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DATA GAPS ASSESSMENT REPORT FOR AREAS OF CONCERN (AOCS) 1, 3, 4, AND 5 BUILDING 219 FORMER BUOY STORAGE AREA WITHIN SITE 10 TANK FARM 2 NS NEWPORT RI

11/1/2015

TETRA TECH

Data Gaps Assessment Report

for

Areas of Concern (AOCs) -001, -003, -004, and -005; Building 219; Former Buoy Storage Area within Site 10 (Tank Farm 2)

Naval Station Newport
Portsmouth, Rhode Island

Naval Facilities Engineering Command Mid-Atlantic

Contract Number N62470-08-D-1001
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November 2015

DATA GAPS ASSESSMENT REPORT
for
AREAS OF CONCERN (AOCs) -001, -003, -004, AND -005; BUILDING 219; FORMER BUOY STORAGE AREA WITHIN SITE 10 (TANK FARM 2)

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PORTSMOUTH, RHODE ISLAND

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

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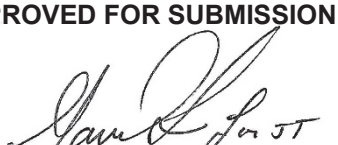

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ACRONYMS AND ABBREVIATIONS

ADAF	Age Dependent Adjustment Factor
amsl	Above Mean Sea Level
AOC	Area of Concern
ATSDR	Agency for Toxic Substances and Disease Registry
B219	Building 219
BAF	Bioaccumulation Factor
BERA	Baseline Ecological Risk Assessment
bgs	Below Ground Surface
BRAC	Base Realignment and Closure
BSA	Buoy Storage Area
Cal EPA	California Environmental Protection Agency
CCME	Canadian Council of Ministers of the Environment
CDD	Chlorinated Dibenzo-p-dioxin
CDF	Chlorinated Dibenzo-p-furan
CDI	Chronic Daily Intake
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLEAN	Comprehensive Long-term Environmental Action Navy
COC	Chemical of Concern
COPC	Chemical of Potential Concern
CSF	Cancer Slope Factor
CSM	Conceptual Site Model
CTE	Central Tendency Exposure
CTO	Contract Task Order
DAF	Dilution Attenuation Factor
DEC	Direct Exposure Criteria
DESC	Defense Energy Support Center
DGA	Data Gaps Assessment
DoD	Department of Defense
DON	Department of Navy
DPT	Direct Push Technology
DU	Decision Unit
EC_{50}	Half Maximal Effective Concentration
Eco SSL	Ecological Soil Screening Level
EEI	Envirodyne Engineers, Inc.
EEQ	Ecological Effects Quotient

ACRONYMS AND ABBREVIATIONS (Continued)

EPC	Exposure Point Concentration
ERA	Ecological Risk Assessment
ESL	Ecological Screening Level
EU	Exposure Unit
ExTPH	Extractable Total Petroleum Hydrocarbons
FFA	Federal Facilities Agreement
FS	Feasibility Study
ft^2	Square Feet
ft/ft	Feet per Foot
Global	Global Remediation Services
GRO	Gasoline Range Organics
GZA	Goldberg-Zoino Associates, Inc.
HEAST	Health Effects Assessment Summary Tables
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
IAS	Initial Assessment Study
ICP-MS	Inductively Coupled Plasma - Mass Spectrometry
IDW	Investigation Derived Waste
ILCR	Incremental Lifetime Cancer Risk
IR	Installation Restoration
IRIS	Integrated Risk Information System
IUR	Inhalation Unit Risk
LOEL	Lowest Observed Effects Levels
mg/kg	Milligrams per Kilogram
MLW	Mean Low Water
MRL	Minimal Risk Level
NAPL	Non-Aqueous Phase Liquid
NAVD 1988	North American Vertical Datum of 1988
NAVFAC	Naval Facilities Engineering Command
NAVSTA	Naval Station Newport
Navy	U. S. Department of Navy
NCEA	National Center for Environmental Assessment
ND	Not Detected
ng/kg	Nanograms per Kilogram

ACRONYMS AND ABBREVIATIONS (Continued)

NOAEL	No-observed Adverse Effects Levels
ORNL	Oak Ridge National Laboratory
PAH	Polynuclear Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PEF	Particulate Emission Factor
PID	Photo Ionization Detector
PPRTV	Provisional Peer Reviewed Toxicity Value
PSL	Project Screening Level
QC	Quality Control
RAGS	Risk Assessment Guidance for Superfund
RBA	Relative Bioavailability
RBC	Risk-based Concentration
RCRA	Resource Conservation Recovery Act
RDA	Recommended Daily Allowance
RDI	Recommended Daily Intake
RfC	Reference Concentration
RfD	Reference Dose
RIDEM	Rhode Island Department of Environmental Management
RME	Reasonable Maximum Exposure
RSL	Regional Screening Level
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act
SB	Subsurface Soil
SERA	Screening Level Ecological Risk Assessment
SIM	Selected Ion Monitoring
SQG	Soil Quality Guidelines
SS	Surface Soil
SSL	Soil Screening Level
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
TDS	Technical Drilling Services, Inc.
TEF	Toxic Equivalency Factor
TEQ	Toxicity Equivalent
Tetra Tech	Tetra Tech, Inc.

ACRONYMS AND ABBREVIATIONS (Continued)

TPH	Total Petroleum Hydrocarbons
TRV	Toxicity Reference Value
TRW	Technical Review Workgroup
UCL	Upper Confidence Limit
µg/kg	Micrograms per kilogram
USCS	Unified Soils Classification System
USDA	United States Department of Agriculture
USEPA	U.S. Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WHO	World Health Organization

EXECUTIVE SUMMARY

This Data Gaps Assessment (DGA) report describes the investigation and data evaluation activities conducted to assess contamination impacts to environmental media at Areas of Concern (AOCs) -001; -003; -004 and -005 (-004/5); Building 219 (B219); and a former buoy storage area (Former BSA) within Site 10 (Tank Farm 2) at Naval Station (NAVSTA) Newport in Newport, Rhode Island (the Base). These areas were selected based upon data and records that indicated the presence or possible presence of hazardous materials that are subject to investigation under the Newport Federal Facilities Agreement (FFA) and the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).

This DGA was conducted to provide site-representative data and to use these data to aid in determining CERCLA risks to potential human and ecological receptors. Previous environmental work at the Site included the investigation and remediation of petroleum-related contamination, under State regulatory authority. The current environmental work was conducted at the Site so that the best path forward for potential CERCLA contamination could be determined. The investigation was performed under the U.S. Department of Defense (DoD) Installation Restoration (IR) Program. The DGA Report was prepared by Tetra Tech, Inc. (Tetra Tech), under the direction of the Naval Facilities Engineering Command (NAVFAC), and Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract No. N62470-08-D-1001, Contract Task Order (CTO) WE30.

The U.S. Environmental Protection Agency (USEPA), the Rhode Island Department of Environmental Management (RIDEM) and the Navy agreed during the September 16, 2009 Remedial Project Managers meeting that different types of contaminants within each site within NAVSTA Newport are governed by different regulatory authorities. Depending on the type of contaminants, the requirements of CERCLA, provisions of the RIDEM Underground Storage Tank (UST) program, or other RIDEM regulations could be applicable to the AOCs within Site 10.

In order to address these different requirements, contaminants identified at NAVSTA Newport were categorized according to the applicable regulatory authority, and decision units (DUs) were created to reflect these varying categories. This process resulted in the creation of three site categories.

Category 1 DUs (AOC-001; AOC-003; AOC-004/5; B219; and Former BSA) are AOCs where CERCLA contaminants may be present. CERCLA contaminants were suspected to be present where records indicate the uncontrolled burning of tank bottom sludge (AOC-001; -003; and -004/005). It was suspected by-products of petroleum sludge burning: polycyclic aromatic hydrocarbons (PAHs), metals, and dioxins/furans may be present in these areas. CERCLA contaminants [polychlorinated biphenyls (PCBs)]

were previously detected in soil around B219. CERCLA contaminants (lead) were suspected to be present in the Former BSA due to the historical storage of painted buoys.

Category 2 is associated with petroleum formerly stored and managed at the site [total petroleum hydrocarbons (TPH)] which may have been released by various mechanisms. These contaminants are governed by the RIDEM UST Section, and are not managed under CERCLA.

The Category 3 was established to address miscellaneous incidental contaminants present that are normally governed by the RIDEM Division of Site Remediation. These would be localized and specific to non-CERCLA releases.

Because of the different regulatory paths for the different categories, it was deemed appropriate to compile separate reports for Category 1 (the CERCLA regulated category) and Category 2 and 3 (the RIDEM regulated categories). As such, this report describes investigation activities, findings and conclusions conducted for the Category 1 DUs. The RIDEM regulated DUs are to be addressed separately.

This report presents the results of the data gaps assessment completed at Tank Farm 2 for AOC-001, AOC-003, AOC-004, AOC-005, Building 219, and the Former Buoy Storage Area. The Navy has also identified three additional AOCs within Tank Farm 2 that require investigation. These areas are the former ground scars, former Public Works Garage Complex (Buildings 82, 240, 236, 239), and former Substation 19 (Building 218). After investigations and/or response actions are completed for those three AOCs, the Navy will evaluate the results from that work, and will coordinate with EPA and RIDEM to assess whether response actions are required to address remaining contamination in accordance with CERCLA or state regulations. In addition, there are petroleum-related AOCs associated with the former tanks and infrastructure at Tank Farm 2. The tank and infrastructure dismantling, investigations, and/or response actions are being completed under state UST and remediation regulations. If a CERCLA release is identified and a CERCLA regulatory decision is required for any of the AOCs beyond the AOCs included in this data gaps assessment, the Navy will complete the CERCLA process for the AOC(s), and a record of decision (ROD) amendment and/or separate ROD will then be prepared to document the CERCLA decision. The Navy is also deferring any further investigations and/or response actions for groundwater, to be addressed as-needed on a site-wide basis.

E.1 SITE CONDITIONS AND BACKGROUND

Tank Farm 2 (Site) occupies approximately 70 acres of land on Aquidneck Island, located approximately 1,000 to 1,500 feet east of Narragansett Bay. The Site is bordered by Bradford Avenue to the north and undeveloped woodlands further to the north. A campground and recreational area are located directly

northeast and east of the Site and the northwest corner of the Site adjoins the southeast corner of Tank Farm 1. Residential housing and Newport Naval Cable TV property are located to the southeast. The property is enclosed along the perimeter with a security fence that restricts public access. The Site contains 11 concrete underground storage tanks (USTs) that were formerly used to store virgin fuel oil. The capacity of each tank was approximately 2.5 million gallons.

Vegetation consisting of dense brush, trees, grass, and woodlands is found between the tanks and the site perimeters at both tank farms. Vegetation in the vicinity of the tanks has been periodically cleared for various construction and investigation activities, but new growth is rapid when not maintained.

Efforts have been undertaken to identify, characterize, and remediate releases from the former UST system to environmental media at the Site. However, a comprehensive investigation of potential CERCLA contamination had not previously been performed. This DGA was conducted to determine the current conditions at the Site, to provide data suitable for a human health and ecological risk assessment, and to present those risk assessments. By determining risk from CERCLA contaminants, the document determines whether a feasibility study or possible remedial action is needed. The areas investigated are AOC-001; AOC-003; AOC-004/5; B219; and the Former BSA. However, at the request of USEPA and RIDEM, the risk assessments were performed for the all of the Category 1 areas of the Site. After evaluation of that risk assessment, the USEPA suggested that the Site be broken up into sub-areas and the risks be re-evaluated. Therefore, AOC-001 was evaluated as an exposure unit; AOC-003, -004, -005 were combined into an exposure unit; the Buoy Storage Area was evaluated as an exposure unit for ecological risk (not human health risk because screening levels were not exceeded) and Building 219 was evaluated as an exposure unit.

E.2 FIELD INVESTIGATIONS

Investigation activities associated with the DGA at the Site were conducted between the months of May and December of 2013 and included tree and brush clearing, soil sampling and analysis, land surveying and investigation-derived waste (IDW) management.

Soil samples were collected using a combination of hand auger and direct push technology (DPT) drilling techniques and soil type encountered was classified and documented. A total of 26 samples were collected and analyzed at AOC-001; 26 at AOC-003; 76 at AOC-004/5 [AOC-004 and AOC-005 overlapped and were combined into one (AOC-004/5)]; 18 at B219; and 15 at the Former BSA.

Surface Soil Investigation – Surface soil samples collected from AOC-001, -003, and -004/5 were analyzed for PAHs, metals, and dioxins/furans; and a subset were analyzed for exactable total petroleum

hydrocarbons (ExTPH) and gasoline range organics (GRO). Surface soil samples collected from B219 were analyzed for PCBs. Surface soil samples collected from the Former BSA were analyzed for lead.

Subsurface Soil Investigation – Subsurface soil samples collected from AOC-001, -003, and -004/5 were analyzed for PAHs, metals, and dioxins/furans [from the one to four foot depth interval below ground surface (bgs)]. A subset of samples was analyzed for ExTPH and GRO. Subsurface soil samples collected from B219 were analyzed for PCBs. Subsurface soil samples collected from the Former BSA were analyzed for lead.

Contaminants from sludge-burning (AOC-003, -004 and -005), or the storage of buoys (buoy storage area) did not appear to have impacted groundwater because previous groundwater sampling downgradient of these areas did not indicate contamination (Appendix A). Furthermore, the project team has agreed to examine the soil data before making the determination whether groundwater sampling is warranted. Therefore, no new groundwater data were collected for the Category 1 areas. However, the screening of soil data against protection of groundwater SSLs is of interest to allow a qualitative evaluation of the potential for chemical migration from soil to groundwater, in the unlikely event that contaminants migrated through the bedrock. This assessment is presented in Section 4.0.

E.3 GEOLOGY AND HYDROGEOLOGY

Subsurface investigations and at the Site has identified a geologic profile of fill materials, overburden soil (primarily till), and bedrock. Bedrock is exposed at the ground surface in the vicinity of AOC-001, -003, and -004/5. The undulating bedrock surface allowed shallow soil sampling in AOC-004/5 and the placement of fill on top of USTs allowed shallow sampling at AOC-001 and AOC-003. Overburden materials are dominated by a mixture of sand, silt, and gravel at the Site. The bedrock in the vicinity of the AOCs is not highly weathered. Bedrock has been identified as shale, slate, and/or phyllite with occasional sandstone/siltstone.

Areas surrounding the USTs have some of the thickest overburden units because the bedrock was blasted to make room for the tanks. The fill in the re-worked areas can be hard to distinguish from the native material because fill appears to be overburden materials from another part of the Site or from the blasting of the bedrock during tank installation efforts.

Groundwater at the AOC-001 area has historically varied between 5 and 25-feet below ground surface. Groundwater at the AOC-003/4/5 area has varied between 20 and 38 feet below ground surface. Groundwater at B219 has varied between 6 and 20 feet below ground surface. The groundwater table at the Category 1 areas is within the bedrock.

E.4 CONTAMINANTS FOUND

Site contaminants identified during the DGA were compared to the USEPA Residential Regional Screening Levels (RSLs), the USEPA Industrial RSLs, and to the USEPA RSL Soil Screening Levels (SSLs) for migration to groundwater (USEPA, 2013). Sample data were validated according to established USEPA Functional Guidelines for Organic Data Review (June 2008); USEPA Functional Guidelines for Inorganic Data Review (January 2010) and New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Guidance/ Procedure (April 2013). A Tier II data validation was performed on the PAH, PCB, metals, and dioxins/furans analyses. Data were found acceptable for use in this DGA.

The background soil investigation study (Tetra Tech, 2008), part of the base-wide background study completed by Tetra Tech in 2008, was used to perform a dataset to dataset statistical comparison between the soil data at the sites and the established background concentrations of metals at the sites.

AOC-001; AOC-003; and AOC-004/5

Analytical results from soil samples collected from within the AOCs show few contaminants at low concentrations. These analytes included PAHs, metals, and dioxins/furans.

The same six PAHs are detected above screening criteria in each of these AOCs: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)phenanthrene, and naphthalene. Overall, concentrations of PAHs in subsurface soil are less than concentrations of PAHs in surface soil at individual locations and as a group.

Six metals: aluminum, arsenic, cobalt, iron, manganese, and thallium, were detected above screening criteria in each AOC. Aluminum, arsenic, cobalt, iron, and manganese were frequently above criteria and thallium was less frequently above criteria. However, concentrations of aluminum and arsenic in surface soils at the Site are within background levels and are not considered to be site related.

Dioxins/furans [which were calculated as dioxin total toxicity equivalents (TEQ)] were detected frequently and generally at greater concentrations in surface soil than subsurface soil. Dioxins (total TEQ) exceeded screening criteria in the majority of surface soil samples from AOC-003 and AOC-004/5; but did not exceed screening criteria in surface soil samples from AOC-001. Dioxins (total TEQ) exceeded screening criteria in three subsurface soil samples: one from AOC-003, one from AOC-004/5, and one from AOC-001.

E.5 HUMAN HEALTH RISK

The objective of the baseline human health risk assessment (HHRA) completed at the Site was to determine whether detected concentrations of chemicals at the Site pose a significant threat of adverse health effects to potential human receptors under current and/or future land use scenarios.

Potential receptors under current land use are adolescent trespassers and adult bow hunters. Potential receptors evaluated in the HHRA for future land use are construction workers, industrial workers, adolescent trespassers, adult bow hunters, child and adult recreational users, and hypothetical child and adult residents.

The Site consists of several subareas [four areas of concern (AOC-001, AOC-003, AOC-004, and AOC-005), B219, and the Former BSA]. As requested by USEPA and RIDEM, these subareas were combined to evaluate the entire Site in this HHRA. Surface soil and subsurface soil were evaluated in the HHRA. PAHs, PCBs, dioxins/furans, and metals were retained as chemicals of potential concern (COPCs) in surface soil. PAHs, dioxins/furans, and metals were retained as COPCs in subsurface soil.

Hazard indices (His), calculated on a target organ basis for noncarcinogenic risks, for all receptors exposed to site-related COPCs in surface soil and all soil were less than or equal to unity (1). Therefore, no adverse non-carcinogenic effects are anticipated for the defined exposure scenarios.

Furthermore, carcinogenic risks for exposure to site-related COPCs for all receptors/media were within USEPA's target risk range of $1x10^{-4}$ to $1x10^{-6}$. Therefore, no primary risk drivers were identified.

The USEPA subsequently requested that the Category 1 areas be re-evaluated for risk as separate exposure units. This was performed by evaluating the data using the following exposure units:

1) AOC-001
2) AOC-003, -004; -005
3) Former Buoy Storage area
4) Building 219

Data from the former BSA were not above screening levels. The analysis of AOC-001 indicated that there is an elevated human health risk in surface soil due to PAHs and chromium and in all soil due to PAHs, chromium and arsenic. The reanalysis did not indicate elevated human health risk at AOC-003; -004; -005, nor at Building 219.

E.6 ECOLOGICAL RISK

This ecological risk assessment (ERA) evaluated surface soil data for the Site. This assessment was a "screening" assessment, to determine contaminants of potential ecological concern, and to assist in determining whether a baseline ecological risk assessment (BERA) should be conducted.

Based on the initial screening of the chemical data, several chemicals were initially selected as COPCs in surface soil because they were detected at concentrations that exceeded conservative screening levels, they had Ecological Effects Quotient (EEQs) greater than 1.0 in the conservative food chain model, or because they did not have screening levels.

While several chemicals were retained as COPCs as a result of the initial screening of surface soil (PAHs, metals, and dioxins/furans), these chemicals were further evaluated and no chemicals were retained as chemicals of concern (COCs) for further evaluation in a BERA for the receptor groups anticipated to be present, which include terrestrial plants, soil invertebrates, mammals, and birds when the Site was considered as all of the Category 1 areas combined.

The reevaluation of ecological risk using smaller exposure units (as described in E.5) indicated that there is an elevated ecological risk to mammals and birds at Building 219, due to PCBs in surface soil.

E.7 CONCLUSIONS

Based on results of the environmental data collected as part of this DGA and the historical information previously generated, elevated risks to human health or ecological receptors are not predicted when the risk assessments are conducted for the Site (Category 1 portions) considered as a whole. However, when the Category 1 portions of the Site was broken up into sub-areas, there is elevated risk. There is an unacceptable ecological risk due to PCBs in the surface soil at Building 219. There is elevated human health risk at AOC-001. The human health risk is primarily due to PAHs and metals in surface soil and all soil where the receptors for each media are the hypothetical child and lifelong residents. It is recommended that Building 219 and AOC-001 proceed to the feasibility study step.

1.0 INTRODUCTION

This Data Gaps Assessment (DGA) Report has been prepared by Tetra Tech, Inc. (Tetra Tech) for the U.S. Department of Navy (Navy) to document investigative work conducted for Site 10, Tank Farm 2 at Naval Station (NAVSTA) Newport (the Site). Tetra Tech completed this work for the Navy under Comprehensive Long-term Environmental Action Navy (CLEAN) Contract No. N62470-08-D-1001, Contract Task Order (CTO) WE30.

Tank Farm 2, located in the Melville section of Portsmouth, Rhode Island, has been owned by the Navy since at least the 1940s. The Site was operated by the Navy until 1974, when it was leased to the Defense Energy Support Center (DESC), who assumed operational control of the Site until the 1990s. The Site has been divided into Comprehensive Environmental Response Compensation and Liability Act (CERCLA) regulated areas (Category 1) and Rhode Island Department of Environmental Management (RIDEM) Underground Storage Tank (UST) Division regulated areas (Category 2) as described in the Tank Farm 2 Sampling and Analysis Plan (SAP) (Tetra Tech, 2013). This DGA was designed to assess existing data gaps and focuses on five Category 1 areas, which include areas of concern (AOCs) AOC-001, AOC-003, AOC-004/005, Building 219 (B219), and the former Buoy Storage Area (Former BSA).

1.1 OBJECTIVES AND SCOPE OF THE INVESTIGATION

The purpose of this DGA was to assess the nature and extent of environmental media contamination, to identify possible contaminant sources, and to identify potential contaminant migration pathways, potential contaminant receptors, and associated exposure pathways. This information is necessary to establish whether a threat to human health or the environment may exist from historical site-related releases, and to assess the extent of contamination and risk from those contaminants. Surface and subsurface soil data collected as part of this effort, were combined with some older surface soil data (at B219) and were used to complete a human health risk assessment (HHRA) and a screening level ecological risk assessment (ERA).

The Site has been segregated into Category 1 (CERCLA-regulated) areas and Category 2 (RIDEM UST Division regulated) areas as decided by the project team based on historical activities and the nature of contaminants suspected to have been released in each of the areas. In addition, RIDEM has identified several other areas of potential concern for which the scope of investigation has not yet been determined. These additional areas of potential concern are currently termed Category 3 areas, and will be further evaluated to assess whether additional investigation will be performed in these areas and if so, whether they will be considered a Category 1 or Category 2 area.

This report addresses only Category 1 Areas. Based on a review of historical environmental investigations and remediation performed at the Site, data gaps for five Category 1 areas were identified. The Category 1 areas that have been characterized in this DGA include:

- Three AOCs where it is suspected that sludge was deposited on the ground and burned (AOC-001, -003, and AOCs -004 and -005, which were combined as AOC-004/5);
- a former transformer building, also known as Building 219 (B219); and
- the Former BSA.

1.2 SITE LOCATION AND DESCRIPTION

NAVSTA Newport is located approximately 25 miles southeast of Providence in the towns of Newport, Middletown, and Portsmouth, Rhode Island. The Site occupies approximately 70 acres of land located approximately 1,000 to 1,500 feet east of Narragansett Bay (Figure 1-1).

The Site is bordered by Bradford Avenue to the north and undeveloped woodlands further to the north. A campground and recreational area are located directly northeast and east of the Site and the northwest corner of the Site adjoins the southeast corner of Tank Farm 1. Residential housing and Newport Naval Cable TV property are located to the southeast. The property is enclosed along the perimeter with a security fence that restricts public access. Access to the property is via Defense Highway, which is located at the western border of the Site between the property and Narragansett Bay. The ground surface at Tank Farm 2 is currently partially covered in vegetation (grass, brush, and trees) with a few clear areas along paved access roads and adjacent to the UST locations. A site plan is provided as Figure 1-2.

The Site is occupied by eleven 2.5-million gallon capacity concrete underground storage tanks (USTs) (Tanks 19 through 29). The USTs are installed in blasted bedrock sockets (Figure 1-2). Underground petroleum distribution lines connect the USTs to the Naval Fuel Loading Area (about 1,000-feet northwest of the Site). A tank access chamber (doghouse) is associated with each UST. The Site also contains support buildings including a former transformer building (Building 219). Other features of the Site include:

- underground fuel distribution lines installed in 10-feet below grade concrete-lined utility trenches;
- an underdrain system (ring drain) around each UST that collects and transfers excess groundwater away from the USTs;

- sump pump chambers in the pump house next to each UST that contain pumps for the fuel distribution lines and the ring drain;

- buried piping connecting the fuel distribution lines and the pump houses;

- a UST vent and a gauging house connected to each UST; and

- support buildings, including B219 which is a former electrical service/transformer building.

The locations of the AOCs, Building 219, and the Former BSA are shown on Figure 1-2.

1.3 BACKGROUND INFORMATION

This section presents general background information for Tank Farm 2, and also includes specific information regarding the Former BSA, B219, AOC-001, AOC-003, and AOC-004/005.

1.3.1 Site History and Background

The Navy has owned the Tank Farm 2 property since at least the 1940's when the USTs were constructed. The tanks stored No.5 fuel oil from the 1940s to 1975, distillate fuel from 1975 to 1985, and marine diesel fuel from 1985 until the mid-1990s. Tank 22 was taken out of service and cleaned in the 1970s and then used as a storage tank for sludge. Tank Farm 2 was operated by the Navy until 1974, when the property was leased to the DESC. The DESC actively operated the Site until the 1990s, when the tanks were emptied and cleaned.

The Site has been inactive since the termination of DESC operations in the 1990s, aside from the occasional environmental related activity performed by Navy and DESC Energy contractors and general non-recurrent landscaping activities. The DESC still maintains contractual control of the property, although it is not in active operation.

Historical information suggests that sludge from tank cleaning was disposed of on the ground surface in the vicinity of each tank, from the 1940s to the mid-1970s (Envirodyne Engineers, Inc., 1983). Since that time, the sludge has reportedly been disposed of at off-site facilities. The tanks and portions of the distribution piping have also been cleaned and inspected, although they have not been permanently decommissioned or achieved official closure by RIDEM.

Previous environmental investigations were prepared for the DESC, under the oversight of Rhode Island Department of Environmental Management (RIDEM). These investigations were summarized in reports submitted to RIDEM:

- *Site Investigation Report Tank Farm No.2, May 1998, GZA GeoEnvironmental, Inc.*
- *Draft Work Plan for Site Closure, Tank Farm 2, September 2003, Foster Wheeler Environmental Corporation.*
- *Draft Condensed Work Plan for Soil and Groundwater Sampling, Tank Farm 2, February 2005, Tetra Tech EC, Inc.*
- *Draft Condensed Work Plan for Soil and Groundwater Sampling, Tank Farm 2, May 2005, Tetra Tech EC, Inc.*
- *Work Plan for Monitoring Well Installation, Tank Farm 2, July 2005, Tetra Tech EC, Inc.*
- *Draft Site Investigation and Remedial Action Report (SIRAR) for Tank Farm 2, July 2006, Tetra Tech EC, Inc.*
- *Addendum 1, Site Investigation and Remedial Action Report for Tank Farm 2, April 2009, Tetra Tech EC, Inc.*
- *Groundwater Monitoring Report for Tank Farm 2, August 2009, Tetra Tech EC, Inc.*

The reports were reviewed in order to assess potential areas of concern (AOCs) that could require further investigation or remediation. This was prepared to summarize the AOCs and what is currently known about them so that an appropriate path forward and associated regulatory frame work can be established for each.

Following review and summary of the reports the project team made decisions regarding the AOCs at the Site. The historic site conditions were summarized in Appendix A (Table A-1 Summary of Site Conditions) to the DGA SAP. This summary was prepared so that the appropriate regulatory framework and path forward for each area could be established. This DGA has been prepared to address only Category 1 areas of the site. In accordance with decisions made by the project team (Worksheet #9 of the SAP), the AOCs at the Site have been separated into Category 1 (CERCLA- regulated), Category 2 (RIDEM UST Division

regulated) areas, and Category 3 areas (regulatory pathway not yet defined). This DGA has been prepared to address the Category 1 areas only.

The categories of areas within the tank farms are defined as follows:

1) Category 1 (CERCLA-regulated) areas – these are locations of releases/suspected releases of CERCLA hazardous substance(s).

2) Category 2 (RIDEM UST Division regulated) areas – these locations relate to virgin petroleum contamination resulting from DESC operations, and which have been, or are currently being, addressed by DESC.

3) Category 3 areas (additional areas of concern) – areas for which the scope of investigation has not been determined, a release is not confirmed, and a regulatory pathway is not yet defined.

The Category 1 areas consist of three types of areas/contaminants at Tank Farm 2:

1) Contaminants associated with burning of tank sludge [polynuclear aromatic hydrocarbons (PAHs)], metals, and dioxins. Sludge may have been deposited on the ground in areas of the Site. There is some evidence that in some of these areas, the sludge was burned. Burning sludge can alter the petroleum sludge, potentially producing dioxins and pyrogenic PAHs, and release elevated concentrations of heavy metals, all of which may have deposited onto soil. Heavier petrogenic PAHs that are not combustion related products may also have been released by this process to the surface soil. The USEPA has stated that areas where evidence of sludge burning has taken place would be governed by CERCLA.

2) Areas where polychlorinated biphenyls (PCBs) may have been released to the environment. The USEPA has stated that the areas where PCB- containing oils were used would be governed by CERCLA.

3) Areas where lead may have been released to the environment from the storage of painted buoys. The USEPA has stated that areas where lead-based paint has been released to the environment could be governed by CERCLA.

Data already collected from all the areas of the Site were reviewed for completeness. The areas are summarized in Table A-1 of Appendix A. The Category 1 portions of the Site that were determined to have

not been adequately characterized with respect to PAHs, metals, dioxins and/or PCBs and required further investigation were investigated in this DGA. These areas are:

1) AOC 001, AOC-003; AOC-004 and AOC-005. (Areas where sludge may have been deposited on the ground and burned);

2) Building 219 (Former Transformer Building); and

3) Former buoy storage area.

The previous investigations in these areas are summarized:

AOC-001- Soil samples from the test pit at this AOC location were screened for TPH using Petroflag™ and all samples had a screening concentration of less than 100 mg/kg, so no samples were sent to the lab for additional analysis. Historic records suggest open burning of sludge was performed at this location. The soil samples have been screened for TPH but none had been analyzed for dioxins and furans or metals.

AOC-003- Historic records suggest open burning of sludge was performed at this location. The soil samples have been analyzed for DRO but none had been analyzed for dioxins and furans or metals.

AOC-004- The soil samples have been screened for TPH but none had been analyzed for dioxins and furans or metals.

AOC-005- Historic records suggest open burning of sludge was performed at this location. The soil samples have been screened for TPH but none had been analyzed for dioxins and furans or metals.

Building 219- It was reported that the building formerly contained transformer. Outside this building four shallow soil samples were collected and analyzed for PCBs. Two of the samples had low levels of PCBs detected and two were slightly above applicable RIDEM standards.

Buoy Storage Area- The former buoy storage area was investigated as several AOCs: AOC-022, -026, -033, -034, -035 and -036. The results of the soil and groundwater sampling and analysis in this area is detailed in Appendix A. In summary, results of the sampling and analysis indicated some elevated petroleum-related constituents, but not at concentrations requiring remedial action. However, lead was not analyzed in the soil samples.

This report presents the results of the data gaps assessment completed at Tank Farm 2 for AOC-001, AOC-003, AOC-004, AOC-005, Building 219, and the Former Buoy Storage Area. The Navy has also identified three additional AOCs within Tank Farm 2 that require investigation. These areas are the former ground scars, former Public Works Garage Complex (Buildings 82, 240, 236, 239), and former Substation 19 (Building 218). After investigations and/or response actions are completed for those three AOCs, the Navy will evaluate the results from that work, and will coordinate with EPA and RIDEM to assess whether response actions are required to address remaining contamination in accordance with CERCLA or state regulations. In addition, there are petroleum-related AOCs associated with the former tanks and infrastructure at Tank Farm 2. The tank and infrastructure dismantling, investigations, and/or response actions are being completed under state UST and remediation regulations. If a CERCLA release is identified and a CERCLA regulatory decision is required for any of the AOCs beyond the AOCs included in this data gaps assessment, the Navy will complete the CERCLA process for the AOC(s), and a record of decision (ROD) amendment and/or separate ROD will then be prepared to document the CERCLA decision. The Navy is also deferring any further investigations and/or response actions for groundwater, to be addressed as-needed on a site-wide basis.

1.3.2 Aerial Photo Review

Aerial photographs dated 1951, 1954, 1962, 1972, 1976, 1979, 1986, and 1988 were reviewed to obtain historical information relating to land use for this DGA. Aerial photographs are provided in Appendix A. Results from the aerial photography review for these areas are included in the following descriptions.

AOC-001; -0003; and -004/5

The AOCs are located in the northwestern section of the Site. AOC-001 is located adjacent to Tank 21. AOC-003 is located near Tank 19 and AOCs-004 and -005 are located near the intersection of the access road and the loop road at Tank Farm 2. AOC-004 and AOC-005 are located adjacent to each other and have been combined into one AOC (AOC-004/5) for this DGA. The majority of the aerial photographs show the AOCs (AOC-001, -003, -004/5) as undistinguishable from surrounding areas. The exception is that in the 1954 photograph, smoke is coming from the location of AOC-003 and it appears that the ground is burning.

Building 219

B219 is located northwest of Tank 26 south of the perimeter access road. Review of the 1951, 1954, and 1962 aerial photographs indicate that there was a building located where B219 is currently located. The building appears to be approximately the same size, but is a slightly different shape than the current B219. B219 is visible in the 1972, 1976, 1979, 1986, and 1988 aerial photographs.

Former Buoy Storage Area

The Former BSA is located in the eastern central part of Tank Farm 2. It is part of a larger rectangular bermed area that is not visible in the 1951, 1954, and 1962 aerial photographs. It is first visible in the 1972 aerial photograph. In the 1972 and 1979 aerial photographs, the entire rectangular area appears to be filled with cylindrical items, interpreted at one time to be drums, but interviews indicate they were buoys. In the 1976 aerial photograph the bermed area does not appear to have buoys but that photograph is not clear.

The vast majority of the bermed area appears to be empty in the 1986 aerial photograph except for the northern portion. Cylindrical objects are visible in the northern portion of the berm in the 1986 aerial photograph possibly indicative of buoy storage. The bermed area appears to be mostly vacant in the 1988 aerial photograph with the exception of a small quantity of material stored in the northern portion.

An interview of Mr. Roger Poison, NAVSTA Newport personnel indicated that in about 1978 he observed thousands of buoys stacked in this area and by about the middle of the 1980's they were no longer stored there. This correlates well with the aerial photography, confirming buoy storage.

1.3.3 Previous Investigations

Environmental investigations and remediation have previously occurred at the Site by the DESC have been performed under the Rhode Island Department of Environmental Management (RIDEM) regulations. These investigations were performed as part of the Tank Farm 2 closure process under RIDEM regulations to address the former storage tanks, distribution piping network, and releases of stored fuels. A summary of the site environmental conditions of the various areas of the Site at the time of the development of the SAP for this DGA work is provided in Appendix A (Table A-1). As part of these investigations, test pits were excavated and soil samples were collected in the vicinity of AOC-001, AOC-003, AOC-0004/5, B219, and the Former BSA. Since investigations were focused more on the characterization of the extent of petroleum impacts to environmental media and potential impacts relating to non-petroleum related compounds was not adequately addressed.

Historical investigations resulted in the installation of 28 monitoring wells, water level and non-aqueous phase liquid (NAPL) gauging rounds, and collection of soil and groundwater samples. The summary of the historical groundwater sampling performed at the Site is included in Appendix A (Table A-2). Monitoring wells and sampling sites were located near the tanks and in areas identified in historical aerial photographs as requiring additional investigation. Soil excavations have occurred at the Site to remove soils determined to be above applicable RIDEM standards based on investigations conducted. A summary of the historical

environmental data around each tank and other areas is included in Appendix A, as Tables A-3.1 through A3.14.

Based upon a review of all of the historical data and existing site conditions, and in collaboration with the regulatory agencies, it was determined that the following Category 1 areas required additional investigation.

Areas of Concern AOC-001; 000-3; and -004/5

Soil samples collected from AOC-001, AOC-003, and AOC-004/5 during the SIRAR investigation were primarily analyzed for compounds related to the release of virgin petroleum products (Tetra Tech, 2006). The soil samples from AOC-001, AOC-003, AOC-004, and AOC-005 were analyzed for petroleum and RIDEM Industrial/ Commercial Direct Exposure Criteria (DEC) criterion were not exceeded in soil samples. Groundwater monitoring wells located downgradient of AOC-003; -004 and -005 (GZ-226, GZ-225 and GZ-201), and downgradient or crossgradient of AOC-001 (GZ-201; GZ-227 and RW-2) were also sampled during the SIRAR. The groundwater samples were analyzed for VOCs, SVOCs, and TPH. Analytical results of compounds detected in these groundwater samples are shown in Appendix A, Tables A-3.1 and A-3.3. With the exception of elevated TPH in one sample, these results show only low levels of few compounds. The concentrations and type of the compounds in groundwater do not suggest that chemicals from a potential Category 1 release in these AOCs migrated through the bedrock to the groundwater. Due to the suspected burning of petroleum sludge on the ground surface in these areas, the potential CERCLA release of petroleum sludge combustion byproducts [dioxins/furans, metals, and polycyclic aromatic hydrocarbons (PAHs)] is a data gap investigated in this DGA.

Building 219

B219 is a former electrical service building that reportedly contained transformer. Soil samples collected adjacent to this building performed during the SIRAR (Tetra Tech, 2006) indicate that elevated concentrations of polychlorinated biphenyls (PCBs) are present in surface soil. Four surface soil samples were collected and analyzed for PCBs and chlorinated benzenes. Aroclor-1260 was detected in the four soil samples at concentrations ranging from 0.33 milligrams per kilogram (mg/kg) to 18 mg/kg. There were two exceedances of the RIDEM Residential DECs for PCBs (10 mg/kg). Detectable levels of chlorinated benzenes and other PCB congeners were not reported (Tetra Tech, 2006). The concentrations are summarized in Appendix A, Table A-3.14.

Due to the potential for the historical presence of PCB-containing transformer oil in electrical equipment likely utilized in B219 and the detection of PCBs in soil samples collected from this area, the potential contaminants in this area are PCBs. The extent of the PCB contamination in this area is a data gap investigated in this DGA. Additional sampling and analysis was performed in this area to further define the

extent of PCB contamination in soil and sample locations and analytical results are presented in figures and tables in Section 4.0, along with a discussion of the results.

Former Buoy Storage Area

During the SIRAR, the Former BSA was investigated as AOC-022, AOC-026, AOC-033, AOC-034, AOC-035, and AOC-036 (Tetra Tech, 2006). Soil and groundwater samples in this area were collected and analyzed for organic compounds including total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs). Groundwater from this area has also previously been analyzed for lead. This entire area was investigated during the SIRAR (Tetra Tech, 2006) as AOC-22. TPH was not detected at concentrations above RIDEM industrial/commercial DEC and excavation was therefore not required. Appendix A includes a Technical Memorandum that summarizes the investigation and results of sampling and analysis at the Former BSA. Appendix A, Table A-3.13 contains a summary of historical environmental data from this area. Since soil at the Former BSA has not been analyzed for lead, the DGA included additional sampling and analysis to determine if a release of lead has occurred from the reported storage of buoys in this area.

1.4 REPORT ORGANIZATION

This DGA report is organized into seven sections as follows:

Section 1, Introduction - Provides background information about NAVSTA Newport and Site 10, Tank Farm 2, including location, description, history of NAVSTA Newport and the Site, an aerial photo review, and a brief discussion of previous investigations conducted at the Site.

Section 2.0, Field Investigation - Section 2 provides an overview of the field investigations conducted as part of this DGA and designed to fulfill existing data gaps in environmental media quality at the Site.

Section 3.0, Physical Characteristics - This section provides a description of the physical site characteristics, including regional physiography, regional and site-specific geology, and regional and site-specific hydrology and hydrogeology.

Section 4.0, Nature and Extent of Contamination - Section 4 presents an assessment of environmental media quality at the Site based on historical data and results of the DGA efforts.

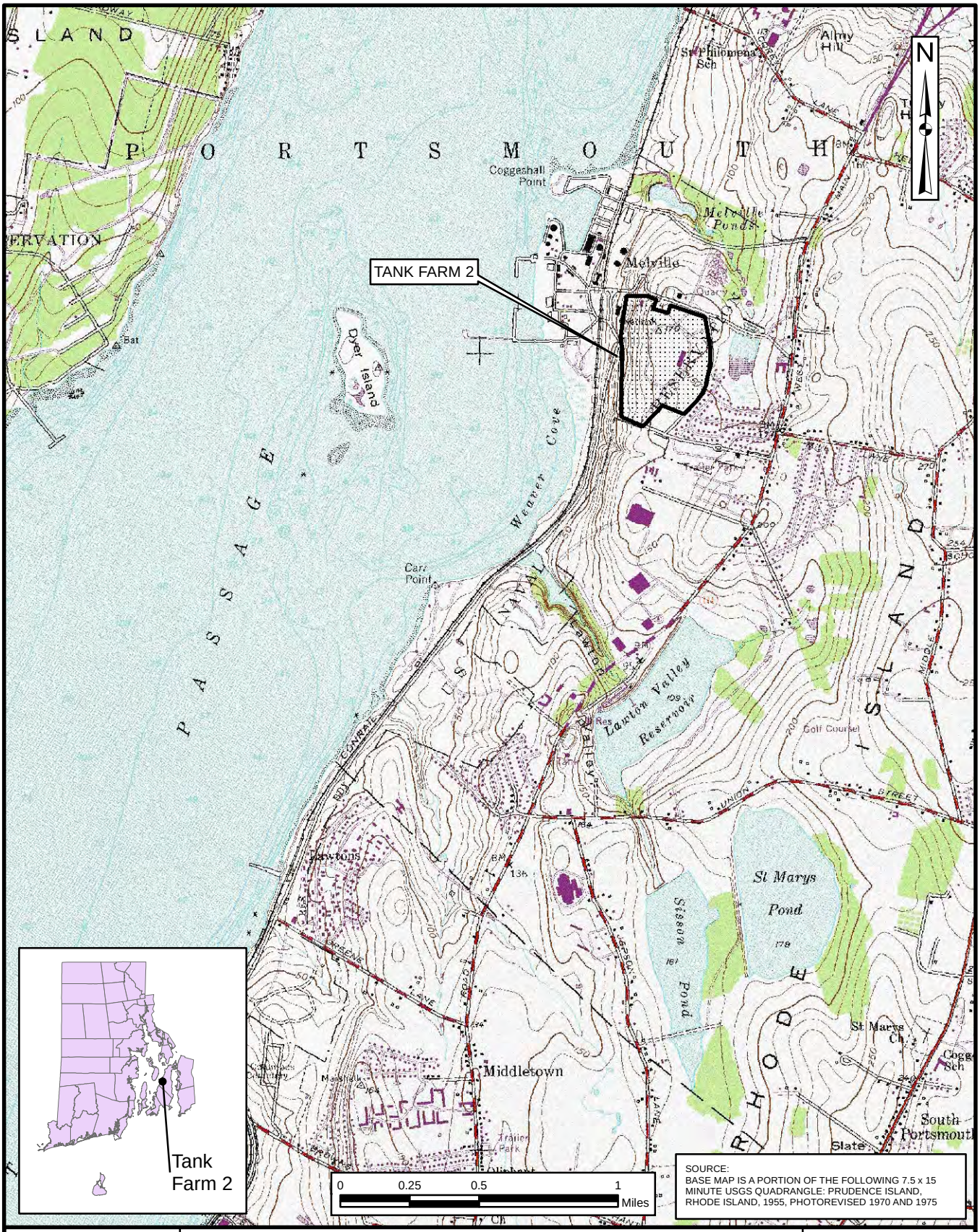
Section 5.0, Human Health Risk Assessment - This section provides a summary of results from the HHRA conducted for the Site.

Section 6.0, Ecological Risk Assessment - Section 6 presents a summary of the ERA results for the Site.

Section 7.0, Summary and Conclusions - Section 7 presents the summary and conclusions formulated from investigation efforts completed as part of this DGA.

This DGA report is supported by tables, figures, and a series of appendices as listed in the table of contents.

I:\03019\PP.DF\TF2_LOCUS.MXD MKB 06/11/14



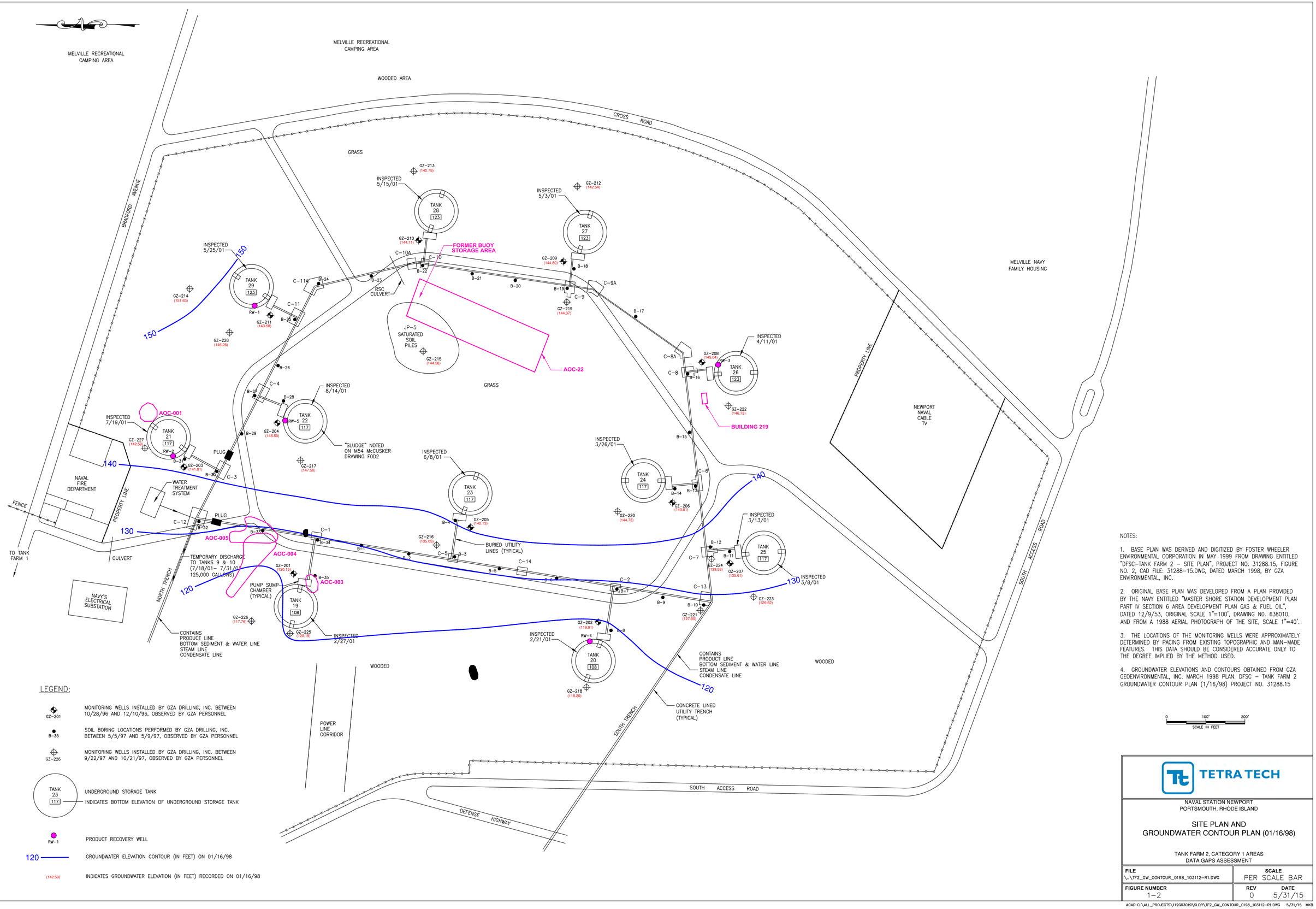
TETRA TECH

NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

SITE LOCUS MAP

TANK FARM 2, CATEGORY 1 AREAS
DATA GAPS ASSESSMENT

SCALE	
PER SCALE BAR	
FILE	
I:\..\TF2_LOCUS.MXD	
REV	DATE
0	06/11/14
FIGURE NUMBER	
1-1	



LEGEND:

- GZ-201 — MONITORING WELLS INSTALLED BY GZA DRILLING, INC. BETWEEN 10/28/96 AND 12/10/96, OBSERVED BY GZA PERSONNEL
- B-35 — SOIL BORING LOCATIONS PERFORMED BY GZA DRILLING, INC. BETWEEN 5/5/97 AND 5/9/97, OBSERVED BY GZA PERSONNEL
- GZ-226 — MONITORING WELLS INSTALLED BY GZA DRILLING, INC. BETWEEN 9/22/97 AND 10/21/97, OBSERVED BY GZA PERSONNEL
- TANK 23 / 117 — UNDERGROUND STORAGE TANK; INDICATES BOTTOM ELEVATION OF UNDERGROUND STORAGE TANK
- RW-1 — PRODUCT RECOVERY WELL
- 120 — GROUNDWATER ELEVATION CONTOUR (IN FEET) ON 01/16/98
- (142.59) — INDICATES GROUNDWATER ELEVATION (IN FEET) RECORDED ON 01/16/98

NOTES:

1. BASE PLAN WAS DERIVED AND DIGITIZED BY FOSTER WHEELER ENVIRONMENTAL CORPORATION IN MAY 1999 FROM DRAWING ENTITLED "DFSC–TANK FARM 2 – SITE PLAN", PROJECT NO. 31288.15, FIGURE NO. 2, CAD FILE: 31288–15.DWG, DATED MARCH 1998, BY GZA ENVIRONMENTAL, INC.

2. ORIGINAL BASE PLAN WAS DEVELOPED FROM A PLAN PROVIDED BY THE NAVY ENTITLED "MASTER SHORE STATION DEVELOPMENT PLAN PART IV SECTION 6 AREA DEVELOPMENT PLAN GAS & FUEL OIL", DATED 12/9/53, ORIGINAL SCALE 1"=100', DRAWING NO. 638010, AND FROM A 1988 AERIAL PHOTOGRAPH OF THE SITE, SCALE 1"=40'.

3. THE LOCATIONS OF THE MONITORING WELLS WERE APPROXIMATELY DETERMINED BY PACING FROM EXISTING TOPOGRAPHIC AND MAN–MADE FEATURES. THIS DATA SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

4. GROUNDWATER ELEVATIONS AND CONTOURS OBTAINED FROM GZA GEOENVIRONMENTAL, INC. MARCH 1998 PLAN: DFSC – TANK FARM 2 GROUNDWATER CONTOUR PLAN (1/16/98) PROJECT NO. 31288.15

0 100' 200'
SCALE IN FEET

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

SITE PLAN AND GROUNDWATER CONTOUR PLAN (01/16/98)

TANK FARM 2, CATEGORY 1 AREAS
DATA GAPS ASSESSMENT

FILE	SCALE
\..\TF2_GW_CONTOUR_0198_103112-R1.DWG	PER SCALE BAR
FIGURE NUMBER	**REV** / **DATE**
1-2	0 / 5/31/15

ACAD: C:\ALL_PROJECTS\112G03019\SI.DR\TF2_GW_CONTOUR_0198_103112-R1.DWG 5/31/15 MKB

2.0 FIELD INVESTIGATION ACTIVITIES

Tetra Tech conducted field activities in support of the DGA at Tank Farm 2, Category 1 Areas (AOC-001; AOC-003; AOC-004/5; B219; and Former BSA) between May 2013 and December 2013. This field investigation was conducted to further evaluate the presence of chemical contamination in soil. The activities that were implemented during this investigation included:

- Tree and brush clearing;
- soil sample collection using hand tools;
- soil sample collection using Direct Push Technology (DPT);
- land surveying; and
- investigation-derived waste (IDW) management.

Activities were conducted in accordance with the site-specific Sampling and Analysis Plan (SAP) (Tetra Tech, 2013). The tasks conducted during this investigation are described in the sections below.

2.1 TREE AND BRUSH CLEARING

Prior to the implementation of field investigation efforts, brush clearing and tree cutting activities were performed at each of the three AOCs, B219, and Former BSA to gain access to soil boring locations. Brush clearing and tree cutting activities were performed by Global Remediation Services (Global) of Taunton, Massachusetts between May 21 and May 24, 2013. Vegetation clearing activities were conducted utilizing a Bobcat™ skid-steer with a forestry mulching attachment, chainsaws and hand-tools with observation and guidance of Tetra Tech field staff. Cut brush and felled trees were stockpiled at each area and left on-site.

2.2 SOIL BORING INVESTIGATION

This section and the subsections that follow discuss the geological investigation activities that were conducted as part of the DGA field sampling program for Tank Farm 2, Category 1 Areas. The subsurface exploration program was designed to collect data that will be used to assess the nature and extent of contamination related to past activities that have potentially resulted in what are considered releases under CERCLA. Soil borings were advanced at the Site to identify potential CERCLA contaminants present, and identify areas of potential contamination to soil. Analytical data for surface and subsurface soil samples collected as part of this effort are discussed in Section 4.0. Field documentation forms are presented in Appendix A.

In accordance with the approved SAP, soil boring locations at AOC-001, AOC-003, and AOC-004/5 were laid out in a grid pattern to provide representative coverage for each of the areas. Borings advanced adjacent to B219 were located in areas of interest including outside doors, near a ground-level building vent, and near an electrical meter. Borings at the former BSA were initially laid out on a grid to cover the area, but they were adjusted in the field by the regulatory agency representatives in order to target areas of potentially highest impact.

During the field investigation, soil borings were advanced using stainless steel hand augers or DPT drilling methods to collect soil samples for laboratory analysis. The method and number of soil borings advanced at each area include:

- AOC-001: 11 DPT soil borings;
- AOC-003: nine hand auger and DPT borings;
- AOC-004/5: 47 hand auger borings and DPT drilling at 48 locations;
- B219 - DPT drilling at 10 locations; and
- Former BSA - DPT drilling at eight locations.

Soil boring locations within AOC-001, AOC-003, AOC-004/5, B219, and Former BSA are shown on Figures 2-1 through 2-5.

The soil boring investigation was performed using procedures specified in the approved SAP, except for the following field modifications:

- AOCs – Stainless steel hand tools were used to advance borings and collect soil samples due to shallow bedrock in the AOC areas. These areas were later revisited to determine if deeper soil samples could be collected using DPT drilling techniques, and deeper samples were obtained at some locations.

- Former BSA – In response to regulator request during a site walk on June 12, 2013, two borings were advanced deeper (to 10 feet bgs) at the former BSA to determine if the concrete impoundment has a bottom. In addition, soil sample locations were adjusted: two soil borings were moved into the impoundment and one soil boring originally planned outside the impoundment was moved to a location adjacent to a crack in the north impoundment wall.

- B219 – In the SAP (Tetra Tech, 2013), sampling locations close to the building (“original locations”) were targeted as the highest impacted areas. The “original locations” are outside doors and adjacent to an electrical box. In an attempt to bound the contamination in those areas, “step out” sampling

locations were proposed 10 to 15 feet from the “original locations”. In response to regulator request during a site walk on June 12, 2013 and subsequent communications, “step out” borings at B219 were moved from 10 to 15 feet from the “original location” to 5 to 10 feet from the “original location”. In addition, soil sample locations were adjusted: one location was moved from the west side of the building; one location was moved from the east side of the building and both were relocated to the south side of the building to provide more samples near the electrical box. One sample planned for just outside the door on the north side of the building was moved to adjacent to ground surface building vents on the north side of the building. It was also decided that the PCB sample locations from the 2005 sampling event did not require resampling, since the 2005 analytical results are considered representative of current soil conditions.

These modifications were documented in field modification records (Appendix B).

Furthermore, the following deviations from the SAP (Tetra Tech, 2013) occurred due to encountering shallow bedrock:

- In AOC-001, four soil samples were collected from a depth of 8 to 10 feet bgs instead of the 11 proposed samples;

- In AOC-003, seven soil samples were collected from a depth of 8 to 10 feet bgs, instead of the 9 proposed samples;

- In AOC-004/5, 49 surface soil samples were collected from 0 to 1 foot bgs, as proposed. However, 28 subsurface soil samples were collected from an interval between 2 and ten feet bgs, instead of the 49 proposed samples from two to 4 feet bgs and 49 proposed samples from 8 to ten feet bgs; and

- In the BSA, seven soil samples were collected from 2 to 4 feet bgs instead of the 8 proposed samples.

2.2.1 Hand Auger Soil Borings

Between October 18 and October 22, 2013, a total of 56 soil borings were advanced using a stainless steel hand auger, including nine soil borings (SS1011 through SS1019) at AOC-003 and 47 borings (SS1020 through SS1043 and SS1045 through SS1068) at AOC-004/5 to facilitate subsurface soil sampling for soil classification and laboratory analysis.

Hand augers were used in AOC-003 and AOC-004/5 due to shallow bedrock (outcrops) observed in these areas. Soil samples were collected using hand augers from the surface to 1 foot bgs to represent the 0 to 1 foot bgs depth interval.

Each soil sample was placed in an aluminum pan and described by the on-site field geologist. The physical characteristics of each soil sample were described using the Unified Soil Classification System (USCS) and recorded on soil boring logs (Appendix C). Other pertinent observations such as photoionization detector (PID) sample headspace screening results, sample moisture, lithologic changes, presence/absence of fill material, and potential evidence of contamination such as staining or odors were recorded on the boring logs. General observations such as sample type and number, sample time, depth, and sampling equipment utilized and methods used were also recorded. After the field descriptions and observations were recorded and when required, the gasoline range organics (GRO) sample aliquot was collected as a grab sample using an Encore sampler. The remaining portion of the sample was homogenized using a stainless steel trowels and placed in appropriate bottles supplied by the laboratory. Excess soil was replaced in the open soil boring.

Each of the surface soil samples were analyzed for dioxins/furans, total metals, and PAHs. In addition, one sample (SS1015) collected from AOC-003 and seven samples (SS1020, SS1027, SS1039, SS1049, SS1051, SS1056, and SS1065) collected from ACO-004/5 were also analyzed for extractable total petroleum hydrocarbons (ExTPH) and GRO. The analytical approach was consistent with that described in the SAP. Table 2-1 provides a summary of soil samples collected and the laboratory analysis performed on each sample.

2.2.2 Direct Push Technology Soil Borings

Between November 12 and November 27, 2013, Technical Drilling Services, Inc. (TDS) of Sterling, Massachusetts advanced DPT soil borings at Tank Farm 2 to facilitate surface and subsurface soil sampling for laboratory analysis and soil classification. A total of 86 soil borings were advanced using DPT techniques, including 11 soil borings at AOC-001, 9 soil borings at AOC-003, 48 soil borings at AOC-004/5, 10 soil borings at B219, and 8 soil borings at the former BSA.

DPT drilling was conducted with a hydraulically-powered direct-push GeoProbe™ drilling rig. Surface and subsurface soil samples were collected using 2-inch diameter Macrocore® samplers with acetate liners. Soil borings were advanced at two-foot depth intervals to a maximum depth of 10 feet bgs or refusal. The acetate liner and sleeve were equipped with a catch basket to ensure that material was not lost during recovery. Acetate liners were cut open using a utility knife upon delivery to the field geologist, soil was then classified and samples were collected as described below.

The physical characteristics of each soil sample were described using the USCS and recorded on boring logs (Appendix C). Other pertinent observations such as PID sample headspace screening results, sample moisture, lithologic changes, presence/absence of fill material, and potential evidence of contamination such as staining or odors were recorded on the boring logs. General observations such as sample type and number, sample time, depth, and sampling equipment utilized and methods used were also recorded. After the field descriptions and observations were recorded and when required, the GRO sample aliquot was collected as a grab sample using an encore sampler. The remaining portion of the sample was homogenized using a stainless steel trowels and placed in appropriate bottles supplied by the laboratory. Excess soil from each boring was placed in 55-gallon open top drums for off-site disposal at a later date.

During DPT drilling, surface soil samples were collected from borings advanced at AOC-001, B219, and the former BSA and subsurface soil samples were collected from all five AOCs. Surface soil samples were collected from 0 to 1 foot bgs and subsurface soil samples collected at B219 and the former BSA were collected from 2 to 4 feet bgs. Subsurface soil samples at AOC-001, AOC-003, and AOC-004/5 were collected from two subsurface depth intervals if possible, targeting the middle interval and bottom interval of each boring. The samples collected at each AOC and corresponding laboratory analysis are summarized in Table 2-1 and included:

- AOC-001: 11 surface soil samples were collected and analyzed for dioxins/furans, total metals, and PAHs. One surface soil sample (TF2-001-SS1003-0001) was also analyzed for ExTPH and GRO. Fifteen subsurface soil samples were collected and analyzed for total metals and PAHs. Twelve subsurface samples were also analyzed for dioxins/furans and three subsurface samples were also analyzed for ExTPH/GRO.

- AOC-003: Seventeen subsurface soil samples were collected and analyzed for total metals and PAHs. Ten subsurface soil samples were also analyzed for dioxins/furans and two subsurface soil samples were also analyzed for ExTPH/GRO.

- AOC-004/5: Twenty-eight subsurface soil samples were analyzed for total metals and PAHs. Seventeen subsurface soil samples were also analyzed for dioxins/furans and four subsurface soil samples were also analyzed for ExTPH/GRO.

- B219 - Eight surface soil and ten subsurface soil samples were analyzed for PCBs.

- Former BSA - Eight surface soil and seven subsurface soil samples were analyzed for total lead.

The analytical approach was consistent with that described in the SAP. Table 2-1 provides a summary of soil samples collected and the laboratory analyses performed on each sample.

2.3 SITE SURVEY

On December 4 and 5, 2013, Louis Federici & Associates of Providence, Rhode Island surveyed the location and elevation of soil borings advanced at Tank Farm 2. The survey included: 11 borings at AOC-001; 9 borings at AOC-003; 48 borings are AOC-004/5; 10 borings at B219; and 8 borings at the former BSA. The northing, easting, and ground surface elevation of each boring are summarized on Table 2-2. The locations of surface soil samples collected in 2005 at B219 (B219-1 through B219-4) were obtained from documentation in the SIRAR (Tetra Tech EC, 2006).

2.4 IDW MANAGEMENT

IDW generated during site investigation at Tank Farm 2 consisted of both liquid and solid waste streams. Liquid IDW consisted of decontamination water and solid IDW included soil cuttings generated during DPT drilling. Solid and liquid IDW was stored in separate 55-gallon drums, and were consolidated into one solid and one liquid drum prior to disposal.

On December 27, 2013, Mill City Environmental collected waste characterization samples. Analytical results indicated that each of the waste streams were non-hazardous. On March 11, 2014, Triumvirate Environmental Services, a licensed waste transporter, transported the liquid and solid waste off-site for disposal at a regulated facility under the NAVSTA waste generator authority.

TABLE 2-1

SAMPLE SUMMARY OF ANALYTICAL RESULTS
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Area	Location ID	Sample ID	Sample Date	Sub-Matrix	Top Depth (feet)	Bottom Depth (feet)	Dioxins/Furans	Total Metals	Total Lead	Total Solids	PAHs	PCBs	ExTPH/GRO
AOC 001	TF2-001-SB1000	TF2-001-SB1000-0204	11/27/2013	SB	2	4	x	x		x	x		
	TF2-001-SB1000	TF2-001-SB1000-0810	11/27/2013	SB	8	10	x	x		x	x		x
	TF2-001-SB1001	TF2-001-SB1001-0204	11/25/2013	SB	2	4	x	x		x	x		
	TF2-001-SB1001	TF2-001-SB1001-0810	11/25/2013	SB	8	10		x		x	x		
	TF2-001-SB1002	TF2-001-SB1002-0204	11/25/2013	SB	2	4	x	x		x	x		
	TF2-001-SB1002	TF2-001-SB1002-0405	11/25/2013	SB	4	5		x		x	x		
	TF2-001-SB1003	TF2-001-SB1003-0204	11/25/2013	SB	2	4	x	x		x	x		
	TF2-001-SB1004	TF2-001-SB1004-0204	11/25/2013	SB	2	4	x	x		x	x		
	TF2-001-SB1004	TF2-001-SB1004-0204-D	11/25/2013	SB	2	4	x	x		x	x		
	TF2-001-SB1005	TF2-001-SB1005-0204	11/27/2013	SB	2	4	x	x		x	x		
	TF2-001-SB1005	TF2-001-SB1005-0204-D	11/27/2013	SB	2	4	x	x		x	x		
	TF2-001-SB1006	TF2-001-SB1006-0204	11/27/2013	SB	2	4	x	x		x	x		x
	TF2-001-SB1007	TF2-001-SB1007-0204	11/25/2013	SB	2	4	x	x		x	x		
	TF2-001-SB1008	TF2-001-SB1008-0204	11/25/2013	SB	2	4	x	x		x	x		
	TF2-001-SB1009	TF2-001-SB1009-0204	11/25/2013	SB	2	4	x	x		x	x		x
	TF2-001-SB1009	TF2-001-SB1009-0810	11/25/2013	SB	8	10		x		x	x		
	TF2-001-SB1010	TF2-001-SB1010-0204	11/27/2013	SB	2	4	x	x		x	x		
	TF2-001-SB1000	TF2-001-SS1000-0001	11/27/2013	SS	0	1	x	x		x	x		
	TF2-001-SB1001	TF2-001-SS1001-0001	11/25/2013	SS	0	1	x	x		x	x		
	TF2-001-SB1002	TF2-001-SS1002-0001	11/25/2013	SS	0	1	x	x		x	x		
	TF2-001-SB1003	TF2-001-SS1003-0001	11/25/2013	SS	0	1	x	x		x	x		x
	TF2-001-SB1003	TF2-001-SS1003-0001-D	11/25/2013	SS	0	1	x	x		x	x		x
	TF2-001-SB1004	TF2-001-SS1004-0001	11/25/2013	SS	0	1	x	x		x	x		
	TF2-001-SB1005	TF2-001-SS1005-0001	11/27/2013	SS	0	1	x	x		x	x		
	TF2-001-SB1006	TF2-001-SS1006-0001	11/27/2013	SS	0	1	x	x		x	x		
	TF2-001-SB1007	TF2-001-SS1007-0001	11/25/2013	SS	0	1	x	x		x	x		
	TF2-001-SB1008	TF2-001-SS1008-0001	11/25/2013	SS	0	1	x	x		x	x		
	TF2-001-SB1009	TF2-001-SS1009-0001	11/25/2013	SS	0	1	x	x		x	x		
	TF2-001-SB1010	TF2-001-SS1010-0001	11/27/2013	SS	0	1	x	x		x	x		

TABLE 2-1

SAMPLE SUMMARY OF ANALYTICAL RESULTS
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Area	Location ID	Sample ID	Sample Date	Sub-Matrix	Top Depth (feet)	Bottom Depth (feet)	Dioxins/Furans	Total Metals	Total Lead	Total Solids	PAHs	PCBs	ExTPH/GRO
AOC 003	TF2-003-SB1011	TF2-003-SB1011-0204	11/15/2013	SB	2	4	x	x		x	x		
	TF2-003-SB1011	TF2-003-SB1011-0204-D	11/15/2013	SB	2	4	x	x		x	x		
	TF2-003-SB1012	TF2-003-SB1012-0204	11/15/2013	SB	2	4	x	x		x	x		
	TF2-003-SB1012	TF2-003-SB1012-0810	11/15/2013	SB	8	10		x		x	x		
	TF2-003-SB1013	TF2-003-SB1013-0204	11/25/2013	SB	2	4	x	x		x	x		
	TF2-003-SB1013	TF2-003-SB1013-0405	11/25/2013	SB	4	5		x		x	x		
	TF2-003-SB1014	TF2-003-SB1014-0204	11/15/2013	SB	2	4	x	x		x	x		
	TF2-003-SB1014	TF2-003-SB1014-0810	11/15/2013	SB	8	10		x		x	x		
	TF2-003-SB1015	TF2-003-SB1015-0204	11/15/2013	SB	2	4	x	x		x	x		
	TF2-003-SB1015	TF2-003-SB1015-0810	11/15/2013	SB	8	10		x		x	x		
	TF2-003-SB1016	TF2-003-SB1016-0204	11/15/2013	SB	2	4	x	x		x	x		
	TF2-003-SB1016	TF2-003-SB1016-0810	11/15/2013	SB	8	10		x		x	x		
	TF2-003-SB1017	TF2-003-SB1017-011.6	11/15/2013	SB	1	1.6	x	x		x	x		x
	TF2-003-SB1017	TF2-003-SB1017-0204	11/15/2013	SB	2	4	x	x		x	x		
	TF2-003-SB1017	TF2-003-SB1017-0810	11/15/2013	SB	8	10		x		x	x		
AOC 003	TF2-003-SB1018	TF2-003-SB1018-0204	11/15/2013	SB	2	4	x	x		x	x		
	TF2-003-SB1019	TF2-003-SB1019-0204	11/25/2013	SB	2	4	x	x		x	x		
	TF2-003-SB1019	TF2-003-SB1019-0810	11/25/2013	SB	8	10		x		x	x		x
	TF2-003-SB1011	TF2-003-SS1011-000.8	10/22/2013	SS	0	0.8	x	x		x	x		
	TF2-003-SB1012	TF2-003-SS1012-000.7	10/22/2013	SS	0	0.7	x	x		x	x		
	TF2-003-SB1013	TF2-003-SS1013-000.7	10/22/2013	SS	0	0.7	x	x		x	x		
	TF2-003-SB1014	TF2-003-SS1014-0001	10/22/2013	SS	0	1	x	x		x	x		
	TF2-003-SB1015	TF2-003-SS1015-000.8	10/22/2013	SS	0	0.8	x	x		x	x		x
	TF2-003-SB1015	TF2-003-SS1015-000.8-D	10/22/2013	SS	0	0.8	x	x		x	x		
	TF2-003-SB1016	TF2-003-SS1016-000.9	10/22/2013	SS	0	0.9	x	x		x	x		
	TF2-003-SB1017	TF2-003-SS1017-000.8	10/22/2013	SS	0	0.8	x	x		x	x		
	TF2-003-SB1018	TF2-003-SS1018-000.8	10/22/2013	SS	0	0.8	x	x		x	x		
	TF2-003-SB1019	TF2-003-SS1019-000.5	10/22/2013	SS	0	0.5	x	x		x	x		

TABLE 2-1

SAMPLE SUMMARY OF ANALYTICAL RESULTS
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Area	Location ID	Sample ID	Sample Date	Sub-Matrix	Top Depth (feet)	Bottom Depth (feet)	Dioxins/Furans	Total Metals	Total Lead	Total Solids	PAHs	PCBs	ExTPH/GRO
AOC 4/5	TF2-004/5-SB1021	TF2-004/5-SB1021-0204	11/13/2013	SB	2	4	x	x		x	x		x
	TF2-004/5-SB1021	TF2-004/5-SB1021-0204-D	11/13/2013	SB	2	4	x	x		x	x		
	TF2-004/5-SB1021	TF2-004/5-SB1021-0608	11/13/2013	SB	6	8		x		x	x		
	TF2-004/5-SB1025	TF2-004/5-SB1025-2.604	11/13/2013	SB	2.6	4	x	x		x	x		
	TF2-004/5-SB1026	TF2-004/5-SB1026-0204	11/13/2013	SB	2	4	x						
	TF2-004/5-SB1026	TF2-004/5-SB1026-022.7	11/13/2013	SB	2	2.7		x		x	x		
	TF2-004/5-SB1031	TF2-004/5-SB1031-0204	11/14/2013	SB	2	4	x	x		x	x		
	TF2-004/5-SB1031	TF2-004/5-SB1031-0810	11/14/2013	SB	8	10		x		x	x		
	TF2-004/5-SB1032	TF2-004/5-SB1032-0204	11/13/2013	SB	2	4	x	x		x	x		
	TF2-004/5-SB1038	TF2-004/5-SB1038-0204	11/14/2013	SB	2	4	x	x		x	x		
	TF2-004/5-SB1038	TF2-004/5-SB1038-0810	11/14/2013	SB	8	10		x		x	x		
	TF2-004/5-SB1039	TF2-004/5-SB1039-0406	11/14/2013	SB	4	6		x		x	x		
	TF2-004/5-SB1040	TF2-004/5-SB1040-0204	11/14/2013	SB	2	4	x	x		x	x		
	TF2-004/5-SB1040	TF2-004/5-SB1040-0810	11/14/2013	SB	8	10		x		x	x		x
	TF2-004/5-SB1040	TF2-004/5-SB1040-0810-D	11/14/2013	SB	8	10				x			x
	TF2-004/5-SB1041	TF2-004/5-SB1041-022.5	11/13/2013	SB	2	2.5	x	x		x	x		
	TF2-004/5-SB1043	TF2-004/5-SS1043-0.10.5	11/13/2013	SS	0.1	0.5	x	x		x	x		
	TF2-004/5-SB1047	TF2-004/5-SB1047-0204	11/14/2013	SB	2	4	x	x		x	x		
	TF2-004/5-SB1047	TF2-004/5-SB1047-0608	11/14/2013	SB	6	8		x		x	x		
	TF2-004/5-SB1048	TF2-004/5-SB1048-0204	11/13/2013	SB	2	4	x	x		x	x		
	TF2-004/5-SB1049	TF2-004/5-SB1049-0204	11/14/2013	SB	2	4	x	x		x	x		
	TF2-004/5-SB1049	TF2-004/5-SB1049-0810	11/14/2013	SB	8	10		x		x	x		
	TF2-004/5-SB1057	TF2-004/5-SB1057-0304	11/14/2013	SB	3	4	x	x		x	x		
	TF2-004/5-SB1057	TF2-004/5-SB1057-0608	11/14/2013	SB	6	8		x		x	x		
	TF2-004/5-SB1057	TF2-004/5-SB1057-0608-D	11/14/2013	SB	6	8		x		x	x		
	TF2-004/5-SB1058	TF2-004/5-SB1058-0204	11/13/2013	SB	2	4	x	x		x	x		x
	TF2-004/5-SB1064	TF2-004/5-SB1064-0204	11/13/2013	SB	2	4	x	x		x	x		
	TF2-004/5-SB1064	TF2-004/5-SB1064-0406	11/13/2013	SB	4	6		x		x	x		
	TF2-004/5-SB1065	TF2-004/5-SB1065-0204	11/14/2013	SB	2	4	x	x		x	x		
	TF2-004/5-SB1065	TF2-004/5-SB1065-0608	11/14/2013	SB	6	8		x		x	x		x
	TF2-004/5-SB1066	TF2-004/5-SB1066-0203	11/14/2013	SB	2	3	x	x		x	x		
	TF2-004/5-SB1068	TF2-004/5-SB1068-0204	11/14/2013	SB	2	4	x	x		x	x		
	TF2-004/5-SB1068	TF2-004/5-SB1068-0204-D	11/14/2013	SB	2	4	x	x		x	x		
	TF2-004/5-SB1020	TF2-004/5-SS1020-0001	10/18/2013	SS	0	1	x	x		x	x		x
	TF2-004/5-SB1020	TF2-004/5-SS1020-0001-D	10/18/2013	SS	0	1	x	x		x	x		x
	TF2-004/5-SB1021	TF2-004/5-SS1021-000.7	10/18/2013	SS	0	0.7	x	x		x	x		
	TF2-004/5-SB1022	TF2-004/5-SS1022-000.9	10/18/2013	SS	0	0.9	x	x		x	x		

TABLE 2-1

SAMPLE SUMMARY OF ANALYTICAL RESULTS
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Area	Location ID	Sample ID	Sample Date	Sub-Matrix	Top Depth (feet)	Bottom Depth (feet)	Dioxins/Furans	Total Metals	Total Lead	Total Solids	PAHs	PCBs	ExTPH/GRO
AOC 004/5	TF2-004/5-SB1023	TF2-004/5-SS1023-000.8	10/18/2013	SS	0	0.8	x	x		x	x		
	TF2-004/5-SB1024	TF2-004/5-SS1024-000.6	10/18/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1025	TF2-004/5-SS1025-000.8	10/18/2013	SS	0	0.8	x	x		x	x		
	TF2-004/5-SB1026	TF2-004/5-SS1026-000.8	10/18/2013	SS	0	0.8	x	x		x	x		
	TF2-004/5-SB1027	TF2-004/5-SS1027-0001	10/18/2013	SS	0	1	x	x		x	x		x
	TF2-004/5-SB1028	TF2-004/5-SS1028-000.8	10/18/2013	SS	0	0.8	x	x		x	x		
	TF2-004/5-SB1029	TF2-004/5-SS1029-000.6	10/18/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1030	TF2-004/5-SS1030-000.6	10/18/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1031	TF2-004/5-SS1031-000.8	10/18/2013	SS	0	0.8	x	x		x	x		
	TF2-004/5-SB1032	TF2-004/5-SS1032-000.9	10/18/2013	SS	0	0.9	x	x		x	x		
	TF2-004/5-SB1033	TF2-004/5-SS1033-000.8	10/18/2013	SS	0	0.8	x	x		x	x		
	TF2-004/5-SB1034	TF2-004/5-SS1034-000.6	10/18/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1035	TF2-004/5-SS1035-0001	10/18/2013	SS	0	1	x	x		x	x		
	TF2-004/5-SB1035	TF2-004/5-SS1035-0001-D	10/18/2013	SS	0	1	x	x		x	x		
	TF2-004/5-SB1036	TF2-004/5-SS1036-000.6	10/18/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1037	TF2-004/5-SS1037-000.7	10/18/2013	SS	0	0.7	x	x		x	x		
	TF2-004/5-SB1038	TF2-004/5-SS1038-000.7	10/18/2013	SS	0	0.7	x	x		x	x		
	TF2-004/5-SB1039	TF2-004/5-SS1039-000.9	10/18/2013	SS	0	0.9	x	x		x	x		x
	TF2-004/5-SB1040	TF2-004/5-SS1040-000.9	10/18/2013	SS	0	0.9	x	x		x	x		
	TF2-004/5-SB1041	TF2-004/5-SS1041-000.7	10/21/2013	SS	0	0.7	x	x		x	x		
	TF2-004/5-SB1041	TF2-004/5-SS1041-000.7-D	10/21/2013	SS	0	0.7	x	x		x	x		
	TF2-004/5-SB1042	TF2-004/5-SS1042-000.5	10/21/2013	SS	0	0.5	x	x		x	x		
	TF2-004/5-SB1044	TF2-004/5-SS1044-000.5	10/21/2013	SS	0	0.5	x	x		x	x		
	TF2-004/5-SB1045	TF2-004/5-SS1045-000.5	10/21/2013	SS	0	0.5	x	x		x	x		
	TF2-004/5-SB1046	TF2-004/5-SS1046-000.5	10/21/2013	SS	0	0.5	x	x		x	x		
	TF2-004/5-SB1047	TF2-004/5-SS1047-000.8	10/21/2013	SS	0	0.8	x	x		x	x		
	TF2-004/5-SB1048	TF2-004/5-SS1048-000.8	10/21/2013	SS	0	0.8	x	x		x	x		
	TF2-004/5-SB1049	TF2-004/5-SS1049-000.9	10/21/2013	SS	0	0.9	x	x		x	x		x
	TF2-004/5-SB1050	TF2-004/5-SS1050-000.6	10/21/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1051	TF2-004/5-SS1051-000.8	10/21/2013	SS	0	0.8	x	x		x	x		x
	TF2-004/5-SB1052	TF2-004/5-SS1052-000.6	10/21/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1053	TF2-004/5-SS1053-000.6	10/21/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1054	TF2-004/5-SS1054-000.6	10/21/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1055	TF2-004/5-SS1055-000.8	10/21/2013	SS	0	0.8	x	x		x	x		
	TF2-004/5-SB1056	TF2-004/5-SS1056-000.6	10/21/2013	SS	0	0.6	x	x		x	x		x
	TF2-004/5-SB1057	TF2-004/5-SS1057-0001	10/21/2013	SS	0	1	x	x		x	x		
	TF2-004/5-SB1058	TF2-004/5-SS1058-000.5	10/22/2013	SS	0	0.5	x	x		x	x		

TABLE 2-1

SAMPLE SUMMARY OF ANALYTICAL RESULTS
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Area	Location ID	Sample ID	Sample Date	Sub-Matrix	Top Depth (feet)	Bottom Depth (feet)	Dioxins/Furans	Total Metals	Total Lead	Total Solids	PAHs	PCBs	ExTPH/GRO
AOC 004/5	TF2-004/5-SB1059	TF2-004/5-SS1059-000.6	10/22/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1060	TF2-004/5-SS1060-000.5	10/22/2013	SS	0	0.5	x	x		x	x		
	TF2-004/5-SB1061	TF2-004/5-SS1061-000.6	10/21/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1061	TF2-004/5-SS1061-000.6-D	10/21/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1062	TF2-004/5-SS1062-000.8	10/21/2013	SS	0	0.8	x	x		x	x		
	TF2-004/5-SB1063	TF2-004/5-SS1063-000.6	10/22/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1064	TF2-004/5-SS1064-000.6	10/22/2013	SS	0	0.6	x	x		x	x		
	TF2-004/5-SB1065	TF2-004/5-SS1065-000.5	10/22/2013	SS	0	0.5	x	x		x	x		x
	TF2-004/5-SB1065	TF2-004/5-SS1065-000.5-D	10/22/2013	SS	0	0.5	x	x		x	x		
	TF2-004/5-SB1066	TF2-004/5-SS1066-000.9	10/21/2013	SS	0	0.9	x	x		x	x		
	TF2-004/5-SB1067	TF2-004/5-SS1067-000.7	10/21/2013	SS	0	0.7	x	x		x	x		
	TF2-004/5-SB1068	TF2-004/5-SS1068-000.5	10/22/2013	SS	0	0.5	x	x		x	x		
BUILDING 219	TF2-B219-SB1080	TF2-B219-SB1080-0204	11/12/2013	SB	2	4				x		x	
	TF2-B219-SB1081	TF2-B219-SB1081-0204	11/12/2013	SB	2	4				x		x	
	TF2-B219-SB1082	TF2-B219-SB1082-0204	11/12/2013	SB	2	4				x		x	
	TF2-B219-SB1081	TF2-B219-SB1082-0204-D	11/12/2013	SB	2	4				x		x	
	TF2-B219-SB1083	TF2-B219-SB1083-0204	11/12/2013	SB	2	4				x		x	
	TF2-B219-SB1084	TF2-B219-SB1084-0204	11/12/2013	SB	2	4				x		x	
	TF2-B219-SB1085	TF2-B219-SB1085-0204	11/12/2013	SB	2	4				x		x	
	TF2-B219-SB1086	TF2-B219-SB1086-0204	11/12/2013	SB	2	4				x		x	
	TF2-B219-SB1087	TF2-B219-SB1087-0204	11/12/2013	SB	2	4				x		x	
	TF2-B219-SB1088	TF2-B219-SB1088-0204	11/12/2013	SB	2	4				x		x	
	TF2-B219-SB1089	TF2-B219-SB1089-0204	11/12/2013	SB	2	4				x		x	
	TF2-B219-SB1089	TF2-B219-SB1089-0204-D	11/12/2013	SB	2	4				x		x	
	TF2-B219-SB1080	TF2-B219-SS1080-0001	11/12/2013	SS	0	1				x		x	
	TF2-B219-SB1081	TF2-B219-SS1081-0001	11/12/2013	SS	0	1				x		x	
	TF2-B219-SB1082	TF2-B219-SS1082-0001	11/12/2013	SS	0	1				x		x	
	TF2-B219-SB1083	TF2-B219-SS1083-0001	11/12/2013	SS	0	1				x		x	
	TF2-B219-SB1084	TF2-B219-SS1084-0001	11/12/2013	SS	0	1				x		x	
	TF2-B219-SB1085	TF2-B219-SS1085-0001	11/12/2013	SS	0	1				x		x	
	TF2-B219-SB1086	TF2-B219-SS1086-0001	11/12/2013	SS	0	1				x		x	
	TF2-B219-SB1087	TF2-B219-SS1087-0001	11/12/2013	SS	0	1				x		x	

TABLE 2-1

SAMPLE SUMMARY OF ANALYTICAL RESULTS
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Area	Location ID	Sample ID	Sample Date	Sub-Matrix	Top Depth (feet)	Bottom Depth (feet)	Dioxins/Furans	Total Metals	Total Lead	Total Solids	PAHs	PCBs	ExTPH/GRO
BUOY STORAGE AREA	TF2-BSA-SB1091	TF2-BSA-SB1091-0204	11/12/2013	SB	2	4			x	x			
	TF2-BSA-SB1092	TF2-BSA-SB1092-0204	11/12/2013	SB	2	4			x	x			
	TF2-BSA-SB1093	TF2-BSA-SB1093-0204	11/12/2013	SB	2	4			x	x			
	TF2-BSA-SB1094	TF2-BSA-SB1094-0204	11/12/2013	SB	2	4			x	x			
	TF2-BSA-SB1095	TF2-BSA-SB1095-0204	11/12/2013	SB	2	4			x	x			
	TF2-BSA-SB1096	TF2-BSA-SB1096-0204	11/12/2013	SB	2	4			x	x			
	TF2-BSA-SB1097	TF2-BSA-SB1097-0204	11/12/2013	SB	2	4			x	x			
	TF2-BSA-SB1090	TF2-BSA-SS1090-0001	11/12/2013	SS	0	1			x	x			
	TF2-BSA-SB1091	TF2-BSA-SS1091-0001	11/12/2013	SS	0	1			x	x			
	TF2-BSA-SB1092	TF2-BSA-SS1092-0001	11/12/2013	SS	0	1			x	x			
	TF2-BSA-SB1093	TF2-BSA-SS1093-0001	11/12/2013	SS	0	1			x	x			
	TF2-BSA-SB1094	TF2-BSA-SS1094-0001	11/12/2013	SS	0	1			x	x			
	TF2-BSA-SB1095	TF2-BSA-SS1095-0001	11/12/2013	SS	0	1			x	x			
	TF2-BSA-SB1096	TF2-BSA-SS1096-0001	11/12/2013	SS	0	1			x	x			
	TF2-BSA-SB1096	TF2-BSA-SS1096-0001-D	11/12/2013	SS	0	1			x	x			
	TF2-BSA-SB1097	TF2-BSA-SS1097-0001	11/12/2013	SS	0	1			x	x			

Notes:
D = Duplicate sample
ExTPH = extractable total petroleum hydrocarbons
GRO = gasoline range organics
PAHs = polycyclic aromatic hydrocarbons
PCBs = polychlorinated biphenyls
SB = sub-surface soil sample
SS = surface soil sample

TABLE 2-2

SURVEY RESULTS
TANK FARM 2 - DATA GAPS INVESTIGATION
NAVSTA NEWPORT, PORTSMOUTH, RI

Area	Point ID	LOCATION ID	NORTHING (FEET)	EASTING (FEET)	GROUND ELEVATION (FEET)
AOC-001	358	TF2-001-SB1000	182891.00	388767.41	151.3
	360	TF2-001-SB1001	182892.35	388782.70	151.1
	355	TF2-001-SB1002	182907.82	388784.71	151.4
	353	TF2-001-SB1003	182918.99	388783.56	150.9
	352	TF2-001-SB1004	182921.42	388769.73	151.2
	350	TF2-001-SB1005	182907.17	388758.15	151.4
	356	TF2-001-SB1006	182907.13	388770.99	151.0
	351	TF2-001-SB1007	182914.20	388760.87	151.3
	354	TF2-001-SB1008	182912.51	388777.34	151.0
	359	TF2-001-SB1009	182899.02	388776.44	151.2
	357	TF2-001-SB1010	182899.78	388762.80	151.1
	345	CRN_BLDG_21	182914.53	388757.44	na
	346	CRN_BLDG_21	182901.72	388751.22	na
	347	CRN_BLDG_21	182904.58	388741.83	na
	348	BLOW_VENT	182895.78	388708.47	na
	349	CABLE_MARKER	182890.69	388751.32	na
AOC-003	294	TF2-003-SB1011	182628.31	388425.36	142.5
	295	TF2-003-SB1012	182629.62	388410.45	142.3
	287	TF2-003-SB1013	182630.74	388396.07	142.2
	289	TF2-003-SB1014	182622.61	388402.67	141.9
	290	TF2-003-SB1015	182622.28	388410.54	142.1
	292	TF2-003-SB1016	182620.23	388417.67	142.3
	293	TF2-003-SB1017	182613.46	388423.84	142.5
	291	TF2-003-SB1018	182614.50	388409.92	142.0
	288	TF2-003-SB1019	182616.26	388394.99	141.7
	279	CRN_BLDG_19	182661.88	388392.21	na
	280	CRN_BLDG_19	182659.49	388406.31	na
	281	CRN_BLDG_19	182649.58	388406.21	na
	282	CRN_BLDG_19	182652.28	388390.57	na
	283	BLOW_VENT	182621.60	388424.73	na
	284	CABLE_MARKER	182615.33	388441.88	na
	285	VAULT_CRN	182629.20	388436.03	na
	286	VAULT_CRN	182630.06	388432.12	na

TABLE 2-2

SURVEY RESULTS
TANK FARM 2 - DATA GAPS INVESTIGATION
NAVSTA NEWPORT, PORTSMOUTH, RI

Area	Point ID	LOCATION ID	NORTHING (FEET)	EASTING (FEET)	GROUND ELEVATION (FEET)
AOC-004/5	192	TF2-004/5-SB1020	182696.78	388506.61	146.3
	191	TF2-004/5-SB1021	182698.00	388523.02	147.0
	194	TF2-004/5-SB1022	182713.30	388492.67	145.5
	193	TF2-004/5-SB1023	182713.13	388507.45	145.6
	190	TF2-004/5-SB1024	182712.92	388522.76	146.2
	189	TF2-004/5-SB1025	182718.83	388539.23	147.0
	174	TF2-004/5-SB1026	182710.42	388554.40	147.2
	241	TF2-004/5-SB1027	182727.38	388477.30	144.5
	195	TF2-004/5-SB1028	182727.54	388493.23	144.7
	196	TF2-004/5-SB1029	182727.35	388507.70	145.4
	243	TF2-004/5-SB1030	182728.29	388522.92	146.3
	186	TF2-004/5-SB1031	182734.47	388539.20	146.7
	188	TF2-004/5-SB1032	182724.18	388530.59	146.4
	228	TF2-004/5-SB1033	182742.75	388462.35	144.2
	227	TF2-004/5-SB1034	182740.37	388475.21	144.0
	224	TF2-004/5-SB1035	182742.93	388492.04	144.2
	197	TF2-004/5-SB1036	182741.81	388507.73	145.4
	242	TF2-004/5-SB1037	182742.56	388522.93	146.1
	184	TF2-004/5-SB1038	182747.32	388536.81	146.5
	187	TF2-004/5-SB1039	182735.62	388528.59	146.5

TABLE 2-2

SURVEY RESULTS
TANK FARM 2 - DATA GAPS INVESTIGATION
NAVSTA NEWPORT, PORTSMOUTH, RI

Area	Point ID	LOCATION ID	NORTHING (FEET)	EASTING (FEET)	GROUND ELEVATION (FEET)
AOC-004/5	185	TF2-004/5-SB1040	182740.18	388547.56	147.1
	240	TF2-004/5-SB1041	182755.74	388443.55	143.6
	230	TF2-004/5-SB1042	182756.91	388458.42	143.5
	226	TF2-004/5-SB1043	182755.82	388472.26	144.0
	225	TF2-004/5-SB1044	182756.45	388492.76	144.8
	198	TF2-004/5-SB1045	182757.24	388507.41	145.5
	180	TF2-004/5-SB1046	182758.60	388522.94	146.0
	182	TF2-004/5-SB1047	182761.66	388534.44	146.5
	181	TF2-004/5-SB1048	182750.06	388528.29	146.4
	183	TF2-004/5-SB1049	182754.60	388540.87	146.8
	239	TF2-004/5-SB1050	182769.49	388424.02	142.6
	232	TF2-004/5-SB1051	182770.50	388438.69	143.4
	231	TF2-004/5-SB1052	182769.82	388453.71	143.2
	229	TF2-004/5-SB1053	182770.21	388469.01	143.8
	362	TF2-004/5-SB1054	182770.88	388493.77	144.8
	199	TF2-004/5-SB1055	182770.46	388506.26	145.3
	179	TF2-004/5-SB1056	182772.35	388522.54	145.9
	244	TF2-004/5-SB1057	182776.42	388535.66	147.0
	234	TF2-004/5-SB1059	182783.81	388419.35	142.6
	233	TF2-004/5-SB1060	182783.84	388434.55	142.8
	178	TF2-004/5-SB1061	182787.28	388522.56	146.0
	177	TF2-004/5-SB1062	182780.59	388527.71	146.4
	237	TF2-004/5-SB1063	182795.55	388384.83	141.2
	236	TF2-004/5-SB1064	182796.77	388400.66	141.8
	235	TF2-004/5-SB1065	182796.76	388415.65	142.3
	175	TF2-004/5-SB1066	182799.29	388521.38	146.1
	176	TF2-004/5-SB1067	182795.10	388527.91	146.5
	238	TF2-004/5-SB1068	182808.51	388376.55	141.1
	274	CRN_FNC	182815.01	388506.85	na
	275	CRN_FNC	182796.13	388506.26	na
	276	CRN_FNC	182796.92	388491.81	na

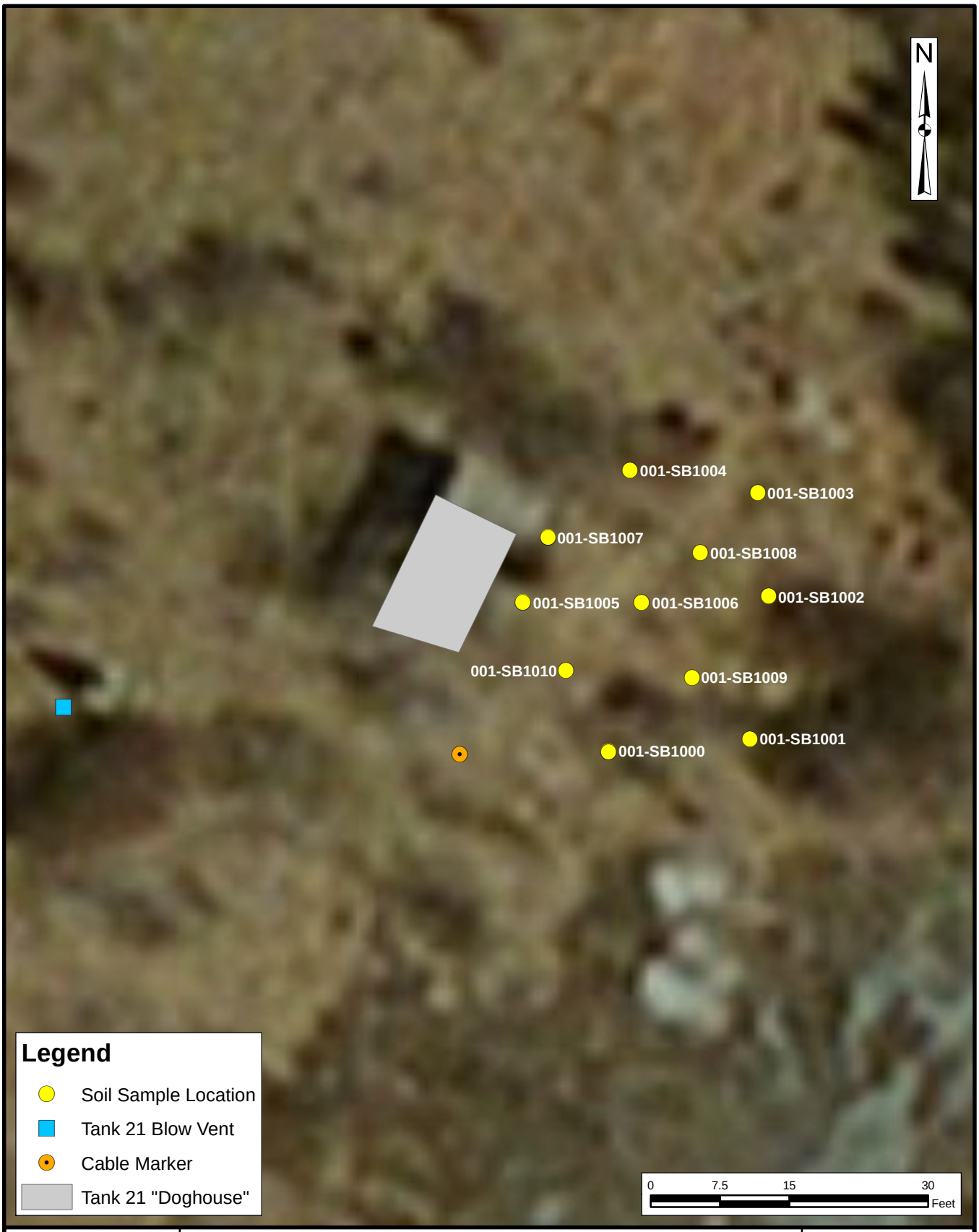
TABLE 2-2

SURVEY RESULTS
TANK FARM 2 - DATA GAPS INVESTIGATION
NAVSTA NEWPORT, PORTSMOUTH, RI

Area	Point ID	LOCATION ID	NORTHING (FEET)	EASTING (FEET)	GROUND ELEVATION (FEET)
BUILDING 219	317	TF2-B219-SB1080	181616.46	388841.36	158.1
	319	TF2-B219-SB1081	181624.09	388843.63	157.8
	320	TF2-B219-SB1082	181623.91	388856.54	157.9
	321	TF2-B219-SB1083	181594.50	388848.74	157.5
	315	TF2-B219-SB1084	181592.23	388837.71	157.2
	313	TF2-B219-SB1085	181603.57	388827.02	157.3
	316	TF2-B219-SB1086	181601.91	388839.55	158.1
	314	TF2-B219-SB1087	181613.41	388826.49	157.3
	318	TF2-B219-SB1088	181617.35	388848.19	157.9
	312	TF2-B219-SB1089	181608.13	388833.24	157.9
	308	CRN_BLDG_19	181614.94	388851.79	na
	309	CRN_BLDG_19	181613.10	388835.69	na
	310	CRN_BLDG_19	181604.54	388836.61	na
BUOY STORAGE AREA	342	TF2-BSA-SB1090	182292.63	389131.42	156.2
	341	TF2-BSA-SB1091	182305.50	389096.02	155.9
	331	IMPOUNDMENT	182293.17	389113.08	na
	332	IMPOUNDMENT	182319.67	389143.40	na
	333	IMPOUNDMENT	182326.30	389128.10	na
	334	IMPOUNDMENT	182359.99	389045.41	na
	335	IMPOUNDMENT	182362.76	389038.12	na
	336	IMPOUNDMENT	182312.73	389023.21	na
	338	TF2-BSA-SB1092	182319.56	389055.94	155.3
	340	TF2-BSA-SB1093	182304.75	389070.02	155.4
	339	TF2-BSA-SB1094	182307.98	389047.15	155.3
	337	TF2-BSA-SB1095	182332.65	389013.56	155.8
	344	TF2-BSA-SB1096	182357.00	389071.55	155.4
	343	TF2-BSA-SB1097	182344.67	389091.48	155.9

Notes:
Survey performed on December 4/ 5, 2013 by Louis Federici Associates, RI Reg. No. 1646.
Vertical control datum : NAVD 1988
Horizontal control datum: NAD 1983 (2003)

I:\03019\SLDR\TANKFARM2_AOC_PROPOSEDSAMPLESAOC001.MXD NEC/DWM 05/14/14



TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

SOIL BORING/SAMPLE LOCATIONS CATEGORY 1/AOC-001

TANK FARM 2, CATEGORY 1 AREAS
DATA GAPS ASSESSMENT

SCALE	
PER SCALE BAR	
FILE	
I:\...\TANKFARM2_AOC_PROPOSEDSAMPLESAOC001_R1	
REV	DATE
0	06/12/14
FIGURE NUMBER	
2-1	

I:\03019\SI.DR\TANKFARM2_AOC_PROPOSEDSAMPLESAOC003_R1.MXD MKB 06/12/14

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

SOIL BORING/SAMPLE LOCATIONS CATEGORY 1/AOC-003

TANK FARM 2, CATEGORY 1 AREAS
DATA GAPS ASSESSMENT

SCALE	
PER SCALE BAR	
FILE	
I:\...\TANKFARM2_AOC_PROPOSEDSAMPLESAOC003_R1	
REV	DATE
0	05/14/14
FIGURE NUMBER	
2-2	

I:\03019\SIDR\TANKFARM2_AOC_PROPOSEDSAMPLESAOC004_5_R1.MXD MKB 06/12/14

N

004/5-SB1068
004/5-SB1064
004/5-SB1063
004/5-SB1065
004/5-SB1059
004/5-SB1058
004/5-SB1060
004/5-SB1051
004/5-SB1053
004/5-SB1050
004/5-SB1052
004/5-SB1043
004/5-SB1041
004/5-SB1042
004/5-SB1033
004/5-SB1034
004/5-SB1035
004/5-SB1027
004/5-SB1028
004/5-SB1029
004/5-SB1022
004/5-SB1023
004/5-SB1020
004/5-SB1021
004/5-SB1024
004/5-SB1025
004/5-SB1030
004/5-SB1036
004/5-SB1037
004/5-SB1032
004/5-SB1026
004/5-SB1045
004/5-SB1044
004/5-SB1054
004/5-SB1055
004/5-SB1046
004/5-SB1056
004/5-SB1062
004/5-SB1061
004/5-SB1066
004/5-SB1067
004/5-SB1057
004/5-SB1047
004/5-SB1048
004/5-SB1049
004/5-SB1038
004/5-SB1039
004/5-SB1040
004/5-SB1031

0 10 20 40 Feet

Legend

- Soil Sample Location
- Utility Pole

Note: The location of 004/5-SB1058 was estimated in the field using line of sight methods from surveyed borings.

TETRA TECH

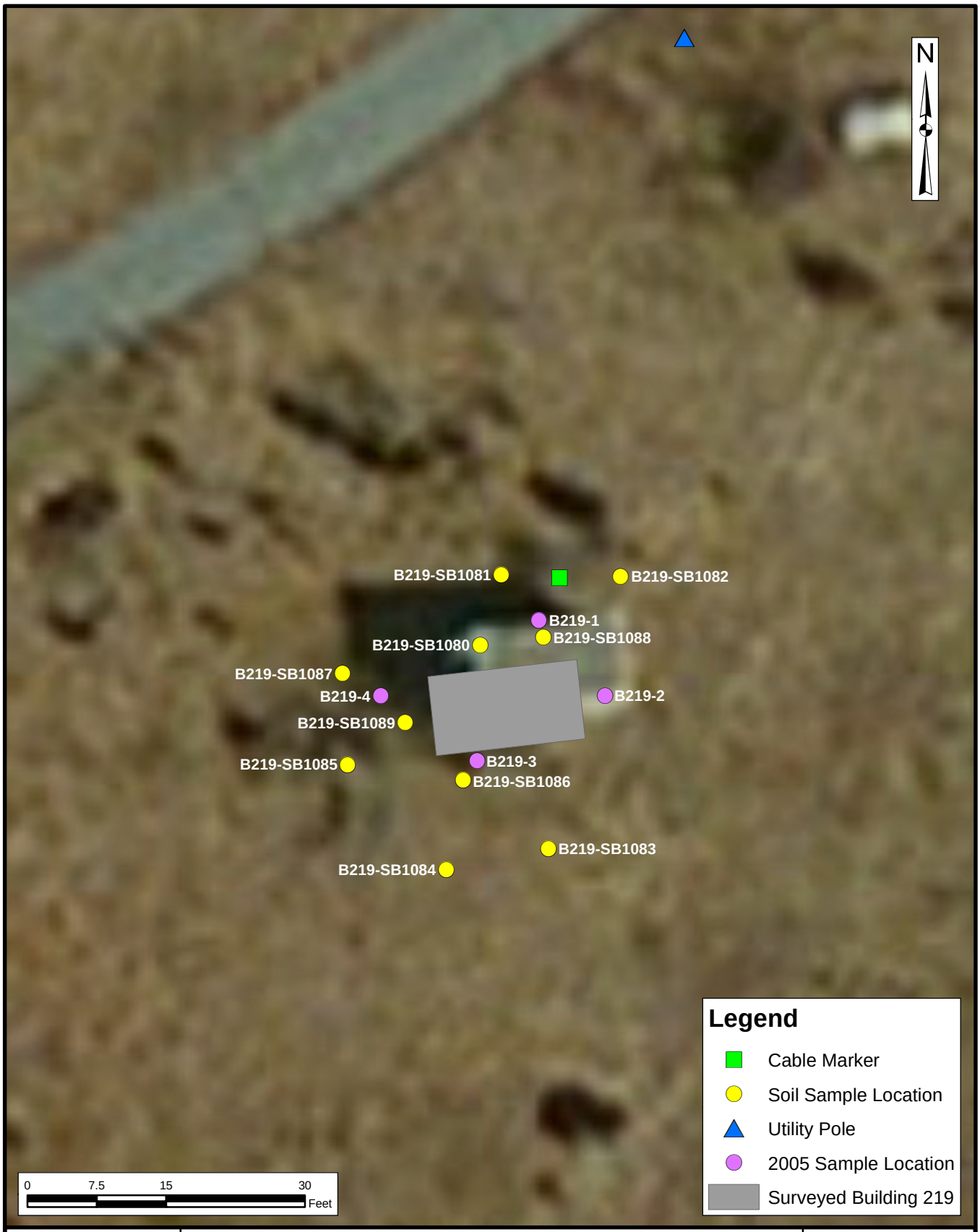
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

SOIL BORING/SAMPLE LOCATIONS CATEGORY 1/AOCs 004 AND 005

TANK FARM 2, CATEGORY 1 AREAS
DATA GAPS ASSESSMENT

FILE	SCALE
I:\...\TANKFARM2_AOC_PROPOSEDSAMPLESAOC004_5_R1	PER SCALE BAR
FIGURE NUMBER 2-3	REV 0 / DATE 06/12/14

I:\03019\SI.DR\TANKFARM2_AOC_PROPOSEDSAMPLESBLDG219_R1.MXD MKB 06/12/14



TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

BUILDING 219 SOIL BORING/SAMPLE LOCATIONS

TANK FARM 2, CATEGORY 1 AREAS
DATA GAPS ASSESSMENT

SCALE	PER SCALE BAR
FILE	I:\...\TANKFARM2_AOC_PROPOSEDSAMPLESBLDG219_R1
REV	0
DATE	06/12/14
FIGURE NUMBER	2-4

I:\03019\SI.DR\TF2_FRMR_BUOY_AREA_PROP_SAMP_LOCS_R1.MXD MKB 06/12/14

Legend

- Soil Sample Location
- Utility Pole #23/11
- Surveyed Concrete Impoundment

N

BSA-SB1096
BSA-SB1097
BSA-SB1095
BSA-SB1092
BSA-SB1094
BSA-SB1093
BSA-SB1091
BSA-SB1090

0 10 20 40 Feet

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

FORMER BUOY STORAGE AREA
BORING/SAMPLE LOCATIONS

TANK FARM 2, CATEGORY 1 AREAS
DATA GAPS ASSESSMENT

FILE	I:\...\TF2_FRMR_BUOY_AREA_PROP_SAMP_LOCS_R1	SCALE	
		PER SCALE BAR	
FIGURE NUMBER	2-5	REV	DATE
		0	06/12/14

3.0 SITE CONDITIONS

This section presents a description of the physical conditions at the Site. The discussions presented in this section are supported by field documentation from the DGA including soil sample logs and boring logs, and other field forms provided in Appendices A, B, and C.

3.1 BASIC SITE CONDITIONS

At the time of the DGA, the Site was covered with overgrown areas including grass, shrubs, and trees. Paved access roads and tank access chambers were observed and support buildings, including B219, a former transformer building, were identified. The property is currently fenced on all sides and accessed off Stringham Road at a locked gate. Signs warning of hazards present are posted on the access gate. A site plan is depicted on Figure 1-2. Descriptions of the locations of each area investigated are described below:

- **AOC-001** – Circular area encompassing approximately 1,600 square feet (ft^2) or 0.04 acres located adjacent to/partially on top of Tank 21 and just east of the doghouse for Tank 21. The locations of borings advanced during the DGA are shown on Figure 2-1.

- **AOC-003** – Oval shaped area encompassing approximately 1,000 ft^2 or 0.02 acres located to the east of Tank 19 and just south of the doghouse for Tank 21. The locations of borings advanced during the DGA are shown on Figure 2-2.

- **AOC-004/5** – Two irregular, elongated overlapping areas that encompass approximately 10,000 ft^2 or 0.23 acres, located to the northwest of the intersection of the access road that bisects Tanks 19 and 21 and the Tank Farm 2 perimeter road. The locations of borings advanced during the DGA are shown on Figure 2-3.

- **B219** – Former transformer building and surrounding area is located northwest of Tank 26. Soil borings surrounding the structure, targeting doorways, and former electrical equipment locations were advanced. The locations of borings advanced during the DGA and the SIRAR are shown on Figure 2-4.

- **Former BSA** – Located south of Tank 28 and south of the Tank Farm 2 perimeter road. The area is located at the north end of an unused concrete-bermed storage area. This area is located in the vicinity of a former JP-5 soil pile and other AOCs investigated during the SIRAR (Tetra Tech, 2006). The locations of borings advanced during the DGA are shown on Figure 2-5.

3.2 SURFACE HYDROLOGY / TOPOGRAPHY

As shown on Figure 1-1, the Site is located on the crown of a hill and topography is generally flat. Topography of the Site slopes gently from an elevation of 160 mean low water (MLW) datum along the eastern side of the Site to 145 MLW along the western side of the Site. The surrounding grade at the Site drops steeply downward to the west, moderately downward to the north and gently downward to the east. No delineated streams or wetlands are located at the Site. An un-named pond is situated approximately 500 feet to the east of the Site. The elevation of the pond is approximately 135 feet MLW and discharges to the northwest through Melville Pond into Narragansett Bay.

The tank farms are located within the Narragansett Bay Drainage Basin which is about 1,850 square miles of land within Massachusetts and Rhode Island. The surface water from the drainage basin flows into Narragansett Bay. Discharge from the Narragansett Bay is to the Atlantic Ocean to the south.

3.3 GEOLOGIC CONDITIONS

The regional and site specific geological conditions are presented in the following subsections.

3.3.1 Regional Geology

The glacial ice of the Pleistocene Epoch shaped the topography of Rhode Island including the Narragansett Bay area approximately two million years to 15,000 years ago. Narragansett Bay was an old sedimentary basin that had undergone significant stream erosion when the Wisconsin-age ice glaciers advanced into the area. The glaciers scoured off all but the hardest of the ancient rocks, and picked up sand, gravel, and boulders. As a glacier paused in its retreat, it dropped off deposits of these materials creating thick moraines. The area also contains glacial erratics carried from as far away as Canada. As the glaciers melted northward, rivers deposited sand and gravel to form broad plains and deltas. Massive chunks of ice lingered behind the retreating glacier, melting slowly, and formed some of the freshwater ponds along Rhode Island's southern shores and at inland places near the present Bay.

The Rhode Island shoreline is now undergoing a slow but steady process of erosion under the carving of the ocean storms and is submerging because of the slow rise in the level of the sea relative to the land.

Till is the most extensive of the glacial deposits in Rhode Island. This glacial deposit is unstratified and widely heterogeneous in grain size distribution, typically comprised of fine (clay/silt/sand) and coarse (pebbles/cobbles/boulders) fractions (USDA, 1981). In southern New England, the late Wisconsin surface till is predominant. Published reports indicate that the surface till forms a discontinuous mantle over bedrock uplands and beneath stratified drift deposits. In general, the surface till comprises a loose sandy unit

containing boulders and cobbles, and lenses of stratified sediments. However, surface tills vary in composition. The physical characteristics of surface till generally reflect local bedrock and older surficial materials from which the deposit was derived (Tetra Tech, 2001).

Regionally, the Upland till plains, the Narragansett till plains, and the Charlestown and Block Island end moraines are till deposits in Rhode Island. The site is located on the Narragansett till plain. The glacial till deposit may have been derived from a sedimentary and meta-sedimentary rock provenance (USDA, 1981).

Stratified drift or outwash, composed of sorted sand, silt, and gravel deposits was laid down by glacial meltwaters as the ice sheet receded. The eroded materials carried by the glacial meltwater were deposited in irregular layers of various thicknesses. Regionally, large deposits of outwash are located in Providence and East Greenwich (USDA, 1981).

Narragansett Basin is an ancient north-south trending structural basin originating near Hanover, Massachusetts. This basin is a complex synclinal mass of Pennsylvanian-aged; non-marine sedimentary rocks, and is the most prominent geologic feature in eastern Rhode Island and adjacent Massachusetts. The basin's approximate length is 55 miles; its width varies from 15 to 25 miles. The western margin of the basin is in the western portion of Providence, Rhode Island, and the eastern margin extends through Fall River, Massachusetts. Exposures of older rocks on Conanicut Island and in the vicinity of Newport suggest that the southern extent of the basin may be near the mouth of Narragansett Bay. NAVSTA Newport is situated at the southeastern end of the Narragansett Basin.

The Pennsylvanian aged stratified rocks within Narragansett Basin (the Narragansett Bay Group) chiefly consist of conglomerates, sandstones, shale, and anthracite. Total thickness of the strata in the basin has been estimated at 12,000 feet. Many folds and some faults occur throughout the basin, but the character and amount of the folding and faulting was not evaluated as part of this report. Hermes et. al, (1994) depicts the faults mapped in the surrounding area.

The bedrock of the Narragansett Bay Group has been divided into six units in descending stratigraphic order are: the Dighton Conglomerate, the Purgatory Conglomerate, the Rhode Island Formation, the Wamsutta Formation, the Sachuest Arkose, and the Pondville Conglomerate. The Rhode Island Formation immediately underlies the Site. Hermes et. al, (1994) provides a detailed depiction of the bedrock geology of Rhode Island. Bedrock beneath the Site and most of the surrounding areas consists of the Rhode Island Formation.

The Rhode Island Formation is the most extensive and thickest of the Pennsylvanian formations in Rhode Island. The majority of the Narragansett Basin is underlain by this formation. In northern Rhode Island,

the Rhode Island Formation is not metamorphosed and primarily consists of gray to black, fine- to coarse-grained quartz arenite, litharenite, shale, and conglomerate. However, in the southern portion of the Basin, such as in the vicinity of NAVSTA Newport, this unit has been metamorphosed. Metasedimentary rocks, including metaconglomerates and metasandstones, as well as schist, carbonaceous schist, phyllite, and graphite are present within the formation (Hermes et. al, 1994).

Within the Rhode Island Formation, there are a few areas of thick, mostly very coarse, conglomerates that are often gray to greenish in color. These conglomerates are composed of gravel, cobbles and boulders, interbedded with sandstone and greywacke. The stones within the conglomerates are mostly quartzites that have been elongated due to tectonic forces. The conglomerate layers are topographically higher because they are more resistant to erosion than the surrounding bedrock.

Underlying the Pennsylvanian rocks of the Narragansett Basin are pre-Pennsylvanian igneous and metamorphic rocks such as granite, granite gneiss, porphoritic granite, slate and quartzite. These basement rocks are mostly deeply buried beneath the Pennsylvanian rocks.

3.3.2 Site Geology

During previous subsurface investigations, and during the current data gaps investigation, borings were completed in fill materials and overburden. Boring logs from previous investigations are provided in Appendix D and boring logs from the data gaps assessment are provided in Appendix C. A cross-section location map is presented on Figure 3-1; Figure 3-2 presents cross-section A-A' through AOC-001, AOC-004, and AOC-005 and Figure 3-3 presents cross-section B-B' through Building 219 Area.

Based on borings completed by Goldberg-Zoino Associates Inc. (GZA) between 1996 through 1997 (GZA, 1998) and soil boring results from the data gaps assessment, overburden materials at the Site vary between less than 1 to approximately 19 feet in thickness. At two soil boring locations completed by GZA (SB-225 and SB-228) the overburden was approximately 40 feet thick. These two locations were situated near tanks and boring logs indicate that overburden material was comprised of fill and blast rock materials. The thickness of the overburden tends to increase in flat lying areas and becomes thinner on slopes (see Figure 3-2). Areas surrounding the tanks have some of the thickest overburden units, because the bedrock was blasted to make room for the tanks and after the tanks were installed the excavation was filled in. The overburden materials are classified as either glacial till or fill. The overburden is generally a mixture of silt, sand and gravel and also boulders and gravel sized pieces of bedrock. The fill can be hard to distinguish from the native material because fill appears to be overburden materials from another part of the site or from the blasting of the bedrock during tank installation. The blasted bedrock is difficult to distinguish from the weathered bedrock and the weathered bedrock/overburden interface is difficult to determine because the bedrock can be very soft and thoroughly weathered. Density of the overburden varies, generally from

loose to medium dense, but is not a reliable indicator as to the nature of the overburden materials (native or fill).

Bedrock is encountered between less than 1 to approximately 40 feet bgs at the Site; Figures 3-2 and 3-3 illustrate approximate bedrock depths in the vicinity of AOC-001, AOC-004/5, and B219. Throughout the Site, bedrock has been identified as a black/gray shale, slate and/or phyllite, depending on the degree of metamorphism with lesser amounts of sandstone/siltstone. Most of the bedrock encountered can be easily broken along planes of bedding and/or foliation and is also highly fractured.

Overburden materials encountered during the DGA included sand with varying amounts of silt and gravel and weathered bedrock with some materials classified as fill or till. Refusal depths and soil boring details for each of the five areas investigated are described below:

- **AOC-001** – Eleven DPT soil borings were advanced; refusal was encountered at 4 feet bgs at seven locations and 5 feet bgs in one boring. Since this AOC is located partially on top of Tank 21, refusal could have been on the top of the tank. Sand, silt, and gravel were encountered in the overburden. Till was identified by the field geologist at three borings and fill materials in two borings. However, the location of this AOC, adjacent to the doghouse for Tank 21, and partially on top of Tank 21, suggests that the majority of the material encountered is fill, which is often re-worked native material (i.e. till and weathered phyllite). Groundwater was not encountered during the DGA at AOC-001. However, based on depth to water data from GZ-203, located approximately 40 feet southeast of AOC-001, the water table in the vicinity of AOC-001 is approximately 5 to 25 feet below the overburden unit (Figure 3-2).

- **AOC-003** – Nine DPT soil borings were advanced. Refusal was encountered at 5 feet bgs at two locations (concrete was observed in drilling shoe at one location) and at 6 feet bgs in one boring. Varying quantities of sand, silt, and gravel were observed in the borings. Till was identified by the field geologist at one location and fill materials in two borings, with possible asphalt (indicating fill) encountered in three other borings. However, the location of this AOC, adjacent to the doghouse for Tank 19, and partially on top of Tank 19, indicates that the majority of the subsurface material encountered is fill. Fill is generally re-worked native material (till and weathered phyllite) with minimal debris (asphalt). Groundwater was not encountered during the DGA at AOC-003.

- **AOC-004/5** – Forty-nine DPT soil borings were advanced; refusal was encountered at 47 locations at depths ranging from 2 to 13 feet bgs. Fill materials was encountered in one boring. The material encountered consisted of various amounts of sand, silt, gravel, and weathered phyllite. Groundwater was not encountered during the DGA at AOC-004/5. However, based on depth to water data from

GZ-201, GZ-226, and GZ-225, located southwest of AOC-004/5, the water table in the vicinity of AOC-004/5 is approximately 20 to 38 feet below the overburden unit (Figure 3-2).

- **B219** – Ten DPT soil borings were advanced to 4 feet bgs, refusal was not encountered. Various amounts of sand, silt, gravel, and weathered phyllite were encountered as well as infrequent brick and coal pieces. This area appears to have been filled before construction of B219 and the majority of the overburden material is believed to be fill (reworked till, weathered bedrock, and occasional debris). Groundwater was not encountered during the DGA at B219. However, depth to water data from GZ-208A and GZ-222, located east and south of B219, respectively, indicate the water table in the B219 area is approximately 6 to 20 feet below the overburden unit (Figure 3-3).

- **Former BSA** – Seven DPT soil borings were advanced to 4 feet bgs and one boring (BSA-SB1091), located inside the impoundment, was advanced to 10 feet bgs to determine if the concrete impoundment had a bottom. Refusal was not encountered, suggesting that the impoundment does not have a concrete bottom. Sand, silt, gravel, and weathered phyllite were generally encountered between 0 to 4 feet bgs. The materials were a combination of fill and till. Groundwater was not encountered during the DGA at the Former BSA.

3.4 HYDROGEOLOGIC CONDITIONS

The regional and site-specific hydrogeological conditions are presented in the following subsections.

3.4.1 Regional Hydrogeology

A summary of regional groundwater hydrogeology is presented below. Much of the regional information described in the Initial Assessment Study (IAS) report (EEI, 1983) was obtained from the Groundwater Map of the Prudence Island and Newport Quadrangles, Rhode Island (1965). Information from both references was used in the following description of the regional groundwater hydrogeology.

Many areas on Aquidneck Island, on which most of NAVSTA Newport is located, obtain their water supply from wells. Areas relying on groundwater are mostly on the east side of Middletown, but there are wells throughout Aquidneck Island. Most groundwater wells are used for domestic needs, although small industries and businesses use some wells.

Groundwater on Aquidneck Island is obtained from the unconsolidated glacial deposits and from the underlying Pennsylvanian bedrock. The unconsolidated glacial deposits range in thickness from less than one foot near rock exposures to about 50 feet at Aquidneck Island. Throughout the area, groundwater depths range from less than one foot to about 30 feet, depending upon the topographic location, time of

year, and character of subsurface deposits. The average depth to the groundwater is around 14 feet bgs on Aquidneck Island and moves from areas of high elevations to discharge to Narragansett Bay or the Sakonnet River.

Seasonal groundwater level fluctuations are common in the area. During the early spring the water table rises due to recharge from snowmelt and rainfall. In late spring and summer, the water table usually declines because rainfall either evaporates or is used by plants before it can reach the water table. During autumn the water table generally rises.

The yield of wells completed in the unconsolidated deposits varies, depending upon the type and thickness of the water bearing deposits penetrated. Till can only yield small supplies; yields from outwash are usually much greater. Yields range from less than one to as much as 120 gallons per minute, as reported from a public supply well on Prudence Island. The upper limits of the referenced well yield are most likely for a well completed in outwash, not till. Under normal weather conditions, till wells yield a few hundred gallons of water per day and are adequate for domestic supplies. However, these wells are subject to going dry during seasonal or unusually severe droughts.

Bedrock wells in the Newport area range in depth from 14 to 1,300 feet, with an average depth of 135 feet. Yields from bedrock wells range from less than 1 to as much as 55 gallons per minute. Most bedrock wells yield less than 10 gallons per minute. The yields in the bedrock wells vary considerably over short distances because the joints and fractures that transmit water to the wells occur randomly. Joints and fractures are most numerous and widest near the top of the bedrock and become fewer and narrower with depth. Bedrock wells seldom go dry, but yields can be extremely low if not enough fractures and joints occur in the area of the well.

Chemical characteristics of the groundwater are similar throughout the area, and the water is generally satisfactory for most ordinary uses. Most groundwater in the area is soft or only moderately hard, with groundwater from till generally containing less mineral matter and being softer than groundwater from bedrock. Wells yielding water with high iron content occur throughout the area, being most numerous around Newport and Middletown and the northern part of Portsmouth.

In scattered locations near the shoreline, over pumping has led to salt water intrusion in some wells. Bedrock wells are not as easily contaminated with salt water as wells completed in unconsolidated deposits, but the chance of contamination increases as the depth of the well below sea level increases.

The groundwater at NAVSTA Newport is very shallow, being less than 10 feet bgs in many areas. Therefore, potential contaminants that may be released at the ground surface have a relatively short

distance to travel before reaching the shallow groundwater table. Those pollutants that do migrate into the groundwater will migrate with groundwater flow and discharge into Narragansett Bay. Coastal sites such as NAVSTA Newport are quite close to the shoreline, and the groundwater only has to migrate a short distance before discharging into Narragansett Bay.

The soils occurring at most of NAVSTA Newport have a permeability that is moderate to moderately rapid, and do not restrict the vertical movement of water. Glacial till, the soil parent material, is generally less permeable than the overlying soils and although it will restrict groundwater movement, it may not represent a complete barrier to the vertical migration of water. However, it is presumed that groundwater will follow a path of least resistance and this pathway in this case would be directly through less dense material to the Bay waters. There are also isolated areas where the bedrock occurs at the surface. Contamination is possible in these areas through the joints and fractures that commonly occur in the bedrock.

Information obtained from the NAVSTA Newport Installation Restoration Program indicates that the depth to groundwater ranged from approximately 4 to 28 feet bgs at NAVSTA Newport sites investigated prior to 1994. Slug tests conducted on monitoring wells at these sites indicated that the hydraulic conductivity of the till unit encountered above the bedrock ranged from 0.22 to 0.44 feet per day and the upper bedrock hydraulic conductivity ranged from 0.029 to 0.21 feet per day. Bedrock slug test data produced hydraulic conductivity values higher than those normally attributed to shale (3.28×10^{-4} to 3.28×10^{-8} feet per day) (Driscoll, 1987).

3.4.2 Site Hydrogeology

The DGA did not include an investigation of site groundwater. However, previous investigations performed for the DESC included an evaluation of site hydrogeology. This information is summarized in this section. A total of 28 monitoring wells were installed by GZA during the 1996-1997 investigation of the Site (GZA, 1998). Well logs from this investigation are included in Appendix D. Examination of the well installation and boring logs indicate that of the 28 monitoring wells, 22 were screened in bedrock, 3 were screened across the bedrock/overburden interface and into bedrock, 2 were screened across overburden materials, and 1 was screened across overburden materials and bedrock.

Water level measurement data collected on October 27, 1997 (low-groundwater) and January 16, 1998 (high-groundwater) were used to construct groundwater contour maps during low and high groundwater conditions and to calculate hydraulic gradient. The January 1998 groundwater elevations and contours are illustrated on Figure 3-1 and the low and high-groundwater table elevations are included on cross-sections A-A' and B-B' (Figures 3-2 and 3-3, respectively). Seasonal fluctuation of the groundwater table varied from 6 to 38 feet; with the greatest fluctuations in monitoring wells located closest to the tank ring drains. Based on the October 1997 water level measurements, groundwater flow across the Site is generally to the

west towards Narragansett Bay and the hydraulic gradient ranged from 0.01 to 0.03 feet per foot (ft/ft). In high water table conditions (January 1998), groundwater flow directions are similar to low water table conditions. The exception is in the eastern-most portion of the Site where groundwater flow is to the east, towards an off-site pond located approximately 500 feet from the site boundary. The hydraulic gradient during the high water synoptic groundwater level round (January 1998) was much greater (0.1 ft/ft) than during the low water synoptic groundwater level round (October 1997).

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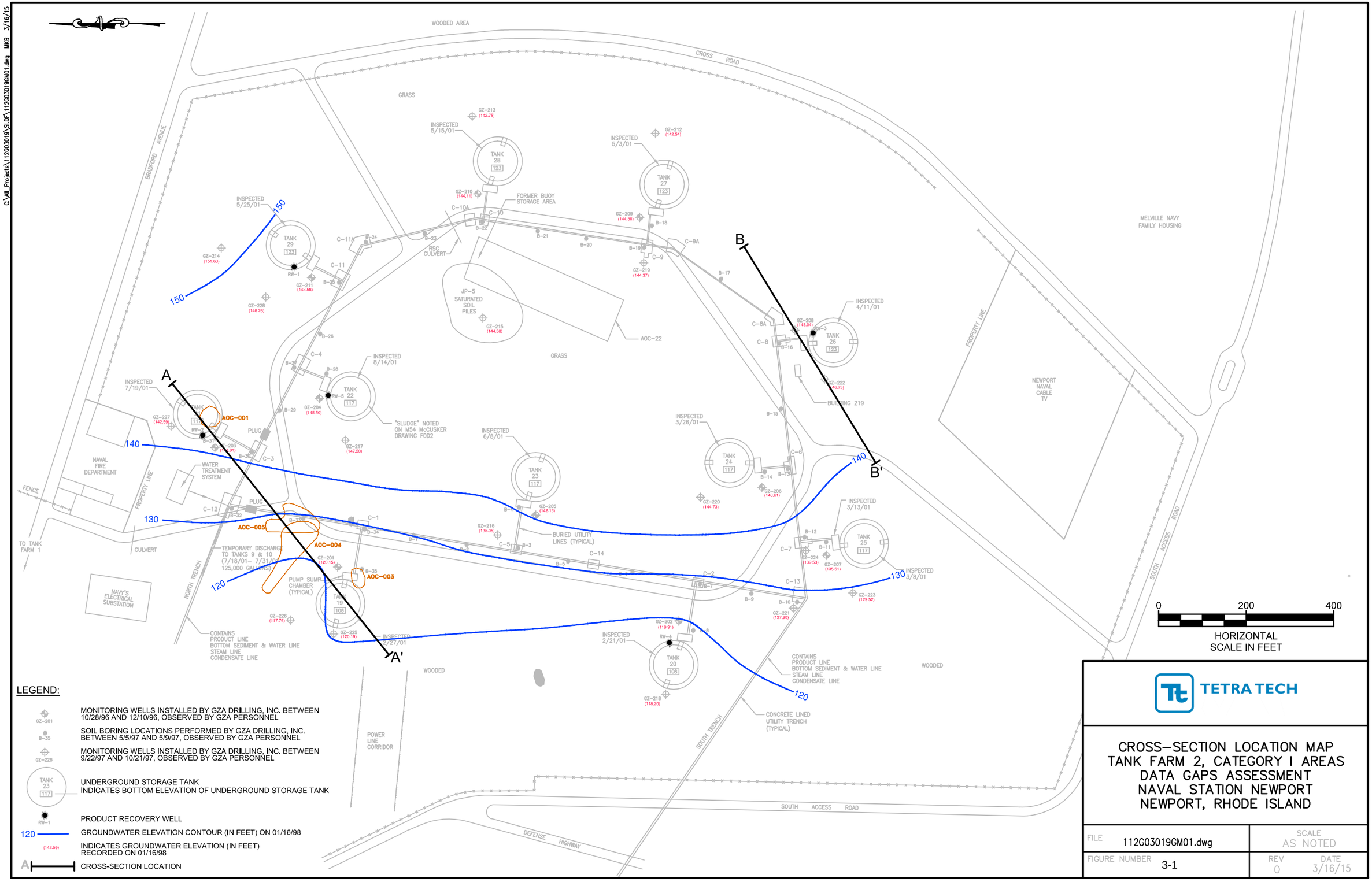

LEGEND:

- GZ-201 — MONITORING WELLS INSTALLED BY GZA DRILLING, INC. BETWEEN 10/28/96 AND 12/10/96, OBSERVED BY GZA PERSONNEL
- B-35 — SOIL BORING LOCATIONS PERFORMED BY GZA DRILLING, INC. BETWEEN 5/5/97 AND 5/9/97, OBSERVED BY GZA PERSONNEL
- GZ-226 — MONITORING WELLS INSTALLED BY GZA DRILLING, INC. BETWEEN 9/22/97 AND 10/21/97, OBSERVED BY GZA PERSONNEL
- TANK 23 117 — UNDERGROUND STORAGE TANK; INDICATES BOTTOM ELEVATION OF UNDERGROUND STORAGE TANK
- RW-1 — PRODUCT RECOVERY WELL
- 120 — GROUNDWATER ELEVATION CONTOUR (IN FEET) ON 01/16/98
- (142.59) — INDICATES GROUNDWATER ELEVATION (IN FEET) RECORDED ON 01/16/98
- A — CROSS-SECTION LOCATION

TETRA TECH

CROSS-SECTION LOCATION MAP
TANK FARM 2, CATEGORY I AREAS
DATA GAPS ASSESSMENT
NAVAL STATION NEWPORT
NEWPORT, RHODE ISLAND

FILE	112G03019GM01.dwg	SCALE	AS NOTED
FIGURE NUMBER	3-1	REV	0
		DATE	3/16/15

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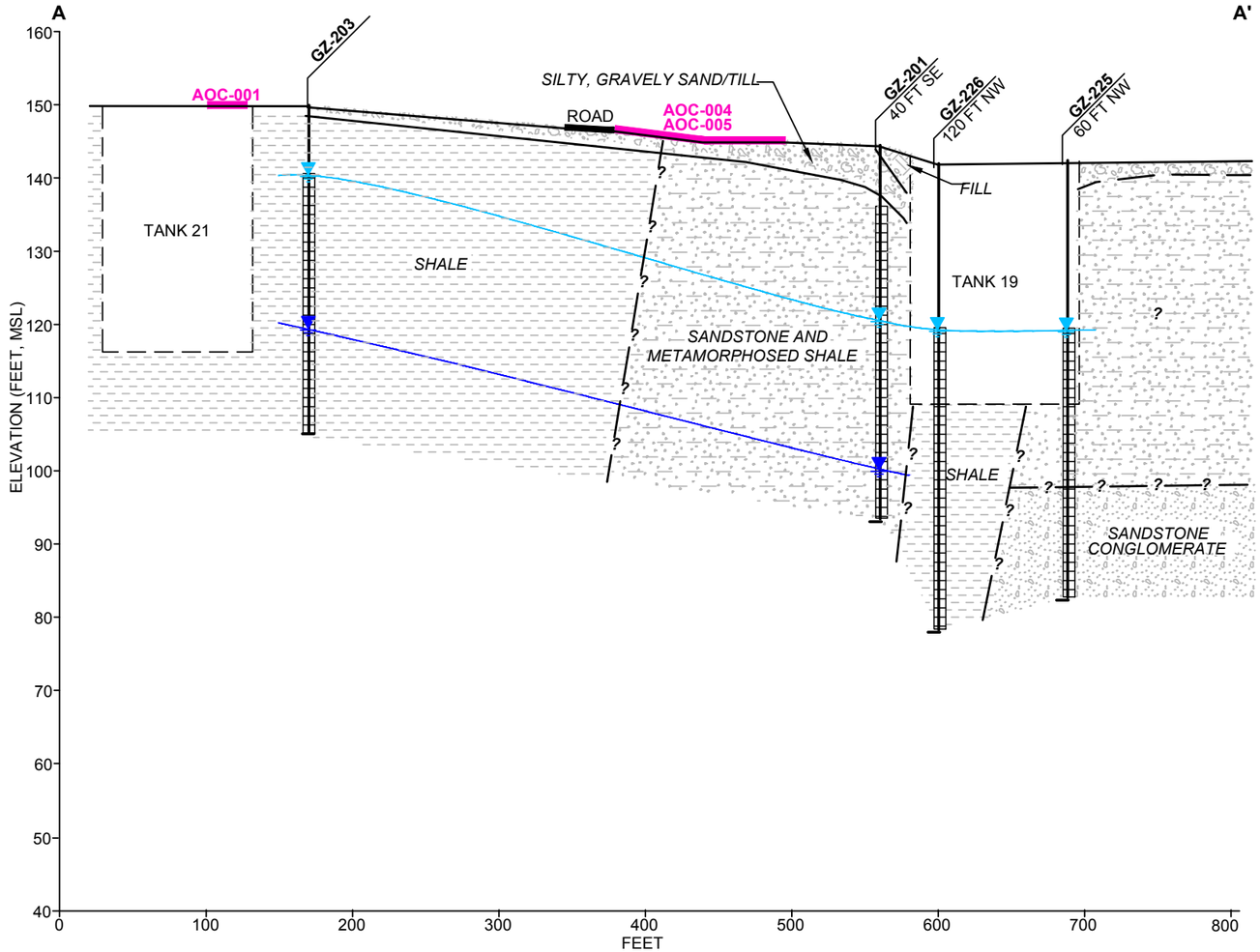
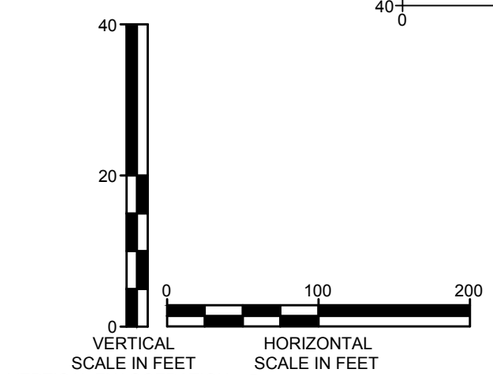




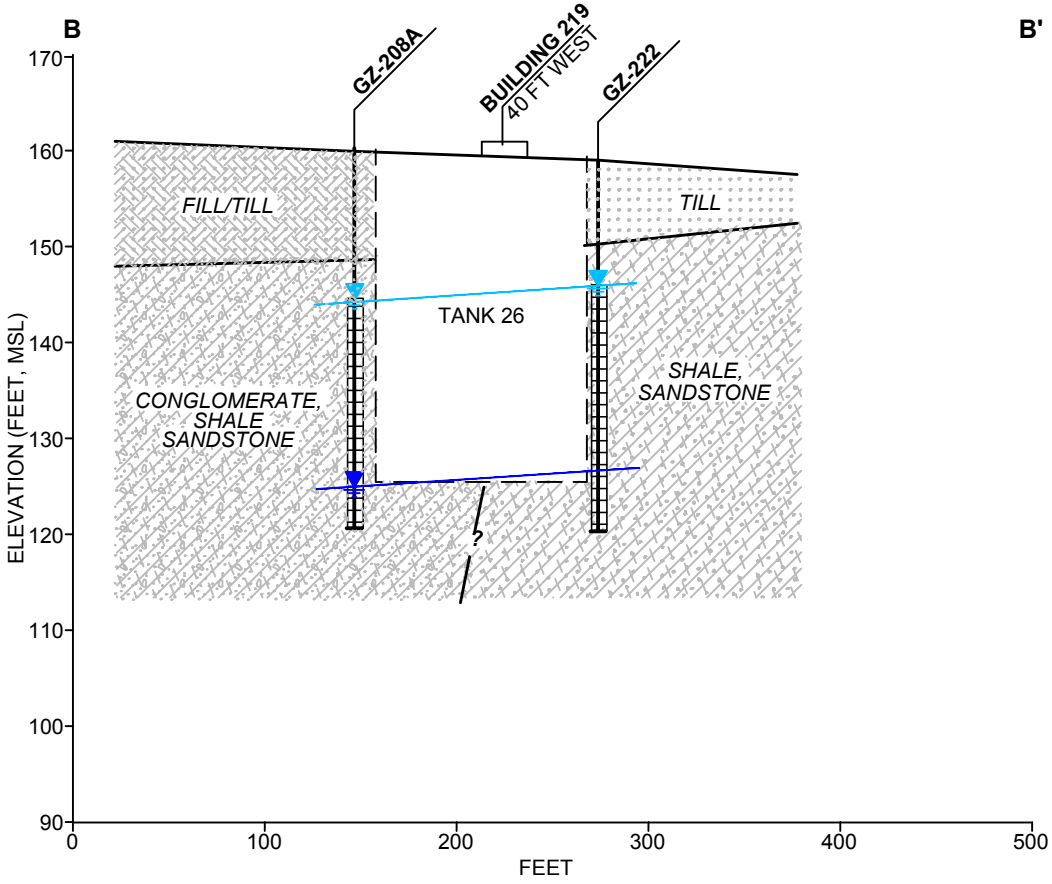
LEGEND

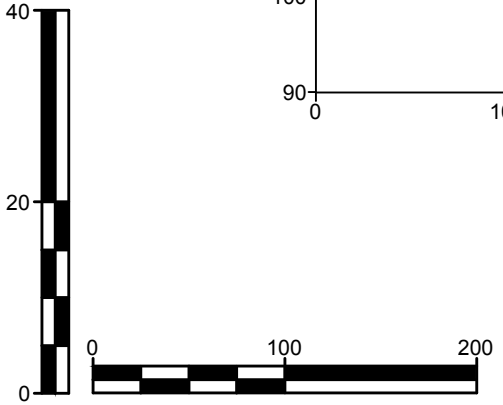
- WATER TABLE 7/21/1997
- WATER TABLE 1/16/1998
- MONITORING WELL AND CREENED INTERVAL
- GZ-226 / 40 FT SE — WELL ID AND DISTANCE/DIRECTION OF OFFSET FROM CROSS-SECTION

TETRA TECH

CROSS–SECTION A – A' THROUGH AOC–001, AOC–004, AND AOC–005 TANK FARM 2, CATEGORY I AREAS DATA GAPS ASSESSMENT NAVAL STATION NEWPORT NEWPORT, RHODE ISLAND

FILE	SCALE
112G03019GS01.dwg	AS NOTED
FIGURE NUMBER 3-2	REV 0 / DATE 3/14/15





LEGEND

- WATER TABLE 7/21/1997
- WATER TABLE 1/16/1998
- MONITORING WELL AND SCREENED INTERVAL
- BUILDING 219 / 40 FT WEST — STRUCTURE AND DISTANCE/ DIRECTION OF OFFSET FROM CROSS-SECTION

TETRA TECH

CROSS–SECTION B – B' THROUGH BUILDING 219 AREA TANK FARM 2, CATEGORY I AREAS DATA GAPS ASSESSMENT NAVAL STATION NEWPORT NEWPORT, RHODE ISLAND

SCALE	AS NOTED
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REV	0
DATE	3/14/15
FIGURE NUMBER	3-3

4.0 NATURE AND EXTENT OF CONTAMINATION

This section summarizes the analytical results obtained from the samples collected to characterize the nature and extent of contamination in the soil at the Site. Details of these investigations are described in Section 2.0 of this report. The analytical results are organized by sample media (surface soil and subsurface soil), and by chemical class (e.g., PAHs, dioxins/furans, PCBs, metals, and ExTPH/GRO). The detections are compared to USEPA Regional Screening Levels (RSLs) for residential and industrial soil and the protection of groundwater soil screening level (SSL) (USEPA, 2013). The ExTPH/GRO results are compared to the RIDEM residential and industrial direct exposure criteria (DECs) (RIDEM, 2011).

4.1 DATA SUMMARY AND EVALUATION

Soil samples collected during the DGA were analyzed in accordance with the SAP (Tetra Tech, 2013). Chemical classes were evaluated in accordance with the following methods:

ANALYTICAL GROUP	ANALYTICAL METHOD
PAHs (SIM)	SW846 8270D SIM
PAHs (full scan)	SW846 8270D
Gasoline Range Organics	SW846 8015B
Extractable Petroleum Hydrocarbons	FL-PRO
PCBs	SW846 8082A
Metals (ICP-MS)	SW846 6020A
Metals (Mercury)	SW846 7471B
Dioxins/Furans	SW846 8290A

Tables of the chemical analytical data collected as described in this section are provided in Appendix E of this report. Aqueous rinsate blank samples were also collected and analyzed, as appropriate.

Sample data were validated according to established USEPA Region I Data Validation Guidelines (USEPA Region 1, February, 1989); (USEPA Region 1, December, 1996); (USEPA Region 1, February, 2004). A Tier II data validation was performed on the PAHs, PCBs, target analyte list (TAL) metals, and dioxins/furans analyses. Tier II validation included evaluation of the following parameters:

- Data Completeness
- Holding Times
- GC/MS Instrument Performance Check (Tuning) (PAHs)
- ICP/MS Tuning (Metals)
- ICP/MS Internal Standard Performance (Metals)

- Initial and Continuing Calibrations/Calibration Verification
- Blanks
- Surrogate Standards (Organics)
- Internal Standards (PAHs)
- Matrix Spike/Matrix Spike Duplicates Recoveries
- ICP Interference (Metals)
- ICP Serial Dilution (Metals)
- Laboratory Control Sample/Laboratory Control Sample Duplicate
- Field Duplicates
- Reporting Limits
- Compound Identification (PAHs)
- Mass Calibration (Dioxins/Furans)
- HRGC/HRMS Tuning and System Performance (Dioxins/Furans)
- Chromatographic Resolution/ Window Defining Mixtures (Dioxins/Furans)
- Cleanup Standard Recoveries (Dioxins/Furans)

Based on this validation process, several analytical results were qualified due to limitations inherent to sample matrix interferences or to field and or laboratory problems. Sample results qualified with a "J" are considered approximate because of limitations identified during data validation.

In general, data were acceptable for use in this DGA. Qualifications on the reported data are documented in the data validation memoranda for each data package provided by the analytical laboratory. Data validation memoranda are presented in Appendix F.

The discussions in this section contain summaries of analytical results along with comparisons of detected contaminant levels to screening criteria. Soil samples collected are compared to the USEPA Residential RSLs, the USEPA Industrial RSLs, and the protection of groundwater SSLs The RSLs used for comparison are based upon the target cancer risk level of $1x10^{-06}$ and a non-cancer target hazard quotient of 0.1. USEPA RSLs are updated every six months. Due to the time that passed between collecting samples and finalizing this report, the November 2013 RSLs are used in this report and not the most recent RSLs. However, Section 5 includes an evaluation of the impact using older RSLs has on the report.

There is no RSL for total chromium and the hexavalent chromium RSL was not used for comparison to the chromium concentrations in soil because there is no source for hexavalent chromium at the Site. Therefore, the hexavalent chromium RSL was not used in the nature and extent discussion. However, in order to reduce the risk of underestimating risk, the human health risk assessment (Section 5) assumes that the total chromium concentrations are hexavalent chromium concentrations.

Dioxin analytical results are compared with Project Screening Levels (PSLs) as reported in the SAP (Tetra Tech, 2013). Although useful, total concentrations of dioxins/furans are not the best measure of the actual toxicity of dioxins/furans because each compound has its own level of toxicity. As the initial step in the dioxins/furans nature and extent evaluation, the concentrations detected in soil were converted to values of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD). To account for variations in toxicity, weighted values, or toxicity equivalents (TEQs), were calculated and summed together as dioxin Total TEQ and compared to screening values.

Updated Toxic Equivalency Factors (TEFs) presented in Van den Berg et al. (2006) were used to calculate the TEQ values for mammals (including humans). The TEFs relate the toxicity of each dioxin/furan congener to that of 2,3,7,8-TCDD and are used to convert each dioxin/furan congener concentration to a TEQ value of 2,3,7,8-TCDD. TEQ values for the individual congeners were summed to represent the dioxin Total TEQ value for each sample. The dioxin Total TEQ values were calculated using positive detections only. In order to evaluate the potential for underestimating risk due to using positive detections only in the total TEQ calculation, the human health risk assessment (Section 5) includes an evaluation of the total TEQ using one-half the detection limit to calculate the TEQs (Section 5.5.3). These tables also show the calculated dioxin Total TEQ values, which are the sums of the individual dioxin/furan congener TEQ values.

Basic statistical analysis of chemical constituents detected is presented in summary tables in this section. Complete results, separated by matrix, for all analyzed chemicals are included in Appendix E.

4.2 NATURE AND EXTENT OF CONTAMINATION IN AOC-001

AOC-001 is governed by CERCLA because contaminants found within this area are associated with the burning of tank sludge. The investigation of Category 1 decision units (DUs) included the collection and analysis of surface soil and subsurface soil samples. The following sections summarize the data for each media sampled as part of the investigation of AOC-001. Sample locations are presented on Figure 2-1.

Sample location identifiers include the site identifier (TF2), the area the sample is located (001 for AOC-001) the sample matrix (SS or SB), the sample location (i.e., 1092), and the sample collection depth interval for soil (i.e., -0001 for 0 to 1 foot bgs).

During the investigation of AOC-001, 11 borings were advanced and soil was collected as described in Section 2.1 of this report. Surface soil was defined as soil collected from 0 to 1 foot bgs. Similarly, subsurface soil was defined as soil collected from 1 to 10 feet bgs or to top of bedrock, whichever is shallower. Surface and subsurface soil are described separately in the sections that follow.

Surface and subsurface soil samples were collected for laboratory analysis of PAHs, dioxins/furans, and TAL metals. Up to 10 percent of the samples were also analyzed for GRO and ExTPH. Dioxins/furans analysis was not performed on samples collected from between 4 and 10 feet bgs, with the exception of one sample collected from 8 to 10 feet bgs from TF2-001-SB1000. . A complete list of results for analytes detected in AOC-001 surface soil samples and subsurface soils are provided in Tables 4-1 and 4-2, respectively. A complete list of results for all analytes that were analyzed in AOC-001 surface and subsurface soil samples can be found in Appendix E. Soil results are compared against USEPA RSLs for residential soils and industrial soils and protection of groundwater SSLs (Tables 4-1 and 4-2). Soil sample locations are shown on Figures 4-1 through 4-4 along with concentrations of select metals and PAHs in excess of screening criteria. Metal and PAH compounds were selected for presentation on Figures 4-1 through 4-4 if they exceed residential RSLs.

4.2.1 Dioxin in AOC-001 Surface Soil Samples

The following table presents data summary statistics for dioxin TEQ values calculated using results from these surface soil samples. Concentrations are in units of nanograms per kilogram (ng/kg). The TEQ value was compared to the Project Screening Level (PSL) in the SAP (Tetra Tech, 2013) and the protection of groundwater SSL. Table 4-1 presents individual congener results for surface soil samples collected from AOC-001.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	PSL from SAP		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances
Total TEQ	11/11	1.81	3.20	TF2-001-SB1007	2.4	4.2	0	5.2	0

As shown in the table above, the total TEQ from all samples was below the PSL and below the protection of groundwater SSL.

4.2.2 Metals in AOC-001 Surface Soil Samples

The following table presents data summary statistics for metals detected in surface soil samples. Concentrations are shown in units of milligrams per kilogram (mg/kg).

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Averages of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Aluminum	11/11	11900	14600	TF2-001-SB1003; -SB1008; -SB1006	13500	7700	11	99000	0	460000	0
Antimony	11/11	0.08J	0.26J	TF2-001-SB1009	0.13	3.1	0	41	0	5.4	0
Arsenic	11/11	4.1	7.7	TF2-001-SB1005	6	0.61	11	2.4	11	0.026	11
Barium	11/11	12.4	22.8	TF2-001-SB1007	16.5	1500	0	19000	0	2400	0
Beryllium	11/11	0.26	0.36	TF2-001-SB1008	0.32	16	0	200	0	260	0
Cadmium	11/11	0.07J	0.14	TF2-001-SB1007	0.1	7	0	80	0	10.4	0
Calcium	11/11	502	2630	TF2-001-SB1005	989	na	na	na	na	na	na
Chromium	11/11	14.9	18	TF2-001-SB1003	16.5	na	na	na	na	na	na
Cobalt	11/11	9.6	16.6	TF2-001-SB1002	12.4	2.3	11	30	0	4.2	11
Copper	11/11	14.2	20.4	TF2-001-SB1010	17.2	310	0	4100	0	440	0
Iron	11/11	22600	27800	TF2-001-SB1002	25400	5500	11	72000	0	5400	11
Lead	11/11	11.4	26.7J	TF2-001-SB1007	15.2	400	0	800	0	na	na
Magnesium	11/11	3450	4560	TF2-001-SB1002	4080	na	na	na	na	na	na
Manganese	11/11	267	459	TF2-001-SB1009	342	180	11	2300	0	420	2
Mercury	7/11	0.04	0.21J	TF2-001-SB1003	0.094	1	0	4.3	0	0.66	0
Nickel	11/11	18.6	28.4	TF2-001-SB1009	23.4	150	0	2000	0	400	0
Potassium	11/11	302J	501	TF2-001-SB1006	406	na	na	na	na	na	na
Selenium	4/11	0.11J	0.31J	TF2-001-SB1010	0.23	39	0	510	0	8	0
Silver	11/11	0.03J	0.56	TF2-001-SB1006	0.089	39	0	510	0	12	0
Sodium	10/11	39.7 J	60.9J	TF2-001-SB1002	48.6	na	na	na	na	na	na
Thallium	11/11	0.03J	0.08J	TF2-001-SB1007	0.05	0.078	1	1	0	0.22	0
Vanadium	11/11	17.4	21.1	TF2-001-SB1003	19.3	39	0	510	0	1260	0
Zinc	11/11	46.8	64.4	TF2-001-SB1009	55	2300	0	31000	0	5800	0

All of the TAL metals were detected above reporting limits. Six metals (aluminum, arsenic, cobalt, iron, manganese, and thallium) were detected at concentrations above one or more criteria. Aluminum, arsenic, cobalt, iron, and manganese were detected at concentrations above one or more criteria in all 11 samples. Only arsenic was detected above all criteria in all 11 samples; arsenic concentrations exceeded the residential (0.61 mg/kg) and industrial (2.4 mg/kg) RSLs, and protection of groundwater SSL (0.026 mg/kg). Arsenic concentrations range from 4.1 to 7.7 mg/kg in the samples in this group. Cobalt and iron concentrations were detected above the residential RSL (2.3 mg/kg and 5500 mg/kg, respectively) and protection of groundwater SSL (4.2 mg/kg and 5400 mg/kg, respectively) in all 11 samples in the sample group. Cobalt concentrations range from 9.6 to 16.6 mg/kg and iron concentrations range from 22600 to 27800 mg/kg. Aluminum concentrations exceeded the residential RSL only. Thallium concentrations

exceeded the residential RSL only (0.078 mg/kg) and in only one sample (TF2-001-SB1007) at 0.08 mg/kg. Manganese exceeded the residential RSL (180 mg/kg) in all 11 samples, and exceeded the protection of groundwater SSL (420 mg/kg) in two samples.

4.2.3 PAHs in AOC-001 Surface Soil Samples

The following table presents data summary statistics for PAHs detected in surface soil samples. All concentrations are in units of micrograms per kilogram (µg/kg).

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
2-Methylnaphthalene	1/11	13J	13J	TF2-001-SB1007	13	23000	0	220000	0	2800	0
Acenaphthene	6/11	2.2J	1000	TF2-001-SB1005	200	340000	0	3300000	0	82000	0
Acenaphthylene	2/11	12J	26	TF2-001-SB1005	19	340000	0	3300000	0	82000	0
Anthracene	9/11	2.6J	2200	TF2-001-SB1005	290	1700000	0	17000000	0	84000	0
Benzo(a)anthracene	10/11	5.2J	4500	TF2-001-SB1005	590	150	2	2100	1	200	2
Benzo(a)pyrene	11/11	4.2J	3700	TF2-001-SB1005	430	15	7	210	2	70	2
Benzo(b) fluoranthene	11/11	6.5J	5800	TF2-001-SB1005	690	150	2	2100	1	700	2
Benzo(g,h,i)perylene	10/11	2.7J	1800	TF2-001-SB1005	230	170000	0	1700000	0	190000	0
Benzo(k) fluoranthene	10/11	5.2J	1700	TF2-001-SB1005	220	1500	1	21000	0	7000	0
Chrysene	11/11	6.4J	4900	TF2-001-SB1005	560	15000	0	210000	0	22000	0
Dibenzo(a,h) anthracene	9/11	3.5J	590J	TF2-001-SB1005	84	15	2	210	1	220	1
Fluoranthene	11/11	8.4J	12000J	TF2-001-SB1005	1400	230000	0	2200000	0	1400000	0
Fluorene	4/11	6.6J	1300	TF2-001-SB1005	370	230000	0	2200000	0	80000	0
Indeno(1,2,3-cd) pyrene	11/11	3.2J	2800J	TF2-001-SB1005	330	150	2	2100	1	4000	0
Naphthalene	2/11	66	1800	TF2-001-SB1005	930	3600	0	18000	0	9.4	2
Phenanthrene	11/11	3.1J	11000	TF2-001-SB1005	1200	170000	0	1700000	0	190000	0
Pyrene	11/11	6.9J	11000J	TF2-001-SB1005	1300	170000	0	1700000	0	190000	0

Each of the 17 PAHs was detected in soil samples collected from this area. Many of the PAHs were detected in each of the 11 samples. Of the 17 PAHs detected, six were detected at concentrations above residential RSL, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)phenanthrene; however, note that

only 1 of 15 samples exceeded the criteria for benzo(k)fluoranthene. Five were detected above industrial RSL, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)phenanthrene. Five were detected above the protection of groundwater SSL, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and naphthalene. Maximum PAH concentrations for each of the PAH parameters tested were detected in the sample fromTF2-001-SB1005.

4.2.4 Petroleum Hydrocarbons in AOC-001 Surface Soil Samples

One surface soil sample was analyzed for petroleum hydrocarbons. GRO was not detected. ExTPH was detected in sample TF2-001-SB1003 at an average concentration of 21 mg/kg which is well below the RIDEM residential DEC of 500 mg/kg.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Averages of Detections	RIDEM Residential DEC		RIDEM Industrial DEC	
						Criterion	Exceedances	Criterion	Exceedances
ExTPH (C08-C44)	1/1	18J	23	TF2-001-SB1003	21	500	0	2500	0

4.2.5 Dioxin in AOC-001 Subsurface Soil Samples

The following table presents data summary statistics for dioxin TEQ values calculated using results from these subsurface soil samples. Concentrations are reported in units of ng/kg. The TEQ value was compared to the PSL in the SAP (Tetra Tech, 2013) and the protection of groundwater SSL. Table 4-2 presents individual congener results for subsurface soil samples collected from AOC-001.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	PSL from SAP		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances
Total TEQ	12/12	1.48	6.0	TF2-001-SB1007	2.4	4.2	1	5.2	1

As shown on the above table, a total TEQ (6.0 ng/kg) was detected in one sample (TF2-001-SB1007) above the PSL (4.2 ng/kg) and above the protection of groundwater SSL (5.2 ng/kg).

4.2.6 Metals in AOC-001 Subsurface Soil Samples

The following table presents data summary statistics for TAL metals detected in subsurface soil samples. All concentrations are in units of mg/kg.

Parameter	Frequency of Detection	Minimum Detection		Maximum Detection		Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
								Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Aluminum	15/15	9880		21000		TF2-001-SB1009	15000	7700	15	99000	0	460000	0
Antimony	14/15	0.03	J	0.15	J	TF2-001-SB1007	0.08	3.1	0	41	0	5.4	0
Arsenic	15/15	5		14.3		TF2-001-SB1008	8.58	0.61	15	2.4	15	0.026	15
Barium	15/15	7.2		27.2		TF2-001-SB1008	17	1500	0	19000	0	2400	0
Beryllium	15/15	0.28		0.47		TF2-001-SB1008	0.37	16	0	200	0	260	0
Cadmium	15/15	0.06	J	0.28		TF2-001-SB1002	0.11	7	0	80	0	10.4	0
Calcium	15/15	608		1660		TF2-001-SB1009	1060	na	na	na	na	na	na
Chromium	15/15	12.9		26.5		TF2-001-SB1001	18	na	na	na	na	na	na
Cobalt	15/15	5.2		30.3		TF2-001-SB1000	12.7	2.3	15	30	1	4.2	15
Copper	15/15	10.2		20.6		TF2-001-SB1001; SB1009	15.6	310	0	4100	0	440	0
Iron	15/15	16200		45100		TF2-001-SB1009	26000	5500	15	72000	0	5400	15
Lead	15/15	11.2	J	19.3	J	TF2-001-SB1008	14	400	0	800	0	na	na
Magnesium	15/15	2380		7010		TF2-001-SB1001	4160	na	na	na	na	na	na
Manganese	15/15	163		458		TF2-001-SB1009	284	180	13	2300	0	420	1
Mercury	13/15	0.04	J	0.11		TF2-001-SB1008	0.061	1	0	4.3	0	0.66	0
Nickel	15/15	11.4		34.7		TF2-001-SB1001	20.5	150	0	2000	0	400	0

Parameter	Frequency of Detection	Minimum Detection		Maximum Detection		Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
								Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Potassium	15/15	221		664		TF2-001-SB1005	455	na	na	na	na	na	na
Selenium	6/15	0.17	J	0.37	J	TF2-001-SB1008; 1002	0.32	39	0	510	0	8	0
Silver	15/15	0.02	J	0.06	J	TF2-001-SB1007	0.038	39	0	510	0	12	0
Sodium	15/15	20.6	J	58	J	TF2-001-SB1003	43.4	na	na	na	na	na	na
Thallium	15/15	0.02	J	0.12		TF2-001-SB1008	0.066	0.078	5	1	0	0.22	0
Vanadium	15/15	15.4		29.2		TF2-001-SB1009	19.6	39	0	510	0	1260	0
Zinc	15/15	33.6		85		TF2-001-SB1009	50	2300	0	31000	0	5800	0

Each of the TAL metals was detected above reporting limits. Six metals (aluminum, arsenic, cobalt, iron, manganese, and thallium) were detected at concentrations above one or more criteria. Only arsenic was detected above all criteria in all 15 samples; arsenic concentrations exceeded the residential (0.61 mg/kg) and industrial (2.4 mg/kg) RSLs, and the protection of groundwater SSL (0.026 mg/kg). Arsenic concentrations range from 5.0 to 14.3 mg/kg in the samples in this group. Cobalt was detected at concentrations above the residential RSL (2.3 mg/kg) and above the protection of groundwater SSL (4.2 mg/kg) in all 15 samples in the sample group, however; the highest cobalt concentration (30.3 mg/kg) was only slightly above the industrial RSL (30 mg/kg). Iron concentrations were detected above the residential RSL (5500 mg/kg) and the protection of groundwater SSL (5400 mg/kg) in all 15 samples in the sample group. Iron concentrations range from 16200 to 45100 mg/kg; iron concentrations did not exceed the industrial RSL (72000 mg/kg). Aluminum concentrations exceeded the residential RSL only. Thallium concentrations exceeded the residential RSL only (0.078 mg/kg) and in only five samples (0.12 mg/kg maximum at sample TF2-001-SB1008). Manganese exceeded the residential RSL (180 mg/kg) in 13 samples, and exceeded the protection of groundwater SSL (420 mg/kg) in one sample.

4.2.7 PAHs in AOC-001 Subsurface Soil Samples

The following table presents data summary statistics for PAHs detected in subsurface soil samples. All concentrations are in units of µg/kg.

Parameter	Frequency of Detection	Minimum Detection		Maximum Detection		Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
								Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
2-Methylnaphthalene	2/15	76		280	J	TF2-001-SB1005	156	23000	0	220000	0	2800	0
Acenaphthene	3/15	6.9	J	890	J	TF2-001-SB1005	267	340000	0	3300000	0	82000	0
Acenaphthylene	2/15	22	J	88	J	TF2-001-SB1005	40	340000	0	3300000	0	82000	0
Anthracene	7/15	2	J	1800	J	TF2-001-SB1005	320	1700000	0	17000000	0	840000	0
Benzo(a)anthracene	10/15	3.6	J	4100	J	TF2-001-SB1005	490	150	2	2100	1	200	2
Benzo(a)pyrene	9/15	4.2	J	3100	J	TF2-001-SB1005	440	15	4	210	2	70	3
Benzo(b)fluoranthene	13/15	3.1	J	4800	J	TF2-001-SB1005	470	150	2	2100	2	700	2
Benzo(g,h,i)perylene	8/15	2.3	J	1500	J	TF2-001-SB1005	250	170000	0	1700000	0	190000	0
Benzo(k)fluoranthene	9/15	4.3	J	1500	J	TF2-001-SB1005	210	1500	0	21000	0	7000	0
Chrysene	11/15	2.7	J	3800	J	TF2-001-SB1005	430	15000	0	210000	0	22000	0
Dibenzo(a,h) anthracene	7/15	2.5	J	490	J	TF2-001-SB1005	82	15	2	210	2	220	1
Fluoranthene	11/15	5	J	10000	J	TF2-001-SB1005	1100	230000	0	2200000	0	1400000	0
Fluorene	3/15	7.8	J	1700	J	TF2-001-SB1005	510	230000	0	2200000	0	80000	0
Indeno(1,2,3-cd) pyrene	12/15	2.1	J	2400	J	TF2-001-SB1005	260	150	2	2100	0	4000	0
Naphthalene	3/15	6	J	1200	J	TF2-001-SB1005	310	3600	0	18000	0	9.4	2
Phenanthrene	12/15	2.4	J	11000	J	TF2-001-SB1005	930	170000	0	1700000	0	190000	0
Pyrene	10/15	5.3	J	10000	J	TF2-001-SB1005	1200	170000	0	1700000	0	190000	0

Each of the 17 PAHs was detected in soil samples collected from this area. The frequencies of detection of the PAHs are shown in the above table. Of the 17 PAHs detected, five were detected at concentrations above residential RSL, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)phenanthrene. Four were detected above industrial RSL, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and dibenzo(a,h)anthracene. Five were detected above the protection of groundwater SSL, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and naphthalene. Maximum PAH concentrations were detected in soil samples collected from sample location TF2-001-SB1005.

4.2.8 Petroleum Hydrocarbons in AOC-001 Subsurface Soil Samples

The following table presents data summary statistics for petroleum hydrocarbons detected in subsurface soil samples. All concentrations are in units of mg/kg.

Parameter	Frequency of Detection	Minimum Detection		Maximum Detection		Location of Maximum Detection	Average of Detections	RIDEM Residential DEC		RIDEM Industrial DEC	
								Criterion	Exceedances	Criterion	Exceedances
ExTPH (C08-C44)	2/3	13	J	29		TF2-001-SB1006	21	500	0	2500	0

GRO was not detected in the three samples. Two of the three samples contained ExTPH above reporting limits. The concentrations were well below the RIDEM Residential DEC (500 mg/kg).

4.2.9 AOC-001 Summary

The following compounds were detected in one or more surface soil sample(s) collected at AOC-001 at concentrations above the indicated screening level(s).

AOC-001 Surface Soil Compound	Residential RSL	Industrial RSL	Protection of GW SSL	PSL
Total TEQ	NA	NA	X	X
aluminum	X	--	--	NA
arsenic	X	X	X	NA
cobalt	X	--	X	NA
iron	X	--	X	NA
manganese	X	--	X	NA
thallium	X	--	--	NA
benzo(a)anthracene	X	X	X	NA
benzo(a)pyrene	X	X	X	NA
benzo(b)fluoranthene	X	X	X	NA
benzo(k)fluoranthene	X	--	--	NA
dibenzo(a,h)anthracene	X	X	X	NA
indeno(1,2,3-cd)pyrene	X	X	--	NA
naphthalene	--	--	X	NA

Note: NA indicates not applicable

The following compounds were detected in at least one subsurface soil samples collected at AOC-001 at concentrations above the indicated screening level(s).

AOC-001 Subsurface Soil Compound	Residential RSL	Industrial RSL	Protection of GW SSL	PSL
Total TEQ	NA	NA	X	X
aluminum	X	--	--	NA
arsenic	X	X	X	NA
cobalt	X	X	X	NA
iron	X	--	X	NA
manganese	X	--	X	NA
thallium	X	--	--	NA
benzo(a)anthrcene	X	X	X	NA
benzo(a)pyrene	X	X	X	NA
benzo(b)fluoranthene	X	X	X	NA
dibenzo(a,h)anthracene	X	X	X	NA
indeno(1,2,3-cd)pyrene	X	--	--	NA
naphthalene	--	--	X	NA

Note: NA indicates not applicable

Dioxins (total TEQ) exceeded the PSL (Tetra Tech, 2013) and the protection of groundwater SSL in one soil sample: a subsurface soil sample collected from TF2-001-SB1007. The TF2-001-SB1007 sample location is located just east of the northeast corner of Building 21.

Six metals (aluminum, arsenic, cobalt, iron, manganese, and thallium) exceeded one or more criteria. Aluminum, arsenic, cobalt, iron, and manganese exceeded criteria in the majority of samples. However, only arsenic was detected above the industrial RSL. The dataset to dataset comparison of background soil data for metals to metals detected in Tank Farm 2 soils (Appendix G) indicate that the concentrations of aluminum and arsenic in the surface soil are consistent with background concentrations and the concentrations of manganese in the subsurface soil are consistent with background concentrations. However, aluminum and arsenic in subsurface soil and manganese in surface soil are statistically greater than background levels. Cobalt and iron are the remaining metals that were consistently above screening criteria.

Seven PAHs were detected above one or more criteria, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)phenanthrene, and naphthalene. Maximum PAH concentrations were detected in the soil samples collected in TF2-001-SB1005 and TF2-001-SB1007 collected from borings advanced adjacent to the doghouse for

Tank 21. Benzo(a)pyrene concentrations in surface and subsurface soil are the highest closest to the doghouse for Tank 21, and generally decrease with distance from the doghouse.

A total of four soil sample were analyzed for petroleum hydrocarbons. ExTPH was detected in three of the four samples collected; however, concentrations were well below the RIDEM residential DEC of 500 mg/kg.

4.3 NATURE AND EXTENT OF CONTAMINATION IN AOC-003

AOC-003 is governed by CERCLA because contaminants found within this area are associated with the burning of tank sludge. This makes AOC-003 a Category 1 Area. The investigation of Category 1 DUs included the collection and analysis of surface soil and subsurface soil samples. The following sections summarize the data for surface soil and subsurface as part of the investigation of AOC-003. Sample locations are presented on Figure 2-2.

Sample location identifiers include the site identifier (TF2), the area the sample is located (003 for AOC-003) the sample matrix (SS or SB), the sample location (i.e., 1011), and the sample collection depth interval for soil (i.e., -0001 for 0 to 1 foot bgs).

During the investigation of AOC-003, soil was collected from 9 borings. Soil borings were advanced and samples collected as described in Section 2.1 of this report. Surface soil was defined as soil collected from 0 to 1 foot bgs. Similarly, subsurface soil was defined as soil collected from 1 to 10 feet bgs or to top of bedrock, whichever is shallower. Surface and subsurface soil are described separately in the sections that follow.

Surface and subsurface soil samples were collected for laboratory analysis of PAHs, dioxins/furans, and TAL metals, and up to 10 percent of the samples were also analyzed for GRO and ExTPH. Dioxins/furans analysis was not performed on samples collected from between 4 and 10 feet bgs. A complete list of results for analytes detected in AOC-003 surface and subsurface soil samples are provided in Tables 4-3 and 4-4, respectively. A complete list of results for all analytes that were analyzed in AOC-003 surface and subsurface soil samples can be found in Appendix E. Soil results are compared against EPA RSLs for residential soils and industrial soils and protection of groundwater SSLs. Figures 4-5 through 4-10 show locations of soil samples and concentrations of select metals, select PAHs, and total TEQ (dioxin) that exceeded screening criteria. Metals and PAHs were selected for presentation on these figures if they exceeded residential RSLs.

4.3.1 Dioxin in AOC-003 Surface Soil

The following table presents data summary statistics for dioxin (as Total TEQ) detected in surface soil samples. Concentrations are reported in ng/kg. The TEQ value was compared to the PSL in the SAP (Tetra Tech, 2013) and the protection of groundwater SSL. Table 4-3 presents individual congener results for subsurface soil samples collected from AOC-003.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	PSL from SAP		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances
Total TEQ	9/9	2.7	9.3	TF2-003-SS1011-000.8	5.4	4.2	7	5.2	5

As shown on the above table, the total TEQ PSL (4.2 ng/kg) was exceeded in 7 of the 9 samples. The protection of groundwater SSL (5.2 ng/kg) was exceeded in 5 of 9 samples. The highest concentration (9.3 ng/kg) was detected in sample TF2-003-SS1011-000.8.

4.3.2 Metals in AOC-003 Surface Soil

The following table presents data summary statistics for TAL metals detected in surface soil samples. Concentrations are reported in units of mg/kg.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection		Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
							Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Aluminum	9/9	8700	11000	J	TF2-003-SS1011-000.8	9700	7700	9	99000	0	460000	0
Antimony	9/9	0.18	0.53	J	TF2-003-SS1016-000.9	0.32	3.1	0	41	0	5.4	0
Arsenic	9/9	4.9	8.9		TF2-003-SS1011-000.8	6.1	0.61	9	2.4	9	0.026	9
Barium	9/9	22.7	41.5		TF2-003-SS1016-000.9	27	1500	0	19000	0	2400	0
Beryllium	9/9	0.35	0.51		TF2-003-SS1016-000.9	0.4	16	0	200	0	260	0
Cadmium	9/9	0.1	0.29		TF2-003-SS1019-000.5	0.19	7	0	80	0	10.4	0
Calcium	9/9	520 J	1080		TF2-003-SS1019-000.5	768	na	na	na	na	na	na
Chromium	9/9	10.6	44.5		TF2-003-SS1017-000.8	16.4	na	na	na	na	na	na
Cobalt	9/9	6.5	11.4		TF2-003-SS1011-000.8	8.48	2.3	9	30	0	4.2	9
Copper	9/9	11.6	21.7		TF2-003-SS1012-000.7	16.8	310	0	4100	0	440	0

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection		Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
							Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Iron	9/9	15000	25100	J	TF2-003-SS1011-000.8	18600	5500	9	72000	0	5400	9
Lead	9/9	16.6	101	J	TF2-003-SS1016-000.9	52.2	400	0	800	0	na	na
Magnesium	9/9	1500 J	3260		TF2-003-SS1014-0001	2510	na	na	na	na	na	na
Manganese	9/9	263	658	J	TF2-003-SS1016-000.9	407	180	9	2300	0	420	3
Mercury	9/9	0.04	0.14	J	TF2-003-SS1011-000.8	0.078	1	0	4.3	0	0.66	0
Nickel	9/9	13	24		TF2-003-SS1017-000.8	17	150	0	2000	0	400	0
Potassium	9/9	311	501		TF2-003-SS1019-000.5	402	na	na	na	na	na	na
Selenium	7/9	0.14 J	0.28	J	TF2-003-SS1015-000.8-D	0.22	39	0	510	0	8	0
Silver	9/9	0.04 J	0.08		TF2-003-SS1016-000.9	0.056	39	0	510	0	12	0
Sodium	5/9	27.6 J	37.5	J	TF2-003-SS1012-000.7	29	na	na	na	na	na	na
Thallium	9/9	0.05 J	0.1		TF2-003-SS1016-000.9	0.064	0.078	1	1	0	0.22	0
Vanadium	9/9	17.2	24.9	J	TF2-003-SS1011-000.8	20.3	39	0	510	0	1260	0
Zinc	9/9	39.6	99.1	J	TF2-003-SS1016-000.9	62.2	2300	0	31000	0	0	0

Each of the TAL metals was detected above reporting limits. Six metals (aluminum, arsenic, cobalt, iron, manganese, and thallium) were detected at concentrations above one or more criteria. Only arsenic was detected above all criteria in all 9 samples; arsenic concentrations exceeded the residential RSL (0.61 mg/kg), industrial RSL (2.4 mg/kg), and protection of groundwater SSL (0.026 mg/kg). Arsenic concentrations range from 4.9 to 8.9 mg/kg in the samples in this group. Cobalt and iron concentrations detected exceeded both the residential RSL (2.3 mg/kg and 5500 mg/kg, respectively) and the protection of groundwater SSL (4.2 mg/kg and 5400 mg/kg, respectively) in all nine samples in the sample group. Aluminum concentrations exceeded the residential RSL only. Thallium concentrations exceeded the residential RSL only (0.078 mg/kg) and in only one sample (TF2-003-SS1016-000.9) at 0.1 mg/kg. Manganese exceeded the residential RSL (180 mg/kg) in all 9 samples, and exceeded the protection of groundwater SSL (420 mg/kg) in three samples.

4.3.3 PAHs in AOC-003 Surface Soil Samples

The following table presents data summary statistics for PAHs detected in the surface soil samples. Concentrations are reported in units of µg/kg.

Parameter	Frequency of Detection	Minimum Detection		Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
							Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
2-Methylnaphthalene	4/9	4.3	J	23	TF2-003-SS1012-000.7	14	23000	0	220000	0	2800	0
Acenaphthene	9/9	4.7	J	160	TF2-003-SS1013-000.7	44	340000	0	3300000	0	82000	0
Acenaphthylene	7/9	1.4	J	5J	TF2-003-SS1012-000.7	2.8	340000	0	3300000	0	82000	0
Anthracene	9/9	9	J	310	TF2-003-SS1013-000.7	88	1700000	0	17000000	0	840000	0
Benzo(a)anthracene	9/9	63	J	740	TF2-003-SS1013-000.7	310	150	6	2100	0	200	4
Benzo(a)pyrene	9/9	38	J	580J	TF2-003-SS1013-000.7	210	15	9	210	3	70	3
Benzo(b) fluoranthene	9/9	58	J	840J	TF2-003-SS1013-000.7	310	150	7	2100	0	700	1
Benzo(g,h,i)perylene	9/9	18	J	200J	TF2-003-SS1013-000.7	82	170000	0	1700000	0	190000	0
Benzo(k) fluoranthene	9/9	18	J	300	TF2-003-SS1013-000.7	110	1500	0	21000	0	7000	0
Chrysene	9/9	56		750	TF2-003-SS1013-000.7	300	15000	0	210000	0	22000	0
Dibenzo(a,h) anthracene	9/9	11	J	110	TF2-003-SS1013-000.7	49	15	8	210	0	220	0
Fluoranthene	9/9	100		1900	TF2-003-SS1013-000.7	700	230000	0	2200000	0	1400000	0
Fluorene	8/9	4.1	J	140	TF2-003-SS1013-000.7	46	230000	0	2200000	0	80000	0
Indeno(1,2,3-cd) pyrene	9/9	53	J	630J	TF2-003-SS1012-000.7	250	150	5	2100	0	4000	0
Naphthalene	5/9	2.9	J	70	TF2-003-SS1012-000.7	37	3600	0	18000	0	9.4	3
Phenanthrene	9/9	78		1700	TF2-003-SS1013-000.7	520	170000	0	1700000	0	190000	0
Pyrene	9/9	130		2000	TF2-003-SS1013-000.7	660	170000	0	1700000	0	190000	0

Each of the 17 PAHs was detected in this area. The majority of PAHs were detected in all 9 samples. Of the 17 PAHs detected, five were detected at concentrations above the residential RSL, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)phenanthrene. One PAH (benzo(a)pyrene) was detected above industrial RSL and four PAHs were detected above the protection of groundwater SSL (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and naphthalene). Maximum PAH concentrations were detected in soil samples collected in samples TF2-003-SB1012-000.7 or TF2-003-SB1013-000.7.

4.3.4 Petroleum Hydrocarbons in AOC-003 Surface Soil Samples

In this sample group, one sample was analyzed for ExTPH and GRO. GRO was not detected. The sample contained 48 mg/kg of ExTPH. The concentration of ExTPH was well below the RIDEM residential DEC of 500 mg/kg.

4.3.5 Dioxin in AOC-003 Subsurface Soil Samples

The following table presents data summary statistics for dioxin (as Total TEQ) detected in subsurface soil samples. All concentrations are in units of ng/kg. The TEQ value was compared to the PSL in the SAP (Tetra Tech, 2013) and the protection of groundwater SSL. Table 4-4 presents individual congener results for subsurface soil samples collected from AOC-003.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	PSL from SAP		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances
Total TEQ	10/10	0.56	11.7	TF2-003-SB1017-011.6	4.6	4.2	5	5.2	4

As shown on the above table, the total TEQ PSL (4.2 ng/kg) was exceeded in 5 of the 10 samples and the protection of groundwater SSL (5.2 ng/kg) was exceeded in 4 of the 10 samples in the sample group. The highest concentration (11.7 ng/kg) was detected in sample TF2-003-SB1017-011.6.

4.3.6 Metals in AOC-003 Subsurface Soil Samples

The following table presents data summary statistics for TAL metals detected in subsurface soil samples. Concentrations are reported in units of mg/kg.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Aluminum	17/17	10400	14700	TF2-003-SB1011-0204	12100	7700	17	99000	0	460000	0
Antimony	16/17	0.06J	0.31J	TF2-003-SB1014-0204	0.13	3.1	0	41	0	5.4	0
Arsenic	17/17	3.8	8.8	TF2-003-SB1017-011.6	5.9	0.61	17	2.4	17	0.026	17
Barium	17/17	11.5	28	TF2-003-SB1011-0204-D	16.8	1500	0	19000	0	2400	0
Beryllium	17/17	0.28	0.61	TF2-003-SB1017-0810	0.36	16	0	200	0	260	0
Cadmium	17/17	0.04J	0.19	TF2-003-SB1012-0204	0.12	7	0	80	0	10.4	0
Calcium	17/17	511	1520	TF2-003-SB1014-0204	992	na	na	na	na	na	na
Chromium	17/17	12.9	19.2	TF2-003-SB1011-0204	15.5	na	na	na	na	na	na

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Cobalt	17/17	6.1	15.2	TF2-003-SB1017-011.6	10.2	2.3	17	30	0	4.2	17
Copper	17/17	11.7J	46J	TF2-003-SB1017-011.6	19.7	310	0	4100	0	440	0
Iron	17/17	19400	32000	TF2-003-SB1017-011.6	24700	5500	17	72000	0	5400	17
Lead	17/17	9.4	27.4	TF2-003-SB1011-0204-D	15.4	400	0	800	0	na	na
Magnesium	17/17	3300	5130	TF2-003-SB1011-0204	4050	na	na	na	na	na	na
Manganese	17/17	179	464	TF2-003-SB1017-0810	308	180	16	2300	0	420	1
Mercury	3/17	0.05	0.09	TF2-003-SB1017-011.6	0.07	1	0	4.3	0	0.66	0
Nickel	17/17	15.4	27.5	TF2-003-SB1017-011.6	20	150	0	2000	0	400	0
Potassium	17/17	264J	628	TF2-003-SB1013-0405	421	na	na	na	na	na	na
Selenium	17/17	0.16J	0.47	TF2-003-SB1017-0810	0.27	39	0	510	0	8	0
Silver	17/17	0.02J	0.05J	TF2-003-SB1017-0810; -SB1011-0204; -SB1012-0204	0.037	39	0	510	0	12	0
Sodium	4/17	52.4J	84.4	TF2-003-SB1013-0405	63.2	na	na	na	na	na	na
Thallium	17/17	0.02J	0.07J	TF2-003-SB1013-0405	0.041	0.078	0	1	0	0.22	0
Vanadium	17/17	12.8	19.6	TF2-003-SB1017-0810	15.6	39	0	510	0	1260	0
Zinc	17/17	37.4	69.5	TF2-003-SB1011-0204-D	50.9	2300	0	31000	0	5800	0

Each of the TAL metals was detected above reporting limits. Five metals (aluminum, arsenic, cobalt, iron, and manganese) exceeded one or more criteria. Only arsenic was detected above all criteria in all 17 samples; arsenic concentrations exceeded the residential RSL (0.61 mg/kg), the industrial RSL (2.4 mg/kg) and the protection of groundwater SSL (0.026 mg/kg). Arsenic was the only metals detected above the industrial RSL. Arsenic concentrations range from 3.8 to 8.8 mg/kg in the samples in this group. Cobalt, iron, and manganese concentrations were detected above both the residential RSL and the protection of groundwater SSL. Aluminum concentrations exceeded the residential RSL only.

4.3.7 PAHs in AOC-003 Subsurface Soil Samples

The following table presents data summary statistics for PAHs detected in the subsurface soil samples. All concentrations are reported in units of µg/kg.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL	Protection of GW SSL		
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
2-Methylnaphthalene	6/17	3.8J	32J	TF2-003-SB1014-0810	11	23000	0	220000	0	2800	0
Acenaphthene	13/17	1.9J	320	TF2-003-SB1014-0810	62	340000	0	3300000	0	82000	0
Acenaphthylene	8/17	1.8	20J	TF2-003-SB1014-0810	6.3	340000	0	3300000	0	82000	0
Anthracene	16/17	1.7J	410	TF2-003-SB1014-0810	73	1700000	0	17000000	0	840000	0
Benzo(a)anthracene	17/17	3.7J	1100	TF2-003-SB1017-011.6	240	150	7	2100	0	200	7
Benzo(a)pyrene	16/17	3.6J	570J	TF2-003-SB1017-011.6	150	15	13	210	6	70	9
Benzo(b) fluoranthene	17/17	8.6J	980	TF2-003-SB1017-011.6	200	150	7	2100	0	700	1
Benzo(g,h,i)perylene	15/17	3.8J	240J	TF2-003-SB1017-011.6	71	170000	0	1700000	0	190000	0
Benzo(k) fluoranthene	14/17	8.7J	350J	TF2-003-SB1019-0204	90	1500	0	21000	0	7000	0
Chrysene	17/17	4.4J	1100	TF2-003-SB1017-011.6	250	15000	0	210000	0	22000	0
Dibenzo(a,h) anthracene	16/17	2.1J	98	TF2-003-SB1017-011.6	32	15	9	210	0	220	0
Fluoranthene	17/17	6.5J	1600	TF2-003-SB1017-011.6	400	230000	0	2200000	0	1400000	0
Fluorene	12/17	4J	170	TF2-003-SB1014-0810	31	230000	0	2200000	0	80000	0
Indeno(1,2,3-cd) pyrene	17/17	4.8	400	TF2-003-SB1017-011.6	100	150	6	2100	0	4000	0
Naphthalene	8/17	3.4J	20J	TF2-003-SB1011-0204	7.2	3600	0	18000	0	9.4	2
Phenanthrene	17/17	3.5J	1500	TF2-003-SB1017-011.6; -SB1014-0810	420	1700000	0	17000000	0	190000	0
Pyrene	17/17	7.4J	2500	TF2-003-SB1017-011.6	550	170000	0	1700000	0	190000	0

Each of the 17 PAHs was detected in soil samples collected from this area. The majority of PAHs were detected in each of the 17 samples. Of the 17 PAHs detected, five were detected at concentrations above residential RSL, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)phenanthrene. One PAH (benzo(a)pyrene) was detected above industrial RSL and four PAHs were detected above the protection of groundwater SSL (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and naphthalene). The majority of the maximum PAH concentrations were detected in samples TF2-003-SB1017-011.6 or TF2-003-SB1014-0810.

4.3.8 Petroleum Hydrocarbons in AOC-003 Subsurface Soil Samples

In this sample group, two samples were analyzed for ExTPH and GRO. The samples contained 11 and 250 mg/kg of ExTPH. GRO was not detected. The concentrations of ExTPH (11 and 250 mg/kg) were well below the RIDEM residential DEC of 500 mg/kg.

4.3.9 AOC-003 Summary

The following compounds were detected in at least one surface soil sample collected at AOC-003 at concentrations above the indicated screening level(s).

AOC-003 Surface Soil Compound	Residential RSL	Industrial RSL	Protection of GW SSL	PSL
Total TEQ	NA	NA	X	X
aluminum	X	--	--	NA
arsenic	X	X	X	NA
cobalt	X	--	X	NA
iron	X	--	X	NA
manganese	X	--	X	NA
thallium	X	--	--	NA
benzo(a)anthracene	X	--	X	NA
benzo(a)pyrene	X	X	X	NA
benzo(b)fluoranthene	X	--	X	NA
dibenzo(a,h)anthracene	X	--	--	NA
indeno(1,2,3-cd)pyrene	X	--	--	NA
naphthalene	--	--	X	NA

Note: NA indicates not applicable

The following compounds were detected in at least one subsurface soil sample collected at AOC-003 at concentrations above the indicated screening level(s).

AOC-003 Subsurface Soil Compound	Residential RSL	Industrial RSL	Protection of GW SSL	PSL
Total TEQ	NA	NA	X	X
aluminum	X	--	--	NA
arsenic	X	X	X	NA
cobalt	X	--	X	NA
iron	X	--	X	NA
manganese	X	--	X	NA
thallium	X	--	--	NA

AOC-003 Subsurface Soil Compound	Residential RSL	Industrial RSL	Protection of GW SSL	PSL
benzo(a)anthracene	X	--	X	NA
benzo(a)pyrene	X	X	X	NA
benzo(b)fluoranthene	X	--	X	NA
dibenzo(a,h)anthracene	X	--	--	NA
indeno(1,2,3-cd)pyrene	X	--	--	NA
naphthalene	--	--	X	NA

Note: NA indicates not applicable

Dioxin (Total TEQ) exceeded the criteria (the protection of groundwater SSL and/or the PSL) in a majority of surface soil samples in AOC-003. In subsurface soil, the dioxin PSL was exceeded in 5 of 10 samples and the protection of groundwater SSL was exceeded in 4 of 10 samples.

Six metals exceeded one or more criteria, including aluminum, arsenic, cobalt, iron, manganese, and thallium. However, only arsenic was detected above the three screening criteria in all surface and subsurface soil samples collected. Each of the six metals (except thallium) was above screening criteria in a majority of samples. The dataset to dataset comparison of background soil data for metals to metals detected in Tank Farm 2 soils (Appendix G) indicate that the concentrations of aluminum and arsenic in the surface soil and manganese in the subsurface soil are consistent with background concentrations. However, aluminum and arsenic in subsurface soil and manganese in surface soil are statistically greater than background levels. Cobalt and iron are the remaining metals that were consistently above screening criteria. A pattern to the metals distribution was not noted.

Six PAHs were detected above one or more criteria, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)phenanthrene, and naphthalene. Each of the maximum PAH concentrations in the surface soil were detected in soil sample TF2-003-SS1012-000.7 or TF2-003-SS1013-000.7. In the subsurface soil group, the majority of maximum detections for the compounds that exceeded criteria were detected in soil sample TF2-003-SB1017-011.6.

A total of three soil sample were analyzed for petroleum hydrocarbons. ExTPH was detected in the three samples at concentrations well below the RIDEM residential DEC of 500 mg/kg.

4.4 NATURE AND EXTENT OF CONTAMINATION IN AOC-004/5

AOC-004/5 is governed by CERCLA because contaminants found within this area are associated with the burning of tank sludge. Therefore, AOC-004/5 is considered a Category 1 Area. The investigation of Category 1 DUs included the collection and analysis of surface soil and subsurface soil samples. The following sections summarize the data for surface soil and subsurface as part of the investigation of AOC-004/5. Sample locations are presented on Figure 2-3.

Sample location identifiers include the site identifier (TF2), the area the sample is located (004/5 for AOC-004/5) the sample matrix (SS or SB), the sample location (i.e., 1092), and the sample collection depth interval for soil (i.e., -0001 for 0 to 1 foot bgs).

During the investigation of AOC-004/5, soil was collected from 49 locations. Soil borings were advanced and samples collected as described in Section 2.1 of this report. Surface soil was defined as soil collected from 0 to 1 foot bgs. Similarly, subsurface soil was defined as soil collected from 1 to 10 feet bgs or to top of bedrock, whichever is shallower. Surface and subsurface soil are described separately in the sections that follow.

Surface and subsurface soil samples were collected for laboratory analysis for PAHs, dioxins/furans, and TAL metals. Up to 10 percent of the samples were also analyzed for GRO and ExTPH. Dioxins/furans analysis was not performed on samples collected from between 4 and 10 feet bgs. A complete list of results for analytes detected in AOC-004/5 surface soil and subsurface soil samples are summarized in Tables 4-5 and 4-6, respectively. A complete list of results for all analytes that were analyzed in AOC-004/5 soil samples is provided in Appendix E. Soil results are compared against USEPA RSLs for residential soils and industrial soils and the protection of groundwater SSLs. Figures 4-11 through 4-15 present locations of soil samples and concentrations of select metals, PAHs, and dioxin that exceeded screening criteria. Metals, PAHs, and total TEQ (dioxin) were selected for presentation on these figures if they exceeded residential RSLs.

4.4.1 Dioxin in AOC-004/5 Surface Soil

The following table presents data summary statistics for dioxin (as Total TEQ) detected in surface soil samples. All concentrations are in units of ng/kg. The TEQ value was compared to the PSL in the SAP (Tetra Tech, 2013) and the protection of groundwater SSL. Table 4-5 presents individual congener results for surface soil samples collected from AOC-004/5.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	PSL from SAP		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances
Total TEQ	49/49	1.5	31	TF2-004/5-SS1047-000.8	6.6	4.2	29	5.2	25

As shown on the above table, the total TEQ PSL (4.2 ng/kg) was exceeded in 29 of 49 samples and the protection of groundwater SSL (5.2 ng/kg) was exceeded in 25 of 49 samples in the sample group. The highest concentration (31 ng/kg) was detected in sample TF2-004/5-SS1047-000.8.

4.4.2 Metals in AOC-004/5 Surface Soil Samples

The following table presents data summary statistics for TAL metals detected in surface soil samples. Concentrations are reported in mg/kg.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Aluminum	49/49	4950	18200	TF2-004/5-SS1043-0.10.5; -SS1035-0001	12800	7700	47	99000	0	460000	0
Antimony	48/49	0.05J	6.6J	TF2-004/5-SS1056-000.6	0.44	3.1	1	41	0	5.4	1
Arsenic	49/49	2.2	11.4	TF2-004/5-SS1044-000.5	7.02	0.61	49	2.4	48	0.026	49
Barium	49/49	11.3J	169J	TF2-004/5-SS1039-000.9	19.2	1500	0	19000	0	2400	0
Beryllium	49/49	0.23	1.3J	TF2-004/5-SS1065-000.5-D	0.42	16	0	200	0	260	0
Cadmium	49/49	0.05J	0.1	TF2-004/5-SS1045-000.5; -SS1047-000.8; -SS1049-000.9;-SS1048-000.8; -SS1039-000.9; SS1061-000.6-D; - SS1066-000.9	0.078	7	0	80	0	10.4	0
Calcium	49/49	307J	1190J	TF2-004/5-SS1055-000.8	660	na	na	na	na	na	na
Chromium	49/49	7.1	24.4J	TF2-004/5-SS1035-0001	17.5	na	na	na	na	na	na
Cobalt	49/49	3.3J	16.4	TF2-004/5-SS1058-000.5	10.6	2.3	49	30	0	4.2	48
Copper	49/49	7.8	39.9	TF2-004/5-SS1063-000.6	21.3	310	0	4100	0	440	0
Iron	49/49	9760	37800	TF2-004/5-SS1035-0001	25000	5500	49	72000	0	5400	49
Lead	49/49	7.6	66.3	TF2-004/5-SS1024-000.6	26.4	400	0	800	0		
Magnesium	49/49	1520J	6180	TF2-004/5-SS1043-0.10.5	3830	na	na	na	na	na	na
Manganese	49/49	155J	498J	TF2-004/5-SS1022-000.9	262	180	47	2300	0	420	1
Mercury	36/49	0.005J	0.08J	TF2-004/5-SS1060-000.5	0.04	1	0	4.3	0	0.66	0

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Nickel	49/49	9.2	53	TF2-004/5-SS1039-000.9	21	150	0	2000	0	400	0
Potassium	49/49	258	504	TF2-004/5-SS1032-000.9	368	na	na	na	na	na	na
Selenium	9/49	0.28J	0.39J	TF2-004/5-SS1056-000.6; TF2-004/5-SS1054-000.6	0.32	39	0	510	0	8	0
Silver	49/49	0.02J	0.22	TF2-004/5-SS1044-000.5	0.049	39	0	510	0	12	0
Sodium	8/49	19.1J	30.6J	TF2-004/5-SS1062-000.8	25.3	na	na	na	na	na	na
Thallium	36/49	0.03J	0.08	TF2-004/5-SS1047-000.8	0.049	0.078	1	1	0	0.22	0
Vanadium	49/49	9	35.2	TF2-004/5-SS1035-0001	23.2	39	0	510	0	1260	0
Zinc	49/49	21.7	71.9J	TF2-004/5-SS1035-0001	50.8	2300	0	31000	0	5800	0

Each of the TAL metals was detected above reporting limits. Seven metals (aluminum, antimony, arsenic, cobalt, iron, manganese, and thallium) exceeded one or more criteria. Arsenic concentrations exceeded the residential (0.61 mg/kg) and the industrial (2.4 mg/kg) RSLs and the protection of groundwater SSL (0.026 mg/kg), in all samples except one where the industrial RSL was not exceeded. Arsenic concentrations range from 2.2 to 11.4 mg/kg in the samples in this group. Cobalt and iron concentrations exceeded the residential RSL (2.3 mg/kg and 5500 mg/kg, respectively) and the protection of groundwater SSL (4.2 mg/kg and 5400 mg/kg, respectively) in each of the samples in this group. Aluminum concentrations exceeded the residential RSL only. Thallium concentrations exceeded the residential RSL only (0.078 mg/kg) and in only one sample (TF2-004/5-SS1047-000.8) at 0.08 mg/kg. Antimony concentrations exceeded the residential RSL (3.1 mg/kg) and the protection of groundwater SSL (5.4 mg/kg) only and in only one sample (TF2-004/5-SS1056-000.6) at an estimated concentration of 6.6 mg/kg. Manganese exceeded the residential RSL (180 mg/kg) in 47 samples, and exceeded the protection of groundwater SSL (420 mg/kg) in one sample.

4.4.3 PAHs in AOC-004/5 Surface Soil Samples

The following table presents data summary statistics for PAHs detected in the surface soil samples. Concentrations are in units of µg/kg.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
2-Methylnaphthalene	6/49	2.2J	72	TF2-004/5-SS1047-000.8	22	23000	0	220000	0	2800	0
Acenaphthene	34/49	1.6J	300	TF2-004/5-SS1021-000.7	22	340000	0	3300000	0	82000	0
Acenaphthylene	25/49	1.3J	11J	TF2-004/5-SS1048-000.8	3.8	340000	0	3300000	0	82000	0
Anthracene	45/49	1.4 J	650	TF2-004/5-SS1021-000.7	39	1700000	0	17000000	0	840000	0
Benzo(a) anthracene	48/49	2.9J	1500	TF2-004/5-SS1021-000.7	100	150	6	2100	0	200	6
Benzo(a)pyrene	48/49	5.7J	1200	TF2-004/5-SS1021-000.7	87	15	40	210	2	70	13
Benzo(b) fluoranthene	49/49	5.2J	2000	TF2-004/5-SS1021-000.7	140	150	12	2100	0	700	1
Benzo(g,h,i) perylene	48/49	2.8J	540	TF2-004/5-SS1021-000.7	38	170000	0	1700000	0	190000	0
Benzo(k) fluoranthene	48/49	4.3J	660	TF2-004/5-SS1021-000.7	51	1500	0	21000	0	7000	0
Chrysene	49/49	4.4J	1800	TF2-004/5-SS1021-000.7	120	15000	0	210000	0	22000	0
Dibenzo(a,h) anthracene	47/49	1.8J	210	TF2-004/5-SS1021-000.7	19	15	14	210	0	220	0
Fluoranthene	49/49	8.2J	3700	TF2-004/5-SS1021-000.7	240	230000	0	2200000	0	1400000	0
Fluorene	19/49	3.5J	230	TF2-004/5-SS1021-000.7	33	230000	0	2200000	0	80000	0
Indeno(1,2,3-cd) pyrene	46/49	2.4J	830	TF2-004/5-SS1021-000.7	72	150	2	2100	0	4000	0
Naphthalene	8/49	3J	96	TF2-004/5-SS1047-000.8	29	3600	0	18000	0	9.4	6
Phenanthrene	48/49	3.4J	2800	TF2-004/5-SS1021-000.7	170	170000	0	1700000	0	190000	0
Pyrene	49/49	6.5J	3400	TF2-004/5-SS1021-000.7	210	170000	0	1700000	0	190000	0

Each of the 17 PAHs was detected in this area. Of the 17 PAHs detected, five were detected at concentrations above residential RSL, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)phenanthrene. One PAH (benzo(a)pyrene) was detected above industrial RSL and four PAHs (benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and naphthalene) were detected above the protection of groundwater SSL. All but three of the maximum PAH concentrations were detected in sample TF2-004/5-SS1021-000.7.

4.4.4 Petroleum Hydrocarbons in AOC-004/5 Surface Soil Samples

The following table presents data summary statistics for TPHs detected in surface soil samples. Concentrations are in units of mg/kg.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	RIDEM Residential DEC		RIDEM Industrial DEC	
						Criterion	Exceedances	Criterion	Exceedances
ExTPH(C08-C44)	7/7	15J	160J	TF2-004/5-SS1049-000.9	61	500	0	2500	0
GRO(C05-C12)	3/7	2.4J	9.4J	TF2-004/5-SS1020-0001-D	5.2	500	0	2500	0

In this sample group, 7 samples were analyzed for GRO and ExTPH. ExTPH was detected in all of the samples and GRO was detected in three of the samples. ExTPH was detected in the soil samples at concentrations between 15 and 160 mg/kg and detected GRO concentrations ranged from 2.4 to 9.4 mg/kg. The concentrations of GRO and ExTPH were well below the RIDEM residential DEC of 500 mg/kg.

4.4.5 Dioxin in AOC-004/5 Subsurface Soil Samples

The following table presents data summary statistics for dioxin (as Total TEQ) detected in subsurface soil samples. Concentrations are reported in units of ng/kg. The TEQ value was compared to the PSL in the SAP (Tetra Tech, 2013) and the protection of groundwater SSL. Table 4-6 presents individual congener results for subsurface soil samples collected from AOC-004/5.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	PSL from SAP		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances
Total TEQ	17/17	0.55	5.0	TF2-004/5-SB1066-0203	1.5	4.2	1	5.2	0

As shown on the above table, the total TEQ PSL (4.2 ng/kg) was exceeded in 1 of the 17 samples. Concentrations did not exceed the protection of groundwater SSL (5.2 ng/kg). The highest concentration (5.0 ng/kg) was detected in sample TF2-004/5-SB1066-0203.

4.4.6 Metals in AOC-004/5 Subsurface Soil Samples

The following table presents data summary statistics for TAL metals detected in subsurface soil samples. All concentrations are in units of mg/kg.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Aluminum	27/27	9450	20700	TF2-004/5-SB1021-0608	14900	7700	27	99000	0	460000	0
Antimony	8/27	0.04J	0.15J	TF2-004/5-SB1026-022.7	0.081	3.1	0	41	0	5.4	0
Arsenic	27/27	2.8	13.4J	TF2-004/5-SB1021-0608	6.69	0.61	27	2.4	27	0.026	27
Barium	27/27	7.7	20.9	TF2-004/5-SB1066-0203	13.7	1500	0	19000	0	2400	0
Beryllium	27/27	0.25	1.3J	TF2-004/5-SB1057-0608	0.43	16	0	200	0	260	0
Cadmium	27/27	0.05J	0.17	TF2-004/5-SB1066-0203	0.071	7	0	80	0	10.4	0
Calcium	27/27	101J	880	TF2-004/5-SB1032-0204	629	na	na	na	na	na	na
Chromium	27/27	11.7J	28.8J	TF2-004/5-SB1021-0608	18.8	na	na	na	na	na	na
Cobalt	27/27	6.5	26.3	TF2-004/5-SB1065-0608	12.7	2.3	27	30	0	4.2	27
Copper	27/27	8.8	63.9J	TF2-004/5-SB1021-0608	21.3	310	0	4100	0	440	0
Iron	27/27	15200	45200	TF2-004/5-SB1021-0608	28900	5500	27	72000	0	5400	27
Lead	27/27	6.3	39.5	TF2-004/5-SB1066-0203	13.6	400	0	800	0	na	na
Magnesium	27/27	2700	7150	TF2-004/5-SB1058-0204	4630	na	na	na	na	na	na
Manganese	27/27	199	467	TF2-004/5-SB1065-0608	286	180	27	2300	0	420	2
Mercury	20/27	0.004J	0.17	TF2-004/5-SB1032-0204	0.037	1	0	4.3	0	0.66	0
Nickel	27/27	11.5	51.8J	TF2-004/5-SB1021-0608	22.9	150	0	2000	0	400	0
Potassium	27/27	184	588	TF2-004/5-SB1057-0304	357	na	na	na	na	na	na
Selenium	11/27	0.05J	0.86	TF2-004/5-SB1057-0304	0.23	390	0	5100	0	8	0
Silver	22/27	0.01J	0.05J	TF2-004/5-SB1066-0203	0.023	39	0	510	0	12	0
Sodium	6/27	19.2J	28J	TF2-004/5-SB1025-2.604	22.9	na	na	na	na	na	na
Thallium	12/27	0.02J	0.25	TF2-004/5-SB1057-0304	0.068	0.078	2	1	0	0.22	1
Vanadium	27/27	13.4	29.1	TF2-004/5-SB1031-0810	17.5	39	0	510	0	1260	0
Zinc	27/27	25.1	129J	TF2-004/5-SB1021-0608	52.3	2300	0	31000	0	5800	0

Each of the TAL metals was detected above reporting limits. Six metals (aluminum, arsenic, cobalt, iron, manganese, and thallium) exceeded one or more criteria. Only arsenic was detected above all criteria in all 27 samples; arsenic concentrations exceeded the residential RSL (0.61 mg/kg) and the industrial RSL (2.4 mg/kg), and the protection of groundwater SSL (0.026 mg/kg). Arsenic was the only metal detected above the industrial RSL. Arsenic concentrations range from 2.8 to 13.4 mg/kg in the samples collected from this group. Cobalt was detected at concentrations above the residential RSL (2.3 mg/kg) and the protection of groundwater SSL (4.2 mg/kg) in all 27 samples in the sample group. Iron was also detected at concentrations above the residential RSL (5500 mg/kg) and the protection of groundwater SSL (5400 mg/kg) in all 27 samples. Aluminum concentrations exceeded the residential RSL only. Thallium concentrations exceeded the residential RSL (0.078 mg/kg) and the protection of groundwater SSL (0.22 mg/kg) only and in only one sample (TF2-004/5-SB1057-0304) at 0.25 mg/kg. Manganese exceeded

the residential RSL (180 mg/kg) in all 27 samples, and exceeded the protection of groundwater SSL (420 mg/kg) in two samples.

4.4.7 PAHs in AOC-004/5 Subsurface Soil Samples

The following table presents data summary statistics for PAHs detected in the subsurface soil samples. Concentrations are in units of µg/kg.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
2-Methylnaphthalene	4/27	3.3J	4.8J	TF2-004/5-SB1021-0204	3.8	23000	0	220000	0	2800	0
Acenaphthene	5/27	1.8J	32	TF2-004/5-SB1065-0204	13	340000	0	3300000	0	82000	0
Acenaphthylene	5/27	1.9J	6.3J	TF2-004/5-SB1066-0203	3.6	340000	0	3300000	0	82000	0
Anthracene	5/27	2.6J	35	TF2-004/5-SB1066-0203	20	1700000	0	17000000	0	840000	0
Benzo(a)anthracene	23/27	2J	170	TF2-004/5-SB1066-0203	18	150	1	2100	0	200	0
Benzo(a)pyrene	11/27	3.5J	140	TF2-004/5-SB1066-0203	28	15	3	210	0	70	2
Benzo(b)fluoranthene	25/27	7.1J	210	TF2-004/5-SB1066-0203	25	150	1	2100	0	700	0
Benzo(g,h,i)perylene	11/27	2.2J	66	TF2-004/5-SB1066-0203	14	170000	0	1700000	0	190000	0
Benzo(k)fluoranthene	7/27	3.5J	62	TF2-004/5-SB1066-0203	20	1500	0	21000	0	7000	0
Chrysene	24/27	1.9J	160	TF2-004/5-SB1066-0203	17	15000	0	210000	0	22000	0
Dibenzo(a,h) anthracene	10/27	7.1J	33J	TF2-004/5-SB1066-0203	12	15	2	210	0	220	0
Fluoranthene	14/27	2.1J	300	TF2-004/5-SB1066-0203	53	230000	0	2200000	0	1400000	0
Fluorene	3/27	7.3J	15J	TF2-004/5-SB1066-0203	11	230000	0	2200000	0	80000	0
Indeno(1,2,3-cd) pyrene	20/27	4J	160J	TF2-004/5-SB1066-0203	20	150	1	2100	0	4000	0
Phenanthrene	10/27	2.2J	170	TF2-004/5-SB1066-0203	40	170000	0	1700000	0	190000	0

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Pyrene	13/27	3.2J	240	TF2-004/5-SB1066-0203	49	170000	0	1700000	0	190000	0

Sixteen of the 17 PAHs (all but naphthalene) were detected in soil samples collected from this area. Of the 16 PAHs detected, five were detected at concentrations above residential RSL, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)phenanthrene. One PAH (benzo(a)pyrene) was detected above the protection of groundwater SSL. PAH concentrations did not exceed the industrial RSLs. The majority of the maximum PAH concentrations were detected in soil sample TF2-004/5-SB1066-0203.

4.4.8 Petroleum Hydrocarbons in AOC-004/5 Subsurface Soil Samples

In this sample group, four samples were analyzed for GRO and ExTPH. GRO was not detected. ExTPH was detected in 3 of the 4 samples at concentrations ranging from 6.1 and 15 mg/kg. Therefore, concentrations are well below the RIDEM residential DEC of 500 mg/kg.

4.4.9 AOC-004/005 Summary

The following compounds were detected in at least one surface soil sample collected at AOC-004/5 at concentrations above the indicated screening level(s).

AOC-004/5 Surface Soil Compound	Residential RSL	Industrial RSL	Protection of GW SSL	PSL
Total TEQ	NA	NA	X	X
aluminum	X	--	--	NA
arsenic	X	X	X	NA
cobalt	X	--	X	NA
iron	X	--	X	NA
manganese	X	--	X	NA
thallium	X	--	--	NA
benzo(a)anthracene	X	--	X	NA

AOC-004/5 Surface Soil Compound	Residential RSL	Industrial RSL	Protection of GW SSL	PSL
benzo(a)pyrene	X	X	X	NA
benzo(b)fluoranthene	X	--	X	NA
dibenzo(a,h)anthracene	X	--	--	NA
indeno(1,2,3-cd)pyrene	X	--	--	NA
naphthalene	--	--	X	NA

Note: NA indicates not applicable

The following compounds were detected in at least one subsurface soil samples collected at AOC-004/5 at concentrations above the indicated screening level(s).

AOC-004/5 Subsurface Soil Compound	Residential RSL	Industrial RSL	Protection of GW SSL	PSL
Total TEQ	NA	NA	--	X
aluminum	X	--	--	NA
arsenic	X	X	X	NA
cobalt	X	--	X	NA
iron	X	--	X	NA
manganese	X	--	X	NA
thallium	X	--	X	NA
benzo(a)anthracene	X	--	--	NA
benzo(a)pyrene	X	--	X	NA
benzo(b)fluoranthene	X	--	--	NA
dibenzo(a,h)anthracene	X	--	--	NA
indeno(1,2,3-cd)pyrene	X	--	--	NA

Note: NA indicates not applicable

Dioxin (as Total TEQ) exceeded the criteria (the protection of groundwater SSL and/or the PSL from the SAP) in the majority of surface soil samples and in 1 of 17 subsurface soil samples collected from AOC-004/5.

Seven metals (aluminum, antimony, arsenic, cobalt, iron, manganese, and thallium) exceeded one or more criteria. Arsenic was the only compounds detected above the industrial RSL; arsenic was above all three

criteria (residential RSL, industrial RSL, and protection of groundwater SSL) in all but one soil sample. Aluminum, arsenic, manganese, cobalt, and iron were detected in all samples above one or more criteria. Thallium was rarely detected above any of the criteria. The statistical comparison of metals in background soil to metals detected in Tank Farm 2 soils (Appendix G) indicate that the concentrations of aluminum and arsenic in the surface soil and concentrations of manganese in the subsurface soil are consistent with background concentrations. However, aluminum and arsenic in subsurface soil and manganese in surface soil are statistically greater than background levels. Cobalt and iron are the remaining metals that were consistently above screening criteria. A pattern to the metals distribution was not noted.

Six PAHs were detected above one or more criteria, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)phenanthrene, and naphthalene. The rate of criteria exceedances is much higher in the surface soil samples than in the subsurface soil samples. .

A total of eleven samples were analyzed for petroleum hydrocarbons. ExTPH and/or GRO were detected in the ten samples at concentrations well below the RIDEM residential DEC of 500 mg/kg.

4.5 NATURE AND EXTENT OF CONTAMINATION IN BUILDING 219

Building 219 is governed by CERCLA because PCBs are the contaminants found within this area. The investigation of Category 1 DUs included the collection and analysis of surface soil and subsurface soil samples. The following sections summarize the data for surface soil and subsurface as part of the investigation of Building 219. Sample locations are presented on Figure 2-4.

Sample location identifiers include the site identifier (TF2), the area the sample is located (B219 for Building 219) the sample matrix (SS or SB), the sample location (i.e., 1080), and the sample collection depth interval for soil (i.e., -0001 for 0 to 1 foot bgs). A sample where there was a field duplicate collected was counted once in the summary statistics.

During the investigation of Building 219, soil samples were collected from 10 borings. Soil borings were advanced and samples collected as described in Section 2.1 of this report. Surface soil was defined as soil collected from 0 to 1 foot bgs. Similarly, subsurface soil was defined as soil collected from 1 to 10 feet bgs or to top of bedrock, whichever is shallower. Surface and subsurface samples were collected from each boring, except the borings located adjacent to samples collected in 2005 where only subsurface samples were collected. In these borings, the 2005 surface soil data are used for characterization. Surface and subsurface soil are described separately in the sections that follow.

Surface and subsurface soil samples were collected for laboratory analysis of PCBs. A complete list of results for analytes detected in Building 219 surface and subsurface soil samples are shown in Tables 4-7

and 4-8, respectively. A complete list of results for all analytes that were analyzed in Building 219 surface and subsurface soil samples is provided in Appendix E. Soil results are compared against USEPA RSLs for residential soils and industrial soils and the protection of groundwater SSL. Figures 4-16 and 4-17 present the summary of PCB concentrations in surface soil and subsurface soil, respectively.

4.5.1 PCBs in Building 219 Surface Soil Samples

The following table presents the summary statistics of the compounds detected in surface soil around Building 219. The concentrations are presented in µg/kg.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Aroclor-1260	12/12	24	18000	TF2-B219-1-0001	3780	220	9	740	7	480	8

Aroclor-1260 was detected in all 12 surface soil samples collected adjacent to Building 219. The Aroclor-1260 concentrations ranged from 24 to 18000 µg/kg. Nine of the samples exceeded the residential RSL, 7 exceeded the industrial RSL, and 8 exceeded the protection of groundwater SSL, as shown on the table above.

4.5.2 PCBs in Building 219 Subsurface Soil Samples

The following table presents the summary statistics of the compounds detected in subsurface soil around Building 219. The concentrations are presented in µg/kg.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Aroclor-1260	3/10	25	110	TF2-B219-SB1081-0204	73.5	220	0	740	0	480	0

Aroclor-1260 was detected in 3 of the 10 subsurface soil samples collected around Building 219. The concentrations ranged from 25 to 110 µg/kg, well below the residential and industrial RSLs and the protection of groundwater SSL.

4.5.3 Building 219 Summary

PCB (Aroclor-1260) was detected in surface and subsurface soil samples collected at Building 219. However, concentrations of Aroclor-1260 exceeding the criteria were limited to surface soil (0 to 1 foot bgs). Concentrations of Aroclor-1260 detected in the surface soil exceeded the residential RSL criteria in 10 of the 12 samples, and exceeded the industrial RSL criteria in 7 of 12 samples... The distribution of Aroclor-1260 indicates that the higher concentrations are present on the north, west and south sides of B219 and concentrations decrease with distance from the building (Figure 4-16), indicating that a release of PCBs has occurred near Building 219.

4.6 NATURE AND EXTENT OF CONTAMINATION IN THE FORMER BUOY STORAGE AREA

The former BSA is governed by CERCLA because of the potential for lead in the soil due to the former storage of buoys observed on historical aerial photography within this area. The investigation of this area included the collection and analysis of surface soil and subsurface soil samples. The following sections summarize the data for surface soil and subsurface as part of the investigation of the former BSA. Sample locations are presented on Figure 2-5.

Sample location identifiers include the site identifier (TF2), the area the sample is located (BSA for Buoy Storage Area) the sample matrix (SS or SB), the sample location (i.e., 1097), and the sample collection depth interval for soil (i.e., -0001 for 0 to 1 foot bgs). A sample where there was a field duplicate collected was counted once in the summary statistics.

During the investigation of the former BSA, soil was collected from eight borings. Soil borings were advanced and samples collected as described in Section 2.1 of this report. Surface soil was defined as soil collected from 0 to 1 foot bgs. Similarly, subsurface soil was defined as soil collected from 1 to 10 feet bgs or to top of bedrock, whichever is shallower. Based upon the nature of the suspected release, subsurface samples were collected from 2 to 4 feet bgs. Surface and subsurface soil samples were collected from each boring.

Surface and subsurface soil samples were collected for laboratory analysis of lead. A complete list of results for analytes detected in the former BSA surface and subsurface soil samples are shown on Tables 4-9 and 4-10, respectively. A complete list of results for all analytes that were analyzed in former BSA soil samples can be found in Appendix E. Soil results are compared against USEPA RSLs for residential soils and industrial soils and the protection of groundwater SSL.

4.6.1 Lead in Buoy Storage Area Surface Soil

The following table presents the summary statistics of the lead results in surface soil at the BSA. The concentrations are presented in mg/kg.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Lead	8/8	15.5 J	73.8J	TF2-BSA-SB1097-0001	32.1	400	0	800	0	na	na

Lead was detected in 8 of the 8 surface soil samples collected from the former BSA at concentrations ranging from 16 to 74 mg/kg, well below the residential RSL of 400 mg/kg.

4.6.2 Lead in Buoy Storage Area Subsurface Soil

The following table presents the summary statistics of the lead results in subsurface soil at the BSA. The concentrations are presented in mg/kg.

Parameter	Frequency of Detection	Minimum Detection	Maximum Detection	Location of Maximum Detection	Average of Detections	Residential RSL		Industrial RSL		Protection of GW SSL	
						Criterion	Exceedances	Criterion	Exceedances	Criterion	Exceedances
Lead	7/7	10J	55.9J	TF2-BSA-SB1097-0204	24.8	400	0	800	0	na	na

Lead was detected in 7 of the 7 subsurface soil samples collected from the former BSA at concentrations ranging from 10 to 56 mg/kg, well below the residential RSL of 400 mg/kg.

4.6.3 Lead in Buoy Storage Area Summary

Lead concentrations did not exceed the most conservative screening criteria. These results suggest that storage of buoys in this area did not impact soil with lead.

4.7 CONCEPTUAL SITE MODEL

No surface water bodies or wetlands are located at Tank Farm 2. The nearest water body is a pond that is located approximately 400 to 500 feet east of the Tank Farm 2 boundary. This pond drains to the north northwest via a stream that drains into Melville Pond located about 2,000 feet north northwest of the Tank Farm 2. Storm drains or other storm water management infrastructure are not present at Tank Farm 2.

The Site is currently vacant and unused for the most part and, as such, human exposure to contaminated soil or groundwater is limited or non-existent. Fencing and locked gates restrict access to the Site. There is some limited hunting allowed by Department of Defense (DoD) personnel; otherwise, the Site is largely unused.

Future use plans for Tank Farm 2 have not been finalized; thus, residential use was the most conservative reuse scenario used during the DGA. Portions of the Site are currently grass-covered; therefore, site maintenance activities such as mowing are possible, although the Site is not actively maintained at the present time. Trespassing may take place, even with the presence of the existing fencing.

The current receptors to environmental contamination include terrestrial biota and human receptors that could potentially be exposed to site soils.

4.7.1 AOC-001; AOC-003; and AOC-004/5

These AOCs are located on a topographic high at the northwestern portion of Tank Farm 2. Topography in this area slopes very gently to the west. Numerous outcrops of bedrock are observed at the ground surface. The release of contaminants in this area was due to the deposition of sludge from the bottom of the USTs onto the ground surface and the burning of the sludge in place. Since sludge was deposited on the ground surface it is expected that the surface soil would contain the highest concentration of contaminants.

Percolating precipitation could have mobilized contaminants into the subsurface soil and eventually to the groundwater. The ground surface elevation slopes from approximately 151 feet based on the North American Vertical Datum of 1988 (NAVD 1988) at AOC-001 to approximately 141 feet (NAVD 1988) at the western portion of AOC-004/5. Surface water runoff would therefore flow in a westerly direction until it percolates into the soil. However, these areas have a thin veneer of overburden material underlain by shallow bedrock. In fact much of these areas have exposed bedrock at the ground surface. Examination of the logs from the installation of the monitoring wells that were not installed in blasted bedrock sockets, in this area (GZ-201, GZ-203, GZ-226) indicates that the bedrock surface is not highly weathered. In addition, based on depth to water data from GZ-203, located approximately 40 feet southeast of AOC-001,

the water table in the vicinity of AOC-001 is approximately 5 to 25 feet below the overburden unit (Figure 3-2). Based on depth to water data from GZ-201, GZ-226, and GZ-225, located southwest of AOC-004/5, the water table in the vicinity of AOC-004/5 is approximately 20 to 38 feet below the overburden unit (Figure 3-2).

Since bedrock is shallow, water table is relatively deep, and top of bedrock is not highly weathered, it is likely that most of the contamination from the burning of petroleum sludge (if any) resides in the overburden soil, and has not migrated to groundwater.

Surface and subsurface soil samples were analyzed for by-products of burning petroleum sludge that could include metals, PAHs and dioxins/furans. In addition, soil samples were analyzed for ExTPH and GRO in response to RIDEM requests. Dioxins, metals and PAHs are present in site soil at concentrations above residential and industrial RSLs and protection of groundwater SSLs.

4.7.2 Building 219

B219 is located near Tank 26, between Tanks 24 and 26. The area around B219 is relatively flat and tall grass and low vegetation surrounds the building. It appears that B219 was constructed on fill, as the ground gently slopes away from the building in every direction.

Contaminants associated with B219 are PCBs that could have been released to the ground surface from improper container handling practices. The surface soil samples have numerous exceedances of residential and industrial RSLs and protection of groundwater SSLs. However, the subsurface soil samples do not have any exceedances of these screening criterion. It therefore appears that, due to PCBs high affinity to sorb to soil, the PCBs have not migrated into the deeper soil. Since PCBs are not above screening criterion in the subsurface soil it is highly unlikely that PCBs have migrated to groundwater.

4.7.3 Former BSA

The former BSA is located west of Tank 28 in the north central portion of the Site, inside the loop road (Figure 1-2). The area was heavily vegetated with trees, brush, and grass and clearing was performed in order to access the area.

The area is relatively flat and is partially inside and partially outside a former concrete impoundment. This area is located in the vicinity of a soil pile and various AOCs that had been previously investigated in the SIRAR (Tetra Tech, 2006). CERCLA contaminants not previously investigated that could be associated with the former BSA include lead from the storage of buoys in this area. Buoys of this type were often painted with lead-based paint. The possibility exists that the surface soil in this area became impacted with

lead due to erosion of the paint from the buoys. The lead could have been carried from the surface soil the subsurface soil and therefore the potential for lead in the surface and subsurface soil was investigated during the DGA at the former BSA.

The results of the DGA at the Former BSA indicates that, while it is present in all of the soil samples collected, lead is well below the most conservative screening concentration (the residential RSL). These results suggest that storage of buoys in this area did not impact soil with lead.

4.8 BACKGROUND COMPARISON OF METALS

Soil data collected during the DGA were statistically compared to background concentrations of metals using data collected as part of the background soil investigation study for the Site (Tetra Tech, 2006) which is part of the base wide background study (Tetra Tech, 2008). This comparison is provided in Appendix G, and is discussed in the contaminant transport discussion (Section 4.6).

A background comparison evaluation was conducted that used comparative statistical methods to compare soil data collected during the DGA field sampling event to a Newport background soil data set (Appendix G). Background data sets were published through the performance of the Base-wide Background Study Report (Tetra Tech, 2008a). Site soil data were classified by soil depth (surface versus subsurface) and soil type. The Site currently contains fill, since fill is typically derived from the reworked native material, historical soils maps (Appendix G) were used data were used to determine that the soil type at the Site is Newport silt loam (Ne).

The comparison of site data with the background data involved a graphical evaluation and a hypothesis test comparing the mean/median concentrations. Refer to Appendix G for a description of the hypothesis test used and a summary of the soil data comparisons for each class of metals in surface and subsurface soil.

The results of the comparison of surface soil for the entire site indicates, the following metals detected at the Site are consistent with background: aluminum, arsenic, beryllium, cadmium, mercury, potassium, and selenium. However, barium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, vanadium and zinc are greater than background concentrations.

The comparison indicates that for subsurface soil for the entire site indicated that, barium, manganese, and potassium are consistent with background, however, aluminum, arsenic, beryllium, calcium, chromium, cobalt, coper, iron, lead, magnesium, nickel, vanadium, and zinc are greater than background concentrations.

Surface soil for the particular subareas were also evaluated. For AOC-001, the comparison indicates aluminum, arsenic, barium, beryllium, cadmium, lead, mercury, potassium, selenium, and vanadium are consistent with background concentrations; however, calcium, chromium, cobalt, copper, iron, magnesium, manganese, nickel, and zinc are greater than background concentrations. For AOC-003, -004, -005, the comparison indicates that concentrations of aluminum, arsenic, beryllium, cadmium, mercury, potassium, and selenium are consistent with background concentrations; however, concentrations of barium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, vanadium, and zinc are greater than background concentrations. For the Buoy Storage Area, surface soil concentrations of lead are greater than background concentrations.

4.9 CONTAMINANT FATE AND TRANSPORT

The fate and transport of contaminants in environmental media are determined by a variety of factors. The physical and chemical properties of contaminants and the environmental media in which the contaminants are released are all factors that determine the eventual fate of these chemicals. The combination of site-related contaminants, geologic and hydrogeologic conditions, and surface features influence how contaminants released to the site have migrated into soils, or have been transformed as the result of degradation processes.

Non-CERCLA contaminant sources at AOC-001, AOC-003, AOC-004/5, Building 219, and the Former BSA have already been identified. Prior to the implementation of the DGA work, the releases from these sources had been identified, investigated, and remediated, if necessary (Tetra Tech, 2006). This DGA report was prepared to determine if risk from the remaining CERCLA contamination, if any, exists.

Generally low levels of constituents (PAHs, metals, and dioxins/furans) were found to be present in soil at AOCs -001, -003, and -004/5, and elevated levels of PCBs were found to be present in the soil at B219. Some of the metals have been shown in the background comparison study (Section 4.8 and Appendix G) to be attributable to background and not activities that occurred at the AOCs. In addition, very low concentrations of dioxin (measured as Total TEQ values) were measured in the soil.

4.9.1 Polycyclic Aromatic Hydrocarbons (PAHs) Fate and Transport

PAHs are non-volatile or have low volatility, and are not very soluble. PAHs are likely to remain adsorbed to soil particles and are only gradually leached by precipitation or infiltration. For these compounds, biodegradation is possible, but is likely to be slow.

PAHs adsorbed to the soil particles present at the ground surface could be conveyed over land suspended in runoff that occurs during precipitation events or through the wind erosion of soil. Wind erosion could

cause contaminants adsorbed to soil particles to be transported offsite through advective air flow. Such erosion is significantly reduced with the presence of a vegetative cover, as is the case at the Site.

While PAHs were frequently detected at concentrations exceeding screening levels in site soils, the concentrations in most samples were low. The groundwater table exists in the bedrock in the area of the AOCs (see Section 4.7.1). In addition to the low solubility of PAHs, the lack of direct contact between the PAHs in soil and groundwater further minimizes the chance for leaching of PAHs from the soil to the groundwater. This is supported by the historical groundwater analytical results at monitoring wells downgradient of the AOCs (GZ-203, GZ-225, and GZ-226) which did not indicate the presence of PAHs in groundwater (GZA, 1998), except at very low concentrations (Appendix A). This indicates that PAHs are likely not mobilizing to groundwater.

4.9.2 Metals Fate and Transport

Metals are non-volatile, however some are insoluble and some are soluble. When subjected to precipitation, soluble metals can be leached from the surface soils to subsurface soils. If conditions are right they could be conveyed into the underlying groundwater by infiltration. When the groundwater table is in the overburden, soluble metals may also be leached from the soils into groundwater through the seasonal rise and fall of the water table. However, at the AOCs, the groundwater table is in the bedrock, making it much more difficult for the soluble metals leaching from the soil to reach the groundwater. In addition data from dissolved lead analyses performed on groundwater samples taken from the Category 1 areas of the Site were all non-detect or were below 3.5 µg/L, indicating that lead is not migrating from soil to groundwater. These results are provided in Appendix A.

4.9.3 Polychlorinated Biphenyls (PCBs) Fate and Transport

One PCB mixture, Aroclor-1260, was detected in surface and subsurface soil samples collected at the B219 area of the Site. In the surface soil, concentrations ranged from 24 to 18000 µg/kg. In the subsurface soil, concentrations of Aroclor-1260 ranged from not detected (ND) to 110 µg/kg.

Since PCBs are nearly insoluble in water and sorb strongly to soil, most of the PCBs mass will likely sorb to soil and remain bound, where it is expected to remain immobile. This is demonstrated by the higher concentrations of Aroclor-1260 in surface soil versus subsurface soil. Biodegradation of PCBs does occur, but usually the degradation rate is very low.

TABLE 4-1

SUMMARY OF ANALYTICAL RESULTS FROM AOC 001 TANK FARM 2 SURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH RHODE ISLAND

SAMPLE ID	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-001-SS1000-0001	TF2-001-SS1001-0001	TF2-001-SS1002-0001	TF2-001-SS1003-0001	TF2-001-SS1003-0001-	TF2-001-SS1003-0001-D	TF2-001-SS1004-0001	TF2-001-SS1005-0001	TF2-001-SS1006-0001	TF2-001-SS1007-0001	TF2-001-SS1008-0001	TF2-001-SS1009-0001	TF2-001-SS1010-0001
LOCATION ID				TF2-001-SB1000	TF2-001-SB1001	TF2-001-SB1002	TF2-001-SB1003	TF2-001-SB1003	TF2-001-SB1003	TF2-001-SB1004	TF2-001-SB1005	TF2-001-SB1006	TF2-001-SB1007	TF2-001-SB1008	TF2-001-SB1009	TF2-001-SB1010
SAMPLE DATE				11/27/2013	11/25/2013	11/25/2013	11/25/2013	20131125	11/25/2013	11/25/2013	11/27/2013	11/27/2013	11/25/2013	11/25/2013	11/25/2013	11/27/2013
TOP DEPTH (FT)				0	0	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH (FT)				1	1	1	1	1	1	1	1	1	1	1	1	1
SACODE				NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE				NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)																
1,2,3,4,6,7,8,9-OCDD	15000 C	60000 C	17400	2900	4500	4700 J	6400	6850	7300	4900	4400	5300	6000	6600	4000	5000
1,2,3,4,6,7,8,9-OCDF	15000 C	60000 C	17400	31	2.1 J	2.4 J	2.2 J	2.45	2.7 J	3.5 J	6 J	4 J	6.6 J	2 J	9.4 J	6 J
1,2,3,4,6,7,8-HPCDD	450 C	1800 C	520	54	29	30	36	36	36	34	36	31	50	33	46	39
1,2,3,4,6,7,8-HPCDF	450 C	1800 C	520	11	0.92 U	1.6 J	1.6 J	1.2	1.6 U	2.5 J	3.8 J	1.8 J	4.8 J	1.3 U	5.6	3.8 J
1,2,3,4,7,8,9-HPCDF	450 C	1800 C	520	0.1 U	0.031 U	0.049 U	0.053 U	0.15825	0.29 J	0.14 J	0.065 U	0.045 U	0.044 U	0.15 J	0.31 J	0.053 U
1,2,3,4,7,8-HXCDD	45 C	180 C	52	0.78 J	0.19 J	0.22 J	0.29 J	0.295	0.3 J	0.3 J	0.27 J	0.22 J	0.48 J	0.29 J	0.44 J	0.34 J
1,2,3,4,7,8-HXCDF	45 C	180 C	52	0.96 J	0.29 J	0.51 J	0.76 J	0.69	0.62 J	0.53 J	0.67 J	0.6 J	1 J	0.36 U	0.88 J	0.68 J
1,2,3,6,7,8-HXCDD	45 C	180 C	52	1.7 J	0.22 J	0.4 J	0.54 J	0.48	0.42 J	0.57 J	0.86 J	0.39 J	1.1 J	0.54 J	1.2 J	0.82 J
1,2,3,6,7,8-HXCDF	45 C	180 C	52	0.8 J	0.19 J	0.48 J	0.46 J	0.485	0.51 J	0.41 J	0.61 J	0.42 J	0.73 J	0.52 J	0.65 J	0.57 J
1,2,3,7,8,9-HXCDD	45 C	180 C	52	1.6 J	0.31 J	0.31 J	0.44 J	0.44	0.44 J	0.52 J	0.92 J	0.45 J	1.1 J	0.55 J	1.1 J	0.77 J
1,2,3,7,8-PECDD	4.5 C	18 C	5.2	0.19 J	0.062 U	0.07 U	0.092 U	0.0695	0.093 J	0.063 U	0.26 J	0.073 U	0.2 J	0.11 J	0.056 U	0.18 J
1,2,3,7,8-PECDF	150 C	600 C	174	0.2 J	0.04 U	0.04 U	0.045 U	0.13125	0.24 J	0.13 J	0.28 J	0.042 U	0.26 J	0.077 U	0.2 J	0.15 J
2,3,4,6,7,8-HXCDF	45 C	180 C	52	1.2 J	0.096 J	0.19 J	0.33 J	0.45	0.57 J	0.22 J	0.53 J	0.32 J	0.73 J	0.4 J	0.61 J	0.52 J
2,3,4,7,8-PECDF	15 C	60 C	17.4	0.32 J	0.13 J	0.12 J	0.29 J	0.26	0.23 J	0.18 J	0.32 J	0.19 J	0.43 J	0.15 J	0.21 J	0.26 J
2,3,7,8-TCDF	45 C	180 C	52	0.63 U	0.26 U	0.36 U	0.36 J	0.2425	0.25 U	0.3 U	0.33 J	0.14 U	0.77 U	0.29 U	0.24 U	0.19 J
TEQ1	4.2		5.2	2.5	1.8	2.0	2.7	2.9	3.0	2.2	2.5	2.2	3.2	2.7	2.3	2.6
TOTAL HPCDD	94 C	390 C	180	**100 [R]**	51	54	66	66	66	64	71	55	**100 [R]**	60	81	73
TOTAL HPCDF				31	1.6 J	3.3 J	2.9 J	2.95	3 J	4.7 J	7.4	3 J	9.7	2.5 J	11	7.2
TOTAL HXCDD				14	3.2 J	4 J	5.6 J	5.25	4.9 J	6 J	8.2 J	4.2 J	11 J	5.3 J	9.4 J	8.4 J
TOTAL HXCDF				15 J	2.3 J	3.8 J	5.9 J	5.65	5.4 J	5 J	6.6 J	4.1 J	9.5	4.5 J	8.4	6.2 J
TOTAL PECDD				2.1 J	0.6 J	1.1 J	1.3 J	1.105	0.91 J	1.3 J	2.1 J	1.2 J	3 J	1.1 J	1.6 J	1.5 J
TOTAL PECDF				7.7 J	1.6 J	2.7 J	3.8 J	4.1	4.4 J	3.1 J	6.4 J	3 J	7.6 J	2.9 J	4.1 J	3.8 J
TOTAL TCDD				0.42 J	0.054 U	0.35 J	0.46 J	0.55	0.64 J	0.36 J	0.74 J	0.36 J	1.1 J	0.86 J	0.4 J	0.62 J
TOTAL TCDF				3.5 J	1.1 J	1 J	3 J	2.75	2.5 J	1.5 J	3.9 J	1.6 J	4.2 J	1.9 J	1.2 J	1.9 J
METALS (MG/KG)																
ALUMINUM	7700 N	99000 N	460000	**12200 [R]**	**12600 [R]**	**14200 [R]**	**14600 [R]**	**14300 [R]**	**14000 [R]**	**12700 [R]**	**14000 [R]**	**14600 [R]**	**14000 [R]**	**14600 [R]**	**11900 [R]**	**13400 [R]**
ANTIMONY	3.1 N	41 N	5.4	0.18 J	0.13 J	0.08 J	0.09 J	0.085	0.08 J	0.08 J	0.17 J	0.12 J	0.2 J	0.08 J	0.26 J	0.08 J
ARSENIC	0.61 C	2.4 C	0.026	**4.1 [R,I,GW]**	**5.1 [R,I,GW]**	**6.1 [R,I,GW]**	**7.1 [R,I,GW]**	**6.75 [R,I,GW]**	**6.4 [R,I,GW]**	**5.4 [R,I,GW]**	**7.7 [R,I,GW]**	**6.8 [R,I,GW]**	**5.8 [R,I,GW]**	**6.6 [R,I,GW]**	**4.9 [R,I,GW]**	**6.4 [R,I,GW]**
BARIUM	1500 N	19000 N	2400	17.1	15.4	14.6	14.2	13.3	12.4	15.8	18.5	17.7	22.8	17.7	12.6	15.5
BERYLLIUM	16 N	200 N	260	0.26	0.3	0.3	0.34	0.345	0.35	0.3	0.34	0.33	0.34	0.36	0.27	0.32
CADMIUM	7 N	80 N	10.4	0.08 J	0.08	0.1	0.08	0.075	0.07 J	0.11	0.11	0.12	0.14	0.12	0.07 J	0.09
CALCIUM				794	843	833	666 J	584	502	604	2630	728	1090	923	1090	758
CHROMIUM				15.1	16.5	17.5	18	17.65	17.3	14.9	16.6	16.7	16	17	15.8	17.3
COBALT	2.3 N	30 N	4.2	**10.9 [R,GW]**	**14.4 [R,GW]**	**16.6 [R,GW]**	**12 [R,GW]**	**11.5 [R,GW]**	**11 [R,GW]**	**10.4 [R,GW]**	**10.4 [R,GW]**	**11.6 [R,GW]**	**9.6 [R,GW]**	**13.1 [R,GW]**	**15.6 [R,GW]**	**12.6 [R,GW]**
COPPER	310 N	4100 N	440	14.2	17	17.3	18.5	18.3	18.1	16.2	18.5	17.1	15	18	17.6	20.4
IRON	5500 N	72000 N	5400	**23800 [R,GW]**	**25600 [R,GW]**	**27800 [R,GW]**	**27000 [R,GW]**	**25850 [R,GW]**	**24700 [R,GW]**	**22600 [R,GW]**	**24100 [R,GW]**	**24800 [R,GW]**	**22900 [R,GW]**	**27200 [R,GW]**	**27700 [R,GW]**	**26800 [R,GW]**
LEAD	400 L	800 L		18.3 J	11.4	12.2	16.4	15.2	14	12.1 J	18.6 J	14.1 J	26.7 J	12.6 J	12.3 J	13.6
MAGNESIUM				3740	3920	4560	4190	4145	4100	3750	4220	4230	3450	4450	4170	4280
MANGANESE	180 N	2300 N	420	**311 [R]**	**458 [R,GW]**	**394 [R]**	**332 [R]**	**304.5 [R]**	**277 [R]**	**294 [R]**	**267 [R]**	**314 [R]**	**270 [R]**	**356 [R]**	**459 [R,GW]**	**336 [R]**
MERCURY	1 N	4.3 N	0.66	0.02 U	0.016 U	0.02 U	0.21 J	0.15	0.09 J	0.17	0.07	0.04	0.11	0.07	0.016 U	0.05
NICKEL	150 N	2000 N	400	21.5	26.2	26.6	23.2	23.2	23.2	21.1	20.7	21.8	18.6	24.4	28.4	24.7
POTASSIUM				405	302 J	390	390 J	373.5	357 J	379	453	501	463	498	336	360
SELENIUM	39 N	510 N	8	0.26 U	0.2 J	0.21 J	0.29 J	0.2	0.11 J	0.29 U	0.25 U	0.26 U	0.24 U	0.26 U	0.23 U	0.31 J
SILVER	39 N	510 N	12	0.04 J	0.03 J	0.04 J	0.07 J	0.06	0.05 J	0.05 J	0.04 J	0.56	0.05 J	0.04 J	0.03 J	0.04 J
SODIUM				51.2 J	47.6 J	60.9 J	53.1 J	56.2	59.3 J	39.7 J	48.8 J	44.2 J	47.5 J	46.6 J	42.8 J	39.4 U
THALLIUM	0.078 N	1 N	0.22	0.05 J	0.04 J	0.04 J	0.05 J	0.045	0.04 J	0.05 J	0.06 J	0.06 J	**0.08 J [R]**	0.05 J	0.03 J	0.04 J
VANADIUM	39 N	510 N	1260	20.9	17.9	20.6	21.1	19.75	18.4	17.4	17.8	19	19.9	19.2	20	20
ZINC	2300 N	31000 N	5800	52.1	56.6	61.5	52.6	52.65	52.7	46.8	53	49.9	53.9	56	64.4	57.7
MISCELLANEOUS PARAMETERS (%)																
TOTAL SOLIDS				85	90	90	89	89	89	87	90	84	83	88	89	88
PETROLEUM HYDROCARBONS (MG/KG)																
ExTPH (C08-C44)				NA	NA	NA	18 J	20.5	23	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS																
2-METHYLNAPHTHALENE	23000 N	220000 N	2800	12 UJ	11 U	11 U	11 U	11 U	11 U	11 UJ	440 U	12 U	13 J	11 U	11 U	11 U
ACENAPHTHENE	340000 N	3300000 N	82000	2.2 J	11 U	11 U	11 U	7.8 J	7.8 J	11 U	1000	6.8 J	170	11 U	2.6 J	11 U
ACENAPHTHYLENE	340000 N	3300000 N	82000	12 U	11 U	11 U	11 U	11 U	11 U	11 U	26	12 U	12 J	11 U	11 U	11 U
ANTHRACENE	1700000 N	17000000 N	840000	4.4 J	11 U	2.8 J	11 U	10.25	15 J	2.6 J	2200	14 J	340	11 U	4.2 J	2.7 J
BENZO(A)ANTHRACENE	150 C	2100 C	200	31	5.2 J	15 J	24 J	37	50 J	15 J	**4500 [R,I,GW]**	45	**1200 [R,GW]**	11 U	24	19 J
BENZO(A)PYRENE	15 C	210 C	70	**31 [R]**	4.2 J	12 J	**20 J [R]**	**28.5 [R]**	**37 J [R]**	13 J	**3700 [R,I,GW]**	**35 [R]**	**880 [R,I,GW]**	8.4 J	**23 J [R]**	**16 J [R]**
BENZO(B)FLUORANTHENE	150 C	2100 C	700	50	6.5 J	18 J	28 J	39	50 J	25	**5800 [R,I,GW]**	53	**1500 [R,GW]**	16 J	37	32
BENZO(G,H,I)PERYLENE	170000 N	1700000 N	190000	16 J	2.7 J	7 J	10 J	16	22 J	4.3 J	1800	16 J	410	11 UJ	9 J	8.9 J
BENZO(K)FLUORANTHENE	1500 C	21000 C	7000	22 J	11 UJ	12 J	19 J	25.5	32	7.4 J	**1700 [R]**	23 J	370	5.2 J	17 J	11 J
CHRYSENE	15000 C	210000 C	22000	39	6.4 J	16 J	22 J	32.5	43 J	14 J	4900	45	1100	7.9 J	28	19 J
DIBENZO(A,H)ANTHRACENE	15 C	210 C	220	7.6 J	11 UJ	3.5 J	3.7 J	5.65	7.6 J	3.9 J	**590 J [R,I,GW]**	7.4 J	**130 [R]**	1.9 U	4.8 J	4.6 J
FLUORANTHENE	230000 N	2200000 N	1400000	70	8.4 J	35	28 J	79	130 J	34	12000 J	97	2700 J	18 J	55	40
FLUORENE	230000 N	2200000 N	80000	12 U	11 U	11 U	11 U	6.6 J	6.6 J	11 U	1300	7.6 J	180	11 U	11 U	11 U
INDENO(1,2,3-CD)PYRENE	150 C	2100 C	4000	32 J	3.2 J	7.5 J	13 J	19.5	26	13 J	**2800 J [R,I]**	31 J	**700 J [R]**	7.9 J	21 J	17 J
NAPHTHALENE	3600 C	18000 C	9.4	12 U	11 U	11 U	11 U	11 U	11 U	11 U	**1800 [GW]**	12 U	**66 [GW]**	11 U	11 U	11 U
PHENANTHRENE	170000 N	1700000 N	190000	32	3.1 J	17 J	3.9 J	44.95	86 J	18 J	11000	82	2000	9.9 J	33	21 J
PYRENE	170000 N	1700000 N	190000	63	6.9 J	22 J	20 J	50	80	26	11000 J	100	3200 J	15 J	62	44
TOTAL PAHS				400.2	46.6	167.8	191.6	392.3	593	176.2	66116	562.8	14971	88.3	320.6	235.2

1 - Project Screening Level was used in place of EPA RSL Residential Soil value.
2- [GW] obtained using a DAF of 20

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-2

SUMMARY OF ANALYTICAL RESULTS FROM AOC-001 TANK FARM 2 SUBSURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH RHODE ISLAND

SAMPLE ID	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-001-SB1000-0204	TF2-001-SB1000-0810	TF2-001-SB1001-0204	TF2-001-SB1001-0810	TF2-001-SB1002-0204	TF2-001-SB1002-0405	TF2-001-SB1003-0204	TF2-001-SB1004-0204	TF2-001-SB1004-0204-20131125	TF2-001-SB1004-0204-DUP	TF2-001-SB1005-0204	TF2-001-SB1005-0204-20131127	TF2-001-SB1005-0204-D	TF2-001-SB1006-0204	TF2-001-SB1007-0204	TF2-001-SB1008-0204	TF2-001-SB1009-0204	TF2-001-SB1009-0810	TF2-001-SB1010-0204
LOCATION ID				TF2-001-SB1000	TF2-001-SB1000	TF2-001-SB1001	TF2-001-SB1001	TF2-001-SB1002	TF2-001-SB1002	TF2-001-SB1003	TF2-001-SB1004	TF2-001-SB1004	TF2-001-SB1004	TF2-001-SB1005	TF2-001-SB1005	TF2-001-SB1005	TF2-001-SB1006	TF2-001-SB1007	TF2-001-SB1008	TF2-001-SB1009	TF2-001-SB1009	TF2-001-SB1010
SAMPLE DATE				11/27/2013	11/27/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/27/2013	11/25/2013	11/27/2013	11/27/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/27/2013
TOP DEPTH (FT)				2	8	2	8	2	4	2	2	2	2	2	2	2	2	2	2	2	8	2
BOTTOM DEPTH (FT)				4	10	4	10	4	5	4	4	4	4	4	4	4	4	4	4	4	10	4
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE				NM	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	FD	NM	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)																						
1,2,3,4,6,7,8,9-OCDD	15000 C	60000 C	17400	3900	5200	4600	NA	5900 J	NA	4500	6000	6750	7500	4400	3950	3500	5000	14000	5000	7400	NA	4900
1,2,3,4,6,7,8,9-OCDF	15000 C	60000 C	17400	2.9 J	3.5 J	1.4 J	NA	1.3 J	NA	0.96 U	2.1 J	1.29	0.96 U	1.3 U	2.625	4.6 J	3.1 J	2.1 J	1 U	1.1 U	NA	2.4 J
1,2,3,4,6,7,8-HPCDD	450 C	1800 C	520	19	25	25	NA	30	NA	29	33	34	35	31	27.5	24	41	150	35	33	NA	28
1,2,3,4,6,7,8-HPCDF	450 C	1800 C	520	0.86 U	1.1 U	0.95 U	NA	0.51 U	NA	0.44 U	0.71 U	0.6 U	0.49 U	0.89 U	1.5225	2.6 J	1.3 J	1.1 U	0.69 U	0.51 U	NA	1.5 J
1,2,3,4,7,8,9-HPCDF	450 C	1800 C	520	0.035 U	0.087 U	0.078 J	NA	0.039 U	NA	0.03 U	0.032 U	0.027 U	0.022 U	0.04 U	0.048 U	0.056 U	0.15 U	0.026 U	0.082 J	0.075 J	NA	0.04 U
1,2,3,4,7,8-HXCDD	45 C	180 C	52	0.15 J	0.11 U	0.13 J	NA	0.27 J	NA	0.2 J	0.22 J	0.12525	0.061 U	0.099 U	0.13975	0.23 J	0.33 U	0.45 J	0.44 J	0.18 J	NA	0.19 J
1,2,3,4,7,8-HXCDF	45 C	180 C	52	0.65 J	0.39 J	0.28 U	NA	0.18 U	NA	0.13 U	0.27 U	0.23 U	0.19 U	0.23 J	0.57	0.91 J	0.13 U	0.32 U	0.34 U	0.28 U	NA	0.31 J
1,2,3,6,7,8-HXCDD	45 C	180 C	52	0.15 J	0.079 U	0.21 J	NA	0.25 J	NA	0.31 J	0.26 J	0.27	0.28 J	0.31 J	0.295	0.28 J	0.23 U	0.78 J	0.54 J	0.22 J	NA	0.38 J
1,2,3,6,7,8-HXCDF	45 C	180 C	52	0.023 U	0.22 J	0.51 J	NA	0.29 J	NA	0.42 J	0.49 J	0.565	0.64 J	0.26 J	0.335	0.41 J	0.48 J	0.2 J	0.3 J	0.42 J	NA	0.48 J
1,2,3,7,8,9-HXCDD	45 C	180 C	52	0.23 J	0.17 J	0.26 J	NA	0.32 J	NA	0.33 J	0.32 J	0.345	0.37 J	0.59 J	0.505	0.42 J	0.24 U	0.88 J	0.74 J	0.26 J	NA	0.41 J
1,2,3,7,8,9-HXCDF	45 C	180 C	52	0.03 U	0.067 U	0.031 U	NA	0.038 U	NA	0.027 U	0.03 U	0.0255 U	0.021 U	0.031 U	0.0355 U	0.04 U	0.12 U	0.12 J	0.023 U	0.14 J	NA	0.032 U
1,2,3,7,8-PECDD	4.5 C	18 C	5.2	0.07 U	0.13 U	0.069 U	NA	0.092 U	NA	0.075 U	0.075 U	0.07875	0.12 J	0.11 J	0.07555	0.082 U	0.24 U	0.05 U	0.16 J	0.051 U	NA	0.063 U
1,2,3,7,8-PECDF	150 C	600 C	174	0.045 U	0.07 U	0.04 U	NA	0.041 U	NA	0.07 U	0.035 U	0.03775	0.058 J	0.035 U	0.09875	0.18 J	0.16 U	0.08 J	0.15 J	0.07 J	NA	0.15 J
2,3,4,6,7,8-HXCDF	45 C	180 C	52	0.15 U	0.06 U	0.13 J	NA	0.034 U	NA	0.071 J	0.027 U	0.07175	0.13 J	0.14 J	0.145	0.15 J	0.11 U	0.15 J	0.21 J	0.2 J	NA	0.17 J
2,3,4,7,8-PECDF	15 C	60 C	17.4	0.033 U	0.073 U	0.042 U	NA	0.077 J	NA	0.089 J	0.037 U	0.035 U	0.033 U	0.13 J	0.14	0.15 J	0.17 U	0.097 J	0.034 U	0.1 J	NA	0.11 J
TEQ[1]	4.2 C		5.2	1.5	1.9	1.8	NA	2.2	NA	1.8	2.3	2.6	2.9	1.9	1.8	1.6	2.0	**6.0 [R,GW]**	2.2	2.7	NA	2.0
TOTAL HPCDD	94 C	390 C	180	34	44	44	NA	61	NA	65	63	64.5	66	63	57	51	88	**270 [R,GW]**	86	57	NA	50
TOTAL HPCDF				1.6 J	1.7 J	1.2 J	NA	0.51 U	NA	0.65 U	0.86 U	0.795 U	0.73 U	1.6 J	2.65	3.7 J	1.3 J	1.9 J	0.98 U	1 U	NA	2.9 J
TOTAL HXCDD				2.1 J	1.3 J	3 J	NA	4.7 J	NA	6.9 J	5.2 J	5.35	5.5 J	7.3	6.9	6.5 J	8.8 J	22 J	9.5	2.5 J	NA	4.2 J
TOTAL HXCDF				1.7 J	0.86 J	2.3 J	NA	0.67 J	NA	1.2 J	1 J	1 J	1.3 U	1.8 J	2.3	2.8 J	1.1 J	1.9 U	1.5 U	2.2 U	NA	3.1 J
TOTAL PECDD				0.39 J	0.72 J	1.3 J	NA	0.98 J	NA	1.7 J	2.1 J	2.2	2.3 J	1.7 J	1.19	0.68 J	1.4 J	2.7 J	1.8 J	1.4 J	NA	1.5 J
TOTAL PECDF				1.1 J	0.27 J	1.8 J	NA	0.37 J	NA	1.1 J	0.41 J	0.555	0.7 J	1.6 J	1.65	1.7 J	0.34 J	1.4 J	1.8 J	1.7 J	NA	1.9 J
TOTAL TCDD				0.09 J	0.086 U	0.29 J	NA	0.96 J	NA	1.7 J	1.3 J	1.25	1.2 J	0.87 J	0.635	0.4 J	0.95 J	1.2 J	0.69 J	0.46 J	NA	0.59 J
TOTAL TCDF				0.54 J	0.25 J	0.88 J	NA	2.1 J	NA	2.3 J	2.2 J	2.25	2.3 J	1.6 J	1.55	1.5 J	1.8 J	1.6 J	4.1 J	1 J	NA	1.4 J
METALS (MG/KG)																						
ALUMINUM	7700 N	99000 N	460000	**16600 [R]**	**15300 [R]**	**14900 [R]**	**20500 [R]**	**15200 [R]**	**12200 [R]**	**11600 [R]**	**13800 [R]**	**13850 [R]**	**13900 [R]**	**9880 [R]**	**10640 [R]**	**11400 [R]**	**13000 [R]**	**13000 [R]**	**14700 [R]**	**16400 [R]**	**21000 [R]**	**16000 [R]**
ANTIMONY	3.1 N	41 N	5.4	0.06 J	0.06 J	0.07	0.03 U	0.09	0.11	0.07 J	0.09 J	0.09	0.09 J	0.08 J	0.09	0.1 J	0.08 J	0.15 J	0.1 J	0.05 J	0.03 J	0.07 J
ARSENIC	0.61 C	2.4 C	0.026	**8.4 [R,I,GW]**	**7.3 [R,I,GW]**	**11.3 [R,I,GW]**	**6.2 [R,I,GW]**	**11.9 [R,I,GW]**	**12.5 [R,I,GW]**	**7.7 [R,I,GW]**	**8 [R,I,GW]**	**8.4 [R,I,GW]**	**8.8 [R,I,GW]**	**5 [R,I,GW]**	**5.3 [R,I,GW]**	**5.6 [R,I,GW]**	**8.4 [R,I,GW]**	**7.1 [R,I,GW]**	**14.3 [R,I,GW]**	**7.4 [R,I,GW]**	**5.6 [R,I,GW]**	**6.9 J [R,I,GW]**
BARIUM	1500 N	19000 N	2400	15.2	12.6	16.2	7.2	19.8	19.2	17.9	25	24.35	23.7	20.3	19.95	19.6	17.1	18.5	27.2	16.1	7.7	16
BERYLLIUM	16 N	200 N	260	0.37	0.42	0.36	0.28	0.36	0.39	0.36	0.43	0.43	0.43	0.38	0.365	0.35	0.37	0.35	0.47	0.36	0.32	0.36
CADMIUM	7 N	80 N	10.4	0.08	0.08	0.13	0.06 J	0.07 J	0.28	0.1 J	0.06 J	0.07	0.08 J	0.11	0.11	0.11	0.13	0.13	0.15	0.11	0.09	0.09
CALCIUM				874	719	825	1550	720	1210	1030	608	719	830	1250	1240	1230	1000	1610	1060	752	1660	874
CHROMIUM				19.6	19.2	18.3	26.5	17.9	14.9	14.4	15.2	15.3	15.4	12.9	13.1	13.3	15.8	15.4	16.2	19	25.4	18.3
COBALT	2.3 N	30 N	4.2	**30.3 [R,I,GW]**	**8.9 [R,GW]**	**14.9 [R,GW]**	**20.3 [R,GW]**	**8.7 [R,GW]**	**7.4 [R,GW]**	**6.2 [R,GW]**	**7.3 [R,GW]**	**7.3 [R,GW]**	**7.3 [R,GW]**	**5.2 [R,GW]**	**6.4 [R,GW]**	**7.6 [R,GW]**	**7.9 [R,GW]**	**11.3 [R,GW]**	**6.5 [R,GW]**	**18 [R,GW]**	**23.1 [R,GW]**	**13.1 [R,GW]**
COPPER	310 N	4100 N	440	19.1	16.9	19	20.6	15	12.1	11.4	15.6	14.45	13.3	10.2	11.1	12	13.5	13.6	13.5	17.6	20.6	14.8
IRON	5500 N	72000 N	5400	**29800 [R,GW]**	**28200 [R,GW]**	**28100 [R,GW]**	**42500 [R,GW]**	**23000 [R,GW]**	**17000 [R,GW]**	**18500 [R,GW]**	**23700 [R,GW]**	**22200 [R,GW]**	**20700 [R,GW]**	**16200 [R,GW]**	**17050 [R,GW]**	**17900 [R,GW]**	**20000 [R,GW]**	**21000 [R,GW]**	**17900 [R,GW]**	**29000 [R,GW]**	**45100 [R,GW]**	**31200 [R,GW]**
LEAD	400 L	800 L		14.5 J	13.6 J	14.8	11.4	13.5	15.4	12.8	12.4 J	12.75	13.1 J	13 J	13.05	13.1 J	14.5 J	13.4 J	19.3 J	16.1 J	11.2 J	13.5
MAGNESIUM				5040	4440	4270	7010	3760	2380	2930	3710	3555	3400	2860	2970	3080	3300	3540	2660	4920	6720	4900
MANGANESE	180 N	2300 N	420	**383 [R]**	**228 [R]**	**374 [R]**	**385 [R]**	**225 [R]**	**227 [R]**	168	**188 [R]**	**196.5 [R]**	**205 [R]**	179	**204 [R]**	**229 [R]**	**212 [R]**	**276 [R]**	163	**409 [R]**	**458 [R,GW]**	**344 [R]**
MERCURY	1 N	4.3 N	0.66	0.04	0.06	0.06 J	0.015 UJ	0.06 J	0.1 J	0.04 J	0.05	0.05	0.05	0.04	0.045	0.05	0.06	0.06	0.11	0.04	0.015 U	0.07
NICKEL	150 N	2000 N	400	25.5	20.8	26.1	34.7	16	12.5	13.5	17.3	16.3	15.3	11.4	12.65	13.9	15.4	18	13.2	25.2	34	23
POTASSIUM				407	380	362	221	461	526	581	608	605.5	603	655	659.5	664	557	484	607	428	222	330 J
SELENIUM	39 N	510 N	8	0.22 U	0.21 U	0.33 J	0.17 J	0.37 J	0.36 J	0.31 J	0.19 U	0.225 U	0.26 U	0.21 U	0.215 U	0.22 U	0.23 U	0.23 U	0.37 J	0.23 U	0.25 U	0.22 U
SILVER	39 N	510 N	12	0.04 J	0.04 J	0.03 J	0.02 J	0.04 J	0.04 J	0.04 J	0.02 J	0.025	0.03 J	0.04 J	0.04	0.04 J	0.04 J	0.06 J	0.05 J	0.05 J	0.02 J	0.03 J
SODIUM				37.7 J	31.3 J	43.6 J	42.6 J	56.4 J	56.9 J	58 J	43 J	46.15	49.3 J	48.1 J	48.55	49 J	52 J	43.4 J	53.2 J	34.4 J	20.6 J	26.5 J
THALLIUM	0.078 N	1 N	0.22	0.05 J	0.06 J	0.05 J	0.02 J	**0.08 J [R]**	**0.1 [R]**	0.07 J	0.06 J	0.07	**0.08 J [R]**	**0.08 [R]**	0.075	0.07	**0.08 [R]**	**0.09 [R]**	**0.12 [R]**	0.05 J	0.02 J	0.05 J
VANADIUM	39 N	510 N	1260	18.8	19.2	16.7	20.3	20.5	19.7	17.7	17.2	18.3	19.4	15.4	15.7	16	19.3	17.5	21.5	19.2	29.2	20.5
ZINC	2300 N	31000 N	5800	53.1	47.4	55	73.6	43.4	41.6	34.7	44.2	42.55	40.9	33.6	35.95	38.3	40.3	45.4	38.8	54.2	85	58.8
MISCELLANEOUS PARAMETERS (%)																						
TOTAL SOLIDS				90	87	89	92	88	86	87	88	88	88	85	85.5	86	87	88	87	90	92	90
PETROLEUM HYDROCARBONS (MG/KG)																						
ExTPH (C08-C44)				NA	13 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	29	NA	NA	11 U	NA	NA
POLYCYCLIC AROMATIC HYDROCARBON:																						
2-METHYLNAPHTHALENE	23000 N	220000 N	2800	11 U	12 U	11 U	11 U	11 U	11 U	11 U	10 UJ	10.5 U	11 UJ	190	235	280 J	11 U	76	11 UJ	10 U	11 UJ	11 U
ACENAPHTHENE	340000 N	3300000 N	82000	11 U	12 U	11 U	11 U	11 U	11 U	11 U	10 U	10.5 U	11 U	240 J	565	890 J	11 U	230	11 U	10 U	11 U	6.9 J
ACENAPHTHYLENE	340000 N	3300000 N	82000	11 U	12 U	11 U	11 U	11 U	11 U	11 U	10 U	10.5 U	11 U	29 J	58.5	88 J	11 U	22 J	11 U	10 U	11 U	11 U
ANTHRACENE	1700000 N	17000000 N	840000	11 U	12 U	11 U	11 U	11 U	11 U	2.3 J	4 J	3	2 J	740 J	1270	1800 J	5.6 J	910	2.7 J	10 U	11 U	19 J
BENZO(A)ANTHRACENE	150 C	2100 C	200	11 U	3.6 J	5.5 J	11 U	3.6 J	5.5 J	16 J	22	19.5	17 J	**1500 J [R,GW]**	**2800 [R,I,GW]**	**4100 J [R,I,GW]**	34	**2000 [R,GW]**	12 U	10 U	11 U	59 J
BENZO(A)PYRENE	15 C	210 C	70	11 U	12 U	4.2 J	11 UJ	11 UJ	5.2 J	13 J	**16 J [R]**	15	14 J	**1200 J [R,I,GW]**	**2150 [R,I,GW]**	**3100 J [R,I,GW]**	**29 [R]**	**1700 [R,I,GW]**	9.6 J	10 UJ	11 UJ	**71 J [R,GW]**
BENZO(B)FLUORANTHENE	150 C	2100 C	700	3.1 J	5.8 J	6.5 J	11 U	5.1 J	7.5 J	16 J	30	28	26	**1800 J [R,GW]**	**3300 [R,I,GW]**	**4800 J [R,I,GW]**	53	**2600 [R,I,GW]**	18 J	4.8 J	11 U	100 J
BENZO(G,H,I)PERYLENE	170000 N	1700000 N	190000	11 U	12 U	2.2 UJ	11 UJ	2.3 J	3.6 J	8 J	3.6 J	4.4	5.2 J	540 J	1020	1500 J	14 J	860	11 UJ	10 UJ	11 UJ	49 J
BENZO(K)FLUORANTHENE	1500 C	21000 C	7000	11 U	12 U	11 UJ	11 U	4.3 J	5.6 J	12 J	10 J	9.3	8.6 J	560 J	1030	1500 J	15 J	770	5.7 J	10 U	11 U	40 J
CHRYSENE	15000 C	210000 C	22000	11 U	12 U	6.2 J	2.7 J	6.1 J	8.4 J	16 J	24	21	18 J	1400 J	2600	3800 J	37	2000	9.4 J	10 U	11 U	56 J
DIBENZO(A,H)ANTHRACENE	15 C	210 C	220	11 U	12 U	11 UJ	11 UJ	11 UJ	11 UJ	2.5 J	5.2 J	4.7	4.2 J	**160 J [R]**	**325 [R,I,GW]**	**490 J [R,I,GW]**	6.1 J	**220 [R,I,GW]**	2.5 J	10 U	11 U	15 J
FLUORANTHENE	230000 N	2200000 N	1400000	11 U	5 J	9.4 J	11 U	8 J	10 J	32	45	38.5	32	3800 J	6900	10000 J	64	5000 J	22 J	10 U	11 U	140 J
FLUORENE	230000 N	2200000 N	80000	11 U	12 U	11 U	11 U	11 U	11 U	11 U	10 U	10.5 U	11 U	530 J	1115	1700 J	11 U	410 J	11 U	10 U	11 U	7.8 J
INDENO(1,2,3-CD)PYRENE	150 C	2100 C	4000	11 U	2.8 J	3 J	11 U	2.5 J	4.1 J	8.7 J	16 J	14.5	13 J	**860 J [R]**	**1630 [R]**	**2400 J [R,I]**	26 J	**1300 J [R]**	9 J	2.1 J	11 U	76 J
NAPHTHALENE	3600 C	18000 C	9.4	11 U	12 U	11 U	11 U	11 U	11 U	11 U	10 U	10.5 U	11 U	**370 J [GW]**	**785 [GW]**	**1200 J [GW]**	11 U	**150 [GW]**	11 U	10 U	11 U	6 J
PHENANTHRENE	170000 N	1700000 N	190000	11 U	2.4 J	4.6 J	11 U	2.7 J	4.6 J	11 J	23	18	13 J	3500 J	7250	11000 J	35	3700	15 J	2.7 J	11 U	120 J
PYRENE	170000 N	170000 N	190000	11	12 U	8 J	11 U	5.3 J	8.2 J	21 J	32	28	24	3600 J	6800	10000 J	67	4800 J	13 J	10 U	11 U	160 J
TOTAL PAHS				3.1	19.6	47.4	2.7	39.9	62.7	158.5	230.8	203.9	177	21019	39833.5	58648	385.7	26748	106.9	9.6	0 U	925.7

1 - Project Screening Level was used in place of EPA RSL Residential Soil value.
2- [GW] obtained using a DAF of 20

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING - DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J- QUANTITATION APPROXIMATE; R- REJECTED; NA-NOT ANALYZED

TABLE 4-3

SUMMARY OF ANALYTICAL RESULTS AOC-003 TANK FARM 2 SURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH RHODE ISLAND

SAMPLE ID	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-003-SS1011-000.8	TF2-003-SS1012-000.7	TF2-003-SS1013-000.7	TF2-003-SS1014-0001	TF2-003-SS1015-000.8	TF2-003-SS1015-000.8-	TF2-003-SS1015-000.8-D	TF2-003-SS1016-000.9	TF2-003-SS1017-000.8	TF2-003-SS1018-000.8	TF2-003-SS1019-000.5
LOCATION ID				TF2-003-SB1011	TF2-003-SB1012	TF2-003-SB1013	TF2-003-SB1014	TF2-003-SB1015	TF2-003-SB1015	TF2-003-SB1015	TF2-003-SB1016	TF2-003-SB1017	TF2-003-SB1018	TF2-003-SB1019
SAMPLE DATE				10/22/2013	10/22/2013	10/22/2013	10/22/2013	10/22/2013	20131022	10/22/2013	10/22/2013	10/22/2013	10/22/2013	10/22/2013
TOP DEPTH (FT)				0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH (FT)				0.8	0.7	0.7	1	0.8	0.8	0.8	0.9	0.8	0.8	0.5
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE				NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)														
1,2,3,4,6,7,8,9-OCDD	15000 C	60000 C	17400	**18000 [R,GW]**	4000	3300	3300	5400	5750	6100	6900	3300	3300	3000
1,2,3,4,6,7,8,9-OCDF	15000 C	60000 C	17400	17	12	13	12	8.9 J	9.95	11	11	8 J	4.5 J	15
1,2,3,4,6,7,8-HPCDD	450 C	1800 C	520	130	81	67	70	84	86	88	110	58	41	72
1,2,3,4,6,7,8-HPCDF	450 C	1800 C	520	13	12	12	12	7.4	8.25	9.1	7	5.9	3.6 J	16
1,2,3,4,7,8,9-HPCDF	450 C	1800 C	520	0.37 J	0.74 J	0.74 J	0.61 J	0.54 J	0.57	0.6 J	0.11 U	0.093 U	0.18 J	0.79 J
1,2,3,4,7,8-HXCDD	45 C	180 C	52	0.97 J	1.8 J	1.1 J	1.9 J	1.1 J	1.25	1.4 J	1.6 J	1.1 J	0.91 J	2.4 J
1,2,3,4,7,8-HXCDF	45 C	180 C	52	1.3 J	3 J	2.6 J	2.6 J	1.7 J	2	2.3 J	1.7 J	1.3 J	1 J	6
1,2,3,6,7,8-HXCDD	45 C	180 C	52	2.5 J	4 J	3.9 J	4.4 J	2.8 J	2.95	3.1 J	2.6 J	1.6 J	1.4 J	5.7
1,2,3,6,7,8-HXCDF	45 C	180 C	52	1.3 J	1.3 J	1.1 J	1.2 J	0.82 J	1.01	1.2 J	0.88 J	0.78 J	0.68 J	2.4 J
1,2,3,7,8,9-HXCDD	45 C	180 C	52	5.6	4.4 J	4.2 J	4.8 J	2.9 J	3	3.1 J	3.5 J	2.1 J	1.6 J	5.4
1,2,3,7,8-PECDD	4.5 C	18 C	5.2	0.72 J	1.4 J	1.1 J	1.1 J	0.73 J	0.835	0.94 J	0.67 J	0.11 U	0.4 J	1.7 J
1,2,3,7,8-PECDF	150 C	600 C	174	0.4 J	0.74 J	1.2 J	0.83 J	0.9 J	0.93	0.96 J	0.67 J	0.38 J	0.3 J	1.4 J
2,3,4,6,7,8-HXCDF	45 C	180 C	52	0.96 J	1.1 J	1.4 J	1.3 J	0.85 J	0.87	0.89 J	0.78 J	0.83 J	0.39 J	1.9 J
2,3,4,7,8-PECDF	15 C	60 C	17.4	0.68 J	1.2 J	1.2 J	1.1 J	0.85 J	0.905	0.96 J	0.8 J	0.6 J	0.43 J	1.1 J
2,3,7,8-TCDD	4.5 C	18 C	5.2	0.23 J	0.26 J	0.22 J	0.43 J	0.15 J	0.2	0.25 J	0.23 J	0.27 J	0.11 J	0.4 J
2,3,7,8-TCDF	45 C	180 C	52	0.76 J	1 J	1.4	1.3	1.5 UJ	0.84 J	0.84 J	1.1	0.69 J	0.46 J	1.5
TEQ[1]	4.2 C		5.2	**9.3 [R,GW]**	**5.8 [R,GW]**	**5.1 [R]**	**5.5 [R,GW]**	**4.7 [R]**	**5.2 [R]**	**5.6 [R,GW]**	**5.6 [R,GW]**	2.9	2.7	**6.8 [R,GW]**
TOTAL HPCDD	94 C	390 C	180	**240 [R,GW]**	**160 [R]**	**130 [R]**	**150 [R]**	**190 [R,GW]**	**195 [R,GW]**	**200 [R,GW]**	**260 [R,GW]**	**120 [R]**	88	**140 [R]**
TOTAL HPCDF				25	22	25	23	15	16.5	18	14	12	6.8 J	29 J
TOTAL HXCDD				31 J	42	37 J	45 J	31 J	32	33	33	20 J	18	85 J
TOTAL HXCDF				20 J	17 J	17 J	15 J	13 J	14.5	16 J	15	9.2 J	5.2 J	23 J
TOTAL PECDD				9 J	31 J	26 J	26 J	12 J	13.5	15 J	6.7 J	7.1 J	7.5 J	45 J
TOTAL PECDF				15	15 J	16 J	14 J	12 J	13	14 J	15 J	7.1 J	4.5 J	19 J
TOTAL TCDD				5.5 J	64 J	19 J	20 J	7.6 J	7.7	7.8 J	3.8 J	4.8 J	5.9 J	37 J
TOTAL TCDF				9.6 J	13	14	25 J	8.9 J	9.45	10 J	12 J	5.8 J	4.7 J	17 J
METALS (MG/KG)														
ALUMINUM	7700 N	99000 N	460000	**11000 J [R]**	**9360 [R]**	**9530 [R]**	**10900 [R]**	**9570 [R]**	**9135 [R]**	**8700 [R]**	**9360 J [R]**	**8920 [R]**	**9630 [R]**	**9340 [R]**
ANTIMONY	3.1 N	41 N	5.4	0.2 J	0.2	0.27	0.51	0.28	0.26	0.24	0.53 J	0.41	0.18	0.29
ARSENIC	0.61 C	2.4 C	0.026	**8.9 [R,I,GW]**	**5.6 [R,I,GW]**	**6 [R,I,GW]**	**6 [R,I,GW]**	**5.2 [R,I,GW]**	**5.05 [R,I,GW]**	**4.9 [R,I,GW]**	**6 [R,I,GW]**	**5.5 [R,I,GW]**	**5.2 [R,I,GW]**	**6.2 [R,I,GW]**
BARIUM	1500 N	19000 N	2400	27.4	23.5	25.6	22.7	31	28.5	26	41.5	23	26.6	24.5
BERYLLIUM	16 N	200 N	260	0.38	0.4	0.36	0.38	0.42	0.39	0.36	0.51	0.38	0.38	0.35
CADMIUM	7 N	80 N	10.4	0.2	0.14	0.17	0.16	0.16	0.15	0.14	0.28	0.23	0.1	0.29
CALCIUM				520 J	857	914	904	754	793	832	719 J	549	576	1080
CHROMIUM				14.7	11.6	12.4	14.8	12.1	11.35	10.6	12.3	44.5	13.2	12.7
COBALT	2.3 N	30 N	4.2	**11.4 [R,GW]**	**7.7 [R,GW]**	**8.6 [R,GW]**	**8.6 [R,GW]**	**7.2 [R,GW]**	**6.85 [R,GW]**	**6.5 [R,GW]**	**7.7 [R,GW]**	**7.6 [R,GW]**	**9.2 [R,GW]**	**8.7 [R,GW]**
COPPER	310 N	4100 N	440	16.3	21.7	18.6	17.8	15.2	15.4	15.6	16.7	14.6	11.6	18.3
IRON	5500 N	72000 N	5400	**25100 J [R,GW]**	**18300 [R,GW]**	**17700 [R,GW]**	**20800 [R,GW]**	**15700 [R,GW]**	**15350 [R,GW]**	**15000 [R,GW]**	**15800 J [R,GW]**	**18700 [R,GW]**	**18400 [R,GW]**	**17500 [R,GW]**
LEAD	400 L	800 L		79.3 J	33.6	57.6	36.7	50.8	50	49.2	101 J	62.5	16.6	32.1
MAGNESIUM				2620 J	2430	2730	3260	2140	2060	1980	1500 J	2470	2720	2790
MANGANESE	180 N	2300 N	420	**512 J [R,GW]**	**263 [R]**	**268 [R]**	**311 [R]**	**371 [R]**	**357 [R]**	**343 [R]**	**658 J [R,GW]**	**332 [R]**	**649 [R,GW]**	**311 [R]**
MERCURY	1 N	4.3 N	0.66	0.14 J	0.07 J	0.07 J	0.07 J	0.09 J	0.085	0.08	0.13 J	0.06 J	0.04	0.04
NICKEL	150 N	2000 N	400	18.5	17.2	16	18.7	14.3	13.65	13	13.4	24	16.2	16.1
POTASSIUM				335	429	328	443	414	362.5	311	354	391	474	501
SELENIUM	39 N	510 N	8	0.26 U	0.2 J	0.26 J	0.19 J	0.28 J	0.28	0.28 J	0.41 U	0.14 J	0.22 J	0.23 J
SILVER	39 N	510 N	12	0.04 J	0.05 J	0.06 J	0.05 J	0.07 J	0.06	0.05 J	0.08	0.06 J	0.04 J	0.06 J
SODIUM				16.8 U	37.5 J	29.2 J	25.1 U	27.6 J	19.35	22.2 U	28 J	24.5 U	22.2 U	29.2 J
THALLIUM	0.078 N	1 N	0.22	0.06 J	0.05 J	0.06 J	0.05 J	**0.08 [R]**	0.07	0.06 J	**0.1 [R]**	0.06 J	0.07 J	0.06 J
VANADIUM	39 N	510 N	1260	24.9 J	17.3	20	21.6	19.2	18.4	17.6	21.8 J	19.8	17.2	21.6
ZINC	2300 N	31000 N	5800	71.8 J	46.3	50	61.4	53.6	49.9	46.2	99.1 J	86.7	39.6	55.4
MISCELLANEOUS PARAMETERS (%)														
TOTAL SOLIDS				87	89	93	93	93	93	93	91	92	95	92
PETROLEUM HYDROCARBONS (MG/KG)														
ExTPH (C08-C44)				NA	NA	NA	NA	48 J	48 J	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)														
2-METHYLNAPHTHALENE	23000 N	220000 N	2800	18 J	23	12 J	10 U	9.5 U	9.75 U	10 U	4.3 J	10 U	9.5 U	9.9 U
ACENAPHTHENE	340000 N	3300000 N	82000	71	100	160	15 J	5.4 J	5.05	4.7 J	14 J	9.5 J	5 J	15 J
ACENAPHTHYLENE	340000 N	3300000 N	82000	3 J	5 J	10 U	1.8 J	2.3 J	2.05	1.8 J	4.3 J	1.4 J	9.5 U	2.1 J
ANTHRACENE	1700000 N	17000000 N	840000	110	220	310	26	16 J	15	14 J	30	20 J	9 J	51
BENZO(A)ANTHRACENE	150 C	2100 C	200	**310 J [R,GW]**	**670 J [R,GW]**	**740 [R,GW]**	**180 J [R]**	120 J	120	120	**200 J [R]**	140 J	63 J	**400 [R,GW]**
BENZO(A)PYRENE	15 C	210 C	70	**190 J [R,GW]**	**440 J [R,I,GW]**	**580 J [R,I,GW]**	**99 J [R,GW]**	**79 J [R,GW]**	**89.5 [R,GW]**	**100 J [R,GW]**	**150 J [R,GW]**	**92 J [R,GW]**	**38 J [R]**	**220 J [R,I,GW]**
BENZO(B)FLUORANTHENE	150 C	2100 C	700	**280 J [R]**	**640 J [R]**	**840 J [R,GW]**	**160 J [R]**	140 J	**155 [R]**	**170 J [R]**	**240 J [R]**	140 J	58 J	**300 J [R]**
BENZO(G,H,I)PERYLENE	170000 N	1700000 N	190000	77 J	160 J	200 J	44 J	39 J	43	47 J	66 J	45 J	18 J	86 J
BENZO(K)FLUORANTHENE	1500 C	21000 C	7000	130	170	300	52	42	49	56	80 J	46	18 J	120
CHRYSENE	15000 C	210000 C	22000	240	630	750	170	110	120	130	180	120	56	410
DIBENZO(A,H)ANTHRACENE	15 C	210 C	220	**52 [R]**	**95 [R]**	**110 [R]**	**27 [R]**	**24 [R]**	**20.5 [R]**	**17 J [R]**	**42 J [R]**	**28 [R]**	11 J	**59 [R]**
FLUORANTHENE	230000 N	2200000 N	1400000	620	1800	1900	330	230	215	200	340	230	100	740
FLUORENE	230000 N	2200000 N	80000	62	120	140	10 J	4.7 J	4.4	4.1 J	14 J	5.7 J	9.5 U	8.3 J
INDENO(1,2,3-CD)PYRENE	150 C	2100 C	4000	**260 J [R]**	**630 J [R]**	**420 J [R]**	130 J	130 J	107	84 J	**230 J [R]**	130 J	53 J	**260 J [R]**
NAPHTHALENE	3600 C	18000 C	9.4	**60 [GW]**	**70 [GW]**	**43 [GW]**	2.9 J	9.5 U	9.75 U	10 U	9.2 J	10 U	9.5 U	9.9 U
PHENANTHRENE	170000 N	1700000 N	190000	510	1200	1700	220	120	115	110	220	160	78	450
PYRENE	170000 N	1700000 N	190000	480	1300	2000	410	200	220	240	320	260	130	840
TOTAL PAHS				3473	8273	10205	1877.7	1262.4	1280.5	1298.6	2143.8	1427.6	637	3961.4

1 - Project Screening Level was used in place of EPA RSL Residential Soil value.
2- [GW] obtained using a DAF of 20

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-4

SUMMARY OF ANALYTICAL RESULTS
AOC-003 TANK FARM 2 SUBSURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND
PAGE 1 OF 2

SAMPLE ID LOCATION ID SAMPLE DATE TOP DEPTH (FT) BOTTOM DEPTH (FT) SACODE QC TYPE	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-003-SB1011-0204 TF2-003-SB1011 11/15/2013 2 4 ORIG NM	TF2-003-SB1011-0204-AVG TF2-003-SB1011 20131115 2 4 AVG NM	TF2-003-SB1011-0204-D TF2-003-SB1011 11/15/2013 2 4 DUP FD	TF2-003-SB1012-0204 TF2-003-SB1012 11/15/2013 2 4 NORMAL NM	TF2-003-SB1012-0810 TF2-003-SB1012 11/15/2013 8 10 NORMAL NM	TF2-003-SB1013-0204 TF2-003-SB1013 11/25/2013 2 4 NORMAL NM	TF2-003-SB1013-0405 TF2-003-SB1013 11/25/2013 4 5 NORMAL NM	TF2-003-SB1014-0204 TF2-003-SB1014 11/15/2013 2 4 NORMAL NM	TF2-003-SB1014-0810 TF2-003-SB1014 11/15/2013 8 10 NORMAL NM	TF2-003-SB1015-0204 TF2-003-SB1015 11/15/2013 2 4 NORMAL NM	TF2-003-SB1015-0810 TF2-003-SB1015 11/15/2013 8 10 NORMAL NM	TF2-003-SB1016-0204 TF2-003-SB1016 11/15/2013 2 4 NORMAL NM	TF2-003-SB1016-0810 TF2-003-SB1016 11/15/2013 8 10 NORMAL NM
DIOXINS/FURANS (NG/KG)																
1,2,3,4,6,7,8,9-OCDD	15000 C	60000 C	17400	3100	3000	2900	3200	NA	2600	NA	2000	NA	3100	NA	3100	NA
1,2,3,4,6,7,8,9-OCDF	15000 C	60000 C	17400	2.8 U	4.25 U	5.7 U	4.3 U	NA	0.82 U	NA	4.2 U	NA	4.3 U	NA	4.4 U	NA
1,2,3,4,6,7,8-HPCDD	450 C	1800 C	520	20	19	18 J	27	NA	24	NA	41	NA	41	NA	35	NA
1,2,3,4,6,7,8-HPCDF	450 C	1800 C	520	4.2 J	4.95	5.7	5.3	NA	0.44 U	NA	12	NA	9.1	NA	8.2	NA
1,2,3,4,7,8,9-HPCDF	450 C	1800 C	520	0.033 U	0.0435 U	0.054 U	0.44 U	NA	0.033 U	NA	0.63 J	NA	0.56 U	NA	0.38 U	NA
1,2,3,4,7,8-HXCDD	45 C	180 C	52	0.22 J	0.132	0.088 U	0.73 J	NA	0.12 J	NA	2.6 J	NA	2.2 J	NA	1.5 J	NA
1,2,3,4,7,8-HXCDF	45 C	180 C	52	0.74 U	0.935	1.5 J	1.2 J	NA	0.11 U	NA	2.9 J	NA	1.9 J	NA	3.5 J	NA
1,2,3,6,7,8-HXCDD	45 C	180 C	52	0.38 J	0.2095	0.078 U	1.6 J	NA	0.21 J	NA	6.9	NA	5.3 J	NA	3.6 J	NA
1,2,3,6,7,8-HXCDF	45 C	180 C	52	0.45 J	0.625	0.8 J	0.76 J	NA	0.31 J	NA	2.4 J	NA	1.9 J	NA	1.8 J	NA
1,2,3,7,8,9-HXCDD	45 C	180 C	52	0.53 J	0.46	0.39 J	1.5 J	NA	0.46 J	NA	6.3	NA	4.9 J	NA	3.5 J	NA
1,2,3,7,8,9-HXCDF	45 C	180 C	52	0.022 U	0.031 U	0.04 U	0.037 U	NA	0.028 U	NA	0.029 U	NA	0.023 U	NA	0.3 J	NA
1,2,3,7,8-PECDD	4.5 C	18 C	5.2	0.14 J	0.0945	0.098 U	0.59 J	NA	0.048 U	NA	2.9 J	NA	2.3 J	NA	1.3 J	NA
1,2,3,7,8-PECDF	150 C	600 C	174	0.029 U	0.14225	0.27 J	0.43 J	NA	0.043 U	NA	1.5 J	NA	1.3 J	NA	0.7 J	NA
2,3,4,6,7,8-HXCDF	45 C	180 C	52	0.29 J	0.26	0.23 J	0.53 J	NA	0.025 U	NA	1.9 J	NA	1.4 J	NA	1.1 J	NA
2,3,4,7,8-PECDF	15 C	60 C	17.4	0.26 J	0.14725	0.069 U	0.39 J	NA	0.033 U	NA	1.9 J	NA	1.5 J	NA	1.3 J	NA
2,3,7,8-TCDD	4.5 C	18 C	5.2	0.029 U	0.0425 U	0.056 U	0.031 U	NA	0.027 U	NA	0.043 U	NA	0.039 U	NA	0.098 U	NA
2,3,7,8-TCDF	45 C	180 C	52	0.13 U	0.0955 U	0.061 UJ	0.35 J	NA	0.23 U	NA	1.1	NA	0.87 J	NA	0.047 UJ	NA
TEQ[1]	4.2 C		5.2	1.6	1.5	1.4	2.7	NA	1.1	NA	**7.1 [R,GW]**	NA	**6.1 [R,GW]**	NA	**4.6 [R]**	NA
TOTAL HPCDD	94 C	390 C	180	36	36	36 J	50	NA	42 J	NA	81	NA	80	NA	75	NA
TOTAL HPCDF				6.8	7.4	8	9	NA	0.68 U	NA	15	NA	12	NA	12 J	NA
TOTAL HXCDD				4.4 J	3.95	3.5 J	17	NA	4.9 J	NA	79	NA	60	NA	41 J	NA
TOTAL HXCDF				4.6 J	5.2	5.8 J	6.8 J	NA	0.74 J	NA	19	NA	14 J	NA	13 J	NA
TOTAL PECDD				2.1 J	1.75	1.4 J	16 J	NA	1 J	NA	87 J	NA	70 J	NA	44 J	NA
TOTAL PECDF				2.8 J	3.25	3.7 J	6.1 J	NA	0.31 J	NA	22 J	NA	15	NA	13 J	NA
TOTAL TCDD				1.5 J	0.764	0.056 U	11 J	NA	1.1 J	NA	63 J	NA	55 J	NA	29 J	NA
TOTAL TCDF				2.4 J	2.65	2.9 J	5.4 J	NA	0.96 J	NA	19 J	NA	17 J	NA	12 J	NA
METALS (MG/KG)																
ALUMINUM	7700 N	99000 N	460000	**14700 [R]**	**14050 [R]**	**13400 [R]**	**11700 [R]**	**12200 [R]**	**10400 [R]**	**11700 [R]**	**10400 [R]**	**11400 [R]**	**12000 [R]**	**12700 [R]**	**11000 [R]**	**13200 [R]**
ANTIMONY	3.1 N	41 N	5.4	0.17 J	0.17	0.17 J	0.18 J	0.06 U	0.07 J	0.06 J	0.31 J	0.1 J	0.14 J	0.07 J	0.18 J	0.11 J
ARSENIC	0.61 C	2.4 C	0.026	**7.7 [R,I,GW]**	**7.2 [R,I,GW]**	**6.7 [R,I,GW]**	**6.5 [R,I,GW]**	**4.7 [R,I,GW]**	**4.5 [R,I,GW]**	**3.8 [R,I,GW]**	**7.8 [R,I,GW]**	**4.9 [R,I,GW]**	**6.2 [R,I,GW]**	**5.2 [R,I,GW]**	**6.4 [R,I,GW]**	**5.7 [R,I,GW]**
BARIUM	1500 N	19000 N	2400	17.9	22.95	28	23.8	11.6	14.3	17.6	19.4	13.7	19.2	11.6	20.5	15
BERYLLIUM	16 N	200 N	260	0.4	0.37	0.34	0.5	0.3	0.28	0.34	0.33	0.31	0.34	0.32	0.38	0.32
CADMIUM	7 N	80 N	10.4	0.14	0.13	0.12	0.19	0.09 J	0.07 J	0.07 J	0.15	0.16	0.16	0.15	0.17	0.11
CALCIUM				853	1066.5	1280	1170	939	614	1110	1520	1110	1110	801	1010	1070
CHROMIUM				19.2	17.8	16.4	15	16.4	12.9	15.8	13.7	17	15.1	14.3	14.1	17
COBALT	2.3 N	30 N	4.2	**12.9 [R,GW]**	**12 [R,GW]**	**11.1 [R,GW]**	**10 [R,GW]**	**10.2 [R,GW]**	**7.4 [R,GW]**	**6.1 [R,GW]**	**10.6 [R,GW]**	**9.6 [R,GW]**	**11 [R,GW]**	**9.3 [R,GW]**	**10.1 [R,GW]**	**10 [R,GW]**
COPPER	310 N	4100 N	440	20.8 J	19.15	17.5 J	34.3 J	15.2 J	13.2	12.6	25.4 J	15.6 J	21 J	11.7 J	19.6 J	15.7 J
IRON	5500 N	72000 N	5400	**29400 [R,GW]**	**28900 [R,GW]**	**28400 [R,GW]**	**24100 [R,GW]**	**24700 [R,GW]**	**20400 [R,GW]**	**19400 [R,GW]**	**24100 [R,GW]**	**22900 [R,GW]**	**24700 [R,GW]**	**25400 [R,GW]**	**22700 [R,GW]**	**27000 [R,GW]**
LEAD	400 L	800 L		25.4	26.4	27.4	18.4	11	9.8	9.4	21.3	14.8	17.2	11.8	26.4	16.4
MAGNESIUM				5130	4755	4380	3570	4370	3490	3300	3560	4200	4360	4520	3790	4580
MANGANESE	180 N	2300 N	420	**346 [R]**	**322 [R]**	**298 [R]**	**314 [R]**	**284 [R]**	**221 [R]**	179	**403 [R]**	**318 [R]**	**339 [R]**	**292 [R]**	**351 [R]**	**309 [R]**
MERCURY	1 N	4.3 N	0.66	0.04 U	0.04 U	0.04 U	0.07	0.05	0.015 U	0.014 U	0.04 U	0.03 U	0.04 U	0.04 U	0.04 U	0.02 U
NICKEL	150 N	2000 N	400	24.2	22.15	20.1	19.1	21.6	17.2	15.4	18.6	19.9	20.5	20	18.4	21.6
POTASSIUM				402 J	450.5	499 J	428 J	284 J	487	628	398 J	346 J	410 J	264 J	418 J	336 J
SELENIUM	39 N	510 N	8	0.29 J	0.305	0.32 J	0.3 J	0.24 J	0.26 J	0.29 J	0.31 J	0.24 J	0.26 J	0.25 J	0.29 J	0.16 J
SILVER	39 N	510 N	12	0.05 J	0.045	0.04 J	0.05 J	0.03 J	0.03 J	0.04 J	0.04 J	0.03 J	0.04 J	0.03 J	0.04 J	0.03 J
SODIUM				39 U	38.5 U	38 U	42.8 U	36 U	61.9 J	84.4	39 U	37 U	37 U	38 U	32.9 U	38 U
THALLIUM	0.078 N	1 N	0.22	0.04 J	0.035	0.03 J	0.04 J	0.02 J	0.04 J	0.07 J	0.04 J	0.03 J	0.04 J	0.03 J	0.05 J	0.03 J
VANADIUM	39 N	510 N	1260	18.2	17.6	17	15.2	14.6	14.5	17.5	13.9	14.9	15.2	15	14.8	15.5
ZINC	2300 N	31000 N	5800	67.1	68.3	69.5	56.2	48.6	39.5	37.4	52.4	50.3	56	47.8	55.9	60.1
MISCELLANEOUS PARAMETERS (%)																
TOTAL SOLIDS				82	86.5	91	91	91	93	92	93	94	93	89	92	93
PETROLEUM HYDROCARBONS (MG/KG)																
ExTPH (C08-C44)				NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS																
2-METHYLNAPHTHALENE	23000 N	220000 N	2800	12 U	11.5 U	11 U	10 U	7.7 J	10 U	11 U	10 U	32 J	6.7 J	9.2 J	11 UJ	11 UJ
ACENAPHTHENE	340000 N	3300000 N	82000	51 J	28	5 J	28	190	10 U	11 U	20 J	320	54	9 J	22	6.9 J
ACENAPHTHYLENE	340000 N	3300000 N	82000	12 U	11.5 U	11 U	2.2 J	16 J	10 U	11 U	2.7 J	20 J	3.2 J	11 U	11 U	1.8 J
ANTHRACENE	1700000 N	17000000 N	840000	26	17.8	9.6 J	50	200	2.6 J	2.2 J	34	410	92	13 J	67	17 J
BENZO(A)ANTHRACENE	150 C	2100 C	200	77 J	55.5	34 J	**300 [R,GW]**	**330 [R,GW]**	9 J	11 J	140	**510 [R,GW]**	**420 [R,GW]**	76	**480 [R,GW]**	120
BENZO(A)PYRENE	15 C	210 C	70	**54 J [R]**	**41 [R]**	**28 J [R]**	**180 J [R,GW]**	**240 J [R,I,GW]**	7 J	8.5 J	**52 J [R]**	**240 J [R,I,GW]**	**240 J [R,I,GW]**	**84 J [R,GW]**	**260 J [R,I,GW]**	**74 [R,GW]**
BENZO(B)FLUORANTHENE	150 C	2100 C	700	63	51	39	**250 [R]**	**340 [R]**	8.6 J	8.9 J	82	**260 [R]**	**320 [R]**	89	**450 [R]**	110
BENZO(G,H,I)PERYLENE	170000 N	1700000 N	190000	25 J	21.5	18 J	87 J	150 J	3.8 J	4.8 J	14 J	95 J	100 J	69 J	100 J	29 J
BENZO(K)FLUORANTHENE	1500 C	21000 C	7000	22 J	18.5	15 J	79 J	93	10 U	8.7 J	26	100	110	26 J	130	39
CHRYSENE	15000 C	210000 C	22000	74 J	56	38 J	300	300	8.7 J	12 J	150	480	460	120	500	110
DIBENZO(A,H)ANTHRACENE	15 C	210 C	220	15 J	14.5	14 J	**36 J [R]**	**59 J [R]**	10 UJ	2.1 J	15 J	**34 [R]**	**48 [R]**	**31 J [R]**	**49 [R]**	**19 [R]**
FLUORANTHENE	230000 N	2200000 N	1400000	130 J	100	70 J	480	500	20 J	31	320	750	640	76	680	180
FLUORENE	230000 N	2200000 N	80000	18 J	11	4 J	12 J	56	10 U	11 U	8 J	170	32	5.1 J	7.9 J	4 J
INDENO(1,2,3-CD)PYRENE	150 C	2100 C	4000	52	44	36	**160 J [R]**	**240 [R]**	4.8 J	4.9 J	38	**170 [R]**	**190 [R]**	59	**190 [R]**	64
NAPHTHALENE	3600 C	18000 C	9.4	**20 J [GW]**	**12.1 [GW]**	4.2 J	10 U	6.7 J	10 U	11 U	10 U	**9.9 J [GW]**	7.2 J	3.4 J	4.8 J	11 U
PHENANTHRENE	170000 N	1700000 N	190000	130 J	91.5	53 J	520	600	16 J	14 J	280	1500	720	100	590	140
PYRENE	170000 N	1700000 N	190000	190 J	136.5	83 J	750	770	16 J	18 J	410	1100	1000	330	960	250
TOTAL PAHS				947	698.9	450.8	3234.2	4098.4	96.5	126.1	1591.7	6200.9	4443.1	1099.7	4490.7	1164.7

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-4

SUMMARY OF ANALYTICAL RESULTS
AOC-003 TANK FARM 2 SUBSURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID LOCATION ID SAMPLE DATE TOP DEPTH (FT) BOTTOM DEPTH (FT) SACODE QC TYPE	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-003-SB1017-011.6 TF2-003-SB1017 11/15/2013 1 1.6 NORMAL NM	TF2-003-SB1017-0204 TF2-003-SB1017 11/15/2013 2 4 NORMAL NM	TF2-003-SB1017-0810 TF2-003-SB1017 11/15/2013 8 10 NORMAL NM	TF2-003-SB1018-0204 TF2-003-SB1018 11/15/2013 2 4 NORMAL NM	TF2-003-SB1019-0204 TF2-003-SB1019 11/25/2013 2 4 NORMAL NM	TF2-003-SB1019-0810 TF2-003-SB1019 11/25/2013 8 10 NORMAL NM
DIOXINS/FURANS (NG/KG)									
1,2,3,4,6,7,8,9-OCDD	15000 C	60000 C	17400	2500	3700	NA	1500	4200	NA
1,2,3,4,6,7,8,9-OCDF	15000 C	60000 C	17400	7 U	0.48 U	NA	1 U	6.4 J	NA
1,2,3,4,6,7,8-HPCDD	450 C	1800 C	520	56	23	NA	8.3	64	NA
1,2,3,4,6,7,8-HPCDF	450 C	1800 C	520	18	0.39 U	NA	0.51 U	14	NA
1,2,3,4,7,8,9-HPCDF	450 C	1800 C	520	0.97 J	0.054 U	NA	0.12 U	0.73 J	NA
1,2,3,4,7,8-HXCDD	45 C	180 C	52	5 J	0.096 J	NA	0.056 U	3.6 J	NA
1,2,3,4,7,8-HXCDF	45 C	180 C	52	3.8 J	0.095 U	NA	0.23 U	3.8 J	NA
1,2,3,6,7,8-HXCDD	45 C	180 C	52	12	0.092 J	NA	0.049 U	8	NA
1,2,3,6,7,8-HXCDF	45 C	180 C	52	3.3 J	0.24 J	NA	0.29 J	2.6 J	NA
1,2,3,7,8,9-HXCDD	45 C	180 C	52	11	0.33 J	NA	0.045 U	5.9	NA
1,2,3,7,8,9-HXCDF	45 C	180 C	52	0.031 U	0.014 U	NA	0.033 U	0.08 J	NA
1,2,3,7,8-PECDD	4.5 C	18 C	5.2	**5.2 J [R]**	0.035 U	NA	0.081 U	2.9 J	NA
1,2,3,7,8-PECDF	150 C	600 C	174	2.4 J	0.02 U	NA	0.044 U	1.7 J	NA
2,3,4,6,7,8-HXCDF	45 C	180 C	52	2.6 J	0.013 U	NA	0.031 U	2.3 J	NA
2,3,4,7,8-PECDF	15 C	60 C	17.4	3.3 J	0.02 U	NA	0.046 U	2.1 J	NA
2,3,7,8-TCDD	4.5 C	18 C	5.2	0.1 U	0.017 U	NA	0.048 U	0.47 J	NA
2,3,7,8-TCDF	45 C	180 C	52	2	0.013 U	NA	0.039 U	1.1	NA
TEQ[1]	4.2 C		5.2	**11.7 [R,GW]**	1.4	NA	0.6	**8.8 [R,GW]**	NA
TOTAL HPCDD	94 C	390 C	180	**110 [R]**	42	NA	14	**120 [R]**	NA
TOTAL HPCDF				23	0.54 U	NA	0.74 U	19 J	NA
TOTAL HXCDD				140	1.2 J	NA	0.57 J	98	NA
TOTAL HXCDF				29 J	0.47 U	NA	0.68 U	24 J	NA
TOTAL PECDD				180 J	0.4 J	NA	0.3 J	110 J	NA
TOTAL PECDF				25	0.02 U	NA	0.046 U	24 J	NA
TOTAL TCDD				160	0.31 J	NA	0.048 U	86 J	NA
TOTAL TCDF				37	0.13 J	NA	0.21 J	25 J	NA
METALS (MG/KG)									
ALUMINUM	7700 N	99000 N	460000	**14500 [R]**	**10500 [R]**	**14500 [R]**	**10400 [R]**	**11000 [R]**	**13200 [R]**
ANTIMONY	3.1 N	41 N	5.4	0.21 J	0.1 J	0.09 J	0.08 J	0.11	0.07 J
ARSENIC	0.61 C	2.4 C	0.026	**8.8 [R,I,GW]**	**5.3 [R,I,GW]**	**8.7 [R,I,GW]**	**5.6 [R,I,GW]**	**5.6 [R,I,GW]**	**4.1 [R,I,GW]**
BARIUM	1500 N	19000 N	2400	23	13	16.6	11.5	19.6	11.5
BERYLLIUM	16 N	200 N	260	0.44	0.31	0.61	0.32	0.31	0.28
CADMIUM	7 N	80 N	10.4	0.13	0.1	0.07 J	0.14	0.09	0.04 J
CALCIUM				1270	511	946	654	1060	908
CHROMIUM				18.1	13	19	13.1	13.9	18
COBALT	2.3 N	30 N	4.2	**15.2 [R,GW]**	**9.5 [R,GW]**	**13.1 [R,GW]**	**9.1 [R,GW]**	**8.7 [R,GW]**	**11.3 [R,GW]**
COPPER	310 N	4100 N	440	46 J	17.5 J	20.4 J	15.3 J	17.1	15.6
IRON	5500 N	72000 N	5400	**32000 [R,GW]**	**21000 [R,GW]**	**31200 [R,GW]**	**23100 [R,GW]**	**21400 [R,GW]**	**27200 [R,GW]**
LEAD	400 L	800 L		16.4	11	14.1	12	13.9	10.9
MAGNESIUM				4800	3530	3920	3790	3630	4610
MANGANESE	180 N	2300 N	420	**387 [R]**	**276 [R]**	**464 [R,GW]**	**273 [R]**	**279 [R]**	**226 [R]**
MERCURY	1 N	4.3 N	0.66	0.09	0.02 U	0.03 U	0.016 U	0.02 U	0.016 U
NICKEL	150 N	2000 N	400	27.5	17.9	24.3	17	17.8	20.4
POTASSIUM				518 J	354 J	349 J	359 J	598	528
SELENIUM	39 N	510 N	8	0.45 J	0.2 J	0.47	0.16 J	0.24 J	0.24 J
SILVER	39 N	510 N	12	0.04 J	0.04 J	0.05 J	0.02 J	0.04 J	0.03 J
SODIUM				41 U	39 U	31 U	36 U	52.4 J	53.9 J
THALLIUM	0.078 N	1 N	0.22	0.05 J	0.04 J	0.04 J	0.03 J	0.06	0.05 J
VANADIUM	39 N	510 N	1260	17.2	12.8	19.6	14.2	15.4	16.5
ZINC	2300 N	31000 N	5800	63.3	38	56.2	39	46.4	49.7
MISCELLANEOUS PARAMETERS (%)									
TOTAL SOLIDS				80	93	89	95	93	89
PETROLEUM HYDROCARBONS (MG/KG)									
ExTPH (C08-C44)				250 J	NA	NA	NA	NA	11 J
POLYCYCLIC AROMATIC HYDROCARBONS									
2-METHYLNAPHTHALENE	23000 N	220000 N	2800	6.5 J	10 U	11 U	3.8 J	11 U	11 U
ACENAPHTHENE	340000 N	3300000 N	82000	66	10 U	1.9 J	34	23	11 U
ACENAPHTHYLENE	340000 N	3300000 N	82000	2.4 J	10 U	11 U	10 U	2.4 J	11 U
ANTHRACENE	1700000 N	17000000 N	840000	150	1.7 J	11 U	31	75	2.9 J
BENZO(A)ANTHRACENE	150 C	2100 C	200	**1100 [R,GW]**	6.6 J	3.7 J	87	**410 [R,GW]**	46
BENZO(A)PYRENE	15 C	210 C	70	**570 J [R,I,GW]**	3.6 J	11 UJ	**44 J [R]**	**250 J [R,I,GW]**	**29 J [R]**
BENZO(B)FLUORANTHENE	150 C	2100 C	700	**980 [R,GW]**	12 J	10 J	58	**280 J [R]**	32 J
BENZO(G,H,I)PERYLENE	170000 N	1700000 N	190000	240 J	10 UJ	11 UJ	18 J	120 J	17 J
BENZO(K)FLUORANTHENE	1500 C	21000 C	7000	240	10 U	11 U	19 J	350 J	22 J
CHRYSENE	15000 C	210000 C	22000	1100	7.3 J	4.4 J	82	440	38
DIBENZO(A,H)ANTHRACENE	15 C	210 C	220	**98 [R]**	8.8 J	8.7 J	12 J	**66 J [R]**	7.5 J
FLUORANTHENE	230000 N	2200000 N	1400000	1600	15 J	6.5 J	160	1100	64
FLUORENE	230000 N	2200000 N	80000	31	10 U	11 U	20 J	13 J	11 U
INDENO(1,2,3-CD)PYRENE	150 C	2100 C	4000	**400 [R]**	7.2 J	5.8 J	39	140 J	17 J
NAPHTHALENE	3600 C	18000 C	9.4	6.5 J	10 U	11 U	10 U	6.7 J	11 U
PHENANTHRENE	170000 N	1700000 N	190000	1500	9.1 J	3.5 J	290	660	31
PYRENE	170000 N	1700000 N	190000	2500	14 J	7.4 J	270	740 J	84
TOTAL PAHS				10590.4	85.3	51.9	1167.8	4676.1	390.4

1 - Project Screening Level was used in place of EPA RSL Residential Soil value.
2- [GW] obtained using a DAF of 20

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-5

SUMMARY OF ANALYTICAL RESULTS
AOC-004/5 TANK FARM 2 SURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH RHODE ISLAND
PAGE 1 OF 4

SAMPLE ID LOCATION ID SAMPLE DATE TOP DEPTH (FT) BOTTOM DEPTH (FT) SACODE QC TYPE	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-004/5-SS1020-0001 TF2-004/5-SB1020 10/18/2013 0 1 ORIG NM	TF2-004/5-SS1020-0001- TF2-004/5-SB1020 20131018 0 1 AVG NM	TF2-004/5-SS1020-0001 TF2-004/5-SB1020 10/18/2013 0 1 DUP FD	TF2-004/5-SS1021- TF2-004/5-SB1021 10/18/2013 0 0.7 NORMAL NM	TF2-004/5-SS1022- TF2-004/5-SB1022 10/18/2013 0 0.9 NORMAL NM	TF2-004/5-SS1023- TF2-004/5-SB1023 10/18/2013 0 0.8 NORMAL NM	TF2-004/5-SS1024- TF2-004/5-SB1024 10/18/2013 0 0.6 NORMAL NM	TF2-004/5-SS1025- TF2-004/5-SB1025 10/18/2013 0 0.8 NORMAL NM	TF2-004/5-SS1026- TF2-004/5-SB1026 10/18/2013 0 0.8 NORMAL NM	TF2-004/5-SS1027-0001 TF2-004/5-SB1027 10/18/2013 0 1 NORMAL NM	TF2-004/5-SS1028- TF2-004/5-SB1028 10/18/2013 0 0.8 NORMAL NM	TF2-004/5-SS1029- TF2-004/5-SB1029 10/18/2013 0 0.6 NORMAL NM	TF2-004/5-SS1030- TF2-004/5-SB1030 10/18/2013 0 0.6 NORMAL NM	TF2-004/5-SS1031- TF2-004/5-SB1031 10/18/2013 0 0.8 NORMAL NM	TF2-004/5-SS1032- TF2-004/5-SB1032 10/18/2013 0 0.9 NORMAL NM
DIOXINS/FURANS (NG/KG)																		
1,2,3,4,6,7,8,9-OCDD	15000 C	60000 C	17400	6000	6300	6600	3000	6400	2200	4100	3400	1400	6100	2200	6300	3100	3800	3900
1,2,3,4,6,7,8,9-OCDF	15000 C	60000 C	17400	4.9 J	6.1	7.3 J	79	5.3 J	22	29	34	12	4.5 J	49	49	15	15	18
1,2,3,4,6,7,8-HPCDD	450 C	1800 C	520	44	46.5	49	140	46	65	120	99	40	39	78	170	70	71	96
1,2,3,4,6,7,8-HPCDF	450 C	1800 C	520	3.6 J	3.85	4.1 J	47	2.9 J	13	20	27	11	2.1 J	26	30	9.1	9	14
1,2,3,4,7,8,9-HPCDF	450 C	1800 C	520	0.39 J	0.35	0.31 J	3.2 J	0.059 U	1 J	1.5 J	1.7 J	0.87 J	0.08 U	1.5 J	1.8 J	0.67 J	0.52 J	1.1 J
1,2,3,4,7,8-HXCDD	45 C	180 C	52	0.62 J	0.585	0.55 J	3.2 J	0.51 J	1.2 J	2.1 J	2.2 J	0.84 J	0.28 J	1.3 J	3.1 J	1.4 J	1.2 J	1.9 J
1,2,3,4,7,8-HXCDF	45 C	180 C	52	0.41 J	0.435	0.46 J	3.6 J	0.27 J	2.2 J	2.8 J	4.4 J	1.1 J	0.3 J	2.9 J	3.5 J	1.2 J	1.4 J	2.2 J
1,2,3,6,7,8-HXCDD	45 C	180 C	52	0.9 J	1.05	1.2 J	7.1	0.98 J	2.8 J	5.1 J	4.5 J	1.6 J	0.47 J	3.3 J	7.3	2.7 J	2.5 J	3.6 J
1,2,3,6,7,8-HXCDF	45 C	180 C	52	0.81 J	1.105	1.4 J	3.7 J	0.52 J	1.6 J	3.1 J	2.8 J	1.7 J	0.92 J	2.1 J	2.2 J	0.95 J	1.1 J	2.2 J
1,2,3,7,8,9-HXCDD	45 C	180 C	52	1.2 J	1.3	1.4 J	6	1.2 J	2.5 J	5.2 J	4.3 J	1.5 J	0.57 J	2.8 J	4.6 J	2.7 J	2.4 J	3.8 J
1,2,3,7,8-PECDD	4.5 C	18 C	5.2	0.27 J	0.255	0.24 J	1.6 J	0.058 U	0.65 J	1.1 J	0.91 J	0.28 J	0.095 U	0.55 J	1.3 J	0.48 J	0.44 J	0.71 J
1,2,3,7,8-PECDF	150 C	600 C	174	0.054 U	0.063 U	0.072 U	0.64 J	0.052 U	0.55 J	0.6 J	0.81 J	0.31 J	0.049 U	0.58 J	1.1 J	0.48 J	0.4 J	0.86 J
2,3,4,6,7,8-HXCDF	45 C	180 C	52	0.44 J	0.495	0.55 J	3.5 J	0.28 J	1.4 J	2.8 J	3.1 J	2.1 J	0.05 U	1.9 J	1.8 J	0.81 J	0.67 J	1.7 J
2,3,4,7,8-PECDF	15 C	60 C	17.4	0.14 J	0.145	0.15 J	1.1 J	0.054 U	0.93 J	1.4 J	1.6 J	0.44 J	0.051 U	0.6 J	1.5 J	0.43 J	0.49 J	0.49 J
2,3,7,8-TCDD	4.5 C	18 C	5.2	0.12 J	0.07125	0.045 U	0.18 J	0.071 U	0.19 J	0.22 J	0.16 J	0.076 U	0.041 U	0.036 U	0.29 J	0.16 J	0.14 J	0.053 U
2,3,7,8-TCDF	45 C	180 C	52	0.19 J	0.18	0.17 J	0.69 J	0.071 U	1 J	1.2 UJ	1 J	0.21 J	0.051 U	0.54 J	1.7	0.71 J	0.66 J	0.97 U
TEQ[1]	4.2 C		5.2	3.2	3.3	3.4	**7.7 [R,GW]**	2.8	3.9	**6.5 [R,GW]**	**6.1 [R,GW]**	2.3	2.5	4.0	**8.4 [R,GW]**	3.6	3.7	**4.7 [R]**
TOTAL HPCDD	94 C	390 C	180	75	80.5	86	**260 [R,GW]**	81	**130 [R]**	**230 [R,GW]**	**190 [R,GW]**	78	66	**140 [R]**	**290 [R,GW]**	**150 [R]**	**130 [R]**	**190 [R,GW]**
TOTAL HPCDF				8.1	9.05	10	140	6.7	33	50	60	26	4.6 J	66	74	22	21	34
TOTAL HXCDD				8.8 J	9.4	10 J	50 J	8.2 J	22	44 J	38 J	12 J	4.6 J	23 J	50 J	23 J	20 J	31 J
TOTAL HXCDF				9.9 J	9.95	10 J	91 J	3.6 J	30	55	64 J	34	2.6 J	37	40 J	17	14 J	36
TOTAL PECDD				2 J	1.9	1.8 J	7.8 J	1.7 J	3.9 J	7 J	7.9 J	1.3 J	1.2 J	4 J	9.1 J	3.1 J	2.5 J	4.5 J
TOTAL PECDF				4.8 J	4.5	4.2 J	30 J	0.79 J	13 J	160 J	30 J	15 J	0.38 J	12 J	22 J	6.6 J	6.6 J	27 J
TOTAL TCDD				1.3 J	0.94	0.58 J	1.1 J	0.71 J	2.4 J	2.7 J	3.4 J	0.076 U	0.43 J	0.94 J	4 J	0.78 J	1.5 J	0.76 J
TOTAL TCDF				4.8 J	3.05	1.3 J	6 J	0.72 J	7.9	11 J	12 J	3.1 J	0.64 J	5.6 J	14 J	3.4 J	4.2 J	3.2 J
METALS (MG/KG)																		
ALUMINUM	7700 N	99000 N	460000	**10100 [R]**	**11400 [R]**	**12700 [R]**	**16000 [R]**	**11600 [R]**	**12600 [R]**	**11200 [R]**	**11600 [R]**	4950	**10900 [R]**	**15200 [R]**	**14500 [R]**	**14900 [R]**	**8920 [R]**	**8540 [R]**
ANTIMONY	3.1 N	41 N	5.4	0.14 J	0.14	0.14 J	0.13 J	0.16 J	0.17 J	2.5 J	0.17 J	0.05 J	0.11 J	0.14 J	0.46 J	0.29 J	0.13 J	0.15 J
ARSENIC	0.61 C	2.4 C	0.026	**7.6 [R,I,GW]**	**7.1 [R,I,GW]**	**6.6 [R,I,GW]**	**8.1 [R,I,GW]**	**6.8 [R,I,GW]**	**7.2 [R,I,GW]**	**6.2 [R,I,GW]**	**6.4 [R,I,GW]**	**2.2 [R,GW]**	**6.2 [R,I,GW]**	**6.6 [R,I,GW]**	**8.3 [R,I,GW]**	**7.7 [R,I,GW]**	**7.2 [R,I,GW]**	**5.2 [R,I,GW]**
BARIUM	1500 N	19000 N	2400	14.9 J	15.9	16.9 J	20.2 J	17.8 J	16.3 J	19.8 J	17.5 J	11.3 J	15.4 J	11.6 J	21.5 J	17.3 J	17.4 J	19.1 J
BERYLLIUM	16 N	200 N	260	0.35	0.33	0.31	0.51	0.4	0.34	0.35	0.33	0.23	0.37	0.37	0.44	0.87	0.32	0.34
CADMIUM	7 N	80 N	10.4	0.06 J	0.06	0.06 J	0.08 J	0.07 J	0.06 J	0.08 J	0.09	0.07 J	0.06 J	0.06	0.08 J	0.09 J	0.08	0.09 J
CALCIUM				551 J	609.5	668 J	748 J	484 J	810 J	765 J	956 J	564 J	388 J	766 J	624 J	694 J	400 J	739 J
CHROMIUM				12.6	14.3	16	20.8	15.2	17.8	15.3	18.3	7.1	13.6	21.1	19.1	18.9	11.8	12.2
COBALT	2.3 N	30 N	4.2	**13.4 J [R,GW]**	**11.85 [R,GW]**	**10.3 J [R,GW]**	**5.2 J [R,GW]**	**12 J [R,GW]**	**8.4 J [R,GW]**	**7.6 J [R,GW]**	**8.6 J [R,GW]**	**3.3 J [R]**	**8.5 J [R,GW]**	**11.2 J [R,GW]**	**9.2 J [R,GW]**	**13.8 J [R,GW]**	**10.1 J [R,GW]**	**8.8 J [R,GW]**
COPPER	310 N	4100 N	440	16.3	16	15.7	22.5	20.4	17.3	18.1	19.4	7.8	14.2	20.1	23.7	22.2	16.7	15.6
IRON	5500 N	72000 N	5400	**21100 [R,GW]**	**21500 [R,GW]**	**21900 [R,GW]**	**28500 [R,GW]**	**23900 [R,GW]**	**25300 [R,GW]**	**19200 [R,GW]**	**22600 [R,GW]**	**9760 [R,GW]**	**20300 [R,GW]**	**30600 [R,GW]**	**26500 [R,GW]**	**30600 [R,GW]**	**19200 [R,GW]**	**15200 [R,GW]**
LEAD	400 L	800 L		12.4	12.45	12.5	26	11.4	25.1	66.3	31.9	7.6	9.2	18.7	37.9	25.2	18.1	19.4
MAGNESIUM				3150 J	3150	3150 J	1970 J	3440 J	3820 J	2750 J	3570 J	1520 J	3080 J	4800 J	3920 J	4410 J	3700 J	3670 J
MANGANESE	180 N	2300 N	420	**345 J [R]**	**315.5 [R]**	**286 J [R]**	156 J	**498 J [R,GW]**	**227 J [R]**	**216 J [R]**	**230 J [R]**	155 J	**271 J [R]**	**251 J [R]**	**243 J [R]**	**320 J [R]**	**247 J [R]**	**230 J [R]**
MERCURY	1 N	4.3 N	0.66	0.02 U	0.017 U	0.014 U	0.04	0.01 U	0.03	0.03	0.04	0.015 U	0.02 U	0.04	0.04	0.05	0.04	0.07
NICKEL	150 N	2000 N	400	17.6	17.15	16.7	9.8	24.8	18.8	14.9	17.9	9.2	15.1	22.7	20.6	24	19	18.5
POTASSIUM				447	406.5	366	439	476	418	470	344	390	445	313	448	332	323	504
SELENIUM	39 N	510 N	8	0.25 U	0.265 U	0.28 U	0.25 U	0.34 U	0.42 U	0.48 U	0.41 U	0.23 U	0.24 U	0.2 U	0.32 U	0.37 U	0.37 U	0.46 U
SILVER	39 N	510 N	12	0.02 J	0.02	0.02 J	0.04 J	0.03 J	0.04 J	0.05 J	0.06 J	0.02 J	0.02 J	0.04 J	0.11	0.04 J	0.05 J	0.06 J
SODIUM				45.9 U	47.45 U	49 U	54.8 U	51.8 U	56.8 U	70.2 U	59.4 U	44.5 U	42.1 U	37.7 U	53.3 U	45.5 U	37 U	59.2 U
THALLIUM	0.078 N	1 N	0.22	0.04 U	0.045 U	0.05 U	0.05 U	0.05 U	0.04 U	0.06 U	0.05 U	0.04 U	0.05 J	0.04 J	0.07 U	0.05 J	0.06 U	0.06 U
VANADIUM	39 N	510 N	1260	16.2	17.85	19.5	25.9	17.1	28.1	24.8	26.1	9	16.5	25	34.7	22.7	14.2	18.9
ZINC	2300 N	31000 N	5800	39	40.85	42.7	57.2	50.5	45	41.7	44.9	21.7	38	53.7	52.9	59.7	46.5	50.2
MISCELLANEOUS PARAMETERS (%)																		
TOTAL SOLIDS				98	97.5	97	96	95	94	95	94	97	94	95	97	95	93	92
PETROLEUM HYDROCARBONS (MG/KG)																		
ExTPH (C08-C44)				32 J	32	32 J	NA	NA	NA	NA	NA	NA	15 J	NA	NA	NA	NA	NA
GRO (C05-C12)				2.4 J	5.9	9.4 J	NA	NA	NA	NA	NA	NA	2 U	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS																		
2-METHYLNAPHTHALENE	23000 N	220000 N	2800	10 U	10 U	10 U	24	10 U	19 J	9.7 U	5.9 J	9.6 U	10 U	9.9 U	9.9 U	9.4 U	9.8 U	11 U
ACENAPHTHENE	340000 N	3300000 N	82000	1.6 J	1.6 J	10 U	300	10 U	59	3.1 J	56	30	10 U	1.8 J	4.7 J	4.8 J	1.9 J	5.3 J
ACENAPHTHYLENE	340000 N	3300000 N	82000	10 U	10 U	10 U	9.5 J	10 U	10 U	2.2 J	10 U	9.6 U	10 U	2.6 J	7.4 J	2 J	1.4 J	11 U
ANTHRACENE	1700000 N	17000000 N	840000	5.8 J	4.55	3.3 J	650	10 U	150	18 J	91	57	10 U	4.1 J	11 J	18 J	4.7 J	15 J
BENZO(A)ANTHRACENE	150 C	2100 C	200	17 J	14	11 J	**1500 [R,GW]**	5.9 J	**260 [R,GW]**	44	**270 [R,GW]**	**210 [R,GW]**	2.9 J	36	88	66	32	53
BENZO(A)PYRENE	15 C	210 C	70	**16 J [R]**	13	10 J	**1200 [R,I,GW]**	5.7 J	**190 [R,GW]**	**54 [R]**	**200 J [R,GW]**	**180 [R,GW]**	10 UJ	**36 [R]**	**86 [R,GW]**	**57 [R]**	**31 [R]**	**51 [R]**
BENZO(B)FLUORANTHENE	150 C	2100 C	700	27	22	17 J	**2000 [R,GW]**	9.4 J	**330 [R]**	110	**310 J [R]**	**320 [R]**	5.2 J	58	**160 [R]**	100	47	82
BENZO(G,H,I)PERYLENE	170000 N	1700000 N	190000	8.2 J	6.75	5.3 J	540	2.8 J	58	32	84 J	83	10 UJ	19 J	42	27	16 J	18 J
BENZO(K)FLUORANTHENE	1500 C	21000 C	7000	9.7 J	8.15	6.6 J	660	4.3 J	140	37	130 J	90	10 U	26	50	37	26	40
CHRYSENE	15000 C	210000 C	22000	20 J	17	14 J	1800	7.5 J	270 J	62	300	250	4.4 J	43	110	79	36 J	69 J
DIBENZO(A,H)ANTHRACENE	15 C	210 C	220	3.5 J	2.75	2 J	**210 [R]**	2.4 J	**32 [R]**	14 J	**39 J [R]**	**41 [R]**	10 UJ	7.9 J	**22 [R]**	12 J	7.7 J	9.3 J
FLUORANTHENE	230000 N	2200000 N	1400000	48 J	38	28 J	3700	15 J	690	120	680	520	8.2 J	86	180	130	75	130
FLUORENE	230000 N	2200000 N	80000	10 U	10 U	10 U	230	10 U	67	3.5 J	51	23	10 U	9.9 U	5 J	4.4 J	9.8 U	3.7 J
INDENO(1,2,3-CD)PYRENE	150 C	2100 C	4000	5.2 J	5.2 J	10 U	**830 [R]**	10 U	120	44 J	150 J	150 J	10 U	23	70	48	20 J	31
NAPHTHALENE	3600 C	18000 C	9.4	10 U	10 U	10 U	**58 [GW]**	10 U	**31 [GW]**	9.7 U	**14 J [GW]**	9.6 U	10 U	9.9 U	9.9 U	9.4 U	9.8 U	11 U
PHENANTHRENE	170000 N	1700000 N	190000	24	18	12 J	2800	5.7 J	650	54	580	330	3.4 J	33	81	66	33	66
PYRENE	170000 N	1700000 N	190000	36 J	28.5	21 J	3400	11 J	540	89	620	500	6.5 J	69	170	130	60	110
TOTAL PAHS				222	176.1	130.2	19911.5	69.7	3606	686.8	3580.9	2784	30.6	445.4	1087.1	781.2	391.7	683.3

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOTANALYZED

TABLE 4-5

SUMMARY OF ANALYTICAL RESULTS
AOC-004/5 TANK FARM 2 SURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH RHODE ISLAND
PAGE 2 OF 4

SAMPLE ID	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-004/5-SS1033-TF2-004/5-SB1033	TF2-004/5-SS1034-TF2-004/5-SB1034	TF2-004/5-SS1035-0001 TF2-004/5-SB1035	TF2-004/5-SS1035-0001-TF2-004/5-SB1035	TF2-004/5-SS1035-0001-TF2-004/5-SB1035	TF2-004/5-SS1036-TF2-004/5-SB1036	TF2-004/5-SS1037-TF2-004/5-SB1037	TF2-004/5-SS1038-TF2-004/5-SB1038	TF2-004/5-SS1039-TF2-004/5-SB1039	TF2-004/5-SS1040-TF2-004/5-SB1040	TF2-004/5-SS1041-TF2-004/5-SB1041	TF2-004/5-SS1041-TF2-004/5-SB1041	TF2-004/5-SS1041-TF2-004/5-SB1041	TF2-004/5-SS1042-TF2-004/5-SB1042	TF2-004/5-SS1043-TF2-004/5-SB1043
LOCATION ID																		
SAMPLE DATE				10/18/2013	10/18/2013	10/18/2013	20131018	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/21/2013	20131021	10/21/2013	10/21/2013	11/13/2013
TOP DEPTH (FT)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
BOTTOM DEPTH (FT)				0.8	0.6	1	1	1	0.6	0.7	0.7	0.9	0.9	0.7	0.7	0.7	0.5	0.5
SACODE				NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
QC TYPE				NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM
DIOXINS/FURANS (NG/KG)																		
1,2,3,4,6,7,8,9-OCDD	15000 C	60000 C	17400	4500	2400	4000	3800	3600	6800	3400	3500	5700	6400	5600	5800	6000	3000	1700
1,2,3,4,6,7,8,9-OCDF	15000 C	60000 C	17400	19	22	280 J	195	110 J	63	26	27	18	37	15	16.5	18	140	10 J
1,2,3,4,6,7,8-HPCDD	450 C	1800 C	520	88	59	330	330	330	270	57	100	81	140	46	54.5	63	170	32
1,2,3,4,6,7,8-HPCDF	450 C	1800 C	520	9.3	17	110 J	85	60 J	40	16	17	11	19	6.4	6.85	7.3	75	5.9
1,2,3,4,7,8,9-HPCDF	450 C	1800 C	520	0.16 U	1.3 J	5.7	4.5	3.3 J	2.1 J	1.5 J	0.89 J	0.1 U	1.2 J	0.098 U	0.124 U	0.15 U	2.9 J	0.077 U
1,2,3,4,7,8-HXCDD	45 C	180 C	52	0.81 J	1.2 J	4.5 J	4.5	4.5 J	3.3 J	0.97 J	1.5 J	1.4 J	1.7 J	0.43 J	0.46	0.49 J	3.3 J	0.44 J
1,2,3,4,7,8-HXCDF	45 C	180 C	52	0.9 J	2.7 J	11	8.15	5.3 J	3.5 J	3.9 J	2 J	1.7 J	2.4 J	0.54 J	0.72	0.9 J	5.4	0.98 J
1,2,3,6,7,8-HXCDD	45 C	180 C	52	2.3 J	2.7 J	14	15	16	12	2.1 J	4.2 J	2.9 J	4.7 J	0.86 J	0.905	0.95 J	7.1	1.4 J
1,2,3,6,7,8-HXCDF	45 C	180 C	52	0.83 J	2.4 J	4.6 J	3.95	3.3 J	2.4 J	2.2 J	1.5 J	1.2 J	1.8 J	0.74 J	0.75	0.76 J	3.7 J	0.64 J
1,2,3,7,8,9-HXCDD	45 C	180 C	52	1.7 J	2.7 J	11	9.9	8.8	8.2	2.5 J	3.8 J	2.7 J	4 J	0.76 J	0.93	1.1 J	6.7	1 J
1,2,3,7,8-PECDD	4.5 C	18 C	5.2	0.23 J	0.56 J	2.1 J	1.95	1.8 J	1.5 J	0.58 J	0.73 J	0.63 J	0.86 J	0.14 J	0.125	0.11 J	1.1 J	0.047 U
1,2,3,7,8-PECDF	150 C	600 C	174	0.084 U	0.77 J	1.1 J	1.05	1 J	0.97 J	1 J	0.54 J	0.59 J	0.91 J	0.067 U	0.07 U	0.073 U	0.85 J	0.15 J
2,3,4,6,7,8-HXCDF	45 C	180 C	52	0.59 J	2.4 J	3.3 J	2.9	2.5 J	2 J	0.66 J	2.1 J	0.78 J	1.6 J	0.2 J	0.27	0.34 J	3 J	0.88 J
2,3,4,7,8-PECDF	15 C	60 C	17.4	0.17 J	1.1 J	2 J	1.6	1.2 J	1.4 J	1 J	0.73 J	0.68 J	0.74 J	0.18 J	0.109	0.076 U	1.5 J	0.18 J
2,3,7,8-TCDD	4.5 C	18 C	5.2	0.039 U	0.24 J	0.41 J	0.355	0.3 J	0.27 J	0.13 J	0.11 J	0.3 U	0.044 U	0.035 U	0.0375 U	0.04 U	0.045 U	0.028 U
2,3,7,8-TCDF	45 C	180 C	52	0.088 U	0.94 J	1.3	1.3	1.5 UJ	1.4 J	0.8 J	0.88 J	0.64 J	0.95 J	0.12 U	0.105	0.15 J	1.2	0.32 U
TEQ[1]	4.2 C		5.2	3.3	4.2	**13.9 [R,GW]**	**12.7 [R,GW]**	**11.6 [R,GW]**	**10.7 [R,GW]**	4.1	**4.9 [R]**	**4.6 [R]**	**6.4 [R,GW]**	2.8	2.9	3.1	**8.0 [R,GW]**	1.5
TOTAL HPCDD	94 C	390 C	180	**160 [R]**	**110 [R]**	**580 [R,I,GW]**	**585 [R,I,GW]**	**590 [R,I,GW]**	**460 [R,I,GW]**	**110 [R]**	**190 [R,GW]**	**150 [R]**	**270 [R,GW]**	82	**101 [R]**	**120 [R]**	**300 [R,GW]**	57
TOTAL HPCDF				23	38	210	180	150	100	28	41	24	51	15	16.5	18	180 J	14
TOTAL HXCDD				15 J	23 J	94	95	96	67 J	18	29	24 J	32 J	6.2 J	6.95	7.7 J	52	9.1 J
TOTAL HXCDF				9.8 J	48 J	81	75	69 J	53 J	23 J	26 J	17	34	5.3 J	6.05	6.8 J	63	10
TOTAL PECDD				1.8 J	4.7 J	13 J	13	13 J	10 J	4.3 J	4.4 J	5.2 J	3.8 J	1.9 J	1.85	1.8 J	6.9 J	0.047 U
TOTAL PECDF				2.2 J	33 J	25 J	23	21 J	20 J	38 J	11 J	10 J	14 J	1.1 J	1.2	1.3 J	20 J	4.4 J
TOTAL TCDD				0.44 J	2.2 J	4.4 J	4.2	4 J	4.5 J	1.9 J	1.9 J	1.4	0.77 J	0.63 J	0.61	0.59 J	2 J	0.36 J
TOTAL TCDF				2.2 J	12 J	12 J	11.5	11	14 J	7.4 J	5.7 J	6.3 J	5.5 J	1 J	1	1 J	11 J	2.4 J
METALS (MG/KG)																		
ALUMINUM	7700 N	99000 N	460000	**11200 [R]**	**14100 [R]**	**18200 [R]**	**17700 [R]**	**17200 [R]**	**15100 [R]**	**13900 [R]**	**14400 [R]**	**13700 [R]**	**13500 [R]**	**8900 [R]**	**8695 [R]**	**8490 [R]**	**15000 [R]**	**18200 [R]**
ANTIMONY	3.1 N	41 N	5.4	0.12 J	0.18 J	0.18 J	0.2	0.22 J	0.22 J	0.28 J	0.15 J	0.31 J	0.2 J	0.13 J	0.12	0.11 J	0.17 J	0.07 U
ARSENIC	0.61 C	2.4 C	0.026	**6.4 [R,I,GW]**	**8.5 [R,I,GW]**	**9.5 [R,I,GW]**	**9 [R,I,GW]**	**8.5 [R,I,GW]**	**10.4 [R,I,GW]**	**7 [R,I,GW]**	**8 [R,I,GW]**	**7.3 [R,I,GW]**	**6.3 [R,I,GW]**	**5.8 [R,I,GW]**	**5.65 [R,I,GW]**	**5.5 [R,I,GW]**	**8.5 [R,I,GW]**	**5.4 [R,I,GW]**
BARIUM	1500 N	19000 N	2400	15.1	16.2	14.2	14.8	15.4 J	16.4 J	20 J	18.4 J	169 J	15.7 J	15.9	15.2	14.5	14.7	11.5
BERYLLIUM	16 N	200 N	260	0.34	0.42	0.44	0.455	0.47	0.37	0.46	0.42	0.36	0.34	0.36	0.335	0.31	0.46	0.38
CADMIUM	7 N	80 N	10.4	0.09	0.07 J	0.09	0.08	0.07 J	0.08 J	0.08 J	0.08 J	0.1	0.07 J	0.08 J	0.08	0.08	0.06 J	0.07 J
CALCIUM				600 J	594 J	1140 J	861	582 J	549 J	843 J	681 J	726 J	740 J	393 J	350	307 J	536 J	908 J
CHROMIUM				14.5 J	20.7 J	24.4 J	24.3	24.2	20.8	19.2	21	18.2	17	13.4 J	12.1	10.8 J	21.2 J	24.2 J
COBALT	2.3 N	30 N	4.2	**11.7 [R,GW]**	**13 [R,GW]**	**13.2 [R,GW]**	**13.95 [R,GW]**	**14.7 J [R,GW]**	**11.2 J [R,GW]**	**10.7 J [R,GW]**	**8.3 J [R,GW]**	**10.9 J [R,GW]**	**10.1 J [R,GW]**	**11 [R,GW]**	**11.5 [R,GW]**	**12 [R,GW]**	**11.5 [R,GW]**	**14.8 [R,GW]**
COPPER	310 N	4100 N	440	17.6	22.4	31.5	33.8	36.1	23.4	19.2	21.7	19.1	18.7	17.5	17.05	16.6	28.7	19.5
IRON	5500 N	72000 N	5400	**23000 [R,GW]**	**29800 [R,GW]**	**37800 [R,GW]**	**36250 [R,GW]**	**34700 [R,GW]**	**29600 [R,GW]**	**27300 [R,GW]**	**28900 [R,GW]**	**24700 [R,GW]**	**24100 [R,GW]**	**19600 [R,GW]**	**19550 [R,GW]**	**19500 [R,GW]**	**33400 [R,GW]**	**34500 [R,GW]**
LEAD	400 L	800 L		12.3 J	28.9 J	33.5 J	33.85	34.2	29.7	28.6	25.4	18.4	28.5	11.5 J	10.9	10.3 J	30.7 J	14.9
MAGNESIUM				3560 J	4300 J	5850 J	5560	5270 J	4240 J	4100 J	3260 J	3680 J	3990 J	2950 J	2985	3020 J	4950 J	6180
MANGANESE	180 N	2300 N	420	**385 J [R]**	**282 J [R]**	**266 J [R]**	**269.5 [R]**	**273 J [R]**	**265 J [R]**	**278 J [R]**	**206 J [R]**	**334 J [R]**	**256 J [R]**	**313 J [R]**	**331.5 [R]**	**350 J [R]**	**259 J [R]**	**294 [R]**
MERCURY	1 N	4.3 N	0.66	0.015 U	0.03 J	0.04	0.045	0.05	0.05	0.03	0.04	0.04	0.06	0.005 J	0.005	0.005 J	0.04	0.02 J
NICKEL	150 N	2000 N	400	19.1	23.6	32.4	30.7	29	22.3	20.3	15.7	53	20.9	16.7	16.8	16.9	25.9	28.8
POTASSIUM				445	482	308	316.5	325	392	404	333	404	393	483	465	447	374	282
SELENIUM	39 N	510 N	8	0.24 U	0.28 U	0.33 J	0.33 J	0.34 U	0.33 U	0.27 U	0.29 U	0.23 U	0.35 U	0.24 U	0.21	0.3 J	0.31 J	0.25 U
SILVER	39 N	510 N	12	0.03 J	0.06 J	0.07 J	0.075	0.08 J	0.06 J	0.04 J	0.04 J	0.05 J	0.04 J	0.02 J	0.02	0.02 J	0.05 J	0.03 J
SODIUM				35 U	42.2 U	34.6 U	36.5 U	38.4 U	45.2 U	50.4 U	43.6 U	45.2 U	52.1 U	33 U	32.85 U	32.7 U	35.1 U	33 U
THALLIUM	0.078 N	1 N	0.22	0.05 J	0.05 J	0.05 J	0.055	0.06 J	0.06 U	0.05 J	0.05 J	0.06 J	0.04 U	0.04 J	0.04	0.04 J	0.04 J	0.033 U
VANADIUM	39 N	510 N	1260	17.3	28.8	35.2	33.95	32.7	29.9	23.2	26.2	25	23.4	15.4	14.9	14.4	33.2	19.6
ZINC	2300 N	31000 N	5800	43.4 J	58.2 J	71.9 J	69.75	67.6	54.3	52.4	44.5	51.8	52.1	39.3 J	38.25	37.2 J	64.4 J	61.2
MISCELLANEOUS PARAMETERS (%)																		
TOTAL SOLIDS				95	95	95	95	95	97	97	94	93	90	96	96	96	94	94
PETROLEUM HYDROCARBONS (MG/KG)																		
ExTPH (C08-C44)				NA	NA	NA	NA	NA	NA	NA	NA	52 J	NA	NA	NA	NA	NA	NA
GRO (C05-C12)				NA	NA	NA	NA	NA	NA	NA	NA	7	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS																		
2-METHYLNAPHTHALENE	23000 N	220000 N	2800	9.8 U	9.7 U	10 U	10 U	10 U	10 J	9.8 U	9.9 U	10 U	11 U	10 U	9.85 U	9.7 U	10 U	10 U
ACENAPHTHENE	340000 N	3300000 N	82000	9.8 U	2 J	3 J	3.3	3.6 J	23	1.9 J	3.2 J	2.8 J	6.8 J	10 U	9.85 U	9.7 U	2.1 J	10 U
ACENAPHTHYLENE	340000 N	3300000 N	82000	9.8 U	4 J	4.9 J	5.05	5.2 J	4.9 J	1.5 J	3.5 J	4.5 J	1.8 J	10 U	9.85 U	9.7 U	4.1 J	10 U
ANTHRACENE	1700000 N	17000000 N	840000	1.9 J	5.8 J	7.6 J	7.75	7.9 J	52	4.5 J	7.6 J	8.8 J	16 J	10 U	1.7 J	1.7 J	4.8 J	10 U
BENZO(A)ANTHRACENE	150 C	2100 C	200	14 J	47	72	77.5	83	140	34	52	54	74	6.5 J	7.05	7.6 J	40	19 J
BENZO(A)PYRENE	15 C	210 C	70	11 J	**48 [R]**	**74 [R,GW]**	**77.5 [R,GW]**	**81 [R,GW]**	**120 [R,GW]**	**32 [R]**	**55 [R]**	**53 [R]**	**65 [R]**	6.7 J	7	7.3 J	**48 [R]**	14 J
BENZO(B)FLUORANTHENE	150 C	2100 C	700	22	87	140	150	**160 [R]**	**180 [R]**	57	86	95	130	11 J	12	13 J	77	30
BENZO(G,H,I)PERYLENE	170000 N	1700000 N	190000	5.1 J	23	37	37.5	38	48	19 J	21	25	30	4.3 J	4	3.7 J	27	6.9 J
BENZO(K)FLUORANTHENE	1500 C	21000 C	7000	7.6 J	25	41	42.5	44	82	20 J	43	28	37	5.4 J	5.2	5 J	30	9.8 J
CHRYSENE	15000 C	210000 C	22000	17 J	56	87	93.5	100	150	45	70 J	60	84	9 J	9.45	9.9 J	54	23
DIBENZO(A,H)ANTHRACENE	15 C	210 C	220	3.1 J	12 J	**18 J [R]**	**18.5 [R]**	**19 J [R]**	**26 [R]**	9.1 J	12 J	12 J	15 J	3.8 J	3.8 J	9.7 U	12 J	9.4 J
FLUORANTHENE	230000 N	2200000 N	1400000	33	97	160	170	180	320	72	120	120	180	14 J	17.5	21	92	40 J
FLUORENE	230000 N	2200000 N	80000	9.8 U	9.7 U	10 U	10 U	10 U	25	9.8 U	6 J	10 U	5.2 J	10 U	9.85 U	9.7 U	10 U	10 U
INDENO(1,2,3-CD)PYRENE	150 C	2100 C	4000	2.4 J	34	60	62.5	65	89	25	38	36	49	10 UJ	9.85 U	9.7 U	43 J	18 J
NAPHTHALENE	3600 C	18000 C	9.4	9.8 U	9.7 U	10 U	10 U	10 U	**13 J [GW]**	9.8 U	9.9 U	10 U	11 U	10 U	9.85 U	9.7 U	10 U	10 U
PHENANTHRENE	170000 N	1700000 N	190000	14 J	35	56	60	64	250	33	50	48	92	6.6 J	7.6	8.6 J	39	10 U
PYRENE	170000 N	1700000 N	190000	23	82	130	150	170	290	70	110	94	150	14 J	14.5	15 J	83	30
TOTAL PAHS				154.1	557.8	890.5	955.6	1020.7	1822.9	424	677.3	641.1	935.8	81.3	87.05	92.8	556	200.1

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOTANALYZED

TABLE 4-5

SUMMARY OF ANALYTICAL RESULTS
AOC-004/5 TANK FARM 2 SURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH RHODE ISLAND
PAGE 3 OF 4

SAMPLE ID	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-004/5-SS1044-TF2-004/5-SB1044	TF2-004/5-SS1045-TF2-004/5-SB1045	TF2-004/5-SS1046-TF2-004/5-SB1046	TF2-004/5-SS1047-TF2-004/5-SB1047	TF2-004/5-SS1048-TF2-004/5-SB1048	TF2-004/5-SS1049-TF2-004/5-SB1049	TF2-004/5-SS1050-TF2-004/5-SB1050	TF2-004/5-SS1052-TF2-004/5-SB1052	TF2-004/5-SS1051-TF2-004/5-SB1051	TF2-004/5-SS1053-TF2-004/5-SB1053	TF2-004/5-SS1054-TF2-004/5-SB1054	TF2-004/5-SS1055-TF2-004/5-SB1055	TF2-004/5-SS1056-TF2-004/5-SB1056	TF2-004/5-SS1057-0001 TF2-004/5-SB1057	TF2-004/5-SS1058-TF2-004/5-SB1058
LOCATION ID																		
SAMPLE DATE				10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/22/2013
TOP DEPTH (FT)				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH (FT)				0.5	0.5	0.5	0.8	0.8	0.9	0.6	0.6	0.8	0.6	0.6	0.8	0.6	1	0.5
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE				NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)																		
1,2,3,4,6,7,8,9-OCDD	15000 C	60000 C	17400	3500	6400	3600	10000	5400	4400	2800	4000	5700	7000	3100	1900	3700	6400	1400
1,2,3,4,6,7,8,9-OCDF	15000 C	60000 C	17400	55	420	18	110	36	38	96	200	35	250	53	22	21	43	42
1,2,3,4,6,7,8-HPCDD	450 C	1800 C	520	140	360	100	**850 [R,GW]**	110	160	62	270	67	**510 [R]**	98 J	55	130	420	48
1,2,3,4,6,7,8-HPCDF	450 C	1800 C	520	28	130	13	99	22	24	34	92	15	120	26	13	16	44	14
1,2,3,4,7,8,9-HPCDF	450 C	1800 C	520	1.1 J	8.9	0.75 J	4.2 J	1.3 J	1.2 J	1.6 J	4.6 J	0.73 J	5.2	1.2 J	0.76 J	0.73 J	1.6 J	0.91 J
1,2,3,4,7,8-HXCDD	45 C	180 C	52	2.4 J	5.2	2.6 J	16	2.1 J	2.9 J	1 J	4.5 J	0.95 J	6.5 J	1.7 J	0.87 J	3 J	7.2	0.64 J
1,2,3,4,7,8-HXCDF	45 C	180 C	52	2.4 J	5.5	1.7 J	7.5	3.3 J	2.6 J	4.1 J	4.9 J	1.1 J	7.1	1.9 J	1.4 J	1.9 J	3.2 J	1.5 J
1,2,3,6,7,8-HXCDD	45 C	180 C	52	6.3	17	5.6	**52 [R]**	4.8 J	8.1	2.3 J	12	2 J	23	4.3 J	2.4 J	6.7	23	1.6 J
1,2,3,6,7,8-HXCDF	45 C	180 C	52	1.6 J	3.6 J	1.1 J	6	2 J	1.6 J	1.7 J	4.2 J	1.2 J	5.1 J	1.2 J	0.84 J	1.7 J	2.8 J	1 J
1,2,3,7,8,9-HXCDD	45 C	180 C	52	4.8 J	11	5.2	34	4.1 J	5.8	2.3 J	9.7	1.8 J	14	3.2 J	1.7 J	6.4	14	1.5 J
1,2,3,7,8-PECDD	4.5 C	18 C	5.2	0.82 J	1.3 J	1.1 J	**5.4 [R,GW]**	0.75 J	1 J	0.5 J	1.8 J	0.41 J	2.7 J	0.58 J	0.31 J	1.2 J	2.5 J	0.3 J
1,2,3,7,8-PECDF	150 C	600 C	174	0.64 J	1.2 J	0.25 U	1.1 J	0.87 J	0.1 U	0.43 J	1.1 J	0.3 J	0.81 J	0.23 J	0.14 J	0.45 J	0.5 J	0.066 U
2,3,4,6,7,8-HXCDF	45 C	180 C	52	1.2 J	3.2 J	0.94 J	5.5	1.7 J	1.3 J	0.75 J	4.1 J	0.58 J	4.4 J	0.78 J	0.59 J	0.98 J	2.2 J	0.94 J
2,3,4,7,8-PECDF	15 C	60 C	17.4	0.67 J	1.5 J	0.59 J	1.4 J	1.3 J	0.76 J	0.65 J	1.6 J	0.35 J	0.98 J	0.36 J	0.16 J	0.25 J	1 J	0.34 J
2,3,7,8-TCDD	4.5 C	18 C	5.2	0.15 J	0.26 J	0.037 U	0.54 J	0.23 J	0.13 U	0.16 J	0.14 J	0.035 U	0.63 J	0.094 J	0.043 U	0.31 J	0.19 J	0.036 U
2,3,7,8-TCDF	45 C	180 C	52	0.64 J	1.2	0.48 J	1.2	1.8	0.66 J	0.43 J	1.2	0.33 J	0.77 J	0.17 J	0.18 J	0.19 J	0.56 J	0.42 J
TEQ[1]	4.2 C		5.2	**5.9 [R,GW]**	**13.8 [R,GW]**	**5.3 [R,GW]**	**31.2 [R,I,GW]**	**6.3 [R,GW]**	**6.7 [R,GW]**	4.0	**11.4 [R,GW]**	3.9	**18.3 [R,I,GW]**	**4.3 [R]**	2.4	**6.3 [R,GW]**	**14.9 [R,GW]**	2.2
TOTAL HPCDD	94 C	390 C	180	**240 [R,GW]**	**580 [R,I,GW]**	**200 [R,GW]**	**1500 [R,I,GW]**	**210 [R,GW]**	**280 [R,GW]**	**110 [R]**	**470 [R,I,GW]**	**120 [R]**	**860 [R,I,GW]**	**170 [R]**	93	**250 [R,GW]**	**730 [R,I,GW]**	82
TOTAL HPCDF				70 J	460	31	240	51	61 J	62	240	39	330	67	31	37	110	42
TOTAL HXCDD				40	81 J	43 J	320 J	35	53	18 J	79	14	130 J	27	15	49	140	10 J
TOTAL HXCDF				28	110 J	21 J	150 J	32	30 J	20 J	95	13 J	120	24 J	13 J	23	77	14
TOTAL PECDD				4.4 J	8.4 J	5.6 J	36	7.7 J	5.1 J	3.4 J	10 J	2.9 J	12 J	3.2 J	2.4 J	8.4 J	14 J	1.5 J
TOTAL PECDF				10 J	20 J	8.3 J	34 J	22 J	10 J	8.8 J	29 J	3.4 J	24 J	5.8 J	6.5 J	8 J	16 J	3.7 J
TOTAL TCDD				1.5 J	2.2 J	0.91 J	4.7 J	3.2 J	1.2	1.8 J	2.2 J	1.2 J	2.7 J	0.92 J	0.46 J	1.3 J	1.7 J	0.48 J
TOTAL TCDF				6 J	13 J	5.2 J	11 J	15 J	7.9 J	6.6 J	11 J	2.7 J	9.4 J	1.7 J	2.4 J	3.4 J	6.2 J	2.8 J
METALS (MG/KG)																		
ALUMINUM	7700 N	99000 N	460000	**13400 [R]**	**16200 [R]**	**14700 [R]**	**12500 [R]**	**13400 [R]**	**12800 [R]**	**8650 J [R]**	**15700 J [R]**	**11600 J [R]**	**13000 J [R]**	**12500 J [R]**	**16200 J [R]**	**12400 J [R]**	6960 J	**15100 J [R]**
ANTIMONY	3.1 N	41 N	5.4	0.22 J	0.17 J	0.43 J	0.66 J	0.59 J	0.28 J	0.15 J	0.23 J	0.14 J	0.19 J	0.11 J	0.07 J	**6.6 J [R,GW]**	0.43 J	0.18 J
ARSENIC	0.61 C	2.4 C	0.026	**11.4 [R,I,GW]**	**8.4 [R,I,GW]**	**5.8 [R,I,GW]**	**7.1 [R,I,GW]**	**8.2 [R,I,GW]**	**5.6 [R,I,GW]**	**4.8 [R,I,GW]**	**8.7 [R,I,GW]**	**8.1 [R,I,GW]**	**8 [R,I,GW]**	**6.9 J [R,I,GW]**	**6.7 [R,I,GW]**	**7.8 J [R,I,GW]**	**3.2 J [R,I,GW]**	**8.3 [R,I,GW]**
BARIUM	1500 N	19000 N	2400	14.9	15.3	13.9	20.2	18.5	13.8	12.8	17.2	17.2	12.3	15.8	13.1	17.2	15.8	11.8
BERYLLIUM	16 N	200 N	260	0.52	0.34	0.36	0.38	0.38	0.33	0.32	0.56	0.42	0.39	0.39	0.39	0.39	0.33	0.84
CADMIUM	7 N	80 N	10.4	0.09	0.1	0.09	0.1	0.1	0.1	0.05 J	0.07 J	0.07 J	0.06 J	0.08 J	0.08	0.08	0.08 J	0.07 J
CALCIUM				789 J	740 J	790 J	660 J	673 J	742 J	363 J	578 J	419 J	573 J	718 J	1190 J	739 J	588 J	653 J
CHROMIUM				19.1 J	22 J	20.8 J	16.6 J	18.6 J	16.7 J	12.3	22.3	14.4	18.8	17.1	23.6	18.3	9.4	21.7
COBALT	2.3 N	30 N	4.2	**12.7 [R,GW]**	**11.8 [R,GW]**	**12.6 [R,GW]**	**8.1 [R,GW]**	**8.9 [R,GW]**	**10.8 [R,GW]**	**7.4 [R,GW]**	**11.8 [R,GW]**	**13.9 [R,GW]**	**10.8 [R,GW]**	**11.9 [R,GW]**	**16.2 [R,GW]**	**11.7 [R,GW]**	**5 [R,GW]**	**16.4 [R,GW]**
COPPER	310 N	4100 N	440	24.2	23	19.6	19.1	19.8	16.7	17.3	25.3	29.8	27.2	19.8	24.9	18.1	11.5	32.6
IRON	5500 N	72000 N	5400	**28900 [R,GW]**	**31000 [R,GW]**	**28600 [R,GW]**	**21500 [R,GW]**	**25800 [R,GW]**	**23800 [R,GW]**	**17500 J [R,GW]**	**31100 J [R,GW]**	**24100 J [R,GW]**	**24800 J [R,GW]**	**23100 J [R,GW]**	**31800 J [R,GW]**	**22900 J [R,GW]**	**11700 J [R,GW]**	**32000 J [R,GW]**
LEAD	400 L	800 L		22.5 J	31.3 J	26.9 J	47.1 J	47.1 J	25.4 J	13.2 J	31.1 J	12.4 J	22.1 J	18	27.4 J	30.3	47	20.2 J
MAGNESIUM				4070 J	5160 J	4540 J	3280 J	3830 J	4360 J	2630 J	4760 J	3790 J	3970 J	3640 J	5440 J	3750 J	1810 J	4850 J
MANGANESE	180 N	2300 N	420	**284 J [R]**	**261 J [R]**	**270 J [R]**	**196 J [R]**	**206 J [R]**	**223 J [R]**	**211 J [R]**	**238 J [R]**	**400 J [R]**	**231 J [R]**	**298 J [R]**	**297 J [R]**	**266 J [R]**	**195 J [R]**	**353 J [R]**
MERCURY	1 N	4.3 N	0.66	0.04	0.05	0.02 U	0.04	0.04	0.04	0.02 U	0.03	0.02 U	0.04	0.04	0.014 U	0.03	0.02 U	0.02 U
NICKEL	150 N	2000 N	400	24.5	27.6	25.6	18.2	21.1	22.4	14.2	26.5	24	23.3	20.3	30.5	20.8	10.7	29.6
POTASSIUM				429	368	372	440	338	309	341	332	383	306	363	258	343	318	291
SELENIUM	39 N	510 N	8	0.35 J	0.26 U	0.24 U	0.32 J	0.28 J	0.25 U	0.34 U	0.43 U	0.26 U	0.39 U	0.39 J	0.38 U	0.39 J	0.33 J	0.34 U
SILVER	39 N	510 N	12	0.22	0.05 J	0.04 J	0.07 J	0.07 J	0.04 J	0.04 J	0.06 J	0.03 J	0.05 J	0.03 J	0.02 J	0.03 J	0.04 J	0.05 J
SODIUM				41.4 U	34.2 U	38 U	42.7 U	38.5 U	38.8 U	17 U	28.2 J	21.8 U	23.4 J	38 U	20.7 U	34.4 U	40 U	25 U
THALLIUM	0.078 N	1 N	0.22	0.06 J	0.05 J	0.04 J	**0.08 [R]**	0.06 J	0.04 J	0.04 J	0.06 J	0.05 J	0.05 J	0.05 J	0.03 J	0.04 J	0.05 J	0.04 J
VANADIUM	39 N	510 N	1260	25.8	32.4	21.8	30.4	30.6	22.2	17.4 J	30.7 J	19.2 J	24.2 J	19.8	19 J	18.7	18	23.1 J
ZINC	2300 N	31000 N	5800	56.8 J	63.4 J	62.4 J	49.2 J	53.7 J	52 J	34.5 J	58.8 J	51.5 J	52.1 J	49.3 J	63.4 J	50.2 J	35.4 J	64.6 J
MISCELLANEOUS PARAMETERS (%)																		
TOTAL SOLIDS				96	96	97	93	94	94	95	94	96	94	97	95	96	96	95
PETROLEUM HYDROCARBONS (MG/KG)																		
ExTPH (C08-C44)				NA	NA	NA	NA	NA	160 J	NA	NA	27 J	NA	NA	NA	100 J	NA	NA
GRO (C05-C12)				NA	NA	NA	NA	NA	2.4 U	NA	NA	2.6 J	NA	NA	NA	2.1 U	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS																		
2-METHYLNAPHTHALENE	23000 N	220000 N	2800	9.8 U	10 U	9.7 U	72	2.2 J	10 U	10 U	9.9 U	9.6 U	10 U	9.8 U	9.3 U	9.8 U	10 U	10 U
ACENAPHTHENE	340000 N	3300000 N	82000	1.9 J	8.1 J	9.7 U	140	3.8 J	1.8 J	10 U	2.8 J	9.6 U	1.6 J	9.8 U	9.3 U	1.6 J	4.2 J	10 U
ACENAPHTHYLENE	340000 N	3300000 N	82000	3.1 J	5 J	1.3 J	10 U	11 J	2.4 J	10 U	3.6 J	9.6 U	10 U	9.8 U	9.3 U	9.8 U	10 U	10 U
ANTHRACENE	1700000 N	17000000 N	840000	4.1 J	21	4.1 J	360	16 J	4.7 J	2.2 J	6.7 J	1.6 J	3 J	1.9 J	2.8 J	3.2 J	7.4 J	2 J
BENZO(A)ANTHRACENE	150 C	2100 C	200	45	110	24	**530 [R,GW]**	95	36	26	64	18 J	33	23	22	23	37	20 J
BENZO(A)PYRENE	15 C	210 C	70	**46 [R]**	**100 [R,GW]**	**28 J [R]**	**390 [R,I,GW]**	**110 [R,GW]**	**39 [R]**	**21 [R]**	**59 [R]**	15 J	**30 [R]**	**19 J [R]**	**16 J [R]**	**22 [R]**	**33 [R]**	**17 J [R]**
BENZO(B)FLUORANTHENE	150 C	2100 C	700	74	**170 [R]**	42 J	**500 [R]**	**210 [R]**	67	39	110	26	50	35	27	40	64	30
BENZO(G,H,I)PERYLENE	170000 N	1700000 N	190000	23	46	17 J	110	47	20 J	12 J	31 J	8.6 J	17 J	11 J	8.1 J	9.8 J	20 J	9.1 J
BENZO(K)FLUORANTHENE	1500 C	21000 C	7000	30	59	21 J	180	62	27	10 J	31	6.5 J	20 J	11 J	7.8 J	13 J	19 J	8.2 J
CHRYSENE	15000 C	210000 C	22000	58	130	37	480	130	50	24	66	15 J	34	21	18 J	28	47	17 J
DIBENZO(A,H)ANTHRACENE	15 C	210 C	220	11 J	**25 [R]**	7.3 J	**58 [R]**	**23 [R]**	10 J	7.9 J	**21 J [R]**	6.5 J	9.7 J	7.7 J	6.3 J	3.9 J	10 U	7.2 J
FLUORANTHENE	230000 N	2200000 N	1400000	87	240	57	1100	190	80	54	120	33	76	44	40	46	78	41
FLUORENE	230000 N	2200000 N	80000	9.8 U	8.7 J	9.7 U	130	3.7 J	10 U	10 U	9.9 U	9.6 U	10 U	9.8 U	9.3 U	9.8 U	3.7 J	10 U
INDENO(1,2,3-CD)PYRENE	150 C	2100 C	4000	33 J	76 J	20 J	**210 [R]**	84	27	37 J	100 J	24 J	56 J	33 J	22 J	22	35	26 J
NAPHTHALENE	3600 C	18000 C	9.4	9.8 U	10 U	9.7 U	**96 [GW]**	9.7 U	10 U	10 U	9.9 U	9.6 U	10 U	9.8 U	9.3 U	9.8 U	10 U	10 U
PHENANTHRENE	170000 N	1700000 N	190000	31	130	27	1100	73	34	19 J	46	12 J	27	15 J	13 J	22	50	17 J
PYRENE	170000 N	1700000 N	190000	80	210	57	960	190	78	39	98	24	58	32	25	43	74	30
TOTAL PAHS				527.1	1338.8	342.7	6416	1250.7	476.9	291.1	759.1	190.2	415.3	253.6	208	277.5	472.3	224.5

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOTANALYZED

TABLE 4-5

SUMMARY OF ANALYTICAL RESULTS
AOC-004/5 TANK FARM 2 SURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH RHODE ISLAND

SAMPLE ID LOCATION ID SAMPLE DATE TOP DEPTH (FT) BOTTOM DEPTH (FT) SACODE QC TYPE	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-004/5-SS1059-TF2-004/5-SB1059 10/22/2013 0 0.6 NORMAL NM	TF2-004/5-SS1060-TF2-004/5-SB1060 10/22/2013 0 0.5 NORMAL NM	TF2-004/5-SS1061-TF2-004/5-SB1061 10/21/2013 0 0.6 ORIG NM	TF2-004/5-SS1061-TF2-004/5-SB1061 20131021 0 0.6 AVG NM	TF2-004/5-SS1061-TF2-004/5-SB1061 10/21/2013 0 0.6 DUP FD	TF2-004/5-SS1062-TF2-004/5-SB1062 10/21/2013 0 0.8 NORMAL NM	TF2-004/5-SS1063-TF2-004/5-SB1063 10/22/2013 0 0.6 NORMAL NM	TF2-004/5-SS1064-TF2-004/5-SB1064 10/22/2013 0 0.6 NORMAL NM	TF2-004/5-SS1065-TF2-004/5-SB1065 10/22/2013 0 0.5 ORIG NM	TF2-004/5-SS1065-TF2-004/5-SB1065 20131022 0 0.5 AVG NM	TF2-004/5-SS1065-TF2-004/5-SB1065 10/22/2013 0 0.5 DUP FD	TF2-004/5-SS1066-TF2-004/5-SB1066 10/21/2013 0 0.9 NORMAL NM	TF2-004/5-SS1067-TF2-004/5-SB1067 10/21/2013 0 0.7 NORMAL NM	TF2-004/5-SS1068-TF2-004/5-SB1068 10/22/2013 0 0.5 NORMAL NM
DIOXINS/FURANS (NG/KG)																	
1,2,3,4,6,7,8,9-OCDD	15000 C	60000 C	17400	6400	5500	3400	3500	3600	4900	1700	1900	3000	3050	3100	5800	3700	2400
1,2,3,4,6,7,8,9-OCDF	15000 C	60000 C	17400	20	210	40	44.5	49	29	34	44	100	94.5	89	69	40	65
1,2,3,4,6,7,8-HPCDD	450 C	1800 C	520	59	300	110	115	120	120	50	87	170	170	170	150	130	160
1,2,3,4,6,7,8-HPCDF	450 C	1800 C	520	6.9 J	95	22	22.5	23	17	15	22	51	48.5	46	33	24	41
1,2,3,4,7,8,9-HPCDF	450 C	1800 C	520	0.11 U	4.9 J	1.4 J	1.2	1 J	1.2 J	1 J	1.3 J	2.9 J	2.65	2.4 J	1.8 J	1.4 J	1.7 J
1,2,3,4,7,8-HXCDD	45 C	180 C	52	0.53 J	4.9 J	2.3 J	2.25	2.2 J	2.2 J	0.66 J	1.2 J	2.7 J	2.65	2.6 J	3.1 J	2.9 J	2.3 J
1,2,3,4,7,8-HXCDF	45 C	180 C	52	0.51 J	8.1	1.9 J	2	2.1 J	2 J	1.8 J	1.8 J	4.1 J	4.05	4 J	2.4 J	2.1 J	2.5 J
1,2,3,6,7,8-HXCDD	45 C	180 C	52	1 J	13	5.7	5.65	5.6	5.7	2 J	3.8 J	6.8	6.65	6.5	7.2	6.8	7.2
1,2,3,6,7,8-HXCDF	45 C	180 C	52	0.64 J	5.6	1.3 J	1.3	1.3 J	1.3 J	1.4 J	1.3 J	3.1 J	3.1	3.1 J	1.8 J	2.1 J	1.9 J
1,2,3,7,8,9-HXCDD	45 C	180 C	52	1.1 J	10	4.7 J	4.8	4.9 J	4.9 J	1.7 J	2.6 J	5.4	5.65	5.9	6.2	6.3	5.2 J
1,2,3,7,8-PECDD	4.5 C	18 C	5.2	0.18 J	1.9 J	0.98 J	0.945	0.91 J	1.2 J	0.27 J	0.59 J	1.1 J	1.1	1.1 J	1.4 J	1.3 J	0.75 J
1,2,3,7,8-PECDF	150 C	600 C	174	0.048 U	2 J	0.3 J	0.32	0.34 J	0.58 J	0.4 J	0.53 J	0.94 J	0.905	0.87 J	0.35 J	0.1 U	0.48 J
2,3,4,6,7,8-HXCDF	45 C	180 C	52	0.41 J	5.7	1.2 J	1.2	1.2 J	1.1 J	1.1 J	2.3 J	3.3 J	3.15	3 J	1.5 J	1.9 J	1.8 J
2,3,4,7,8-PECDF	15 C	60 C	17.4	0.05 U	2.4 J	0.51 J	0.51	0.51 J	0.84 J	0.48 J	0.64 J	1.4 J	1.4	1.4 J	0.64 J	0.56 J	0.72 J
2,3,7,8-TCDD	4.5 C	18 C	5.2	0.042 U	0.28 J	0.056 U	0.114	0.2 J	0.17 J	0.05 U	0.16 J	0.18 J	0.104	0.056 U	0.26 J	0.14 U	0.098 U
2,3,7,8-TCDF	45 C	180 C	52	0.065 U	2	0.43 J	0.425	0.42 J	0.76 J	0.49 J	0.44 J	1	1.1	1.2	0.51 J	0.71 J	0.33 U
TEQ[1]	4.2 C		5.2	3.2	**13.6 [R,GW]**	**5.3 [R,GW]**	**5.4 [R,GW]**	**5.6 [R,GW]**	**6.3 [R,GW]**	2.5	4.0	**7.5 [R,GW]**	**7.4 [R,GW]**	**7.3 [R,GW]**	**7.7 [R,GW]**	**6.4 [R,GW]**	**5.8 [R,GW]**
TOTAL HPCDD	94 C	390 C	180	**100 [R]**	**510 [R,I,GW]**	**200 [R,GW]**	**210 [R,GW]**	**220 [R,GW]**	**210 [R,GW]**	90	**150 [R]**	**290 [R,GW]**	**290 [R,GW]**	**290 [R,GW]**	**270 [R,GW]**	**240 [R,GW]**	**270 [R,GW]**
TOTAL HPCDF				17 J	240	56	59	62	39	40	56	130	125	120 J	88	57	100
TOTAL HXCDD				7.5 J	87	34 J	35	36	41 J	14 J	27 J	45	46	47 J	44	47	44
TOTAL HXCDF				6.6 J	120 J	28	29	30	24	38 J	28 J	68 J	68	68	36	38	43
TOTAL PECDD				1.6 J	14 J	4.7 J	4.75	4.8 J	6.9 J	2.8 J	4.6 J	7.4 J	7.85	8.3 J	5.5 J	7.4 J	6.1 J
TOTAL PECDF				1.4 J	45 J	9.5 J	9.35	9.2 J	13 J	9.9 J	12 J	26 J	27.5	29	9.8 J	11 J	14 J
TOTAL TCDD				1.3	5.1 J	1.3 J	1.25	1.2 J	2.2 J	0.76 J	2.1 J	1.8 J	2.3	2.8 J	1.1 J	0.82 J	2.3 J
TOTAL TCDF				1.2 J	23	5 J	4.55	4.1 J	8.5 J	4.6 J	5.8 J	11 J	10.3	9.6 J	4.8 J	4.3 J	5.9 J
METALS (MG/KG)																	
ALUMINUM	7700 N	99000 N	460000	**10100 J [R]**	**16200 J [R]**	**9090 J [R]**	**10695 [R]**	**12300 J [R]**	**11400 J [R]**	**14600 J [R]**	**14000 J [R]**	**13600 J [R]**	**13550 [R]**	**13500 J [R]**	**9960 J [R]**	**9460 J [R]**	**15600 J [R]**
ANTIMONY	3.1 N	41 N	5.4	0.09 J	0.22 J	0.2 J	0.375	0.55 J	0.36 J	0.23 J	0.15 J	0.19 J	0.17	0.15 J	2 J	0.45 J	0.13 J
ARSENIC	0.61 C	2.4 C	0.026	**5.1 [R,I,GW]**	**7.8 [R,I,GW]**	**3.8 [R,I,GW]**	**4.7 [R,I,GW]**	**5.6 [R,I,GW]**	**5.3 [R,I,GW]**	**10.6 [R,I,GW]**	**6.4 [R,I,GW]**	**6.6 [R,I,GW]**	**8.55 [R,I,GW]**	**10.5 [R,I,GW]**	**6 [R,I,GW]**	**5 [R,I,GW]**	**8.1 [R,I,GW]**
BARIUM	1500 N	19000 N	2400	17.9	15.9	12.8	14.55	16.3	17.8	14	15.2	18.1	16.35	14.6	18.7	20.2	12.8
BERYLLIUM	16 N	200 N	260	0.37	0.42	0.3	0.31	0.32	0.35	0.62	0.46	0.41 J	0.855	1.3 J	0.37	0.36	0.47
CADMIUM	7 N	80 N	10.4	0.07 J	0.07 J	0.07 J	0.085	0.1	0.08 J	0.06 J	0.08 J	0.07 J	0.07	0.07 J	0.1	0.08 J	0.06
CALCIUM				467 J	731 J	890 J	785	680 J	710 J	550 J	428 J	561 J	516.5	472 J	656 J	651 J	696 J
CHROMIUM				12.8	22.7	12.2	13.5	14.8	15	20.4	19.3	18.6	18.7	18.8	13.5	13.2	19.3
COBALT	2.3 N	30 N	4.2	**9.3 [R,GW]**	**13.2 [R,GW]**	**7.3 [R,GW]**	**8.15 [R,GW]**	**9 [R,GW]**	**7.4 [R,GW]**	**11.7 [R,GW]**	**13.3 [R,GW]**	**12.7 [R,GW]**	**12.45 [R,GW]**	**12.2 [R,GW]**	**8.5 [R,GW]**	**7.6 [R,GW]**	**11.1 [R,GW]**
COPPER	310 N	4100 N	440	16.1	27.1	13.9	15.6	17.3	16.4	39.9	35.5	25.9	29.8	33.7	14.5	14.9	31.1
IRON	5500 N	72000 N	5400	**19000 J [R,GW]**	**31600 J [R,GW]**	**17100 J [R,GW]**	**19700 [R,GW]**	**22300 J [R,GW]**	**18500 J [R,GW]**	**30600 J [R,GW]**	**27200 J [R,GW]**	**26300 J [R,GW]**	**29350 [R,GW]**	**32400 J [R,GW]**	**17000 J [R,GW]**	**17000 J [R,GW]**	**29900 J [R,GW]**
LEAD	400 L	800 L		10.3 J	34.5 J	20.7 J	25.35	30 J	51.2 J	17.2 J	20.9 J	22 J	23.15	24.3 J	60 J	34 J	24.7 J
MAGNESIUM				3170 J	5260 J	2740 J	3230	3720 J	3060 J	4400 J	4150 J	4300 J	4255	4210 J	2390 J	2590 J	4870 J
MANGANESE	180 N	2300 N	420	**297 J [R]**	**265 J [R]**	179 J	**216 [R]**	**253 J [R]**	**188 J [R]**	**266 J [R]**	**262 J [R]**	**256 J [R]**	**261.5 [R]**	**267 J [R]**	**189 J [R]**	**202 J [R]**	**265 J [R]**
MERCURY	1 N	4.3 N	0.66	0.013 U	0.08 J	0.04 J	0.04	0.04 J	0.04 J	0.02 U	0.03 J	0.03 J	0.035	0.04 J	0.05 J	0.03 J	0.04 J
NICKEL	150 N	2000 N	400	17.5	28.6	13.2	15.7	18.2	17	25	23	22.2	24.95	27.7	14.4	14.1	22.5
POTASSIUM				461	301	260	285	310	310	296	267	371	319.5	268	328	384	312
SELENIUM	39 N	510 N	8	0.28 U	0.29 U	0.26 U	0.27 U	0.28 U	0.28 U	0.48 U	0.28 U	0.33 U	0.305 U	0.28 U	0.28 U	0.29 U	0.23 U
SILVER	39 N	510 N	12	0.02 J	0.08	0.03 J	0.035	0.04 J	0.05 J	0.04 J	0.05 J	0.06 J	0.055	0.05 J	0.04 J	0.03 J	0.08
SODIUM				21.6 U	25.9 J	19.1 J	19.1 J	23.4 U	30.6 J	22.6 U	23.5 U	27.1 J	19.5	23.8 U	27.4 J	28.2 J	24.5 U
THALLIUM	0.078 N	1 N	0.22	0.05 J	0.05 J	0.04 J	0.04	0.04 J	0.06 J	0.04 J	0.05 J	0.04 J	0.04	0.04 J	0.06 J	0.06 J	0.04 J
VANADIUM	39 N	510 N	1260	16.8 J	33.4 J	14.1 J	16.9	19.7 J	23.6 J	22 J	22.8 J	26.4 J	25	23.6 J	22.7 J	18.7 J	25.5 J
ZINC	2300 N	31000 N	5800	40.8 J	62 J	36.7 J	43	49.3 J	45.6 J	60.6 J	50.4 J	52.1 J	58.5	64.9 J	43.5 J	41.9 J	50.4 J
MISCELLANEOUS PARAMETERS (%)																	
TOTAL SOLIDS				96	94	96	96	96	93	97	97	96	96	96	92	94	94
PETROLEUM HYDROCARBONS (MG/KG)																	
ExTPH (C08-C44)				NA	NA	NA	NA	NA	NA	NA	NA	38 J	38 J	NA	NA	NA	NA
GRO (C05-C12)				NA	NA	NA	NA	NA	NA	NA	NA	3 U	3 U	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS																	
2-METHYLNAPHTHALENE	23000 N	220000 N	2800	10 U	9.8 U	9.4 U	9.55 U	9.7 U	9.8 U	9.7 U	9.3 U	9.2 U	9.3 U	9.4 U	10 U	10 U	10 U
ACENAPHTHENE	340000 N	3300000 N	82000	10 U	3.6 J	2.8 J	7.4	12 J	13 J	9.7 U	9.3 U	1.6 J	1.6 J	9.4 U	2.3 J	38	10 U
ACENAPHTHYLENE	340000 N	3300000 N	82000	10 U	6.4 J	1.9 J	1.9 J	9.7 U	3 J	9.7 U	9.3 U	2.4 J	2.2	2 J	10 U	10 U	1.4 J
ANTHRACENE	1700000 N	17000000 N	840000	10 U	8 J	8.3 J	22.15	36	22	2.8 J	1.4 J	3.4 J	2.95	2.5 J	6.6 J	94	1.9 J
BENZO(A)ANTHRACENE	150 C	2100 C	200	13 J	91	71	75.5	80	140	25	14 J	39	27.75	33 U	50	**350 [R,GW]**	26 U
BENZO(A)PYRENE	15 C	210 C	70	12 J	**88 [R,GW]**	**61 [R]**	**62.5 [R]**	**64 [R]**	**110 [R,GW]**	**21 [R]**	13 J	**38 [R]**	**34 [R]**	**30 J [R]**	**40 [R]**	**190 [R,GW]**	**26 J [R]**
BENZO(B)FLUORANTHENE	150 C	2100 C	700	20 J	**170 [R]**	120	110	100	**200 [R]**	38	21	75	65	55 J	87	**380 [R]**	43 J
BENZO(G,H,I)PERYLENE	170000 N	1700000 N	190000	7.4 J	43 J	32 J	29.5	27 J	39 J	10 J	5.2 J	18 J	17	16 J	21 J	65 J	14 J
BENZO(K)FLUORANTHENE	1500 C	21000 C	7000	4.5 J	46	39	35.5	32	57	10 J	11 J	21	20	19 J	22	120	14 J
CHRYSENE	15000 C	210000 C	22000	9 J	92	82	84	86	140	21	19	44	38	32	54	370	24
DIBENZO(A,H)ANTHRACENE	15 C	210 C	220	6.2 J	**31 J [R]**	14 J	13.5	13 J	**16 J [R]**	7.7 J	1.8 J	12 J	11.5	11 J	9.2 J	**37 [R]**	8.9 J
FLUORANTHENE	230000 N	2200000 N	1400000	21	170	110	125	140	260	52	34	90	76.5	63	91	750	46
FLUORENE	230000 N	2200000 N	80000	10 U	3.5 J	9.4 U	7.85	11 J	12 J	9.7 U	9.3 U	9.2 U	9.3 U	9.4 U	10 U	43	10 U
INDENO(1,2,3-CD)PYRENE	150 C	2100 C	4000	20 J	150 J	63	58	53	89	33 J	11 J	62 J	57	52	41	140	40
NAPHTHALENE	3600 C	18000 C	9.4	10 U	9.8 U	9.4 U	3 J	3 J	4 J	9.7 U	9.3 U	9.2 U	9.3 U	9.4 U	10 U	**13 J [GW]**	10 U
PHENANTHRENE	170000 N	1700000 N	190000	8.2 J	62	49 J	84.5	120 J	180	19 J	15 J	33	28.5	24	43	620	18 J
PYRENE	170000 N	1700000 N	190000	15 J	130	120	130	140	240	35	29	66	58	50	98	830	38
TOTAL PAHS				136.3	1094.5	774	845.5	917	1525	274.5	175.4	505.4	430.95	356.5	565.1	4040	275.2

1 - Project Screening Level was used in place of EPA RSL Residential Soil value.
2- [GW] obtained using a DAF of 20

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOTANALYZED

TABLE 4-6

SUMMARY OF ANALYTICAL RESULTS
AOC-004/5 TANK FARM 2 SUBSURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH RHODE ISLAND
PAGE 1 OF 4

SAMPLE ID	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-004/5-SB1021-0204	TF2-004/5-SB1021-0204-AVG	TF2-004/5-SB1021-0204-D	TF2-004/5-SB1021-0608	TF2-004/5-SB1025-2.604	TF2-004/5-SB1026-022.7	TF2-004/5-SB1026-0204	TF2-004/5-SB1031-0204	TF2-004/5-SB1031-0810	TF2-004/5-SB1032-0204	TF2-004/5-SB1038-0204	TF2-004/5-SB1038-0810
LOCATION ID				TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1025	TF2-004/5-SB1026	TF2-004/5-SB1026	TF2-004/5-SB1031	TF2-004/5-SB1031	TF2-004/5-SB1032	TF2-004/5-SB1038	TF2-004/5-SB1038
SAMPLE DATE				11/13/2013	20131113	11/13/2013	11/13/2013	11/13/2013	11/13/2013	11/13/2013	11/14/2013	11/14/2013	11/13/2013	11/14/2013	11/14/2013
TOP DEPTH (FT)				2	2	2	6	2.6	2	2	2	8	2	2	8
BOTTOM DEPTH (FT)				4	4	4	8	4	2.7	4	4	10	4	4	10
SACODE				ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE				NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)															
1,2,3,4,6,7,8,9-OCDD	15000 C	60000 C	17400	5700	4250	2800	NA	2000	NA	1700	1900	NA	5500	5000	NA
1,2,3,4,6,7,8,9-OCDF	15000 C	60000 C	17400	1.5 U	1.65 U	1.8 U	NA	0.69 U	NA	9.5 J	1.1 U	NA	1.5 U	1.8 U	NA
1,2,3,4,6,7,8-HPCDD	450 C	1800 C	520	22	18.5	15	NA	9.1	NA	19	7.9	NA	24	25	NA
1,2,3,4,6,7,8-HPCDF	450 C	1800 C	520	0.47 U	0.545 U	0.62 U	NA	0.32 U	NA	5.9	1.3 U	NA	0.34 U	0.82 U	NA
1,2,3,4,7,8,9-HPCDF	450 C	1800 C	520	0.034 U	0.036 U	0.038 U	NA	0.028 U	NA	0.085 U	0.023 U	NA	0.086 J	0.052 U	NA
1,2,3,4,7,8-HXCDD	45 C	180 C	52	0.088 J	0.06375	0.079 U	NA	0.08 J	NA	0.36 J	0.081 J	NA	0.19 J	0.16 J	NA
1,2,3,4,7,8-HXCDF	45 C	180 C	52	0.15 U	0.155 U	0.16 U	NA	0.22 U	NA	0.5 J	0.65 U	NA	0.08 U	0.44 J	NA
1,2,3,6,7,8-HXCDD	45 C	180 C	52	0.087 U	0.0715 U	0.056 U	NA	0.071 U	NA	0.71 J	0.14 J	NA	0.099 U	0.19 J	NA
1,2,3,6,7,8-HXCDF	45 C	180 C	52	0.36 J	0.35	0.34 J	NA	0.16 J	NA	0.7 J	0.42 J	NA	0.6 J	0.22 U	NA
1,2,3,7,8,9-HXCDD	45 C	180 C	52	0.15 J	0.0895	0.058 U	NA	0.13 J	NA	0.81 J	0.19 J	NA	0.18 J	0.061 U	NA
1,2,3,7,8,9-HXCDF	45 C	180 C	52	0.031 U	0.031 U	0.031 U	NA	0.024 U	NA	0.044 U	0.094 J	NA	0.032 U	0.04 U	NA
1,2,3,7,8-PECDD	4.5 C	18 C	5.2	0.072 U	0.061 U	0.05 U	NA	0.039 U	NA	0.18 J	0.035 U	NA	0.069 U	0.078 U	NA
1,2,3,7,8-PECDF	150 C	600 C	174	0.028 U	0.03 U	0.032 U	NA	0.051 J	NA	0.045 U	0.026 U	NA	0.035 U	0.054 J	NA
2,3,4,6,7,8-HXCDF	45 C	180 C	52	0.12 J	0.12	0.12 J	NA	0.022 U	NA	1 J	0.02 U	NA	0.029 U	0.12 J	NA
2,3,4,7,8-PECDF	15 C	60 C	17.4	0.029 U	0.031 U	0.033 U	NA	0.062 J	NA	0.18 J	0.12 J	NA	0.037 U	0.046 U	NA
2,3,7,8-TCDD	4.5 C	18 C	5.2	0.032 U	0.0305 U	0.029 U	NA	0.033 U	NA	0.03 U	0.027 U	NA	0.033 U	0.051 U	NA
2,3,7,8-TCDF	45 C	180 C	52	0.43 U	0.237 U	0.044 UJ	NA	0.28 U	NA	0.34 U	0.099 U	NA	0.42 U	0.072 UJ	NA
TEQ[1]	4.2 C		5.2	2.0	1.5	1.0	NA	0.7	NA	1.4	0.8	NA	2.0	1.8	NA
TOTAL HPCDD	94 C	390 C	180	38	31.5	25	NA	16	NA	38	13	NA	40	43	NA
TOTAL HPCDF				1 U	1.05	1.6 J	NA	0.43 U	NA	15	1.5 U	NA	0.62 U	1.6 J	NA
TOTAL HXCDD				1.6 J	1.085	0.57 J	NA	0.93 J	NA	6 J	1.2 J	NA	1 J	1.5 J	NA
TOTAL HXCDF				1.6 J	1.7	1.8 J	NA	0.48 J	NA	19 J	1.8 J	NA	0.92 J	1.7 J	NA
TOTAL PECDD				0.072 U	0.353	0.67 J	NA	0.043 J	NA	0.18 J	1 J	NA	0.069 U	0.83 J	NA
TOTAL PECDF				1.1 J	1.05	1 J	NA	0.31 J	NA	9.6 J	0.88 J	NA	0.1 J	0.85 J	NA
TOTAL TCDD				0.81 J	0.575	0.34 J	NA	0.49 J	NA	0.19 J	0.5 J	NA	0.84 J	0.54 J	NA
TOTAL TCDF				0.63 J	0.635	0.64 J	NA	0.86 J	NA	2 J	1 J	NA	0.67 J	0.92 J	NA
METALS (MG/KG)															
ALUMINUM	7700 N	99000 N	460000	**13900 [R]**	**14500 [R]**	**15100 [R]**	**20700 [R]**	**12800 [R]**	**11800 [R]**	NA	**12300 [R]**	**17200 [R]**	**12800 [R]**	**15800 [R]**	**16800 [R]**
ANTIMONY	3.1 N	41 N	5.4	0.04 J	0.05	0.06 J	0.1 J	0.06 J	0.15 J	NA	0.08 U	0.04 U	0.06 J	0.07 U	0.1 U
ARSENIC	0.61 C	2.4 C	0.026	**7.4 J [R,I,GW]**	**8.65 [R,I,GW]**	**9.9 J [R,I,GW]**	**13.4 J [R,I,GW]**	**5 J [R,I,GW]**	**7.1 J [R,I,GW]**	NA	**4.8 [R,I,GW]**	**2.8 [R,I,GW]**	**7.1 J [R,I,GW]**	**6.6 [R,I,GW]**	**5.7 [R,I,GW]**
BARIUM	1500 N	19000 N	2400	10.2	11.6	13	12.5	15.1	13.3	NA	16.1	7.7	13.9	16	12.5
BERYLLIUM	16 N	200 N	260	0.26	0.33	0.4	1	0.37	0.62	NA	0.36	0.25	0.34	0.4	0.34
CADMIUM	7 N	80 N	10.4	0.07	0.075	0.08	0.08 J	0.05 J	0.06 J	NA	0.05 J	0.1	0.1	0.06 J	0.06 J
CALCIUM				655	684	713	382	524	592	NA	607 J	782 J	880	863 J	690 J
CHROMIUM				18.9 J	18.95	19 J	28.8 J	14.8 J	13.6 J	NA	13.9 J	17.5 J	16.4 J	21.9 J	22 J
COBALT	2.3 N	30 N	4.2	**14.6 [R,GW]**	**16.8 [R,GW]**	**19 [R,GW]**	**25.4 [R,GW]**	**8.4 [R,GW]**	**11.3 [R,GW]**	NA	**8.5 [R,GW]**	**11.3 [R,GW]**	**12 [R,GW]**	**10.5 [R,GW]**	**12.2 [R,GW]**
COPPER	310 N	4100 N	440	22.6 J	23.7	24.8 J	63.9 J	12.7 J	34.9 J	NA	15.9	10.9	16 J	19.5	20.2
IRON	5500 N	72000 N	5400	**29100 [R,GW]**	**30300 [R,GW]**	**31500 [R,GW]**	**45200 [R,GW]**	**21400 [R,GW]**	**27000 [R,GW]**	NA	**19700 [R,GW]**	**37600 [R,GW]**	**25000 [R,GW]**	**31700 [R,GW]**	**32600 [R,GW]**
LEAD	400 L	800 L		8.9	10.7	12.5	19.9	9.4	19.2	NA	10	6.3	9.7	11.6	14.4
MAGNESIUM				4690	4750	4810	6870	3460	3710	NA	3260	5200	3940	4900	5330
MANGANESE	180 N	2300 N	420	**276 [R]**	**308 [R]**	**340 [R]**	**433 [R,GW]**	**215 [R]**	**275 [R]**	NA	**225 [R]**	**244 [R]**	**312 [R]**	**250 [R]**	**265 [R]**
MERCURY	1 N	4.3 N	0.66	0.04	0.025	0.01 J	0.02 J	0.03 J	0.02 J	NA	0.04	0.02 U	0.17	0.03	0.03 J
NICKEL	150 N	2000 N	400	27 J	27.05	27.1 J	51.8 J	16.5 J	18.4 J	NA	15	17.8	23.2 J	22.3	23.7
POTASSIUM				226	271.5	317	270	384	333	NA	431	184	337	403	363
SELENIUM	39 N	510 N	8	0.28 U	0.31 U	0.34 U	0.4 U	0.34 U	0.54 U	NA	0.16 J	0.05 J	0.27 U	0.22 J	0.27 J
SILVER	39 N	510 N	12	0.02 J	0.02	0.02 J	0.02 J	0.03 J	0.03 J	NA	0.02 J	0.01 J	0.02 J	0.03 J	0.02 J
SODIUM				19.2 J	20.6	22 J	19.3 J	28 J	23.7 J	NA	47.6 U	29 U	23.5 J	47.7 U	46 U
THALLIUM	0.078 N	1 N	0.22	0.02 J	0.025	0.03 J	0.02 J	0.05 J	0.03 J	NA	0.06 U	0.028 U	0.04 J	0.04 U	0.03 U
VANADIUM	39 N	510 N	1260	15	16.1	17.2	20.5	16.2	13.4	NA	15.9	29.1	16.4	18.5	20.6
ZINC	2300 N	31000 N	5800	58.9 J	58.2	57.5 J	129 J	34.3 J	46.9 J	NA	40	58.1	46.9 J	52.8	54.9
MISCELLANEOUS PARAMETERS (%)															
TOTAL SOLIDS				92	92.5	93	95	91	95	NA	90	94	92	92	92
PETROLEUM HYDROCARBONS (MG/KG)															
ExTPH (C08-C44)				6.1 J	6.1 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS															
2-METHYLNAPHTHALENE	23000 N	220000 N	2800	4.8 J	4.8 J	9.8 U	10 U	3.7 J	10 U	NA	10 U	10 U	10 U	10 U	11 U
ACENAPHTHENE	340000 N	3300000 N	82000	11 U	10.4 U	9.8 U	10 U	11 U	14 J	NA	10 U	4.6 J	10 U	10 U	1.6 U
ACENAPHTHYLENE	340000 N	3300000 N	82000	3.5 J	3.5 J	9.8 U	1.9 J	11 U	3.3 J	NA	10 U	10 U	10 U	10 U	11 U
ANTHRACENE	1700000 N	17000000 N	840000	11 U	10.4 U	9.8 U	10 U	11 U	24	NA	10 U	6.3 J	10 U	10 U	2.6 J
BENZO(A)ANTHRACENE	150 C	2100 C	200	22 J	13.8	5.6 J	17 J	3.3 J	110 J	NA	10 U	6.2 J	2.7 J	10 U	5.3 J
BENZO(A)PYRENE	15 C	210 C	70	**22 J [R]**	12.75	3.5 J	13 J	11 UJ	**90 J [R,GW]**	NA	10 U	4.3 J	10 UJ	10 U	4.4 J
BENZO(B)FLUORANTHENE	150 C	2100 C	700	27 J	19	11 J	17 J	10 J	140 J	NA	8.8 J	9.7 J	9.2 J	8.7 J	12 J
BENZO(G,H,I)PERYLENE	170000 N	1700000 N	190000	11 J	7.95	9.8 U	5.5 J	11 U	52	NA	10 U	10 U	10 U	10 U	2.4 J
BENZO(K)FLUORANTHENE	1500 C	21000 C	7000	10 J	7.45	9.8 U	6.1 J	11 U	44	NA	10 U	10 U	10 U	10 U	4.2 J
CHRYSENE	15000 C	210000 C	22000	22 J	14.2	6.4 J	17 J	3.4 J	110 J	NA	10 U	5.7 J	2.9 J	2.2 J	5.9 J
DIBENZO(A,H)ANTHRACENE	15 C	210 C	220	10 J	7.45	9.8 U	10 U	11 U	**25 [R]**	NA	10 U	8 J	10 U	10 U	10 J
FLUORANTHENE	230000 N	2200000 N	1400000	30 J	22	14 J	30 J	11 U	230 J	NA	2.1 J	11 J	10 U	4 J	9.3 J
FLUORENE	230000 N	2200000 N	80000	11 U	10.4 U	9.8 U	10 U	11 U	11 J	NA	10 U	10 U	10 U	10 U	11 U
INDENO(1,2,3-CD)PYRENE	150 C	2100 C	4000	22 J	14	6 J	13 J	6.4 J	100 J	NA	4.7 J	5.8 J	5.9 J	10 U	7.6 J
PHENANTHRENE	170000 N	1700000 N	190000	20 U	15.5 U	11 U	18 U	11 U	130	NA	10 U	22	10 U	2.6 J	5.8 J
PYRENE	170000 N	1700000 N	190000	21 J	12.95	9.8 U	32	11 U	170	NA	10 U	12 J	10 U	3.2 J	8.3 J
TOTAL PAHS				205.3	125.9	46.5	152.5	26.8	1253.3	NA	15.6	95.6	20.7	20.7	77.8

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-6

SUMMARY OF ANALYTICAL RESULTS
AOC-004/5 TANK FARM 2 SUBSURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH RHODE ISLAND

SAMPLE ID	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-004/5-SB1039-0406	TF2-004/5-SB1040-0204	TF2-004/5-SB1040-0810	TF2-004/5-SB1040-0810-AVG	TF2-004/5-SB1040-0810-D	TF2-004/5-SB1041-022.5	TF2-004/5-SB1047-0204	TF2-004/5-SB1047-0608	TF2-004/5-SB1048-0204	TF2-004/5-SB1049-0204
LOCATION ID				TF2-004/5-SB1039	TF2-004/5-SB1040	TF2-004/5-SB1040	TF2-004/5-SB1040	TF2-004/5-SB1040	TF2-004/5-SB1041	TF2-004/5-SB1047	TF2-004/5-SB1047	TF2-004/5-SB1048	TF2-004/5-SB1049
SAMPLE DATE				11/14/2013	11/14/2013	11/14/2013	20131114	11/14/2013	11/13/2013	11/14/2013	11/14/2013	11/13/2013	11/14/2013
TOP DEPTH (FT)				4	2	8	8	8	2	2	6	2	2
BOTTOM DEPTH (FT)				6	4	10	10	10	2.5	4	8	4	4
SACODE				NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE				NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	15000 C	60000 C	17400	NA	3400	NA	NA	NA	8800	5800	NA	1400	1300
1,2,3,4,6,7,8,9-OCDF	15000 C	60000 C	17400	NA	1 U	NA	NA	NA	1.3 U	1 U	NA	0.64 U	2.2 U
1,2,3,4,6,7,8-HPCDD	450 C	1800 C	520	NA	17	NA	NA	NA	40	27	NA	9.3	6
1,2,3,4,6,7,8-HPCDF	450 C	1800 C	520	NA	0.56 U	NA	NA	NA	0.27 U	0.59 U	NA	0.65 U	1.1 U
1,2,3,4,7,8,9-HPCDF	450 C	1800 C	520	NA	0.02 U	NA	NA	NA	0.035 U	0.048 U	NA	0.12 J	0.038 U
1,2,3,4,7,8-HXCDD	45 C	180 C	52	NA	0.03 U	NA	NA	NA	0.13 J	0.22 J	NA	0.1 J	0.033 U
1,2,3,4,7,8-HXCDF	45 C	180 C	52	NA	0.18 U	NA	NA	NA	0.096 U	0.5 J	NA	0.5 J	0.43 U
1,2,3,6,7,8-HXCDD	45 C	180 C	52	NA	0.2 J	NA	NA	NA	0.11 U	0.27 J	NA	0.24 J	0.095 J
1,2,3,6,7,8-HXCDF	45 C	180 C	52	NA	0.35 J	NA	NA	NA	0.17 J	0.4 U	NA	0.45 J	0.4 J
1,2,3,7,8,9-HXCDD	45 C	180 C	52	NA	0.13 J	NA	NA	NA	0.13 J	0.26 J	NA	0.25 J	0.19 J
1,2,3,7,8,9-HXCDF	45 C	180 C	52	NA	0.018 U	NA	NA	NA	0.049 J	0.17 J	NA	0.26 J	0.025 U
1,2,3,7,8-PECDD	4.5 C	18 C	5.2	NA	0.035 U	NA	NA	NA	0.048 U	0.1 U	NA	0.039 U	0.047 UJ
1,2,3,7,8-PECDF	150 C	600 C	174	NA	0.024 U	NA	NA	NA	0.03 U	0.092 J	NA	0.054 J	0.034 UJ
2,3,4,6,7,8-HXCDF	45 C	180 C	52	NA	0.016 U	NA	NA	NA	0.022 U	0.074 J	NA	0.66 J	0.1 J
2,3,4,7,8-PECDF	15 C	60 C	17.4	NA	0.062 J	NA	NA	NA	0.031 U	0.12 J	NA	0.18 J	0.13 J
2,3,7,8-TCDD	4.5 C	18 C	5.2	NA	0.028 U	NA	NA	NA	0.033 U	0.059 U	NA	0.031 U	0.03 U
2,3,7,8-TCDF	45 C	180 C	52	NA	0.19 U	NA	NA	NA	0.02 U	0.12 UJ	NA	0.55 U	0.13 UJ
TEQ[1]	4.2 C		5.2	NA	1.3	NA	NA	NA	3.1	2.2	NA	0.8	0.6
TOTAL HPCDD	94 C	390 C	180	NA	25	NA	NA	NA	69	45	NA	19	10
TOTAL HPCDF				NA	0.89 U	NA	NA	NA	0.4 U	1.1 U	NA	1.4 J	1.6 U
TOTAL HXCDD				NA	0.95 J	NA	NA	NA	1.3 J	3.1 J	NA	3.3 J	1 J
TOTAL HXCDF				NA	1.1 U	NA	NA	NA	0.49 J	2.6 J	NA	6 J	1.4 U
TOTAL PECDD				NA	0.53 J	NA	NA	NA	0.048 U	1.7 J	NA	0.039 U	0.37 J
TOTAL PECDF				NA	0.45 J	NA	NA	NA	0.18 J	3.7 J	NA	5.2 J	0.43 J
TOTAL TCDD				NA	0.14 J	NA	NA	NA	0.4 J	0.55 J	NA	0.26 J	0.47 J
TOTAL TCDF				NA	0.47 J	NA	NA	NA	0.55 J	2.2 J	NA	0.46 J	0.46 J
METALS (MG/KG)													
ALUMINUM	7700 N	99000 N	460000	**12900 [R]**	**13300 [R]**	**13800 [R]**	**13800 [R]**	NA	**15600 [R]**	**13200 [R]**	**15600 [R]**	**16300 [R]**	**12000 [R]**
ANTIMONY	3.1 N	41 N	5.4	0.07 U	0.07 U	0.1 U	0.1 U	NA	0.06 U	0.08 U	0.07 U	0.04 J	0.07 U
ARSENIC	0.61 C	2.4 C	0.026	**5.4 [R,I,GW]**	**5 [R,I,GW]**	**4.7 [R,I,GW]**	**4.7 [R,I,GW]**	NA	**6.1 [R,I,GW]**	**6.6 [R,I,GW]**	**7.8 [R,I,GW]**	**5.9 J [R,I,GW]**	**4.4 [R,I,GW]**
BARIUM	1500 N	19000 N	2400	14.2	13.1	15.3	15.3	NA	14	18.1	15.8	13.5	15.3
BERYLLIUM	16 N	200 N	260	0.35	0.34	0.36	0.36	NA	0.44	0.4	0.35	0.44	0.36
CADMIUM	7 N	80 N	10.4	0.06 J	0.06 J	0.05 J	0.05 J	NA	0.07 J	0.06 J	0.07	0.06 J	0.05 J
CALCIUM				716 J	587 J	822 J	822 J	NA	534 J	674 J	770 J	373	611 J
CHROMIUM				16 J	15.9 J	17.7 J	17.7 J	NA	19.9 J	16 J	18.6 J	21.4 J	14.2 J
COBALT	2.3 N	30 N	4.2	**8.3 [R,GW]**	**13.2 [R,GW]**	**9 [R,GW]**	**9 [R,GW]**	NA	**11.2 [R,GW]**	**8.7 [R,GW]**	**15.4 [R,GW]**	**10.4 [R,GW]**	**7.4 [R,GW]**
COPPER	310 N	4100 N	440	15.6	19.3	15.7	15.7	NA	16.5	13	22	21.1 J	11.8
IRON	5500 N	72000 N	5400	**20900 [R,GW]**	**24800 [R,GW]**	**23200 [R,GW]**	**23200 [R,GW]**	NA	**27600 [R,GW]**	**20300 [R,GW]**	**26600 [R,GW]**	**30600 [R,GW]**	**18900 [R,GW]**
LEAD	400 L	800 L		9	11.6	11.8	11.8	NA	14.8	11.7	11.4	13.6	8.6
MAGNESIUM				3490	4470	4020	4020	NA	4660	3340	4720	5050	3160
MANGANESE	180 N	2300 N	420	**219 [R]**	**300 [R]**	**236 [R]**	**236 [R]**	NA	**254 [R]**	**240 [R]**	**345 [R]**	**249 [R]**	**216 [R]**
MERCURY	1 N	4.3 N	0.66	0.07	0.02 U	0.05	0.05	NA	0.03 J	0.02 J	0.02 J	0.005 J	0.02 J
NICKEL	150 N	2000 N	400	17.2	20.6	17.5	17.5	NA	23.1	15.8	22.9	24.1 J	13.3
POTASSIUM				328	334	394	394	NA	371	427	397	300	412
SELENIUM	39 N	510 N	8	0.19 J	0.09 J	0.22 J	0.22 J	NA	0.28 U	0.24 U	0.18 U	0.3 U	0.24 U
SILVER	39 N	510 N	12	0.02 J	0.02 J	0.03 J	0.03 J	NA	0.02 J	0.032 U	0.024 U	0.02 J	0.031 U
SODIUM				51.7 U	34.3 U	37.5 U	37.5 U	NA	34 U	37.1 U	31.4 U	22.5 J	34.1 U
THALLIUM	0.078 N	1 N	0.22	0.05 U	0.03 U	0.05 U	0.05 U	NA	0.05 U	**0.2 [R]**	0.05 J	0.03 J	0.05 J
VANADIUM	39 N	510 N	1260	17.2	13.6	16.3	16.3	NA	18.8	18.6	17.1	17.8	16.2
ZINC	2300 N	31000 N	5800	36.9	44.9	40.4	40.4	NA	47.1	36.2	50	49 J	34.8
MISCELLANEOUS PARAMETERS (%)													
TOTAL SOLIDS				90	93	86	87	88	94	90	88	94	91
PETROLEUM HYDROCARBONS (MG/KG)													
ExTPH (C08-C44)				NA	NA	7.8 J	7.8 J	11 U	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS													
2-METHYLNAPHTHALENE	23000 N	220000 N	2800	11 U	9.2 U	10 U	10 U	NA	10 U	11 U	11 U	3.4 J	10 U
ACENAPHTHENE	340000 N	3300000 N	82000	11 U	9.2 U	10 U	10 U	NA	10 U	11 U	11 U	10 U	10 U
ACENAPHTHYLENE	340000 N	3300000 N	82000	11 U	9.2 U	10 U	10 U	NA	10 U	11 U	11 U	10 U	10 U
ANTHRACENE	1700000 N	17000000 N	840000	11 U	9.2 U	10 U	10 U	NA	10 U	11 U	11 U	10 U	10 U
BENZO(A)ANTHRACENE	150 C	2100 C	200	4.8 J	2 J	4.1 J	4.1 J	NA	3.9 J	8 J	2.8 J	2.7 J	10 U
BENZO(A)PYRENE	15 C	210 C	70	11 U	9.2 U	4.9 J	4.9 J	NA	10 U	5.3 J	11 U	10 UJ	10 U
BENZO(B)FLUORANTHENE	150 C	2100 C	700	12 J	8.1 J	12 J	12 J	NA	9.5 J	14 J	11 J	9.5 J	8.5 J
BENZO(G,H,I)PERYLENE	170000 N	1700000 N	190000	11 U	9.2 U	3 J	3 J	NA	10 U	2.8 J	11 U	2.2 J	10 U
BENZO(K)FLUORANTHENE	1500 C	21000 C	7000	11 U	9.2 U	3.5 J	3.5 J	NA	10 U	3.3 U	11 U	10 U	10 U
CHRYSENE	15000 C	210000 C	22000	5.7 J	2.2 J	6.2 J	6.2 J	NA	3.9 J	8.2 J	3.6 J	3.4 J	1.8 U
DIBENZO(A,H)ANTHRACENE	15 C	210 C	220	11 U	7.1 J	8.3 J	8.3 J	NA	7.9 J	11 UJ	11 UJ	10 U	10 UJ
FLUORANTHENE	230000 N	2200000 N	1400000	9.4 J	3.8 J	7.5 J	7.5 J	NA	12 U	24	11 U	10 U	10 U
FLUORENE	230000 N	2200000 N	80000	11 U	9.2 U	10 U	10 U	NA	10 U	11 U	11 U	10 U	10 U
INDENO(1,2,3-CD)PYRENE	150 C	2100 C	4000	7.1 J	4 J	8.7 J	8.7 J	NA	4.8 J	8.5 J	6.8 J	5.6 J	10 UJ
PHENANTHRENE	170000 N	1700000 N	190000	6.6 J	2.2 J	3.8 J	3.8 J	NA	10 U	11 U	11 U	10 U	10 U
PYRENE	170000 N	1700000 N	190000	11 J	3.5 J	8 J	8 J	NA	10 U	19 J	11 U	10 U	10 U
TOTAL PAHS				56.6	32.9	70	70	NA	30	89.8	24.2	26.8	8.5

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-6

SUMMARY OF ANALYTICAL RESULTS
AOC-004/5 TANK FARM 2 SUBSURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH RHODE ISLAND

SAMPLE ID LOCATION ID SAMPLE DATE TOP DEPTH (FT) BOTTOM DEPTH (FT) SACODE QC TYPE	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-004/5-SB1049-0810 TF2-004/5-SB1049 11/14/2013 8 10 NORMAL NM	TF2-004/5-SB1057-0304 TF2-004/5-SB1057 11/14/2013 3 4 NORMAL NM	TF2-004/5-SB1057-0608 TF2-004/5-SB1057 11/14/2013 6 8 ORIG NM	TF2-004/5-SB1057-0608-AVG TF2-004/5-SB1057 20131114 6 8 AVG NM	TF2-004/5-SB1057-0608-D TF2-004/5-SB1057 11/14/2013 6 8 DUP FD	TF2-004/5-SB1058-0204 TF2-004/5-SB1058 11/13/2013 2 4 NORMAL NM	TF2-004/5-SB1064-0204 TF2-004/5-SB1064 11/13/2013 2 4 NORMAL NM	TF2-004/5-SB1064-0406 TF2-004/5-SB1064 11/13/2013 4 6 NORMAL NM	TF2-004/5-SB1065-0204 TF2-004/5-SB1065 11/14/2013 2 4 NORMAL NM	TF2-004/5-SB1065-0608 TF2-004/5-SB1065 11/14/2013 6 8 NORMAL NM	TF2-004/5-SB1066-0203 TF2-004/5-SB1066 11/14/2013 2 3 NORMAL NM
DIOXINS/FURANS (NG/KG)														
1,2,3,4,6,7,8,9-OCDD	15000 C	60000 C	17400	NA	1600	NA	NA	NA	2000	2100	NA	3000	NA	7300
1,2,3,4,6,7,8,9-OCDF	15000 C	60000 C	17400	NA	0.32 U	NA	NA	NA	1.9 U	7.6 J	NA	1.6 U	NA	21
1,2,3,4,6,7,8-HPCDD	450 C	1800 C	520	NA	7	NA	NA	NA	8.4	20	NA	11	NA	75
1,2,3,4,6,7,8-HPCDF	450 C	1800 C	520	NA	0.19 U	NA	NA	NA	0.58 U	3.5 J	NA	1 U	NA	11
1,2,3,4,7,8,9-HPCDF	450 C	1800 C	520	NA	0.038 U	NA	NA	NA	0.031 U	0.067 U	NA	0.2 U	NA	0.12 U
1,2,3,4,7,8-HXCDD	45 C	180 C	52	NA	0.064 U	NA	NA	NA	0.032 U	0.15 J	NA	0.1 J	NA	1.1 J
1,2,3,4,7,8-HXCDF	45 C	180 C	52	NA	0.08 U	NA	NA	NA	0.13 U	0.38 J	NA	0.37 U	NA	1.3 J
1,2,3,6,7,8-HXCDD	45 C	180 C	52	NA	0.045 U	NA	NA	NA	0.022 U	0.68 J	NA	0.13 J	NA	2.7 J
1,2,3,6,7,8-HXCDF	45 C	180 C	52	NA	0.25 U	NA	NA	NA	0.29 J	0.48 J	NA	0.49 J	NA	0.99 J
1,2,3,7,8,9-HXCDD	45 C	180 C	52	NA	0.047 U	NA	NA	NA	0.11 J	0.42 J	NA	0.15 J	NA	2.6 J
1,2,3,7,8,9-HXCDF	45 C	180 C	52	NA	0.03 U	NA	NA	NA	0.024 U	0.04 U	NA	0.022 U	NA	0.19 J
1,2,3,7,8-PECDD	4.5 C	18 C	5.2	NA	0.068 U	NA	NA	NA	0.039 U	0.069 U	NA	0.034 U	NA	0.74 J
1,2,3,7,8-PECDF	150 C	600 C	174	NA	0.035 U	NA	NA	NA	0.027 U	0.034 U	NA	0.021 U	NA	0.2 J
2,3,4,6,7,8-HXCDF	45 C	180 C	52	NA	0.027 U	NA	NA	NA	0.021 U	0.26 J	NA	0.16 J	NA	1.7 J
2,3,4,7,8-PECDF	15 C	60 C	17.4	NA	0.037 U	NA	NA	NA	0.029 U	0.035 U	NA	0.086 J	NA	0.41 J
2,3,7,8-TCDD	4.5 C	18 C	5.2	NA	0.043 U	NA	NA	NA	0.037 J	0.038 U	NA	0.03 U	NA	0.051 U
2,3,7,8-TCDF	45 C	180 C	52	NA	0.021 U	NA	NA	NA	0.017 U	0.071 UJ	NA	0.084 U	NA	0.23 J
TEQ[1]	4.2 C		5.2	NA	0.6	NA	NA	NA	0.8	1.1	NA	1.1	NA	**5.0 [R]**
TOTAL HPCDD	94 C	390 C	180	NA	12	NA	NA	NA	14 J	35	NA	19	NA	**150 [R]**
TOTAL HPCDF				NA	0.26 U	NA	NA	NA	1.2 J	8.9	NA	1.7 U	NA	26
TOTAL HXCDD				NA	0.27 J	NA	NA	NA	0.46 J	3.8 J	NA	1 J	NA	21 J
TOTAL HXCDF				NA	0.33 U	NA	NA	NA	0.62 J	5.5 J	NA	1.9 J	NA	22 J
TOTAL PECDD				NA	0.82 J	NA	NA	NA	0.36 J	0.069 U	NA	0.18 J	NA	6.1 J
TOTAL PECDF				NA	0.037 U	NA	NA	NA	0.11 J	2.3 J	NA	1 J	NA	11 J
TOTAL TCDD				NA	0.7 J	NA	NA	NA	0.2 J	0.29 J	NA	0.1 J	NA	2.5 J
TOTAL TCDF				NA	0.33 J	NA	NA	NA	0.11 J	1.2 J	NA	0.69 J	NA	5.4 J
METALS (MG/KG)														
ALUMINUM	7700 N	99000 N	460000	**14600 [R]**	**12200 [R]**	**17400 [R]**	**16600 [R]**	**15800 [R]**	**20000 [R]**	**16100 [R]**	**16600 [R]**	**16200 [R]**	**20200 [R]**	**12900 [R]**
ANTIMONY	3.1 N	41 N	5.4	0.08 U	0.09 J	0.1 J	0.1	0.1 J	0.06 U	0.09 U	0.05 U	0.06 U	0.08 U	0.12 U
ARSENIC	0.61 C	2.4 C	0.026	**8.3 [R,I,GW]**	**5.3 [R,I,GW]**	**8.9 [R,I,GW]**	**7.75 [R,I,GW]**	**6.6 [R,I,GW]**	**7.4 [R,I,GW]**	**7.7 [R,I,GW]**	**6.6 [R,I,GW]**	**6.9 [R,I,GW]**	**7.7 [R,I,GW]**	**12.1 [R,I,GW]**
BARIUM	1500 N	19000 N	2400	18.4	14.2	12.9	13	13.1	10.8	10.2	10.8	11.4	10.1	20.9
BERYLLIUM	16 N	200 N	260	0.38	0.38	1.3 J	0.9	0.5 J	0.46	0.51	0.34	0.58	0.44	0.36
CADMIUM	7 N	80 N	10.4	0.07 J	0.14	0.05 J	0.055	0.06 J	0.05 J	0.07 J	0.06 J	0.05 J	0.07	0.17
CALCIUM				827 J	545 J	746 J	721.5	697 J	554 J	637 J	408 J	520 J	101 J	870 J
CHROMIUM				17.8 J	15.1 J	23 J	21.3	19.6 J	27 J	22.1 J	22.1 J	20.8 J	26.5 J	15.8 J
COBALT	2.3 N	30 N	4.2	**13.7 [R,GW]**	**8.3 [R,GW]**	**23.5 J [R,GW]**	**18.55 [R,GW]**	**13.6 J [R,GW]**	**15.2 [R,GW]**	**12.4 [R,GW]**	**16.3 [R,GW]**	**14.7 [R,GW]**	**26.3 [R,GW]**	**11.2 [R,GW]**
COPPER	310 N	4100 N	440	15.7	13	23.3	21.25	19.2	26.4	26.6	27.7	22	41.5	18.5
IRON	5500 N	72000 N	5400	**24300 [R,GW]**	**21600 [R,GW]**	**41200 [R,GW]**	**35400 [R,GW]**	**29600 [R,GW]**	**43500 [R,GW]**	**38600 [R,GW]**	**35400 [R,GW]**	**35000 [R,GW]**	**42000 [R,GW]**	**25500 [R,GW]**
LEAD	400 L	800 L		11.6	8.4	15.4	13.9	12.4	15.1	14.6	20.2	13.6	20.4	39.5
MAGNESIUM				4220	3500	5660	5370	5080	7150	5720	5840	5500	6880	3740
MANGANESE	180 N	2300 N	420	**326 [R]**	**223 [R]**	**322 [R]**	**310.5 [R]**	**299 [R]**	**364 [R]**	**293 [R]**	**338 [R]**	**299 [R]**	**467 [R,GW]**	**307 [R]**
MERCURY	1 N	4.3 N	0.66	0.07	0.02 J	0.02 J	0.025	0.03	0.016 U	0.004 J	0.016 U	0.018 U	0.016 U	0.04
NICKEL	150 N	2000 N	400	21.1	15.8	31	28.05	25.1	32.8	29.1	27.4	25.7	35.6	21
POTASSIUM				480	588	324	336	348	310	282	295	306	279	428
SELENIUM	39 N	510 N	8	0.29 J	0.86	0.2 U	0.225 U	0.25 U	0.33 U	0.24 U	0.24 U	0.09 J	0.21 U	0.3 U
SILVER	39 N	510 N	12	0.04 J	0.03 U	0.027 U	0.0305 U	0.034 U	0.01 J	0.01 J	0.02 J	0.02 J	0.02 J	0.05 J
SODIUM				45.4 U	34.7 U	28.3 U	31.15 U	34 U	29 U	29 U	32 U	43.6 U	44 U	34.5 U
THALLIUM	0.078 N	1 N	0.22	0.06 U	**0.25 [R,GW]**	0.04 J	0.03	0.04 U	0.06 U	0.029 U	0.032 U	0.03 U	0.028 U	0.05 U
VANADIUM	39 N	510 N	1260	17.9	14	18.3	18.1	17.9	19.1	17.4	16.9	15.8	16.8	18.6
ZINC	2300 N	31000 N	5800	46.9	33.5	60.5	55.95	51.4	75.1	64.5	60.7	54.8	70.8	61.5
MISCELLANEOUS PARAMETERS (%)														
TOTAL SOLIDS				88	91	91	91	91	94	93	95	94	96	96
PETROLEUM HYDROCARBONS (MG/KG)														
ExTPH (C08-C44)				NA	NA	NA	NA	NA	10 U	NA	NA	NA	15 J	NA
POLYCYCLIC AROMATIC HYDROCARBONS														
2-METHYLNAPHTHALENE	23000 N	220000 N	2800	11 U	10 U	10 U	10.5 U	11 U	10 U	9.8 U	10 U	10 U	9.6 U	3.3 J
ACENAPHTHENE	340000 N	3300000 N	82000	11 U	10 U	10 U	10.5 U	11 U	10 U	9.8 U	10 U	32	9.6 U	15 J
ACENAPHTHYLENE	340000 N	3300000 N	82000	11 U	10 U	10 U	10.5 U	11 U	10 U	9.8 U	10 U	3.1 J	9.6 U	6.3 J
ANTHRACENE	1700000 N	17000000 N	840000	11 U	10 U	10 U	10.5 U	11 U	10 U	9.8 U	10 U	32	9.6 U	35
BENZO(A)ANTHRACENE	150 C	2100 C	200	2.2 J	2.2 J	5.2 J	3.65	2.1 J	10 U	2.6 J	4.7 J	44	2.4 J	**170 [R]**
BENZO(A)PYRENE	15 C	210 C	70	11 U	10 U	4.8 J	4.8 J	11 U	10 UJ	9.8 U	3.6 J	**28 [R]**	9.6 U	**140 [R,GW]**
BENZO(B)FLUORANTHENE	150 C	2100 C	700	9.4 J	10 U	12 J	10.75	9.5 J	8.3 J	9.8 U	11 J	28	7.1 J	**210 [R]**
BENZO(G,H,I)PERYLENE	170000 N	1700000 N	190000	11 U	10 U	2.8 J	2.8 J	11 U	10 UJ	9.8 U	10 U	6.7 J	4.7 J	66
BENZO(K)FLUORANTHENE	1500 C	21000 C	7000	11 U	10 U	10 U	10.5 U	11 U	10 UJ	9.8 U	3.1 U	12 J	9.6 U	62
CHRYSENE	15000 C	210000 C	22000	2.4 J	2.4 J	6.2 J	4.4	2.6 J	1.9 J	3.2 J	5.6 J	36	9.6 U	160
DIBENZO(A,H)ANTHRACENE	15 C	210 C	220	11 UJ	10 UJ	10 UJ	10.5 U	11 UJ	10 UJ	9.8 UJ	10 UJ	10 J	9.6 U	**33 J [R]**
FLUORANTHENE	230000 N	2200000 N	1400000	11 U	10 U	10 U	10.5 U	11 U	10 U	9.8 U	10 U	89	9.6 U	300
FLUORENE	230000 N	2200000 N	80000	11 U	10 U	10 U	10.5 U	11 U	10 U	9.8 U	10 U	7.3 J	9.6 U	15 J
INDENO(1,2,3-CD)PYRENE	150 C	2100 C	4000	11 UJ	10 UJ	7.7 J	7.7 J	11 UJ	10 UJ	9.8 UJ	6.2 J	20 J	9.6 U	**160 J [R]**
PHENANTHRENE	170000 N	1700000 N	190000	11 U	10 U	10 U	10.5 U	11 U	10 U	9.8 U	10 U	53	9.6 U	170
PYRENE	170000 N	1700000 N	190000	11 U	10 U	10 U	10.5 U	11 U	10 U	9.8 U	10 U	110	9.6 U	240
TOTAL PAHS				14	4.6	38.7	26.45	14.2	10.2	5.8	31.1	511.1	14.2	1785.6

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-6

SUMMARY OF ANALYTICAL RESULTS
AOC-004/5 TANK FARM 2 SUBSURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH RHODE ISLAND

SAMPLE ID LOCATION ID SAMPLE DATE TOP DEPTH (FT) BOTTOM DEPTH (FT) SACODE QC TYPE	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-004/5-SB1068-0204 TF2-004/5-SB1068 11/14/2013 2 4 ORIG NM	TF2-004/5-SB1068-0204-AVG TF2-004/5-SB1068 20131114 2 4 AVG NM	TF2-004/5-SB1068-0204-D TF2-004/5-SB1068 11/14/2013 2 4 DUP FD
DIOXINS/FURANS (NG/KG)						
1,2,3,4,6,7,8,9-OCDD	15000 C	60000 C	17400	1900	2250	2600
1,2,3,4,6,7,8,9-OCDF	15000 C	60000 C	17400	0.91 U	0.84 U	0.77 U
1,2,3,4,6,7,8-HPCDD	450 C	1800 C	520	6.3	6.95	7.6
1,2,3,4,6,7,8-HPCDF	450 C	1800 C	520	0.73 U	0.725 U	0.72 U
1,2,3,4,7,8,9-HPCDF	450 C	1800 C	520	0.11 U	0.067 U	0.024 U
1,2,3,4,7,8-HXCDD	45 C	180 C	52	0.026 U	0.0265 U	0.027 U
1,2,3,4,7,8-HXCDF	45 C	180 C	52	0.31 U	0.355 U	0.4 U
1,2,3,6,7,8-HXCDD	45 C	180 C	52	0.023 U	0.03875	0.066 J
1,2,3,6,7,8-HXCDF	45 C	180 C	52	0.12 J	0.11	0.1 J
1,2,3,7,8,9-HXCDD	45 C	180 C	52	0.13 J	0.12	0.11 J
1,2,3,7,8,9-HXCDF	45 C	180 C	52	0.017 U	0.017 U	0.017 U
1,2,3,7,8-PECDD	4.5 C	18 C	5.2	0.038 U	0.041 U	0.044 U
1,2,3,7,8-PECDF	150 C	600 C	174	0.022 U	0.0225 U	0.023 U
2,3,4,6,7,8-HXCDF	45 C	180 C	52	0.07 J	0.0685	0.067 J
2,3,4,7,8-PECDF	15 C	60 C	17.4	0.065 J	0.0655	0.066 J
2,3,7,8-TCDD	4.5 C	18 C	5.2	0.023 U	0.0285 U	0.034 U
2,3,7,8-TCDF	45 C	180 C	52	0.015 U	0.05 U	0.085 U
TEQ[1]	4.2 **C**		**5.2**	0.7	0.8	0.9
TOTAL HPCDD	94 C	390 C	180	10	11.5	13
TOTAL HPCDF				0.99 U	0.855 U	0.72 U
TOTAL HXCDD				0.79 J	0.82	0.85 J
TOTAL HXCDF				0.67 U	0.76 U	0.85 U
TOTAL PECDD				1 J	1.05	1.1 J
TOTAL PECDF				0.15 J	0.165	0.18 J
TOTAL TCDD				1.6 J	1.55	1.5 J
TOTAL TCDF				0.35 J	0.43	0.51 J
METALS (MG/KG)						
ALUMINUM	7700 N	99000 N	460000	**10600 [R]**	**10025 [R]**	**9450 [R]**
ANTIMONY	3.1 N	41 N	5.4	0.06 U	0.055 U	0.05 U
ARSENIC	0.61 C	2.4 C	0.026	**4.3 [R,I,GW]**	**3.8 [R,I,GW]**	**3.3 [R,I,GW]**
BARIUM	1500 N	19000 N	2400	12.9	12.3	11.7
BERYLLIUM	16 N	200 N	260	0.33	0.305	0.28
CADMIUM	7 N	80 N	10.4	0.06 J	0.055	0.05 J
CALCIUM				773 J	712.5	652 J
CHROMIUM				13.3 J	12.5	11.7 J
COBALT	2.3 N	30 N	4.2	**7 [R,GW]**	**6.75 [R,GW]**	**6.5 [R,GW]**
COPPER	310 N	4100 N	440	10.6	9.7	8.8
IRON	5500 N	72000 N	5400	**17700 [R,GW]**	**16450 [R,GW]**	**15200 [R,GW]**
LEAD	400 L	800 L		8	7.4	6.8
MAGNESIUM				3050	2875	2700
MANGANESE	180 N	2300 N	420	**200 [R]**	**199.5 [R]**	**199 [R]**
MERCURY	1 N	4.3 N	0.66	0.03 U	0.03 U	0.03 U
NICKEL	150 N	2000 N	400	13.6	12.55	11.5
POTASSIUM				427	408.5	390
SELENIUM	39 N	510 N	8	0.22 U	0.1 J	0.1 J
SILVER	39 N	510 N	12	0.02 J	0.02	0.02 J
SODIUM				45.4 U	41.45 U	37.5 U
THALLIUM	0.078 N	1 N	0.22	0.05 U	0.04 J	0.04 J
VANADIUM	39 N	510 N	1260	15.2	14.6	14
ZINC	2300 N	31000 N	5800	29	27.05	25.1
MISCELLANEOUS PARAMETERS (%)						
TOTAL SOLIDS				91	90	89
PETROLEUM HYDROCARBONS (MG/KG)						
ExTPH (C08-C44)				NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS						
2-METHYLNAPHTHALENE	23000 N	220000 N	2800	11 U	10.5 U	10 U
ACENAPHTHENE	340000 N	3300000 N	82000	11 U	1.8 J	1.8 J
ACENAPHTHYLENE	340000 N	3300000 N	82000	11 U	10.5 U	10 U
ANTHRACENE	1700000 N	17000000 N	840000	11 U	6.15 U	1.3 U
BENZO(A)ANTHRACENE	150 C	2100 C	200	11 U	2.7 J	2.7 J
BENZO(A)PYRENE	15 C	210 C	70	11 U	10.5 U	10 U
BENZO(B)FLUORANTHENE	150 C	2100 C	700	11 U	9.6 J	9.6 J
BENZO(G,H,I)PERYLENE	170000 N	1700000 N	190000	11 U	10.5 U	10 U
BENZO(K)FLUORANTHENE	1500 C	21000 C	7000	11 U	10.5 U	10 U
CHRYSENE	15000 C	210000 C	22000	11 U	2.7 J	2.7 J
DIBENZO(A,H)ANTHRACENE	15 C	210 C	220	11 U	8.2 J	8.2 J
FLUORANTHENE	230000 N	2200000 N	1400000	11 U	4.5 J	4.5 J
FLUORENE	230000 N	2200000 N	80000	11 U	10.5 U	10 U
INDENO(1,2,3-CD)PYRENE	150 C	2100 C	4000	11 U	5.2 J	5.2 J
PHENANTHRENE	170000 N	1700000 N	190000	11 U	4.4 J	4.4 J
PYRENE	170000 N	1700000 N	190000	11 U	4.9 J	4.9 J
TOTAL PAHS				0 U	22	44

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-7

SUMMARY OF ANALYTICAL RESULTS
BUILDING 219 TANK FARM 2 SURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-B219-SS1080-0001	TF2-B219-SS1081-0001	TF2-B219-SS1082-0001	TF2-B219-SS1083-0001	TF2-B219-SS1084-0001	TF2-B219-SS1085-0001	TF2-B219-SS1086-0001	TF2-B219-SS1087-0001	TF2-B219-1	TF2-B219-2	TF2-B219-3	TF2-B219-4
LOCATION ID				TF2-B219-SB1080	TF2-B219-SB1081	TF2-B219-SB1082	TF2-B219-SB1083	TF2-B219-SB1084	TF2-B219-SB1085	TF2-B219-SB1086	TF2-B219-SB1087	TF2-B219-1	TF2-B219-2	TF2-B219-3	TF2-B219-4
SAMPLE DATE				11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	6/2/2005	6/2/2005	6/2/2005	6/2/2005
TOP DEPTH (FT)				0	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH (FT)				1	1	1	1	1	1	1	1	0.5	0.5	0.5	0.5
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE				NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
PCBS (UG/KG)															
AROCLOR-1260	220 C	740 C	480	**4400 [R,I,GW]**	**2400 [R,I,GW]**	**360 [R]**	24	42	**1300 [R,I,GW]**	**2800 J [R,I,GW]**	**600 [R,GW]**	**18000 [R,I,GW]**	33	**4100 [R,I,GW]**	**11000 [R,I,GW]**
TOTAL AROCLOR	220 C	740 C		**4400 [R,I]**	**2400 [R,I]**	**360 [R]**	24	42	**1300 [R,I]**	**2800 [R,I]**	**600 [R]**	**18000 [R,I]**	33	**4100 [R,I]**	**11000 [R,I]**
MISCELLANEOUS PARAMETERS (%)															
TOTAL SOLIDS				88	91	94	94	96	94	88	94				

1- [GW] obtained using a DAF of 20

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-8

SUMMARY OF ANALYTICAL RESULTS
BUILDING 219 TANK FARM 2 SUBSURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-B219-SB1080-0204	TF2-B219-SB1081-0204	TF2-B219-SB1082-0204-D	TF2-B219-SB1082-0204	TF2-B219-SB1082-0204-AVG	TF2-B219-SB1083-0204	TF2-B219-SB1084-0204	TF2-B219-SB1085-0204	TF2-B219-SB1086-0204	TF2-B219-SB1087-0204	TF2-B219-SB1088-0204
LOCATION ID				TF2-B219-SB1080	TF2-B219-SB1081	TF2-B219-SB1081	TF2-B219-SB1082	TF2-B219-SB1082	TF2-B219-SB1083	TF2-B219-SB1084	TF2-B219-SB1085	TF2-B219-SB1086	TF2-B219-SB1087	TF2-B219-SB1088
SAMPLE DATE				11/12/2013	11/12/2013	11/12/2013	11/12/2013	20131112	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013
TOP DEPTH (FT)				2	2	2	2	2	2	2	2	2	2	2
BOTTOM DEPTH (FT)				4	4	4	4	4	4	4	4	4	4	4
SACODE				NORMAL	NORMAL	DUP	ORIG	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE				NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM
PCBS (UG/KG)														
AROCLOR-1260	220	740	480	84	110	8.8 UJ	8.8 U	8.8 U	8.9 U	8.8 U	8.8 U	8.9 U	8.6 U	9.1 U
TOTAL AROCLOR	220	740		84	110	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
MISCELLANEOUS PARAMETERS (%)														
TOTAL SOLIDS				93	90	95	95	95	95	96	95	94	95	93

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-8

SUMMARY OF ANALYTICAL RESULTS
BUILDING 219 TANK FARM 2 SUBSURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-B219-SB1089-0204	TF2-B219-SB1089-0204-AVG	TF2-B219-SB1089-0204-D
LOCATION ID				TF2-B219-SB1089	TF2-B219-SB1089	TF2-B219-SB1089
SAMPLE DATE				11/12/2013	20131112	11/12/2013
TOP DEPTH (FT)				2	2	2
BOTTOM DEPTH (FT)				4	4	4
SACODE				ORIG	AVG	DUP
QC TYPE				NM	NM	FD
PCBS (UG/KG)						
AROCLOR-1260	220	740	480	25	26.5	28
TOTAL AROCLOR	220	740		25	26.5	28
MISCELLANEOUS PARAMETERS (%)						
TOTAL SOLIDS				92	92	92

1- [GW] obtained using a DAF of 20

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-9

SUMMARY OF ANALYTICAL RESULTS
FORMER BUOY STORAGE AREA TANK FARM 2 SURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-BSA-SS1090-0001	TF2-BSA-SS1091-0001	TF2-BSA-SS1091-0204	TF2-BSA-SS1092-0001	TF2-BSA-SS1093-0001	TF2-BSA-SS1094-0001	TF2-BSA-SS1095-0001	TF2-BSA-SS1096-0001	TF2-BSA-SS1096-0001-	TF2-BSA-SS1096-0001-D	TF2-BSA-SS1097-0001
LOCATION ID				TF2-BSA-SB1090	TF2-BSA-SB1091	TF2-BSA-SB1091	TF2-BSA-SB1092	TF2-BSA-SB1093	TF2-BSA-SB1094	TF2-BSA-SB1095	TF2-BSA-SB1096	TF2-BSA-SB1096	TF2-BSA-SB1096	TF2-BSA-SB1097
SAMPLE DATE				11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	20131112	11/12/2013	11/12/2013
TOP DEPTH (FT)				0	0	2	0	0	0	0	0	0	0	0
BOTTOM DEPTH (FT)				1	1	4	1	1	1	1	1	1	1	1
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
QC TYPE				NM	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM
METALS (MG/KG)														
LEAD	400 L	800 L		23.5 J	19.5 J	NA	43.4 J	15.5 J	19.1 J	15.5 J	46.5 J	42.05	37.6 J	73.8 J
MISCELLANEOUS PARAMETERS (%)														
TOTAL SOLIDS				90	93	93	90	91	97	89	88	88	88	90

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOT ANALYZED

TABLE 4-10

SUMMARY OF ANALYTICAL RESULTS
FORMER BUOY STORAGE AREA TANK FARM 2 SUBSURFACE SOIL
DATA GAPS ASSESSMENT
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

SAMPLE ID	EPA RSL For Residential Soil [R]	EPA RSL For Industrial Soil [I]	EPA SSL For Protection of Groundwater [GW]	TF2-BSA-SB1091-0204	TF2-BSA-SB1092-0204	TF2-BSA-SB1093-0204	TF2-BSA-SB1094-0204	TF2-BSA-SB1095-0204	TF2-BSA-SB1096-0204	TF2-BSA-SB1097-0204
LOCATION ID				TF2-BSA-SB1091	TF2-BSA-SB1092	TF2-BSA-SB1093	TF2-BSA-SB1094	TF2-BSA-SB1095	TF2-BSA-SB1096	TF2-BSA-SB1097
SAMPLE DATE				11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013
TOP DEPTH (FT)				2	2	2	2	2	2	2
BOTTOM DEPTH (FT)				4	4	4	4	4	4	4
SACODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE				NM	NM	NM	NM	NM	NM	NM
METALS (MG/KG)										
LEAD	400 L	800 L		10 J	10.7 J	20.1 J	30.3 J	15.4 J	31.1 J	55.9 J
MISCELLANEOUS PARAMETERS (%)										
TOTAL SOLIDS				93	93	94	88	92	87	87

DARK SHADING-EXCEEDS CRITERION; LIGHT SHADING-DETECTED; U-NOT DETECTED;
UJ-DETECTION LIMIT APPROXIMATE; J-QUANTITATION APPROXIMATE; R-REJECTED; NA-NOTANALYZED

03019/SI.DR/TF2_TAGS_R1.DWG 06/03/15 MKB

LEGEND

SOIL SAMPLE LOCATION

SURVEYED BUILDING 21

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

J - Quantitation Approximate
U - Not Detected
UJ - Detection Limit Approximate

The Screening Level (SL) is the EPA RSL for Residential Soil.

0 10 20
SCALE IN FEET

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-001
SURFACE SOIL METALS

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TFS_TAGS_R1.DWG	AS NOTED

FIGURE NUMBER	REV	DATE
4-1	0	06/03/15

03019/SI.DR/TF2_TAGS_R1.DWG 06/07/15 MKB

LEGEND

SOIL SAMPLE LOCATION

SURVEYED BUILDING 21

0 10 20

SCALE IN FEET

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

J - Quantitation Approximate
U - Not Detected
UJ - Detection Limit Approximate

The Screening Level (SL) is the EPA RSL for Residential Soil.

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-001
SURFACE SOIL PAHs

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TFS_TAGS_R1.DWG	AS NOTED
FIGURE NUMBER **4-2**	REV 0 / DATE 06/07/15

03019/SI.DR/TF2_TAGS_R1.DWG 06/03/15 MKB

LEGEND

- SOIL SAMPLE LOCATION
- SURVEYED BUILDING 21

0 10 20
SCALE IN FEET

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

J - Quantitation Approximate
U - Not Detected
UJ - Detection Limit Approximate

The Screening Level (SL) is the EPA RSL for Residential Soil.

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-001
SUBSURFACE SOIL METALS

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TFS_TAGS_R1.DWG	AS NOTED
FIGURE NUMBER **4-3**	REV 0 / DATE 06/03/15

03019/SI.DR/TF2_TAGS_R1.DWG 06/03/15 MKB

0 10 20
SCALE IN FEET

LEGEND

SOIL SAMPLE LOCATION

SURVEYED BUILDING 21

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

J - Quantitation Approximate
U - Not Detected
UJ - Detection Limit Approximate

The Screening Level (SL) is the EPA RSL for Residential Soil.

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-001
SUBSURFACE SOIL PAHs

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TFS_TAGS_R1.DWG	AS NOTED
FIGURE NUMBER **4-4**	REV 0 / DATE 06/03/15

03019/SI.DR/TF2_TAGS_R1.DWG 06/07/15 MKB

0 10 20
SCALE IN FEET

LEGEND

- SOIL SAMPLE LOCATION
- SURVEYED BUILDING 19
- SURVEYED VAULT

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

J - Quantitation Approximate
U - Not Detected
UJ - Detection Limit Approximate

The Screening Level (SL) is the EPA RSL for Residential Soil.

TETRA TECH

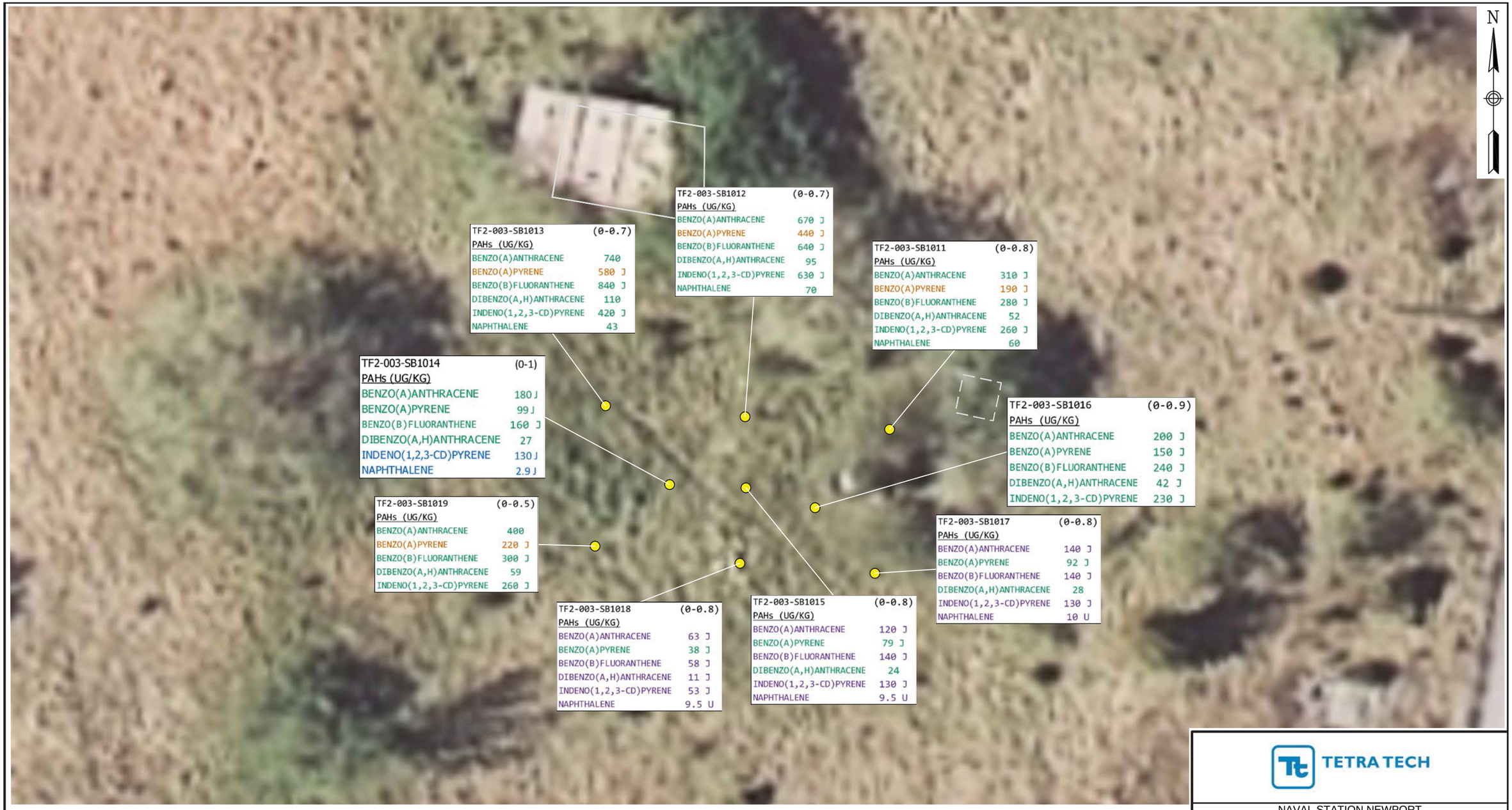
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-003
SURFACE SOIL METALS

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TFS_TAGS_R1.DWG	AS NOTED
FIGURE NUMBER **4-5**	REV 0 / DATE 06/07/15

03019/SI.DR/TF2_TAGS_R1.DWG 06/07/15 MKB



0 10 20
SCALE IN FEET

LEGEND

- SOIL SAMPLE LOCATION
- SURVEYED BUILDING 19
- SURVEYED VAULT

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

J - Quantitation Approximate
U - Not Detected
UJ - Detection Limit Approximate

The Screening Level (SL) is the EPA RSL for Residential Soil.

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-003
SURFACE SOIL PAHs

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TFS_TAGS_R1.DWG	AS NOTED
FIGURE NUMBER **4-6**	REV 0 / DATE 06/07/15

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N

TF2-003-SB1013 (0-0.7 FT)
DIOXINS/FURANS (NG/KG)
TEQ 5.1

TF2-003-SB1012 (0-0.7 FT)
DIOXINS/FURANS (NG/KG)
TEQ 5.8

TF2-003-SB1011 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 9.3

TF2-003-SB1014 (0-1 FT)
DIOXINS/FURANS (NG/KG)
TEQ 5.5

TF2-003-SB1016 (0-0.9 FT)
DIOXINS/FURANS (NG/KG)
TEQ 5.6

TF2-003-SB1019 (0-0.5 FT)
DIOXINS/FURANS (NG/KG)
TEQ 6.8

TF2-003-SB1017 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 2.9

TF2-003-SB1018 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 2.7

TF2-003-SB1015 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 4.7

0 10 20
SCALE IN FEET

LEGEND

- SOIL SAMPLE LOCATION
- TANK 19 "DOGHOUSE"
- TANK 19 VAULT

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

The Screening Level (SL) is the EPA RSL for Residential Soil.

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-003
SURFACE SOIL DIOXINS

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TF2_AOC03_TAGS.DWG	AS NOTED
FIGURE NUMBER **4-7**	REV 0 / DATE 10/01/15

03019/SI.DR/TF2_TAGS_R1.DWG 06/07/15 MKB

0 10 20
SCALE IN FEET

LEGEND

- SOIL SAMPLE LOCATION
- SURVEYED BUILDING 19
- SURVEYED VAULT

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

J - Quantitation Approximate
U - Not Detected
UJ - Detection Limit Approximate

The Screening Level (SL) is the EPA RSL for Residential Soil.

TETRA TECH

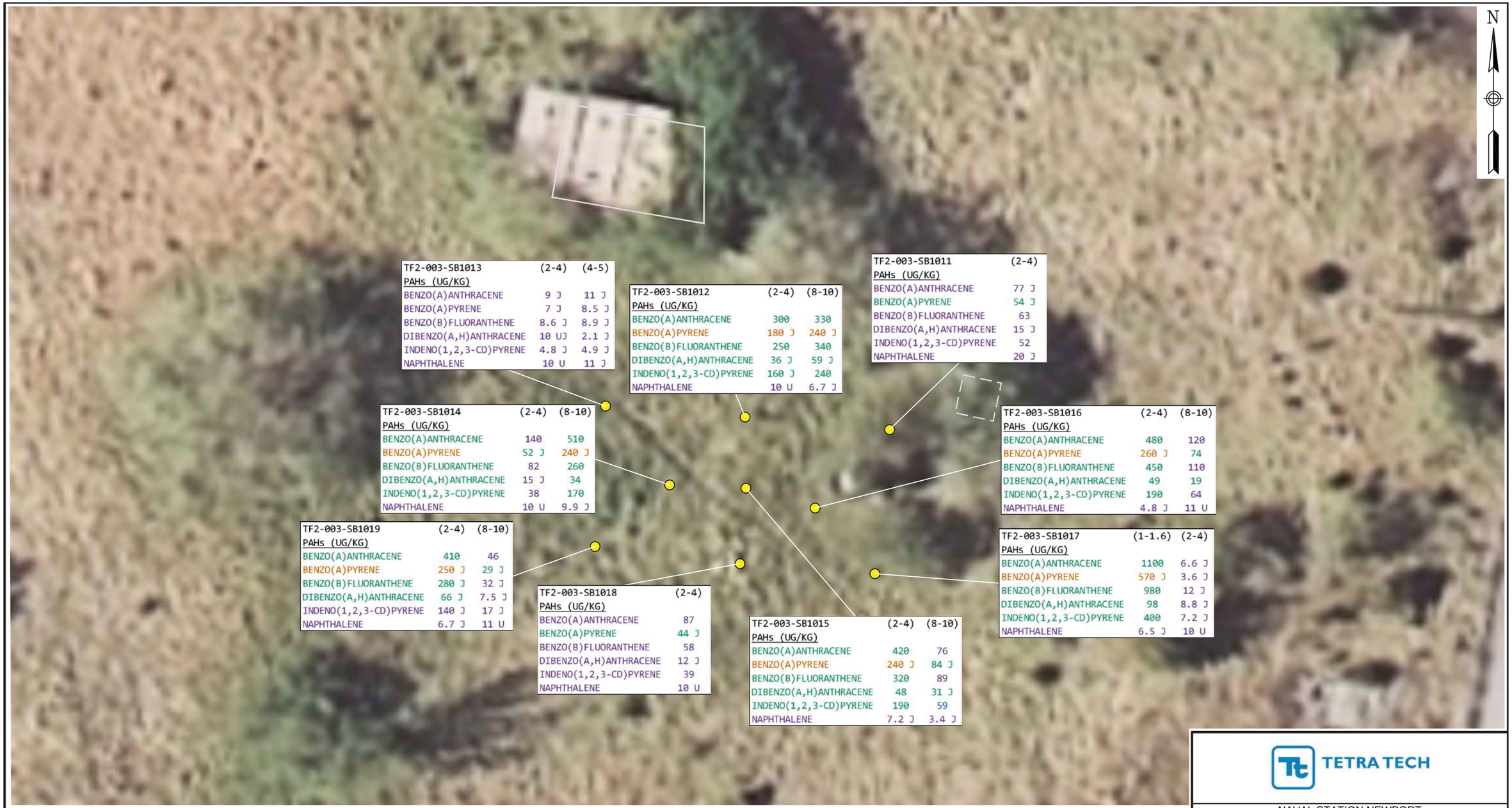
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-003
SUBSURFACE SOIL METALS

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TFS_TAGS_R1.DWG	AS NOTED
FIGURE NUMBER **4-8**	REV 0 / DATE 06/07/15

03019/SI.DR/TF2_TAGS_R1.DWG 06/07/15 MKB



0 10 20
SCALE IN FEET

LEGEND

- SOIL SAMPLE LOCATION
- SURVEYED BUILDING 19
- SURVEYED VAULT

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

J - Quantitation Approximate
U - Not Detected
UJ - Detection Limit Approximate

The Screening Level (SL) is the EPA RSL for Residential Soil.

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-003
SUBSURFACE SOIL PAHs

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE	
TFS_TAGS_R1.DWG	AS NOTED	
FIGURE NUMBER	REV	DATE
4-9	0	06/07/15

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N

TF2-003-SB1013 (2-4 FT)
DIOXINS/FURANS (NG/KG)
TEQ 1.1

TF2-003-SB1012 (2-4 FT)
DIOXINS/FURANS (NG/KG)
TEQ 2.7

TF2-003-SB1011 (2-4 FT)
DIOXINS/FURANS (NG/KG)
TEQ 1.6

TF2-003-SB1014 (2-4 FT)
DIOXINS/FURANS (NG/KG)
TEQ 7.1

TF2-003-SB1016 (2-4 FT)
DIOXINS/FURANS (NG/KG)
TEQ 4.6

TF2-003-SB1017 (1-1.6 FT) (2-4 FT)
DIOXINS/FURANS (NG/KG)
TEQ 11.7 1.4

TF2-003-SB1019 (2-4 FT)
DIOXINS/FURANS (NG/KG)
TEQ 8.8

TF2-003-SB1015 (2-4 FT)
DIOXINS/FURANS (NG/KG)
TEQ 6.1

TF2-003-SB1018 (2-4 FT)
DIOXINS/FURANS (NG/KG)
TEQ 0.6

0 10 20
SCALE IN FEET

LEGEND

SOIL SAMPLE LOCATION

TANK 19 "DOGHOUSE"

TANK 19 VAULT

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

The Screening Level (SL) is the EPA RSL for Residential Soil.

TETRA TECH

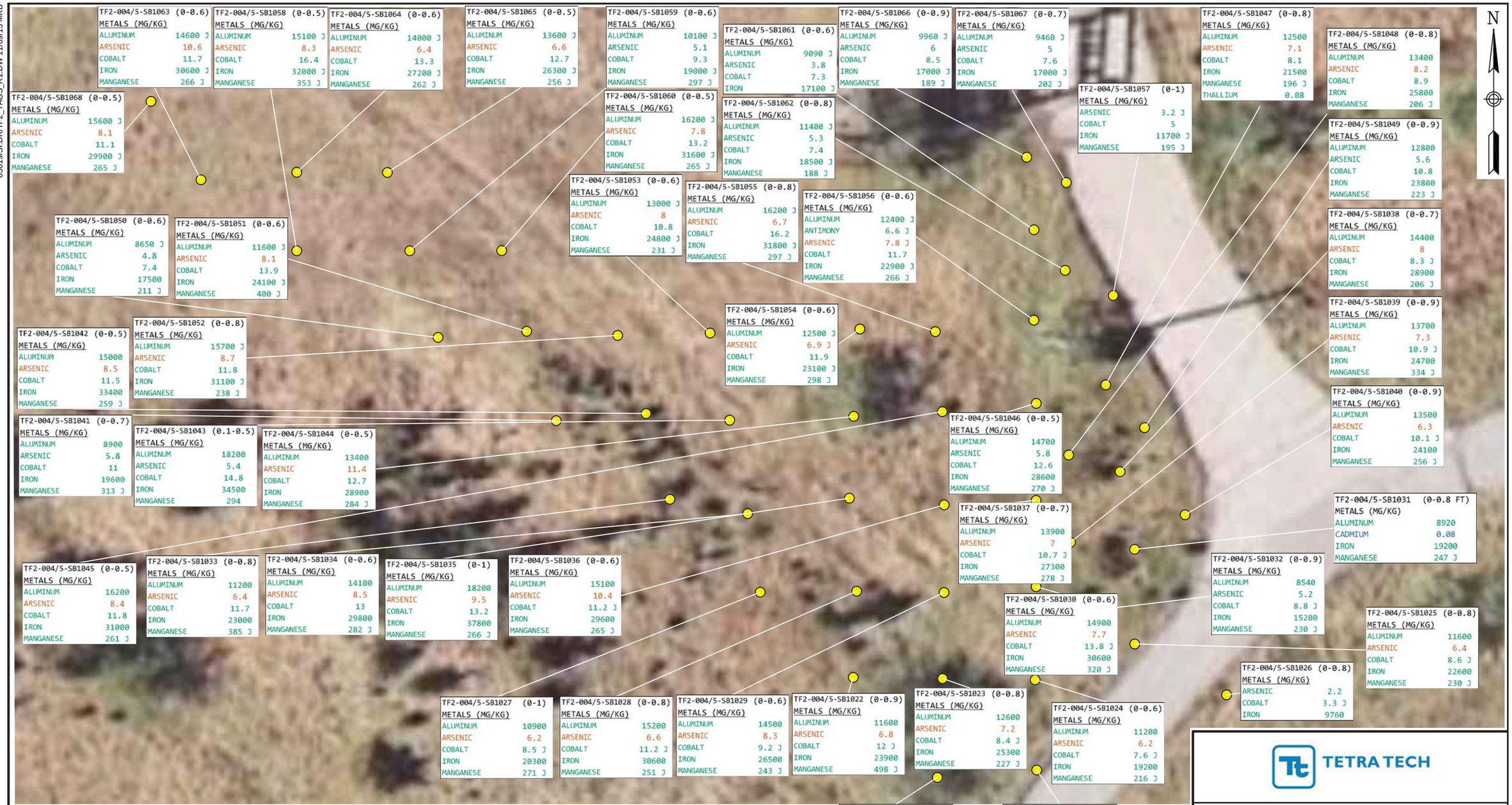
NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-003
SUBSURFACE SOIL DIOXINS

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TF2_AOC03_TAGS.DWG	AS NOTED
FIGURE NUMBER **4-10**	REV 0 / DATE 10/01/15

03019/SI.DR/TF2_TAGS_R1.DW 11/09/15 MKB



LEGEND

SOIL SAMPLE LOCATION

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

J - Quantitation Approximate
U - Not Detected
UJ - Detection Limit Approximate

The Screening Level (SL) is the EPA RSL for Residential Soil.

0 16 32
SCALE IN FEET

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-004/5
SURFACESOILS METALS

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TFS_TAGS_R1.DWG	AS NOTED
FIGURE NUMBER **4-11**	REV 0 / DATE 11/09/15

03019/SI.DR/TF2_TAGS_R1.DWG 06/08/15 MKB

LEGEND

SOIL SAMPLE LOCATION

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

J - Quantitation Approximate
U - Not Detected
UJ - Detection Limit Approximate

The Screening Level (SL) is the EPA RSL for Residential Soil.

0 16 32
SCALE IN FEET

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-004/5
SURFACE SOIL PAHs

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TFS_TAGS_R1.DWG	AS NOTED
FIGURE NUMBER **4-12**	REV 0 / DATE 06/08/15

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TF2-004/5-SB1068 (0-0.5 FT)
DIOXINS/FURANS (NG/KG)
TEQ 5.8

TF2-004/5-SB1064 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 4.0

TF2-004/5-SB1065 (0-0.5 FT)
DIOXINS/FURANS (NG/KG)
TEQ 7.5

TF2-004/5-SB1066 (0-0.9 FT)
DIOXINS/FURANS (NG/KG)
TEQ 7.7

TF2-004/5-SB1067 (0-0.7 FT)
DIOXINS/FURANS (NG/KG)
TEQ 6.4

TF2-004/5-SB1057 (0-1 FT)
DIOXINS/FURANS (NG/KG)
TEQ 14.9

TF2-004/5-SB1059 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 3.2

TF2-004/5-SB1061 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 5.3

TF2-004/5-SB1047 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 31.2

TF2-004/5-SB1063 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 2.5

TF2-004/5-SB1060 (0-0.5 FT)
DIOXINS/FURANS (NG/KG)
TEQ 13.6

TF2-004/5-SB1062 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 6.3

TF2-004/5-SB1048 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 6.3

TF2-004/5-SB1058 (0-0.5 FT)
DIOXINS/FURANS (NG/KG)
TEQ 2.2

TF2-004/5-SB1055 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 2.4

TF2-004/5-SB1049 (0-0.9 FT)
DIOXINS/FURANS (NG/KG)
TEQ 6.7

TF2-004/5-SB1051 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 11.4

TF2-004/5-SB1053 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 18.3

TF2-004/5-SB1038 (0-0.7 FT)
DIOXINS/FURANS (NG/KG)
TEQ 4.9

TF2-004/5-SB1050 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 4.0

TF2-004/5-SB1052 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 3.9

TF2-004/5-SB1054 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 4.3

TF2-004/5-SB1056 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 6.3

TF2-004/5-SB1042 (0-0.5 FT)
DIOXINS/FURANS (NG/KG)
TEQ 8.0

TF2-004/5-SB1039 (0-0.9 FT)
DIOXINS/FURANS (NG/KG)
TEQ 4.6

TF2-004/5-SB1041 (0-0.7 FT)
DIOXINS/FURANS (NG/KG)
TEQ 2.8

TF2-004/5-SB1043 (0.1-0.5 FT)
DIOXINS/FURANS (NG/KG)
TEQ 1.5

TF2-004/5-SB1044 (0-0.5 FT)
DIOXINS/FURANS (NG/KG)
TEQ 5.9

TF2-004/5-SB1045 (0-0.5 FT)
DIOXINS/FURANS (NG/KG)
TEQ 13.8

TF2-004/5-SB1046 (0-0.5 FT)
DIOXINS/FURANS (NG/KG)
TEQ 5.3

TF2-004/5-SB1040 (0-0.9 FT)
DIOXINS/FURANS (NG/KG)
TEQ 6.4

TF2-004/5-SB1031 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 3.7

TF2-004/5-SB1033 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 3.3

TF2-004/5-SB1035 (0-1 FT)
DIOXINS/FURANS (NG/KG)
TEQ 13.9

TF2-004/5-SB1034 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 4.2

TF2-004/5-SB1036 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 10.7

TF2-004/5-SB1037 (0-0.7 FT)
DIOXINS/FURANS (NG/KG)
TEQ 4.1

TF2-004/5-SB1032 (0-0.9 FT)
DIOXINS/FURANS (NG/KG)
TEQ 4.7

TF2-004/5-SB1027 (0-1 FT)
DIOXINS/FURANS (NG/KG)
TEQ 2.5

TF2-004/5-SB1028 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 4.0

TF2-004/5-SB1029 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 8.4

TF2-004/5-SB1030 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 3.6

TF2-004/5-SB1025 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 6.1

TF2-004/5-SB1026 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 2.3

TF2-004/5-SB1022 (0-0.9 FT)
DIOXINS/FURANS (NG/KG)
TEQ 2.8

TF2-004/5-SB1023 (0-0.8 FT)
DIOXINS/FURANS (NG/KG)
TEQ 3.9

TF2-004/5-SB1024 (0-0.6 FT)
DIOXINS/FURANS (NG/KG)
TEQ 6.5

TF2-004/5-SB1020 (0-1 FT)
DIOXINS/FURANS (NG/KG)
TEQ 3.2

TF2-004/5-SB1021 (0-0.7 FT)
DIOXINS/FURANS (NG/KG)
TEQ 7.7

N

LEGEND

SOIL SAMPLE LOCATION

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

The Screening Level (SL) is the EPA RSL for Residential Soil.

0 16 32
SCALE IN FEET

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-004/5
SURFACE SOIL DIOXINS

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TF2_AOC4_TAGS.DWG	AS NOTED
FIGURE NUMBER **4-13**	REV 0 / DATE 10/01/15

C:\GIS\02710\SLFR\TF2_AOC04_TAGS.DWG MKB 10/2/15

N

8TF2-004/5-SB1068	(2-4 FT)
PAHs (UG/KG)	
BENZO(A)ANTHRACENE	2.7 J
BENZO(A)PYRENE	10.5 U
BENZO(B)FLUORANTHENE	9.6 J
DIBENZO(A,H)ANTHRACENE	8.2 J
INDENO(1,2,3-CD)PYRENE	5.2 J

TF2-004/5-SB1064	(2-4 FT)	(4-6 FT)
PAHs (UG/KG)		
BENZO(A)ANTHRACENE	2.6 J	4.7 J
BENZO(A)PYRENE	9.8 U	3.6 J
BENZO(B)FLUORANTHENE	9.8 U	11 J
DIBENZO(A,H)ANTHRACENE	9.8 UJ	10 UJ
INDENO(1,2,3-CD)PYRENE	9.8 UJ	6.2 J

TF2-004/5-SB1065	(2-4 FT)	(6-8 FT)
PAHs (UG/KG)		
BENZO(A)ANTHRACENE	44	2.4 J
BENZO(A)PYRENE	28	9.6 U
BENZO(B)FLUORANTHENE	28	7.1 J
DIBENZO(A,H)ANTHRACENE	10 J	9.6 U
INDENO(1,2,3-CD)PYRENE	20 J	9.6 U

TF2-004/5-SB1066	(2-3 FT)
PAHs (UG/KG)	
BENZO(A)ANTHRACENE	170
BENZO(A)PYRENE	140
BENZO(B)FLUORANTHENE	210
DIBENZO(A,H)ANTHRACENE	33 J
INDENO(1,2,3-CD)PYRENE	160 J

TF2-004/5-SB1057	(3-4 FT)	(6-5 FT)
PAHs (UG/KG)		
BENZO(A)ANTHRACENE	2.2 J	3.65
BENZO(A)PYRENE	10 U	4.8 J
BENZO(B)FLUORANTHENE	10 U	10.75
DIBENZO(A,H)ANTHRACENE	10 UJ	10.5 U
INDENO(1,2,3-CD)PYRENE	10 UJ	7.7 J

TF2-004/5-SB1047	(2-4 FT)	(6-5 FT)
PAHs (UG/KG)		
BENZO(A)ANTHRACENE	8 J	2.8 J
BENZO(A)PYRENE	5.3 J	11 U
BENZO(B)FLUORANTHENE	14 J	11 J
DIBENZO(A,H)ANTHRACENE	11 UJ	11 UJ
INDENO(1,2,3-CD)PYRENE	8.5 J	6.8 J

TF2-004/5-SB1038	(2-4 FT)	(8-10 FT)
PAHs (UG/KG)		
BENZO(A)ANTHRACENE	10 U	5.3 J
BENZO(A)PYRENE	10 U	4.4 J
BENZO(B)FLUORANTHENE	8.7 J	12 J
DIBENZO(A,H)ANTHRACENE	10 U	10 J
INDENO(1,2,3-CD)PYRENE	10 U	7.6 J

TF2-004/5-SB1049	(2-4 FT)	(8-10 FT)
PAHs (UG/KG)		
BENZO(A)ANTHRACENE	10 U	2.2 J
BENZO(A)PYRENE	10 U	11 U
BENZO(B)FLUORANTHENE	8.5 J	9.4 J
DIBENZO(A,H)ANTHRACENE	10 UJ	11 UJ
INDENO(1,2,3-CD)PYRENE	10 UJ	11 UJ

TF2-004/5-SB1058	(2-4 FT)
PAHs (UG/KG)	
BENZO(A)ANTHRACENE	10 U
BENZO(A)PYRENE	10 UJ
BENZO(B)FLUORANTHENE	8.3 J
DIBENZO(A,H)ANTHRACENE	10 UJ
INDENO(1,2,3-CD)PYRENE	10 UJ

TF2-004/5-SB1041	(2-2.5 FT)
PAHs (UG/KG)	
BENZO(A)ANTHRACENE	3.9 J
BENZO(A)PYRENE	10 U
BENZO(B)FLUORANTHENE	9.5 J
DIBENZO(A,H)ANTHRACENE	7.9 J
INDENO(1,2,3-CD)PYRENE	4.8 J

TF2-004/5-SB1048	(2-4 FT)
PAHs (UG/KG)	
BENZO(A)ANTHRACENE	2.7 J
BENZO(A)PYRENE	10 UJ
BENZO(B)FLUORANTHENE	9.5 J
DIBENZO(A,H)ANTHRACENE	10 U
INDENO(1,2,3-CD)PYRENE	5.6 J

TF2-004/5-SB1039	(4-6 FT)
PAHs (UG/KG)	
BENZO(A)ANTHRACENE	4.8 J
BENZO(A)PYRENE	11 U
BENZO(B)FLUORANTHENE	12 J
DIBENZO(A,H)ANTHRACENE	11 U
INDENO(1,2,3-CD)PYRENE	7.1 J

TF2-004/5-SB1040	(2-4 FT)	(8-10 FT)
PAHs (UG/KG)		
BENZO(A)ANTHRACENE	2 J	4.1 J
BENZO(A)PYRENE	9.2 U	4.9 J
BENZO(B)FLUORANTHENE	8.1 J	12 J
DIBENZO(A,H)ANTHRACENE	7.1 J	8.3 J
INDENO(1,2,3-CD)PYRENE	4 J	8.7 J

TF2-004/5-SB1031	(2-4 FT)	(8-10 FT)
PAHs (UG/KG)		
BENZO(A)ANTHRACENE	10 U	6.2 J
BENZO(A)PYRENE	10 U	4.3 J
BENZO(B)FLUORANTHENE	8.8 J	9.7 J
DIBENZO(A,H)ANTHRACENE	10 U	8 J
INDENO(1,2,3-CD)PYRENE	4.7 J	5.8 J

TF2-004/5-SB1026	(2-2.7 FT)
PAHs (UG/KG)	
BENZO(A)ANTHRACENE	110 J
BENZO(A)PYRENE	90 J
BENZO(B)FLUORANTHENE	140 J
DIBENZO(A,H)ANTHRACENE	25
INDENO(1,2,3-CD)PYRENE	100 J

TF2-004/5-SB1032	(2-4 FT)
PAHs (UG/KG)	
BENZO(A)ANTHRACENE	2.7 J
BENZO(A)PYRENE	10 UJ
BENZO(B)FLUORANTHENE	9.2 J
DIBENZO(A,H)ANTHRACENE	10 U
INDENO(1,2,3-CD)PYRENE	5.9 J

TF2-004/5-SB1026	(2-2.7 FT)
PAHs (UG/KG)	
BENZO(A)ANTHRACENE	110 J
BENZO(A)PYRENE	90 J
BENZO(B)FLUORANTHENE	140 J
DIBENZO(A,H)ANTHRACENE	25
INDENO(1,2,3-CD)PYRENE	100 J

TF2-004/5-SB1021	(2-4 FT)	(6-8 FT)
PAHs (UG/KG)		
BENZO(A)ANTHRACENE	22 J	17 J
BENZO(A)PYRENE	22 J	13 J
BENZO(B)FLUORANTHENE	27 J	17 J
DIBENZO(A,H)ANTHRACENE	10 J	10 U
INDENO(1,2,3-CD)PYRENE	22 J	13 J

TF2-004/5-SB1063
TF2-004/5-SB1059
TF2-004/5-SB1060
TF2-004/5-SB1067
TF2-004/5-SB1061
TF2-004/5-SB1062
TF2-004/5-SB1056
TF2-004/5-SB1055
TF2-004/5-SB1054
TF2-004/5-SB1050
TF2-004/5-SB1051
TF2-004/5-SB1052
TF2-004/5-SB1053
TF2-004/5-SB1042
TF2-004/5-SB1043
TF2-004/5-SB1044
TF2-004/5-SB1045
TF2-004/5-SB1046
TF2-004/5-SB1033
TF2-004/5-SB1034
TF2-004/5-SB1035
TF2-004/5-SB1036
TF2-004/5-SB1037
TF2-004/5-SB1027
TF2-004/5-SB1028
TF2-004/5-SB1029
TF2-004/5-SB1030
TF2-004/5-SB1022
TF2-004/5-SB1023
TF2-004/5-SB1024
TF2-004/5-SB1020

LEGEND

SOIL SAMPLE LOCATION

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

The Screening Level (SL) is the EPA RSL for Residential Soil.

0 16 32
SCALE IN FEET

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-004/5
SUBSURFACE SOIL PAHs

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TF2_AOC4_TAGS.DWG	AS NOTED
FIGURE NUMBER **4-14**	REV 0 / DATE 10/02/15

03019/SI.DR/TF2_TAGS_R1.DWG 06/03/15 MKB

LEGEND

SOIL SAMPLE LOCATION

0 16 32

SCALE IN FEET

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

The Screening Level (SL) is the EPA RSL for Residential Soil.

J - Quantitation Approximate
U - Not Detected
UJ - Detection Limit Approximate

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

AOC-004/5
SUBSURFACE SOIL METALS

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TFS_TAGS_R1.DWG	AS NOTED
FIGURE NUMBER **4-15**	REV 0 / DATE 06/03/15

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0 10 20
SCALE IN FEET

LEGEND

SOIL SAMPLE LOCATION

SURVEYED BUILDING 219

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

The Screening Level (SL) is the EPA RSL for Residential Soil.

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

BUILDING 219
SURFACE SOIL PCBs

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TF2_TAG_B219_PCB.DWG	AS NOTED
FIGURE NUMBER **4-16**	REV 0 / DATE 10/02/15

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0 10 20
SCALE IN FEET

LEGEND

SOIL SAMPLE LOCATION

SURVEYED BUILDING 219

CHEMICAL RESULT > 100 times SL
CHEMICAL RESULT > 10 times SL
CHEMICAL RESULT > SL
CHEMICAL RESULT <= SL

The Screening Level (SL) is the EPA RSL for Residential Soil.

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

BUILDING 219
SUBSURFACE SOIL PCBs

TANK FARM 2, CATEGORY 1 AREA
DATA GAPS ASSESSMENT

FILE	SCALE
TF2_TAG_B219_PCB.DWG	AS NOTED
FIGURE NUMBER **4-17**	REV 0 / DATE 10/02/15

5.0 HUMAN HEALTH RISK ASSESSMENT

This section presents the HHRA for Tank Farm 2 at NAVSTA Newport. The objective of the HHRA is to determine whether exposure to chemicals in the study area pose a potential unacceptable risk to current/future human receptors. The potential risks to human receptors are estimated based on the assumption that no actions are taken to control contaminant releases.

The following current guidance and reports published by the Navy, the USEPA, and the State of Rhode Island were considered in the preparation of this document:

- Conducting Human Health Risk Assessments under the Environmental Restoration Program (Navy, February 2001).
- Navy Policy on the Use of Background Chemical Levels (Navy, January 2004).
- U.S. Navy Human Health Risk Assessment Guidance (Navy, December 2008).
- Rules and Regulations for the Investigation and Remediation of Hazardous Material Releases (RIDEM, November 2011).
- Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual (Part A) (USEPA, December 1989).
- Soil Screening Guidance: Technical Background Document (USEPA, May 1996).
- Exposure Factors Handbook: 2011 Edition (USEPA, September 2011).
- Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors (USEPA, February 2014).
- Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (USEPA, December 2002).
- Guidance for Characterizing Background and Chemical Concentrations in Soil for CERCLA Sites (USEPA, December 2002).

- Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) (USEPA, July 2004).

- Guidelines for Carcinogen Risk Assessment (USEPA, March 2005a).

- Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, March 2005b).

- Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment) (USEPA, January 2009).

The HHRA is structured and reported according to the guidelines of the Risk Assessment Guidance for Superfund (RAGS), Human Health Evaluation Manual, Part D: Standardized Planning, Reporting, and Review of Superfund Risk Assessments (RAGS Part D) (USEPA, December 2001). Tank Farm 2 is located in the Melville section of Portsmouth, Rhode Island and is northeast of Tank Farm 3, which is located north of Tank Farm 4. Site conditions and usage at Tank Farm 2 is similar to the other Tank Farms. Consequently, this assessment follows the methodology used for the HHRA for Tank Farms 4 and 5 (Tetra Tech, January 2011).

This HHRA consists of five components: data evaluation, exposure assessment, toxicity assessment, risk characterization, and uncertainty analysis. Sections 5.1 through 5.5 contain detailed discussions of the five components of the HHRA.

Three major aspects of chemical contamination and environmental fate and transport must be considered to evaluate potential risks: (1) contaminants with toxic characteristics must be found in environmental media and must be released by either natural processes or by human action; (2) potential exposure points must exist; and (3) human receptors must be present at the point of exposure. Risk is a function of both toxicity and exposure. If any one of these factors is absent for a site, the exposure pathway is incomplete, and no potential risks are considered to exist for human receptors.

5.1 DATA EVALUATION

Data evaluation, the first component of a baseline HHRA, is a medium-specific task involving the compilation and evaluation of analytical data. The second step (and the main objective) of the data evaluation is to develop a medium-specific list of chemicals of potential concern (COPCs) that will be used to quantitatively and/or qualitatively determine potential human health risks for site media. COPCs are selected primarily based on a risk-based screen (i.e., a comparison of site contaminant concentrations to

conservative risk-based screening values) and a background screen (i.e., a comparison of site concentrations to background concentrations).

5.1.1 Data Usability

Section 4.0 of this report presents a discussion of the data usability evaluation. All the sample data were validated according to established U.S. EPA Region I Data Validation Guidelines (EPA Region 1, July 1993, Draft); (EPA Region 1, December, 1996); (EPA Region 1, February, 2004); (EPA Region 1, November, 2008); and (EPA Region 1, September, 2005). A Tier II data validation was also performed and the results are summarized in Section 4.0 of this report. Data validation memoranda are presented in Appendix E. Soil samples from the 2013 field investigation (Section 2.0) were used in this HHRA. Additionally, four historical soil samples (surface soil only) were included. These historical samples, collected in 2005 from the Building 219 area, were analyzed for a limited parameter list, and only PCBs were detected. A discussion of the analytical results is presented in Section 4.0. Surface soil samples were collected between 0 to 1 foot bgs. Subsurface soil samples were collected between 1 and 10 feet bgs. The maximum detection reported for the original and duplicate samples was used in the selection of COPCs. If a chemical was detected in either the original or duplicate sample but not both of these samples, the detected result was used in the selection of COPCs. Samples used in this HHRA are listed on the COPC selection tables and in Appendix H-1.

5.1.2 Selection of Chemicals of Potential Concern

The selection of COPCs is a quantitative screening process used to limit the number of chemicals and exposure routes quantitatively evaluated in the baseline HHRA to those site-related constituents that dominate overall potential risks. Screening by risk-based concentration (RBC) is used to focus the risk assessment on significant chemicals and exposure routes.

As discussed in Section 5.1.2.2, a chemical was selected as a COPC and retained for further quantitative risk evaluation if the maximum detection in a sampled medium exceeds the lowest RBC and, for inorganics, is also present above background levels. Chemicals eliminated from further evaluation are assumed to present minimal risks to potential human receptors. Medium-specific tables summarizing the selection of COPCs are included in the risk assessment.

5.1.2.1 Derivation of Screening Criteria

The primary criteria used to identify COPCs are based on USEPA RSLs (November 2013). The RSLs are based on exposure pathways for which generally accepted methods, models, and assumptions have been developed (i.e., ingestion, dermal contact, and inhalation) for specific land-use conditions and do not

consider impact to groundwater or ecological receptors. The screening concentrations based on the RSLs correspond to a systemic hazard quotient (HQ) of 0.1 for non-carcinogens or an incremental lifetime cancer risk (ILCR) of $1x10^{-6}$ for carcinogens. The RSLs for non-carcinogens based on an HQ of 0.1 to account for the potential cumulative effects of several chemicals affecting the same target organ or producing the same adverse non-carcinogenic effect.

USEPA released the January 2015 RSLs after this HHRA was prepared. The January 2015 RSLs are generally higher than the November 2013 RSLs for the chemicals evaluated in this HHRA. A comparison of the January 2015 and November 2013 RSLs and the uncertainty associated with the use of the November 2013 RSLs is presented in Section 5.5.1, Uncertainty in the Selection of COPCs.

The COPC screening levels used for each medium in the risk assessment are discussed below.

Screening Levels for Soil

Screening levels based on RSLs for residential soil (USEPA, November 2013) were used to select COPCs for surface and subsurface soil. The risk-based screening levels used in the COPC selection for soil are presented in Table 5-1. Maximum chemical concentrations in soil were not compared to USEPA risk-based soil screening levels (SSLs) for groundwater protection as part of COPC selection for direct contact exposures (e.g., incidental ingestion, dermal contact, and inhalation); however, chemical concentrations in soil were compared to the SSLs as part of the qualitative evaluation for migration from soil to groundwater presented in Section 5.4.3.5.

Essential Nutrients

Per USEPA guidance (December 1989) “Chemicals that are (1) essential human nutrients, (2) present at low concentrations (i.e., only slightly elevated above natural occurring levels), and (3) toxic at very high doses (i.e., much higher than those that could be associated with contact at the site) need not be considered further in the quantitative risk assessment.” In this HHRA, these chemicals are magnesium, calcium, potassium, and sodium. Based on historical information available for the Site, no unusual use or disposal of these constituents occurred at the site under investigation. Soil concentrations greater than 1,000,000 mg/kg (i.e., pure mineral intake) would be required before receptor intake would exceed recommended daily allowance (RDA) and recommended daily intake (RDI) values. A review of currently available analytical data indicates that such concentrations have not been detected in soil at the site.

Iron and manganese are also essential human nutrients. While exposure to high levels of iron and manganese can result in adverse health effects, iron and manganese deficiency can also trigger adverse health effects such as anemia and osteoporosis, respectively. The USEPA has defined reference doses

(RfDs) in order to derive regional screening levels for these metals. A provisional RfD has been developed for iron based on typical dietary intake; however, the data used to derive this RfD are insufficient to determine the chronic dose level that is associated with adverse health effects in individuals. The RfD for manganese is estimated to be an intake for the general population that is not associated with adverse health effects; it is not meant to imply that intakes above this RfD are toxic. These RfDs doses focus on what is considered to be a safe intake of iron and manganese for the general population. Detected concentrations of iron and manganese in soil were screened against USEPA RSLs developed using these RfDs, and these metals were selected as COPCs for quantitative evaluation for data sets in which their concentrations exceeded the screening levels.

Evaluation of Dioxins/Furans

To evaluate dioxins/furans, 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) equivalents values were calculated using World Health Organization (WHO) TEFs (WHO, July 2006), which are recommended by USEPA (USEPA, December 2010), for 2,3,7,8-TCDD and 16 other dioxins/furans. TEFs are based on the potency of each of these compounds relative to that of 2,3,7,8-TCDD. TEFs are used to convert each individual dioxin/furan concentration into an equivalent concentration of 2,3,7,8-TCDD. The sum of these equivalent concentrations for the 16 other dioxins/furans and 2,3,7,8-TCDD is the 2,3,7,8-TCDD equivalents (TEQ) concentration.

Screening Levels for Chromium

There is no historical information indicating hexavalent would be present at the Tank Farm 2, thus the SAP did not include chromium speciation. Consequently, chromium speciation was not performed on the soil samples collected at the site. To be conservative, the screening levels for hexavalent chromium were used for the selection of COPCs.

Total Petroleum Hydrocarbons

Petroleum hydrocarbons are not considered to be a CERCLA contaminant. In addition there are no toxicity criteria available to evaluate risks from exposures to petroleum hydrocarbons [Extractable Petroleum Hydrocarbons (C08-C44) and Total Petroleum Hydrocarbons (C05–C12)]. Therefore, petroleum hydrocarbons are not evaluated in this HHRA. Petroleum hydrocarbons are discussed in Section 4 (Nature and Extent of Contamination).

Chemicals without Toxicity Criteria

Because of the lack of toxicity criteria, USEPA RSLs are not available for some chemicals [i.e., acenaphthylene, benzo(g,h,i)perylene, and phenanthrene]. For COPC screening, acenaphthene was

used as a surrogate for acenaphthylene, and pyrene was selected as a surrogate for benzo(g,h,i)perylene and phenanthrene.

Background Evaluation

In accordance with Navy policy (DON, January 2004) chemicals present at background concentrations were not retained as COPCs in this HHRA. The background evaluation was conducted in accordance with the following Navy guidance:

- Guidance for Environmental Background Analysis, Volume I: Soil. Prepared by Battelle Memorial Institute, Earth Tech, Inc., and Newfields for the Naval Facilities Engineering Command, Washington D.C., April 2002.

In the COPC selection process, if the results of the background evaluation indicated that chemical concentrations detected in site soils did not exceed background concentrations, that chemical was not selected as a COPC and was not carried through the quantitative risk assessment. However, chemicals present at concentrations exceeding risk-based screening criteria but not selected as COPCs on the basis of background evaluations are quantitatively evaluated in the risk characterization section in Section 5.4.3.3. A discussion of background risk versus site-related risk is also presented in Section 5.4.3.3. The results of the background comparison analysis for surface soil and subsurface soil are presented in Appendix G.

The results of the background comparison for surface soil showed that concentrations of barium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, vanadium, and zinc are greater than background concentrations. In contrast, surface soil concentrations of aluminum, arsenic, beryllium, cadmium, mercury, potassium, and selenium are consistent with background concentrations.

The results of the background comparison for subsurface soil showed that concentrations of aluminum, arsenic, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, nickel, vanadium, and zinc are greater than background concentrations. In contrast, subsurface soil concentrations of barium, manganese, and potassium are consistent with background concentrations.

5.1.2.2 Decision Rules for Establishing COPCs

The following decision rule was used to select lists of COPCs for the Tank Farm 2:

An organic chemical detected in soil was selected as a COPC for soil if any detected chemical concentration exceeded the USEPA direct contact screening levels for soil; an inorganic chemical detected in soil was

selected as a COPC for soil if any detected chemical concentration exceeded the USEPA direct contact screening level for soil and if the background evaluation indicates the site concentrations are not within naturally occurring levels (Appendix G).

As indicated in Section 5.1.2.1 chemicals with concentrations exceeding the screening criteria for migration from soil to groundwater were not retained as COPCs for quantitative evaluation in the risk assessment.

5.1.3 COPCs Selected for the HHRA

COPCs were selected for surface soil (0 to 1 foot bgs) and subsurface soil (1 to 10 feet bgs) using the risk-based COPC screening levels described in Section 5.1.2. As discussed in Section 1.0, the portion of Tank Farm 2 evaluated consists of several subareas; four areas of concern (AOC-001, AOC-003; AOC-004 and AOC-005), a former transformer building (Building 219), and the former buoy storage area. As requested by USEPA and RIDEM these subareas were combined and evaluated as one area for COPC selection in this HHRA. A discussion of the chemicals identified as COPCs and the rationale for COPC selection is provided in the following subsections. A discussion of nature and extent of the chemicals detected in site soil is presented in Section 4.0 and is not repeated in this section. COPC selection information for each medium is presented in Tables 5-2 and 5-3. Chemicals retained as COPCs for surface and subsurface soil are presented in Table 5-4. RAGS Part D tables for COPC selection are included in Appendix H-2.

5.1.3.1 Surface Soil

Seventeen PAHs, 1 PCB, 17 dioxins/furans, and 23 inorganics were detected in surface soil samples collected at the site. A comparison of maximum detected surface soil concentrations to screening levels based on RSLs for residential exposures is presented in Table 5-2. The following chemicals were detected at maximum concentrations exceeding direct contact COPC screening levels and were retained as COPCs for surface soil:

- PAHs [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene].

- PCBs (Aroclor-1260).

- Dioxins/Furans (1,2,3,4,6,7,8,9-OCDD, 1,2,3,4,6,7,8-HPCDD, 1,2,3,6,7,8-HXCDD, 1,2,3,7,8-PECDD, and 2,3,7,8-TCDD equivalents).

- Metals (antimony, chromium, cobalt, iron, manganese, and thallium).

Concentrations of aluminum and arsenic also exceeded the screening levels but were within naturally occurring levels and are not considered to be related to site activities (Appendix G); therefore, these chemicals were not retained as COPCs for direct contact with surface soil.

5.1.3.2 Subsurface Soil

Seventeen PAHs, 1 PCB, 17 dioxins/furans, and 23 metals were detected in subsurface soil at the site. A comparison of maximum detected subsurface soil concentrations to screening levels based on the RSLs for residential exposure is presented in Table 5-3. The following chemicals were detected at maximum concentrations exceeding direct contact COPC screening levels and were retained as COPCs for subsurface soil:

- PAHs [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene].

- Dioxins/furans (1,2,3,7,8-PECDD and 2,3,7,8-TCDD equivalents).

- Metals (aluminum, arsenic, chromium, cobalt, iron, and thallium).

Concentrations of manganese also exceeded the screening levels but were within naturally occurring levels and are not considered to be site related (Appendix G); therefore, manganese was not retained as a COPC for direct contact with subsurface soil.

5.1.3.3 Summary

Table 5-4 summarizes the chemicals retained as COPCs for direct contact exposures to surface soil and subsurface soil at the Tank Farm 2. RAGS Part D tables for COPC selection are included in Appendix H-2.

5.2 EXPOSURE ASSESSMENT

The exposure assessment portion of the risk assessment defines and evaluates, quantitatively or qualitatively, the type and magnitude of human exposure to the chemicals present at or migrating from a site. The exposure assessment is designed to depict the physical setting of the site, to identify potentially exposed populations and applicable exposure pathways, to calculate concentrations of COPCs to which receptors might be exposed, and to estimate chemical intakes under the identified exposure scenarios.

Actual or potential exposures at the site were determined based on the most likely pathways of contaminant release and transport, as well as human activity patterns. A complete exposure pathway has three components: a source of chemicals that can be released to the environment, a route of contaminant transport through an environmental medium, and an exposure or contact point for a human receptor.

5.2.1 Conceptual Site Model

A conceptual site model (CSM) facilitates consistent and comprehensive evaluation of potential risks to human health by creating a framework for identifying the pathways by which human receptors may come in contact with environmental media contaminated by site activities. A CSM depicts the relationships among the following elements, which are necessary for defining complete exposure pathways:

- Site sources of contamination
- Contaminant release mechanisms and transport/migration pathways
- Exposure routes
- Potential receptors

The elements of the CSM (contaminant source, release mechanisms, transport/migration pathways, exposure routes, and potential receptors) establish the manner and degree to which a potential receptor may be exposed to chemicals present at the site. The degree of risk incurred by a potential receptor varies according to the means of exposure, the duration of exposure, and the specific chemical to which the receptor is exposed.

Section 4.7 presents the CSM for Tank Farm 2. Groundwater exposures were not evaluated in this HHRA. A summary of the exceedances of the SSLs for the protection of groundwater is provided in Section 4. Table 5-5 provides a site-specific summary of the potential receptors evaluated in the HHRA. A summary of the exposure routes addressed quantitatively for each human receptor is provided in Table 5-6. Figure 5-1 illustrates the CSM for Tank Farm 2.

This report presents the results of the data gaps assessment completed at Tank Farm 2 for AOC-001, AOC-003, AOC-004, AOC-005, Building 219, and the Former Buoy Storage Area. The Navy has also identified three additional AOCs within Tank Farm 2 that require investigation. These areas are the former ground scars, former Public Works Garage Complex (Buildings 82, 240, 236, 239), and former Substation 19 (Building 218). After investigations and/or response actions are completed for those three AOCs, the Navy will evaluate the results from that work, and will coordinate with EPA and RIDEM to assess whether response actions are required to address remaining contamination in accordance with CERCLA or state regulations. In addition, there are petroleum-related AOCs associated with the former tanks and infrastructure at Tank Farm 2. The tank and infrastructure dismantling, investigations, and/or response

actions are being completed under state UST and remediation regulations. If a CERCLA release is identified and a CERCLA regulatory decision is required for any of the AOCs beyond the AOCs included in this data gaps assessment, the Navy will complete the CERCLA process for the AOC(s), and a record of decision (ROD) amendment and/or separate ROD will then be prepared to document the CERCLA decision. The Navy is also deferring any further investigations and/or response actions for groundwater, to be addressed as-needed on a site-wide basis.

5.2.1.1 Potential Current and Future Receptors of Concern and Exposure Pathways

The baseline HHRA prepared for Tank Farm 2 considered receptor exposure under residential and non-residential (e.g., industrial, recreational) land-use scenarios. Based on the CSM information presented in the Sampling and Analysis Plan (Tetra Tech, July 2013), the following receptors were identified for the HHRA:

- **Adolescent Trespasser** – A plausible receptor under current and future land use. Trespassers are individuals using the site for passive activities including walking or hiking two days a week during the warmer months of the year (mid-April through mid-October). A trespasser may be exposed to potentially contaminated surface soil (incidental ingestion; dermal contact) and air (inhalation). Trespasser exposure to subsurface soil is unlikely; however, because future construction could potentially bring subsurface soil to the surface, exposure to subsurface soil via incidental ingestion, dermal contact, and inhalation was evaluated for this receptor to support risk management decision making.

- **Adult Bow Hunter** – Adult bow hunters are plausible receptors under current and future land use, as some limited hunting (for deer) is currently allowed at the site (Tetra Tech, July 2013). Adult bow hunters are assumed to be present at the site two days a week every other week during hunting season (mid-September through January). Adult bow hunters may be exposed to potentially contaminated surface soil (incidental ingestion; dermal contact) and air (inhalation). Adult bow hunter exposure to subsurface soil is unlikely; however, because future construction could potentially bring subsurface soil to the surface, exposure to subsurface soil via incidental ingestion, dermal contact, and inhalation was evaluated for this receptor to support risk management decision making. The only prey being hunted at Tank Farm 2 is deer. Bioaccumulation is not expected to be a concern because the home range of deer is very large in comparison to the site. Also, vegetation is the main food source for deer, and PCBs, the major chemicals of concern at Tank Farm 2, are not known to bio-accumulate in plants.

- **Industrial Worker** – A plausible receptor under future land use. This receptor could be directly exposed to surface soil (incidental ingestion; dermal contact) and airborne particulates from surface soil (inhalation). Industrial worker exposure to subsurface soil is unlikely; however, because future

construction could potentially bring subsurface soil to the surface, exposure to subsurface soil via incidental ingestion, dermal contact, and inhalation was evaluated for this receptor to support risk management decision making.

- **Construction Worker** – A plausible on-site receptor under future land use; no construction projects are currently planned. Construction workers could be exposed to surface and subsurface soils (incidental ingestion; dermal contact) as well as airborne contaminants emanating from these media (inhalation).

- **Child and Adult Recreational Users** – Child and adult recreational users are plausible receptors under future land use. Recreational users are individuals using the site for passive activities including walking or hiking two days a week during the warmer months of the year (mid-April through mid-October). Recreational users may be exposed to potentially contaminated surface soil (incidental ingestion; dermal contact) and air (inhalation). Recreational user exposure to subsurface soil is unlikely; however, because future construction could potentially bring subsurface soil to the surface, exposure to subsurface soil via incidental ingestion, dermal contact, and inhalation was evaluated for this receptor to support risk management decision making.

- **Hypothetical Child and Adult Residents** – Given the anticipated future land use for much of the site (commercial/industrial), residents are a very unlikely future receptor. However, the hypothetical future residential scenario is typically evaluated in a risk assessment for decision-making purposes. For example, the need for deed restrictions at a site may be eliminated prior to site closure if minimal risks are estimated for residential receptors. It is assumed that a hypothetical resident may be exposed to surface soil (ingestion; dermal contact, inhalation) and air (inhalation). Receptor exposure to subsurface soil would only occur if subsurface soil was excavated and deposited on existing surface soil. Although this is an unlikely scenario, it is included in this HHRA for purposes of completeness and to assist the risk managers regarding the need for deed restrictions.

5.2.2 Central Tendency Exposure versus Reasonable Maximum Exposure

Traditionally, exposures evaluated in an HHRA were based on the concept of a reasonable maximum exposure (RME) only, which is defined as "the maximum exposure that is reasonably expected to occur at a site" (USEPA, December 1989). However, subsequent risk assessment guidance (USEPA, February 1992) indicates the need to address an average case or central tendency exposure (CTE).

To provide a full characterization of potential exposure, both RME and CTE scenarios were evaluated in the HHRA. The available guidance (USEPA, May 1993) concerning the evaluation of CTE is limited; therefore, professional judgment was exercised when defining CTE conditions for a particular receptor at

the site. Tables 5-8 and 5-9 present the exposure parameters used for the RME and CTE scenarios, respectively.

5.2.3 Exposure Point Concentrations

The exposure point concentration (EPC), which is calculated for COPCs and non-site-related chemicals detected at levels exceeding screening criteria but within naturally occurring levels, is an estimate of the chemical concentration within an exposure unit (EU). The EPC is assumed to be the concentration to which the receptor is exposed and is used to estimate exposure intakes. An EU is the area over which receptor activity is expected to occur.

As previously discussed, USEPA and RIDEM requested that the subareas identified for this site be evaluated as one EU in this HHRA. Two datasets were evaluated: surface soil (0 to 1 foot bgs) and all soil (i.e., combined surface and subsurface soil, 0 to 10 feet bgs).

The following guidelines were used to calculate EPCs:

- For surface soil and all soil the 95-percent upper confidence limit (UCL) on the arithmetic mean, which was based on the distribution of the data set, was selected as the EPC. EPCs were calculated following USEPA's Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (December 2002) and using USEPA's ProUCL software Version 5.0.00 (USEPA, September 2013).

- Non-detected values were evaluated in accordance with the ProUCL guidance. Duplicates were averaged for purposes of calculating EPCs for COPCs in environmental media.

- The same EPCs were used to evaluate both RME and CTE scenarios.

As noted above, data were combined to calculate EPCs (and risks) to soils evaluated across all the target areas combined. In addition, because some elevated PAH and PCB concentrations were noted in samples collected from the subareas AOC-001 and Building 219, respectively, EPCs and risks for both of these two subareas were also evaluated separately.

Table 5-7 presents the EPCs used for Tank Farm 2 Soil. ProUCL Outputs are included in Appendix H-3. RAGS Part D Tables that describe the EPCs for each area (and separated for surface soil and all soil) are presented as Tables 3.1 through 3.6 in Appendix H-2. Appendix H-1 lists the samples which were used to derive the EPCs for surface and subsurface soil.

5.2.4 Chemical Intake Estimation

The methodologies and techniques used to estimate exposure intakes are presented in this section. Intakes for the identified potential receptor groups were calculated using current USEPA risk assessment guidance and are presented in the risk assessment spreadsheets. Risk assessment results are presented using USEPA RAGS Part D table format. Assumptions regarding exposure are presented in Tables 5-8 and 5-9 for the RME and CTE scenarios, respectively. The exposure assumptions presented in Table 5-8 and 5-9 are based on current USEPA and risk assessment guidance.

Non-carcinogenic intakes were estimated using the concept of an average annual exposure. Carcinogenic intakes were calculated as incremental lifetime exposures, which assume a life expectancy of 70 years. The exposure assumptions reflect current USEPA guidance. The majority of the exposure assumptions used to estimate chemical intakes were based on default assumptions described in several USEPA guidance documents (e.g., USEPA December 1989, March 1991, August 1997, July 2004, and February 2014) RIDEM has default exposure assumptions for industrial and residential exposures (RIDEM, November 2011). The RIDEM values were not used in this HHRA because the default USEPA exposure assumptions for industrial and residential exposures are based on more recent studies (USEPA, February 2014). The following paragraphs discuss the non-default receptor-specific exposure assumptions used in the risk assessment.

5.2.4.1 Incidental Ingestion of Soil

Direct physical contact with soil may result in the incidental ingestion of chemicals. Chemical intake for the incidental ingestion of soil is estimated in the following manner (USEPA, December 1989):

$$\text{Intake} = \frac{(C_s)(IR)(FI)(EF)(ED)(CF)}{(BW)(AT)}$$

where:

Intake	=	intake of chemical from soil (mg/kg/day)
C_s	=	concentration of chemical in soil (mg/kg)
IR	=	ingestion rate (mg/day)
FI	=	fraction ingested from contaminated source (dimensionless)
EF	=	exposure frequency (days/yr)
ED	=	exposure duration (yr)
CF	=	conversion factor (1×10^{-6} kg/mg)
BW	=	body weight (kg)
AT	=	averaging time (days);

for non-carcinogens, AT = ED x 365 days/yr

for carcinogens, AT = 70 yr x 365 days/yr

Most of the exposure assumptions used to estimate chemical intakes from incidental ingestion of soil were based on default assumptions described in standard USEPA guidance and are summarized in Tables 5-8 and 5-9. The following paragraphs briefly discuss the non-default receptor-specific exposure assumptions for incidental ingestion of soil that were used in the HHRA.

The selected exposure frequency assumptions consider anticipated receptor activities at the site. It is assumed that adult bow hunters are exposed to soil two days per week every other week during hunting season (i.e., September 15 to January 31) (20 days a year) under the RME scenario and one day per week every other week during hunting season (10 days a year) under the CTE scenario. No construction activities are currently planned at Tank Farm 2. It is assumed that construction workers assigned to future excavation projects at the site are exposed to soil for 5 days a week over 6 months (130 days a year) for 1 year under the RME scenario, and 2 days a week over 6 months (52 days a year) for 1 year under the CTE scenario. It is assumed that adolescent trespassers and child and adult recreational users are exposed to soil for 2 days per week over 24 weeks during the warmer months (48 days a year) and 1 day a week over 24 weeks (24 days a year) under the RME and CTE scenarios, respectively. A value of 0.5 was assumed for the fraction ingested for adult bow hunters and child and adult recreational users exposed to soil because it is assumed that these receptors are at the site only part of the day. A value of 0.6 was used for the relative bioavailability (RBA) for arsenic (USEPA, December 2012), and a value of 1 was used for all other chemicals.

5.2.4.2 Dermal Contact with Soil

Direct physical contact with soil may result in the dermal absorption of chemicals. Exposure associated with dermal contact with soil is estimated in the following manner (USEPA, December 1989):

$$\text{Intake} = \frac{(C_s)(SA)(AF)(ABS)(CF)(EF)(ED)}{(BW)(AT)}$$

where:

Intake	=	amount of chemical absorbed during contact with soil (mg/kg/day)
C_s	=	concentration of chemical in soil (mg/kg)
SA	=	skin surface area available for contact (cm^2/day)
AF	=	skin adherence factor (mg/cm^2)
ABS	=	absorption factor (dimensionless)
CF	=	conversion factor (1×10^{-6} kg/mg)
EF	=	exposure frequency (days/year)

ED	=	exposure duration (year)
BW	=	body weight (kg)
AT	=	averaging time (days); for non-carcinogens, AT = ED x 365 days/year for carcinogens, AT = 70 years x 365 days/year

Most of the exposure assumptions used to estimate chemical intakes from dermal contact with soil were based on the default assumptions described in standard USEPA guidance and are summarized in Tables 5-8 and 5-9. The following paragraphs briefly discuss non-default receptor-specific exposure assumptions for dermal contact with soil that were used in the HHRA.

The exposed skin surface areas of the body available for dermal contact with soil were determined on a receptor-specific basis because they correspond with assumed human activities and clothing worn during exposure events. With the exception of the skin surface area recommended for adolescent trespassers exposed to soil, all of the skin surface areas presented in Tables 5-8 and 5-9 are based on USEPA default values. Current guidance (USEPA August 1997 and July 2004) was used to develop the skin surface area available for contact for the adolescent trespasser as follows:

- For the adolescent trespasser, the skin surface area available for soil contact is 4,050 cm^2 (which assumes 31 percent of the average total surface area of 1.31 m^2 for females and males, ages 7 through 17 years).

A summary of the receptor-specific input values used to estimate chemical intakes from dermal contact with soil are presented in Tables 5-8 and 5-9. The exposure frequencies and durations recommended for the evaluation of incidental ingestion of soil were also used to estimate chemical intakes for dermal contact with soil. The soil adherence factors are those presented in Exhibits 3.3 and 3.5 of RAGS Part E (USEPA, July 2004). To the extent possible, chemical-specific dermal absorption factors provided in RAGS Part E were used to evaluate the COPCs for soil. However, dermal absorption factors are only available for the short list of chemicals in Exhibit 3-4 of RAGS Part E. In addition, as indicated in RAGS Part E, absorption factors for metals other than arsenic and cadmium have not been developed due to insufficient data to support default values. Therefore, ABS was set equal to zero for these chemicals and risks from dermal absorption of metals other than arsenic and cadmium from soil were not quantified in this risk assessment. The uncertainty associated with the omission of these constituents is discussed in the uncertainty analysis. Dermal absorption values used in this HHRA are as follows:

- PAHs: 0.13
- PCBs: 0.14

- Dioxins/furans: 0.03
- Arsenic: 0.03

5.2.4.3 Inhalation of Air Containing Fugitive Dust/Volatiles Emitted from Soil

Intakes of both particulates and vapors/gases are calculated using the same equation, as follows (USEPA, January 2009):

$$EC = \frac{(C_{air})(ET)(EF)(ED)}{AT \times 24\,hrs/day}$$

where:

EC	=	exposure concentration (mg/m^3)
C_{air}	=	concentration of chemical in air (mg/m^3)
ET	=	exposure time (hours/day)
EF	=	exposure frequency (days/yr)
ED	=	exposure duration (yr)
AT	=	averaging time (hours);
	=	for non-carcinogens, AT = ED x 365 days/yr
	=	for carcinogens, AT = 70 yr x 365 days/yr

Some of the exposure assumptions used to estimate chemical intakes from inhalation of fugitive dusts/volatile emissions from soil were based on default assumptions described in standard USEPA guidance and are summarized in Tables 5-8 and 5-9. The exposure frequencies and durations used to estimate incidental ingestion of soil intakes were also used to estimate exposure via inhalation of fugitive dust/volatile emissions from soil.

The concentrations of chemicals in air resulting from emissions from soil are developed following procedures presented in USEPA Soil Screening Guidance (December 2002). Chemical concentrations in air were calculated as follows:

$$C_{air} = C_{soil} \times \left[\frac{1}{PEF} + \frac{1}{VF}\right]$$

where:

C_{air}	=	chemical concentration in air (mg/m^3)
C_s	=	chemical concentration in soil (mg/kg)
PEF	=	Particulate emission factor (m^3/kg)
VF	=	volatilization factor (m^3/kg)

No volatile chemicals were retained as COPCs in surface and subsurface soil, therefore, the above equation reduces to:

$$C_{air} = C_{soil} \times \left[\frac{1}{PEF} \right]$$

The particulate emissions factor (PEF) relates the concentration of the chemical in soil to the concentration of dust particles in air. A PEF value of $1.1 \times 10^{+10}$ m^3/kg was obtained from USEPA's Soil Screening internet site at http://rais.ornl.gov/epa/ssl1.shtml. This is the default value for Hartford, Connecticut, which is the closest city to the Tank Farm 2 listed on the Internet site. Because air emissions resulting from fugitive dust emissions settings will be different than dust emissions generated during construction activities, a separate PEF was used for construction activities. The PEF for construction workers ($1.4 \times 10^{+6}$ m^3/kg) was calculated using the equations presented in the supplemental SSL guidance document (USEPA, December 2002). Sample calculations showing how the PEFs were calculated are presented in Appendix H-4.

5.2.4.4 Assessing Cancer Risks from Early Life Exposures

USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, March 2005b) recommends making adjustments to the toxicity of carcinogenic chemicals that act via the mutagenic mode of action when evaluating early-life exposures. The guidance recommends using age-dependent adjustment factors (ADAFs) combined with age-specific exposure estimates when assessing cancer risks. In the absence of chemical-specific data, the supplement guidance recommends the following default adjustments, which reflect the fact that cancer risks are generally higher from early-life exposures than from similar exposures later in life:

- For exposures before 2 years of age (i.e., spanning a 2-year interval from the first day of birth until a child's second birthday), a 10-fold adjustment.

- For exposures between 2 and 16 years of age (i.e., spanning a 14-year time interval from a child's second birthday until their sixteenth birthday), a three-fold adjustment.

- For exposures after turning 16 years of age, no adjustment.

The adjustments were applied using the same method as that used by ORNL in the development of RSLs. Children were evaluated as two age groups, ages 0 to 2 years and ages 2 to 6 years, and adults were evaluated as two age groups, ages 6 to 16, and ages greater than 16 years old. Using this approach, the intakes for recreational users and hypothetical residents were calculated as follows:

$$Intake_{Child} = Intake_{(ages\ 0 - 2\ years)} \times 10 + Intake_{(ages\ 2 - 6\ years)} \times 3$$

$$Intake_{Adult} = Intake_{(ages\ 6 - 16\ years)} \times 3 + Intake_{(ages > 16\ years)}$$

Additionally, the intakes for adolescent trespassers were calculated as follows:

$$Intake_{Adolescent} = Intake_{(age\ 6 - 16\ years)} \times 3$$

The above approach was used only for those COPCs that are identified as mutagenic in the ORNL screening table (e.g., carcinogenic PAHs, hexavalent chromium). Sample calculations showing how this approach was applied are included in Appendix H-4.

5.2.4.5 Summary of Exposure Parameters

A summary of exposure input parameters for all exposure pathways is presented in Tables 5-8 and 5-9 for the identified potential receptor groups at the site. In general, standard default parameters (e.g., USEPA, December 1989, March 1991, July 1997, July 2004, and February 2014), which combine mid-range and upper-end exposure factors, were used to assess RME conditions in this HHRA.

5.3 TOXICITY ASSESSMENT

The toxicity assessment weighs the evidence regarding the potential for exposure to chemicals to produce adverse effects in exposed receptors and, when possible, the assessment estimates the relationship between the exposure to a chemical and the increased likelihood and/or severity of adverse effects. Quantitative estimates of the relationship between the magnitude and type of exposures and the severity or probability of human health effects are defined for the identified constituents of concern. Quantitative toxicity values determined during this component of the risk assessment are integrated with exposure assessment outputs to characterize the potential occurrence of adverse health effects for each receptor group.

The RfD is the toxicity value used to evaluate noncarcinogenic health effects for ingestion and dermal exposures. The reference concentration (RfC) is used to evaluate noncarcinogenic health effects for inhalation exposures. The RfD and RfC estimate a daily exposure level for a human population that is unlikely to pose an appreciable risk during a portion or for all of a human lifetime. It is based on a review of animal and/or human toxicity data, with adjustments for various data uncertainties. Carcinogenic effects are quantified using the cancer slope factor (CSF) for ingestion and dermal exposures, and using inhalation unit risks (IUR) for inhalation exposure that are plausible upper-bound estimates of the probability of the development of cancer per unit intake of the chemical over a lifetime. These are typically based on dose-response data from human and/or animal studies.

5.3.1 Toxicity Criteria for Oral and Inhalation Exposures

Oral RfDs and CSFs and inhalation RfCs and IURs used in this HHRA were obtained from the following primary USEPA literature sources (December 2003):

- Tier 1 - Integrated Risk Information System (IRIS).

- Tier 2 - USEPA Provisional Peer Reviewed Toxicity Values (PPRTVs) – The Office of Research and Development/National Center for Environmental Assessment (NCEA) Superfund Health Risk Technical Support Center develops PPRTVs on a chemical-specific basis when requested by USEPA's Superfund program.

- Tier 3 - Other Toxicity Values – These sources include but are not limited to California Environmental Protection Agency (Cal EPA) toxicity values, Agency for Toxic Substances and Disease Registry (ATSDR) values, and the Annual Health Effects Assessment Summary Tables (HEAST) (USEPA, July 1997).

Although toxicity criteria can be found in several toxicological sources, USEPA's IRIS online database is the preferred source of toxicity values. This database is continuously updated, and the presented values have been verified by USEPA. The toxicity criteria for the constituents selected as COPCs are presented in Tables 5-10 through 5-13.

5.3.2 Toxicity Criteria for Dermal Exposure

RfDs and CSFs in the scientific literature are typically expressed as "administered" (i.e., not absorbed) doses. Therefore, these values are considered inappropriate for estimating risks associated with dermal exposures. Oral dose response parameters based on administered doses must be adjusted to absorbed doses before they can be compared to estimated dermal exposure intakes.

When oral absorption is essentially complete (i.e., 100 percent), an absorbed dose is equivalent to the administered dose, and therefore no toxicity adjustment is necessary. Conversely, when the gastrointestinal absorption of a chemical is poor (e.g., 1 percent), the absorbed dose is smaller than the administered dose; thus, toxicity factors based on absorbed dose should be adjusted to account for the difference in the absorbed dose relative to the administered dose. USEPA (July 2004) recommends a 50 percent absorption cut-off to reflect the intrinsic variability in analyzing absorption studies. Therefore, the adjustment from administered to absorbed dose was only performed when the chemical specific gastrointestinal absorption efficiency was less than 50 percent. The adjustment from administered to

absorbed dose was made using chemical specific gastrointestinal absorption efficiencies published in numerous sources of guidance [e.g., USEPA 2004 (the primary reference), IRIS, ATSDR toxicological profiles, etc.], using the following equations:

$$RfD_{dermal} = (RfD_{oral})\ (ABS_{GI})$$

$$CSF_{dermal} = (CSF_{oral}) / (ABS_{GI})$$

where:
- ABS_{GI} = absorption efficiency in the gastrointestinal tract
- RfD_{dermal} = RfD for the dermal route of exposure
- RfD_{oral} = RfD for the oral route of exposure
- CSF_{dermal} = CSF for the dermal route of exposure
- CSF_{oral} = CSF of the oral route of exposure

As noted above, the preceding adjustment of the oral toxicity criteria (e.g., RfDs, CSFs) was necessary to allow quantitative evaluation of the dermal route of exposure in the baseline risk assessment. An explanation of this procedure and the need for this procedure are presented in Appendix A of USEPA RAGS Part A.

5.3.3 Toxicity Values for Construction Workers

Under the guidelines established by the Superfund program, exposures to construction workers of one year or less are classified as subchronic exposures. Risks for noncarcinogenic effects associated with subchronic exposures should incorporate toxicity values for subchronic and not chronic effects. Tables 5-10 and 5-11 display the available subchronic RfDs and RfCs that were used for the construction worker. Uncertainty associated with the lack of subchronic RfCs for chemicals is discussed in Section 5.5.3.

5.3.4 Toxicity of Chromium

Toxicity criteria are available for different forms of chromium (trivalent and hexavalent), where the hexavalent form is considered to be more toxic. In the absence of speciating the chromium into its different valence states, it is conservatively assumed that the all the chromium exists in its hexavalent form. Hexavalent chromium has carcinogenic and noncarcinogenic toxicity factors. Additionally, hexavalent chromium is a carcinogen that acts via a mutagenic mode of action. USEPA Guidelines for Carcinogen Risk Assessment (March 2005a) and Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (March 2005b) specify the use of ADAFs for carcinogens that act via a mutagenic mode of action. No chemical-specific ADAF is available for hexavalent chromium; therefore, USEPA's default ADAFs are applied to the carcinogenic toxicity factors for hexavalent chromium. The following default ADAFs should be applied: 10 for ages 0 to 2, 3 for ages 2 to 16, and 1 (no adjustment) for

ages 16 to 70. Noncarcinogenic effects are evaluated like all noncarcinogens in accordance with USEPA's risk assessment guidance (December 1989).

5.3.5 Toxicity of PCBs

The HHRA of PCBs was conducted per the following USEPA guidance document: PCBs: Cancer Dose-Response Assessment and Application to Environmental Mixtures (USEPA, September 1996).

This guidance presents a tiered approach to the risk assessment of PCBs. A range of CSFs for PCBs is presented for use in HHRA according to criteria that consider the environmental media investigated, type of exposure, and anticipated persistence, bioaccumulation potential, and toxicity of the PCB homologues/congeners detected in the samples. Only Aroclor-1260 was detected in soil samples from Tank Farm 2; therefore, the CSF for Aroclor-1260 [2.0 $(mg/kg\text{-}day)^{-1}$] (USEPA, September 1996), the upper bound slope factor, was used in the HHRA.

5.3.6 Toxicity Criteria for the Carcinogenic Effect of PAHs

Limited toxicity values are available to evaluate the carcinogenic effects from exposure to PAHs. The most extensively studied PAH is benzo(a)pyrene, which is classified by the USEPA as a probable human carcinogen. Although CSFs are available for benzo(a)pyrene, insufficient data are available to calculate CSFs for other potentially carcinogenic PAHs. Toxic effects for these chemicals were evaluated using the toxicity equivalent factors (TEFs) that relate the potency of the other potentially carcinogenic PAHs to the potency of benzo(a)pyrene, as presented in current USEPA guidance (USEPA, July 1993). The equivalent oral CSF for a carcinogenic PAH other than benzo(a)pyrene is derived by multiplying the CSF for benzo(a)pyrene by TEF recommended for that PAH. TEFs for the individual carcinogenic PAHs are as follows:

Compound	TEF
Benzo(a)anthracene	0.1
Benzo(a)pyrene	1
Benzo(b)fluoranthene	0.1
Benzo(k)fluoranthene	0.01
Chrysene	0.001
Dibenzo(a,h)anthracene	1
Indeno(1,2,3-cd)pyrene	0.1

Carcinogenic PAHs act via a mutagenic mode of action. USEPA Guidelines for Carcinogen Risk Assessment (March 2005a) and Supplemental Guidance of Assessing Susceptibility from Early-Life

Exposure to Carcinogens (March 2005b) specify the use of ADAFs for carcinogens that act via a mutagenic mode of action. No chemical-specific ADAF is available for carcinogenic PAHs; therefore, USEPA's default ADAFs are applied to the carcinogenic intakes for the carcinogenic PAHs. The following default ADAFs were applied: 10 for ages 0 to 2, 3 for ages 2 to 16, and 1 (no adjustment) for ages 16 to 70.

5.3.7 Toxicity Criteria for Carcinogenic Effects of Dioxins/Furans

Chlorinated dibenzo-p-dioxins (CDDs) and chlorinated-dibenzofurans (CDFs) were evaluated using World Health Organization (WHO) TEFs (WHO, July 2006), which are recommended by USEPA (USEPA, December 2010), for 2,3,7,8-TCDD and 16 other dioxins/furans. TEFs reflect the potency of each of these compounds relative to that of 2,3,7,8-TCDD. TEFs are used to convert each individual dioxin/furan concentration into an equivalent concentration of 2,3,7,8-TCDD. The sum of the equivalent concentrations of the 16 other dioxins/furans and 2,3,7,8-TCDD is referred to as the 2,3,7,8-TCDD equivalents (TEQ) concentration.

5.3.8 Toxicity Criteria for Thallium

The USEPA RSLs for thallium were derived using Provisional Peer Reviewed Toxicity Values. The oral reference dose presented in the RSL table for thallium was developed for the purposes of screening and is not appropriate for quantifying risks (USEPA, October 2012). Therefore, the oral reference dose thallium was not used in this HHRA to quantify risk estimates.

5.4 RISK CHARACTERIZATION

This section provides a characterization of human health risks associated with potential exposures to COPCs at the Tank Farm 2. Potential risks (non-carcinogenic and carcinogenic) for human receptors resulting from exposures outlined in the exposure assessment were quantitatively determined and are discussed in this section. Sections 5.4.1 and 5.4.2 outline the methods used to quantitatively estimate the type and magnitude of potential risks for human receptors. Summaries of the risk characterization for the site are provided in Section 5.4.3.

5.4.1 Quantitative Analysis of Chemicals

Quantitative estimates of risk for chemicals were calculated according to risk assessment methods outlined in USEPA guidance (USEPA, December 1989). Lifetime cancer risks are expressed in the form of dimensionless probabilities, referred to as ILCRs, based on CSFs and IURs. Non-carcinogenic risk estimates are presented in the form of HQs that are determined through a comparison of intakes with published RfDs and RfCs.

ILCR estimates for ingestion and dermal exposures were generated for each COPC using estimated exposure intakes and published CSFs, as follows:

$$ILCR = (Estimated\ Exposure\ Intake)(CSF)$$

ILCRs estimates for inhalation exposures were generated for each COPC using estimated exposure concentrations and published IURs, as follows:

$$ILCR = (IUR)(Exposure\ Concentration)(1000\ \mu g/mg)$$

A cumulative ILCR was generated by summing the individual ILCRs for all COPCs. An ILCR of $1x10^{-6}$ indicates that the exposed receptor has an one-in-one-million chance of developing cancer under the defined exposure scenario. Alternatively, such a risk may be interpreted as representing one additional case of cancer in an exposed population of one million people.

Non-carcinogenic risks were assessed using the concept of HQs and HIs. The HQ for a COPC is the ratio of the estimated intake to the RfD and is calculated for ingestion and dermal exposures as follows:

$$HQ = (Estimated\ Exposure\ Intake)/(RfD)$$

For inhalation exposures, HQ is calculated as follows:

$$HQ = (Exposure\ Concentration)/(RfC)$$

A hazard index (HI) was generated by summing the individual HQs for all COPCs. The HI is not a mathematical prediction of the severity of toxic effects and therefore is not a true "risk"; it is simply a numerical indicator of the possibility of the occurrence of noncarcinogenic (threshold) effects.

5.4.2 Interpretation of Risk Assessment Results

To interpret the quantitative risk estimates and to aid risk managers in determining the need for remediation, quantitative risk estimates were compared to typical USEPA risk benchmarks. Calculated ILCRs were interpreted using USEPA's target cancer risk range ($1x10^{-4}$ to $1x10^{-6}$). HIs were evaluated against a benchmark value of 1.

USEPA defines the range of $1x10^{-4}$ to $1x10^{-6}$ as the ILCR target range for hazardous waste facilities addressed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation Recovery Act (RCRA). Individual or cumulative ILCRs greater than $1x10^{-4}$

are generally considered "unacceptable" by USEPA. Risk management decisions are necessary when the ILCR is within $1x10^{-4}$ to $1x10^{-6}$. USEPA typically does not require remediation when the cumulative ILCR is less than $1x10^{-6}$. Similarly, cumulative ILCRs greater than $1x10^{-5}$ are generally considered to be "unacceptable" by State of Rhode Island; remediation may or may not be necessary when the cumulative ILCR exceeds $1x10^{-5}$.

A HI exceeding unity (1.0) indicates that there may be non-carcinogenic health risks associated with exposure. If a HI exceeds unity, target organ effects associated with exposure to COPCs are considered. Only those HQs for chemicals that affect the same target organ(s) or exhibit similar critical effect(s) are regarded as truly additive. Consequently, it may be possible for the cumulative HI to exceed 1.0, but no adverse health effects are anticipated if the COPCs do not affect the same target organ or exhibit the same critical effect (i.e., target-organ/critical effect-specific HIs do not exceed 1).

5.4.3 Results of the Risk Characterization

This section contains a summary of the results of the risk characterization for the Tank Farm 2. Quantitative risk estimates for potential human receptors were developed for those chemicals identified as COPCs. The methodology used to calculate the risks presented in this section was discussed in Sections 5.2 and 5.3. Potential risks from direct contact exposures to surface soil and all soil are discussed in Sections 5.4.3.1 and 5.4.3.2. Potential risks from direct contact exposures to chemicals within naturally occurring levels are discussed in Section 5.4.3.3. Subarea-specific risks for AOC-001 and Building 219 are discussed in Section 5.4.3.4. Uncertainties associated with the risk estimates are discussed in Section 5.5.

Potential cancer risks and HIs for Tank Farm 2 as a single EU were calculated for current/future adolescent trespassers, current/future adult bow hunters, future construction workers, future industrial workers, future child and adult recreational users, and hypothetical future child and adult residents and are summarized in Tables 5-14 and 5-15 for the RME and CTE scenarios, respectively. Potential cancer risks and HIs for the AOC-001 and Building 219 subareas were calculated for the same receptors and are summarized in Tables 5-16 and 5-17 for the RME and CTE scenarios, respectively, for AOC-001 and Tables 5-18 and 5-19 for the RME and CTE scenarios, respectively, for Building 219. Chemicals retained as COCs are summarized in Table 5-23. Sample calculations are presented in Appendix H-4, and the results of the risk assessment in RAGS Part D format are included in Appendix H-2.

5.4.3.1 Non-Carcinogenic Risks

RME Scenario

Table 5-14 and Figure 5-2 present the HIs for exposures to surface soil and all soil for the RME scenario. Cumulative HIs developed on a target-organ/effect specific basis for all receptors under current and future scenarios were less than or equal to unity (1). Therefore, adverse noncarcinogenic effects are not anticipated under the defined exposure scenarios.

CTE Scenario

Table 5-15 and Figure 5-3 present the HIs for exposures to surface soil and all soil for the CTE scenario. Cumulative HIs developed on a target-organ/effect specific basis for all receptors under current and future scenarios were less than or equal to unity (1). Therefore, adverse noncarcinogenic effects are not anticipated under the defined exposure scenarios.

5.4.3.2 Carcinogenic Risks

RME Scenario

Table 5-14 and Figure 5-4 present the ILCRs for surface soil and all soil for the RME scenario. Cumulative ILCRs for all receptors were within the USEPA's target risk range of 10^{-4} to 10^{-6}. The ILCRs of $1x10^{-4}$ for hypothetical child and lifelong residents exposed to surface soil and all soil were equal to the upper bound of USEPA's target risk range.

Cumulative ILCRs for all receptors were less than or equal to the RIDEM cumulative cancer risk benchmark of $1x10^{-5}$ with the exception of industrial workers and child, adult, and lifelong residents. ILCRs for industrial workers exposed to surface soil (ILCR = $2x10^{-5}$); child residents exposed to surface soil (ILCR = $1x10^{-4}$) and all soil (ILCR = $1x10^{-4}$); adult residents exposed to surface soil (ILCR = $2x10^{-5}$) and all soil (ILCR = $2x10^{-5}$), and lifelong residents exposed to surface soil (ILCR = $1x10^{-4}$) and all soil (ILCR = $1x10^{-4}$) exceed the RIDEM cumulative cancer risk benchmark. Carcinogenic PAHs, Aroclor-1260, arsenic, and chromium were the major contributors to the ILCRs for exposures to soil.

CTE Scenario

Table 5-15 and Figure 5-5 present the ILCRs for the surface soil and all soil for the CTE scenario. Cumulative ILCRs for all receptors were within the USEPA's target risk range of 10^{-4} to 10^{-6}.

Cumulative ILCRs for all receptors were less than or equal to the RIDEM cumulative cancer risk benchmark with the exception of lifelong residents. The ILCRs for lifelong residents exposed to surface soil (ILCR = $2x10^{-5}$) and all soil (ILCR = $2x10^{-5}$) exceeded the RIDEM cumulative cancer risk benchmark. Benzo(a)pyrene, Aroclor-1260, and chromium were the major contributors to the ILCRs for exposures to soil.

5.4.3.3 Subarea-Specific Risks

Because some elevated PAH and PCB concentrations were noted in samples collected from the subareas AOC-001 and Building 219, respectively, risks for both of these subareas were also evaluated separately.

5.4.3.3.1 AOC-001

Non-Carcinogenic Risks - RME Scenario

Table 5-16 presents the HIs for exposures to AOC-001 surface soil and all soil for the RME scenario. Cumulative HIs developed on a target-organ/effect specific basis for all receptors under current and future scenarios were less than or equal to unity (1). Therefore, adverse noncarcinogenic effects are not anticipated under the defined exposure scenarios.

Non-Carcinogenic Risks - CTE Scenario

Table 5-17 presents the HIs for exposures to AOC-001 surface soil and all soil for the CTE scenario. Cumulative HIs developed on a target-organ/effect specific basis for all receptors under current and future scenarios were less than or equal to unity (1). Therefore, adverse noncarcinogenic effects are not anticipated under the defined exposure scenarios.

Carcinogenic Risks - RME Scenario

Table 5-16 presents the ILCRs for AOC-001 surface soil and all soil for the RME scenario. Cumulative ILCRs for all receptors except for child and lifelong residents were within the USEPA's target risk range of 10^{-4} to 10^{-6}. The ILCRs for child and lifelong residents exposed to surface soil ($4x10^{-4}$ for both receptors) and all soil ($2x10^{-4}$ for child residents and $3x10^{-4}$ for lifelong residents) exceeded USEPA's target risk range. The primary risk contributors were PAHs and chromium (evaluated as hexavalent chromium) in surface soil and PAHs, chromium (evaluated as hexavalent chromium), and arsenic in all soil.

Cumulative ILCRs for adult bow hunters, construction workers, and adult recreational users were less than the RIDEM cumulative cancer risk benchmark. ILCRs for adolescent trespassers exposed to surface soil (ILCR = $2x10^{-5}$); industrial workers exposed to surface soil (ILCR = $2x10^{-5}$) and all soil (ILCR = $2x10^{-5}$); child

recreational users exposed to surface soil (ILCR = $3x10^{-5}$) and all soil (ILCR = $2x10^{-5}$); lifelong recreational users exposed to surface soil (ILCR = $4x10^{-5}$) and all soil (ILCR = $2x10^{-5}$); child residents exposed to surface soil (ILCR = $4x10^{-4}$) and all soil (ILCR = $4x10^{-4}$), adult residents exposed to surface soil (ILCR = $5x10^{-5}$) and all soil (ILCR = $3x10^{-5}$); and lifelong residents exposed to surface soil (ILCR = $4x10^{-4}$) and all soil (ILCR =$3x10^{-4}$) exceeded the RIDEM cumulative cancer risk benchmark. Carcinogenic PAHs and chromium were the major contributors to the ILCRs for exposures to soil.

Carcinogenic Risks - CTE Scenario

Table 5-17 presents the ILCRs for AOC-001 surface soil and all soil for the CTE scenario. Cumulative ILCRs for all receptors were within the USEPA's target risk range of 10^{-4} to 10^{-6}.

Cumulative ILCRs for all receptors were less than the RIDEM cumulative cancer risk benchmark with the exception of child and lifelong residents. The ILCR for child residents exposed to surface soil (ILCR = $4x10^{-5}$) and all soil (ILCR = $3x10^{-5}$) and lifelong residents exposed to surface soil (ILCR = $5x10^{-5}$) and all soil (ILCR = $3x10^{-5}$) exceeded the RIDEM cumulative cancer risk benchmark. Carcinogenic PAHs and chromium were the major contributors to the ILCRs for exposures to soil.

5.4.3.3.2 Building 219

Non-Carcinogenic Risks - RME Scenario

Table 5-18 presents the HIs for exposures to Building 219 surface soil and all soil for the RME scenario. HIs were not calculated because no noncarcinogenic toxicity criteria are available for Aroclor-1260, the only COPC identified for Building 219.

Non-Carcinogenic Risks - CTE Scenario

Table 5-19 presents the HIs for exposures to Building 219 surface soil and all soil for the CTE scenario. HIs were not calculated because no noncarcinogenic toxicity criteria are available for Aroclor-1260, the only COPC identified for Building 219.

Carcinogenic Risks - RME Scenario

Table 5-18 presents the ILCRs for Building 219 surface soil and all soil for the RME scenario. Cumulative ILCRs for all receptors were within the USEPA's target risk range of 10^{-4} to 10^{-6}.

Cumulative ILCRs for all receptors were less than or equal to the RIDEM cumulative cancer risk benchmark with the exception of child and lifelong residents. The ILCR for child residents exposed to surface soil

(ILCR = $3x10^{-5}$) and all soil (ILCR = $2x10^{-5}$) and lifelong residents exposed to surface soil (ILCR = $5x10^{-5}$) and all soil (ILCR = $3x10^{-5}$) exceeded the RIDEM cumulative cancer risk benchmark. Aroclor-1260 was the major contributor to the ILCRs for exposures to soil.

Carcinogenic Risks - CTE Scenario

Table 5-19 presents the ILCRs for the surface soil and all soil for the CTE scenario. Cumulative ILCRs for all receptors were within the USEPA's target risk range of 10^{-4} to 10^{-6} and were less than the RIDEM cumulative cancer risk benchmark.

5.4.3.4 Risk Associated With Naturally Occurring Chemicals

As discussed in Section 5.1.2.1, chemicals detected at maximum concentrations exceeding COPC screening levels but within naturally occurring concentrations were not retained as COPCs and were not evaluated in the risk assessment presented in Sections 5.4.3.1 and 5.4.3.2. Aluminum and arsenic were within naturally occurring levels in surface soil, and manganese was within naturally occurring levels in subsurface soil. However, site manganese concentrations in surface soil were not within naturally occurring levels, and aluminum and arsenic concentrations in subsurface soil were not within naturally occurring levels. Therefore, no chemicals were considered to be within naturally occurring levels for the all soil dataset, and total (site plus background) cancer risks and HIs for all soil are equal to the site-related cancer risks and HIs for all soil. Table 5-20 presents the cancer risks and HIs associated with these metals for the RME and CTE scenarios. RAGS Part D tables for these chemicals for the RME and CTE scenarios are presented in Appendix H-5. Also included in Table 5-20 is a comparison of the cancer risks and HIs for exposures to surface soil and all soil based on site-related COPCs.

HIs for surface soil and all soil for all receptors were less than unity for exposures to chemicals present at background concentrations. Total HIs do not exceed unity on a target organ-specific basis.

ILCRs for surface soil and all soil for all receptors exposed to chemicals present at background concentrations were less or within USEPA's target cancer risk range. Total (site plus background) ILCRs were also less than or within USEPA's target cancer risk range.

5.4.3.5 Migration from Soil to Groundwater

Maximum chemical concentrations in soil were also compared to USEPA risk-based soil screening levels SSLs for groundwater protection. The extent and concentrations of the chemicals and the number, distribution and magnitude of SSL exceedances were considered in evaluating the potential for groundwater to have been impacted by releases to soil. This evaluation suggested that it was unlikely that groundwater

was impacted. However, as described in Section 5.2.1, the Navy will be performing investigations of additional areas at Tank Farm 2. The Navy is deferring a decision concerning site-wide groundwater until investigations and/or response actions are completed at other identified AOCs.

The USEPA SSLs are based on a dilution attenuation factor (DAF) of 1. For comparison with site soil concentrations, the USEPA SSLs were multiplied by a factor of 20 to represent a DAF of 20. A DAF of 20 was used based on USEPA's Soil Screening Guidance (USEPA, May 1996), which states, "the EPA has selected a default DAF of 20 to account for contaminant dilution and attenuation during transport through the saturated zone to a compliance point (i.e., receptor well). At most sites, this adjustment will more accurately reflect a contaminant's threat to groundwater resources than assuming a DAF of 1 (i.e., no dilution or attenuation)." The guidance further states, "a DAF of 20 is protective for sources up to 0.5 acres in size," and "can be protective of larger sources as well." The SSLs for migration from soil to groundwater were not used for the selection of COPCs for direct contact exposure; however, they do allow qualitative evaluation of the potential for chemical migration from soil to groundwater. Chemicals with concentrations exceeding the SSLs may potentially migrate from the soil to groundwater in sufficient quantities to pose groundwater quality problems.

A comparison of maximum detected surface soil concentrations to USEPA SSLs for chemical migration from soil to groundwater based on a DAF of 20 is presented in Table 5-21. The following chemicals were detected in surface soil at maximum concentrations exceeding the screening levels for migration from soil to groundwater:

- PAHs [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and naphthalene].

- PCBs (Aroclor-1260).

- Dioxins/furans (1,2,3,4,6,7,8,9-OCDD, 1,2,3,4,6,7,8-HPCDD, 1,2,3,7,8-PECDD, and 2,3,7,8-TCDD equivalents).

- Metals (antimony, chromium, cobalt, iron, and manganese).

Concentrations of arsenic also exceeded the screening level but were within naturally occurring levels and are not considered to be related to site activities (Appendix G). As discussed in Section 5.1.2.1, chemicals detected at concentrations exceeding the SSLs for migration from soil to groundwater were not retained as COPCs for quantitative evaluation in this HHRA.

A comparison of maximum detected subsurface soil concentrations to USEPA SSLs for chemical migration from soil to groundwater based on a DAF of 20 and is presented in Table 5-22. The following chemicals were detected in subsurface soil at maximum concentrations exceeding the screening levels for migration from soil to groundwater:

- PAHs [benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, and naphthalene].

- Dioxins/furans (2,3,7,8-TCDD equivalents).

- Metals (arsenic, chromium, cobalt, iron, and thallium).

Concentrations of manganese also exceeded the screening levels but were within naturally occurring levels and are not considered to be site related (Appendix G). As discussed in Section 5.1.2.1, chemicals detected at concentrations exceeding the SSLs for migration from soil to groundwater were not retained as COPCs for quantitative evaluation in this HHRA.

5.5 UNCERTAINTY ANALYSIS

This section presents a summary of uncertainties inherent in the risk assessment and includes a discussion of how they may affect the quantitative risk estimates and conclusions of the risk analysis. The baseline HHRA for the site was performed in accordance with current USEPA guidance; however, there are varying degrees of uncertainty associated with the baseline HHRA. The following sections discuss general uncertainties in risk assessment and uncertainties specific to the risk assessment for the site.

Uncertainty in the selection of COPCs was related to the current status of the predictive databases; the grouping of samples; the numbers, types, and distributions of samples; data quality; and the procedures used to include or exclude constituents as COPCs. Uncertainty associated with the exposure assessment included the values used as input variables for a given intake route or scenario, the assumptions made to determine EPCs, and the predictions regarding future land use and population characteristics. Uncertainty in the toxicity assessment included the quality of the existing toxicity data needed to support dose-response relationships and the weight of evidence used to determine the carcinogenicity of COPCs. Uncertainty in risk characterization is associated with exposure to multiple chemicals and the cumulative uncertainty from combining conservative assumptions made in earlier steps of the risk assessment process.

Whereas there were various sources of random uncertainty and bias, the magnitude of bias and uncertainty and the direction of bias are influenced by the assumptions made throughout the risk assessment including selection of COPCs and selection of values for dose-response relationships. Throughout the entire risk

assessment, assumptions that consider safety factors were made so that the final calculated risks were overestimated.

Generally, risk assessments include two types of uncertainty, measurement and informational uncertainty. Measurement uncertainty refers to the usual variance that accompanies scientific measurements. For example, this type of uncertainty is associated with analytical data collected for the site. The risk assessment reflects the accumulated variances of the individual values used.

Informational uncertainty stems from inadequate availability of information needed to complete the toxicity and exposure assessments. Often, this gap is significant, such as the absence of information on the effects of human exposure to low doses of a chemical, the biological mechanism of action of a chemical, or the behavior of a chemical in soil.

After the risk assessment is complete, the results must be reviewed and evaluated to identify the type and magnitude of uncertainty involved. Reliance on results from a risk assessment without consideration of uncertainties, limitations, and assumptions inherent in the process can be misleading. For example, to account for uncertainties in the development of exposure assumptions, conservative estimates were made to ensure that the particular assumptions were protective of sensitive subpopulations or the maximum exposed individuals. If a number of conservative assumptions are combined in an exposure model, the resulting calculations can propagate the uncertainties associated with those assumptions, thereby producing a much larger uncertainty for the final results. This uncertainty is biased toward over predicting both carcinogenic and non-carcinogenic risks. Thus, both the results of the risk assessment and the uncertainties associated with those results must be considered when making risk-management decisions.

This interpretation of uncertainty is especially relevant when the risks exceed the point of departure for defining "acceptable" risk. For example, when risks calculated using a high degree of uncertainty are less than an acceptable risk level (i.e., 10^{-6}), the interpretation of no significant risk is typically straightforward. However, when risks calculated using a high degree of uncertainty exceed an acceptable risk level (i.e., 10^{-4}), a conclusion can be difficult unless uncertainty is considered.

5.5.1 Uncertainty in Selection of COPCs

The most significant issues related to uncertainty in COPC selection at the site are the COPC screening levels used and the absence of screening levels for a few chemicals detected in site media. A brief discussion of each of these issues is provided in this section.

COPC Screening Levels

The use of risk-based screening values based on conservative land-use scenarios (i.e., residential land use for soil) corresponding to ILCRs of 10^{-6} and HIs of 0.1 ensured that all the significant contributors to risk from the site were evaluated. The elimination of chemicals present at concentrations that correspond to ILCRs less than 10^{-6} and HIs less than 0.1 should not have affected the final conclusions of the risk assessment because those chemicals were not expected to cause a potential health concern at the detected concentrations.

The November 2013 RSLs were used to select COPCs in this HHRA. After this HHRA was prepared USEPA released the January 2015 RSLs. Table 5-24 presents a comparison of the November 2013 and January 2015 RSLs for chemicals detected in soil at Tank Farm 2. For the chemicals detected in Tank Farm 2 soil, the January 2015 RSLs are either the same as or higher than the November 2013 RSLs. The chemicals selected as COPCs for soil would not change if the January 2015 RSLs had been used in this HHRA instead of the November 2013 RSLs. Consequently, the use of the November 2013 RSLs does not introduce any uncertainty into this HHRA that would change the conclusions of this HHRA.

Chemicals without Established Screening Levels

USEPA RSLs are currently not available for some constituents detected at the site [i.e., acenaphthylene, benzo(g,h,i)perylene, and phenanthrene]. For COPC screening, acenaphthene was used as a surrogate for acenaphthylene, and pyrene was selected as a surrogate for benzo(g,h,i)perylene and phenanthrene. Applying toxicity values for one compound to another compound increases the uncertainty in the risk assessment both in regard to the selection of COPCs and the calculated risks. The direction of the uncertainty is not known.

5.5.2 Uncertainty in the Exposure Assessment

Uncertainty in the exposure assessment arose because of the methods used to calculate EPCs, the determination of land-use conditions, the selection of receptors and scenarios, and the selection of exposure parameters. Each of these is discussed below.

Exposure Point Concentrations

As requested by USEPA and RIDEM the subareas at Tank Farm 2 were evaluated as one EU in this HHRA. Evaluating the subareas as one EU introduces uncertainty in the HHRA. Some of the subareas are separated by several hundred feet making it unlikely that a receptor would be exposed to site media equally at all of the subareas. If the site was redeveloped in the future for industrial or residential land use it is more likely that some of the subareas would be separate EUs, especially for residential land use. In addition

concentrations of COPCs are not the same in all subareas making interpretation of the estimated HIs and ILCRs difficult. For example, PCBs were only analyzed in soil samples collected from the Building 219 subarea, but the risk estimates for PCBs were added to the risks from other subareas to determine total receptor risks. Also combining the subareas into one EU could underestimate the risks because lower COPC concentrations in one subarea may dilute higher COPC concentrations in another subarea (i.e., the EPCs calculated to estimate receptor exposure may be biased low).

To address the uncertainty associated with evaluating the subareas at Tank Farm 2 as one EU, subareas where higher contaminant concentrations were observed were additionally evaluated individually. In this subarea-specific evaluation, AOC-001 was evaluated separately due to higher detections of PAHs, and Building 219 was evaluated separately due to PCB concentrations. Overall risk assessment conclusions do not change if Building 219 is evaluated as a separate subarea. However, PAHs and chromium (evaluated as hexavalent chromium) in surface soil and all soil and arsenic in all soil were identified as primary risk contributors if AOC-001 is evaluated separately. Uncertainty associated with toxicity criteria for chromium is discussed in Section 5.5.3.

Uncertainty is associated with the use of 95-percent UCLs on the mean concentration as EPCs. As a result of using 95-percent UCLs, the estimations of potential risk for the RME scenario were most likely overstated because UCLs represent the upper limit that potential receptors would be exposed to over the entire exposure period.

Land Use

The current land-use patterns at NAVSTA Newport are well established, thereby limiting the uncertainty associated with land-use assumptions. Land use at the Site is currently limited and is expected to be limited in the future, as long as the NAVSTA Newport remains active (potential and infrequent adolescent trespassers and adult bow hunters are the only current and likely future receptors). To be conservative, risks to hypothetical residents (which are assumed to be the maximally-exposed and most sensitive receptors) were also estimated for the site.

Exposure Routes and Receptor Identification

The determination of various receptor groups and exposure routes of potential concern was based on current land use at the site and anticipated future land use. Therefore, the uncertainty associated with the selection of exposure routes and potential receptors was minimal because they were considered to be well defined.

Exposure Parameters

Each exposure factor selected for use in the risk assessment had some associated uncertainty. Generally, exposure factors were based on surveys of physiological and lifestyle profiles across the United States. The attributes and activities studied in these surveys generally had a broad distribution. To avoid underestimation of exposure, in most cases, USEPA guidelines on the RME receptor were used, which generally specify the use of the 95th percentile value for most parameters. Therefore, the selected values for the receptors represented an upper bound of the observed or expected habits of the majority of the population.

While the default exposure assumptions for residents and industrial workers are upper bound values they are also very conservative. For example the default exposure assumptions for a resident assume the resident is exposed to soil for 350 days a year. There is no seasonal adjustment accounting for a resident being indoors part of the year due to weather. While it is possible for a resident to be exposed to indoor dust that consists of outdoor soil that was brought into a house, it is realistic to assume that most residents clean their houses occasionally. Therefore, it is highly conservative to assume a resident is exposed to soil 350 days a year. Likewise the exposure assumptions for an industrial worker assume the worker is exposed to soil 250 days a year. This would only be likely for a worker who works outdoors all year round. Most workers work in factories or commercial buildings and would not be exposed to outdoor soil on a regular basis. And as with the resident while it is possible for a worker to be exposed to outdoor soil that is brought indoors it is unrealistic to assume that factories and commercial buildings are not cleaned at least occasionally. Therefore, the default exposure assumptions for residents and industrial workers are highly conservative and more likely overestimate risk than underestimate risk.

As stated in Section 5.2.4, RIDEM has default exposure assumptions for industrial and residential exposures (RIDEM, November 2011); however, the RIDEM values were not used in this HHRA because the default USEPA exposure assumptions for industrial and residential exposures are based on more recent studies (USEPA, February 2014). The following table compares the RIDEM default exposure assumptions to previous and current USEPA exposure assumptions for parameters where RIDEM values, previous USEPA values, and current USEPA values differ:

Parameter	RIDEM Default Value[(1)]	Previous USEPA Value[(2)]	Current USEPA Value[(2)]
Industrial Workers			
Body weight	70 kg	70 kg	80 kg
Soil ingestion rate	50 mg/day	100 mg/day	100 mg/day
Skin surface area	--	3,300 cm^2	3,470 cm^2
Adherence factor	--	0.2 mg/cm^2	0.12 mg/cm^2

Parameter	RIDEM Default Value[1]	Previous USEPA Value[2]	Current USEPA Value[2]
Residents			
Adult body weight	70 kg	70 kg	80 kg
Exposure duration – oral	24 years	24 years	20 years
Exposure duration – inhalation	30 years	30 years	26 years
Child skin surface area	--	2,800 cm^2	2,690 cm^2
Adult skin surface area	--	5,700 cm^2	6,032 cm^2

1 – RIDEM, November 2011.
2 – USEPA, February 2014.

The current USEPA values presented above were used in this HHRA instead of any previous USEPA or RIDEM values. Additionally, the particulate emission factor of $1.1x10^{10}$ m^3/kg (USEPA, December 2002) was used in this HHRA instead of the RIDEM default value of $4.51x10^9$ m^3/kg (RIDEM, 2011). RIDEM only has default exposure assumptions for the incidental ingestion and inhalation exposure pathways. RIDEM does not consider dermal exposures in the derivation of their direct exposure criteria. The RIDEM exposure factors are the same as the previous USEPA exposure assumptions with the exception of the soil ingestion rate for industrial workers. In general, USEPA current exposure assumptions are less conservative than their previous values and therefore less conservative than the RIDEM default exposure assumptions. However, ILCRs and HIs calculated using USEPA current exposure assumptions will be higher than those calculated using RIDEM exposure assumptions because RIDEM exposure assumptions do not consider the dermal pathway.

5.5.3 Uncertainty in the Toxicological Evaluation

Uncertainties associated with the toxicity assessment (determination of RfDs and CSFs and use of available criteria) are discussed in this section.

Derivation of Toxicity Criteria

Uncertainty associated with the toxicity assessment was associated with hazard assessment and dose-response evaluations for the COPCs. The hazard assessment characterized the nature and strength of the evidence of causation or the likelihood that a chemical that induces adverse effects in animals will also induce adverse effects in humans. Hazard assessment of carcinogenicity was evaluated as a weight-of-evidence determination using USEPA methods. Positive animal cancer test data may suggest that humans contain tissue(s) that may manifest a carcinogenic response; however, the animal data cannot necessarily be used to predict the target tissue in humans. In the hazard assessment of non-cancer effects, however, positive animal data often suggest the nature of the effects (i.e., the target tissues and type of effects) anticipated in humans.

Uncertainty in hazard assessment arose from the nature and quality of the animal and human data. Uncertainty was reduced when similar effects were observed across species, strain, sex, and exposure route; when the magnitude of the response was clearly dose-related; when pharmacokinetic data indicated a similar fate in humans and animals; when postulated mechanisms of toxicity were similar for humans and animals; and when the COPC was structurally similar to other chemicals for which the toxicity is more completely characterized.

Uncertainty in the dose-response evaluation included the determination of a CSF for the carcinogenic assessment and derivation of an RfD for the non-carcinogenic assessment. Uncertainty was introduced from interspecies (animal to human) extrapolation, which, in the absence of quantitative pharmacokinetic or mechanistic data, is usually based on consideration of interspecies differences in basal metabolic rate. Uncertainty also resulted from intraspecies variation. Most toxicity experiments are performed with animals that are very similar in age and genotype, so intragroup biological variation is minimal, but the human population of concern may reflect a great deal of heterogeneity, including unusual sensitivity or tolerance to the COPC. Even toxicity data from human occupational exposure reflect a bias because only those individuals sufficiently healthy to attend work regularly (the "healthy worker effect") and those not unusually sensitive to the chemical are likely to be occupationally exposed. Finally, uncertainty arises from the quality of the key study from which the quantitative estimate was derived and the database used. For cancer effects, the uncertainty associated with dose-response factors was mitigated by assuming the 95-percent upper bound for the slope factor. Another source of uncertainty in carcinogenic assessment is the method by which data from high doses in animal studies are extrapolated to the dose range expected for environmentally exposed humans. The linearized multistage model, which is used in nearly all quantitative estimations of human risk from animal data, is based on a nonthreshold assumption of carcinogenesis. Evidence suggests, however, that epigenetic carcinogens, as well as many genotoxic carcinogens, have a threshold below which they are non-carcinogenic. Therefore, the use of the linearized multistage model was conservative for chemicals that exhibited a threshold for carcinogenicity.

For non-cancer effects, additional uncertainty factors may have been applied in the derivation of the RfD to mitigate poor quality of the key study or gaps in the database. Additional uncertainty for non-cancer effects arose from the use of an effect level in the estimation of an RfD, because this estimation was predicated on the assumption of a threshold less than which adverse effects were not expected. Therefore, an uncertainty factor is usually applied to estimate a no-effect level. Additional uncertainty arose in estimation of an RfD for chronic exposure from subchronic data. Unless empirical data indicated that effects did not worsen with increasing duration of exposure, an additional uncertainty factor was applied to the no-effect level in the subchronic study. Uncertainty in the derivation of RfDs was mitigated by the use of uncertainty

and modifying factors that normally ranged between 3 and 10. The resulting combination of uncertainty and modifying factors may have reached 1,000 or more.

The derivation of dermal RfDs and CSFs from oral values may have caused uncertainty. This was particularly the case when no gastrointestinal absorption rates were available in the literature or when only qualitative statements regarding absorption were available.

Uncertainty in the ADAFs

An ADAF is applied as a default safety factor to risk calculations when evaluating cancer risk associated with exposure by children between the ages of birth to 16 years to chemicals that carcinogenic via a mutagenic mode of action. USEPA's *Supplemental Guidance for Assessing Susceptibility from Early-Life Exposures to Carcinogens* (USEPA, March 2005b) states that the ADAF should be used when chemical-specific data to evaluate differences between adults and children are unavailable.

Inherent with the use of ADAFs is uncertainty in the evaluation of risk. Specifically, the default ADAFs were derived from studies where exposures were much higher than those typically observed in the environment. Hence, the mutagenic potential of a chemical at typical environmental concentrations may be much less and may be offset by DNA repair mechanisms. Moreover, the default ADAFs were based on results of repeated exposure studies because the lifetime study design had less ability to distinguish potential increased susceptibility from early-life exposures. Finally, cell replication can vary for different tissues, thus making the window of susceptibility different for individual chemicals, depending on target tissues. Hence, using the same ADAF for all chemicals may clearly misrepresent the level of risk associated with exposure.

Uncertainty in the Calculation of 2,3,7,8-TCDD Equivalents for Dioxins/Furans

In the HHRA, a value of 0 was used for non-detects in the calculation of 2,3,6,7-TCDD equivalents. At Tank Farm 2 using one-half the detection limit for non-detects instead of 0 in the calculation of 2,3,7,8-TCDD equivalents does not have any significant effect on the risk estimates. In surface soil, EPCs for 2,3,7,8-TCDD equivalents for the entire site data set and the AOC-001 data set do not change if one-half the detection limit is used to calculate 2,3,7,8-TCDD equivalents. For the all soil dataset, the EPCs calculated using one-half the detection limit for non-detects for the entire site dataset (5.4 mg/kg) and the AOC-001 dataset (2.8 mg/kg) are only slightly higher than the EPCs for these datasets for 2,3,7,8-TCDD equivalents calculated using 0 for non-detects (EPCs were 5.2 mg/kg and 2.7 mg/kg for the entire site and AOC-001, respectively). The risk results do not change when using the slightly higher EPCs for the all soil datasets. Consequently, overall HHRA conclusions do not change.

Uncertainty in the Toxicity Criteria for Chromium

Toxicity criteria are available for different forms of chromium, which is considered to be more toxic in the hexavalent state. Although there is no evidence to support the conclusion that hexavalent chromium is present at the site, risks associated with this chemical were assessed by conservatively assuming that 100 percent of the reported chromium result is attributable to hexavalent chromium. If chromium had been evaluated as trivalent chromium then ILCRs and HIs for chromium would be less than those reported in the HHRA; however, even when evaluating chromium using toxicity criteria for hexavalent chromium, results are within USEPA's target cancer risk range when Tank Farm 2 is evaluated as one EU. When evaluating AOC-001 as a separate subarea, chromium (evaluated as hexavalent chromium) was identified as a primary risk driver; however, even if chromium was excluded from the risk estimates, cancer risks would still exceed the USEPA target cancer risk range due to PAHs. Therefore, although the risks calculated for chromium in soil at the site are likely overestimated, overall HHRA conclusions are not impacted by the uncertainty associated with toxicity values for chromium.

Use of Chronic Toxicity Values for Construction Workers

Under the guidelines established by the Superfund program, the one year exposure duration assumed for the construction worker should be evaluated as a subchronic exposure. Risks for noncarcinogenic effects associated with subchronic exposures should be developed using subchronic toxicity criteria, not chronic toxicity values. Subchronic toxicity values used in this HHRA were obtained from USEPA's PPRTV internet site if available. Also, subchronic ATSDR Minimal Risk Levels (MRLs) were used as subchronic toxicity values when subchronic PPRTV values were not available. However, subchronic toxicity values are not as widely available as chronic toxicity values (e.g., subchronic toxicity criteria are not currently available for aluminum and manganese). Therefore, chronic toxicity values were used when subchronic toxicity values were not available. This likely resulted in an overestimation of potential noncarcinogenic risks for the construction worker receptor because subchronic toxicity values may be up to an order of magnitude higher than chronic toxicity values. However, no "unacceptable HIs" were identified for construction workers exposed to COPCs in site soil. Consequently, overall HHRA conclusions are not impacted by the uncertainty associated with the use of chronic toxicity values for some COPCs in the evaluation for the construction worker.

5.5.4 Uncertainty in the Risk Characterization

Uncertainty in risk characterization resulted from assumptions made regarding additivity of effects from exposure to multiple COPCs from various exposure routes. High uncertainty exists when summing non-cancer risks for several substances across different exposure pathways. This assumes that each substance has a similar effect and/or mode of action. Even when chemicals affect the same target organs,

they may have different mechanisms of action or differ in their fate in the body, so additivity may not be an appropriate assumption in all cases. However, the assumption of additivity was considered because in most cases it represented a conservative estimate of risk.

Risks to any individual may also have been overestimated by summing multiple assumed exposure pathway risks for any single receptor. Although every effort was made to develop reasonable scenarios, not all individual receptors may be exposed via all pathways considered.

Finally, the risk characterization did not consider antagonistic or synergistic effects. Little or no information was available to determine the potential for antagonism or synergism for the COPCs. Because chemical-specific interactions could not be predicted, the likelihood for risks to be overpredicted or underpredicted could not be defined, but the methodology used was based on current USEPA guidance.

5.6 SUMMARY AND CONCLUSIONS

The baseline HHRA for Tank Farm 2 at NAVSTA Newport was conducted to characterize the potential risks to likely human receptors under current and potential future land use. Potential receptors under current land use are adolescent trespassers and adult bow hunters. Potential receptors evaluated in the HHRA for future land use are construction workers, industrial workers, adolescent trespassers, adult bow hunters, child and adult recreational users, and hypothetical child and adult residents. Although future land use is likely to be the same as current land use, potential future receptors were evaluated in the baseline HHRA, primarily for decision-making purposes.

Although Tank Farm 2 consists of several subareas [four areas of concern (AOC-001, AOC-003; AOC-004 and AOC-005), a former transformer building (Building 219), and the former buoy storage area], as requested by USEPA and RIDEM, these subareas were combined and evaluated as one area in this HHRA. AOC-001 and Building 219 were subsequently evaluated separately due to higher concentrations of PAHs and PCBs detected for AOC-001 and Building 219, respectively. Surface soil and subsurface soil were evaluated in the HHRA. Chemicals retained as COPCs are summarized in Table 5-4. PAHs, PCBs, dioxins/furans, and metals were retained as COPCs in surface soil. PAHs, dioxins/furans, and metals were retained as COPCs in subsurface soil.

Quantitative estimates of non-carcinogenic and carcinogenic risks (HIs and ILCRs, respectively) were developed for potential human receptors. All receptors were evaluated for exposures to surface soil (0 to 1 foot bgs) and all soil [i.e., combined surface soil and subsurface soil (> 1 foot bgs)]. The results of the HHRA are summarized below. Chemicals retained as COCs are summarized in Table 5-23.

A summary of "worst case scenario" site risks (RME, assumptions of most toxic constituents present) is presented below and described in the text that follows.

SUMMARY OF TOTAL RME RISK FROM SOIL AT TANK FARM 2

Chemical	Tank Farm 2		AOC 001		B219	
	Surface Soil (mg/kg)	All Soil (mg/kg)	Surface Soil (mg/kg)	All Soil (mg/kg)	Surface Soil (mg/kg)	All Soil (mg/kg)
Carcinogenic Risk						
Current/Future Adolescent Trespasser	6E-06	5E-06	2E-05	1E-05	3E-06	2E-06
Current/Future Adult Hunters	1E-06	1E-06	3E-06	2E-06	7E-07	4E-07
Future Construction Workers	3E-06	3E-06	3E-06	3E-06	7E-07	4E-07
Future Industrial Workers	2E-05	1E-05	2E-05	2E-05	1E-05	7E-06
Future Child Recreational Users	1E-05	9E-06	3E-05	2E-05	3E-06	2E-06
Future Adult Recreational Users	2E-06	2E-06	4E-06	3E-06	1E-06	7E-07
Future Lifelong Recreational Users	1E-05	1E-05	4E-05	2E-05	4E-06	3E-06
Hypothetical Child Resident	1E-04	1E-04	**4E-04(1)**	**2E-04 (1)**	3E-05	2E-05
Hypothetical Adult Resident	2E-05	2E-05	5E-05	3E-05	1E-05	8E-06
Hypothetical Lifetime Resident	1E-04	1E-04	**4E-04(1)**	**3E-04(1)**	5E-05	3E-05
Noncarcinogenic Risk						
Current/Future Adolescent Trespasser	0.04	0.04	0.03	0.04	NA	NA
Current/Future Adult Hunters	0.01	0.009	0.008	0.01	NA	NA
Future Construction Workers	1	1	0.8	1.1 (1)	NA	NA
Future Industrial Workers	0.12	0.1	0.09	0.1	NA	NA
Future Child Recreational Users	0.1	0.1	0.1	0.1	NA	NA
Future Adult Recreational Users	0.01	0.01	0.009	0.01	NA	NA
Future Lifelong Recreational Users	NA	NA	NA	NA	NA	NA
Hypothetical Child Resident	2 *	2 *	1	2 *	NA	NA
Hypothetical Adult Resident	0.2	0.2	0.1	0.2	NA	NA
Hypothetical Lifetime Resident	NA	NA	NA	NA	NA	NA

Details on risks and contributions are provided in Tables 5-14 through 5-19. For "background" risk see Table 5-20.

*Target Organ HI values are less than 1

1 - assumes presence of Chromium VI

Noncarcinogenic Risks – Tank Farm 2

HIs, calculated on a target organ basis, for all receptors exposed to site-related COPCs in surface soil and all soil were less than or equal to unity (1). Therefore, no adverse noncarcinogenic effects are anticipated for the defined exposure scenarios.

Carcinogenic Risks – Tank Farm 2

ILCRs for all receptors/media were within USEPA's target risk range of $1x10^{-4}$ to $1x10^{-6}$. Therefore, no primary risk drivers were identified.

Cumulative ILCRs for all receptors were less than or equal to the RIDEM cumulative cancer risk benchmark of $1x10^{-5}$ with the exception of industrial workers and child, adult, and lifelong residents. ILCRs for industrial workers exposed to surface soil (ILCR = $2x10^{-5}$); child residents exposed to surface soil (ILCR = $1x10^{-4}$) and all soil (ILCR = $1x10^{-4}$); adult residents exposed to surface soil (ILCR = $2x10^{-5}$) and all soil (ILCR = $2x10^{-5}$), and lifelong residents exposed to surface soil (ILCR = $1x10^{-4}$) and all soil (ILCR = $1x10^{-4}$) exceed the RIDEM cumulative cancer risk benchmark. Carcinogenic PAHs, Aroclor-1260, arsenic, and chromium were the major contributors to the ILCRs for exposures to soil.

Noncarcinogenic Risks – AOC-001 Subarea

HIs, calculated on a target organ basis, for all receptors exposed to site-related COPCs in surface soil and all soil were less than or equal to unity (1). Therefore, no adverse noncarcinogenic effects are anticipated for the defined exposure scenarios.

Carcinogenic Risks – AOC-001 Subarea

Cumulative ILCRs for all receptors except for child and lifelong residents were within the USEPA's target risk range of 10^{-4} to 10^{-6}. The ILCRs for child and lifelong residents exposed to surface soil ($4x10^{-4}$ for both receptors) and all soil ($2x10^{-4}$ for child residents and $3x10^{-4}$ for lifelong residents) exceeded USEPA's target risk range. The primary risk contributors were PAHs and chromium (evaluated as hexavalent chromium) in surface soil and PAHs, chromium (evaluated as hexavalent chromium), and arsenic in all soil.

Cumulative ILCRs for adult bow hunters, construction workers, and adult recreational users were less than the RIDEM cumulative cancer risk benchmark. ILCRs for adolescent trespassers exposed to surface soil (ILCR = $2x10^{-5}$); industrial workers exposed to surface soil (ILCR = $2x10^{-5}$) and all soil (ILCR = $2x10^{-5}$); child recreational users exposed to surface soil (ILCR = $3x10^{-5}$) and all soil (ILCR = $2x10^{-5}$); lifelong recreational users exposed to surface soil (ILCR = $4x10^{-5}$) and all soil (ILCR = $2x10^{-5}$); child residents exposed to surface soil (ILCR = $4x10^{-4}$) and all soil (ILCR = $4x10^{-4}$), adult residents exposed to surface soil (ILCR = $5x10^{-5}$) and all soil (ILCR = $3x10^{-5}$); and lifelong residents exposed to surface soil (ILCR = $4x10^{-4}$) and all soil (ILCR = $3x10^{-4}$) exceeded the RIDEM cumulative cancer risk benchmark. Carcinogenic PAHs and chromium were the major contributors to the ILCRs for exposures to soil.

Noncarcinogenic Risks – Building 219 Subarea

HIs were not calculated because no noncarcinogenic toxicity criteria are available for Aroclor-1260, the only COPC identified for Building 219.

Carcinogenic Risks - RME Scenario

Cumulative ILCRs for all receptors/media were within the USEPA's target risk range of 10^{-4} to 10^{-6}. Therefore, no primary risk drivers were identified.

Cumulative ILCRs for all receptors were less than or equal to the RIDEM cumulative cancer risk benchmark with the exception of child and lifelong residents. The ILCR for child residents exposed to surface soil (ILCR = $3x10^{-5}$) and all soil (ILCR = $2x10^{-5}$) and lifelong residents exposed to surface soil (ILCR = $5x10^{-5}$) and all soil (ILCR = $3x10^{-5}$) exceeded the RIDEM cumulative cancer risk benchmark. Aroclor-1260 was the major contributor to the ILCRs for exposures to soil.

HHRA Conclusions

When evaluating Tank Farm 2 as a single EU, HIs for all receptors were less than or equal to unity (1.0) on a target organ basis and ILCRs for all receptors were with USEPA's target cancer risk range ($1x10^{-4}$ to $1x10^{-6}$). Similarly, no risk benchmarks were exceeded when evaluating the Building 219 subarea EU. Cancer risk estimates for hypothetical child and lifelong residents exceeded USEPA's target cancer risk range when evaluating the AOC-001 subarea separately, resulting in the identification of COCs in surface soil and all soil for these receptors.

TABLE 5-1

SCREENING CRITERIA FOR SOIL
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

CAS No.	Parameter	USEPA Regional Screening Levels[1]	
		Direct Contact Residential	Protection of Groundwater
Polycyclic Aromatic Hydrocarbons (ug/kg)			
91-57-6	2-Methylnaphthalene	23,000 N	2800
83-32-9	Acenaphthene	340,000 N	82,000
208-96-8	Acenaphthylene	340,000 N[2]	82,000 [2]
120-12-7	Anthracene	1,700,000 N	840,000
56-55-3	Benzo(a)anthracene	150 C	200
50-32-8	Benzo(a)pyrene	15 C	70
205-99-2	Benzo(b)fluoranthene	150 C	700
191-24-2	Benzo(g,h,i)perylene	170,000 N[3]	190,000 [3]
207-08-9	Benzo(k)fluoranthene	1,500 C	7000
218-01-9	Chrysene	15,000 C	22,000
53-70-3	Dibenzo(a,h)anthracene	15 C	220
206-44-0	Fluoranthene	230,000 N	1,400,000
86-73-7	Fluorene	230,000 N	80,000
193-39-5	Indeno(1,2,3-cd)pyrene	150 C	4000
91-20-3	Naphthalene	3,600 C	9.4
85-01-8	Phenanthrene	170,000 N[3]	190,000 [3]
129-00-0	Pyrene	170,000 N	190,000
PCBs (ug/kg)			
11096-82-5	Aroclor-1260	220 C	480
Dioxins/Furans (ng/kg)			
3268-87-9	1,2,3,4,6,7,8,9-OCDD	15000 C[4]	17400 [4]
39001-02-0	1,2,3,4,6,7,8,9-OCDF	15000 C[4]	17400 [4]
35822-46-9	1,2,3,4,6,7,8-HPCDD	450 C[4]	520 [4]
67562-39-4	1,2,3,4,6,7,8-HPCDF	450 C[4]	520 [4]
55673-89-7	1,2,3,4,7,8,9-HPCDF	450 C[4]	520 [4]
39227-28-6	1,2,3,4,7,8-HXCDD	45 C[4]	52 [4]
70648-26-9	1,2,3,4,7,8-HXCDF	45 C[4]	52 [4]
57653-85-7	1,2,3,6,7,8-HXCDD	45 C[4]	52 [4]
57117-44-9	1,2,3,6,7,8-HXCDF	45 C[4]	52 [4]
19408-74-3	1,2,3,7,8,9-HXCDD	45 C[4]	52 [4]
72918-21-9	1,2,3,7,8,9-HXCDF	45 C[4]	52 [4]
40321-76-4	1,2,3,7,8-PECDD	4.5 C[4]	5.2 [4]
57117-41-6	1,2,3,7,8-PECDF	150 C[4]	174 [4]
60851-34-5	2,3,4,6,7,8-HXCDF	45 C[4]	52 [4]
57117-31-4	2,3,4,7,8-PECDF	15 C[4]	17.4 [4]
1746-01-6	2,3,7,8-TCDD	4.5 C	5.2
51207-31-9	2,3,7,8-TCDF	45 C[4]	52 [4]
--	2,3,7,8-TCDD Equivalents	4.5 C	5.2
--	TOTAL HPCDD	NA	NA
--	TOTAL HPCDF	NA	NA
--	TOTAL HXCDD	NA	NA
--	TOTAL HXCDF	NA	NA
--	TOTAL PECDD	NA	NA
--	TOTAL PECDF	NA	NA
--	TOTAL TCDD	NA	NA
--	TOTAL TCDF	NA	NA

TABLE 5-1

SCREENING CRITERIA FOR SOIL
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

CAS No.	Parameter	USEPA Regional Screening Levels[1]	
		Direct Contact Residential	Protection of Groundwater
Metals (mg/kg)			
7429-90-5	Aluminum	7,700 N	460,000
7440-36-0	Antimony	3.1 N	5.4
7440-38-2	Arsenic	0.61 C	0.026
7440-39-3	Barium	1,500 N	2400
7440-41-7	Beryllium	16 N	260
7440-43-9	Cadmium	7 N	10.4
7440-70-2	Calcium	NA	NA
7440-47-3	Chromium	0.29 C[5]	0.0118 C[5]
7440-48-4	Cobalt	2.3 N	4.2
7440-50-8	Copper	310 N	440
7439-89-6	Iron	5,500 N	5400
7439-92-1	Lead	400	280 [6]
7439-95-4	Magnesium	NA	NA
7439-96-5	Manganese	180 N	420
7439-97-6	Mercury	2.3 N[7]	0.66
7440-02-0	Nickel	150 N	400
7440-09-7	Potassium	NA	NA
7782-49-2	Selenium	39 N	8
7440-22-4	Silver	39 N	12
7440-23-5	Sodium	NA	NA
7440-28-0	Thallium	0.078 N	0.22
7440-62-2	Vanadium	39 N	1260
7440-66-6	Zinc	2,300 N	5800

1 - United States Environmental Protection Agency (USEPA) Regional Screening Level, November 2013. Carcinogenic values represent an incremental cancer risk of 1E-06. The noncarcinogenic values are the RSL divided by 10 to correspond to a Target Hazard Quotient of 0.1. Protection of groundwater values are risk-based SSLs based on a dilution attenuation factor of 20.
2 - Value is for acenaphthene.
3 - Value is for pyrene.
4 - Value is derived by multiplying the criteria for 2,3,7,8-TCDD by World Health Organization Toxicity Equivalency Factor.
5 - Value is for hexavalent chromium.
6 - Value is MCL-based soil screening level.
7 - Value is for mercuric chloride (and other mercury salts).

C - Carcinogenic
MCL - Maximum Contaminant Level
N - Noncarcinogenic
NA - Not Available.
RSL - Regional Screening Level
SSL - Soil Screening Level

TABLE 5-2

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SURFACE SOIL
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Above Background Concentration?[4]	Adjusted USEPA RSL Residential Soil[5]	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Tank Farm 2	**Polycyclic Aromatic Hydrocarbons**												
	91-57-6	2-Methylnaphthalene	2.2 J	72	ug/kg	TF2-004/5-SS1047-000.8	11/69	9.2 - 440	72	NA	23000 N	No	BSL
	83-32-9	Acenaphthene	1.6 J	1000	ug/kg	TF2-001-SS1005-0001	49/69	9.3 - 11	1000	NA	340000 N	No	BSL
	208-96-8	Acenaphthylene	1.3 J	26	ug/kg	TF2-001-SS1005-0001	34/69	9.3 - 12	26	NA	340000 N[7]	No	BSL
	120-12-7	Anthracene	1.4 J	2200	ug/kg	TF2-001-SS1005-0001	63/69	10 - 11	2200	NA	1700000 N	No	BSL
	56-55-3	**Benzo(a)anthracene**	2.9 J	4500	ug/kg	TF2-001-SS1005-0001	67/69	11 - 33	4500	NA	**150 C**	**Yes**	ASL
	50-32-8	**Benzo(a)pyrene**	4.2 J	3700	ug/kg	TF2-001-SS1005-0001	68/69	10 - 10	3700	NA	**15 C**	**Yes**	ASL
	205-99-2	**Benzo(b)fluoranthene**	5.2 J	5800	ug/kg	TF2-001-SS1005-0001	69/69	-	5800	NA	**150 C**	**Yes**	ASL
	191-24-2	Benzo(g,h,i)perylene	2.7 J	1800	ug/kg	TF2-001-SS1005-0001	67/69	10 - 11	1800	NA	170000 N[8]	No	BSL
	207-08-9	**Benzo(k)fluoranthene**	4.3 J	1700	ug/kg	TF2-001-SS1005-0001	67/69	10 - 11	1700	NA	**1500 C**	**Yes**	ASL
	218-01-9	Chrysene	4.4 J	4900	ug/kg	TF2-001-SS1005-0001	69/69	-	4900	NA	15000 C	No	BSL
	53-70-3	**Dibenzo(a,h)anthracene**	1.8 J	590 J	ug/kg	TF2-001-SS1005-0001	65/69	1.9 - 11	590	NA	**15 C**	**Yes**	ASL
	206-44-0	Fluoranthene	8.2 J	12000 J	ug/kg	TF2-001-SS1005-0001	69/69	-	12000	NA	230000 N	No	BSL
	86-73-7	Fluorene	3.5 J	1300	ug/kg	TF2-001-SS1005-0001	31/69	9.2 - 12	1300	NA	230000 N	No	BSL
	193-39-5	**Indeno(1,2,3-cd)pyrene**	2.4 J	2800 J	ug/kg	TF2-001-SS1005-0001	66/69	9.7 - 10	2800	NA	**150 C**	**Yes**	ASL
	91-20-3	Naphthalene	2.9 J	1800	ug/kg	TF2-001-SS1005-0001	15/69	9.2 - 12	1800	NA	3600 C	No	BSL
	85-01-8	Phenanthrene	3.1 J	11000	ug/kg	TF2-001-SS1005-0001	68/69	10 - 10	11000	NA	170000 N[8]	No	BSL
	129-00-0	Pyrene	6.5 J	11000 J	ug/kg	TF2-001-SS1005-0001	69/69	-	11000	NA	170000 N	No	BSL
	PCBs												
	11096-82-5	**Aroclor-1260**	24	18000	ug/kg	TF2-B219-1	12/12	-	18000	NA	**220 C**	**Yes**	ASL
	Dioxins/Furans												
	3268-87-9	**1,2,3,4,6,7,8,9-OCDD**	1400	18000	ng/kg	TF2-003-SS1011-000.8	69/69	-	18000	NA	**15000 C[9]**	**Yes**	ASL
	39001-02-0	1,2,3,4,6,7,8,9-OCDF	2 J	420	ng/kg	TF2-004/5-SS1045-000.5	69/69	-	420	NA	15000 C[9]	No	BSL
	35822-46-9	**1,2,3,4,6,7,8-HPCDD**	29	850	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	850	NA	**450 C[9]**	**Yes**	ASL
	67562-39-4	1,2,3,4,6,7,8-HPCDF	1.6 J	130	ng/kg	TF2-004/5-SS1045-000.5	67/69	0.92 - 1.6	130	NA	450 C[9]	No	BSL
	55673-89-7	1,2,3,4,7,8,9-HPCDF	0.14 J	8.9	ng/kg	TF2-004/5-SS1045-000.5	53/69	0.031 - 0.16	8.9	NA	450 C[9]	No	BSL
	39227-28-6	1,2,3,4,7,8-HXCDD	0.19 J	16	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	16	NA	45 C[9]	No	BSL
	70648-26-9	1,2,3,4,7,8-HXCDF	0.27 J	11	ng/kg	TF2-004/5-SS1035-0001	68/69	0.36 - 0.36	11	NA	45 C[9]	No	BSL
	57653-85-7	**1,2,3,6,7,8-HXCDD**	0.22 J	52	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	52	NA	**45 C[9]**	**Yes**	ASL
	57117-44-9	1,2,3,6,7,8-HXCDF	0.19 J	6	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	6	NA	45 C[9]	No	BSL
	19408-74-3	1,2,3,7,8,9-HXCDD	0.31 J	34	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	34	NA	45 C[9]	No	BSL
	72918-21-9	1,2,3,7,8,9-HXCDF	0.19 J	0.19 J	ng/kg	TF2-004/5-SB1043-0.10.5	1/69	0.026 - 0.18	0.19	NA	45 C[9]	No	BSL
	40321-76-4	**1,2,3,7,8-PECDD**	0.093 J	5.4	ng/kg	TF2-004/5-SS1047-000.8	60/69	0.047 - 0.11	5.4	NA	**4.5 C[9]**	**Yes**	ASL
	57117-41-6	1,2,3,7,8-PECDF	0.13 J	2 J	ng/kg	TF2-004/5-SS1060-000.5	55/69	0.04 - 0.25	2	NA	150 C[9]	No	BSL
	60851-34-5	2,3,4,6,7,8-HXCDF	0.096 J	5.7	ng/kg	TF2-004/5-SS1060-000.5	68/69	0.05 - 0.05	5.7	NA	45 C[9]	No	BSL
	57117-31-4	2,3,4,7,8-PECDF	0.12 J	2.4 J	ng/kg	TF2-004/5-SS1060-000.5	66/69	0.05 - 0.076	2.4	NA	15 C[9]	No	BSL
	1746-01-6	2,3,7,8-TCDD	0.094 J	0.63 J	ng/kg	TF2-004/5-SS1053-000.6	38/69	0.028 - 0.3	0.63	NA	4.5 C	No	BSL
	51207-31-9	2,3,7,8-TCDF	0.15 J	2	ng/kg	TF2-004/5-SS1060-000.5	53/69	0.051 - 1.5	2	NA	45 C[9]	No	BSL
	--	**2,3,7,8-TCDD Equivalents**	1.5	31.2	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	31.2	NA	**4.5 C**	**Yes**	ASL
	37871-00-4	Total HPCDD	51	1500	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	1500	NA	NA	No	NTX
	38998-75-3	Total HPCDF	1.6 J	460	ng/kg	TF2-004/5-SS1045-000.5	69/69	-	460	NA	NA	No	NTX

TABLE 5-2

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SURFACE SOIL
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Above Background Concentration?[4]	Adjusted USEPA RSL Residential Soil[5]	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Tank Farm 2	**Dioxins/Furans (continued)**												
	34465-46-8	Total HXCDD	3.2 J	320 J	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	320	NA	NA	No	NTX
	55684-94-1	Total HXCDF	2.3 J	150 J	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	150	NA	NA	No	NTX
	36088-22-9	Total PECDD	0.6 J	45 J	ng/kg	TF2-003-SS1019-000.5	68/69	0.047 - 0.047	45	NA	NA	No	NTX
	30402-15-4	Total PECDF	0.38 J	160 J	ng/kg	TF2-004/5-SS1024-000.6	69/69	-	160	NA	NA	No	NTX
	41903-57-5	Total TCDD	0.35 J	64 J	ng/kg	TF2-003-SS1012-000.7	67/69	0.054 - 0.076	64	NA	NA	No	NTX
	55722-27-5	Total TCDF	0.64 J	25 J	ng/kg	TF2-003-SS1014-0001	69/69	-	25	NA	NA	No	NTX
	Metals												
	7429-90-5	Aluminum	4950	18200	mg/kg	TF2-004/5-SS1043-0.10.5	69/69	-	18200	No	**7700 N**	No	BKG
	7440-36-0	**Antimony**	0.05 J	6.6 J	mg/kg	TF2-004/5-SS1056-000.6	68/69	0.07 - 0.07	6.6	NA	**3.1 N**	**Yes**	ASL
	7440-38-2	Arsenic	2.2	11.4	mg/kg	TF2-004/5-SS1044-000.5	69/69	-	11.4	No	**0.61 C**	No	BKG
	7440-39-3	Barium	11.3 J	169 J	mg/kg	TF2-004/5-SS1039-000.9	69/69	-	169	Yes	1500 N	No	BSL
	7440-41-7	Beryllium	0.23	1.3 J	mg/kg	TF2-004/5-SS1065-000.5-D	69/69	-	1.3	No	16 N	No	BSL, BKG
	7440-43-9	Cadmium	0.05 J	0.29	mg/kg	TF2-003-SS1019-000.5	69/69	-	0.29	No	7 N	No	BSL, BKG
	7440-70-2	Calcium	307 J	2630	mg/kg	TF2-001-SS1005-0001	69/69	-	2630	Yes	NA	No	NUT
	7440-47-3	**Chromium**	7.1	44.5	mg/kg	TF2-003-SS1017-000.8	69/69	-	44.5	Yes	**0.29 C[10]**	**Yes**	ASL
	7440-48-4	**Cobalt**	3.3 J	16.6	mg/kg	TF2-001-SS1002-0001	69/69	-	16.6	Yes	**2.3 N**	**Yes**	ASL
	7440-50-8	Copper	7.8	39.9	mg/kg	TF2-004/5-SS1063-000.6	69/69	-	39.9	Yes	310 N	No	BSL
	7439-89-6	**Iron**	9760	37800	mg/kg	TF2-004/5-SS1035-0001	69/69	-	37800	Yes	**5500 N**	**Yes**	ASL
	7439-92-1	Lead	7.6	101 J	mg/kg	TF2-003-SS1016-000.9	77/77	-	101	Yes	400	No	BSL
	7439-95-4	Magnesium	1500 J	6180	mg/kg	TF2-004/5-SS1043-0.10.5	69/69	-	6180	Yes	NA	No	NUT
	7439-96-5	**Manganese**	155 J	658 J	mg/kg	TF2-003-SS1016-000.9	69/69	-	658	Yes	**180 N**	**Yes**	ASL
	7439-97-6	Mercury	0.005 J	0.21 J	mg/kg	TF2-001-SS1003-0001	52/69	0.01 - 0.02	0.21	No	2.3 N[11]	No	BSL, BKG
	7440-02-0	Nickel	9.2	53	mg/kg	TF2-004/5-SS1039-000.9	69/69	-	53	Yes	150 N	No	BSL
	7440-09-7	Potassium	258	504	mg/kg	TF2-004/5-SS1032-000.9	69/69	-	504	No	NA	No	NUT, BKG
	7782-49-2	Selenium	0.11 J	0.39 J	mg/kg	TF2-004/5-SS1054-000.6, TF2-004/5-SS1056-000.6	20/69	0.2 - 0.48	0.39	No	39 N	No	BSL, BKG
	7440-22-4	Silver	0.02 J	0.56	mg/kg	TF2-001-SS1006-0001	69/69	-	0.56	NA	39 N	No	BSL
	7440-23-5	Sodium	19.1 J	60.9 J	mg/kg	TF2-001-SS1002-0001	23/69	16.8 - 70.2	60.9	NA	NA	No	NUT
	7440-28-0	**Thallium**	0.03 J	0.1	mg/kg	TF2-003-SS1016-000.9	56/69	0.033 - 0.07	0.1	NA	**0.078 N**	**Yes**	ASL
	7440-62-2	Vanadium	9	35.2	mg/kg	TF2-004/5-SS1035-0001	69/69	-	35.2	Yes	39 N	No	BSL
	7440-66-6	Zinc	21.7	99.1 J	mg/kg	TF2-003-SS1016-000.9	69/69	-	99.1	Yes	2300 N	No	BSL

TABLE 5-2

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SURFACE SOIL
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - To determine whether chemical concentrations were within background levels, a statistical analysis was conducted using the site and background datasets.
5 - USEPA Regional Screening Level, November 2013. Carcinogenic values represent an incremental cancer risk of 1E-06. The noncarcinogenic values are the RSL divided by 10 to correspond to a Target Hazard Quotient of 0.1.
6 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level and is statistically determined to be greater than site background.
7 - Value is for acenaphthene.
8 - Value is for pyrene.
9 - Value is derived by multiplying the criteria for 2,3,7,8-TCDD by World Health Organization Toxicity Equivalency Factor.
10 - Value is for hexavalent chromium.
11 - Value is for mercuric chloride (and other mercury salts).
Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Definitions:
C = Carcinogen
COPC = Chemical Of Potential Concern
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level and site background

For elimination as a COPC:
BKG = Less than Background Concentration
BSL = Below COPC Screening Level
NUT = Essential nutrient
NTX = No toxicity criteria

Associated Samples:

TF2-001-SS1000-0001	TF2-003-SS1015-000.8-D	TF2-004/5-SS1031-000.8	TF2-004/5-SS1045-000.5	TF2-004/5-SS1061-000.6-D	TF2-B219-1
TF2-001-SS1001-0001	TF2-003-SS1016-000.9	TF2-004/5-SS1032-000.9	TF2-004/5-SS1046-000.5	TF2-004/5-SS1062-000.8	TF2-B219-2
TF2-001-SS1002-0001	TF2-003-SS1017-000.8	TF2-004/5-SS1033-000.8	TF2-004/5-SS1047-000.8	TF2-004/5-SS1063-000.6	TF2-B219-3
TF2-001-SS1003-0001	TF2-003-SS1018-000.8	TF2-004/5-SS1034-000.6	TF2-004/5-SS1048-000.8	TF2-004/5-SS1064-000.6	TF2-B219-4
TF2-001-SS1003-0001-D	TF2-003-SS1019-000.5	TF2-004/5-SS1035-0001	TF2-004/5-SS1049-000.9	TF2-004/5-SS1065-000.5	TF2-BSA-SS1090-0001
TF2-001-SS1004-0001	TF2-004/5-SS1020-0001	TF2-004/5-SS1035-0001-D	TF2-004/5-SS1050-000.6	TF2-004/5-SS1065-000.5-D	TF2-BSA-SS1091-0001
TF2-001-SS1005-0001	TF2-004/5-SS1020-0001-D	TF2-004/5-SS1036-000.6	TF2-004/5-SS1051-000.8	TF2-004/5-SS1066-000.9	TF2-BSA-SS1092-0001
TF2-001-SS1006-0001	TF2-004/5-SS1021-000.7	TF2-004/5-SS1037-000.7	TF2-004/5-SS1052-000.6	TF2-004/5-SS1067-000.7	TF2-BSA-SS1093-0001
TF2-001-SS1007-0001	TF2-004/5-SS1022-000.9	TF2-004/5-SS1038-000.7	TF2-004/5-SS1053-000.6	TF2-004/5-SS1068-000.5	TF2-BSA-SS1094-0001
TF2-001-SS1008-0001	TF2-004/5-SS1023-000.8	TF2-004/5-SS1039-000.9	TF2-004/5-SS1054-000.6	TF2-B219-SS1080-0001	TF2-BSA-SS1095-0001
TF2-001-SS1009-0001	TF2-004/5-SS1024-000.6	TF2-004/5-SS1040-000.9	TF2-004/5-SS1055-000.8	TF2-B219-SS1081-0001	TF2-BSA-SS1096-0001
TF2-001-SS1010-0001	TF2-004/5-SS1025-000.8	TF2-004/5-SS1041-000.7	TF2-004/5-SS1056-000.6	TF2-B219-SS1082-0001	TF2-BSA-SS1096-0001-D
TF2-003-SS1011-000.8	TF2-004/5-SS1026-000.8	TF2-004/5-SS1041-000.7-D	TF2-004/5-SS1057-0001	TF2-B219-SS1083-0001	TF2-BSA-SS1097-0001
TF2-003-SS1012-000.7	TF2-004/5-SS1027-0001	TF2-004/5-SS1042-000.5	TF2-004/5-SS1058-000.5	TF2-B219-SS1084-0001	
TF2-003-SS1013-000.7	TF2-004/5-SS1028-000.8	TF2-004/5-SB1043-0.10.5	TF2-004/5-SS1059-000.6	TF2-B219-SS1085-0001	
TF2-003-SS1014-0001	TF2-004/5-SS1029-000.6	TF2-004/5-SS1043-0.10.5	TF2-004/5-SS1060-000.5	TF2-B219-SS1086-0001	
TF2-003-SS1015-000.8	TF2-004/5-SS1030-000.6	TF2-004/5-SS1044-000.5	TF2-004/5-SS1061-000.6	TF2-B219-SS1087-0001	

TABLE 5-3

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SUBSURFACE SOIL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Above Background Concentration?[4]	Adjusted USEPA RSL Residential Soil[5]	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Tank Farm 2	**Polycyclic Aromatic Hydrocarbons**												
	91-57-6	2-Methylnaphthalene	3.3 J	280 J	ug/kg	TF2-001-SB1005-0204-D	12/59	9.2 - 12	280	NA	23000 N	No	BSL
	83-32-9	Acenaphthene	1.8 J	890 J	ug/kg	TF2-001-SB1005-0204-D	21/59	1.6 - 12	890	NA	340000 N	No	BSL
	208-96-8	Acenaphthylene	1.8 J	88 J	ug/kg	TF2-001-SB1005-0204-D	15/59	9.2 - 12	88	NA	340000 N[7]	No	BSL
	120-12-7	Anthracene	1.7 J	1800 J	ug/kg	TF2-001-SB1005-0204-D	28/59	1.3 - 12	1800	NA	1700000 N	No	BSL
	56-55-3	**Benzo(a)anthracene**	2 J	4100 J	ug/kg	TF2-001-SB1005-0204-D	50/59	10 - 12	4100	NA	**150 C**	**Yes**	ASL
	50-32-8	**Benzo(a)pyrene**	3.5 J	3100 J	ug/kg	TF2-001-SB1005-0204-D	36/59	9.2 - 12	3100	NA	**15 C**	**Yes**	ASL
	205-99-2	**Benzo(b)fluoranthene**	3.1 J	4800 J	ug/kg	TF2-001-SB1005-0204-D	55/59	9.8 - 11	4800	NA	**150 C**	**Yes**	ASL
	191-24-2	Benzo(g,h,i)perylene	2.2 J	1500 J	ug/kg	TF2-001-SB1005-0204-D	34/59	2.2 - 12	1500	NA	170000 N[8]	No	ASL
	207-08-9	Benzo(k)fluoranthene	3.5 J	1500 J	ug/kg	TF2-001-SB1005-0204-D	30/59	3.1 - 12	1500	NA	1500 C	No	ASL
	218-01-9	Chrysene	1.9 J	3800 J	ug/kg	TF2-001-SB1005-0204-D	52/59	1.8 - 12	3800	NA	15000 C	No	ASL
	53-70-3	**Dibenzo(a,h)anthracene**	2.1 J	490 J	ug/kg	TF2-001-SB1005-0204-D	33/59	9.6 - 12	490	NA	**15 C**	**Yes**	ASL
	206-44-0	Fluoranthene	2.1 J	10000 J	ug/kg	TF2-001-SB1005-0204-D	42/59	9.6 - 12	10000	NA	230000 N	No	BSL
	86-73-7	Fluorene	4 J	1700 J	ug/kg	TF2-001-SB1005-0204-D	18/59	9.2 - 12	1700	NA	230000 N	No	BSL
	193-39-5	**Indeno(1,2,3-cd)pyrene**	2.1 J	2400 J	ug/kg	TF2-001-SB1005-0204-D	49/59	9.6 - 11	2400	NA	**150 C**	**Yes**	ASL
	91-20-3	Naphthalene	3.4 J	1200 J	ug/kg	TF2-001-SB1005-0204-D	11/59	9.2 - 12	1200	NA	3600 C	No	BSL
	85-01-8	Phenanthrene	2.2 J	11000 J	ug/kg	TF2-001-SB1005-0204-D	39/59	9.6 - 20	11000	NA	170000 N[8]	No	BSL
	129-00-0	Pyrene	3.2 J	10000 J	ug/kg	TF2-001-SB1005-0204-D	40/59	9.6 - 12	10000	NA	170000 N	No	BSL
	PCBs												
	11096-82-5	Aroclor-1260	25	110	ug/kg	TF2-B219-SB1081-0204	3/10	8.6 - 9.1	110	NA	220 C	No	BSL
	Dioxins/Furans												
	3268-87-9	1,2,3,4,6,7,8,9-OCDD	1300	14000	ng/kg	TF2-001-SB1007-0204	39/39	-	14000	NA	15000 C[9]	No	BSL
	39001-02-0	1,2,3,4,6,7,8,9-OCDF	1.3 J	21	ng/kg	TF2-004/5-SB1066-0203	13/39	0.32 - 7	21	NA	15000 C[9]	No	BSL
	35822-46-9	1,2,3,4,6,7,8-HPCDD	6	150	ng/kg	TF2-001-SB1007-0204	39/39	-	150	NA	450 C[9]	No	BSL
	67562-39-4	1,2,3,4,6,7,8-HPCDF	1.3 J	18	ng/kg	TF2-003-SB1017-011.6	13/39	0.19 - 1.3	18	NA	450 C[9]	No	BSL
	55673-89-7	1,2,3,4,7,8,9-HPCDF	0.075 J	0.97 J	ng/kg	TF2-003-SB1017-011.6	8/39	0.02 - 0.56	0.97	NA	450 C[9]	No	BSL
	39227-28-6	1,2,3,4,7,8-HXCDD	0.08 J	5 J	ng/kg	TF2-003-SB1017-011.6	31/39	0.026 - 0.33	5	NA	45 C[9]	No	BSL
	70648-26-9	1,2,3,4,7,8-HXCDF	0.23 J	3.8 J	ng/kg	TF2-003-SB1017-011.6, TF2-003-SB1019-0204	17/39	0.08 - 0.74	3.8	NA	45 C[9]	No	BSL
	57653-85-7	1,2,3,6,7,8-HXCDD	0.066 J	12	ng/kg	TF2-003-SB1017-011.6	30/39	0.022 - 0.23	12	NA	45 C[9]	No	BSL
	57117-44-9	1,2,3,6,7,8-HXCDF	0.1 J	3.3 J	ng/kg	TF2-003-SB1017-011.6	35/39	0.023 - 0.4	3.3	NA	45 C[9]	No	BSL
	19408-74-3	1,2,3,7,8,9-HXCDD	0.11 J	11	ng/kg	TF2-003-SB1017-011.6	35/39	0.045 - 0.24	11	NA	45 C[9]	No	BSL
	72918-21-9	1,2,3,7,8,9-HXCDF	0.049 J	0.3 J	ng/kg	TF2-003-SB1016-0204	9/39	0.014 - 0.12	0.3	NA	45 C[9]	No	BSL
	40321-76-4	**1,2,3,7,8-PECDD**	0.11 J	5.2 J	ng/kg	TF2-003-SB1017-011.6	12/39	0.034 - 0.24	5.2	NA	**4.5 C[9]**	**Yes**	ASL
	57117-41-6	1,2,3,7,8-PECDF	0.051 J	2.4 J	ng/kg	TF2-003-SB1017-011.6	18/39	0.02 - 0.16	2.4	NA	150 C[9]	No	BSL
	60851-34-5	2,3,4,6,7,8-HXCDF	0.067 J	2.6 J	ng/kg	TF2-003-SB1017-011.6	25/39	0.013 - 0.15	2.6	NA	45 C[9]	No	BSL
	57117-31-4	2,3,4,7,8-PECDF	0.062 J	3.3 J	ng/kg	TF2-003-SB1017-011.6	23/39	0.02 - 0.17	3.3	NA	15 C[9]	No	BSL
	1746-01-6	2,3,7,8-TCDD	0.037 J	0.47 J	ng/kg	TF2-003-SB1019-0204	2/39	0.017 - 0.16	0.47	NA	4.5 C	No	BSL
	51207-31-9	2,3,7,8-TCDF	0.23 J	2	ng/kg	TF2-003-SB1017-011.6	6/39	0.013 - 0.61	2	NA	45 C[9]	No	BSL
	--	**2,3,7,8-TCDD Equivalents**	0.55	11.7	ng/kg	TF2-003-SB1017-011.6	39/39	-	11.7	NA	**4.5 C**	**Yes**	ASL
	37871-00-4	Total HPCDD	10	270	ng/kg	TF2-001-SB1007-0204	39/39	-	270	NA	NA	No	NTX

TABLE 5-3

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SUBSURFACE SOIL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Above Background Concentration?[4]	Adjusted USEPA RSL Residential Soil[5]	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Tank Farm 2	**Dioxins/Furans (continued)**												
	38998-75-3	Total HPCDF	1.2 J	26	ng/kg	TF2-004/5-SB1066-0203	21/39	0.26 - 1.7	26	NA	NA	No	NTX
	34465-46-8	Total HXCDD	0.27 J	140	ng/kg	TF2-003-SB1017-011.6	39/39	-	140	NA	NA	No	NTX
	55684-94-1	Total HXCDF	0.48 J	29 J	ng/kg	TF2-003-SB1017-011.6	30/39	0.33 - 2.2	29	NA	NA	No	NTX
	36088-22-9	Total PECDD	0.043 J	180 J	ng/kg	TF2-003-SB1017-011.6	35/39	0.039 - 0.072	180	NA	NA	No	NTX
	30402-15-4	Total PECDF	0.1 J	25	ng/kg	TF2-003-SB1017-011.6	36/39	0.02 - 0.046	25	NA	NA	No	NTX
	41903-57-5	Total TCDD	0.09 J	160	ng/kg	TF2-003-SB1017-011.6	37/39	0.048 - 0.086	160	NA	NA	No	NTX
	55722-27-5	Total TCDF	0.11 J	37	ng/kg	TF2-003-SB1017-011.6	39/39	-	37	NA	NA	No	NTX
	Metals												
	7429-90-5	**Aluminum**	9450	21000	mg/kg	TF2-001-SB1009-0810	59/59	-	21000	Yes	**7700 N**	**Yes**	ASL
	7440-36-0	Antimony	0.03 J	0.31 J	mg/kg	TF2-003-SB1014-0204	38/59	0.03 - 0.12	0.31	NA	3.1 N	No	BSL
	7440-38-2	**Arsenic**	2.8	14.3	mg/kg	TF2-001-SB1008-0204	59/59	-	14.3	Yes	**0.61 C**	**Yes**	ASL
	7440-39-3	Barium	7.2	28	mg/kg	TF2-003-SB1011-0204-D	59/59	-	28	No	1500 N	No	BSL, BKG
	7440-41-7	Beryllium	0.25	1.3 J	mg/kg	TF2-004/5-SB1057-0608	59/59	-	1.3	Yes	16 N	No	BSL
	7440-43-9	Cadmium	0.04 J	0.28	mg/kg	TF2-001-SB1002-0405	59/59	-	0.28	NA	7 N	No	BSL
	7440-70-2	Calcium	101 J	1660	mg/kg	TF2-001-SB1009-0810	59/59	-	1660	Yes	NA	No	NUT
	7440-47-3	**Chromium**	11.7 J	28.8 J	mg/kg	TF2-004/5-SB1021-0608	59/59	-	28.8	Yes	**0.29 C[10]**	**Yes**	ASL
	7440-48-4	**Cobalt**	5.2	30.3	mg/kg	TF2-001-SB1000-0204	59/59	-	30.3	Yes	**2.3 N**	**Yes**	ASL
	7440-50-8	Copper	8.8	63.9 J	mg/kg	TF2-004/5-SB1021-0608	59/59	-	63.9	Yes	310 N	No	BSL
	7439-89-6	**Iron**	15200	45200	mg/kg	TF2-004/5-SB1021-0608	59/59	-	45200	Yes	**5500 N**	**Yes**	ASL
	7439-92-1	Lead	6.3	55.9 J	mg/kg	TF2-BSA-SB1097-0204	66/66	-	55.9	Yes	400	No	BSL
	7439-95-4	Magnesium	2380	7150	mg/kg	TF2-004/5-SB1058-0204	59/59	-	7150	Yes	NA	No	NUT
	7439-96-5	Manganese	163	467	mg/kg	TF2-004/5-SB1065-0608	59/59	-	467	No	**180 N**	No	BKG
	7439-97-6	Mercury	0.004 J	0.17	mg/kg	TF2-004/5-SB1032-0204	36/59	0.014 - 0.04	0.17	NA	2.3 N[11]	No	BSL
	7440-02-0	Nickel	11.4	51.8 J	mg/kg	TF2-004/5-SB1021-0608	59/59	-	51.8	Yes	150 N	No	BSL
	7440-09-7	Potassium	184	664	mg/kg	TF2-001-SB1005-0204-D	59/59	-	664	No	NA	No	NUT, BKG
	7782-49-2	Selenium	0.05 J	0.86	mg/kg	TF2-004/5-SB1057-0304	34/59	0.18 - 0.54	0.86	NA	39 N	No	BSL
	7440-22-4	Silver	0.01 J	0.06 J	mg/kg	TF2-001-SB1007-0204	54/59	0.024 - 0.034	0.06	NA	39 N	No	BSL
	7440-23-5	Sodium	19.2 J	84.4	mg/kg	TF2-003-SB1013-0405	25/59	28.3 - 51.7	84.4	NA	NA	No	NUT
	7440-28-0	**Thallium**	0.02 J	0.25	mg/kg	TF2-004/5-SB1057-0304	44/59	0.028 - 0.06	0.25	NA	**0.078 N**	**Yes**	ASL
	7440-62-2	Vanadium	12.8	29.2	mg/kg	TF2-001-SB1009-0810	59/59	-	29.2	Yes	39 N	No	BSL
	7440-66-6	Zinc	25.1	129 J	mg/kg	TF2-004/5-SB1021-0608	59/59	-	129	Yes	2300 N	No	BSL

TABLE 5-3

OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SUBSURFACE SOIL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - To determine whether chemical concentrations were within background levels, a statistical analysis was conducted using the site and background datasets.
5 - United States Environmental Protection Agency (USEPA) Regional Screening Level, November 2013. Carcinogenic values represent an incremental cancer risk of 1E-06. The noncarcinogenic values are the RSL divided by 10 to correspond to a Target Hazard Quotient of 0.1. Protection of groundwater values are risk-based SSLs.
6 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level and is statistically determined to be greater than site background.
7 - Value is for acenaphthene.
8 - Value is for pyrene.
9 - Value is derived by multiplying the criteria for 2,3,7,8-TCDD by World Health Organization Toxicity Equivalency Factor.
10 - Value is for hexavalent chromium.
11 - Value is for mercuric chloride (and other mercury salts).

Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Definitions:
C = Carcinogen
COPC = Chemical Of Potential Concern
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level and site background

For elimination as a COPC:
BKG = Less than Background Concentration
BSL = Below COPC Screening Level
NUT = Essential nutrient
NTX = No toxicity criteria

Associated Samples:

TF2-001-SB1000-0204	TF2-003-SB1011-0204	TF2-003-SB1019-0810	TF2-004/5-SB1047-0204	TF2-B219-SB1081-0204	TF2-BSA-SB1096-0204
TF2-001-SB1000-0810	TF2-003-SB1011-0204-D	TF2-004/5-SB1021-0204	TF2-004/5-SB1047-0608	TF2-B219-SB1082-0204-D	TF2-BSA-SB1097-0204
TF2-001-SB1001-0204	TF2-003-SB1012-0204	TF2-004/5-SB1021-0204-D	TF2-004/5-SB1048-0204	TF2-B219-SB1082-0204	
TF2-001-SB1001-0810	TF2-003-SB1012-0810	TF2-004/5-SB1021-0608	TF2-004/5-SB1049-0204	TF2-B219-SB1083-0204	
TF2-001-SB1002-0204	TF2-003-SB1013-0204	TF2-004/5-SB1025-2.604	TF2-004/5-SB1049-0810	TF2-B219-SB1084-0204	
TF2-001-SB1002-0405	TF2-003-SB1013-0405	TF2-004/5-SB1026-0204	TF2-004/5-SB1057-0304	TF2-B219-SB1085-0204	
TF2-001-SB1003-0204	TF2-003-SB1014-0204	TF2-004/5-SB1026-022.7	TF2-004/5-SB1057-0608	TF2-B219-SB1086-0204	
TF2-001-SB1004-0204	TF2-003-SB1014-0810	TF2-004/5-SB1031-0204	TF2-004/5-SB1057-0608-D	TF2-B219-SB1087-0204	
TF2-001-SB1004-0204-D	TF2-003-SB1015-0204	TF2-004/5-SB1031-0810	TF2-004/5-SB1058-0204	TF2-B219-SB1088-0204	
TF2-001-SB1005-0204	TF2-003-SB1015-0810	TF2-004/5-SB1032-0204	TF2-004/5-SB1064-0204	TF2-B219-SB1089-0204	
TF2-001-SB1005-0204-D	TF2-003-SB1016-0204	TF2-004/5-SB1038-0204	TF2-004/5-SB1064-0406	TF2-B219-SB1089-0204-D	
TF2-001-SB1006-0204	TF2-003-SB1016-0810	TF2-004/5-SB1038-0810	TF2-004/5-SB1065-0204	TF2-BSA-SB1091-0204	
TF2-001-SB1007-0204	TF2-003-SB1017-011.6	TF2-004/5-SB1039-0406	TF2-004/5-SB1065-0608	TF2-BSA-SS1091-0204	
TF2-001-SB1008-0204	TF2-003-SB1017-0204	TF2-004/5-SB1040-0204	TF2-004/5-SB1066-0203	TF2-BSA-SB1092-0204	
TF2-001-SB1009-0204	TF2-003-SB1017-0810	TF2-004/5-SB1040-0810	TF2-004/5-SB1068-0204	TF2-BSA-SB1093-0204	
TF2-001-SB1009-0810	TF2-003-SB1018-0204	TF2-004/5-SB1040-0810-D	TF2-004/5-SB1068-0204-D	TF2-BSA-SB1094-0204	
TF2-001-SB1010-0204	TF2-003-SB1019-0204	TF2-004/5-SB1041-022.5	TF2-B219-SB1080-0204	TF2-BSA-SB1095-0204	

TABLE 5-4

CHEMICALS RETAINED AS COPCS
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Surface Soil	Subsurface Soil
	Direct Contact	Direct Contact
PAHs		
Benzo(a)anthracene	E	E
Benzo(a)pyrene	E	E
Benzo(b)fluoranthene	E	E
Benzo(k)fluoranthene	E	
Dibenzo(a,h)anthracene	E	E
Indeno(1,2,3-cd)pyrene	E	E
PCBs		
Aroclor-1260	E	
Dioxin/Furans		
1,2,3,4,6,7,8,9-OCDD	E	
1,2,3,4,6,7,8-HPCDD	E	
1,2,3,6,7,8-HXCDD	E	
1,2,3,7,8-PECDD	E	E
2,3,7,8-TCDD Equivalents	E	E
Total HPCDD	E	E
Metals		
Aluminum		E
Antimony	E	
Arsenic		E
Chromium	E	E
Cobalt	E	E
Iron	E	E
Manganese	E	
Thallium	E	E

Notes:
E - Chemical exceeded USEPA screening criteria and was retained as a COPC.

TABLE 5-5

SELECTION OF EXPOSURE PATHWAYS
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND
PAGE 1 OF 3

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Surface Soil	Surface Soil	Tank Farm 2	Trespassers	Adolescent	Ingestion Dermal	Quant Quant	Current trespassers may contact surface soil while at the site.
				Bow Hunters	Adult	Ingestion Dermal	Quant Quant	Bow hunters may contact surface soil while at the site.
		Air	Tank Farm 2	Trespassers	Adolescent	Inhalation	Quant	Current trespassers may be exposed to fugitive dust and volatile emissions from surface soil while at the site.
				Bow Hunters	Adult	Inhalation	Quant	Bow hunters may be exposed to fugitive dust and volatile emissions from surface soil while at the site.
	Subsurface Soil	Subsurface Soil	Tank Farm 2	Trespassers	Adolescent	Ingestion Dermal	None None	Current trespassers are not exposed to subsurface soil.
				Bow Hunters	Adult	Ingestion Dermal	None None	Current bow hunters are not exposed to subsurface soil.
		Air	Tank Farm 2	Trespassers	Adolescent	Inhalation	None	Current trespassers are not exposed to subsurface soil.
				Bow Hunters	Adult	Inhalation	None	Current bow hunters are not exposed to subsurface soil.
Future	Surface Soil	Surface Soil	Tank Farm 2	Construction Workers	Adult	Ingestion Dermal	Quant Quant	Construction workers may have contact with surface soil during excavation activities.
				Industrial Worker	Adult	Ingestion Dermal	Quant Quant	Industrial workers may contact surface soil during normal work activities.
				Trespassers	Adolescent	Ingestion Dermal	Quant Quant	Trespassers may contact surface soil while at the site.
				Recreational Users	Child	Ingestion Dermal	Quant Quant	Recreational users may contact surface soil while at the site.
					Adult	Ingestion Dermal	Quant Quant	
				Residents	Child	Ingestion Dermal	Quant Quant	Although a future residential scenario is considered unlikely at the site, this scenario is included to aid in future risk management decisions.
					Adult	Ingestion Dermal	Quant Quant	

TABLE 5-5

SELECTION OF EXPOSURE PATHWAYS
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Surface Soil	Air	Tank Farm 2	Construction Workers	Adult	Inhalation	Quant	Construction workers may be exposed to fugitive dust and volatile emissions from surface soil during construction activities.
				Industrial Worker	Adult	Inhalation	Quant	Industrial workers may be exposed to fugitive dust and volatile emissions from surface soil during work activities.
				Trespassers	Adolescent	Inhalation	Quant	Trespassers may be exposed to fugitive dust and volatile emissions from surface soil while at the site.
				Recreational Users	Child	Inhalation	Quant	Recreational users may be exposed to fugitive dust and volatile emissions from surface soil while at the site.
					Adult	Inhalation	Quant	
				Residents	Child	Inhalation	Quant	Although a future residential scenario is considered unlikely at the site, this scenario is included to aid in future risk management decisions.
					Adult	Inhalation	Quant	
	Subsurface Soil	Subsurface Soil	Tank Farm 2	Construction Workers	Adult	Ingestion Dermal	Quant Quant	Construction workers may have contact with subsurface soil during excavation activities.
				Industrial Worker	Adult	Ingestion Dermal	Quant Quant	Although exposures to subsurface soil by industrial workers are considered unlikely at the site, this scenario is included to aid in future risk management decisions.
			Tank Farm 2	Trespassers	Adolescent	Ingestion Dermal	Quant Quant	Although exposures to subsurface soil by trespassers are considered unlikely at the site, this scenario is included to aid in future risk management decisions.
				Recreational Users	Child	Ingestion Dermal	Quant Quant	Although exposures to subsurface soil by recreational users are considered unlikely at the site, this scenario is included to aid in future risk management decisions.
					Adult	Ingestion Dermal	Quant Quant	
				Residents	Child	Ingestion Dermal	Quant Quant	Although a future residential scenario is considered unlikely at the site, this scenario is included to aid in future risk management decisions.
					Adult	Ingestion Dermal	Quant Quant	
		Air	Tank Farm 2	Construction Workers	Adult	Inhalation	Quant	Construction workers may be exposed to fugitive dust and volatile emissions from subsurface soil during construction activities.
				Industrial Worker	Adult	Inhalation	Quant	Although exposures to subsurface soil by industrial workers are considered unlikely at the site, this scenario is included to aid in future risk management decisions.
				Trespassers	Adolescent	Inhalation	Quant	Although exposures to subsurface soil by trespassers are considered unlikely at the site, this scenario is included to aid in future risk management decisions.
				Recreational Users	Child	Inhalation	Quant	Although exposures to subsurface soil by recreational users are considered unlikely at the site, this scenario is included to aid in future risk management decisions.
					Adult	Inhalation	Quant	

TABLE 5-5

SELECTION OF EXPOSURE PATHWAYS
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Subsurface Soil	Air	Tank Farm 2	Residents	Child	Inhalation	Quant	Although a future residential scenario is considered unlikely at the site, this scenario is included to aid in future risk management decisions.
					Adult	Inhalation	Quant	

Notes:
Quant - Quantitative.

TABLE 5-6

RECEPTORS AND EXPOSURE ROUTES FOR QUANTITATIVE EVALUATION
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptors	Exposure Routes
Trespassers (adolescent) (current/future land use)	• Soil incidental ingestion (surface/subsurface)(1) • Soil dermal contact (surface/subsurface)(1) • Inhalation of air/dust emissions (surface/subsurface)(1)
Bow Hunters (adult) (current/future land use)	• Soil incidental ingestion (surface/subsurface)(1) • Soil dermal contact (surface/subsurface) (1) • Inhalation of air/dust emissions (surface/subsurface)(1)
Construction Workers (future land use)	• Soil incidental ingestion (surface/subsurface) • Soil dermal contact (surface/subsurface) • Inhalation of air/dust emissions (surface/subsurface)
Industrial Workers (future land use)	• Soil incidental ingestion (surface/subsurface)(1) • Soil dermal contact (surface/subsurface) (1) • Inhalation of air/dust emissions (surface/subsurface)(1)
Recreational Users (child/adult) (future land use)	• Soil incidental ingestion (surface/subsurface)(1) • Soil dermal contact (surface/subsurface)(1) • Inhalation of air/dust emissions (surface/subsurface)(1)
Hypothetical Residents (child/adult) (future land use)	• Soil incidental ingestion (surface/subsurface)(1) • Soil dermal contact (surface/subsurface)(1) • Inhalation of air/dust emissions (surface/subsurface)(1)

1 – These receptors are not expected to be exposed to subsurface soil, but exposure to subsurface was evaluated to aid in risk management decisions.

TABLE 5-7

EXPOSURE POINT CONCENTRATIONS
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Surface Soil (mg/kg)	All Soil (mg/kg)
PAHs		
Benzo(a)anthracene	0.51(1)	0.48(3)
Benzo(a)pyrene	0.41(1)	0.30(1)
Benzo(b)fluoranthene	0.27(4)	0.58(3)
Benzo(k)fluoranthene	0.20(1)	0.15(1)
Dibenzo(a,h)anthracene	0.070(1)	0.052(1)
Indeno(1,2,3-cd)pyrene	0.32(1)	0.29(3)
PCBs		
Aroclor-1260	11(2)	7.0(9)
Dioxins/Furans		
2,3,7,8-TCDD Equivalents	0.0000065(4)	0.0000052(6)
Metals		
Aluminum	NA	13700(5)
Antimony	0.81(1)	0.34(8)
Arsenic	NA	7.1(6)
Chromium	18.2(5)	18.1(6)
Cobalt	11.2(5)	11.8(7)
Iron	25300(5)	26400(5)
Manganese	314(7)	305(6)
Thallium	0.056(1)	0.053(8)

Notes:
NA - Not applicable. Not a COPC for this medium.

Footnotes:
1 - 95% KM (Chebyshev) UCL.
2 - 95% Adjusted Gamma UCL.
3 - 97.5% KM (Chebyshev) UCL.
4 - 95% H-UCL.
5 - 95% Student's-t UCL.
6 - 95% Approximate Gamma UCL.
7 - 95% Modified-t UCL.
8 - 95% KM (BCA) UCL.
9 - 95% GROS Adjusted Gamma UCL.

TABLE 5-8

SUMMARY OF EXPOSURE INPUT PARAMETERS
REASONABLE MAXIMUM EXPOSURES
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Parameter Code	Exposure Parameter	Adolescent Trespasser	Bow Hunter	Construction Worker	Industrial Worker	Child Recreational User	Adult Recreational User	Child Resident	Adult Resident
All Exposures									
ED	Exposure Duration (years)	12[1]	20[2]	1[3]	25[2]	6[2]	20[2]	6[2]	20[2]
BW	Body Weight (kg)	50[4]	80[2]	80[2]	80[2]	15[2]	80[2]	15[2]	80[2]
AT-N	Averaging Time (Non-Cancer) (days)	4,380[5]	7,300[2]	365[5]	9,125[2]	2,190[5]	7,300[2]	2,190[2]	7,300[2]
AT-C	Averaging Time (Cancer) (days)	25,550[5]	25,550[5]	25,550[5]	25,550[2]	25,550[5]	25,550[5]	25,550[2]	25,550[2]
Incidental Ingestion/Dermal Contact with Soil									
C_{soil}	Exposure concentration for soil (mg/kg)	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]
IR	Ingestion Rate (mg/day)	100[4]	100[2]	330[3]	100[2]	200[2]	100[2]	200[2]	100[2]
RBA	Relative bioavailability (unitless)	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific
EF	Exposure Frequency (days/year)	48[7]	20[8]	130[9]	250[2]	48[7]	48[7]	350[2]	350[2]
FI	Fraction Ingested (unitless)	1	0.5[10]	1	1	0.5[10]	0.5[10]	1	1
SA	Skin Surface Available for Contact (cm^2)	4,050[11]	6,032[2]	3,470[2]	3,470[2]	2,690[2]	6,032[2]	2,690[2]	6,032[2]
AF	Soil to Skin Adherence Factor (mg/cm^2/event)	0.4[12]	0.07[2]	0.3[3,12]	0.12[2]	0.2[2]	0.07[2]	0.2[2]	0.07[2]
ABS	Absorption Factor (unitless)	chemical-specific[12]	chemical-specific[12]	chemical-specific[12]	chemical-specific[12]	chemical-specific[12]	chemical-specific[12]	chemical-specific[12]	chemical-specific[12]
CF	Conversion Factor (kg/mg)	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06
Inhalation Fugitive Dust/Volatile Emissions from Soil									
C_{air}	Exposure concentration for air (mg/m^3)	calculated[3]	calculated[3]	calculated[3]	calculated[3]	calculated[3]	calculated[3]	calculated[3]	calculated[3]
ET	Exposure Time (hours/day)	4[7]	8[8]	8[9]	8[2]	4[7]	4[7]	24[2]	24[2]
EF	Exposure Frequency (days/year)	48[7]	20[8]	130[9]	250[2]	48[7]	48[7]	350[2]	350[2]
PEF	Particulate Emission Factor (m^3/kg)	1.1E+10[13]	1.1E+10[13]	1.4E+06[3]	1.1E+10[13]	1.1E+10[13]	1.1E+10[13]	1.1E+10[13]	1.1E+10[13]

1 - Adolescent ages 7 to 18 years old.
2 - USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.
3 - USEPA, 2002: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9365.4-24.
4 - USEPA, 1997: Exposure Factors Handbook. EPA/600/8-95/002FA.
5 - USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A.
6 - USEPA, 2002. Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.
7 - Assumes 4 hours a day 2 days a week for 24 weeks during late spring, summer, and early fall.
8 - Assume 8 hours a day 2 days every other week during hunting season.
9 - Assumes a 26 week construction project.
10 - Professional judgment. Receptor is only at the site part of the day.
11 - Assumes 31 percent of the average total surface area of 1.31 m2 for females and males, ages 7 through 17 years (USEPA, 1997).
12 - USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. PA/540/R/99/005.
13 - USEPA, 2014: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

TABLE 5-9

SUMMARY OF EXPOSURE INPUT PARAMETERS
CENTRAL TENDENCY EXPOSURES
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Parameter Code	Exposure Parameter	Adolescent Trespasser	Bow Hunter	Construction Worker	Industrial Worker	Child Recreational User	Adult Recreational User	Child Resident	Adult Resident
All Exposures									
ED	Exposure Duration (years)	6[1]	7[1]	1[2]	9[1]	2[1]	7[1]	2[1]	7[1]
BW	Body Weight (kg)	50[3]	80[4]	80[4]	80[4]	15[1]	80[4]	15[1]	80[4]
AT-N	Averaging Time (Non-Cancer) (days)	2,190[5]	2,555[4]	365[4]	3,285[4]	730[4]	2,555[4]	730[4]	2,555[4]
AT-C	Averaging Time (Cancer) (days)	25,550[5]	25,550[4]	25,550[4]	25,550[4]	25,550[4]	25,550[4]	25,550[4]	25,550[4]
Incidental Ingestion/Dermal Contact with Soil									
C_{soil}	Exposure concentration for soil (mg/kg)	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]	Maximum or 95% UCL[6]
IR	Ingestion Rate (mg/day)	50[1]	50[1]	330[1]	50[1]	100[1]	50[1]	100[1]	50[1]
RBA	Relative bioavailability (unitless)	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific	Chemical-specific
EF	Exposure Frequency (days/year)	24[7]	10[8]	52[9]	219[10]	24[7]	24[7]	234[10]	234[10]
FI	Fraction Ingested (unitless)	1	0.5[11]	1	1	0.5[11]	0.5[11]	1	1
SA	Skin Surface Available for Contact (cm^2)	4,050[12]	6,032[4]	3,470[4]	3,470[4]	2,690[4]	6,032[4]	2,690[4]	6,032[4]
AF	Soil to Skin Adherence Factor (mg/cm^2/event)	0.04[13]	0.01[13]	0.1[13]	0.02[13]	0.04[13]	0.01[13]	0.04[13]	0.01[13]
ABS	Absorption Factor (unitless)	chemical-specific[13]	chemical-specific[13]	chemical-specific[13]	chemical-specific[13]	chemical-specific[13]	chemical-specific[13]	chemical-specific[13]	chemical-specific[13]
CF	Conversion Factor (kg/mg)	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06	1E-06
Inhalation Fugitive Dust/Volatile Emissions from Soil									
C_{air}	Exposure concentration for air (mg/m^3)	calculated[2]	calculated[2]	calculated[2]	calculated[2]	calculated[2]	calculated[2]	calculated[2]	calculated[2]
ET	Exposure Time (hours/day)	4[11]	4[8]	8[9]	8[14]	4[11]	4[11]	24	24
EF	Exposure Frequency (days/year)	24[7]	10[8]	52[9]	219[10]	24[7]	24[7]	234[10]	234[10]
PEF	Particulate Emission Factor (m^3/kg)	1.1E+10[15]	1.1E+10[15]	1.4E+06[2]	1.1E+10[15]	1.1E+10[15]	1.1E+10[15]	1.1E+10[15]	1.1E+10[15]

1 - USEPA, 1997: Exposure Factors Handbook. EPA/600/8-95/002FA.
2 - USEPA, 2002: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9365.4-24.
3 - Assumed to be 50 percent of RME.
4 - USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.
5 - USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A.
6 - USEPA, 2002. Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.
7 - Assumes 2 days a week for 12 weeks.
8 - Assumes 4 hours a day one day every other week during hunting season.
9 - Assumes two days a week over a 26 week construction project.
10 - USEPA 1993. Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure.
11 - Professional judgment. Receptor is only at the site part of the day.
12 - Assumes 31 percent of the average total surface area of 1.31 m2 for females and males, ages 7 through 17 years (USEPA, 1997).
13 - USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. PA/540/R/99/005.
14 - Length of a typical work day.
15 - USEPA, 2014: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

TABLE 5-10

NON-CANCER TOXICITY DATA -- ORAL/DERMAL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal[1]	Absorbed RfD for Dermal[2]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD: Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
PAHs										
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs										
Aroclor-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins/Furans										
2,3,7,8-TCDD Equivalents	Subchronic	2.0E-08	mg/kg/day	1	2.0E-08	mg/kg/day	Immune	30/1	ATSDR	12/1998
	Chronic	7.0E-10	mg/kg/day	1	7.0E-10	mg/kg/day	Reproductive	30/1	IRIS	4/11/2014
Metals										
Aluminum	Subchronic	1.0E+00	mg/kg/day	1	1.0E+00	mg/kg/day	Central Nervous System	30/1	ATSDR	9/2008
	Chronic	1.0E+00	mg/kg/day	1	1.0E+00	mg/kg/day	Central Nervous System	100	PPRTV	10/23/2006
Antimony	Subchronic	4.0E-04	mg/kg/day	0.15	6.0E-05	mg/kg/day	Blood	1000/1	PPRTV	7/29/2008
	Chronic	4.0E-04	mg/kg/day	0.15	6.0E-05	mg/kg/day	Blood	1000/1	IRIS	4/11/2014
Arsenic	Chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	Skin, Cardiovascular System	3/1	IRIS	4/11/2014
Chromium[3]	Subchronic	5.0E-03	mg/kg/day	0.025	1.3E-04	mg/kg/day	None Reported	100/3	HEAST	9/1997
	Chronic	3.0E-03	mg/kg/day	0.025	7.5E-05	mg/kg/day	None Reported	300/3	IRIS	4/11/2014
Cobalt	Subchronic	3.0E-03	mg/kg/day	1	3.0E-03	mg/kg/day	Thyroid	300/1	PPRTV	8/25/2008
	Chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	Thyroid	3000/1	PPRTV	8/25/2008
Iron	Subchronic	7.0E-01	mg/kg/day	1	7.0E-01	mg/kg/day	Gastrointestinal System	1.5	PPRTV	9/11/2006
	Chronic	7.0E-01	mg/kg/day	1	7.0E-01	mg/kg/day	Gastrointestinal System	1.5	PPRTV	9/11/2006
Manganese[4]	Chronic	2.4E-02	mg/kg/day	0.04	9.6E-04	mg/kg/day	Central Nervous System	1	IRIS	4/11/2014
Thallium[5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1 - U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.

2 - Adjusted dermal RfD = Oral RfD x Oral Absorption Efficiency for Dermal.

3 - Values are for hexavalent chromium.

4 - Adjusted IRIS value in accordance with IRIS.

5 - Toxicity criterion used to derive the is only suitable for screening and is not to be used for quantifying risks.

Definitions:

ATSDR = Agency for Toxic Substances and Disease Registry.

HEAST = Health Effects Assessment Summary Tables

IRIS = Integrated Risk Information System

NA = Not Available.

PPRTV = Provisional Peer Reviewed Toxicity Value.

TABLE 5-11

NON-CANCER TOXICITY DATA -- INHALATION
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Extrapolated RfD[(1)]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC: Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
PAHs									
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs									
Aroclor-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins/Furans									
2,3,7,8-TCDD Equivalents	Chronic	4.0E-08	mg/m^3	1.1E-08	(mg/kg/day)	Reproductive	NA	Cal EPA	9/2009
Metals									
Aluminum	Chronic	5.0E-03	mg/m^3	1.4E-03	(mg/kg/day)	Central Nervous System	300/1	PPRTV	10/23/2006
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	Chronic	1.5E-05	mg/m^3	4.3E-06	(mg/kg/day)	Skin, Cardiovascular System	NA	Cal EPA	9/2009
Chromium[(2)]	Subchronic	3.0E-04	mg/m^3	8.6E-05	(mg/kg/day)	Respiratory	100/1	ATSDR	9/2012
	Chronic	1.0E-04	mg/m^3	2.9E-05	(mg/kg/day)	Respiratory	300/1	IRIS	4/11/2014
Cobalt	Subchronic	2.0E-05	mg/m^3	5.7E-06	(mg/kg/day)	Respiratory	100/1	PPRTV	8/25/2008
	Chronic	6.0E-06	mg/m^3	1.7E-06	(mg/kg/day)	Respiratory	300/1	PPRTV	8/25/2008
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	Chronic	5.0E-05	mg/m^3	1.4E-05	(mg/kg/day)	Central Nervous System	1000/1	IRIS	4/11/2014
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 - Extrapolated RfD = RfC *$20m^3$/day / 70 kg.
2 - Values are for hexavalent chromium.

Definitions:
ATSDR = Agency for Toxic Substances and Disease Registry
Cal EPA = California Environmental Protection Agency, Technical Support Document for Describing Available Cancer Slope Factors, September 2009.
IRIS = Integrated Risk Information System.
NA = Not Applicable.
PPRTV = Provisional Peer Reviewed Toxicity Value.

TABLE 5-12

CANCER TOXICITY DATA -- ORAL/DERMAL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal[1]	Absorbed Cancer Slope Factor for Dermal[2]		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
PAHs								
Benzo(a)anthracene[3]	7.3E-01	$(mg/kg/day)^{-1}$	1	7.3E-01	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(1)	7/1993
Benzo(a)pyrene[3]	7.3E+00	$(mg/kg/day)^{-1}$	1	7.3E+00	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	IRIS	4/11/2014
Benzo(b)fluoranthene[3]	7.3E-01	$(mg/kg/day)^{-1}$	1	7.3E-01	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(1)	7/1993
Benzo(k)fluoranthene[3]	7.3E-02	$(mg/kg/day)^{-1}$	1	7.3E-02	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(1)	7/1993
Dibenzo(a,h)anthracene[3]	7.3E+00	$(mg/kg/day)^{-1}$	1	7.3E+00	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(1)	7/1993
Indeno(1,2,3-cd)pyrene[3]	7.3E-01	$(mg/kg/day)^{-1}$	1	7.3E-01	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(1)	7/1993
PCBs								
Aroclor-1260	2.0E+00	$(mg/kg/day)^{-1}$	1	2.0E+00	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(2)	9/1996
Dioxins/Furans								
2,3,7,8-TCDD Equivalents	1.3E+05	$(mg/kg/day)^{-1}$	1	1.3E+05	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Metals								
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	1.5E+00	$(mg/kg/day)^{-1}$	1	1.5E+00	$(mg/kg/day)^{-1}$	A / Known human carcinogen	IRIS	4/11/2014
Chromium[3,4]	5.0E-01	$(mg/kg/day)^{-1}$	0.025	2.0E+01	$(mg/kg/day)^{-1}$	D (Not classifiable as to human carcinogenicity)	NJDEP	4/8/2009
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	D (Not classifiable as to human carcinogenicity)	IRIS	4/11/2014
Thallium	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
1 - USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.
2 - Adjusted cancer slope factor for dermal = Oral cancer slope factor / Oral absorption efficiency for dermal.
3 - Carcinogenic PAHs and hexavalent chromium are considered to act via the mutagenic mode of action. These chemicals are evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).
4 - Values are for hexavalent chromium.

Cal EPA = California Environmental Protection Agency, Technical Support Document for Describing Available Cancer Slope Factors, September 2009.

IRIS = Integrated Risk Information System.

NA = Not Available.

NJDEP = New Jersey Department of Environmental Protection.

USEPA(1) = USEPA Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons, July 1993, EPA/600/R-93/089.

USEPA(2) = USEPA, PCBs: Cancer Dose-Response Assessment and Applications to Environmental Mixtures, September 1996, EPA/600/P-96/001F.

TABLE 5-13

CANCER TOXICITY DATA -- INHALATION
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor[1]		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
PAHs							
Benzo(a)anthracene[2]	1.1E-04	$(ug/m^3)^{-1}$	3.9E-01	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Benzo(a)pyrene[2]	1.1E-03	$(ug/m^3)^{-1}$	3.9E+00	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Benzo(b)fluoranthene[2]	1.1E-04	$(ug/m^3)^{-1}$	3.9E-01	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Benzo(k)fluoranthene[2]	1.1E-04	$(ug/m^3)^{-1}$	3.9E-01	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Dibenzo(a,h)anthracene[2]	1.2E-03	$(ug/m^3)^{-1}$	4.2E+00	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Indeno(1,2,3-cd)pyrene[2]	1.1E-04	$(ug/m^3)^{-1}$	3.9E-01	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
PCBs							
Aroclor-1260	5.7E-04	$(ug/m3)^{-1}$	2.0E+00	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(1)	9/1996
Dioxins/Furans							
2,3,7,8-TCDD Equivalents	3.8E+01	$(ug/m3)^{-1}$	1.3E+05	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Metals							
Aluminum	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA
Arsenic	4.3E-03	$(ug/m^3)^{-1}$	1.5E+01	$(mg/kg/day)^{-1}$	A / Known human carcinogen	IRIS	4/11/2014
Chromium[2,3]	8.4E-02	$(ug/m^3)^{-1}$	2.9E+02	$(mg/kg/day)^{-1}$	A / Known human carcinogen	IRIS	4/11/2014
Cobalt	9.0E-03	$(ug/m^3)^{-1}$	3.2E+01	$(mg/kg/day)^{-1}$	NA	PPRTV	8/25/2008
Iron	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	D / Not classifiable as to human carcinogenicity	IRIS	4/11/2014
Thallium	NA	NA	NA	NA	NA	NA	NA

Notes:

1 - Inhalation CSF = Unit Risk * 70 kg / $20m^3$/day.

2 - Carcinogenic PAHs and hexavalent chromium are considered to act via the mutagenic mode of action. These chemicals are evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

3 - Values are for hexavalent chromium.

Definitions:

Cal EPA = California Environmental Protection Agency, Technical Support Document for Describing Available Cancer Slope Factors, September 2009.

HEAST = Health Effects Assessment Summary Tables.

IRIS = Integrated Risk Information System.

NA = Not Available.

PPRTV = Provisional Peer Reviewed Toxicity Value.

USEPA(1) = USEPA, PCBs: Cancer Dose-Response Assessment and Applications to Environmental Mixtures, September 1996, EPA/600/P-96/001F.

TABLE 5-14

SUMMARY OF CANCER RISKS AND HAZARD INDICES - REASONABLE MAXIMUM EXPOSURES - TANK FARM 2
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Current/Future Adolescent Trespassers	Surface Soil	Incidental Ingestion	3E-06	--	--	--	0.03	--
		Dermal Contact	3E-06	--	--	Aroclor-1260	0.001	--
		Inhalation	2E-09	--	--	--	0.00002	--
		Total	6E-06	--	--	Aroclor-1260	0.03	--
	All Soil	Incidental Ingestion	3E-06	--	--	--	0.03	--
		Dermal Contact	3E-06	--	--	--	0.004	--
		Inhalation	2E-09	--	--	--	0.00002	--
		Total	5E-06	--	--	Aroclor-1260	0.04	--
Current/Future Adult Bow Hunters	Surface Soil	Incidental Ingestion	1E-06	--	--	--	0.007	--
		Dermal Contact	3E-07	--	--	--	0.00008	--
		Inhalation	2E-09	--	--	--	0.00001	--
		Total	1E-06	--	--	--	0.007	--
	All Soil	Incidental Ingestion	9E-07	--	--	--	0.009	--
		Dermal Contact	3E-07	--	--	--	0.0003	--
		Inhalation	2E-09	--	--	--	0.00002	--
		Total	1E-06	--	--	--	0.009	--
Future Construction Workers	Surface Soil	Incidental Ingestion	8E-07	--	--	--	0.09	--
		Dermal Contact	2E-07	--	--	--	0.00005	--
		Inhalation	2E-06	--	--	Chromium VI	0.6	--
		Total	3E-06	--	--	Chromium VI	0.7	--
	All Soil	Incidental Ingestion	7E-07	--	--	--	0.1	--
		Dermal Contact	2E-07	--	--	--	0.003	--
		Inhalation	2E-06	--	--	Chromium VI	0.8	--
		Total	3E-06	--	--	Chromium VI	1.0	--
Future Industrial Workers	Surface Soil	Incidental Ingestion	1E-05	--	--	Aroclor-1260, Chromium VI	0.09	--
		Dermal Contact	5E-06	--	--	Aroclor-1260	0.0010	--
		Inhalation	1E-08	--	--	--	0.0002	--
		Total	2E-05	--	--	Aroclor-1260, Chromium VI	0.09	--
	All Soil	Incidental Ingestion	1E-05	--	--	Aroclor-1260, Arsenic, Chromium VI	0.1	--
		Dermal Contact	4E-06	--	--	Aroclor-1260	0.003	--
		Inhalation	1E-08	--	--	--	0.0002	--
		Total	1E-05	--	--	Aroclor-1260, Arsenic, Chromium VI	0.1	--
Future Child Recreational Users	Surface Soil	Incidental Ingestion	7E-06	--	--	Aroclor-1260, Chromium VI	0.09	--
		Dermal Contact	2E-06	--	--	--	0.001	--
		Inhalation	1E-09	--	--	--	0.00002	--
		Total	1E-05	--	--	Benzo(a)pyrene, Aroclor-1260, Chromium VI	0.09	--
	All Soil	Incidental Ingestion	7E-06	--	--	Chromium VI	0.1	--
		Dermal Contact	2E-06	--	--	--	0.004	--
		Inhalation	1E-09	--	--	--	0.00002	--
		Total	9E-06	--	--	Aroclor-1260, Chromium VI	0.1	--
Future Adult Recreational Users	Surface Soil	Incidental Ingestion	1E-06	--	--	--	0.009	--
		Dermal Contact	8E-07	--	--	--	0.0002	--
		Inhalation	2E-09	--	--	--	0.00002	--
		Total	2E-06	--	--	--	0.009	--
	All Soil	Incidental Ingestion	1E-06	--	--	--	0.01	--
		Dermal Contact	6E-07	--	--	--	0.0006	--
		Inhalation	2E-09	--	--	--	0.00002	--
		Total	2E-06	--	--	--	0.01	--

TABLE 5-14

SUMMARY OF CANCER RISKS AND HAZARD INDICES - REASONABLE MAXIMUM EXPOSURES - TANK FARM 2
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Future Lifelong Recreational Users	Surface Soil	Incidental Ingestion	8E-06	--	--	Chromium VI	NA	--
		Dermal Contact	3E-06	--	--	--	NA	--
		Inhalation	3E-09	--	--	--	NA	--
		Total	1E-05	--	--	Benzo(a)pyrene, Chromium VI	NA	--
	All Soil	Incidental Ingestion	8E-06	--	--	Chromium VI	NA	--
		Dermal Contact	3E-06	--	--	--	NA	--
		Inhalation	3E-09	--	--	--	NA	--
		Total	1E-05	--	--	Benzo(a)pyrene, Chromium VI	NA	--
Hypothetical Child Residents	Surface Soil	Incidental Ingestion	1E-04	--	Benzo(a)pyrene, Aroclor-1260, Chromium VI	Benzo(a)anthracene, Dibenzo(a,h)anthracene	1	--
		Dermal Contact	2E-05	--	--	Benzo(a)pyrene, Aroclor-1260	0.010	--
		Inhalation	6E-08	--	--	--	0.0007	--
		Total	1E-04	--	Benzo(a)pyrene, Aroclor-1260, Chromium VI	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene	1	--
	All Soil	Incidental Ingestion	1E-04	--	Aroclor-1260, Chromium VI	Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Arsenic	2	Target Organ HIs ≤ 1
		Dermal Contact	1E-05	--	--	Benzo(a)pyrene, Aroclor-1260	0.03	--
		Inhalation	6E-08	--	--	--	0.0010	--
		Total	1E-04	--	Benzo(a)pyrene, Aroclor-1260, Chromium VI	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Arsenic	2	Target Organ HIs ≤ 1
Hypothetical Adult Residents	Surface Soil	Incidental Ingestion	2E-05	--	--	Benzo(a)pyrene, Aroclor-1260, Chromium VI	0.1	--
		Dermal Contact	6E-06	--	--	Aroclor-1260	0.001	--
		Inhalation	8E-08	--	--	--	0.0007	--
		Total	2E-05	--	--	Benzo(a)pyrene, Aroclor-1260, Chromium VI	0.1	--
	All Soil	Incidental Ingestion	2E-05	--	--	Benzo(a)pyrene, Aroclor-1260, Arsenic, Chromium VI	0.2	--
		Dermal Contact	5E-06	--	--	Aroclor-1260	0.005	--
		Inhalation	8E-08	--	--	--	0.0010	--
		Total	2E-05	--	--	Benzo(a)pyrene, Aroclor-1260, Arsenic, Chromium VI	0.2	--

TABLE 5-14

SUMMARY OF CANCER RISKS AND HAZARD INDICES - REASONABLE MAXIMUM EXPOSURES - TANK FARM 2
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Hypothetical Lifelong Residents	Surface Soil	Incidental Ingestion	1E-04	--	Benzo(a)pyrene, Chromium VI	Benzo(a)anthracene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Aroclor-1260	NA	--
		Dermal Contact	2E-05	--	--	Benzo(a)pyrene, Aroclor-1260	NA	--
		Inhalation	1E-07	--	--	--	NA	--
		Total	1E-04	--	Benzo(a)pyrene, Chromium VI	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Aroclor-1260	NA	--
	All Soil	Incidental Ingestion	1E-04	--	Chromium VI	Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Aroclor-1260, Arsenic	NA	--
		Dermal Contact	2E-05	--	--	Benzo(a)pyrene, Aroclor-1260, Arsenic	NA	--
		Inhalation	1E-07	--	--	--	NA	--
		Total	1E-04	--	Benzo(a)pyrene, Chromium VI	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Aroclor-1260, Arsenic	NA	--

TABLE 5-15

SUMMARY OF CANCER RISKS AND HAZARD INDICES - CENTRAL TENDENCY EXPOSURES - TANK FARM 2
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Current/Future Adolescent Trespassers	Surface Soil	Incidental Ingestion	4E-07	--	--	--	0.007	--
		Dermal Contact	9E-08	--	--	--	0.00006	--
		Inhalation	4E-10	--	--	--	0.000008	--
		Total	4E-07	--	--	--	0.007	--
	All Soil	Incidental Ingestion	3E-07	--	--	--	0.009	--
		Dermal Contact	7E-08	--	--	--	0.0002	--
		Inhalation	4E-10	--	--	--	0.00001	--
		Total	4E-07	--	--	--	0.009	--
Current/Future Adult Bow Hunters	Surface Soil	Incidental Ingestion	8E-08	--	--	--	0.002	--
		Dermal Contact	8E-09	--	--	--	0.000006	--
		Inhalation	1E-10	--	--	--	0.000003	--
		Total	8E-08	--	--	--	0.002	--
	All Soil	Incidental Ingestion	7E-08	--	--	--	0.002	--
		Dermal Contact	6E-09	--	--	--	0.00002	--
		Inhalation	1E-10	--	--	--	0.000005	--
		Total	8E-08	--	--	--	0.002	--
Future Construction Workers	Surface Soil	Incidental Ingestion	3E-07	--	--	--	0.03	--
		Dermal Contact	3E-08	--	--	--	0.000006	--
		Inhalation	8E-07	--	--	--	0.2	--
		Total	1E-06	--	--	--	0.3	--
	All Soil	Incidental Ingestion	3E-07	--	--	--	0.05	--
		Dermal Contact	2E-08	--	--	--	0.0004	--
		Inhalation	8E-07	--	--	--	0.3	--
		Total	1E-06	--	--	--	0.4	--
Future Industrial Workers	Surface Soil	Incidental Ingestion	2E-06	--	--	--	0.04	--
		Dermal Contact	2E-07	--	--	--	0.0001	--
		Inhalation	4E-09	--	--	--	0.0002	--
		Total	2E-06	--	--	--	0.04	--
	All Soil	Incidental Ingestion	2E-06	--	--	--	0.05	--
		Dermal Contact	2E-07	--	--	--	0.0005	--
		Inhalation	4E-09	--	--	--	0.0002	--
		Total	2E-06	--	--	--	0.05	--
Future Child Recreational Users	Surface Soil	Incidental Ingestion	7E-07	--	--	--	0.02	--
		Dermal Contact	9E-08	--	--	--	0.0001	--
		Inhalation	3E-10	--	--	--	0.000008	--
		Total	8E-07	--	--	--	0.02	--
	All Soil	Incidental Ingestion	6E-07	--	--	--	0.03	--
		Dermal Contact	7E-08	--	--	--	0.0004	--
		Inhalation	3E-10	--	--	--	0.00001	--
		Total	7E-07	--	--	--	0.03	--
Future Adult Recreational Users	Surface Soil	Incidental Ingestion	9E-08	--	--	--	0.002	--
		Dermal Contact	2E-08	--	--	--	0.00001	--
		Inhalation	3E-10	--	--	--	0.000008	--
		Total	1E-07	--	--	--	0.002	--
	All Soil	Incidental Ingestion	8E-08	--	--	--	0.003	--
		Dermal Contact	2E-08	--	--	--	0.00005	--
		Inhalation	3E-10	--	--	--	0.00001	--
		Total	1E-07	--	--	--	0.003	--

TABLE 5-15

SUMMARY OF CANCER RISKS AND HAZARD INDICES - CENTRAL TENDENCY EXPOSURES - TANK FARM 2
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Future Lifelong Recreational Users	Surface Soil	Incidental Ingestion	8E-07	--	--	--	NA	--
		Dermal Contact	1E-07	--	--	--	NA	--
		Inhalation	5E-10	--	--	--	NA	--
		Total	9E-07	--	--	--	NA	--
	All Soil	Incidental Ingestion	7E-07	--	--	--	NA	--
		Dermal Contact	9E-08	--	--	--	NA	--
		Inhalation	5E-10	--	--	--	NA	--
		Total	8E-07	--	--	--	NA	--
Hypothetical Child Residents	Surface Soil	Incidental Ingestion	1E-05	--	--	Benzo(a)pyrene, Aroclor-1260, Chromium VI	0.4	--
		Dermal Contact	9E-07	--	--	--	0.001	--
		Inhalation	2E-08	--	--	--	0.0005	--
		Total	1E-05	--	--	Benzo(a)pyrene, Aroclor-1260, Chromium VI	0.4	--
	All Soil	Incidental Ingestion	1E-05	--	--	Benzo(a)pyrene, Aroclor-1260, Chromium VI	0.6	--
		Dermal Contact	7E-07	--	--	--	0.004	--
		Inhalation	2E-08	--	--	--	0.0007	--
		Total	1E-05	--	--	Benzo(a)pyrene, Aroclor-1260, Chromium VI	0.6	--
Hypothetical Adult Residents	Surface Soil	Incidental Ingestion	2E-06	--	--	--	0.04	--
		Dermal Contact	2E-07	--	--	--	0.0001	--
		Inhalation	1E-08	--	--	--	0.0005	--
		Total	2E-06	--	--	--	0.04	--
	All Soil	Incidental Ingestion	2E-06	--	--	--	0.05	--
		Dermal Contact	1E-07	--	--	--	0.0005	--
		Inhalation	1E-08	--	--	--	0.0007	--
		Total	2E-06	--	--	--	0.05	--
Hypothetical Lifelong Residents	Surface Soil	Incidental Ingestion	2E-05	--	--	Benzo(a)pyrene, Chromium VI	NA	--
		Dermal Contact	1E-06	--	--	--	NA	--
		Inhalation	3E-08	--	--	--	NA	--
		Total	2E-05	--	--	Benzo(a)pyrene, Chromium VI	NA	--
	All Soil	Incidental Ingestion	1E-05	--	--	Benzo(a)pyrene, Chromium VI	NA	--
		Dermal Contact	8E-07	--	--	--	NA	--
		Inhalation	3E-08	--	--	--	NA	--
		Total	2E-05	--	--	Benzo(a)pyrene, Chromium VI	NA	--

TABLE 5-16

SUMMARY OF CANCER RISKS AND HAZARD INDICES - REASONABLE MAXIMUM EXPOSURES - AOC-001
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Current/Future Adolescent Trespassers	Surface Soil	Incidental Ingestion	7E-06	--	--	Benzo(a)pyrene	0.03	--
		Dermal Contact	1E-05	--	--	Benzo(a)pyrene	0.001	--
		Inhalation	2E-09	--	--	--	0.00002	--
		Total	2E-05	--	--	Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene	0.03	--
	All Soil	Incidental Ingestion	5E-06	--	--	Benzo(a)pyrene	0.04	--
		Dermal Contact	7E-06	--	--	Benzo(a)pyrene	0.004	--
		Inhalation	2E-09	--	--	--	0.00003	--
		Total	1E-05	--	--	Benzo(a)pyrene	0.04	--
Current/Future Adult Bow Hunters	Surface Soil	Incidental Ingestion	2E-06	--	--	--	0.007	--
		Dermal Contact	9E-07	--	--	--	0.00004	--
		Inhalation	1E-09	--	--	--	0.00002	--
		Total	3E-06	--	--	Benzo(a)pyrene	0.008	--
	All Soil	Incidental Ingestion	1E-06	--	--	--	0.010	--
		Dermal Contact	5E-07	--	--	--	0.0003	--
		Inhalation	2E-09	--	--	--	0.00002	--
		Total	2E-06	--	--	--	0.010	--
Future Construction Workers	Surface Soil	Incidental Ingestion	1E-06	--	--	--	0.09	--
		Dermal Contact	4E-07	--	--	--	0.00002	--
		Inhalation	2E-06	--	--	Chromium VI	0.7	--
		Total	3E-06	--	--	Chromium VI	0.8	--
	All Soil	Incidental Ingestion	8E-07	--	--	--	0.1	--
		Dermal Contact	2E-07	--	--	--	0.004	--
		Inhalation	2E-06	--	--	Chromium VI	0.9	--
		Total	3E-06	--	--	Chromium VI	1.1	--
Future Industrial Workers	Surface Soil	Incidental Ingestion	2E-05	--	--	Benzo(a)pyrene, Chromium VI	0.09	--
		Dermal Contact	7E-06	--	--	Benzo(a)pyrene	0.0004	--
		Inhalation	1E-08	--	--	--	0.0002	--
		Total	2E-05	--	--	Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	0.09	--
	All Soil	Incidental Ingestion	1E-05	--	--	Benzo(a)pyrene, Arsenic, Chromium VI	0.1	--
		Dermal Contact	4E-06	--	--	Benzo(a)pyrene	0.003	--
		Inhalation	1E-08	--	--	--	0.0003	--
		Total	2E-05	--	--	Benzo(a)pyrene, Arsenic, Chromium VI	0.1	--

TABLE 5-16

SUMMARY OF CANCER RISKS AND HAZARD INDICES - REASONABLE MAXIMUM EXPOSURES - AOC-001
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Future Child Recreational Users	Surface Soil	Incidental Ingestion	2E-05	--	--	Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	0.10	--
		Dermal Contact	1E-05	--	--	Benzo(a)pyrene	0.001	--
		Inhalation	1E-09	--	--	--	0.00002	--
		Total	3E-05	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	0.10	--
	All Soil	Incidental Ingestion	1E-05	--	--	Benzo(a)pyrene, Chromium VI	0.1	--
		Dermal Contact	7E-06	--	--	Benzo(a)pyrene	0.005	--
		Inhalation	1E-09	--	--	--	0.00003	--
		Total	2E-05	--	--	Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	0.1	--
Future Adult Recreational Users	Surface Soil	Incidental Ingestion	2E-06	--	--	--	0.009	--
		Dermal Contact	2E-06	--	--	--	0.0001	--
		Inhalation	2E-09	--	--	--	0.00002	--
		Total	4E-06	--	--	Benzo(a)pyrene	0.009	--
	All Soil	Incidental Ingestion	2E-06	--	--	--	0.01	--
		Dermal Contact	1E-06	--	--	--	0.0007	--
		Inhalation	2E-09	--	--	--	0.00003	--
		Total	3E-06	--	--	Benzo(a)pyrene	0.01	--
Future Lifelong Recreational Users	Surface Soil	Incidental Ingestion	2E-05	--	--	Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	NA	--
		Dermal Contact	1E-05	--	--	Benzo(a)pyrene	NA	--
		Inhalation	3E-09	--	--	--	NA	--
		Total	4E-05	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Chromium VI	NA	--
	All Soil	Incidental Ingestion	2E-05	--	--	Benzo(a)pyrene, Chromium VI	NA	--
		Dermal Contact	8E-06	--	--	Benzo(a)pyrene	NA	--
		Inhalation	3E-09	--	--	--	NA	--
		Total	2E-05	--	--	Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	NA	--

TABLE 5-16

SUMMARY OF CANCER RISKS AND HAZARD INDICES - REASONABLE MAXIMUM EXPOSURES - AOC-001
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Hypothetical Child Residents	Surface Soil	Incidental Ingestion	3E-04	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	Indeno(1,2,3-cd)pyrene	1	--
		Dermal Contact	8E-05	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene	0.004	--
		Inhalation	6E-08	--	--	--	0.0009	--
		Total	4E-04	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Chromium VI	--	1	--
	All Soil	Incidental Ingestion	2E-04	--	Benzo(a)pyrene, Chromium VI	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Arsenic	2	Target Organ HIs ≤ 1
		Dermal Contact	5E-05	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene	0.03	--
		Inhalation	6E-08	--	--	--	0.001	--
		Total	2E-04	--	Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	Benzo(a)anthracene, Indeno(1,2,3-cd)pyrene, Arsenic	2	Target Organ HIs ≤ 1
Hypothetical Adult Residents	Surface Soil	Incidental Ingestion	3E-05	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	0.1	--
		Dermal Contact	2E-05	--	--	Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene	0.0006	--
		Inhalation	7E-08	--	--	--	0.0009	--
		Total	5E-05	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Chromium VI	0.1	--
	All Soil	Incidental Ingestion	2E-05	--	--	Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Arsenic, Chromium VI	0.2	--
		Dermal Contact	9E-06	--	--	Benzo(a)pyrene	0.005	--
		Inhalation	8E-08	--	--	--	0.001	--
		Total	3E-05	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Arsenic, Chromium VI	0.2	--

TABLE 5-16

SUMMARY OF CANCER RISKS AND HAZARD INDICES - REASONABLE MAXIMUM EXPOSURES - AOC-001
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Hypothetical Lifelong Residents	Surface Soil	Incidental Ingestion	3E-04	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	Indeno(1,2,3-cd)pyrene	NA	--
		Dermal Contact	1E-04	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene	NA	--
		Inhalation	1E-07	--	--	--	NA	--
		Total	4E-04	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Chromium VI	--	NA	--
	All Soil	Incidental Ingestion	2E-04	--	Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	Benzo(a)anthracene, Indeno(1,2,3-cd)pyrene, Arsenic	NA	--
		Dermal Contact	6E-05	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Arsenic	NA	--
		Inhalation	1E-07	--	--	--	NA	--
		Total	3E-04	--	Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	Indeno(1,2,3-cd)pyrene, Arsenic	NA	--

TABLE 5-17

SUMMARY OF CANCER RISKS AND HAZARD INDICES - CENTRAL TENDENCY EXPOSURES - AOC-001
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Current/Future Adolescent Trespassers	Surface Soil	Incidental Ingestion	8E-07	--	--	--	0.007	--
		Dermal Contact	3E-07	--	--	--	0.00003	--
		Inhalation	4E-10	--	--	--	0.000010	--
		Total	1E-06	--	--	--	0.007	--
	All Soil	Incidental Ingestion	6E-07	--	--	--	0.010	--
		Dermal Contact	2E-07	--	--	--	0.0002	--
		Inhalation	4E-10	--	--	--	0.00001	--
		Total	8E-07	--	--	--	0.010	--
Current/Future Adult Bow Hunters	Surface Soil	Incidental Ingestion	1E-07	--	--	--	0.002	--
		Dermal Contact	2E-08	--	--	--	0.000003	--
		Inhalation	1E-10	--	--	--	0.000004	--
		Total	2E-07	--	--	--	0.002	--
	All Soil	Incidental Ingestion	1E-07	--	--	--	0.002	--
		Dermal Contact	1E-08	--	--	--	0.00002	--
		Inhalation	1E-10	--	--	--	0.000005	--
		Total	1E-07	--	--	--	0.003	--
Future Construction Workers	Surface Soil	Incidental Ingestion	4E-07	--	--	--	0.04	--
		Dermal Contact	5E-08	--	--	--	0.000003	--
		Inhalation	8E-07	--	--	--	0.3	--
		Total	1E-06	--	--	--	0.3	--
	All Soil	Incidental Ingestion	3E-07	--	--	--	0.06	--
		Dermal Contact	3E-08	--	--	--	0.0005	--
		Inhalation	8E-07	--	--	--	0.4	--
		Total	1E-06	--	--	--	0.4	--
Future Industrial Workers	Surface Soil	Incidental Ingestion	2E-06	--	--	--	0.04	--
		Dermal Contact	4E-07	--	--	--	0.00006	--
		Inhalation	4E-09	--	--	--	0.0002	--
		Total	3E-06	--	--	Benzo(a)pyrene	0.04	--
	All Soil	Incidental Ingestion	2E-06	--	--	--	0.05	--
		Dermal Contact	2E-07	--	--	--	0.0005	--
		Inhalation	4E-09	--	--	--	0.0002	--
		Total	2E-06	--	--	--	0.06	--
Future Child Recreational Users	Surface Soil	Incidental Ingestion	2E-06	--	--	--	0.02	--
		Dermal Contact	5E-07	--	--	--	0.00006	--
		Inhalation	3E-10	--	--	--	0.000010	--
		Total	2E-06	--	--	--	0.02	--
	All Soil	Incidental Ingestion	1E-06	--	--	--	0.03	--
		Dermal Contact	3E-07	--	--	--	0.0005	--
		Inhalation	3E-10	--	--	--	0.00001	--
		Total	2E-06	--	--	--	0.03	--
Future Adult Recreational Users	Surface Soil	Incidental Ingestion	2E-07	--	--	--	0.002	--
		Dermal Contact	4E-08	--	--	--	0.000006	--
		Inhalation	2E-10	--	--	--	0.000010	--
		Total	2E-07	--	--	--	0.002	--
	All Soil	Incidental Ingestion	1E-07	--	--	--	0.003	--
		Dermal Contact	3E-08	--	--	--	0.00005	--
		Inhalation	3E-10	--	--	--	0.00001	--
		Total	1E-07	--	--	--	0.003	--

TABLE 5-17

SUMMARY OF CANCER RISKS AND HAZARD INDICES - CENTRAL TENDENCY EXPOSURES - AOC-001
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Future Lifelong Recreational Users	Surface Soil	Incidental Ingestion	2E-06	--	--	--	NA	--
		Dermal Contact	5E-07	--	--	--	NA	--
		Inhalation	5E-10	--	--	--	NA	--
		Total	3E-06	--	--	Benzo(a)pyrene	NA	--
	All Soil	Incidental Ingestion	1E-06	--	--	--	NA	--
		Dermal Contact	3E-07	--	--	--	NA	--
		Inhalation	6E-10	--	--	--	NA	--
		Total	2E-06	--	--	--	NA	--
Hypothetical Child Residents	Surface Soil	Incidental Ingestion	4E-05	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Chromium VI	0.5	--
		Dermal Contact	5E-06	--	--	Benzo(a)pyrene	0.0006	--
		Inhalation	2E-08	--	--	--	0.0006	--
		Total	4E-05	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Chromium VI	0.5	--
	All Soil	Incidental Ingestion	3E-05	--	--	Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	0.6	--
		Dermal Contact	3E-06	--	--	Benzo(a)pyrene	0.004	--
		Inhalation	2E-08	--	--	--	0.0008	--
		Total	3E-05	--	--	Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	0.6	--
Hypothetical Adult Residents	Surface Soil	Incidental Ingestion	3E-06	--	--	Benzo(a)pyrene	0.04	--
		Dermal Contact	4E-07	--	--	--	0.00006	--
		Inhalation	1E-08	--	--	--	0.0006	--
		Total	4E-06	--	--	Benzo(a)pyrene	0.04	--
	All Soil	Incidental Ingestion	2E-06	--	--	--	0.06	--
		Dermal Contact	2E-07	--	--	--	0.0005	--
		Inhalation	2E-08	--	--	--	0.0008	--
		Total	3E-06	--	--	--	0.06	--

TABLE 5-17

SUMMARY OF CANCER RISKS AND HAZARD INDICES - CENTRAL TENDENCY EXPOSURES - AOC-001
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Hypothetical Lifelong Residents	Surface Soil	Incidental Ingestion	4E-05	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Chromium VI	NA	--
		Dermal Contact	5E-06	--	--	Benzo(a)pyrene	NA	--
		Inhalation	3E-08	--	--	--	NA	--
		Total	5E-05	--	Benzo(a)pyrene	Benzo(a)anthracene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene, Chromium VI	NA	--
	All Soil	Incidental Ingestion	3E-05	--	--	Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	NA	--
		Dermal Contact	3E-06	--	--	Benzo(a)pyrene	NA	--
		Inhalation	3E-08	--	--	--	NA	--
		Total	3E-05	--	--	Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Dibenzo(a,h)anthracene, Chromium VI	NA	--

TABLE 5-18

SUMMARY OF CANCER RISKS AND HAZARD INDICES - REASONABLE MAXIMUM EXPOSURES - B219
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Current/Future Adolescent Trespassers	Surface Soil	Incidental Ingestion	1E-06	--	--	--	--	--
		Dermal Contact	2E-06	--	--	Aroclor-1260	--	--
		Inhalation	2E-12	--	--	--	--	--
		Total	3E-06	--	--	Aroclor-1260	--	--
	All Soil	Incidental Ingestion	6E-07	--	--	--	--	--
		Dermal Contact	1E-06	--	--	--	--	--
		Inhalation	1E-12	--	--	--	--	--
		Total	2E-06	--	--	Aroclor-1260	--	--
Current/Future Adult Bow Hunters	Surface Soil	Incidental Ingestion	4E-07	--	--	--	--	--
		Dermal Contact	3E-07	--	--	--	--	--
		Inhalation	3E-12	--	--	--	--	--
		Total	7E-07	--	--	--	--	--
	All Soil	Incidental Ingestion	3E-07	--	--	--	--	--
		Dermal Contact	2E-07	--	--	--	--	--
		Inhalation	2E-12	--	--	--	--	--
		Total	4E-07	--	--	--	--	--
Future Construction Workers	Surface Soil	Incidental Ingestion	5E-07	--	--	--	--	--
		Dermal Contact	2E-07	--	--	--	--	--
		Inhalation	8E-09	--	--	--	--	--
		Total	7E-07	--	--	--	--	--
	All Soil	Incidental Ingestion	3E-07	--	--	--	--	--
		Dermal Contact	1E-07	--	--	--	--	--
		Inhalation	5E-09	--	--	--	--	--
		Total	4E-07	--	--	--	--	--
Future Industrial Workers	Surface Soil	Incidental Ingestion	7E-06	--	--	Aroclor-1260	--	--
		Dermal Contact	4E-06	--	--	Aroclor-1260	--	--
		Inhalation	5E-11	--	--	--	--	--
		Total	1E-05	--	--	Aroclor-1260	--	--
	All Soil	Incidental Ingestion	4E-06	--	--	Aroclor-1260	--	--
		Dermal Contact	2E-06	--	--	Aroclor-1260	--	--
		Inhalation	3E-11	--	--	--	--	--
		Total	7E-06	--	--	Aroclor-1260	--	--
Future Child Recreational Users	Surface Soil	Incidental Ingestion	2E-06	--	--	Aroclor-1260	--	--
		Dermal Contact	1E-06	--	--	--	--	--
		Inhalation	1E-12	--	--	--	--	--
		Total	3E-06	--	--	Aroclor-1260	--	--
	All Soil	Incidental Ingestion	1E-06	--	--	--	--	--
		Dermal Contact	8E-07	--	--	--	--	--
		Inhalation	7E-13	--	--	--	--	--
		Total	2E-06	--	--	Aroclor-1260	--	--
Future Adult Recreational Users	Surface Soil	Incidental Ingestion	5E-07	--	--	--	--	--
		Dermal Contact	6E-07	--	--	--	--	--
		Inhalation	4E-12	--	--	--	--	--
		Total	1E-06	--	--	--	--	--
	All Soil	Incidental Ingestion	3E-07	--	--	--	--	--
		Dermal Contact	4E-07	--	--	--	--	--
		Inhalation	2E-12	--	--	--	--	--
		Total	7E-07	--	--	--	--	--

TABLE 5-18

SUMMARY OF CANCER RISKS AND HAZARD INDICES - REASONABLE MAXIMUM EXPOSURES - B219
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Future Lifelong Recreational Users	Surface Soil	Incidental Ingestion	2E-06	--	--	Aroclor-1260	NA	--
		Dermal Contact	2E-06	--	--	Aroclor-1260	NA	--
		Inhalation	5E-12	--	--	--	NA	--
		Total	4E-06	--	--	Aroclor-1260	NA	--
	All Soil	Incidental Ingestion	1E-06	--	--	--	NA	--
		Dermal Contact	1E-06	--	--	--	NA	--
		Inhalation	3E-12	--	--	--	NA	--
		Total	3E-06	--	--	Aroclor-1260	NA	--
Hypothetical Child Residents	Surface Soil	Incidental Ingestion	2E-05	--	Aroclor-1260	--	--	--
		Dermal Contact	9E-06	--	--	Aroclor-1260	--	--
		Inhalation	5E-11	--	--	--	--	--
		Total	3E-05	--	Aroclor-1260	--	--	--
	All Soil	Incidental Ingestion	2E-05	--	Aroclor-1260	--	--	--
		Dermal Contact	6E-06	--	--	Aroclor-1260	--	--
		Inhalation	3E-11	--	--	--	--	--
		Total	2E-05	--	Aroclor-1260	--	--	--
Hypothetical Adult Residents	Surface Soil	Incidental Ingestion	8E-06	--	--	Aroclor-1260	--	--
		Dermal Contact	4E-06	--	--	Aroclor-1260	--	--
		Inhalation	2E-10	--	--	--	--	--
		Total	1E-05	--	--	Aroclor-1260	--	--
	All Soil	Incidental Ingestion	5E-06	--	--	Aroclor-1260	--	--
		Dermal Contact	3E-06	--	--	Aroclor-1260	--	--
		Inhalation	1E-10	--	--	--	--	--
		Total	8E-06	--	--	Aroclor-1260	--	--
Hypothetical Lifelong Residents	Surface Soil	Incidental Ingestion	3E-05	--	Aroclor-1260	--	NA	--
		Dermal Contact	1E-05	--	--	Aroclor-1260	NA	--
		Inhalation	2E-10	--	--	--	NA	--
		Total	5E-05	--	Aroclor-1260	--	NA	--
	All Soil	Incidental Ingestion	2E-05	--	Aroclor-1260	--	NA	--
		Dermal Contact	9E-06	--	--	Aroclor-1260	NA	--
		Inhalation	1E-10	--	--	--	NA	--
		Total	3E-05	--	Aroclor-1260	--	NA	--

TABLE 5-19

SUMMARY OF CANCER RISKS AND HAZARD INDICES - CENTRAL TENDENCY EXPOSURES - B219
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Current/Future Adolescent Trespassers	Surface Soil	Incidental Ingestion	1E-07	--	--	--	--	--
		Dermal Contact	6E-08	--	--	--	--	--
		Inhalation	5E-13	--	--	--	--	--
		Total	2E-07	--	--	--	--	--
	All Soil	Incidental Ingestion	8E-08	--	--	--	--	--
		Dermal Contact	4E-08	--	--	--	--	--
		Inhalation	3E-13	--	--	--	--	--
		Total	1E-07	--	--	--	--	--
Current/Future Adult Bow Hunters	Surface Soil	Incidental Ingestion	4E-08	--	--	--	--	--
		Dermal Contact	6E-09	--	--	--	--	--
		Inhalation	3E-13	--	--	--	--	--
		Total	4E-08	--	--	--	--	--
	All Soil	Incidental Ingestion	2E-08	--	--	--	--	--
		Dermal Contact	4E-09	--	--	--	--	--
		Inhalation	2E-13	--	--	--	--	--
		Total	3E-08	--	--	--	--	--
Future Construction Workers	Surface Soil	Incidental Ingestion	2E-07	--	--	--	--	--
		Dermal Contact	3E-08	--	--	--	--	--
		Inhalation	3E-09	--	--	--	--	--
		Total	2E-07	--	--	--	--	--
	All Soil	Incidental Ingestion	1E-07	--	--	--	--	--
		Dermal Contact	2E-08	--	--	--	--	--
		Inhalation	2E-09	--	--	--	--	--
		Total	1E-07	--	--	--	--	--
Future Industrial Workers	Surface Soil	Incidental Ingestion	1E-06	--	--	--	--	--
		Dermal Contact	2E-07	--	--	--	--	--
		Inhalation	1E-11	--	--	--	--	--
		Total	1E-06	--	--	--	--	--
	All Soil	Incidental Ingestion	7E-07	--	--	--	--	--
		Dermal Contact	1E-07	--	--	--	--	--
		Inhalation	9E-12	--	--	--	--	--
		Total	8E-07	--	--	--	--	--
Future Child Recreational Users	Surface Soil	Incidental Ingestion	1E-07	--	--	--	--	--
		Dermal Contact	4E-08	--	--	--	--	--
		Inhalation	2E-13	--	--	--	--	--
		Total	2E-07	--	--	--	--	--
	All Soil	Incidental Ingestion	9E-08	--	--	--	--	--
		Dermal Contact	3E-08	--	--	--	--	--
		Inhalation	1E-13	--	--	--	--	--
		Total	1E-07	--	--	--	--	--
Future Adult Recreational Users	Surface Soil	Incidental Ingestion	5E-08	--	--	--	--	--
		Dermal Contact	2E-08	--	--	--	--	--
		Inhalation	6E-13	--	--	--	--	--
		Total	6E-08	--	--	--	--	--
	All Soil	Incidental Ingestion	3E-08	--	--	--	--	--
		Dermal Contact	1E-08	--	--	--	--	--
		Inhalation	4E-13	--	--	--	--	--
		Total	4E-08	--	--	--	--	--

TABLE 5-19

SUMMARY OF CANCER RISKS AND HAZARD INDICES - CENTRAL TENDENCY EXPOSURES - B219
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 10^{-4}	Chemicals with Cancer Risks > 10^{-5} and ≤ 10^{-4}	Chemicals with Cancer Risks > 10^{-6} and ≤ 10^{-5}	Hazard Index	Chemicals Contributing to an Target Organ HI > 1
Future Lifelong Recreational Users	Surface Soil	Incidental Ingestion	2E-07	--	--	--	NA	--
		Dermal Contact	6E-08	--	--	--	NA	--
		Inhalation	8E-13	--	--	--	NA	--
		Total	2E-07	--	--	--	NA	--
	All Soil	Incidental Ingestion	1E-07	--	--	--	NA	--
		Dermal Contact	4E-08	--	--	--	NA	--
		Inhalation	5E-13	--	--	--	NA	--
		Total	2E-07	--	--	--	NA	--
Hypothetical Child Residents	Surface Soil	Incidental Ingestion	3E-06	--	--	Aroclor-1260	--	--
		Dermal Contact	4E-07	--	--	--	--	--
		Inhalation	1E-11	--	--	--	--	--
		Total	3E-06	--	--	Aroclor-1260	--	--
	All Soil	Incidental Ingestion	2E-06	--	--	Aroclor-1260	--	--
		Dermal Contact	3E-07	--	--	--	--	--
		Inhalation	7E-12	--	--	--	--	--
		Total	2E-06	--	--	Aroclor-1260	--	--
Hypothetical Adult Residents	Surface Soil	Incidental Ingestion	9E-07	--	--	--	--	--
		Dermal Contact	1E-07	--	--	--	--	--
		Inhalation	4E-11	--	--	--	--	--
		Total	1E-06	--	--	--	--	--
	All Soil	Incidental Ingestion	6E-07	--	--	--	--	--
		Dermal Contact	9E-08	--	--	--	--	--
		Inhalation	2E-11	--	--	--	--	--
		Total	7E-07	--	--	--	--	--
Hypothetical Lifelong Residents	Surface Soil	Incidental Ingestion	4E-06	--	--	Aroclor-1260	NA	--
		Dermal Contact	6E-07	--	--	--	NA	--
		Inhalation	5E-11	--	--	--	NA	--
		Total	4E-06	--	--	Aroclor-1260	NA	--
	All Soil	Incidental Ingestion	2E-06	--	--	Aroclor-1260	NA	--
		Dermal Contact	4E-07	--	--	--	NA	--
		Inhalation	3E-11	--	--	--	NA	--
		Total	3E-06	--	--	Aroclor-1260	NA	--

TABLE 5-20

RISKS ASSOCIATED WITH NATURALLY OCCURRING CHEMICALS
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Reasonable Maximum Exposures		Central Tendency Exposures	
	ILCR	HI	ILCR	HI
CURRENT/FUTURE ADOLESCENT TRESPASSERS				
Surface Soil				
Site Risk	6E-06	0.03	4E-07	0.007
Background Risk	5E-07	0.01	4E-08	0.002
Site + Background Risk	7E-06	0.04	5E-07	0.01
All Soil				
Site Risk	5E-06	0.04	4E-07	0.009
Background Risk	--	--	--	--
Site + Background Risk	5E-06	0.04	4E-07	0.009
CURRENT/FUTURE ADULT BOW HUNTERS				
Surface Soil				
Site Risk	1E-06	0.007	8E-08	0.002
Background Risk	2E-07	0.002	1E-08	0.0005
Site + Background Risk	1E-06	0.01	1E-07	0.002
All Soil				
Site Risk	1E-06	0.009	8E-08	0.002
Background Risk	--	--	--	--
Site + Background Risk	1E-06	0.009	8E-08	0.002
FUTURE CONSTRUCTION WORKERS				
Surface Soil				
Site Risk[(1)]	3E-06	0.7	1E-06	0.3
Background Risk[(2)]	2E-07	0.3	7E-08	0.1
Site + Background Risk[(3)]	3E-06	1	1E-06	0.4
All Soil				
Site Risk	3E-06	1	1E-06	0.4
Background Risk	--	--	--	--
Site + Background Risk	3E-06	1	1E-06	0.4
FUTURE INDUSTRIAL WORKERS				
Surface Soil				
Site Risk	2E-05	0.09	2E-06	0.04
Background Risk	2E-06	0.03	3E-07	0.01
Site + Background Risk	2E-05	0.12	2E-06	0.05
All Soil				
Site Risk	1E-05	0.1	2E-06	0.05
Background Risk	--	--	--	--
Site + Background Risk	1E-05	0.1	2E-06	0.05

TABLE 5-20

RISKS ASSOCIATED WITH NATURALLY OCCURRING CHEMICALS
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Reasonable Maximum Exposures		Central Tendency Exposures	
	ILCR	HI	ILCR	HI
FUTURE CHILD RECREATIONAL USERS				
Surface Soil				
Site Risk	1E-05	0.09	8E-07	0.02
Background Risk	6E-07	0.03	4E-08	0.006
Site + Background Risk	1E-05	0.1	8E-07	0.03
All Soil				
Site Risk	9E-06	0.1	7E-07	0.02
Background Risk	--	--	--	--
Site + Background Risk	9E-06	0.1	7E-07	0.02
FUTURE ADULT RECREATIONAL USERS				
Surface Soil				
Site Risk	2E-06	0.009	1E-07	0.002
Background Risk	2E-07	0.003	1E-08	0.0006
Site + Background Risk	2E-06	0.01	1E-07	0.003
All Soil				
Site Risk	2E-06	0.01	1E-07	0.003
Background Risk	--	--	--	--
Site + Background Risk	2E-06	0.01	1E-07	0.003
FUTURE LIFELONG RECREATIONAL USERS				
Surface Soil				
Site Risk	1E-05	NA	9E-07	NA
Background Risk	8E-07	NA	6E-08	NA
Site + Background Risk	1E-05	NA	1E-06	NA
All Soil				
Site Risk	1E-05	NA	8E-07	NA
Background Risk	--	NA	--	NA
Site + Background Risk	1E-05	NA	8E-07	NA
HYPOTHETICAL CHILD RESIDENTS				
Surface Soil				
Site Risk	1E-04	1	1E-05	0.4
Background Risk	8E-06	0.4	8E-07	0.1
Site + Background Risk	1E-04	2[(4)]	2E-05	0.6
All Soil				
Site Risk	1E-04	2[(4)]	1E-05	0.6
Background Risk	--	--	--	--
Site + Background Risk	1E-04	2[(4)]	1E-05	0.6

TABLE 5-20

RISKS ASSOCIATED WITH NATURALLY OCCURRING CHEMICALS
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Receptor	Reasonable Maximum Exposures		Central Tendency Exposures	
	ILCR	HI	ILCR	HI
HYPOTHETICAL ADULT RESIDENTS				
Surface Soil				
Site Risk	2E-05	0.1	2E-06	0.04
Background Risk	3E-06	0.04	3E-07	0.01
Site + Background Risk	3E-05	0.2	2E-06	0.05
All Soil				
Site Risk	2E-05	0.2	2E-06	0.05
Background Risk	--	--	--	--
Site + Background Risk	2E-05	0.2	2E-06	0.05
HYPOTHETICAL LIFELONG RESIDENTS				
Surface Soil				
Site Risk	1E-04	NA	2E-05	NA
Background Risk	1E-05	NA	1E-06	NA
Site + Background Risk	1E-04	NA	2E-05	NA
All Soil				
Site Risk	1E-04	NA	2E-05	NA
Background Risk	--	NA	--	NA
Site + Background Risk	1E-04	NA	2E-05	NA

Notes:
ILCR = Incremental Lifetime Cancer Risk
HI = Hazard Index
1 - Cancer risk or hazard index from only site-related chemicals detected at concentrations exceeding screening levels.
2 - Cancer risk or hazard index from only chemicals present at naturally occurring levels detected at concentrations exceeding screening levels. Aluminum and arsenic were within background levels in surface soil. Manganese was within background levels in subsurface soil but was evaluated for the all soil dataset.
3 - Cancer risk or hazard index from all chemicals detected at concentrations exceeding screening levels.
4 - Target organ HIs are less than 1.

TABLE 5-21

COMPARISON OF CHEMICAL CONCENTRATIONS TO SCREENING CRITERIA FOR MIGRATION FROM SURFACE SOIL TO GROUNDWATER
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Above Background Concentration?[4]	USEPA RSL Migration from Soil to Groundwater[5]	Exceeds Screening Criteria?
Tank Farm 2	**Polycyclic Aromatic Hydrocarbons**											
	91-57-6	2-Methylnaphthalene	2.2 J	72	ug/kg	TF2-004/5-SS1047-000.8	11/69	9.2 - 440	72	NA	2800	No
	83-32-9	Acenaphthene	1.6 J	1000	ug/kg	TF2-001-SS1005-0001	49/69	9.3 - 11	1000	NA	82000	No
	208-96-8	Acenaphthylene	1.3 J	26	ug/kg	TF2-001-SS1005-0001	34/69	9.3 - 12	26	NA	82000 [6]	No
	120-12-7	Anthracene	1.4 J	2200	ug/kg	TF2-001-SS1005-0001	63/69	10 - 11	2200	NA	840000	No
	56-55-3	**Benzo(a)anthracene**	2.9 J	4500	ug/kg	TF2-001-SS1005-0001	67/69	11 - 33	4500	NA	**200**	**Yes**
	50-32-8	**Benzo(a)pyrene**	4.2 J	3700	ug/kg	TF2-001-SS1005-0001	68/69	10 - 10	3700	NA	**70**	**Yes**
	205-99-2	**Benzo(b)fluoranthene**	5.2 J	5800	ug/kg	TF2-001-SS1005-0001	69/69	-	5800	NA	**700**	**Yes**
	191-24-2	Benzo(g,h,i)perylene	2.7 J	1800	ug/kg	TF2-001-SS1005-0001	67/69	10 - 11	1800	NA	190000 [7]	No
	207-08-9	Benzo(k)fluoranthene	4.3 J	1700	ug/kg	TF2-001-SS1005-0001	67/69	10 - 11	1700	NA	7000	No
	218-01-9	Chrysene	4.4 J	4900	ug/kg	TF2-001-SS1005-0001	69/69	-	4900	NA	22000	No
	53-70-3	**Dibenzo(a,h)anthracene**	1.8 J	590 J	ug/kg	TF2-001-SS1005-0001	65/69	1.9 - 11	590	NA	**220**	**Yes**
	206-44-0	Fluoranthene	8.2 J	12000 J	ug/kg	TF2-001-SS1005-0001	69/69	-	12000	NA	1400000	No
	86-73-7	Fluorene	3.5 J	1300	ug/kg	TF2-001-SS1005-0001	31/69	9.2 - 12	1300	NA	80000	No
	193-39-5	Indeno(1,2,3-cd)pyrene	2.4 J	2800 J	ug/kg	TF2-001-SS1005-0001	66/69	9.7 - 10	2800	NA	4000	No
	91-20-3	**Naphthalene**	2.9 J	1800	ug/kg	TF2-001-SS1005-0001	15/69	9.2 - 12	1800	NA	**9.4**	**Yes**
	85-01-8	Phenanthrene	3.1 J	11000	ug/kg	TF2-001-SS1005-0001	68/69	10 - 10	11000	NA	190000 [7]	No
	129-00-0	Pyrene	6.5 J	11000 J	ug/kg	TF2-001-SS1005-0001	69/69	-	11000	NA	190000	No
	PCBs											
	11096-82-5	**Aroclor-1260**	24	18000	ug/kg	TF2-B219-1	12/12	-	18000	NA	**480**	**Yes**
	Dioxins/Furans											
	3268-87-9	**1,2,3,4,6,7,8,9-OCDD**	1400	18000	ng/kg	TF2-003-SS1011-000.8	69/69	-	18000	NA	**17400 [8]**	**Yes**
	39001-02-0	1,2,3,4,6,7,8,9-OCDF	2 J	420	ng/kg	TF2-004/5-SS1045-000.5	69/69	-	420	NA	17400 [8]	No
	35822-46-9	**1,2,3,4,6,7,8-HPCDD**	29	850	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	850	NA	**520 [8]**	**Yes**
	67562-39-4	1,2,3,4,6,7,8-HPCDF	1.6 J	130	ng/kg	TF2-004/5-SS1045-000.5	67/69	0.92 - 1.6	130	NA	520 [8]	No
	55673-89-7	1,2,3,4,7,8,9-HPCDF	0.14 J	8.9	ng/kg	TF2-004/5-SS1045-000.5	53/69	0.031 - 0.16	8.9	NA	520 [8]	No
	39227-28-6	1,2,3,4,7,8-HXCDD	0.19 J	16	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	16	NA	52 [8]	No
	70648-26-9	1,2,3,4,7,8-HXCDF	0.27 J	11	ng/kg	TF2-004/5-SS1035-0001	68/69	0.36 - 0.36	11	NA	52 [8]	No
	57653-85-7	1,2,3,6,7,8-HXCDD	0.22 J	52	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	52	NA	52 [8]	No
	57117-44-9	1,2,3,6,7,8-HXCDF	0.19 J	6	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	6	NA	52 [8]	No
	19408-74-3	1,2,3,7,8,9-HXCDD	0.31 J	34	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	34	NA	52 [8]	No
	72918-21-9	1,2,3,7,8,9-HXCDF	0.19 J	0.19 J	ng/kg	TF2-004/5-SB1043-0.10.5	1/69	0.026 - 0.18	0.19	NA	52 [8]	No
	40321-76-4	**1,2,3,7,8-PECDD**	0.093 J	5.4	ng/kg	TF2-004/5-SS1047-000.8	60/69	0.047 - 0.11	5.4	NA	**5.2 [8]**	**Yes**
	57117-41-6	1,2,3,7,8-PECDF	0.13 J	2 J	ng/kg	TF2-004/5-SS1060-000.5	55/69	0.04 - 0.25	2	NA	174 [8]	No
	60851-34-5	2,3,4,6,7,8-HXCDF	0.096 J	5.7	ng/kg	TF2-004/5-SS1060-000.5	68/69	0.05 - 0.05	5.7	NA	52 [8]	No
	57117-31-4	2,3,4,7,8-PECDF	0.12 J	2.4 J	ng/kg	TF2-004/5-SS1060-000.5	66/69	0.05 - 0.076	2.4	NA	17.4 [8]	No
	1746-01-6	2,3,7,8-TCDD	0.094 J	0.63 J	ng/kg	TF2-004/5-SS1053-000.6	38/69	0.028 - 0.3	0.63	NA	5.2	No
	51207-31-9	2,3,7,8-TCDF	0.15 J	2	ng/kg	TF2-004/5-SS1060-000.5	53/69	0.051 - 1.5	2	NA	52 [8]	No

TABLE 5-21

COMPARISON OF CHEMICAL CONCENTRATIONS TO SCREENING CRITERIA FOR MIGRATION FROM SURFACE SOIL TO GROUNDWATER
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Above Background Concentration?[4]	USEPA RSL Migration from Soil to Groundwater[5]	Exceeds Screening Criteria?
Tank Farm 2	**Dioxins/Furans (continued)**											
	--	**2,3,7,8-TCDD Equivalents**	1.5	31.2	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	31.2	NA	**5.2**	**Yes**
	37871-00-4	Total HPCDD	51	1500	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	1500	NA	NA	No
	38998-75-3	Total HPCDF	1.6 J	460	ng/kg	TF2-004/5-SS1045-000.5	69/69	-	460	NA	NA	No
	34465-46-8	Total HXCDD	3.2 J	320 J	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	320	NA	NA	No
	55684-94-1	Total HXCDF	2.3 J	150 J	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	150	NA	NA	No
	36088-22-9	Total PECDD	0.6 J	45 J	ng/kg	TF2-003-SS1019-000.5	68/69	0.047 - 0.047	45	NA	NA	No
	30402-15-4	Total PECDF	0.38 J	160 J	ng/kg	TF2-004/5-SS1024-000.6	69/69	-	160	NA	NA	No
	41903-57-5	Total TCDD	0.35 J	64 J	ng/kg	TF2-003-SS1012-000.7	67/69	0.054 - 0.076	64	NA	NA	No
	55722-27-5	Total TCDF	0.64 J	25 J	ng/kg	TF2-003-SS1014-0001	69/69	-	25	NA	NA	No
	Metals											
	7429-90-5	Aluminum	4950	18200	mg/kg	TF2-004/5-SS1043-0.10.5	69/69	-	18200	No	460000	No
	7440-36-0	**Antimony**	0.05 J	6.6 J	mg/kg	TF2-004/5-SS1056-000.6	68/69	0.07 - 0.07	6.6	NA	**5.4**	**Yes**
	7440-38-2	Arsenic	2.2	11.4	mg/kg	TF2-004/5-SS1044-000.5	69/69	-	11.4	No	**0.026**	Yes[11]
	7440-39-3	Barium	11.3 J	169 J	mg/kg	TF2-004/5-SS1039-000.9	69/69	-	169	Yes	2400	No
	7440-41-7	Beryllium	0.23	1.3 J	mg/kg	TF2-004/5-SS1065-000.5-D	69/69	-	1.3	No	260	No
	7440-43-9	Cadmium	0.05 J	0.29	mg/kg	TF2-003-SS1019-000.5	69/69	-	0.29	No	10.4	No
	7440-70-2	Calcium	307 J	2630	mg/kg	TF2-001-SS1005-0001	69/69	-	2630	Yes	NA	No
	7440-47-3	**Chromium**	7.1	44.5	mg/kg	TF2-003-SS1017-000.8	69/69	-	44.5	Yes	**0.0118 C[9]**	**Yes**
	7440-48-4	**Cobalt**	3.3 J	16.6	mg/kg	TF2-001-SS1002-0001	69/69	-	16.6	Yes	**4.2**	**Yes**
	7440-50-8	Copper	7.8	39.9	mg/kg	TF2-004/5-SS1063-000.6	69/69	-	39.9	Yes	440	No
	7439-89-6	**Iron**	9760	37800	mg/kg	TF2-004/5-SS1035-0001	69/69	-	37800	Yes	**5400**	**Yes**
	7439-92-1	Lead	7.6	101 J	mg/kg	TF2-003-SS1016-000.9	77/77	-	101	Yes	280 [10]	No
	7439-95-4	Magnesium	1500 J	6180	mg/kg	TF2-004/5-SS1043-0.10.5	69/69	-	6180	Yes	NA	No
	7439-96-5	**Manganese**	155 J	658 J	mg/kg	TF2-003-SS1016-000.9	69/69	-	658	Yes	**420**	**Yes**
	7439-97-6	Mercury	0.005 J	0.21 J	mg/kg	TF2-001-SS1003-0001	52/69	0.01 - 0.02	0.21	No	0.66	No
	7440-02-0	Nickel	9.2	53	mg/kg	TF2-004/5-SS1039-000.9	69/69	-	53	Yes	400	No
	7440-09-7	Potassium	258	504	mg/kg	TF2-004/5-SS1032-000.9	69/69	-	504	No	NA	No
	7782-49-2	Selenium	0.11 J	0.39 J	mg/kg	TF2-004/5-SS1056-000.6	20/69	0.2 - 0.48	0.39	No	8	No
	7440-22-4	Silver	0.02 J	0.56	mg/kg	TF2-001-SS1006-0001	69/69	-	0.56	NA	12	No
	7440-23-5	Sodium	19.1 J	60.9 J	mg/kg	TF2-001-SS1002-0001	23/69	16.8 - 70.2	60.9	NA	NA	No
	7440-28-0	Thallium	0.03 J	0.1	mg/kg	TF2-003-SS1016-000.9	56/69	0.033 - 0.07	0.1	NA	0.22	No
	7440-62-2	Vanadium	9	35.2	mg/kg	TF2-004/5-SS1035-0001	69/69	-	35.2	Yes	1260	No
	7440-66-6	Zinc	21.7	99.1 J	mg/kg	TF2-003-SS1016-000.9	69/69	-	99.1	Yes	5800	No

TABLE 5-21

COMPARISON OF CHEMICAL CONCENTRATIONS TO SCREENING CRITERIA FOR MIGRATION FROM SURFACE SOIL TO GROUNDWATER
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - To determine whether chemical concentrations were within background levels, a statistical analysis was conducted using the site and background datasets.
5 - USEPA Regional Screening Level, November 2013. Protection of groundwater values are risk-based SSLs. Values are based on a dilution attenuation factor of 20.
6 - Value is for acenaphthene.
7 - Value is for pyrene.
8 - Value is derived by multiplying the criteria for 2,3,7,8-TCDD by World Health Organization Toxicity Equivalency Factor.
9 - Value is for hexavalent chromium.
10 - Value is MCL-based soil screening level.
11 - Although the maximum concentration exceeds the screening level, the maximum concentration is within background levels.

Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria.

Definitions:
C = Carcinogen
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Associated Samples:

TF2-001-SS1000-0001	TF2-003-SS1014-0001	TF2-004/5-SS1027-0001	TF2-004/5-SS1041-000.7	TF2-004/5-SS1054-000.6	TF2-004/5-SS1067-000.7	TF2-B219-1
TF2-001-SS1001-0001	TF2-003-SS1015-000.8	TF2-004/5-SS1028-000.8	TF2-004/5-SS1041-000.7-D	TF2-004/5-SS1055-000.8	TF2-004/5-SS1068-000.5	TF2-B219-2
TF2-001-SS1002-0001	TF2-003-SS1015-000.8-D	TF2-004/5-SS1029-000.6	TF2-004/5-SS1042-000.5	TF2-004/5-SS1056-000.6	TF2-B219-SS1080-0001	TF2-B219-3
TF2-001-SS1003-0001	TF2-003-SS1016-000.9	TF2-004/5-SS1030-000.6	TF2-004/5-SB1043-0.10.5	TF2-004/5-SS1057-0001	TF2-B219-SS1081-0001	TF2-B219-4
TF2-001-SS1003-0001-D	TF2-003-SS1017-000.8	TF2-004/5-SS1031-000.8	TF2-004/5-SS1043-0.10.5	TF2-004/5-SS1058-000.5	TF2-B219-SS1082-0001	TF2-BSA-SS1095-0001
TF2-001-SS1004-0001	TF2-003-SS1018-000.8	TF2-004/5-SS1032-000.9	TF2-004/5-SS1044-000.5	TF2-004/5-SS1059-000.6	TF2-B219-SS1083-0001	TF2-BSA-SS1096-0001
TF2-001-SS1005-0001	TF2-003-SS1019-000.5	TF2-004/5-SS1033-000.8	TF2-004/5-SS1045-000.5	TF2-004/5-SS1060-000.5	TF2-B219-SS1084-0001	TF2-BSA-SS1096-0001-D
TF2-001-SS1006-0001	TF2-004/5-SS1020-0001	TF2-004/5-SS1034-000.6	TF2-004/5-SS1046-000.5	TF2-004/5-SS1061-000.6	TF2-B219-SS1085-0001	TF2-BSA-SS1097-0001
TF2-001-SS1007-0001	TF2-004/5-SS1020-0001-D	TF2-004/5-SS1035-0001	TF2-004/5-SS1047-000.8	TF2-004/5-SS1061-000.6-D	TF2-B219-SS1086-0001	
TF2-001-SS1008-0001	TF2-004/5-SS1021-000.7	TF2-004/5-SS1035-0001-D	TF2-004/5-SS1048-000.8	TF2-004/5-SS1062-000.8	TF2-B219-SS1087-0001	
TF2-001-SS1009-0001	TF2-004/5-SS1022-000.9	TF2-004/5-SS1036-000.6	TF2-004/5-SS1049-000.9	TF2-004/5-SS1063-000.6	TF2-BSA-SS1090-0001	
TF2-001-SS1010-0001	TF2-004/5-SS1023-000.8	TF2-004/5-SS1037-000.7	TF2-004/5-SS1050-000.6	TF2-004/5-SS1064-000.6	TF2-BSA-SS1091-0001	
TF2-003-SS1011-000.8	TF2-004/5-SS1024-000.6	TF2-004/5-SS1038-000.7	TF2-004/5-SS1051-000.8	TF2-004/5-SS1065-000.5	TF2-BSA-SS1092-0001	
TF2-003-SS1012-000.7	TF2-004/5-SS1025-000.8	TF2-004/5-SS1039-000.9	TF2-004/5-SS1052-000.6	TF2-004/5-SS1065-000.5-D	TF2-BSA-SS1093-0001	
TF2-003-SS1013-000.7	TF2-004/5-SS1026-000.8	TF2-004/5-SS1040-000.9	TF2-004/5-SS1053-000.6	TF2-004/5-SS1066-000.9	TF2-BSA-SS1094-0001	

TABLE 5-22

COMPARISON OF CHEMICAL CONCENTRATIONS TO SCREENING CRITERIA FOR MIGRATION FROM SUBSURFACE SOIL TO GROUNDWATER
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	USEPA RSL Migration from Soil to Groundwater[5]	Exceeds Screening Criteria?
Tank Farm 2	**Polycyclic Aromatic Hydrocarbons**											
	91-57-6	2-Methylnaphthalene	3.3 J	280 J	ug/kg	TF2-001-SB1005-0204-D	12/59	9.2 - 12	280	NA	2800	No
	83-32-9	Acenaphthene	1.8 J	890 J	ug/kg	TF2-001-SB1005-0204-D	21/59	1.6 - 12	890	NA	82000	No
	208-96-8	Acenaphthylene	1.8 J	88 J	ug/kg	TF2-001-SB1005-0204-D	15/59	9.2 - 12	88	NA	82000 [6]	No
	120-12-7	Anthracene	1.7 J	1800 J	ug/kg	TF2-001-SB1005-0204-D	28/59	1.3 - 12	1800	NA	840000	No
	56-55-3	**Benzo(a)anthracene**	2 J	4100 J	ug/kg	TF2-001-SB1005-0204-D	50/59	10 - 12	4100	NA	**200**	**Yes**
	50-32-8	**Benzo(a)pyrene**	3.5 J	3100 J	ug/kg	TF2-001-SB1005-0204-D	36/59	9.2 - 12	3100	NA	**70**	**Yes**
	205-99-2	**Benzo(b)fluoranthene**	3.1 J	4800 J	ug/kg	TF2-001-SB1005-0204-D	55/59	9.8 - 11	4800	NA	**700**	**Yes**
	191-24-2	Benzo(g,h,i)perylene	2.2 J	1500 J	ug/kg	TF2-001-SB1005-0204-D	34/59	2.2 - 12	1500	NA	190000 [7]	No
	207-08-9	Benzo(k)fluoranthene	3.5 J	1500 J	ug/kg	TF2-001-SB1005-0204-D	30/59	3.1 - 12	1500	NA	7000	No
	218-01-9	Chrysene	1.9 J	3800 J	ug/kg	TF2-001-SB1005-0204-D	52/59	1.8 - 12	3800	NA	22000	No
	53-70-3	**Dibenzo(a,h)anthracene**	2.1 J	490 J	ug/kg	TF2-001-SB1005-0204-D	33/59	9.6 - 12	490	NA	**220**	**Yes**
	206-44-0	Fluoranthene	2.1 J	10000 J	ug/kg	TF2-001-SB1005-0204-D	42/59	9.6 - 12	10000	NA	1400000	No
	86-73-7	Fluorene	4 J	1700 J	ug/kg	TF2-001-SB1005-0204-D	18/59	9.2 - 12	1700	NA	80000	No
	193-39-5	Indeno(1,2,3-cd)pyrene	2.1 J	2400 J	ug/kg	TF2-001-SB1005-0204-D	49/59	9.6 - 11	2400	NA	4000	No
	91-20-3	**Naphthalene**	3.4 J	1200 J	ug/kg	TF2-001-SB1005-0204-D	11/59	9.2 - 12	1200	NA	**9.4**	**Yes**
	85-01-8	Phenanthrene	2.2 J	11000 J	ug/kg	TF2-001-SB1005-0204-D	39/59	9.6 - 20	11000	NA	190000 [7]	No
	129-00-0	Pyrene	3.2 J	10000 J	ug/kg	TF2-001-SB1005-0204-D	40/59	9.6 - 12	10000	NA	190000	No
	PCBs											
	11096-82-5	Aroclor-1260	25	110	ug/kg	TF2-B219-SB1081-0204	3/10	8.6 - 9.1	110	NA	480	No
	Dioxins/Furans											
	3268-87-9	1,2,3,4,6,7,8,9-OCDD	1300	14000	ng/kg	TF2-001-SB1007-0204	39/39	-	14000	NA	17400 [8]	No
	39001-02-0	1,2,3,4,6,7,8,9-OCDF	1.3 J	21	ng/kg	TF2-004/5-SB1066-0203	13/39	0.32 - 7	21	NA	17400 [8]	No
	35822-46-9	1,2,3,4,6,7,8-HPCDD	6	150	ng/kg	TF2-001-SB1007-0204	39/39	-	150	NA	520 [8]	No
	67562-39-4	1,2,3,4,6,7,8-HPCDF	1.3 J	18	ng/kg	TF2-003-SB1017-011.6	13/39	0.19 - 1.3	18	NA	520 [8]	No
	55673-89-7	1,2,3,4,7,8,9-HPCDF	0.075 J	0.97 J	ng/kg	TF2-003-SB1017-011.6	8/39	0.02 - 0.56	0.97	NA	520 [8]	No
	39227-28-6	1,2,3,4,7,8-HXCDD	0.08 J	5 J	ng/kg	TF2-003-SB1017-011.6	31/39	0.026 - 0.33	5	NA	52 [8]	No
	70648-26-9	1,2,3,4,7,8-HXCDF	0.23 J	3.8 J	ng/kg	TF2-003-SB1019-0204	17/39	0.08 - 0.74	3.8	NA	52 [8]	No
	57653-85-7	1,2,3,6,7,8-HXCDD	0.066 J	12	ng/kg	TF2-003-SB1017-011.6	30/39	0.022 - 0.23	12	NA	52 [8]	No
	57117-44-9	1,2,3,6,7,8-HXCDF	0.1 J	3.3 J	ng/kg	TF2-003-SB1017-011.6	35/39	0.023 - 0.4	3.3	NA	52 [8]	No
	19408-74-3	1,2,3,7,8,9-HXCDD	0.11 J	11	ng/kg	TF2-003-SB1017-011.6	35/39	0.045 - 0.24	11	NA	52 [8]	No
	72918-21-9	1,2,3,7,8,9-HXCDF	0.049 J	0.3 J	ng/kg	TF2-003-SB1016-0204	9/39	0.014 - 0.12	0.3	NA	52 [8]	No
	40321-76-4	1,2,3,7,8-PECDD	0.11 J	5.2 J	ng/kg	TF2-003-SB1017-011.6	12/39	0.034 - 0.24	5.2	NA	5.2 [8]	No
	57117-41-6	1,2,3,7,8-PECDF	0.051 J	2.4 J	ng/kg	TF2-003-SB1017-011.6	18/39	0.02 - 0.16	2.4	NA	174 [8]	No
	60851-34-5	2,3,4,6,7,8-HXCDF	0.067 J	2.6 J	ng/kg	TF2-003-SB1017-011.6	25/39	0.013 - 0.15	2.6	NA	52 [8]	No
	57117-31-4	2,3,4,7,8-PECDF	0.062 J	3.3 J	ng/kg	TF2-003-SB1017-011.6	23/39	0.02 - 0.17	3.3	NA	17.4 [8]	No
	1746-01-6	2,3,7,8-TCDD	0.037 J	0.47 J	ng/kg	TF2-003-SB1019-0204	2/39	0.017 - 0.16	0.47	NA	5.2	No
	51207-31-9	2,3,7,8-TCDF	0.23 J	2	ng/kg	TF2-003-SB1017-011.6	6/39	0.013 - 0.61	2	NA	52 [8]	No
	--	**2,3,7,8-TCDD Equivalents**	0.55	11.7	ng/kg	TF2-003-SB1017-011.6	39/39	-	11.7	NA	**5.2**	**Yes**

TABLE 5-22

COMPARISON OF CHEMICAL CONCENTRATIONS TO SCREENING CRITERIA FOR MIGRATION FROM SUBSURFACE SOIL TO GROUNDWATER
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Range of Background Concentrations[4]	USEPA RSL Migration from Soil to Groundwater[5]	Exceeds Screening Criteria?
Tank Farm 2	**Dioxins/Furans (continued)**											
	37871-00-4	Total HPCDD	10	270	ng/kg	TF2-001-SB1007-0204	39/39	-	270	NA	NA	No
	38998-75-3	Total HPCDF	1.2 J	26	ng/kg	TF2-004/5-SB1066-0203	21/39	0.26 - 1.7	26	NA	NA	No
	34465-46-8	Total HXCDD	0.27 J	140	ng/kg	TF2-003-SB1017-011.6	39/39	-	140	NA	NA	No
	55684-94-1	Total HXCDF	0.48 J	29 J	ng/kg	TF2-003-SB1017-011.6	30/39	0.33 - 2.2	29	NA	NA	No
	36088-22-9	Total PECDD	0.043 J	180 J	ng/kg	TF2-003-SB1017-011.6	35/39	0.039 - 0.072	180	NA	NA	No
	30402-15-4	Total PECDF	0.1 J	25	ng/kg	TF2-003-SB1017-011.6	36/39	0.02 - 0.046	25	NA	NA	No
	41903-57-5	Total TCDD	0.09 J	160	ng/kg	TF2-003-SB1017-011.6	37/39	0.048 - 0.086	160	NA	NA	No
	55722-27-5	Total TCDF	0.11 J	37	ng/kg	TF2-003-SB1017-011.6	39/39	-	37	NA	NA	No
	Metals											
	7429-90-5	Aluminum	9450	21000	mg/kg	TF2-001-SB1009-0810	59/59	-	21000	Yes	460000	No
	7440-36-0	Antimony	0.03 J	0.31 J	mg/kg	TF2-003-SB1014-0204	38/59	0.03 - 0.12	0.31	NA	5.4	No
	7440-38-2	**Arsenic**	2.8	14.3	mg/kg	TF2-001-SB1008-0204	59/59	-	14.3	Yes	**0.026**	**Yes**
	7440-39-3	Barium	7.2	28	mg/kg	TF2-003-SB1011-0204-D	59/59	-	28	No	2400	No
	7440-41-7	Beryllium	0.25	1.3 J	mg/kg	TF2-004/5-SB1057-0608	59/59	-	1.3	Yes	260	No
	7440-43-9	Cadmium	0.04 J	0.28	mg/kg	TF2-001-SB1002-0405	59/59	-	0.28	NA	10.4	No
	7440-70-2	Calcium	101 J	1660	mg/kg	TF2-001-SB1009-0810	59/59	-	1660	Yes	NA	No
	7440-47-3	**Chromium**	11.7 J	28.8 J	mg/kg	TF2-004/5-SB1021-0608	59/59	-	28.8	Yes	**0.0118 C[9]**	**Yes**
	7440-48-4	**Cobalt**	5.2	30.3	mg/kg	TF2-001-SB1000-0204	59/59	-	30.3	Yes	**4.2**	**Yes**
	7440-50-8	Copper	8.8	63.9 J	mg/kg	TF2-004/5-SB1021-0608	59/59	-	63.9	Yes	440	No
	7439-89-6	**Iron**	15200	45200	mg/kg	TF2-004/5-SB1021-0608	59/59	-	45200	Yes	**5400**	**Yes**
	7439-92-1	Lead	6.3	55.9 J	mg/kg	TF2-BSA-SB1097-0204	66/66	-	55.9	Yes	280 [10]	No
	7439-95-4	Magnesium	2380	7150	mg/kg	TF2-004/5-SB1058-0204	59/59	-	7150	Yes	NA	No
	7439-96-5	Manganese	163	467	mg/kg	TF2-004/5-SB1065-0608	59/59	-	467	No	**420**	Yes[11]
	7439-97-6	Mercury	0.004 J	0.17	mg/kg	TF2-004/5-SB1032-0204	36/59	0.014 - 0.04	0.17	NA	0.66	No
	7440-02-0	Nickel	11.4	51.8 J	mg/kg	TF2-004/5-SB1021-0608	59/59	-	51.8	Yes	400	No
	7440-09-7	Potassium	184	664	mg/kg	TF2-001-SB1005-0204-D	59/59	-	664	No	NA	No
	7782-49-2	Selenium	0.05 J	0.86	mg/kg	TF2-004/5-SB1057-0304	34/59	0.18 - 0.54	0.86	NA	8	No
	7440-22-4	Silver	0.01 J	0.06 J	mg/kg	TF2-001-SB1007-0204	54/59	0.024 - 0.034	0.06	NA	12	No
	7440-23-5	Sodium	19.2 J	84.4	mg/kg	TF2-003-SB1013-0405	25/59	28.3 - 51.7	84.4	NA	NA	No
	7440-28-0	**Thallium**	0.02 J	0.25	mg/kg	TF2-004/5-SB1057-0304	44/59	0.028 - 0.06	0.25	NA	**0.22**	**Yes**
	7440-62-2	Vanadium	12.8	29.2	mg/kg	TF2-001-SB1009-0810	59/59	-	29.2	Yes	1260	No
	7440-66-6	Zinc	25.1	129 J	mg/kg	TF2-004/5-SB1021-0608	59/59	-	129	Yes	290	No

TABLE 5-22

COMPARISON OF CHEMICAL CONCENTRATIONS TO SCREENING CRITERIA FOR MIGRATION FROM SUBSURFACE SOIL TO GROUNDWATER
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - To determine whether chemical concentrations were within background levels, a statistical analysis was conducted using the site and background datasets.
5 - USEPA Regional Screening Level, November 2013. Protection of groundwater values are risk-based SSLs. Values are based on a dilution attenuation factor of 20.
6 - Value is for acenaphthene.
7 - Value is for pyrene.
8 - Value is derived by multiplying the criteria for 2,3,7,8-TCDD by World Health Organization Toxicity Equivalency Factor.
9 - Value is for hexavalent chromium.
10 - Value is MCL-based soil screening level.
11 - Although the maximum concentration exceeds the screening level, the maximum concentration is within background levels.

Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria.

Definitions:
C = Carcinogen
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Associated Samples:

TF2-001-SB1000-0204	TF2-001-SB1010-0204	TF2-003-SB1018-0204	TF2-004/5-SB1040-0810	TF2-004/5-SB1066-0203	TF2-BSA-SS1091-0204
TF2-001-SB1000-0810	TF2-003-SB1011-0204	TF2-003-SB1019-0204	TF2-004/5-SB1040-0810-D	TF2-004/5-SB1068-0204	TF2-BSA-SB1092-0204
TF2-001-SB1001-0204	TF2-003-SB1011-0204-D	TF2-003-SB1019-0810	TF2-004/5-SB1041-022.5	TF2-004/5-SB1068-0204-D	TF2-BSA-SB1093-0204
TF2-001-SB1001-0810	TF2-003-SB1012-0204	TF2-004/5-SB1021-0204	TF2-004/5-SB1047-0204	TF2-B219-SB1080-0204	TF2-BSA-SB1094-0204
TF2-001-SB1002-0204	TF2-003-SB1012-0810	TF2-004/5-SB1021-0204-D	TF2-004/5-SB1047-0608	TF2-B219-SB1081-0204	TF2-BSA-SB1095-0204
TF2-001-SB1002-0405	TF2-003-SB1013-0204	TF2-004/5-SB1021-0608	TF2-004/5-SB1048-0204	TF2-B219-SB1082-0204-D	TF2-BSA-SB1096-0204
TF2-001-SB1003-0204	TF2-003-SB1013-0405	TF2-004/5-SB1025-2.604	TF2-004/5-SB1049-0204	TF2-B219-SB1082-0204	TF2-BSA-SB1097-0204
TF2-001-SB1004-0204	TF2-003-SB1014-0204	TF2-004/5-SB1026-0204	TF2-004/5-SB1049-0810	TF2-B219-SB1083-0204	
TF2-001-SB1004-0204-D	TF2-003-SB1014-0810	TF2-004/5-SB1026-022.7	TF2-004/5-SB1057-0304	TF2-B219-SB1084-0204	
TF2-001-SB1005-0204	TF2-003-SB1015-0204	TF2-004/5-SB1031-0204	TF2-004/5-SB1057-0608	TF2-B219-SB1085-0204	
TF2-001-SB1005-0204-D	TF2-003-SB1015-0810	TF2-004/5-SB1031-0810	TF2-004/5-SB1057-0608-D	TF2-B219-SB1086-0204	
TF2-001-SB1006-0204	TF2-003-SB1016-0204	TF2-004/5-SB1032-0204	TF2-004/5-SB1058-0204	TF2-B219-SB1087-0204	
TF2-001-SB1007-0204	TF2-003-SB1016-0810	TF2-004/5-SB1038-0204	TF2-004/5-SB1064-0204	TF2-B219-SB1088-0204	
TF2-001-SB1008-0204	TF2-003-SB1017-011.6	TF2-004/5-SB1038-0810	TF2-004/5-SB1064-0406	TF2-B219-SB1089-0204	
TF2-001-SB1009-0204	TF2-003-SB1017-0204	TF2-004/5-SB1039-0406	TF2-004/5-SB1065-0204	TF2-B219-SB1089-0204-D	
TF2-001-SB1009-0810	TF2-003-SB1017-0810	TF2-004/5-SB1040-0204	TF2-004/5-SB1065-0608	TF2-BSA-SB1091-0204	

TABLE 5-23

CHEMICALS RETAINED AS CHEMICALS OF CONCERN
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Receptor									
	Adolescent Trespassers	Adult Bow Hunter	Construction Workers	Industrial Workers	Child Recreational User	Adult Recreational User	Lifelong Recreational User	Child Residents	Adult Residents	Lifelong Residents
Surface Soil - Tank Farm 2										
No COCs identified for Tank Farm 2 surface soil.										
All Soil - Tank Farm 2										
No COCs identified for Tank Farm 2 all soil.										
Surface Soil - AOC-001										
Benzo(a)anthracene								X		X
Benzo(a)pyrene								X		X
Benzo(b)fluoranthene								X		X
Dibenzo(a,h)anthracene								X		X
Indeno(1,2,3-cd)pyrene								X		X
Chromium VI								X		X
All Soil - AOC-001										
Benzo(a)anthracene								X		X
Benzo(a)pyrene								X		X
Benzo(b)fluoranthene								X		X
Dibenzo(a,h)anthracene								X		X
Indeno(1,2,3-cd)pyrene								X		X
Arsenic								X		X
Chromium VI								X		X
Surface Soil - Building 219										
No COCs identified for Building 219 surface soil.										
All Soil - Building 219										
No COCs identified for Building 219 all soil.										

X - Chemical is retained as a chemical of concern (COC).

A chemical was retained as a COC if the total ILCR for a medium exceeded $1x10^{-4}$ and the chemical specific ILCR exceeded $1x10^{-6}$ or if the total HI on a target organ basis exceeded 1 and the chemical specific HI exceeded 0.1.

TABLE 5-24

COMPARISON OF NOVEMBER 2013 AND JANUARY 2015 USEPA RESIDENTIAL SCREENING LEVELS FOR SOIL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

CAS No.	Chemical	USEPA Regional Screening Levels[1]			
		Adjusted Direct Contact Residential		Protection of Groundwater	
		November 2013	January 2015	November 2013	January 2015
Polycyclic Aromatic Hydrocarbons (mg/kg)					
91-57-6	2-Methylnaphthalene	23 N	23 N	**2.8**	3.8
83-32-9	Acenaphthene	**340 N**	350 N	**82**	110
208-96-8	Acenaphthylene	**340 N[2]**	350 N[2]	**82 [2]**	110 [2]
120-12-7	Anthracene	1,700 N	1,700 N	**840**	1,160
56-55-3	Benzo(a)anthracene	0.15 C	0.15 C	**0.2**	0.24
50-32-8	Benzo(a)pyrene	0.015 C	0.015 C	**0.07**	0.08
205-99-2	Benzo(b)fluoranthene	0.15 C	0.15 C	**0.7**	0.82
191-24-2	Benzo(g,h,i)perylene	170 N[3]	170 N[3]	**190 [3]**	260 [3]
207-08-9	Benzo(k)fluoranthene	1.5 C	1.5 C	**7**	8
218-01-9	Chrysene	15 C	15 C	**22**	24
53-70-3	Dibenzo(a,h)anthracene	0.015 C	0.015 C	**0.22**	0.26
206-44-0	Fluoranthene	230 N	230 N	**1,400**	1,780
86-73-7	Fluorene	230 N	230 N	**80**	108
193-39-5	Indeno(1,2,3-cd)pyrene	0.15 C	0.15 C	**4**	4.8
91-20-3	Naphthalene	**3.6 C**	3.8 C	**0.0094**	0.0108
85-01-8	Phenanthrene	170 N[3]	170 N[3]	**190 [3]**	260 [3]
129-00-0	Pyrene	170 N	170 N	**190**	260
PCBs (mg/kg)					
11096-82-5	Aroclor-1260	**0.22 C**	0.24 C	**0.48**	0.54
Dioxins/Furans (ng/kg)					
3268-87-9	1,2,3,4,6,7,8,9-OCDD	**15,000 C[4]**	16,000 C[4]	**17,400 [4]**	20,000 [4]
39001-02-0	1,2,3,4,6,7,8,9-OCDF	**15,000 C[4]**	16,000 C[4]	**17,400 [4]**	20,000 [4]
35822-46-9	1,2,3,4,6,7,8-HPCDD	**450 C[4]**	490 C[4]	**520 [4]**	600 [4]
67562-39-4	1,2,3,4,6,7,8-HPCDF	**450 C[4]**	490 C[4]	**520 [4]**	600 [4]
55673-89-7	1,2,3,4,7,8,9-HPCDF	**450 C[4]**	490 C[4]	**520 [4]**	600 [4]
39227-28-6	1,2,3,4,7,8-HXCDD	**45 C[4]**	49 C[4]	**52 [4]**	60 [4]
70648-26-9	1,2,3,4,7,8-HXCDF	**45 C[4]**	49 C[4]	**52 [4]**	60 [4]
57653-85-7	1,2,3,6,7,8-HXCDD	**45 C[4]**	49 C[4]	**52 [4]**	60 [4]
57117-44-9	1,2,3,6,7,8-HXCDF	**45 C[4]**	49 C[4]	**52 [4]**	60 [4]
19408-74-3	1,2,3,7,8,9-HXCDD	**45 C[4]**	49 C[4]	**52 [4]**	60 [4]
72918-21-9	1,2,3,7,8,9-HXCDF	**45 C[4]**	49 C[4]	**52 [4]**	60 [4]
40321-76-4	1,2,3,7,8-PECDD	**4.5 C[4]**	4.9 C[4]	**5.2 [4]**	6 [4]
57117-41-6	1,2,3,7,8-PECDF	**150 C[4]**	160 C[4]	**174 [4]**	200 [4]
60851-34-5	2,3,4,6,7,8-HXCDF	**45 C[4]**	49 C[4]	**52 [4]**	60 [4]
57117-31-4	2,3,4,7,8-PECDF	**15 C[4]**	16 C[4]	**174 [4]**	200 [4]
1746-01-6	2,3,7,8-TCDD	**4.5 C**	4.9 C	**5.2**	6
51207-31-9	2,3,7,8-TCDF	**45 C[4]**	49 C[4]	**52 [4]**	60 [4]
--	2,3,7,8-TCDD Equivalents	**4.5 C**	4.9 C	**5.2**	6
--	TOTAL HPCDD	NA	NA	NA	NA
--	TOTAL HPCDF	NA	NA	NA	NA
--	TOTAL HXCDD	NA	NA	NA	NA
--	TOTAL HXCDF	NA	NA	NA	NA
--	TOTAL PECDD	NA	NA	NA	NA
--	TOTAL PECDF	NA	NA	NA	NA
--	TOTAL TCDD	NA	NA	NA	NA
--	TOTAL TCDF	NA	NA	NA	NA

TABLE 5-24

COMPARISON OF NOVEMBER 2013 AND JANUARY 2015 USEPA RESIDENTIAL SCREENING LEVELS FOR SOIL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

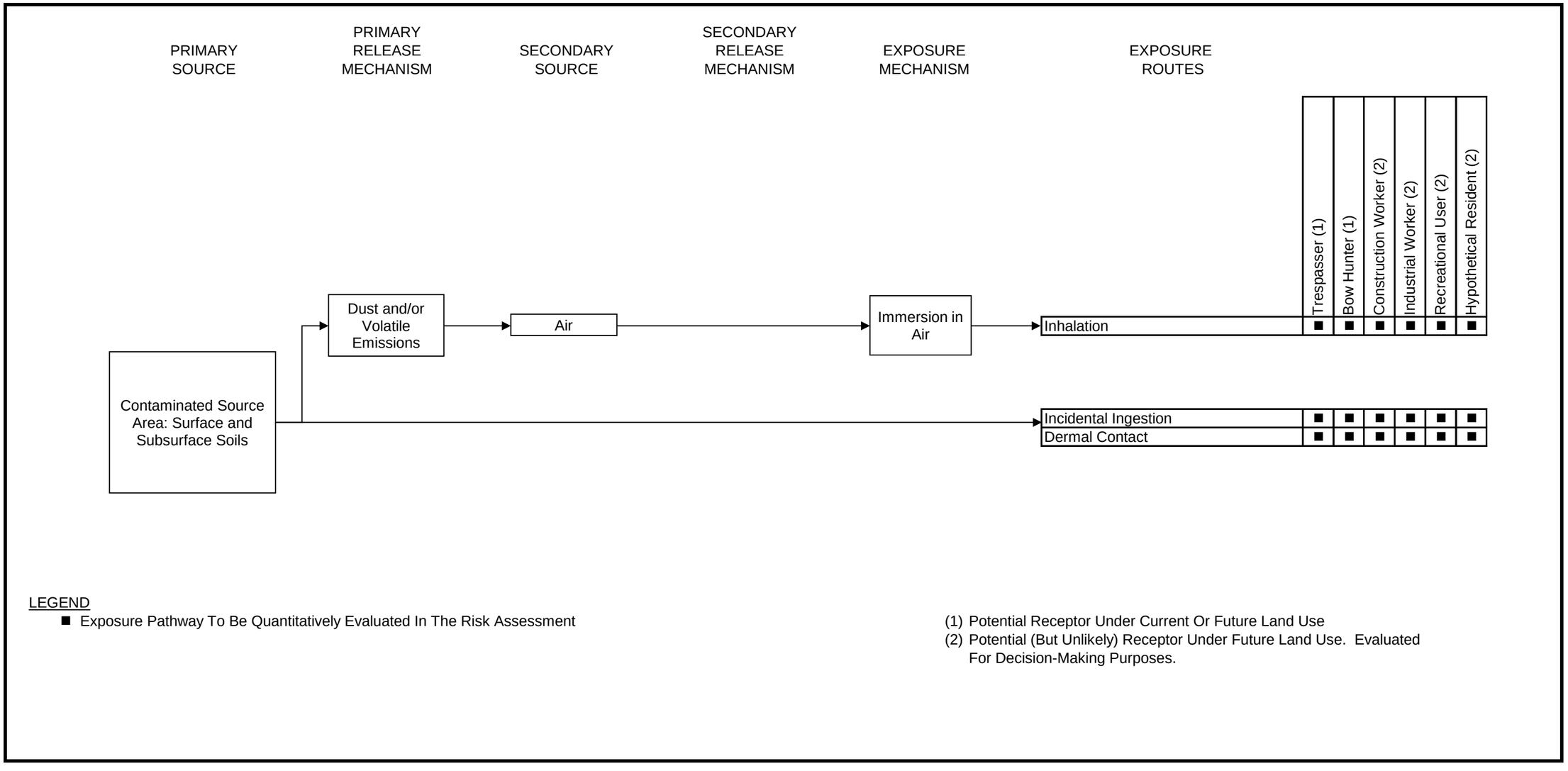
CAS No.	Chemical	USEPA Regional Screening Levels[1]			
		Adjusted Direct Contact Residential		Protection of Groundwater	
Inorganics (mg/kg)					
7429-90-5	Aluminum	7,700 N	7,700 N	**460,000**	600,000
7440-36-0	Antimony	3.1 N	3.1 N	**5.4**	7
7440-38-2	Arsenic	**0.61 C**	0.67 C	**0.026**	0.03
7440-39-3	Barium	1,500 N	1,500 N	**2,400**	3,200
7440-41-7	Beryllium	16 N	16 N	**260**	380
7440-43-9	Cadmium	7 N	7 N	**10.4**	13.8
7440-70-2	Calcium	NA	NA	NA	NA
7440-47-3	Chromium	**0.29 C**[5]	0.3 C[5]	**0.0118** [5]	0.0134 [5]
7440-48-4	Cobalt	2.3 N	2.3 N	**4.2**	5.4
7440-50-8	Copper	310 N	310 N	**440**	560
7439-89-6	Iron	5,500 N	5,500 N	**5,400**	7,000
7439-92-1	Lead	400	400	280 [6]	280 [6]
7439-95-4	Magnesium	NA	NA	NA	NA
7439-96-5	Manganese	180 N	180 N	**420**	560
7439-97-6	Mercury	2.3 N[7]	2.3 N[7]	0.66	0.66
7440-02-0	Nickel	150 N	150 N	**400**	520
7440-09-7	Potassium	NA	NA	NA	NA
7782-49-2	Selenium	39 N	39 N	**8**	10.4
7440-22-4	Silver	39 N	39 N	**12**	16
7440-23-5	Sodium	NA	NA	NA	NA
7440-28-0	Thallium	0.078 N	0.078 N	**0.22**	0.28
7440-62-2	Vanadium	39 N	39 N	**1,260**	1,720
7440-66-6	Zinc	2,300 N	2,300 N	**5,800**	7,400

1 - USEPA Regional Screening Level. Carcinogenic values represent an incremental cancer risk of $1x10^{-6}$.
The noncarcinogenic values are the RSL divided by 10 to correspond to a Target Hazard Quotient of 0.1.
Protection of groundwater values are risk-based SSLs multiplied by 20 to represent a dilution attenuation factor (DAF) of 20.
2 - Value is for acenaphthene.
3 - Value is for pyrene.
4 - Value is derived by multiplying the criteria for 2,3,7,8-TCDD by World Health Organization Toxicity Equivalency Factor.
5 - Value is for hexavalent chromium.
6 - Value is MCL based soil screening level.
7 - Value is for mercuric chloride (and other mercury salts).

Bolded values indicate the November 2013 RSLs are less than the January 2015 RSLs.
Shading indicates the January 2015 RSLs are less than the November 2013 RSLs.

FIGURE 5-1

HUMAN HEALTH CONCEPTUAL SITE MODEL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND



LEGEND

■ Exposure Pathway To Be Quantitatively Evaluated In The Risk Assessment

(1) Potential Receptor Under Current Or Future Land Use
(2) Potential (But Unlikely) Receptor Under Future Land Use. Evaluated For Decision-Making Purposes.

FIGURE 5-2
SUMMARY OF HAZARD INDICES - RME SCENARIO
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

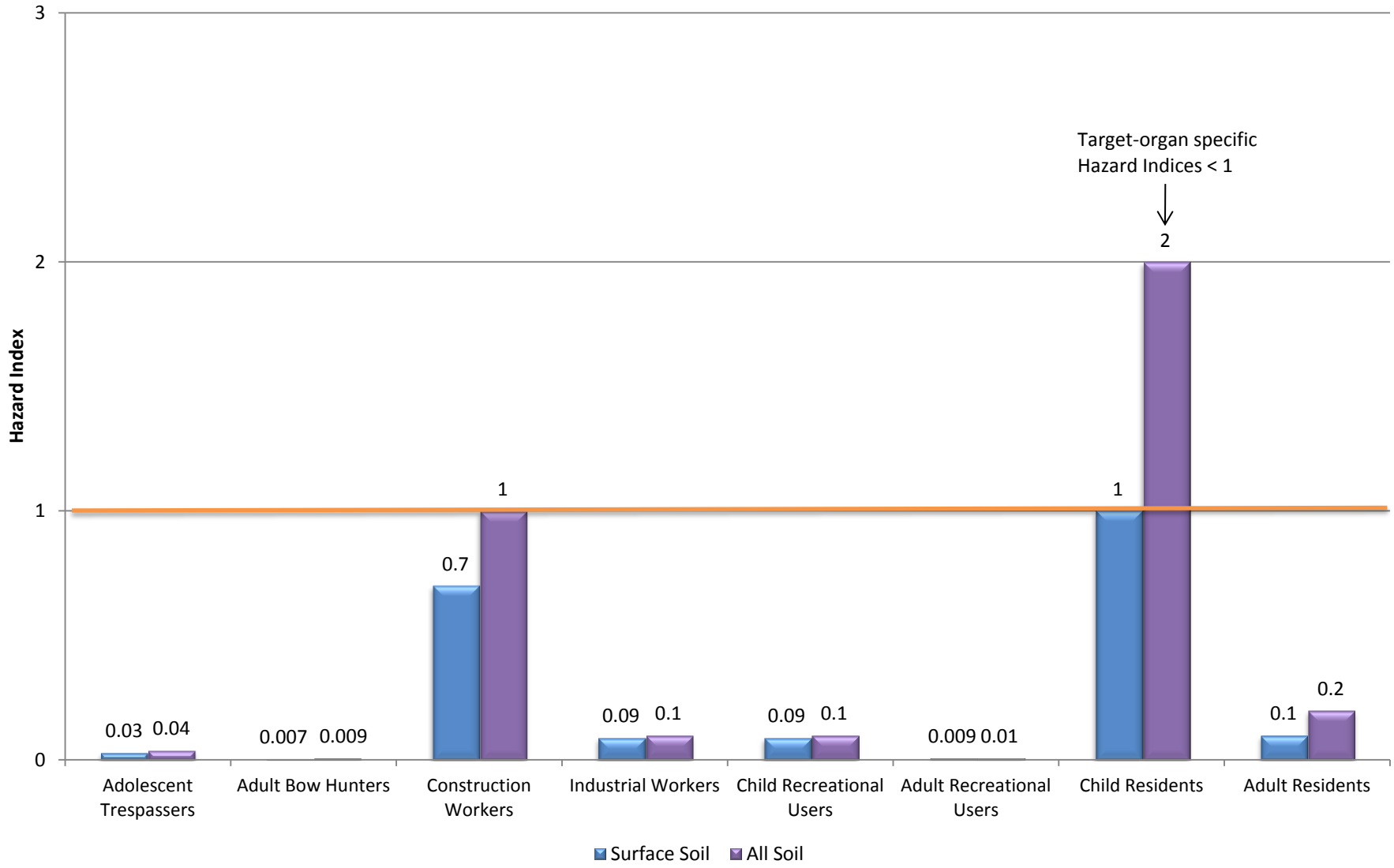


FIGURE 5-3
SUMMARY OF HAZARD INDICES - CTE SCENARIO
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

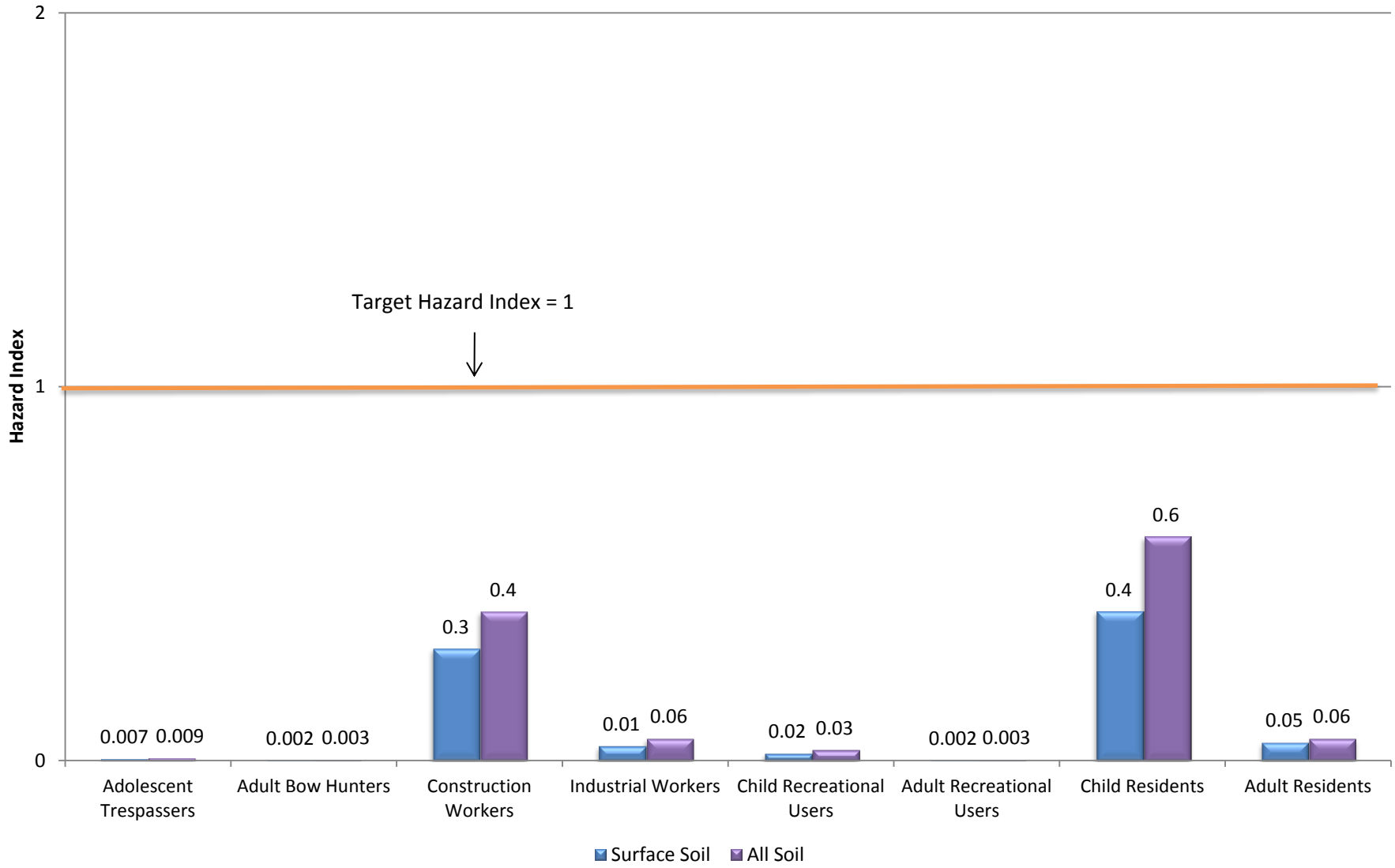


FIGURE 5-4
SUMMARY OF CANCER RISKS - RME SCENARIO
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

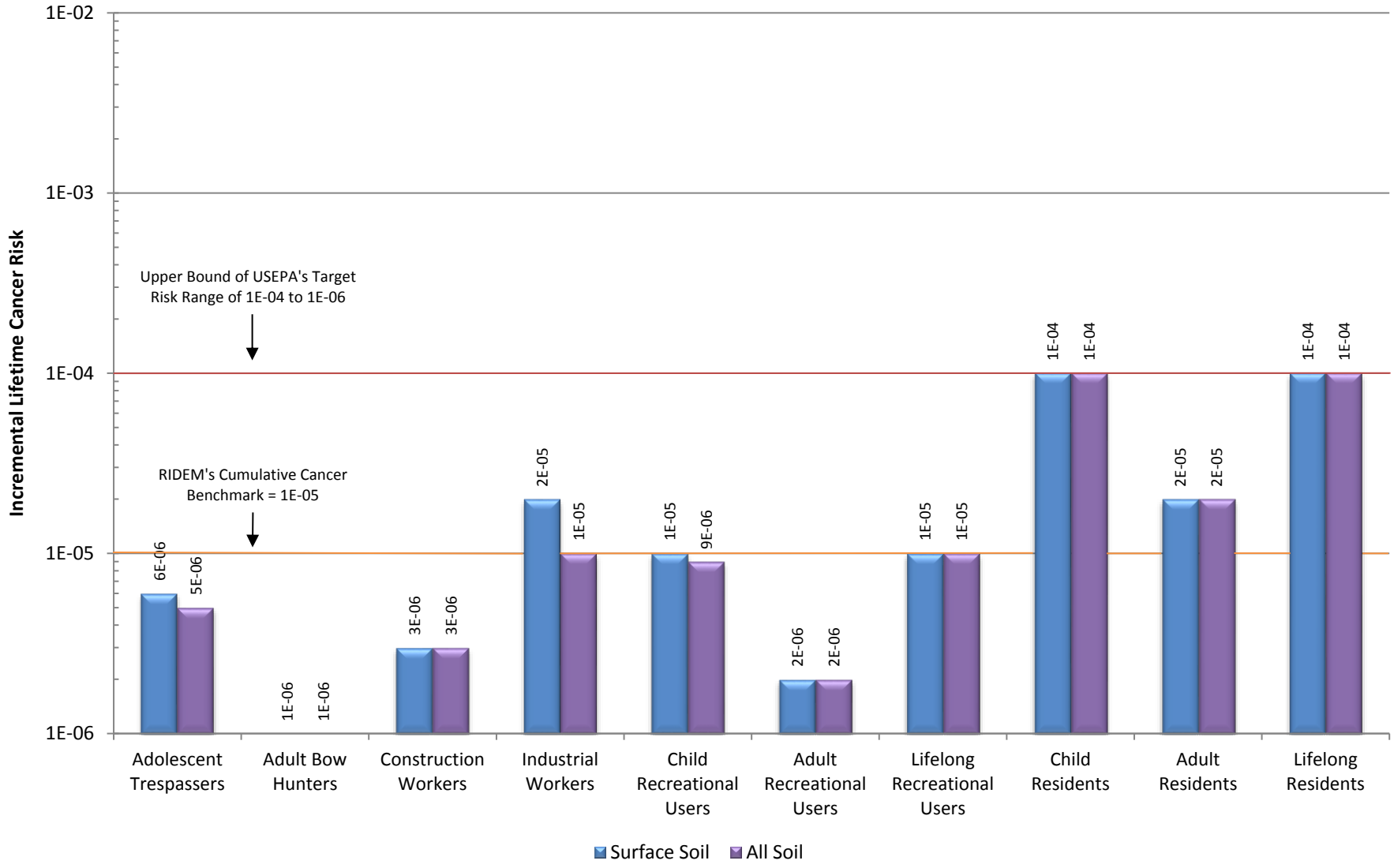
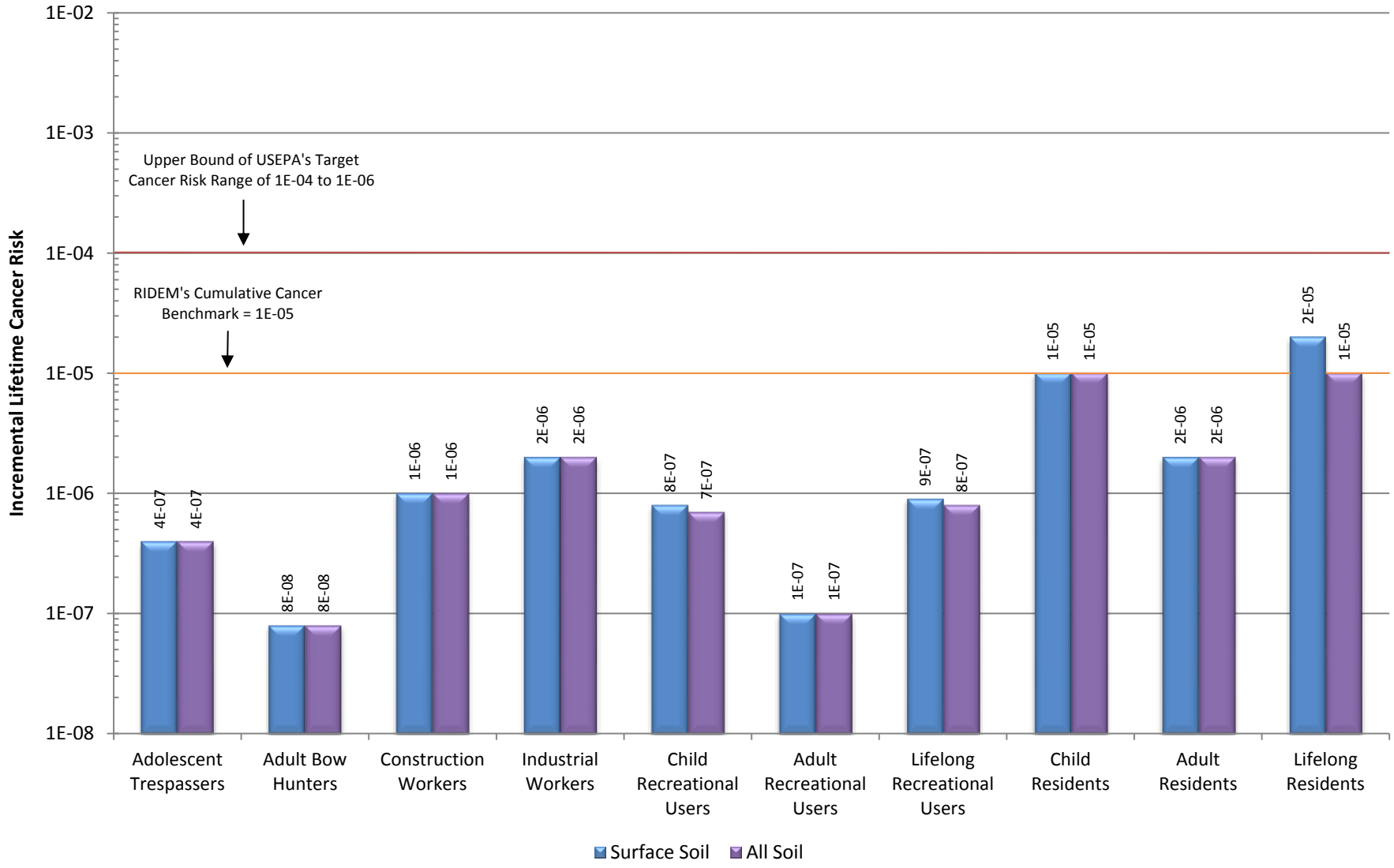


FIGURE 5-5
SUMMARY OF CANCER RISKS - CTE SCENARIO
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND



6.0 ECOLOGICAL RISK ASSESSMENT

6.1 INTRODUCTION

This ERA was conducted to evaluate the potential for adverse ecological impacts of site-related contamination and to determine the need for further investigation and/or remedial action at Tank Farm 2. The evaluation is based on data collected during the 2013 field event and soil data collected near Building 219 from a previous investigation conducted in 2005 (the 2005 soil samples were analyzed for a limited parameter list and only PCBs were detected). The ERA contains information to enable scientists and managers to conclude either that ecological risks at the site are most likely negligible or that further information is necessary to evaluate potential ecological risks at the site.

The ERA was conducted in accordance with several guidance documents (Navy, 1997, 1999; U.S. EPA, 1997, 1998).

The ERA consists of Steps 1, 2, and 3a of the eight step ERA process. The first two screening steps comprise the screening-level ecological risk assessment (SERA), and correspond with Tier 1 of the Navy Policy (Navy, 1999), where conservative exposure estimates are compared to screening-level and threshold toxicity values. Step 3a is the first step of a baseline ecological risk assessment (BERA) and consists of refining the conservative assumptions following Steps 1 and 2 to further focus the ERA process on the chemicals of greatest concern at a site. Step 3a corresponds with the first part of Tier 2 of the Navy Policy (Navy, 1999). Steps 3b through 7 consist of additional site-specific investigations/biological studies. Steps 3b through 7 are conducted if additional evaluations or investigations are necessary. Aspects of Step 8, risk management, are addressed throughout the ERA process, in cooperation with Region 1 regulators. See Appendix I for a flowchart of the ERA Tiered Approach.

6.2 TIER 1, STEP 1: SCREENING-LEVEL PROBLEM FORMULATION

Problem formulation is the first step of an ERA. The problem formulation process enables the risk assessor to identify the ecological resources to be protected (known as assessment endpoints); the measurements used to evaluate risks to those resources (known as measurement endpoints); and the chemicals, geographic areas, and environmental media relevant to the risk assessment.

As part of receptor identification, site habitats and potential ecological receptors (as they apply to ecological risk) are described in the following subsections.

6.2.1 Environmental Setting

Tank Farm 2 is situated within NAVSTA Newport located in Portsmouth, Rhode Island (Figure 1-1. Tank Farm 2 occupies approximately 70 acres. The portion of Tank 2 Farm evaluated as part of this DGA includes four areas of concern (AOC-001, AOC-003; AOC-004 and AOC-005), a former transformer building (Building 219), and the former buoy storage area. These areas were identified as having potential for historical releases that fall under EPA's CERCLA program (Category 1).

Tank Farm 2 consists of an open area of overgrown grass with paved access roads and support buildings, including Building 219. Tank Farm 2 is dominated by early successional plants such as grasses, herbaceous plants, and young shrubs or saplings. Tank Farm 2 contains patches of grassland with scattered individual and clumps of shrubs. Photos of Tank Farm 2 taken after brush was cleared from the site are presented in Appendix A. A Natural Resources Inventory indicated that the early successional habitats at Tank Farm 2 contains patches of grassland that stand out as unique within the naval base property, in terms of vegetation structure and animal species composition (RINHS, 2006). Tank Farm 2 provides important habitat to a few early successional habitat species including Savannah Sparrow, Brown Thrasher, Eastern Towhee, Prairie Warbler, and Blue-winged Warbler; which are species that have experienced population declines in the northeast (RINHS, 2006). The 2006 species survey did not document protected species at Tank Farm 2 (RINHS, 2006).

Tank Farm 2 is approximately 1,000 feet east of Narragansett Bay and a freshwater pond is located approximately 400 to 500 feet east of the eastern Site boundary (Figure 1-1). Groundwater at Tank Farm 2 is generally encountered approximately 5 to 30 feet bgs flowing predominately to the west and northwest (Figure 1-2).

6.2.2 Potential Sources of Contamination

Petroleum sludge may have been deposited on the ground and burned at AOC 001, AOC-003; AOC-004 and AOC-005. Contaminants associated with burning of tank sludge include PAHs, metals, and dioxins. PCB-containing transformer oils were used in the transformers in Building 219. Buoys stored in the former storage area may have been painted with a lead-based paint.

6.2.3 Potential Exposure Pathways

PAHs, metals, and dioxins from the petroleum sludge by may have been released to the surface soil at the former burn locations by burning the sludge and depositing it on the ground. Operations at Building 219 may have released PCBs directly to surface soil by incidental spillage to the surface soil during routine use and maintenance of the transformers in Building 219. Paint containing lead from painted buoys may have

been deposited to surface soil during weathering from the storage of painted buoys in the former buoy storage area. There are no surface water bodies proximal to Tank Farm 2 that could be impacted.

Several groups of terrestrial ecological receptors can be exposed to contaminants in surface soil. Invertebrates such as earthworms are exposed to contaminants as they move through the soil and ingest soil particles while searching for food. Plants are exposed to contaminants via direct contact as contaminants are absorbed through the roots, and contaminants are then translocated to different parts of the plants (e.g., leaves, seeds). These pathways are evaluated in the ERA.

Small mammals/birds may be exposed to contaminants in soil via several exposure routes. They may be exposed by direct contact as they search for food or burrow into the soil. Exposure of terrestrial wildlife to contaminants in the soil via dermal contact is unlikely to represent a major exposure pathway because fur, feathers, and chitinous exoskeletons are expected to minimize transfer of contaminants across dermal tissue. Therefore, the dermal pathway was not evaluated in the ERA. Small mammals also may be exposed to contaminants in soil via incidental ingestion of soil and ingestion of plants and/or invertebrates that have accumulated contaminants from the soil. These pathways are evaluated in the ERA. Most terrestrial receptors are not substantially exposed to subsurface soils, so this pathway was not evaluated in this ERA.

As stated in EPA (2008a), species with greatest bioaccumulation of dioxin-like chemicals are generally those located at higher trophic levels because these hydrophobic chemicals have a strong potential for biomagnification (i.e., the increase in concentration of a chemical in the tissue of organisms along a series of predator-prey associations, primarily occurring through the mechanism of dietary accumulation). As indicated above, higher trophic level receptors were not evaluated in the ERA because their home rages are so much larger than the site. Therefore, biomagnification of dioxins through the food chain is not a concern for this site.

The surface soil depth interval evaluated was 0 to 1 feet in depth below the ground surface.

6.2.4 Assessment Endpoints and Measurement Endpoints

Assessment endpoints are explicit expressions of the environmental value that is to be protected (USEPA, 1997). The selection of these endpoints is based on the habitats present, the migration pathways of chemicals, and the routes that chemicals may take to enter receptors. Measurement endpoints are estimates of biological impacts (e.g., mortality, growth, reproduction) that are used to evaluate the assessment endpoints. The specific assessment endpoints and measurement endpoints used to evaluate Tank Farm 2 data are presented in Table 6-1.

For vertebrate receptors, selection of a particular species is required so that intake through eating can be estimated. The following surrogate species were used for the food chain modeling that was conducted to evaluate risks to mammals and birds:

- Herbivorous mammal: meadow vole
- Herbivorous bird: bobwhite quail
- Invertivorous mammal: short-tailed shrew
- Invertivorous bird: American robin

The surrogate receptors were selected either because they have been identified at the site, have the potential to be present at the site, and/or represent a trophic level that may be present at the site. The selected receptors are generally thought to be conservative receptors because they have relatively high ingestion rates compared to their body weights so they have a high exposure to contaminants. The following discusses why each receptor was selected for Tank Farm 2:

American robin: Robins were observed at Tank Farm 2 during the 2005 Natural Resources Inventory (NRI) conducted by the Rhode Island Natural History Survey (RINHS) (Puryear, 2006). Therefore, the American robin was selected as that small insectivorous mammal surrogate receptor.

Short-tailed shrew: Eleven species of mammal were observed at the facility during the 2005 NRI conducted by the RINHS (Puryear, 2006). One of those species was the short-tailed shrew, but it was only observed at Tank Farm 5. None of the other 10 species are representative of small insectivorous mammals. Because it has the potential to be present at Tank Farm 2, it was selected as the small insectivorous mammal surrogate receptor.

Northern bobwhite quail: Although no bobwhite quail were observed during the 2005 NRI conducted by the RINHS (Puryear, 2006), the quail prefers. The habitat at the site is within their requirements, and they are representative of small herbivorous birds. Also, exposure factors are available for the quail so was selected as the small herbivorous bird surrogate receptor.

Meadow vole: The meadow vole was not one of the 11 mammal species observed at the facility during the 2005 NRI conducted by the RINHS (Puryear, 2006). However, a similar species, the white-footed mouse was observed at Tank Farm 3 and Tank Farm 5. The habitat at the site is within the meadow vole's requirements, and they are representative of small herbivorous mammals such as the mouse. Also, exposure factors are available for the vole so was selected as the small herbivorous mammal surrogate receptor.

6.2.5 Conceptual Site Model

A CSM in ERA problem formulation is a written description of predicted relationships between ecological entities and the stressors to which they may be exposed (USEPA, 1998). The CSM consists of two primary components, predicted relationships among stressor, exposure, and assessment endpoint response and a diagram that illustrates the relationships (USEPA, 1998). Figure 6-1 is an ecological CSM for Tank Farm 2. Potential contaminants at Tank Farm 2 include PAHs, metals, and dioxins from burning of petroleum sludge associated for the four areas of concern, PCBs associated with oil used in Building 219 and lead paint from the stored buoys. The immediate exposure medium is the surface soil as chemicals from these sources may have been released to soil. Terrestrial plants, invertebrates, and vertebrates are exposed to the surface soil by direct contact and ingestion of soil and/or other food items. For this ERA, surface soil was defined as 0 to 1 foot.

6.3 TIER 1, STEP 2: SCREENING-LEVEL EXPOSURE ESTIMATE AND RISK QUOTIENTS

6.3.1 Ecological Effects Evaluation

The preliminary ecological effects evaluation is an investigation of the relationship between the exposure to a chemical and the potential for adverse effects resulting from exposure. As the first step in the ecological effects evaluation, toxicity thresholds such as ecological screening levels and toxicity reference values (TRVs) were identified and compiled as discussed below.

Terrestrial plants and soil invertebrates

Risks to terrestrial plants and soil invertebrates resulting from direct exposure to chemicals were evaluated by comparing the chemical concentrations in the surface soil to screening levels. The screening levels, which were considered in the following hierarchy, consisted of the USEPA Ecological Soil Screening Levels (Eco SSLs) (http://www.epa.gov/ecotox/ecossl/), followed by values from Canadian Soil Quality Guidelines (SQGs) (CCME, 1999a-e, 2001, 2010), Oak Ridge National Laboratory (ORNL) Toxicological Benchmarks for plants (Efroymson et al., 1997a) and invertebrates (Efroymson et al., 1997b), USEPA Region 5 ecological screening levels (ESLs) (USEPA, 2003a), and Los Alamos National Laboratory (LANL) ECORISK database (version 3.1; LANL, 2012). The screening levels are presented in Table 6-2. These screening levels are expressed in units of concentration because terrestrial plants and soil invertebrates are directly exposed to the soil.

Mammals and birds

Potential risks to mammals and birds resulting from exposure to chemicals in the surface soil were evaluated by first comparing chemical concentrations to ecological screening levels (Table 6-2). If a

chemical concentration exceeded its screening level or a screening level was not available, the chemical was evaluated using food chain models for risks to mammals and birds.

Risks to mammals and birds from exposures to chemicals in the surface soil were determined by estimating the Chronic Daily Intake (CDI) and comparing the CDI to toxicity reference values (TRVs) representing acceptable daily doses in mg/kg-day. The TRVs, including no observed adverse effect levels (NOAELs), and lowest observed adverse effect levels (LOAELs) were obtained from wildlife studies presented in ORNL Toxicological Benchmarks for Wildlife: 1996 Revision (Sample et al., 1996) and the U.S. EPA Eco SSLs (http://www.epa.gov/ecotox/ecossl/) and were supplemented with other toxicity information when necessary. Tables 1 and 2 in Appendix I present the TRVs for each chemical and the sources (i.e., NOAELs and LOAELs) of the TRVs used in this ERA. If a subchronic study was used to develop the TRV, the final value was multiplied by a factor of 0.1 to account for uncertainty between subchronic and chronic effects. Also, the LOAEL was multiplied by a factor of 0.1 to estimate a NOAEL TRV if only a LOAEL study was available. The chemical-specific Eco SSL documents provide both NOAELs and LOAELS for various studies, but TRVs are generally calculated only for NOAELs. The geometric mean of the chemical-specific growth and reproduction LOAELs from the chemical-specific Eco SSL documents were used as the LOAEL TRVs.

Dioxins/Furans

Individual dioxin/furan concentrations were used to calculate 2,3,7,8-TCDD equivalent concentrations for using toxic equivalency factors (TEFs) for birds and mammals (Van den Berg, et al., 2006). 2,3,7,8-TCDD equivalents were calculated using one-half the detection limit for non-detected dioxins/furans. TEFs are not available for plants and invertebrates. Dioxins need to bind to the aryl hydrocarbon (Ah) receptor to cause toxicity. Many, if not all, invertebrates lack the aryl hydrocarbon (Ah) receptor or a comparably sensitive receptor for dioxins. In USEPA (1993a), it is noted that the Ah receptor has not been detected in plants or in nine species of invertebrates representing eight classes of four phyla. Also, Van den Berg et al. (1998) states that, “At this time, development of TEFs for invertebrates is not recommended because there is limited evidence for ligand activation of Ah receptor or for TCDD-like toxicity in invertebrates.”

6.3.2 Exposure Characterization

To determine whether a chemical has the potential to impact an ecological receptor, a chemical concentration or dose must first be determined. That concentration/dose is then compared to the ecological effects data described above. Per a request from the regulators, data collected from Tank Farm 2 was evaluated on a site-wide basis and was not evaluated for individual subareas. There are not physical barriers that would justify exposure to only one subarea. Therefore, birds and mammals with larger home ranges may be exposed to contaminants present across the site. However, exposure may be

overestimated for receptors with smaller home ranges that may only be exposed to chemicals from one area. Also, the habitat as discussed in Section 6.2.1 is similar across the site.

Maximum detected chemical concentrations from samples collected across the site were used for the initial screening to select COPCs for Tank Farm 2. Using the maximum detected concentrations across the site ensures that the screening step is conservative. However, for subsequent evaluation in Step 3a, the data were divided into three exposure areas as follows based on their proximity to each other and because they were analyzed for different lists of parameters:

- AOC-001 (1,200 ft^2), AOC 003 (850 ft^2) and AOC 4/5 (13,000 ft^2) were combined as one exposure unit for the food chain model for birds and mammals because they were analyzed for the same parameters and were within about 250 feet so birds and mammals could feed in both areas. For plants and invertebrates, however, AOC-001 was evaluated separately from AOC 003 and AOC 4/5 because PAH concentrations at AOC were slightly greater than they were at AOC 003 and AOC 4/5.

- Building 219 (1,300 ft^2) was evaluated separately because it was a spatially distinct area and was only analyzed for PCBs.

- Former Buoy Storage Area (7,000 ft^2) was evaluated separately because it was a spatially distinct area and was only analyzed for lead.

The approximate size of each area is listed above, and was determined by drawing a box around the area encompassed by the soil samples. These areas were used to calculate a home range factor in the Step 3a food chain models.

The following paragraphs describe the concentrations/doses used for each set of ecological receptors.

Terrestrial soil invertebrates and plants are exposed to chemicals in the surface soil through ingestion and/or direct contact. Maximum chemical concentrations in soil were used in the screening step to select COPCs.

Mammals and birds are exposed to chemicals in surface soil through ingestion of food and incidental ingestion of contaminated soil. Doses in mg/kg-day were estimated for terrestrial wildlife (mammals and birds) using exposure dose equations (i.e., food chain models). Per USEPA request, all chemicals that were detected in surface soil were carried through the food-chain model for the complete exposure pathways (e.g., uptake into invertebrates subsequently ingestion by wildlife). The only exceptions were calcium, magnesium, potassium, and sodium and chemicals detected in surface soil at concentrations less

than screening levels based on risks to mammals and birds. The following equation was used to calculate chronic daily intake (CDI) for terrestrial wildlife (mammals and birds) from exposure to chemicals in soil (and associated food items such as plants and invertebrates):

$$CDI = \frac{[(C_f * I_f) + (C_s * I_s)] * H}{BW}$$

where:

CDI	=	chronic daily intake (mg/kg-day)
C_f	=	chemical concentration in food (mg/kg) (see discussion below)
C_s	=	chemical concentration in surface soil (mg/kg)
I_f	=	food ingestion rate (kg/day)
I_s	=	incidental surface soil ingestion rate (kg/day)
H	=	portion of food intake from the contaminated area (unitless)
BW	=	body weight (kg)

The exposure assumptions (i.e., ingestion rate, body weight) were obtained primarily from the Wildlife Exposure Factors Handbook (USEPA, 1993b) with other sources used as necessary. Food ingestion rates were presented on a dry weight basis and chemical concentrations in the food items were estimated in dry weight concentrations. This was done to be consistent with chemical concentrations in soil, which are reported on a dry weight basis. The exposure assumptions are presented in Table 3 of Appendix I and the calculation of exposure assumptions are presented in Table 4 of Appendix I.

Chemical concentrations in food items for soil insectivorous and herbivorous receptors were calculated using soil-to-invertebrate or soil-to-plant bioaccumulation factors (BAFs) and regression equations from the USEPA Eco SSL Guidance Document (2007a) or other published sources. The sources of the BAFs are documented in Tables 5 and 6 of Appendix I. The following equation was used to calculate chemical concentrations in plants or invertebrates when BAFs were used:

$$Cf = Cs * BAF$$

where:

Cf	=	contaminant concentration in food (mg/kg)
Cs	=	contaminant concentration in surface soil (mg/kg)
BAF	=	biota-soil bioaccumulation factor (soil to plant or soil to earthworm) (unitless)

A default value of 1.0 was used for the BAF when chemical-specific data was not available.

The food chain model scenarios were calculated using various exposure assumptions to present a range of potential risks. For selecting chemicals as COPCs in the screening step, the following Tier 1 exposure assumptions were used:

- Maximum soil concentrations.
- 90th percentile BAFs (or maximum value if a 90th percentile value is not available) or regression equations.
- Conservative receptor body weight and ingestion rates.
- Receptors spend 100% of their time at the site.

6.3.3 Risk Characterization

An Ecological Effects Quotient (EEQ) approach was used to characterize the risk to ecological receptors. This approach characterizes the potential effects by comparing exposure concentrations with the effects data. When EEQs exceed 1.0, it is an indication that ecological receptors are potentially at risk, although additional evaluation or data may be necessary to confirm with greater certainty whether ecological receptors are actually at risk, especially because most benchmarks are developed using conservative exposure assumptions and/or studies. An EEQ should not be construed as being probabilistic; rather, it is a numerical indicator of the extent to which an EPC exceeds or is less than a benchmark.

The EEQs for plants, soil invertebrates, and wildlife based on the maximum detected chemical concentrations were calculated as follows:

$$EEQ = \frac{Css}{SSSL}$$

where:

EEQ	=	Ecological effects quotient (unitless)
Css	=	Maximum chemical concentration in surface soil from 0 to 1 foot bgs (µg/kg or mg/kg)
SSSL	=	Surface soil screening level (µg/kg or mg/kg)

The EEQs determined in the food chain model for terrestrial wildlife were calculated as follows:

$$EEQ = \frac{CDI}{TRV}$$

where:

EEQ = Ecological effects quotient (unitless)

CDI = Chronic daily intake dose (mg/kg-day)

TRV = Toxicity reference value (NOAEL or LOAEL) (mg/kg-day)

6.3.4 Tier 1, Step 2: Selection of Chemicals of Potential Concern

The final part of the screening evaluation is the selection of ecological COPCs. Chemicals that were not selected as COPCs are assumed to only cause negligible risk to ecological receptors and were not evaluated further in the ERA. Chemicals that are initially selected as COPCs (using maximum detected concentrations across the site) were further evaluated in Step 3a. The ecological COPCs were selected by the following procedures:

- For soil invertebrates and plants, chemicals with EEQs greater than 1.0 (using screening values) were selected as COPCs because they have a potential to cause risk to plants and/or soil invertebrates.

- For wildlife receptors, chemicals with EEQs greater than 1.0 based on the food chain model using NOAELs were selected as COPCs because they have the potential to cause risks to mammals and birds.

- Chemicals without screening values were selected as COPCs and were further evaluated in Steps 3a.

- Calcium, magnesium, potassium, and sodium were not selected as COPCs, because they are essential nutrients that can be tolerated by living systems even at high concentrations. No evidence indicates that these chemicals are related to site operations, and they are not considered hazardous chemicals.

Table 6-3 presents the chemicals that were selected as COPCs in surface soil for potential risks to plants and invertebrates for Tank Farm 2. This table also presents the chemicals that were selected for food chain modeling for mammals and birds. Table 6-4 presents the chemicals that were selected as COPCs in surface soil for potential risk to birds and mammals.

Terrestrial Plants

One PAH and four metals were selected as COPCs because they were detected at a maximum concentration that resulted in an EEQ greater than 1.0. Nine PAHs, dioxins/furans, and two metals were selected as COPCs because screening levels were not available.

Soil Invertebrates

Two metals were selected as COPCs because they were detected at a maximum concentration that resulted in an EEQ greater than 1.0. One metal and dioxins/furans were selected as COPCs because screening levels were not available.

Mammals and Birds

Table 6-4 summarizes the results of the conservative inputs food chain modeling for terrestrial soil receptors. Appendix I presents the calculation worksheets. The following lists the chemicals selected as COPCs for birds and mammals because EEQs were greater than 1.0 using maximum chemical concentrations and Tier 1 input parameters in the food chain model:

- Herbivorous mammal: Pyrene and three metals were selected as COPCs.
- Herbivorous bird: Aroclor-1260 and five metals were selected as COPCs.
- Invertivorous mammal: Five PAHs, Aroclor-1260, 2,3,7,8-TCDD equivalents, and five metals were selected as COPCs.
- Invertivorous bird: Four PAHs, Aroclor-1260, 2,3,7,8-TCDD equivalents, and seven metals were selected as COPCs.
- Avian TRVs were not available for three metals (antimony, beryllium, and thallium).

6.3.5 Summary of Tier 1 Screening Level Ecological Risk Assessment

Table 6-5 summarizes the chemicals selected as COPCs after the Tier 1, Step 2 Screening Level ERA. As shown on the table, several chemicals were selected as COPCs for plants, soil invertebrates, mammals and birds because their concentrations exceeded screening levels, they do not have screening levels, or their EEQ was greater than 1.0 in the screening-level food chain model. Therefore, it was recommended that the ERA proceed to a Tier 2, Step 3a, to better refine the risks to these receptors.

6.4 TIER 2, STEP 3A: COPC REFINEMENT

Step 3a consists of refining the conservative exposure assumptions/concentrations used to evaluate potential risks to ecological receptors and re-evaluating the analytical data using benchmarks that are more appropriate for the assessment endpoints. The objective of the Step 3a refinement was to better determine which chemicals contribute to potentially unacceptable levels of ecological risk, and to identify chemicals of concern (COCs) and eliminate from further consideration those chemicals that were initially selected as COPCs because of the use of very conservative exposure scenarios but are not likely causing a significant risk. The Step 3a evaluation can also be used to eliminate chemicals from further evaluation for certain groups of receptors that are not at significant risk. For example, a chemical might not be retained as a COC in soil for plants based on low risks to plants but the same chemical might be retained as a COC based on risks to invertebrates or wildlife. This is important because if the site proceeds further to a baseline ERA, the studies in the baseline ERA should only focus on the receptors that are at potential risk.

For chemicals evaluated further in Step 3a, the following factors were evaluated, as appropriate, to determine if the risks are great enough to warrant additional evaluations (i.e., proceed to a baseline ERA, develop cleanup levels). All of these factors may not be discussed for each chemical and/or receptor group.

- Magnitude of criterion exceedance: Although the magnitude of the risks may not relate directly to the magnitude of a criterion exceedance, the magnitude of the criterion exceedance may be one item used in a lines-of-evidence approach to determine the need for further site evaluation. The greater the criterion exceedance, the greater the probability and concern that an unacceptable risk exists.

- Frequency of chemical detection and spatial distribution: A chemical detected at a low frequency typically is of less concern than a chemical detected at higher frequency if toxicity and concentrations and spatial areas represented by the data are similar. All else being equal, chemicals detected frequently were given greater consideration than those detected relatively infrequently. In addition, the spatial distribution of a chemical may be evaluated to determine the area that a sample represents.

- Contaminant bioavailability: Many contaminants (especially metals) are present in the environment in forms that are typically not bioavailable, and the limited bioavailability was considered when evaluating the exposures of receptors to site contaminants. Contaminants with generally less bioavailability were considered to be less toxic than the more bioavailable contaminants, all other factors being equal.

- Additional Benchmarks: Alternative benchmarks were used to further evaluate risks to specific groups of ecological receptors (e.g., plants and invertebrates).

- Area-specific Evaluations: As discussed in Section 6.3.2, For the Step 3a evaluation, Tank Farm 2 was divided into three areas for evaluating risks to plants and invertebrates (AOC-001, combined AOC-003, and 4/5, Building 219, and Buoy Storage Area) and three areas for evaluating risks to birds and mammals (Combined AOC-001, -003, and 4/5, Building 219, and Buoy Storage Area). Only the chemicals selected as COPCs following Tier 1, Step 2 (summarized in Table 6-5) were included in the Tier 2, Step 3A evaluation.

- Food Chain Modeling: Exposure via the food chain is a major pathway of concern for chemicals known to significantly bioaccumulate and/or biomagnify. Thus, potential risk to upper level receptors was evaluated using food chain models. The conservative exposure doses calculated for terrestrial wildlife were re-calculated using the following less conservative exposure assumptions and chemical concentrations:

  - Average soil concentrations.
  - Median or mean BAFs (if available).
  - Average receptor body weights and ingestion rates.
  - Home range factor, which accounts for the size of the contaminated area compared to the home range of the receptor.

- Background: Concentrations of chemicals in surface soil were compared to background concentration data. If the concentrations of a detected chemical are not statistically greater than the background concentrations, the chemical was considered similar to background, not site-related, and eliminated as a COPC. Appendix G presents the statistical background evaluation. For this reason, aluminum, lead, mercury, and vanadium are eliminated as COPCs in surface soil for AOC-001. Aluminum and mercury are eliminated as COPCs in surface soil for combined AOCs 003 and AOC 4/5. These chemicals are not further evaluated.

6.4.1 Tier 2, Step 3a: Terrestrial Plants and Soil Invertebrates

The COPC selection for plants and soil invertebrates for the separate areas within Tank Farm 2 are presented in Table 6-6 for AOC-001 and Table 6-7 for combined AOCs 003 and 4/5. Building 219 and the Buoy Storage Area were not further evaluated for risks to plants and soil invertebrates because chemicals detected within these areas were not selected as COPCs for the overall site (Table 6-5). A summary of the Step 3a evaluation for soil invertebrates and terrestrial plants is presented in Table 6-8.

6.4.1.1 Terrestrial Plants

AOC-001

Several PAHs were selected as COPCs because screening levels were not available. Plant Eco SSLs are not available for PAHs; however, data presented in Table 3.1 in the Eco SSL reference document for PAHs (USEPA, 2007e) shows that PAHs are typically not toxic to plants except at high soil concentrations. For example, the lowest listed median effective concentration required to induce a 50 percent effect (EC_{50}) is 30,000 µg/kg for anthracene from Mitchell et al. (1988). The maximum concentration of the PAHs without screening levels (≤11,000 µg/kg) is well below this value and most other PAH detections were much lower than 11,000 µg/kg. Also, PAHs concentrations were generally less than the lowest Canadian SQG for individual PAHs (2,500 µg/kg for anthracene) (CCME, 2010) and all PAHs were less than the lowest Canadian SQG for benzo(a)pyrene (20,000 µg/kg). Naphthalene only slightly exceeded its screening level (1,000 µg/kg) in one sample (1,800 µg/kg) from TF2-001-SB1005. The screening level is based on the NOAEL and the maximum naphthalene concentration is well below the LOAEL of 10,000 µg/kg (LANL, 2012). Also, concentrations of naphthalene are less than the EC_{50} and Canadian SQG discussed above for other PAHs. For these reasons, any impacts to plants from PAHs at the site are expected to be minor so PAHs are eliminated as COPCs for plants at AOC-001.

Dioxins/furans were selected as COPCs because screening values are not available for plants. As indicated above, it is assumed that dioxins/furans are more toxic to birds and mammals than plants (or invertebrates) because dioxins need to bind to the aryl hydrocarbon (Ah) receptor to cause toxicity and the Ah receptor has not been detected in plants (USEPA, 1993a). Therefore, plants are not likely impacted by the concentrations of dioxins at AOC-001 and 2,3,7,8-TCDD equivalents are eliminated as COPCs for plants.

Cobalt exceeded its screening level (13 mg/kg) in several samples with a maximum concentration of 16.6 mg/kg detected in a sample from TF2-001-SB1002. The concentrations of cobalt were only slightly elevated compared to its screening level. In addition, most cobalt concentrations exceeding the screening level were bounded within 15 feet by adjacent samples with concentrations less than the screening level. Cobalt concentrations were not bounded east of TF2-001-SB1002 and southeast of TF2-001-SB1001 at AOC-001. However, because cobalt concentrations only slightly exceeded the screening, any impacts to plants are expected to be minor; therefore, cobalt is eliminated as a COPC for plants.

Iron was initially selected as a COPC for plants because the Eco SSL document states that iron should be retained as a COPC for plants if the soil pH is less than 5.0 or greater than 8.0 (USEPA, 2003c). Although soil pH was not available at Tank Farm 3, based on soil pH data available for other Tank Farm sites (average pH of 5.8 and 5.6 at Tank Farms 4 and 5, respectively), soil pH at the site is expected to be within

the pH range 5 to 8 and iron is not expected to toxic to plants within this soil pH range; therefore iron concentrations at AOC-001 are not expected to be toxic to plants and iron is eliminated as a COPC for plants.

Manganese was selected as a COPC because it was detected at a maximum concentration (459 mg/kg) that exceeded the Eco SSL based on plants (220 mg/kg). All samples had a manganese concentration that exceeded the Eco SSL; however most samples only slightly exceeded the screening level. Only two samples had manganese concentrations that were greater than twice the screening level. Also, based on the distribution of manganese in soil across the site, there does not appear to be a pattern that would indicate a specific source of manganese. Therefore, any impacts to plants from manganese do not appear site-related and manganese is eliminated as a COPC for plants.

Combined AOCs 003 and 4/5

PAHs, dioxins/furans, and iron are eliminated as COPCs for plants for the reasons discussed above for AOC-001.

Antimony only slightly exceeded its screening level (5 mg/kg) in one sample (6.6 mg/kg) from TF2-004/5-SB1056 collected from 0 to 0.6 feet bgs from AOC-005. This maximum concentration is bounded by samples with concentrations less than the screening level within 15 feet. In addition, the authors had low confidence in the plant screening level for antimony, which is based on a report of unspecified toxic effects on plants grown in a surface soil with the addition of 5 ppm antimony (Efroymson et al., 1997a). In the Eco SSL document for antimony (USEPA, 2005a), it was noted that of the 12 papers selected for acquisition for further review, none of the papers met all eleven study acceptance criteria and had an evaluation score greater than ten (USEPA, 2005a). Thus, an Eco SSL for plants for antimony could not be derived. Antimony toxicity was reviewed in an article by Tschan et al. (2009), where they determined that plants were generally found to be more tolerant to soil antimony concentrations than were soil fauna. This conclusion was based on half maximal effective concentrations (EC50s) of 125 to 7,500 mg/kg for plants (nearly all EC50s were greater than 500 mg/kg), and EC50s ranging from 70 to 316 mg/kg for soil invertebrates. Therefore, it is likely that a plant toxicity benchmark for antimony would be greater than the Eco SSL for soil invertebrates (78 mg/kg). For these reasons, antimony is eliminated as a COPC for plants.

Cobalt exceeded its screening level (13 mg/kg) in several samples with a maximum concentration of 16.4 mg/kg detected in a sample from TF2-004/5-SS1058. The concentrations of cobalt were only slightly elevated compared to its screening level. In addition, most cobalt concentrations exceeding the screening level were bounded within 15 feet by adjacent samples with concentrations less than the screening level. Cobalt concentrations were not bounded southwest of TF2-004/5-SB1058 and north of TF2-004/5-SB1055

at AOC-004/5. However, because cobalt concentrations only slightly exceeded the screening level, any impacts to plants are expected to be minor; therefore, cobalt is eliminated as a COPC for plants.

Manganese was selected as a COPC because it was detected at a maximum concentration (658 mg/kg) that exceeded the Eco SSL based on plants (220 mg/kg). Most samples had a manganese concentration that exceeded the Eco SSL; however most samples only slightly exceeded the screening level. Only four samples located sporadically throughout AOC 003 and AOC 4/5 had manganese concentrations that were greater than twice the screening level. Also, based on the distribution of manganese in soil across the site, there does not appear to be a pattern that would indicate a specific source of manganese. Therefore, any impacts to plants from manganese do not appear site-related and manganese is eliminated as a COPC for plants.

Nickel only exceeded its screening level (38 mg/kg) in one sample (53 mg/kg) from TF2-004/5-SB1039 from AOC-004/5. This maximum concentration is bounded by samples with concentrations less than the screening level within 15 feet. Therefore, any impacts to plants from nickel are expected to be minor; therefore, nickel is eliminated as a COPC for plants.

Several metals were initially selected as COPCs because concentrations of a few metals (i.e., antimony, cobalt, manganese, and nickel) exceeded their respective plant benchmarks in some of the surface soil samples or screening values were not available (i.e., iron). Although some isolated potential risks to plants cannot be ruled out, risks are not great enough to warrant carrying antimony, cobalt, iron, manganese, and nickel further in the ERA process so these metals are not retained as COCs for risks to plants at AOC-001 and combined AOCs 003 and 4/5 .

6.4.1.2 Soil Invertebrates

AOC-001

Dioxins/furans were selected as COPCs because screening values are not available for soil invertebrates for most of the dioxins/furans. However, all dioxins/furans concentrations were well below the screening value for 2,3,7,8-TCDD (5,000,000 ng/kg). A study reported in the literature demonstrated that two species of earthworms showed no adverse effects when exposed for 85 days to soil containing levels of 5,000,000 ng/kg of 2,3,7,8-TCDD (Eisler, 1986). The other dioxins/furans are expected to be less toxic that 2,3,7,8-TCDD. Also, as indicated above, it is assumed that dioxins/furans are more toxic to birds and mammals than plants (or invertebrates) because dioxins need to bind to the aryl hydrocarbon (Ah) receptor to cause toxicity and the Ah receptor has not been detected in soil invertebrates (USEPA, 1993a). Therefore, soil invertebrates are not likely impacted by the concentrations of dioxins/furans at AOC-001 and dioxins/furans are eliminated as COPCs for soil invertebrates.

Iron was selected as a COPC because it exceeded its screening value (200 mg/kg) in all samples. The iron screening value is based on reduced nitrogen mineralization by native soil microflora by iron (III) (Efroymson, et al., 1997b). However, this is a very conservative and unrealistic effects value as it is much lower than typical background levels. Based on soil pH data available for other Tank Farm sites (average pH of 5.8 and 5.6 at Tank Farms 4 and 5, respectively), iron is not expected to be very bioavailable. Also, based on the distribution of iron in soil across the Site, there does not appear to be a pattern that would indicate a specific source of iron, such as from a localized burning of petroleum sludge that might have occurred during former operations. Therefore, impacts to soil invertebrates from iron are expected to be minimal, and iron is eliminated as a COPC for soil invertebrates.

Manganese was selected as a COPC because it exceeded its screening value (450 mg/kg). Only two samples had manganese concentrations (458 mg/kg and 459 mg/kg), which slightly exceeded the screening value. Therefore, any impacts to soil invertebrates from manganese are expected to be minimal, and manganese is eliminated as a COPC for soil invertebrates.

Combined AOCs 003 and 4/5

Dioxins/furans and iron are eliminated as COPCs for soil invertebrates for the reasons discussed above for AOC-001.

Manganese was selected as a COPC because it exceeded its screening value (450 mg/kg). Only four samples located sporadically throughout AOC 003 and AOC 4/5 had manganese concentrations exceeding the screening value. Therefore, any impacts to soil invertebrates from manganese are expected to be minimal and do not appear site-related, and manganese is eliminated as a COPC for soil invertebrates.

6.4.2 Tier 2, Step 3a: Mammals and Birds

The EEQs from the terrestrial food chain modeling were greater than 1.0 for several chemicals using maximum chemical concentrations and conservative exposure assumptions (see Section 6.3.6). Therefore, as part of the Step 3a refinement, risks for this pathway were recalculated using average chemical concentrations in surface soil (samples collected from 0 to 1 feet) and less conservative exposure assumptions (i.e., average ingestion rates, average body weights) (see Table 3 in Appendix I). Table 6-9 summarizes the results of the less conservative inputs food chain modeling for the birds and mammals. Appendix I present the calculation worksheets. A discussion of the risks to mammals and birds is presented below.

Risks to birds and mammals exposed to surface soil were evaluated using three food chain models: 1) combined AOCs 001, 003, and 4/5; 2) Building 219 (only analyzed for PCBs); and, 3) Buoy Storage Area (only analyzed for lead). The home range of the surrogate birds and mammals used in the food chain model are generally larger than the contaminated areas at AOC-001 (1,200 square feet), AOC-003 (850 square feet), AOC 4/5 (13,000 square feet), Building 219 (1,300 square feet), and the Buoy Storage Area (7,000 square feet). Therefore, the home ranges of the surrogate birds and mammals were taken into account within the less conservative inputs food chain modeling to determine the portion of their diet that birds and mammals would obtain from each area.

Combined AOCs 001, 003, and 4/5

Herbivorous receptors: No EEQs were greater than 1.0 for the quail; therefore, impacts to herbivorous birds are not expected from chemicals detected in surface soil at these AOCs. The EEQ for iron (2.7) for the vole was greater than 1.0 using the NOAEL as the TRV, but was less than 1.0 using the LOAEL as the TRV. For this reason, impacts to herbivorous mammals are expected to be minimal; therefore, iron is eliminated as a COPC.

Invertivorous receptors: The EEQs for 2,3,7,8-TCDD equivalents (2.0) and iron (1.3) for the shrew were greater than 1.0 using the NOAEL as the TRV. The EEQs for Aroclor-1260 (12) and iron (2.9) for the robin were greater than 1.0 using the NOAEL as the TRV. All LOAEL EEQs were less than 1.0. Therefore, any impacts to invertivorous receptors are expected to be minimal and no chemicals are retained as COPCs.

Building 219

The EEQs for Aroclor-1260 were just slightly greater than 1.0 using the NOAEL as the TRV for the robin and shrew after accounting for the home range of the receptors. However, the elevated PCB detections were not bounded to the north so the potentially impacted area may be larger than the 1,300 ft^2 area used to adjust the exposure dose in the food chain models. Therefore, there is uncertainty in whether birds and mammals at Building 219 are at potential risk from PCBs so PCBs are retained as COPCs for these receptors.

Buoy Storage Area

The EEQs for lead were less than 1.0 using the NOAEL as the TRV. Therefore, no risks are expected for birds and mammals at the Buoy Storage Area.

6.5 UNCERTAINTY ANALYSIS

This section presents general uncertainties associated with the ERA. The major uncertainties presented here are assessment and measurement endpoints; exposure characterization (whether the receptor actually takes in the constituent); effects data (use of comparison criteria for similar species and constituents), and risk characterization (predicted effects to a population).

6.5.1 Uncertainty in Assessment Endpoints and Measurement Endpoints

Measurement endpoints were used to evaluate the assessment endpoints selected for the ERA. For the ERA, the measurement endpoints were not the same as the assessment endpoints. Measurement endpoints were used to predict effects to the assessment endpoints by selecting surrogate species to be evaluated. For example, a decrease in reproduction of a shrew was used to assess a decrease in reproduction of the small mammal population. However, predicting a decrease in reproduction of a shrew may either underprotect or overprotect the small mammal population based on differences in ingestion rates, toxicity, food preferences, home ranges, etc. between different species.

"As indicated in USEPA guidance (USEPA, 1997), "it is not practical or possible to directly evaluate risks to all of the individual components of the ecosystem at a site. Therefore, the ERA focused on the receptors that tend to have the greatest risks, which should account for receptors that have lower risks. For example, risks to omnivores were not evaluated because exposure to contaminants in plants is greatest for herbivores, and exposure to contaminants in animals is greatest for invertivores. Therefore, omnivores are protected by protecting herbivores and invertivores. Large carnivorous birds and mammals also were not evaluated because their home range (hundreds of acres) is much larger than the portion of Tank 2 Farm evaluated as part of this DGA, so they would only consume a small portion of food from the site. Although reptiles such as snakes and turtles, and amphibians, may be present at the site, they were not evaluated in the ERA because of the general lack of toxicity information and the lack of methods to evaluate their exposure to chemicals. Also, because reptiles and amphibians have much lower metabolic rates than either birds or mammals, they will consume less food on a body-weight basis and will therefore, have a lower exposure than mammals or birds."

6.5.2 Uncertainty in Exposure Characterization

The contaminant doses to terrestrial wildlife were calculated using an equation that incorporates ingestion rates, body weights, BAFs, and other exposure factors. These exposure factors were obtained from literature studies or predicted using various equations. Ingestion rates and body weights vary among species, especially among species inhabiting different habitats.

Bioaccumulation of contaminants into various biological media (e.g., plants, invertebrates, small mammals) depends on characteristics of the media such as pH, organic carbon, etc. Therefore, actual BAFs at the sites may be different than those used in the ERA and obtained from the literature. Also, the bioavailability of contaminants reported in toxicity studies is typically greater than the contaminants in environmental media. Typically, highly bioavailable forms of the chemicals are used when conducting toxicity tests and/or conducting dosing studies for wildlife.

As discussed in Section 6.3.2, soil samples evaluated in the ERA included samples collected from 0 to 1 foot bgs, although most of the samples were collected from 0 to 1 foot. It is possible that subsurface soil may be brought to the surface under future scenarios. Because the primary reason for excavating soil would be for construction of a building, which would reduce the ecological habitat, this potential pathway was not evaluated in the ERA.

6.5.3 Uncertainty in Ecological Effects Data

Uncertainty exists in the ecological effects data, including the screening levels and wildlife TRVs. Several of the screening levels are very conservative, and typically are based on studies where the bioavailability of the chemical is much greater than it is in the environment. Also, toxicity data was not available or was limited for some chemicals.

The NOAELs/LOAELs used for the wildlife endpoints species are based on species other than the endpoint species (e.g., rats, mice). Uncertainty exists in the application of toxicity data across species because the contaminant may be more or less toxic to the endpoint species than it was to the test study species.

TRVs were not available for birds for antimony, beryllium, and thallium. Therefore, food chain model risks to these receptors could not be evaluated. Additionally, PAH TRVs for birds were based on 7,12-dimethylbenz(a)anthracene. There is uncertainty with using this TRV for all PAH calculations for birds.

6.5.4 Uncertainty in Risk Characterization

Risks are possible if an EEQ is greater than or equal to 1.0 regardless of the magnitude of the EEQ. However, the magnitude of effects to ecological receptors cannot be inferred based on the magnitude of the EEQ. Rather, an EEQ greater than 1.0 simply indicates that the dose used to derive the toxicity reference value was exceeded.

Finally, there is uncertainty in how the predicted risks to a few individuals at a site translate into risk to the population at the Site and in the surrounding area.

6.6 SUMMARY AND CONCLUSIONS

This ERA evaluated surface soil data collected for Tank Farm 2. The maximum chemical concentrations across all AOCs, Building 219 and the Buoy Storage Area were used for the initial COPC screening in Step 2 for plants and invertebrates and for the Step 2 screening-level food chain model for birds and mammals. Based upon this screening, several chemicals were initially selected as COPCs in surface soil because they were detected at concentrations that exceeded conservative screening levels (for plants and invertebrates), or because they had EEQs greater than 1.0 in the screening-level food chain model (for birds and mammals), or because they did not have screening levels.

The chemicals that were initially selected as COPCs in Step 2, were then further evaluated in Step 3a to refine the list of COPCs, and to better characterize risks to ecological receptors. In Step 3a, risks to plants and invertebrates exposed to surface soil were evaluated for four separate areas:

- AOC-001;
- AOC-003 and AOC-004/5;
- Building 219; and
- Buoy Storage Area.

Risks to mammals and birds in Step 3a were evaluated for three separate areas:

- AOC-001, AOC-003, and AOC-004/5;
- Building 219; and
- Buoy Storage Area.

Aroclor-1260 was retained as a COPC for potential risks to mammals and birds at Building 219. No other chemicals were retained as COPCs for further evaluation in a BERA for terrestrial plants, soil invertebrates, mammals, and birds in any of the other areas.

TABLE 6-1

ASSESSMENT ENDPOINTS AND MEASUREMENT ENDPOINTS
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Assessment Endpoint	Measurement Endpoint
Adverse effects on the survival, reproduction, and/or growth of soil invertebrates	• Survival, growth, and/or reproduction of soil invertebrates were evaluated by comparing the measured concentrations of chemicals in the surface soil to invertebrate soil screening levels.
Adverse effects on the survival, reproduction, and/or growth of terrestrial plants	• Survival, growth, and/or reproduction of terrestrial plants were evaluated by comparing the measured concentrations of chemicals in the surface soil to plant soil screening levels.
Adverse effects on the survival, reproduction, and/or increase in development effects of insectivorous birds and mammals	• Survival, reproduction, and/or increase in development effects of insectivorous birds and mammals were evaluated by comparing the estimated ingested dose of contaminants in the surface soil and earthworms to No Observed Adverse Effects Levels (NOAELs) and Lowest Observed Adverse Effects Levels (LOAELs) for surrogate wildlife species (short-tailed shrew and American robin).
Adverse effects on the survival, reproduction, and/or increase in development effects of herbivorous birds and mammals	• Survival, reproduction, and/or increase in development effects of herbivorous birds and mammals were evaluated by comparing the estimated ingested dose of contaminants in the surface soil and plants to NOAELs and LOAELs for surrogate wildlife species (meadow vole and bobwhite quail).

TABLE 6-2

SURFACE SOIL ECOLOGICAL SCREENING LEVELS
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Plants		Invertebrates		Avian		Mammals	
	Value	Source	Value	Source	Value	Source	Value	Source
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)								
2-METHYLNAPHTHALENE	NA	NA	29000	Eco SSL	NA	NA	100000	Eco SSL
ACENAPHTHENE	20000	ORNL	29000	Eco SSL	NA	NA	100000	Eco SSL
ACENAPHTHYLENE	20000	ORNL[(1)]	29000	Eco SSL	NA	NA	100000	Eco SSL
ANTHRACENE	2500	CCME	29000	Eco SSL	NA	NA	100000	Eco SSL
BENZO(A)ANTHRACENE	18000	LANL	18000	Eco SSL	800	LANL	1100	Eco SSL
BENZO(A)PYRENE	20000	CCME	18000	Eco SSL	NA	NA	1100	Eco SSL
BENZO(B)FLUORANTHENE	18000	LANL	18000	Eco SSL	NA	NA	1100	Eco SSL
BENZO(G,H,I)PERYLENE	NA	NA	18000	Eco SSL	NA	NA	1100	Eco SSL
BENZO(K)FLUORANTHENE	NA	NA	18000	Eco SSL	NA	NA	1100	Eco SSL
CHRYSENE	NA	NA	18000	Eco SSL	NA	NA	1100	Eco SSL
DIBENZO(A,H)ANTHRACENE	NA	NA	18000	Eco SSL	NA	NA	1100	Eco SSL
FLUORANTHENE	50000	CCME	29000	Eco SSL	NA	NA	100000	Eco SSL
FLUORENE	NA	NA	29000	Eco SSL	NA	NA	100000	Eco SSL
INDENO(1,2,3-CD)PYRENE	NA	NA	18000	Eco SSL	NA	NA	1100	Eco SSL
NAPHTHALENE	1000	LANL	29000	Eco SSL	3400	LANL	100000	Eco SSL
PHENANTHRENE	NA	NA	29000	Eco SSL	NA	NA	100000	Eco SSL
PYRENE	NA	NA	18000	Eco SSL	34000	LANL	1100	Eco SSL
PCBS (UG/KG)								
AROCLOR-1260	33000	CCME	33000	CCME	1300	CCME	0.332	Region 5
DIOXINS/FURANS (NG/KG)								
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	NA	NA	NA	0.199	Region 5
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	NA	NA	NA	38.6	Region 5
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	NA	NA	NA	0.199	Region 5
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	NA	NA	NA	38.6	Region 5
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	NA	NA	NA	38.6	Region 5
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	NA	NA	NA	38.6	Region 5
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	NA	NA	NA	38.6	Region 5
1,2,3,4,7,8-HXCDD	NA	NA	NA	NA	NA	NA	0.199	Region 5
1,2,3,4,7,8-HXCDF	NA	NA	NA	NA	NA	NA	38.6	Region 5
1,2,3,6,7,8-HXCDD	NA	NA	NA	NA	NA	NA	0.199	Region 5
1,2,3,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	38.6	Region 5
1,2,3,7,8,9-HXCDD	NA	NA	NA	NA	NA	NA	0.199	Region 5
1,2,3,7,8,9-HXCDF	NA	NA	NA	NA	NA	NA	38.6	Region 5
1,2,3,7,8-PECDD	NA	NA	NA	NA	NA	NA	0.199	Region 5
1,2,3,7,8-PECDF	NA	NA	NA	NA	NA	NA	38.6	Region 5
2,3,4,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	38.6	Region 5
2,3,4,7,8-PECDF	NA	NA	NA	NA	NA	NA	38.6	Region 5
2,3,7,8-TCDD	NA	NA	5000000	LANL	NA	NA	0.199	Region 5
2,3,7,8-TCDF	NA	NA	NA	NA	NA	NA	38.6	Region 5
2,3,7,8-TCDD equivalents	NA	NA	5000000	LANL	NA	NA	0.199	Region 5

TABLE 6-2

SURFACE SOIL ECOLOGICAL SCREENING LEVELS
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Plants		Invertebrates		Avian		Mammals	
	Value	Source	Value	Source	Value	Source	Value	Source
METALS (MG/KG)								
ALUMINUM	NA[2]	Eco SSL	NA[2]	Eco SSL	NA	NA	NA	NA
ANTIMONY	5	ORNL	78	Eco SSL	NA	NA	0.27	Eco SSL
ARSENIC	18	Eco SSL	17	CCME	43	Eco SSL	46	Eco SSL
BARIUM	500	ORNL	330	Eco SSL	820	LANL	2000	Eco SSL
BERYLLIUM	10	ORNL	40	Eco SSL	NA	NA	21	Eco SSL
CADMIUM	32	Eco SSL	140	Eco SSL	0.77	Eco SSL	0.36	Eco SSL
CALCIUM	NA	NA	NA	NA	NA	NA	NA	NA
CHROMIUM	78	CCME	78	CCME	26	Eco SSL	34	Eco SSL
COBALT	13	Eco SSL	1000	ORNL[3]	120	Eco SSL	230	Eco SSL
COPPER	70	Eco SSL	80	Eco SSL	28	Eco SSL	49	Eco SSL
IRON	NA[4]	Eco SSL	200	ORNL[3]	NA	NA	NA	NA
LEAD	120	Eco SSL	1700	Eco SSL	11	Eco SSL	56	Eco SSL
MAGNESIUM	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	220	Eco SSL	450	Eco SSL	4300	Eco SSL	4000	Eco SSL
MERCURY	12	CCME	12	CCME	0.013	LANL[5]	1.7	LANL[5]
NICKEL	38	Eco SSL	280	Eco SSL	210	Eco SSL	130	Eco SSL
POTASSIUM	NA	NA	NA	NA	NA	NA	NA	NA
SELENIUM	0.52	Eco SSL	4.1	Eco SSL	1.2	Eco SSL	0.63	Eco SSL
SILVER	560	Eco SSL	50	ORNL[3]	4.2	Eco SSL	14	Eco SSL
SODIUM	NA	NA	NA	NA	NA	NA	NA	NA
THALLIUM	1.4	CCME	1.4	CCME	0.9	LANL	0.0569	Region 5[6]
VANADIUM	130	CCME	130	CCME	7.8	Eco SSL	280	Eco SSL
ZINC	160	Eco SSL	120	Eco SSL	46	Eco SSL	79	Eco SSL

Screening Level Sources in the Order of Preference:
Eco SSL - EPA Ecological Soil Screening Levels (USEPA, 2003b, 2003c, 2005a-h, 2006a, 2007b-g, 2008)
CCME - Canadian Council of Ministers of the Environment Soil Quality Guidelines (SQGs) (CCME, 1999a-e, 2001, 2010).
ORNL - Oak Ridge National Laboratory Toxicological Benchmarks for plants and invertebrates (Efroymson et al., 1997a and 1997b)
Region 5 - USEPA Region 5 Ecological Screening Levels (USEPA, 2003a)
LANL - Los Alamos National Laboratories Ecological Screening Levels (LANL, 2012)

Footnotes:
1 - Value for acenaphthene.
2 - Only considered a COPC when the soil pH is less than 5.5 (USEPA, 2003b).
3 - Value for soil microorganisms
4 - Not expected to be toxic to plants with a soil pH between 5 and 8 (USEPA, 2003c).
5 - Available Canadian SQG was not selected because it was based on organic mercury toxicity to a pig.
6 - Available Canadian SQG was not selected because it is based on a loss of wool by sheep, and it was lower than a Canadian background level.

Abbreviations:
NA - Not available

TABLE 6-3

SURFACE SOIL ECOLOGICAL COPC SELECTION - TIER 1 SCREENING
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Frequency of Detection	Minimum Concentration[1]	Maximum Concentration[1]	Sample of Maximum Concentration	Average of All Results[2]	Average of Detections[3]	Screening Levels[4]				EEQs[5]				Deletion or Selection of COPCs for Invertebrates/Plants		Further Evaluated in Terrestrial Food Chain Modeling[6]	
							Plants	Invertebrates	Birds	Mammals	Plants	Invertebrates	Birds	Mammals	COPC (yes/no)?	Rationale	Evaluated (yes/no)?	Rationale
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)																		
2-METHYLNAPHTHALENE	11/69	2.2 J	72	TF2-004/5-SS1047-000.8	10.3	18.5	NA	29000	NA	100000	NA	0.0025	NA	0.00072	YES	NSL	YES	NSL
ACENAPHTHENE	49/69	1.6 J	1000	TF2-001-SS1005-0001	35.2	47.5	20000	29000	NA	100000	0.050	0.034	NA	0.010	NO	BSL	YES	NSL
ACENAPHTHYLENE	34/69	1.3 J	26	TF2-001-SS1005-0001	4.82	4.51	20000	29000	NA	100000	0.0013	0.00090	NA	0.00026	NO	BSL	YES	NSL
ANTHRACENE	63/69	1.4 J	2200	TF2-001-SS1005-0001	74.5	81.1	2500	29000	NA	100000	0.88	0.076	NA	0.022	NO	BSL	YES	NSL
BENZO(A)ANTHRACENE	67/69	2.9 J	4500	TF2-001-SS1005-0001	199	205	18000	18000	800	1100	0.25	0.25	**5.6**	**4.1**	NO	BSL	YES	ASL
BENZO(A)PYRENE	68/69	4.2 J	3700	TF2-001-SS1005-0001	157	159	20000	18000	NA	1100	0.19	0.21	NA	**3.4**	NO	BSL	YES	NSL, ASL
BENZO(B)FLUORANTHENE	69/69	5.2 J	5800	TF2-001-SS1005-0001	253	253	18000	18000	NA	1100	0.32	0.32	NA	**5.3**	NO	BSL	YES	NSL, ASL
BENZO(G,H,I)PERYLENE	67/69	2.7 J	1800	TF2-001-SS1005-0001	70.4	72.3	NA	18000	NA	1100	NA	0.10	NA	**1.6**	YES	NSL	YES	NSL, ASL
BENZO(K)FLUORANTHENE	67/69	4.3 J	1700	TF2-001-SS1005-0001	81.1	83.3	NA	18000	NA	1100	NA	0.094	NA	**1.5**	YES	NSL	YES	NSL, ASL
CHRYSENE	69/69	4.4 J	4900	TF2-001-SS1005-0001	212	212	NA	18000	NA	1100	NA	0.27	NA	**4.5**	YES	NSL	YES	NSL, ASL
DIBENZO(A,H)ANTHRACENE	65/69	1.8 J	590 J	TF2-001-SS1005-0001	30.4	32.0	NA	18000	NA	1100	NA	0.033	NA	0.54	YES	NSL	YES	NSL
FLUORANTHENE	69/69	8.2 J	12000 J	TF2-001-SS1005-0001	478	478	50000	29000	NA	100000	0.24	0.41	NA	0.12	NO	BSL	YES	NSL
FLUORENE	31/69	3.5 J	1300	TF2-001-SS1005-0001	38.9	80.5	NA	29000	NA	100000	NA	0.045	NA	0.013	YES	NSL	YES	NSL
INDENO(1,2,3-CD)PYRENE	66/69	2.4 J	2800 J	TF2-001-SS1005-0001	134	139	NA	18000	NA	1100	NA	0.16	NA	**2.5**	YES	NSL	YES	NSL, ASL
NAPHTHALENE	15/69	2.9 J	1800	TF2-001-SS1005-0001	37.0	152	1000	29000	3400	100000	**1.8**	0.062	0.5	0.018	YES	ASL	NO	BSL
PHENANTHRENE	68/69	3.1 J	11000	TF2-001-SS1005-0001	376	382	NA	29000	NA	100000	NA	0.38	NA	0.11	YES	NSL	YES	NSL
PYRENE	69/69	6.5 J	11000 J	TF2-001-SS1005-0001	449	449	NA	18000	34000	1100	NA	0.61	0.3	**10.0**	YES	NSL	YES	ASL
PCBS (UG/KG)																		
AROCLOR-1260	12/12	24	18000	TF2-B219-1	3780	3780	33000	33000	1300	0.332	0.55	0.55	**13.8**	**54217**	NO	BSL	YES	ASL
DIOXINS/FURANS (NG/KG)																		
1,2,3,4,6,7,8,9-OCDD	69/69	1400	18000	TF2-003-SS1011-000.8	4541	4541	NA	NA	NA	0.199	NA	NA	NA	**90452**	YES	NSL	NO	[7]
1,2,3,4,6,7,8,9-OCDF	69/69	2 J	420	TF2-004/5-SS1045-000.5	46.1	46.1	NA	NA	NA	38.6	NA	NA	NA	**10.9**	YES	NSL	NO	[7]
1,2,3,4,6,7,8-HPCDD	69/69	29	850	TF2-004/5-SS1047-000.8	121	121	NA	NA	NA	0.199	NA	NA	NA	**4271**	YES	NSL	NO	[7]
1,2,3,4,6,7,8-HPCDF	67/69	1.6 J	130	TF2-004/5-SS1045-000.5	24.0	24.7	NA	NA	NA	38.6	NA	NA	NA	**3.4**	YES	NSL	NO	[7]
1,2,3,4,7,8,9-HPCDF	53/69	0.14 J	8.9	TF2-004/5-SS1045-000.5	1.25	1.61	NA	NA	NA	38.6	NA	NA	NA	0.23	YES	NSL	NO	[7]
1,2,3,4,7,8-HXCDD	69/69	0.19 J	16	TF2-004/5-SS1047-000.8	1.98	1.98	NA	NA	NA	0.199	NA	NA	NA	**80.4**	YES	NSL	NO	[7]
1,2,3,4,7,8-HXCDF	68/69	0.27 J	11	TF2-004/5-SS1035-0001	2.38	2.42	NA	NA	NA	38.6	NA	NA	NA	0.28	YES	NSL	NO	[7]
1,2,3,6,7,8-HXCDD	69/69	0.22 J	52	TF2-004/5-SS1047-000.8	5.30	5.30	NA	NA	NA	0.199	NA	NA	NA	**261**	YES	NSL	NO	[7]
1,2,3,6,7,8-HXCDF	69/69	0.19 J	6	TF2-004/5-SS1047-000.8	1.71	1.71	NA	NA	NA	38.6	NA	NA	NA	0.16	YES	NSL	NO	[7]
1,2,3,7,8,9-HXCDD	69/69	0.31 J	34	TF2-004/5-SS1047-000.8	4.26	4.26	NA	NA	NA	0.199	NA	NA	NA	**171**	YES	NSL	NO	[7]
1,2,3,7,8,9-HXCDF	1/69	0.19 J	0.19 J	TF2-004/5-SB1043-0.10.5	0.047	0.190	NA	NA	NA	38.6	NA	NA	NA	0.0049	YES	NSL	NO	[7]
1,2,3,7,8-PECDD	60/69	0.093 J	5.4	TF2-004/5-SS1047-000.8	0.813	0.930	NA	NA	NA	0.199	NA	NA	NA	**27.1**	YES	NSL	NO	[7]
1,2,3,7,8-PECDF	55/69	0.13 J	2 J	TF2-004/5-SS1060-000.5	0.511	0.631	NA	NA	NA	38.6	NA	NA	NA	0.052	YES	NSL	NO	[7]
2,3,4,6,7,8-HXCDF	68/69	0.096 J	5.7	TF2-004/5-SS1060-000.5	1.48	1.50	NA	NA	NA	38.6	NA	NA	NA	0.15	YES	NSL	NO	[7]
2,3,4,7,8-PECDF	66/69	0.12 J	2.4 J	TF2-004/5-SS1060-000.5	0.712	0.743	NA	NA	NA	38.6	NA	NA	NA	0.062	YES	NSL	NO	[7]
2,3,7,8-TCDD	38/69	0.094 J	0.63 J	TF2-004/5-SS1053-000.6	0.139	0.228	NA	5000000	NA	0.199	NA	0.00000013	NA	**3.2**	YES	NSL	NO	[7]
2,3,7,8-TCDF	53/69	0.15 J	2	TF2-004/5-SS1060-000.5	0.644	0.781	NA	NA	NA	38.6	NA	NA	NA	0.1	YES	NSL	NO	[7]
2,3,7,8-TCDD equivalents - Mammal	69/69	1.6	31	TF2-004/5-SS1047-000.8	5.79	5.79	NA	NA	NA	0.199	NA	NA	NA	NA	NO	[8]	YES	ASL
2,3,7,8-TCDD equivalents - Bird	69/69	0.90	18	TF2-004/5-SS1047-000.8	4.32	4.32	NA	NA	NA	0.199	NA	NA	NA	NA	NO	[8]	YES	NSL

TABLE 6-3

SURFACE SOIL ECOLOGICAL COPC SELECTION - TIER 1 SCREENING
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Frequency of Detection	Minimum Concentration[1]	Maximum Concentration[1]	Sample of Maximum Concentration	Average of All Results[2]	Average of Detections[3]	Screening Levels[4]				EEQs[5]				Deletion or Selection of COPCs for Invertebrates/Plants		Further Evaluated in Terrestrial Food Chain Modeling[6]	
							Plants	Invertebrates	Birds	Mammals	Plants	Invertebrates	Birds	Mammals	COPC (yes/no)?	Rationale	Evaluated (yes/no)?	Rationale
METALS (MG/KG)																		
ALUMINUM	69/69	4950	18200	TF2-004/5-SS1035-0001, TF2-004/5-SS1043-0.10.5	12524	12524	NA[9]	NA[9]	NA	NA	NA	NA	NA	NA	YES	NSL[11]	YES	NSL
ANTIMONY	68/69	0.05 J	6.6 J	TF2-004/5-SS1056-000.6	0.370	0.375	5	78	NA	0.27	**1.32**	0.085	NA	**24.4**	YES	ASL	YES	ASL
ARSENIC	69/69	2.2	11.4	TF2-004/5-SS1044-000.5	6.73	6.73	18	17	43	46	0.63	0.67	0.27	0.25	NO	BSL	NO	BSL
BARIUM	69/69	11.3 J	169 J	TF2-004/5-SS1039-000.9	19.8	19.8	500	330	820	2000	0.34	0.51	0.21	0.085	NO	BSL	NO	BSL
BERYLLIUM	69/69	0.23	1.3 J	TF2-004/5-SS1065-000.5-D	0.398	0.398	10	40	NA	21	0.13	0.033	NA	0.062	NO	BSL	YES	NSL
CADMIUM	69/69	0.05 J	0.29	TF2-003-SS1019-000.5	0.096	0.096	32	140	0.77	0.36	0.0091	0.0021	0.38	0.81	NO	BSL	NO	BSL
CALCIUM	69/69	307 J	2630	TF2-001-SS1005-0001	727	727	NA	NA	NA	NA	NA	NA	NA	NA	NO	NUT	NO	NUT
CHROMIUM	69/69	7.1	44.5	TF2-003-SS1017-000.8	17.2	17.2	78	78	26	34	0.57	0.57	**1.7**	**1.3**	NO	BSL	YES	ASL
COBALT	69/69	3.3 J	16.6	TF2-001-SS1002-0001	10.6	10.6	13	1000	120	230	**1.3**	0.017	0.14	0.072	YES	ASL	NO	BSL
COPPER	69/69	7.8	39.9	TF2-004/5-SS1063-000.6	20.1	20.1	70	80	28	49	0.57	0.50	**1.4**	0.81	NO	BSL	YES	ASL
IRON	69/69	9760	37800	TF2-004/5-SS1035-0001	24196	24196	NA[10]	200	NA	NA	NA	**189**	NA	NA	YES	NSL[11], ASL	YES	NSL
LEAD	77/77	7.6	101 J	TF2-003-SS1016-000.9	28.4	28.4	120	1700	11	56	0.84	0.059	**9.2**	**1.8**	NO	BSL	YES	ASL
MAGNESIUM	69/69	1500 J	6180	TF2-004/5-SS1043-0.10.5	3701	3701	NA	NA	NA	NA	NA	NA	NA	NA	NO	NUT	NO	NUT
MANGANESE	69/69	155 J	658 J	TF2-003-SS1016-000.9	294	294	220	450	4300	4000	**3.0**	**1.5**	0.15	0.16	YES	ASL	NO	BSL
MERCURY	52/69	0.005 J	0.21 J	TF2-001-SS1003-0001	0.043	0.054	12	12	0.013	1.7	0.018	0.018	**16.2**	0.12	NO	BSL	YES	ASL
NICKEL	69/69	9.2	53	TF2-004/5-SS1039-000.9	21.2	21.2	38	280	210	130	**1.4**	0.19	0.25	0.41	YES	ASL	NO	BSL
POTASSIUM	69/69	258	504	TF2-004/5-SS1032-000.9	379	379	NA	NA	NA	NA	NA	NA	NA	NA	NO	NUT	NO	NUT
SELENIUM	20/69	0.11 J	0.39 J	TF2-004/5-SS1054-000.6, TF2-004/5-SS1056-000.6	0.186	0.268	0.52	4.1	1.2	0.63	0.75	0.10	0.33	0.62	NO	BSL	NO	BSL
SILVER	69/69	0.02 J	0.56	TF2-001-SS1006-0001	0.056	0.056	560	50	4.2	14	0.0010	0.011	0.13	0.040	NO	BSL	NO	BSL
SODIUM	23/69	19.1 J	60.9 J	TF2-001-SS1002-0001	24.8	36.1	NA	NA	NA	NA	NA	NA	NA	NA	NO	NUT	NO	NUT
THALLIUM	56/69	0.03 J	0.1	TF2-003-SS1016-000.9	0.047	0.052	1.4	1.4	0.9	0.0569	0.071	0.071	0.11	**1.8**	NO	BSL	YES	ASL
VANADIUM	69/69	9	35.2	TF2-004/5-SS1035-0001	22.2	22.2	130	130	7.8	280	0.27	0.27	**4.5**	0.13	NO	BSL	YES	ASL
ZINC	69/69	21.7	99.1 J	TF2-003-SS1016-000.9	52.9	52.9	160	120	46	79	0.62	0.83	**2.2**	**1.3**	NO	BSL	YES	ASL

Shaded chemical name indicates that the chemical was selected as a COPC or retained for food chain modeling.

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Average of all analytical results including one-half of the detection limit for non-detects.
3 - Average of detected concentrations only.
4 - The sources of the screening levels are presented in Table 6-2.
5 - EEQ is calculated by dividing the chemical concentration by its screening level. Shaded cells indicate that the EEQ exceeds 1. Value is unitless.
6 - Chemicals with EEQs for birds or mammals greater than 1.0 or chemicals without bird or mammal screening values are retained for food chain modeling.
7 - Risk from parameter considered by evaluating 2,3,7,8-TCDD Equivalents.
8 - 2,3,7,8-TCDD equivalents based on plants and soil invertebrates are not available.
9 - Only considered a COPC when the soil pH is less than 5.5.
10 - Not expected to be toxic to plants with a soil pH between 5 and 8.
11 - COPC selection based on soil pH and pH data are not available.

Abbreviations:
COPC - Chemical of Potential Concern
EEQ - Ecological Effects Quotient
J - Estimated concentration
NA - Not applicable; not available

Rationale Codes for COPC Selection:
ASL - Above Screening Level
BSL - Below Screening Level
NSL - No Screening Level
NUT - Essential Nutrient

TABLE 6-4

TERRESTRIAL FOOD CHAIN MODEL - TIER 1 SCENARIO
INVERTIVOROUS AND HERBIVOROUS RECEPTORS
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Herbivorous Receptors EEQs				Invertivorous Receptors EEQs			
	Bobwhite Quail		Meadow Vole		American Robin		Short-Tailed Shrew	
	NOAEL-based	LOAEL-based	NOAEL-based	LOAEL-based	NOAEL-based	LOAEL-based	NOAEL-based	LOAEL-based
Semivolatile Organic Compounds								
2-Methylnaphthalene	4.8E-03	4.8E-04	1.4E-04	2.6E-05	1.4E-02	1.4E-03	2.7E-04	5.0E-05
Acenaphthene	7.6E-03	7.6E-04	6.0E-05	1.1E-05	1.3E-01	1.3E-02	2.4E-03	4.5E-04
Acenaphthylene	1.1E-03	1.1E-04	3.1E-05	5.8E-06	4.8E-02	4.8E-03	9.7E-04	1.8E-04
Anthracene	5.3E-02	5.3E-03	1.3E-03	2.4E-04	4.6E-01	4.6E-02	8.8E-03	1.6E-03
Benzo(a)anthracene	4.2E-02	4.2E-03	5.5E-02	8.8E-04	6.4E-01	6.4E-02	1.3E+00	2.0E-02
Benzo(a)pyrene	5.1E-02	5.1E-03	1.0E-01	1.7E-03	4.5E-01	4.5E-02	8.7E-01	1.4E-02
Benzo(b)fluoranthene	1.4E-01	1.4E-02	3.6E-01	5.7E-03	1.3E+00	1.3E-01	2.6E+00	4.2E-02
Benzo(g,h,i)perylene	5.5E-02	5.5E-03	1.5E-01	2.4E-03	4.5E-01	4.5E-02	9.3E-01	1.5E-02
Benzo(k)fluoranthene	2.2E-02	2.2E-03	4.3E-02	6.8E-04	3.8E-01	3.8E-02	7.8E-01	1.2E-02
Chrysene	4.5E-02	4.5E-03	5.9E-02	9.4E-04	9.7E-01	9.7E-02	2.0E+00	3.2E-02
Dibenzo(a,h)anthracene	8.4E-03	8.4E-04	1.7E-02	2.7E-04	1.2E-01	1.2E-02	2.4E-01	3.8E-03
Fluoranthene	4.1E-01	4.1E-02	1.1E-02	2.0E-03	3.1E+00	3.1E-01	6.0E-02	1.1E-02
Fluorene	9.7E-03	9.7E-04	7.5E-05	1.4E-05	1.0E+00	1.0E-01	2.0E-02	3.7E-03
Indeno(1,2,3-cd)pyrene	3.7E-02	3.7E-03	7.1E-02	1.1E-03	6.8E-01	6.8E-02	1.4E+00	2.2E-02
Phenanthrene	2.8E-01	2.8E-02	6.9E-03	1.3E-03	1.7E+00	1.7E-01	3.1E-02	5.8E-03
Pyrene	5.0E-01	5.0E-02	1.5E+00	2.4E-02	1.7E+00	1.7E-01	3.4E+00	5.4E-02
PCBs								
Aroclor-1260	1.5E+00	1.5E-01	9.5E-01	9.5E-02	2.6E+02	2.6E+01	4.5E+02	4.5E+01
Dioxins/Furans								
2,3,7,8-TCDD equivalents - Mammal	--	--	1.3E-01	1.3E-02	--	--	7.4E+01	7.4E+00
2,3,7,8-TCDD equivalents - Bird	2.0E-02	2.0E-03	--	--	4.7E+00	4.7E-01	--	--
Metals								
Aluminum	2.0E+01	2.0E+00	3.8E+01	3.8E+00	3.1E+01	3.1E+00	1.0E+03	1.0E+02
Antimony	NV	NV	8.3E-01	1.8E-02	NV	NV	1.2E+01	2.6E-01
Beryllium	NV	NV	1.6E-01	1.2E-01	NV	NV	2.0E-02	1.5E-02
Chromium	3.2E-01	5.4E-02	1.5E-01	6.2E-03	1.3E+00	2.2E-01	6.6E-01	2.7E-02
Copper	3.6E-01	4.2E-02	1.9E-01	1.3E-02	1.1E+00	1.3E-01	4.1E-01	2.8E-02
Iron	6.0E+00	6.0E-01	3.5E+00	3.5E-01	1.2E+01	1.22E+00	5.3E+00	5.3E-01
Lead	1.1E+00	4.2E-02	1.6E-01	4.0E-03	4.9E+00	1.8E-01	8.3E-01	2.1E-02
Mercury	1.8E+01	1.8E+00	3.6E+00	7.3E-01	1.7E+01	1.7E+00	2.2E+00	4.3E-01
Thallium	NV	NV	5.4E-02	5.4E-03	NV	NV	1.5E+00	1.5E-01
Vanadium	1.6E+00	3.2E-01	3.4E-02	1.5E-02	3.4E+00	6.9E-01	6.5E-02	2.9E-02
Zinc	1.2E-01	4.7E-02	9.5E-02	2.4E-02	9.8E-01	3.8E-01	5.5E-01	1.4E-01

Cells are shaded if the value is greater than 1.0

NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
EEQ - Ecological Effects Quotient
NV - No value determined

TABLE 6-5

SUMMARY OF TIER 1 SCREENING LEVEL ECOLOGICAL RISK ASSESSMENT
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Analyte	Plants	Invertebrates	Birds	Mammals
PAHs				
2-METHYLNAPHTHALENE	X			
BENZO(A)ANTHRACENE				X
BENZO(B)FLUORANTHENE			X	X
BENZO(G,H,I)PERYLENE	X			
BENZO(K)FLUORANTHENE	X			
CHRYSENE	X			X
DIBENZO(A,H)ANTHRACENE	X			
FLUORANTHENE			X	
FLUORENE	X			
INDENO(1,2,3-CD)PYRENE	X			X
NAPHTHALENE	X			
PHENANTHRENE	X		X	
PYRENE	X		X	X
PCBs				
AROCLOR-1260			X	X
Dioxins/Furans				
1,2,3,4,6,7,8,9-OCDD	X	X		
1,2,3,4,6,7,8,9-OCDF	X	X		
1,2,3,4,6,7,8-HPCDD	X	X		
1,2,3,4,6,7,8-HPCDF	X	X		
1,2,3,4,7,8,9-HPCDF	X	X		
1,2,3,4,7,8-HXCDD	X	X		
1,2,3,4,7,8-HXCDF	X	X		
1,2,3,6,7,8-HXCDD	X	X		
1,2,3,6,7,8-HXCDF	X	X		
1,2,3,7,8,9-HXCDD	X	X		
1,2,3,7,8,9-HXCDF	X	X		
1,2,3,7,8-PECDD	X	X		
1,2,3,7,8-PECDF	X	X		
2,3,4,6,7,8-HXCDF	X	X		
2,3,4,7,8-PECDF	X	X		
2,3,7,8-TCDD	X			
2,3,7,8-TCDF	X	X		
2,3,7,8-TCDD Equivalents			X	X
Metals				
ALUMINUM	X	X	X	X
ANTIMONY	X			X
CHROMIUM			X	
COBALT	X			
COPPER			X	
IRON	X	X	X	X
LEAD			X	
MANGANESE	X	X		
MERCURY			X	X
NICKEL	X			
THALLIUM				X
VANADIUM			X	

Notes:
X - Chemical selected as a COPC.

TABLE 6-6

SURFACE SOIL ECOLOGICAL COPC SELECTION FOR AOC-001 - PLANTS AND INVERTEBRATES
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Frequency of Detection	Minimum Concentration[1]	Maximum Concentration[1]	Sample of Maximum Concentration	Average of All Results[2]	Average of Detections[3]	Similar to Background[4]	Screening Levels[5]		EEQs[6]		Deletion or Selection of COPCs for Invertebrates/Plants	
								Plants	Invertebrates	Plants	Invertebrates	COPC (yes/no)?	Rationale
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)													
2-METHYLNAPHTHALENE	1/11	13	13	TF2-001-SS1007-0001	25.8	13.0	NA	NA	29000	NA	0.00045	YES	NSL
BENZO(G,H,I)PERYLENE	10/11	2.7 J	1800	TF2-001-SS1005-0001	209	229	NA	NA	18000	NA	0.10	YES	NSL
BENZO(K)FLUORANTHENE	10/11	5.2	1700	TF2-001-SS1005-0001	200	219	NA	NA	18000	NA	0.094	YES	NSL
CHRYSENE	11/11	6.4 J	4900	TF2-001-SS1005-0001	564	564	NA	NA	18000	NA	0.27	YES	NSL
DIBENZO(A,H)ANTHRACENE	9/11	3.5	590	TF2-001-SS1005-0001	69.4	84.2	NA	NA	18000	NA	0.033	YES	NSL
FLUORENE	4/11	6.6 J	1300	TF2-001-SS1005-0001	139	374	NA	NA	29000	NA	0.045	YES	NSL
INDENO(1,2,3-CD)PYRENE	11/11	3.2	2800	TF2-001-SS1005-0001	332	332	NA	NA	18000	NA	0.16	YES	NSL
NAPHTHALENE	2/11	66	1800	TF2-001-SS1005-0001	174	933	NA	1000	29000	**1.8**	0.062	YES	ASL
PHENANTHRENE	11/11	3.1 J	11000	TF2-001-SS1005-0001	1206	1206	NA	NA	29000	NA	0.38	YES	NSL
PYRENE	11/11	6.9 J	11000	TF2-001-SS1005-0001	1326	1326	NA	NA	18000	NA	0.61	YES	NSL
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	11/11	2900	7300	TF2-001-SS1003-0001-D	5014	5014	NA	NA	NA	NA	NA	YES	NSL
1,2,3,4,6,7,8,9-OCDF	11/11	2 J	31	TF2-001-SS1000-0001	6.86	6.86	NA	NA	NA	NA	NA	YES	NSL
1,2,3,4,6,7,8-HPCDD	11/11	29	54	TF2-001-SS1000-0001	38.0	38.0	NA	NA	NA	NA	NA	YES	NSL
1,2,3,4,6,7,8-HPCDF	9/11	1.6 J	11	TF2-001-SS1000-0001	3.38	4.01	NA	NA	NA	NA	NA	YES	NSL
1,2,3,4,7,8,9-HPCDF	4/11	0.14 J	0.31 J	TF2-001-SS1009-0001	0.09	0.19	NA	NA	NA	NA	NA	YES	NSL
1,2,3,4,7,8-HXCDD	11/11	0.19 J	0.78 J	TF2-001-SS1000-0001	0.35	0.35	NA	NA	NA	NA	NA	YES	NSL
1,2,3,4,7,8-HXCDF	10/11	0.29 J	1 J	TF2-001-SS1007-0001	0.64	0.68	NA	NA	NA	NA	NA	YES	NSL
1,2,3,6,7,8-HXCDD	11/11	0.22 J	1.7 J	TF2-001-SS1000-0001	0.75	0.75	NA	NA	NA	NA	NA	YES	NSL
1,2,3,6,7,8-HXCDF	11/11	0.19 J	0.8 J	TF2-001-SS1000-0001	0.53	0.53	NA	NA	NA	NA	NA	YES	NSL
1,2,3,7,8,9-HXCDD	11/11	0.31 J	1.6 J	TF2-001-SS1000-0001	0.73	0.73	NA	NA	NA	NA	NA	YES	NSL
1,2,3,7,8-PECDD	6/11	0.093 J	0.26 J	TF2-001-SS1005-0001	0.11	0.17	NA	NA	NA	NA	NA	YES	NSL
1,2,3,7,8-PECDF	7/11	0.13 J	0.28 J	TF2-001-SS1005-0001	0.13	0.19	NA	NA	NA	NA	NA	YES	NSL
2,3,4,6,7,8-HXCDF	11/11	0.096 J	1.2 J	TF2-001-SS1000-0001	0.48	0.48	NA	NA	NA	NA	NA	YES	NSL
2,3,4,7,8-PECDF	11/11	0.12 J	0.43 J	TF2-001-SS1007-0001	0.23	0.23	NA	NA	NA	NA	NA	YES	NSL
2,3,7,8-TCDF	3/11	0.19 J	0.36 J	TF2-001-SS1003-0001	0.21	0.25	NA	NA	NA	NA	NA	YES	NSL
METALS (MG/KG)													
ALUMINUM	11/11	11900	14600	TF2-001-SS1003-0001, TF2-001-SS1006-0001, TF2-001-SS1008-0001	13500	13500	Yes	NA[7]	NA[7]	NA	NA	YES	NSL[9]
ANTIMONY	11/11	0.08 J	0.26 J	TF2-001-SS1009-0001	0.13	0.13	No	5	78	0.052	0.0033	NO	BSL
COBALT	11/11	9.6	16.6	TF2-001-SS1002-0001	12.4	12.4	No	13	1000	**1.3**	0.017	YES	ASL
IRON	11/11	22600	27800	TF2-001-SS1002-0001	25377	25377	No	NA[8]	200	NA	**139**	YES	NSL[9], ASL
MANGANESE	11/11	267	459	TF2-001-SS1009-0001	342	342	No	220	450	**2.1**	**1.02**	YES	ASL
NICKEL	11/11	18.6	28.4	TF2-001-SS1009-0001	23.4	23.4	No	38	280	0.75	0.10	NO	BSL

Note: Only includes chemicals that are detected at AOC-001 and are COPCs for plants and invertebrates as listed in Table 6-5.
Shaded chemical name indicates that the chemical was selected as a COPC.

Abbreviations:
COPC - Chemical of Potential Concern
EEQ - Ecological Effects Quotient
J - Estimated concentration
NA - Not applicable; not available

Rationale Codes for COPC Selection:
ASL - Above Screening Level
BSL - Below Screening Level
NSL - No Screening Level

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Average of all analytical results including one-half of the detection limit for non-detects.
3 - Average of detected concentrations only.
4 - A statistical analysis was conducted using the site and background datasets.
5 - The sources of the screening levels are presented in Table 6-2.
6 - EEQ is calculated by dividing the chemical concentration by its screening level. Shaded cells indicate that the EEQ exceeds 1. Value is unitless.
7 - Only considered a COPC when the soil pH is less than 5.5.
8 - Not expected to be toxic to plants with a soil pH between 5 and 8.
9 - COPC selection based on soil pH and pH data are not available.

TABLE 6-7

SURFACE SOIL ECOLOGICAL COPC SELECTION FOR COMBINED AOCs 003 AND 4/5 - PLANTS AND INVERTEBRATES
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Frequency of Detection	Minimum Concentration[1]	Maximum Concentration[1]	Sample of Maximum Concentration	Average of All Results[2]	Average of Detections[3]	Similar to Background[4]	Screening Levels[5]		EEQs[6]		Deletion or Selection of COPCs for Invertebrates/Plants	
								Plants	Invertebrates	Plants	Invertebrates	COPC (yes/no)?	Rationale
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)													
2-METHYLNAPHTHALENE	10/58	2.2 J	72	TF2-004/5-SS1047-000.8	7.4	19.0	NA	NA	29000	NA	0.0025	YES	NSL
BENZO(G,H,I)PERYLENE	57/58	2.8 J	540	TF2-004/5-SS1021-000.7	44.1	44.8	NA	NA	18000	NA	0.030	YES	NSL
BENZO(K)FLUORANTHENE	57/58	4.3 J	660	TF2-004/5-SS1021-000.7	58.5	59.5	NA	NA	18000	NA	0.037	YES	NSL
CHRYSENE	58/58	4.4 J	1800	TF2-004/5-SS1021-000.7	145	145	NA	NA	18000	NA	0.10	YES	NSL
DIBENZO(A,H)ANTHRACENE	56/58	1.8 J	210	TF2-004/5-SS1021-000.7	23.0	23.7	NA	NA	18000	NA	0.012	YES	NSL
FLUORENE	27/58	3.5 J	230	TF2-004/5-SS1021-000.7	19.9	37.1	NA	NA	29000	NA	0.0079	YES	NSL
INDENO(1,2,3-CD)PYRENE	55/58	2.4 J	830	TF2-004/5-SS1021-000.7	96.0	101	NA	NA	18000	NA	0.046	YES	NSL
NAPHTHALENE	13/58	2.9 J	96	TF2-004/5-SS1047-000.8	11.0	32.1	NA	1000	29000	0.096	0.0033	NO	BSL
PHENANTHRENE	57/58	3.4 J	2800	TF2-004/5-SS1021-000.7	219	223	NA	NA	29000	NA	0.097	YES	NSL
PYRENE	58/58	6.5 J	3400	TF2-004/5-SS1021-000.7	283	283	NA	NA	18000	NA	0.19	YES	NSL
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	58/58	1400	18000	TF2-003-SS1011-000.8	4452	4452	NA	NA	NA	NA	NA	YES	NSL
1,2,3,4,6,7,8,9-OCDF	58/58	4.5 J	420	TF2-004/5-SS1045-000.5	53	53	NA	NA	NA	NA	NA	YES	NSL
1,2,3,4,6,7,8-HPCDD	58/58	32	850	TF2-004/5-SS1047-000.8	136	136	NA	NA	NA	NA	NA	YES	NSL
1,2,3,4,6,7,8-HPCDF	58/58	2.1 J	130	TF2-004/5-SS1045-000.5	28	28	NA	NA	NA	NA	NA	YES	NSL
1,2,3,4,7,8,9-HPCDF	49/58	0.18 J	8.9	TF2-004/5-SS1045-000.5	1.5	1.7	NA	NA	NA	NA	NA	YES	NSL
1,2,3,4,7,8-HXCDD	58/58	0.28 J	16	TF2-004/5-SS1047-000.8	2.3	2.3	NA	NA	NA	NA	NA	YES	NSL
1,2,3,4,7,8-HXCDF	58/58	0.27 J	11	TF2-004/5-SS1035-0001	2.7	2.7	NA	NA	NA	NA	NA	YES	NSL
1,2,3,6,7,8-HXCDD	58/58	0.47 J	52	TF2-004/5-SS1047-000.8	6.2	6.2	NA	NA	NA	NA	NA	YES	NSL
1,2,3,6,7,8-HXCDF	58/58	0.52 J	6	TF2-004/5-SS1047-000.8	1.9	1.9	NA	NA	NA	NA	NA	YES	NSL
1,2,3,7,8,9-HXCDD	58/58	0.57 J	34	TF2-004/5-SS1047-000.8	4.9	4.9	NA	NA	NA	NA	NA	YES	NSL
1,2,3,7,8,9-HXCDF	1/58	0.19 J	0.19 J	TF2-004/5-SB1043-0.10.5	0.053	0.19	NA	NA	NA	NA	NA	YES	NSL
1,2,3,7,8-PECDD	54/58	0.11 J	5.4	TF2-004/5-SS1047-000.8	0.95	1.0	NA	NA	NA	NA	NA	YES	NSL
1,2,3,7,8-PECDF	48/58	0.14 J	2 J	TF2-004/5-SS1060-000.5	0.58	0.69	NA	NA	NA	NA	NA	YES	NSL
2,3,4,6,7,8-HXCDF	57/58	0.2 J	5.7	TF2-004/5-SS1060-000.5	1.7	1.7	NA	NA	NA	NA	NA	YES	NSL
2,3,4,7,8-PECDF	55/58	0.14 J	2.4 J	TF2-004/5-SS1060-000.5	0.80	0.84	NA	NA	NA	NA	NA	YES	NSL
2,3,7,8-TCDD	38/58	0.094 J	0.63 J	TF2-004/5-SS1053-000.6	0.16	0.23	NA	NA	5000000	NA	0.00000013	YES	NSL
2,3,7,8-TCDF	50/58	0.15 J	2	TF2-004/5-SS1060-000.5	0.73	0.81	NA	NA	NA	NA	NA	YES	NSL
METALS (MG/KG)													
ALUMINUM	58/58	4950	18200	TF2-004/5-SS1035-0001, TF2-004/5-SS1043-0.10.5	12339	12339	Yes	NA[7]	NA[7]	NA	NA	YES	NSL[9]
ANTIMONY	57/58	0.05 J	6.6 J	TF2-004/5-SS1056-000.6	0.41	0.42	No	5	78	**1.3**	0.085	YES	ASL
COBALT	58/58	3.3 J	16.4	TF2-004/5-SS1058-000.5	10.3	10.3	No	13	1000	**1.3**	0.016	YES	ASL
IRON	58/58	9760	37800	TF2-004/5-SS1035-0001	23972	23972	No	NA[8]	200	NA	**189**	YES	NSL[9], ASL
MANGANESE	58/58	155 J	658 J	TF2-003-SS1016-000.9	285	285	No	220	450	**3.0**	**1.5**	YES	ASL
NICKEL	58/58	9.2	53	TF2-004/5-SS1039-000.9	20.8	20.8	No	38	280	**1.4**	0.19	YES	ASL

Note: Only includes chemicals that are detected at AOCs 003 and 4/5 and are COPCs for plants and invertebrates as listed in Table 6-5.
Shaded chemical name indicates that the chemical was selected as a COPC.

Abbreviations:
COPC - Chemical of Potential Concern
EEQ - Ecological Effects Quotient
J - Estimated concentration
NA - Not applicable; not available

Rationale Codes for COPC Selection:
ASL - Above Screening Level
BSL - Below Screening Level
NSL - No Screening Level

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Average of all analytical results including one-half of the detection limit for non-detects.
3 - Average of detected concentrations only.
4 - A statistical analysis was conducted using the site and background datasets.
5 - The sources of the screening levels are presented in Table 6-2.
6 - EEQ is calculated by dividing the chemical concentration by its screening level. Shaded cells indicate that the EEQ exceeds 1. Value is unitless.
7 - Only considered a COPC when the soil pH is less than 5.5.
8 - Not expected to be toxic to plants with a soil pH between 5 and 8.
9 - COPC selection based on soil pH and pH data are not available.

TABLE 6-8

STEP 3A EVALUATION FOR RISKS TO PLANTS AND INVERTEBRATES FROM SURFACE SOIL COPCs
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

COPC	Frequency of Detection	Maximum Concentration	Screening Level[1]		EEQ[2]		Factors Considered in Step 3a Evaluation[3]		Risk Determination (Acceptable/ Unacceptable)	Retained as a COPC after Step 3a Evaluation?	
			Plants	Invertebrates	Plants	Invertebrates	Plants	Invertebrates		Plants	Invertebrates
AOC 001											
Polycyclic Aromatic Hydrocarbons (ug/kg)											
2-Methylnaphthalene	1/11	13	NA	29000	NA	0.0004	PAHs are typically not toxic to plants except at high soil concentrations. All concentrations less than lowest listed EC50 for PAHs of 30,000 µg/kg for anthracene. PAHs concentrations were generally less than the lowest Canadian SQG for individual PAHs (2,500 µg/kg) and all PAHs were less than the lowest Canadian SQG for benzo(a)pryene (20,000 µg/kg).	Not selected as a COPC.	Acceptable	No	No
Benzo(g,h,i)perylene	10/11	1800	NA	18000	NA	0.10			Acceptable	No	No
Benzo(k)fluoranthene	10/11	1700	NA	18000	NA	0.094			Acceptable	No	No
Chrysene	11/11	4900	NA	18000	NA	0.27			Acceptable	No	No
Dibenzo(a,h)anthracene	9/11	590	NA	18000	NA	0.033			Acceptable	No	No
Fluorene	4/11	1300	NA	29000	NA	0.045			Acceptable	No	No
Indeno(1,2,3-cd)pyrene	11/11	2800	NA	18000	NA	0.16			Acceptable	No	No
Naphthalene	2/11	1800	1000	29000	**1.8**	0.062			Acceptable	No	No
Phenanthrene	11/11	11000	NA	29000	NA	0.38			Acceptable	No	No
Pyrene	11/11	11000	NA	18000	NA	0.61			Acceptable	No	No
Dioxins/furans (ng/kg)											
1,2,3,4,6,7,8,9-OCDD	11/11	7300	NA	NA	NA	NA	Dioxins need to bind to the aryl hydrocarbon (Ah) receptor to cause toxicity and the Ah receptor has not been detected in plants and soil invertebrates.		Acceptable	No	No
1,2,3,4,6,7,8,9-OCDF	11/11	31	NA	NA	NA	NA			Acceptable	No	No
1,2,3,4,6,7,8-HPCDD	11/11	54	NA	NA	NA	NA			Acceptable	No	No
1,2,3,4,6,7,8-HPCDF	9/11	11	NA	NA	NA	NA			Acceptable	No	No
1,2,3,4,7,8,9-HPCDF	4/11	0.31 J	NA	NA	NA	NA			Acceptable	No	No
1,2,3,4,7,8-HXCDD	11/11	0.78 J	NA	NA	NA	NA			Acceptable	No	No
1,2,3,4,7,8-HXCDF	10/11	1 J	NA	NA	NA	NA			Acceptable	No	No
1,2,3,6,7,8-HXCDD	11/11	1.7 J	NA	NA	NA	NA			Acceptable	No	No
1,2,3,6,7,8-HXCDF	11/11	0.8 J	NA	NA	NA	NA			Acceptable	No	No
1,2,3,7,8,9-HXCDD	11/11	1.6 J	NA	NA	NA	NA			Acceptable	No	No
1,2,3,7,8-PECDD	6/11	0.26 J	NA	NA	NA	NA			Acceptable	No	No
1,2,3,7,8-PECDF	7/11	0.28 J	NA	NA	NA	NA			Acceptable	No	No
2,3,4,6,7,8-HXCDF	11/11	1.2 J	NA	NA	NA	NA			Acceptable	No	No
2,3,4,7,8-PECDF	11/11	0.43 J	NA	NA	NA	NA			Acceptable	No	No
2,3,7,8-TCDF	3/11	0.36 J	NA	NA	NA	NA			Acceptable	No	No
Metals (mg/kg)											
Antimony	11/11	0.26 J	5	78	0.05	0.003	Not selected as a COPC.	Not selected as a COPC.	Acceptable	No	No
Cobalt	11/11	16.6	13	1000	**1.3**	0.017	EEQ only slightly exceeded 1. Exceedances generally bounded by lower concentrations.	Not selected as a COPC.	Acceptable	No	No
Iron	11/11	27800	NA	200	NA	**139**	Based on soil pH data available for other Tank Farm sites, soil pH at the site is expected to be within the pH range (5 to 8) at which iron is not expected to be toxic to plants.	Based on soil pH data available for other Tank Farm sites, iron is not expected to be very bioavailable to earthworms. Also, based on the distribution of iron in soil across the site, there does not appear to be a pattern that would indicate a specific source of iron, so any impacts from iron are not likely site related.	Acceptable	No	No
Manganese	11/11	459	220	450	**2.1**	**1.0**	Most samples only slightly exceeded the screening level. Only two samples had concentrations greater than twice the screening level. Based on the distribution of manganese in soil across the site, there does not appear to be a pattern that would indicate a specific source of manganese.		Acceptable	No	No
Nickel	11/11	28.4	38	280	0.7	0.10	Not selected as a COPC.	Not selected as a COPC.	Acceptable	No	No

TABLE 6-8

STEP 3A EVALUATION FOR RISKS TO PLANTS AND INVERTEBRATES FROM SURFACE SOIL COPCs
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

COPC	Frequency of Detection	Maximum Concentration	Screening Level[1]		EEQ[2]		Factors Considered in Step 3a Evaluation[3]		Risk Determination (Acceptable/ Unacceptable)	Retained as a COPC after Step 3a Evaluation?	
			Plants	Invertebrates	Plants	Invertebrates	Plants	Invertebrates		Plants	Invertebrates
AOCs 003 and 4/5											
Polycyclic Aromatic Hydrocarbons (ug/kg)											
2-Methylnaphthalene	10/58	72	NA	29000	NA	0.0025	PAHs are typically not toxic to plants except at high soil concentrations. All concentrations less than lowest listed EC50 for PAHs of 30,000 µg/kg for anthracene. PAHs concentrations were generally less than the lowest Canadian SQG for individual PAHs (2,500 µg/kg) and all PAHs were less than the lowest Canadian SQG for benzo(a)pryene (20,000 µg/kg).	Not selected as a COPC.	Acceptable	No	No
Benzo(g,h,i)perylene	57/58	540	NA	18000	NA	0.03			Acceptable	No	No
Benzo(k)fluoranthene	57/58	660	NA	18000	NA	0.037			Acceptable	No	No
Chrysene	58/58	1800	NA	18000	NA	0.10			Acceptable	No	No
Dibenzo(a,h)anthracene	56/58	210	NA	18000	NA	0.012			Acceptable	No	No
Fluorene	27/58	230	NA	29000	NA	0.008			Acceptable	No	No
Indeno(1,2,3-cd)pyrene	55/58	830	NA	18000	NA	0.05			Acceptable	No	No
Naphthalene	13/58	96	1000	29000	0.096	0.003			Acceptable	No	No
Phenanthrene	57/58	2800	NA	29000	NA	0.10			Acceptable	No	No
Pyrene	58/58	3400	NA	18000	NA	0.19			Acceptable	No	No
Dioxins/furans (ng/kg)											
1,2,3,4,6,7,8,9-OCDD	58/58	18000	NA	NA	NA	NA	Dioxins need to bind to the aryl hydrocarbon (Ah) receptor to cause toxicity and the Ah receptor has not been detected in plants and soil invertebrates.		Acceptable	No	No
1,2,3,4,6,7,8,9-OCDF	58/58	420	NA	NA	NA	NA			Acceptable	No	No
1,2,3,4,6,7,8-HPCDD	58/58	850	NA	NA	NA	NA			Acceptable	No	No
1,2,3,4,6,7,8-HPCDF	58/58	130	NA	NA	NA	NA			Acceptable	No	No
1,2,3,4,7,8,9-HPCDF	49/58	8.9	NA	NA	NA	NA			Acceptable	No	No
1,2,3,4,7,8-HXCDD	58/58	16	NA	NA	NA	NA			Acceptable	No	No
1,2,3,4,7,8-HXCDF	58/58	11	NA	NA	NA	NA			Acceptable	No	No
1,2,3,6,7,8-HXCDD	58/58	52	NA	NA	NA	NA			Acceptable	No	No
1,2,3,6,7,8-HXCDF	58/58	6	NA	NA	NA	NA			Acceptable	No	No
1,2,3,7,8,9-HXCDD	58/58	34	NA	NA	NA	NA			Acceptable	No	No
1,2,3,7,8,9-HXCDF	1/58	0.19 J	NA	NA	NA	NA			Acceptable	No	No
1,2,3,7,8-PECDD	54/58	5.4	NA	NA	NA	NA			Acceptable	No	No
1,2,3,7,8-PECDF	48/58	2 J	NA	NA	NA	NA			Acceptable	No	No
2,3,4,6,7,8-HXCDF	57/58	5.7	NA	NA	NA	NA			Acceptable	No	No
2,3,4,7,8-PECDF	55/58	2.4 J	NA	NA	NA	NA			Acceptable	No	No
2,3,7,8-TCDD	38/58	0.63 J	NA	NA	NA	5000000			Acceptable	No	No
2,3,7,8-TCDF	50/58	2	NA	NA	NA	NA			Acceptable	No	No

TABLE 6-8

STEP 3A EVALUATION FOR RISKS TO PLANTS AND INVERTEBRATES FROM SURFACE SOIL COPCs
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

COPC	Frequency of Detection	Maximum Concentration	Screening Level[1]		EEQ[2]		Factors Considered in Step 3a Evaluation[3]		Risk Determination (Acceptable/ Unacceptable)	Retained as a COPC after Step 3a Evaluation?	
			Plants	Invertebrates	Plants	Invertebrates	Plants	Invertebrates		Plants	Invertebrates
Metals (mg/kg)											
Antimony	57/58	6.6 J	5	78	**1.32**	0.085	EEQ only slightly exceeded 1. Infrequently exceeded screening level in 1 of 58 samples. Exceedance bounded by lower concentrations. Low confidence in the plant screening level. It is likely that a plant toxicity benchmark for antimony would be greater than the screening level for soil invertebrates (78 mg/kg).	Not selected as a COPC.	Acceptable	No	No
Cobalt	58/58	16.4	13	1000	**1.3**	0.016	EEQ only slightly exceeded 1. Exceedances generally bounded by lower concentrations.	Not selected as a COPC.	Acceptable	No	No
Iron	58/58	37800	NA	200	NA	**189**	Based on soil pH data available for other Tank Farm sites, soil pH at the site is expected to be within the pH range (5 to 8) at which iron is not expected to be toxic to plants.	Based on soil pH data available for other Tank Farm sites, iron is not expected to be very bioavailable to earthworms. Also, based on the distribution of iron in soil across the site, there does not appear to be a pattern that would indicate a specific source of iron, so any impacts from iron are not likely site related.	Acceptable	No	No
Manganese	58/58	658 J	220	450	**3.0**	**1.5**	Most samples only slightly exceeded the screening level. Only four samples had concentrations greater than twice the screening level, but these samples were located sporadically throughout the four AOCs. Based on the distribution of manganese in soil across the site, there does not appear to be a pattern that would indicate a specific source of manganese.		Acceptable	No	No
Nickel	58/58	53	38	280	**1.4**	0.19	EEQ only slightly exceeded 1. Infrequently exceeded screening level in 1 of 58 samples. Exceedance bounded by lower concentrations.	Not selected as a COPC.	Acceptable	No	No

Footnotes:
1 - The sources of the screening levels are presented in Table 6-2.
2 - EEQ is calculated by dividing the maximum chemical concentration by its screening level. Value is unitless.
3 - See Section 6.4 for a more detailed Step 3a evaluation.

Abbreviations:
Ah - Aryl hydrocarbon
COPC - Chemical of Potential Concern
EC50 - Effective concentration that caused an effect in 50 percent of the test population
EEQ - Ecological Effects Quotient
ERA - Ecological risk assessment
J - Estimated concentration
NA - Not applicable
NOEC - No observed effects concentration
PAH - Polycyclic aromatic hydrocarbon
SQG - Soil quality guideline

TABLE 6-9

TERRESTRIAL FOOD CHAIN MODEL - TIER 2, STEP 3A SCENARIO FOR COMBINED AOCs 001, 003, AND 4/5, BUILDING 219, AND BUOY STORAGE AREA
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

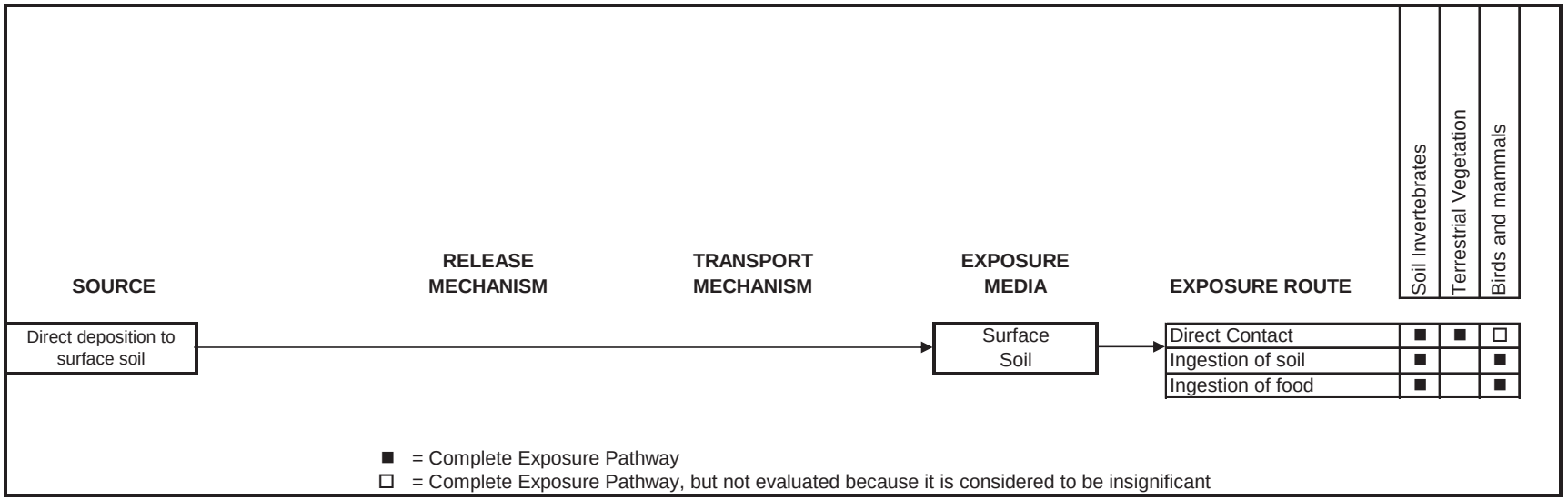
Chemical	Herbivorous Receptors EEQs				Invertivorous Receptors EEQs			
	Bobwhite Quail		Meadow Vole		American Robin		Short-Tailed Shrew	
	NOAEL-based	LOAEL-based	NOAEL-based	LOAEL-based	NOAEL-based	LOAEL-based	NOAEL-based	LOAEL-based
AOCs 001, 003, AND 4/5								
Semivolatile Organic Compounds								
Benzo(a)anthracene	2.7E-05	2.7E-06	2.2E-03	3.5E-05	1.4E-02	1.4E-03	1.6E-02	2.6E-04
Benzo(b)fluoranthene	6.7E-05	6.7E-06	6.5E-03	1.0E-04	2.8E-02	2.8E-03	3.4E-02	5.5E-04
Chrysene	2.8E-05	2.8E-06	2.3E-03	3.7E-05	2.1E-02	2.1E-03	2.5E-02	4.0E-04
Fluoranthene	1.9E-04	1.9E-05	1.8E-04	3.3E-05	6.2E-02	6.2E-03	7.0E-04	1.3E-04
Fluorene	4.6E-05	4.6E-06	4.6E-05	8.5E-06	1.6E-02	1.6E-03	1.8E-04	3.3E-05
Indeno(1,2,3-cd)pyrene	1.6E-05	1.6E-06	1.3E-03	2.1E-05	1.6E-02	1.6E-03	2.0E-02	3.2E-04
Phenanthrene	3.5E-04	3.5E-05	3.5E-04	6.4E-05	2.8E-02	2.8E-03	3.1E-04	5.8E-05
Pyrene	2.5E-04	2.5E-05	2.6E-02	4.2E-04	3.4E-02	3.4E-03	4.1E-02	6.5E-04
Dioxins/Furans								
2,3,7,8-TCDD equivalents - Mammal	--	--	4.6E-03	4.6E-04	--	--	2.0E+00	2.0E-01
2,3,7,8-TCDD equivalents - Bird	2.9E-05	2.9E-06	--	--	2.9E-01	2.9E-02	--	--
Metals								
Antimony	NV	NV	1.6E-02	3.5E-04	NV	NV	2.0E-01	4.3E-03
Chromium	9.4E-04	1.6E-04	1.8E-02	7.6E-04	2.0E-01	3.4E-02	7.2E-02	3.0E-03
Copper	2.7E-03	3.1E-04	5.7E-02	3.9E-03	2.4E-01	2.8E-02	6.0E-02	4.0E-03
Iron	2.5E-02	2.5E-03	5.2E-01	5.2E-02	2.9E+00	2.9E-01	1.3E+00	1.3E-01
Lead	3.0E-03	1.1E-04	2.1E-02	5.4E-04	7.0E-01	2.6E-02	8.1E-02	2.1E-03
Thallium	NV	NV	4.9E-03	4.9E-04	NV	NV	2.0E-01	2.0E-02
Vanadium	6.1E-03	1.2E-03	4.4E-03	1.9E-03	5.7E-01	1.2E-01	8.6E-03	3.8E-03
BUILDING 219								
PCBs								
Aroclor-1260	1.6E-04	1.6E-05	1.5E-02	1.5E-03	1.02E+00	1.0E-01	1.02E+00	1.0E-01
BUOY STORAGE AREA								
Metals								
Lead	1.5E-03	5.6E-05	2.3E-02	5.8E-04	3.6E-01	1.3E-02	4.2E-02	1.1E-03

Cells are shaded if the value is greater than 1.0

NOAEL - No Observed Adverse Effects Level
LOAEL - Lowest Observed Adverse Effects Level
EEQ - Ecological Effects Quotient
NV - No value determined

FIGURE 6-1

ECOLOGICAL CONCEPTUAL SITE MODEL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND



Blank space indicates incomplete exposure pathway or relatively insignificant, or not applicable, potential exposure.

7.0 SUMMARY AND CONCLUSIONS

This section provides a summary of the findings of the Data Gaps Investigations conducted at Tank Farm 2.

The areas investigated included AOC-001, AOC-003, AOC-004/5, B219, and the Former BSA. These areas were identified as areas where CERCLA contaminants may be present based upon records indicating the uncontrolled burning of tank bottom (petroleum) sludge (AOCs); release(s) from electrical equipment (B219); and the storage of buoys (Former BSA). It was suspected that PAHs, metals, and dioxins/furans may be present in the vicinity of the AOCs; PCBs may be present in the vicinity of B219; and lead may be present in the vicinity of the Former BSA.

At the request of RIDEM, a subset of the AOC samples was also analyzed for the non-CERCLA parameters: ExTPH and GRO.

7.1 OBJECTIVES

The purpose of this DGA was to provide up-to-date, site-representative data and to use these data to aid in determining CERCLA risks to potential human and ecological receptors, so that the best path forward for the Site's CERCLA contaminants can be determined.

7.2 SITE DESCRIPTION AND HISTORY

The Site occupies approximately 70 acres of land located just east of Narragansett Bay in Portsmouth, Rhode Island. The Site is occupied by eleven 2.5 million gallon capacity USTs that were installed in blasted bedrock sockets in the 1940s, and all of the appurtenances for petroleum storage and distribution.

Investigations and remediation for petroleum contamination have previously been performed at the Site. This report addresses only Category 1 (CERCLA) Areas of the Site. Based on a review of historical environmental investigations and remediation performed at the Site, data gaps for five Category 1 Areas were identified. The Category 1 Areas that have been characterized in this DGA include:

- Three AOCs where it is suspected that petroleum sludge was deposited on the ground and burned (AOC-001, -003, -004/5);
- a former transformer building, also known as Building 219 (B219); and
- the Former BSA.

7.3 FIELD INVESTIGATION

The DGA field activities conducted included:

- tree and brush clearing;
- drilling and soil sample collection;
- land surveying; and
- IDW characterization and disposal.

Eleven soil borings were advanced at AOC-001; 9 at AOC-003; 49 at AOC-004/5; 10 at B219; and 8 at the Former BSA. These borings were advanced using a combination of hand auger equipment and DPT drilling equipment. In each boring, soil samples for laboratory analysis were collected.

7.4 GEOLOGY AND HYDROGEOLOGY

Overburden thickness is between less than 1 to approximately 40 feet bgs at the Site. Overburden materials at the Site are very thin or non-existent at topographic highs, such as in the vicinity of AOCs -001, -003, and -004/5. The historical borings that indicated 40 feet of overburden were associated with the blast sockets for the USTs.

The overburden materials are classified as either glacial till or fill. The overburden is generally a mixture of silt, sand, and gravel. The fill is difficult to distinguish from the till because fill is generally overburden materials from another part of the site or from the blasting of the bedrock during tank installation.

Groundwater was not encountered during the DGA. Previous investigations indicate that groundwater flow across the Site is generally westerly, towards Narragansett Bay. The groundwater table is generally in the bedrock.

7.5 NATURE AND EXTENT OF CONTAMINATION

Section 4 of this report presents in detail the findings of extent of contamination in surface and subsurface soil. Petroleum products (as ExTPH and GRO) were tested for in soil samples and results indicate that concentrations of these constituents are well below the RIDEM residential DECs. The results of the analytical testing for CERCLA contaminants are summarized below.

7.5.1 AOC-001

Analytical results from soil samples collected from within AOC-001 show few contaminants at low concentrations. The analyte groups with more screening level exceedances are PAHs and metals. Dioxin (Total TEQ) only exceeded the criteria in one surface soil sample.

Seven PAHs were detected above one or more criteria, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)phenanthrene, and naphthalene. Maximum concentrations of PAHs were detected in samples collected closest to the doghouse for Tank 21.

Aluminum, arsenic, cobalt, iron, and manganese exceeded criteria in the majority of samples; however, only arsenic was detected above the industrial RSL. Concentrations of arsenic and aluminum in the surface soil and concentrations of manganese in the subsurface soil are within site background levels and are not considered to be site related. Aluminum and arsenic concentrations in subsurface soil and manganese concentrations in the surface soil are statistically greater than background levels.

7.5.2 AOC-003

Analytical results from soil samples collected from within AOC-003 show few contaminants at low concentrations. The analyte groups with more screening level exceedances are PAHs and metals. Dioxin (Total TEQ) exceeded the criteria in a majority of surface soil samples, but only approximately half of the subsurface soil samples.

Six PAHs were detected above one or more criteria, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)phenanthrene, and naphthalene.

Aluminum, arsenic, cobalt, iron, and manganese exceeded criteria in the majority of samples; however, only arsenic was detected above the three screening criteria in all samples. Concentrations of arsenic and aluminum in the surface soil and manganese in the subsurface soil are within site background levels and are not considered to be site related. Aluminum and arsenic in subsurface soil and manganese in the surface soil are statistically greater than background levels.

7.5.3 AOC-004/5

Analytical results from soil samples collected from within AOC-004/5 show few contaminants at low concentrations. The analyte groups with more screening level exceedances are PAHs and metals. Dioxin

(Total TEQ) exceeded the criteria in a majority of the surface soil samples, but only exceeded the lowest criterion (PSL) in just 1 of 17 subsurface soil samples.

Six PAHs were detected above one or more criteria, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)phenanthrene, and naphthalene. The rate of criteria exceedances is higher in the surface soil samples than in the subsurface soil samples.

Aluminum, arsenic, cobalt, iron, and manganese exceeded criteria in the majority of samples. Iron and thallium were above screening levels in some of the subsurface soil samples. Concentrations of arsenic and aluminum in the surface soil and concentrations of manganese in subsurface soil are within site background levels and are not considered to be site related. Concentrations of aluminum and arsenic in subsurface soil and concentrations of manganese in surface soil are statistically greater than background levels.

7.5.4 Building 219

PCBs (Aroclor-1260 only) were detected in all 12 surface soil samples and 3 of 10 subsurface soil samples collected at Building 219. However, concentrations of Aroclor-1260 exceeding the criteria were limited to surface soil (0 to 1 foot bgs). Concentrations of Aroclor-1260 detected in the surface soil ranged from 24 to 18000 µg/kg and exceeded the lowest criterion (Residential RSL, 220 µg/kg) in 10 of 12 surface soil samples. The distribution of Aroclor-1260 indicates that the higher concentrations are present on the north (just outside a door) and south (adjacent to an electrical box) sides of B219 and concentrations decrease with distance from the building.

7.5.5 Former Buoy Storage Area

Lead was detected in all of the 15 collected soil samples (8 surface soil and 7 subsurface soil) at concentrations ranging from 10 to 74 mg/kg, well below the lowest screening criterion (the residential RSL, 400 mg/kg). This indicates the storage of buoys did not result in lead-impacted soil.

7.6 HUMAN HEALTH RISK ASSESSMENT

The HHRA provided in Section 5 evaluated receptor exposure under residential and non-residential (industrial and recreational) land use scenarios. Although the Site consists of several subareas (AOC-001, AOC-003, AOC-004/5, B219, and the Former BSA), as requested by USEPA and RIDEM, these subareas were combined and evaluated as one area in this HHRA.

PAHs, PCBs, dioxins/furans, and metals were retained as COPCs in surface soil. PAHs, dioxins/furans, and metals were retained as COPCs in subsurface soil.

The following receptors were evaluated:

- Future construction workers;
- Future industrial workers;
- Current and future adult recreational user;
- Current and future adolescent trespasser;
- Current and future adult hunter;
- Future child and adult recreational users; and
- Future child and adult residents.

All receptors were evaluated for exposures to surface soil and all soil (soil from ground surface to a total depth of 10 feet bgs). HIs for all receptors exposed to site-related COPCs were less than or equal to 1. Therefore, no adverse noncarcinogenic effects are anticipated for the exposure scenarios. ILCRs for all receptors/media were within USEPA's target risk range of $1x10^{-4}$ to $1x10^{-6}$. Therefore, no primary risk drivers were identified. Therefore, no COCs were identified for the Site based upon the defined exposure scenarios.

When the Category 1 areas of the site were divided into separate exposure units and reevaluated for human health risk, an elevated human health risk due to PAHs, chromium and arsenic is defined forAOC-001. The reanalysis did not suggest elevated human health risk at the other Category 1 areas.

7.7 ECOLOGICAL RISK ASSESSMENT

The screening level ERA was performed to identify the potential for adverse ecological impacts of site-related contamination and to determine if further investigation and/or remedial action at the Site is required. This assessment was a "screening" assessment, to determine contaminants of potential ecological concern, and to assist in determining whether a BERA should be conducted.

Several chemicals were retained as COPCs for the receptor groups anticipated to be present: terrestrial plants, soil invertebrates, mammals, and birds, as a result of the initial screening of surface soil. These chemicals were further evaluated as a part of the Step 3a refinement, the first step of the BERA. After a review of alternate toxicity information for the initial COPCs was conducted, no chemicals were retained as COCs for further evaluation in a BERA for the receptor groups anticipated to be present. Further evaluation is therefore not needed.

When the Category 1 areas of the site were divided into separate exposure units and reevaluated for ecological risk, an elevated ecological risk due to PCBs in surface soil at Building 219. The reanalysis did not suggest elevated ecological risk at the other Category 1 areas.

7.8 RECOMMENDATIONS

Based on the results of the HHRA and the screening level ERA, elevated risks to human health or ecological receptors are predicted at AOC-001 (elevated human health risk due to PAHs and metals) and at Building 219 (elevated ecological risk due to PCBs). Therefore, a Feasibility Study (FS) step is recommended for these portions of the Site.

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APPENDIX A

SUMMARY OF FORMER INVESTIGATIONS, FIELD DOCUMENTATION FORMS, AND PHOTOGRAPHS

Table A-1
SUMMARY OF SITE CONDITIONS
SAMPLING AND ANALYSIS PLAN
REMEDIAL INVESTIGATION TANK FARM 2
NAVAL STATION, NEWPORT, NEWPORT, RHODE ISLAND

Area	Description	History	Associated sampling locations	Available Data	Exceedances	Remedial Category	Other Information	Next Steps
Tank 19	2.5-million gallon capacity storage underground storage tank; stored No. 5 Fuel oil from the 1940's to 1975, distillate fuel from 1975 to 1985, and marine diesel fuel from 1985 until the mid 1990's.	GZA cleaned and closed in 1996/1997. A structural assessment of the interior of the tank indicated that there were cracks on the floor and the weeping of oil/water was observed. In 2001, FwEC pumped, cleaned, and repaired any infiltration points in the tanks. A marine chemist certified that the tanks were gas-free and safe for workers. Tanks were ballasted with clean water. No closure permit has been received from RIDEM.	**Monitoring Wells**:GZ-201, GZ-225, GZ-226 **Borings**: B-35 **TtEC 2005 soil exploration**: TF2-Tank19-1, TF2-Tank19-2, TF2-Tankpit19-1 through TF2-Tankpit19-5	**Groundwater**: TPH, VOC, SVOC, DRO **Soil**: PAH, TPH, VOC, Petroflag™ screening	None	2		No further action.
Tank 20	2.5-million gallon capacity storage underground storage tank; stored No. 5 Fuel oil from the 1940's to 1975, distillate fuel from 1975 to 1985, and marine diesel fuel from 1985 until the mid 1990's.	GZA cleaned and closed in 1996/1997. A structural assessment of the interior of the tank indicated that there were cracks on the floor and the weeping of oil/water was observed. In 2001, FwEC pumped, cleaned, and repaired any infiltration points in the tanks. A marine chemist certified that the tanks were gas-free and safe for workers. Tanks were ballasted with clean water. No closure permit has been received from RIDEM.	**Monitoring Wells**:GZ-202, GZ-218 **Recovery Wells**: RW-4 **Borings**: B-8 **TtEC 2005 soil exploration**: TF2-Tank20-1, TF2-Tank20-2, TF2-Tankpit20-1 through TF2-Tankpit20-5	**Groundwater**: TPH, VOC, SVOC, DRO, Oil-fingerprint **Soil**: PAH, TPH, VOC, Petroflag™ screening	**Groundwater:** Over 1-foot of LNAPL was detected in GZ-202 multiple times during gauging performed in 2009.	2		Conduct periodic gauging and bailing of LNAPL and install additional wells. Conduct a Site Investigation under RIDEM UST regulations, confirm petroleum is not mobile, develop a Corrective Action Plan accordingly.
Tank 21	2.5-million gallon capacity storage underground storage tank; stored No. 5 Fuel oil from the 1940's to 1975, distillate fuel from 1975 to 1985, and marine diesel fuel from 1985 until the mid 1990's.	GZA cleaned and closed in 1996/1997. A structural assessment of the interior of the tank indicated that there were cracks on the floor and the weeping of oil/water was observed. In 2001, FwEC pumped, cleaned, and repaired any infiltration points in the tanks. A marine chemist certified that the tanks were gas-free and safe for workers. Tanks were ballasted with clean water. No closure permit has been received from RIDEM.	**Monitoring Wells**:GZ-203, GZ-227 **Recovery Wells**:RW-2 **Borings**: B-31 **TtEC 2005 soil exploration**: TF2-Tank21-1, TF2-Tank21-2, TF2-Tankpit21-1 through TF2-Tankpit21-5	**Groundwater**: TPH, VOC, SVOC, DRO, Lead **Soil**: DRO, PAH, TPH, VOC, Petroflag™ screening	None	2		No further action.
Tank 22	2.5-million gallon capacity storage underground storage tank; stored No. 5 Fuel oil from the 1940's to the 1970's. At that time, this tank was taken out of service, cleaned and used as a slop tank.	GZA cleaned and closed in 1996/1997. A structural assessment of the interior of the tank indicated that there were cracks on the floor and the weeping of oil/water was observed. In 2001, FwEC pumped, cleaned, and repaired any infiltration points in the tanks. A marine chemist certified that the tanks were gas-free and safe for workers. Tanks were ballasted with clean water. No closure permit has been received from RIDEM.	**Monitoring Wells**:GZ-204, GZ-217 **Recovery Wells**: RW-5 **Borings**: B-27, B-28 **TtEC 2005 soil exploration**: TF2-Tank22-1, TF2-Tank22-2, TF2-Tankpit22-1 through TF2-Tankpit22-5	**Groundwater**: PAH, TPH, VOC **Soil**: PAH, TPH, VOC, Petroflag™ screening	None	2		No further action.
Tank 23	2.5-million gallon capacity storage underground storage tank; stored No. 5 Fuel oil from the 1940's to 1975, distillate fuel from 1975 to 1985, and marine diesel fuel from 1985 until the mid 1990's.	GZA cleaned and closed in 1996/1997. A structural assessment of the interior of the tank indicated that there were cracks on the floor and the weeping of oil/water was observed. In 2001, FwEC pumped, cleaned, and repaired any infiltration points in the tanks. A marine chemist certified that the tanks were gas-free and safe for workers. Tanks were ballasted with clean water. No closure permit has been received from RIDEM.	**Monitoring Wells**: GZ-205, GZ-216 **Borings**: B-4 **TtEC 2005 soil exploration**: TF2-Tank23-1, TF2-Tank23-2, TF2-Tankpit23-1 through TF2-Tankpit23-5	**Groundwater**: DRO, GRO, VOC, SVOC, Lead **Soil**: TPH, VOC, SVOC, Petroflag™ screening	None	2		No further action.

Table A-1
SUMMARY OF SITE CONDITIONS
SAMPLING AND ANALYSIS PLAN
REMEDIAL INVESTIGATION TANK FARM 2
NAVAL STATION, NEWPORT, NEWPORT, RHODE ISLAND

Area	Description	History	Associated sampling locations	Available Data	Exceedances	Remedial Category	Other Information	Next Steps
Tank 24	2.5-million gallon capacity storage underground storage tank; stored No. 5 Fuel oil from the 1940's to 1975, distillate fuel from 1975 to 1985, and marine diesel fuel from 1985 until the mid 1990's.	GZA cleaned and closed in 1996/1997. A structural assessment of the interior of the tank indicated that there were cracks on the floor and the weeping of oil/water was observed. In 2001, FwEC pumped, cleaned, and repaired any infiltration points in the tanks. A marine chemist certified that the tanks were gas-free and safe for workers. Tanks were ballasted with clean water. No closure permit has been received from RIDEM.	**Monitoring Wells**: GZ-206, GZ-220 **Borings**: B-13, B-14 **TtEC 2005 soil exploration**: TF2-Tank24-1, TF2-Tank24-2, TF2-Tankpit24-1 through TF2-Tankpit24-5	**Groundwater:** PAH, VOC, TPH **Soil**: PAH, TPH, VOC, Petroflag™ screening	None	2	GZ-206 could not be located in the TtEC 2009 GW sampling event.	No further action.
Tank 25	2.5-million gallon capacity storage underground storage tank; stored No. 5 Fuel oil from the 1940's to 1975, distillate fuel from 1975 to 1985, and marine diesel fuel from 1985 until the mid 1990's.	GZA cleaned and closed in 1996/1997. A structural assessment of the interior of the tank indicated that there were cracks on the floor. In 2001, FwEC pumped, cleaned, and repaired any infiltration points in the tanks. A marine chemist certified that the tanks were gas-free and safe for workers. Tanks were ballasted with clean water. No closure permit has been received from RIDEM.	**Monitoring Wells**: GZ-207, GZ-221, GZ-223, GZ-224 **Borings**: B-10, B-11, B-12 **TtEC 2005 soil exploration**: TF2-Tank25-1, TF2-Tank25-2, TF2-Tankpit25-1 through TF2-Tankpit25-6, TF2-Tankpit25-6D **TtEC 2005 Remediation**: TF2-T25-R1 through TF2-T25-R38	**Groundwater:** DRO, TPH, VOC, SVOC, Lead **Soil**: TPH, VOC, SVOC, DRO, Petroflag™ screening	No exceedences post-remedial excavation.	2	GZ-207 and GZ-224 were destroyed during the Tank 25 remediation in 2005 by TtEC.	No further action.
Tank 26	2.5-million gallon capacity storage underground storage tank; stored No. 5 Fuel oil from the 1940's to 1975, distillate fuel from 1975 to 1985, and marine diesel fuel from 1985 until the mid 1990's.	GZA cleaned and closed in 1996/1997. A structural assessment of the interior of the tank indicated that there were cracks on the floor and the weeping of groundwater was observed. In 2001, FwEC pumped, cleaned, and repaired any infiltration points in the tanks. A marine chemist certified that the tanks were gas-free and safe for workers. Tanks were ballasted with clean water. No closure permit has been received from RIDEM.	**Monitoring Wells**:GZ-208, GZ-222 **Recovery Wells**: RW-3 **Borings**: B-16 **TtEC 2005 soil exploration**: TF2-Tank26-1, TF2-Tank26-2, TF2-Tankpit26-1 through TF2-Tankpit26-5	**Groundwater**: TPH, VOC, SVOC, Oil fingerprinting **Soil**: PAH, TPH, VOC, Petroflag™ screening	**Groundwater:** LNAPL was detected in GZ-208 multiple times during 2009. The last time the well was gauged in 2009, LNAPL was greater than 1-foot thick.	2		Conduct periodic gauging and bailing of LNAPL and install additional wells. Conduct a Site Investigation under RIDEM UST regulations, confirm petroleum is not mobile, develop a Corrective Action Plan accordingly.
Tank 27	2.5-million gallon capacity storage underground storage tank; stored No. 5 Fuel oil from the 1940's to 1975, distillate fuel from 1975 to 1985, and marine diesel fuel from 1985 until the mid 1990's.	GZA cleaned and closed in 1996/1997. A structural assessment of the interior of the tank indicated that there were cracks on the floor and the weeping of oil/water was observed. In 2001, FwEC pumped, cleaned, and repaired any infiltration points in the tanks. A marine chemist certified that the tanks were gas-free and safe for workers. Tanks were ballasted with clean water. No closure permit has been received from RIDEM.	**Monitoring Wells**: GZ-209, GW-212, GZ-219 **Borings**:B-18 **TtEC 2005 soil exploration**: TF2-Tank27-1, TF2-Tank27-2, TF2-Tankpit27-1 through TF2-Tankpit27-5	**Groundwater**: DRO, TPH, VOC, SVOC, Lead **Soil**: TPH, DRO, SVOC, VOC, Petroflag™ screening	**Soil:** A soil sample collected at 15-17' in boring GZ-209 exceeded the RIDEM GB Leachability Criteria with a concentration of TPH = 5,600 mg/kg in 1996	2	In 2009, TtEC recorded that the cover and pad of well GZ-209 was damaged and could not be removed to initiate sampling.	No further action (no exceedence in groundwater sample from GZ-209).
Tank 28	2.5-million gallon capacity storage underground storage tank; stored No. 5 Fuel oil from the 1940's to 1975, distillate fuel from 1975 to 1985, and marine diesel fuel from 1985 until the mid 1990's.	GZA cleaned and closed in 1996/1997. A structural assessment of the interior of the tank indicated that there were cracks on the floor and the weeping of groundwater was observed. In 2001, FwEC pumped, cleaned, and repaired any infiltration points in the tanks. A marine chemist certified that the tanks were gas-free and safe for workers. Tanks were ballasted with clean water. No closure permit has been received from RIDEM.	**Monitoring Wells**: GZ-210, GZ-213 **Borings**: B-22 **TtEC 2005 soil exploration**:TF2-Tank28-1, TF2-Tank28-2, TF2-Tankpit28-1 through TF2-Tankpit28-5	**Groundwater**: TPH, VOC, SVOC **Soil**: PAH, TPH, VOC, Petroflag™ screening	None	2	TtEC found an obstruction in well GZ-213 during the 2009 sampling event.	No further action.

Table A-1
SUMMARY OF SITE CONDITIONS
SAMPLING AND ANALYSIS PLAN
REMEDIAL INVESTIGATION TANK FARM 2
NAVAL STATION, NEWPORT, NEWPORT, RHODE ISLAND

Area	Description	History	Associated sampling locations	Available Data	Exceedances	Remedial Category	Other Information	Next Steps
Tank 29	2.5-million gallon capacity storage underground storage tank; stored No. 5 Fuel oil from the 1940's to 1975, distillate fuel from 1975 to 1985, and marine diesel fuel from 1985 until the mid 1990's.	GZA cleaned and closed in 1996/1997. A structural assessment of the interior of the tank indicated that there were cracks on the floor. In 2001, FwEC pumped, cleaned, and repaired any infiltration points in the tanks. A marine chemist certified that the tanks were gas-free and safe for workers. Tanks were ballasted with clean water. No closure permit has been received from RIDEM.	**Monitoring Wells**: GZ-211, GZ-214, GZ-228 **Recovery Wells**: RW-1 **Borings**: B-25 **TtEC 2005 soil exploration**: TF2-Tank29-1, TF2-Tank29-2, TF2-Tankpit29-1 through TF2-Tankpit29-5	**Groundwater**: TPH, DRO, VOC, SVOC **Soil**: DRO, PAH, TPH, VOC, Petroflag™ screening	**Groundwater:** Product was observed coming through the sample tubing at GZ-211 during the 2009 sampling round, and thus the well was not sampled.	2		Conduct periodic gauging and bailing of LNAPL and install additional wells. Conduct a Site Investigation under RIDEM UST regulations, confirm petroleum is not mobile, develop a Corrective Action Plan accordingly.
Underground Distribution Lines	This piping connects the tanks to one another and to the fuel distribution area. The lines are located approximately 10-feet underground in concrete lined utility trenches.	During 1996/1997 tank closure activities, GZA also decommissioned the fuel distribution pipelines associated with each tank and the transfer pipe loop. The pipes were cleaned until a PID detected an internal atmosphere of <25 ppm and then grouted. GZA also performed asbestos abatement activities on encountered sections of the piping with asbestos containing insulation. In 2001, FwEC inspected the sections of piping decommissioned by GZA. If a length of piping was found to have elevated levels of VOCs, it was re-cleaned and re-sealed.	**Borings**: B-1 through B-35	**Soil**: TPH	None	2		No further action.
TF2-001	Aerial photograph 1951; Open burning is evident at Tank 21. Not shown in 1953.	This AOC was GPS located and it was described as having minor, stressed vegetation. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-001-1 through TF2-001-5	**Soil**: Petroflag™ screening	None	1		Additional surface and subsurface soil sample collection and analysis for PAHs, dioxin and furans and metals.
TF2-002	Aerial photograph 1951; Large linear ground scar at Tank 19. Remains in 1953.	This AOC was GPS located and it was described as having stressed soils. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-001-2 through TF2-002-5	**Soil**: Petroflag™ screening	None	2		No further action.
TF2-003	Aerial photograph 1954; Open burning and stained ground at Tank 19.	This AOC was GPS located and it was described as a grassy, open area. A test pit was excavated and soil samples were screened for TPH using Petroflag™ and also sent to the laboratory for analysis. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-003-1 through TF2-003-5. Sent samples TF2-003-2, -3, -4 and -5 to laboratory for analysis.	**Soil:** DRO, Petroflag™ screening	None	1		Additional surface and subsurface soil sample collection and analysis for PAHs, dioxin and furans and metals.
TF2-004	Aerial photograph 1954; Open burning and ground staining at Tank 19.	This AOC was GPS located and it was described as a grassy, open area. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-004-1 through TF2-004-7	**Soil:** Petroflag™ screening	None	1		Additional surface and subsurface soil sample collection and analysis for PAHs, dioxin and furans and metals.

Table A-1
SUMMARY OF SITE CONDITIONS
SAMPLING AND ANALYSIS PLAN
REMEDIAL INVESTIGATION TANK FARM 2
NAVAL STATION, NEWPORT, NEWPORT, RHODE ISLAND

Area	Description	History	Associated sampling locations	Available Data	Exceedances	Remedial Category	Other Information	Next Steps
TF2-005	Aerial photograph 1954; Open burning and ground staining at Tank 19.	This AOC was GPS located and it was described as a grassy, open area with a roadway partially within the AOC. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-005-1 through TF2-005-5	**Soil**: Petroflag™ screening	None	1		Additional surface and subsurface soil sample collection and analysis for PAHs, dioxin and furans and metals.
TF2-006	Aerial photograph 1954; Significant ground staining at Tank 22.	This AOC was GPS located and it was described as a grassy, open area. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-006-1 through TF2-006-7	**Soil**: Petroflag™ screening	None	2		No further action.
TF2-007	Aerial photograph 1954; Significant ground staining at Tank 22.	This AOC was GPS located and it was described as having low vegetation and a grassy, open area. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-007-1 through TF2-007-9	**Soil**: Petroflag™ screening	None	2		No further action.
TF2-008	Aerial photograph 1954; Significant ground staining at Tank 22.	This AOC was GPS located and it was described as having loose rock and shale with no surface soils. Area that appeared to be staining on the 1954 aerial photographs is bedrock outcrop. No excavation of this area was completed.	None	None	Not Applicable	Not Applicable		No further action.
TF2-009	Aerial photograph 1954; Significant ground staining at Tank 27.	This AOC was GPS located and it was described as having low vegetation and no staining or stressed vegetation. A test pit was excavated and soil samples were screened for TPH using Petroflag™ and also sent to the laboratory for analysis. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-009-1 through TF2-009-9. Sent sample TF2-009-1 to laboratory for analysis.	**Soil**: DRO, Petroflag™ screening	None	2		No further action.
TF2-010	Aerial photograph 1954; Significant ground staining at Tank 27.	This AOC was GPS located and it was described as having stressed, stained soils in the SE area and otherwise, partially grassy and open and partially wooded. A test pit was excavated and soil samples were screened for TPH using Petroflag™ and also sent to the laboratory for analysis. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-010-1 through TF2-010-13. Sent samples TF2-010-3, -6 and -12 to laboratory for analysis.	**Soil**: DRO, Petroflag™ screening	None	2		No further action.
TF2-011	Aerial photograph 1962; Medium-toned material or liquid east of Tank 19.	This AOC was GPS located. The area was observed to be a fire hydrant and fire lines buried beneath a berm. The decision was made that no excavation was required. Aerial photographs showed anomalies here which turned out to be the buried fire protection infrastructure.	None	None	Not Applicable	Not Applicable		No further action.

Table A-1
SUMMARY OF SITE CONDITIONS
SAMPLING AND ANALYSIS PLAN
REMEDIAL INVESTIGATION TANK FARM 2
NAVAL STATION, NEWPORT, NEWPORT, RHODE ISLAND

Area	Description	History	Associated sampling locations	Available Data	Exceedances	Remedial Category	Other Information	Next Steps
TF2-012	Aerial photograph 1962; Ground staining at Tank 22.	This AOC was GPS located and it was described as an open area with minor stressed vegetation. A test pit was excavated and soil samples were screened for TPH using Petroflag™ and also sent to the laboratory for analysis. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-012-1 through TF2-012-5. Sent samples TF2-012-1 and -3 to laboratory.	**Soil:** DRO, VOC, SVOC, Petroflag™ screening	None	2		No further action.
TF2-013	Aerial photograph 1962; Ground staining at Tank 28.	This AOC was GPS located and it was described as having no stressed vegetation or ground staining. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-013-1 through TF2-013-5	**Soil**: Petroflag™ screening	None	2		No further action.
TF2-014	Aerial photograph 1962; Ground staining at Tank 28.	This AOC was GPS located and it was described as an open vegetated area with no stress or staining. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-014-1 through TF2-014-5	**Soil**: Petroflag™ screening	None	2		No further action.
TF2-015	Aerial photograph 1962; Ground staining at Tank 29.	This AOC was GPS located and it was described as an open area that surrounds the Tank 29 blockhouse. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-015-1 through TF2-015-5	**Soil**: Petroflag™ screening	None	2		No further action.
TF2-016	Aerial photograph 1962; Staining and dark toned material at Tank 27.	This AOC was GPS located and it was described as not having any staining or mounded material that was observable. A test pit was excavated and soil samples were screened for TPH using Petroflag™ and also sent to the laboratory for analysis. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-016-1 through TF2-016-5. Sent samples TF2-016-3 and -4 to laboratory for analysis.	**Soil**: DRO, Petroflag™ screening	None	2		No further action.
TF2-017	Aerial photograph 1962; Two pits are southwest of Tank 26.	This AOC was GPS located and it was described as having stressed vegetation and two, small craters and various small depressions. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-017-1 through TF2-017-5	**Soil**: Petroflag™ screening	None	2		No further action.

Table A-1
SUMMARY OF SITE CONDITIONS
SAMPLING AND ANALYSIS PLAN
REMEDIAL INVESTIGATION TANK FARM 2
NAVAL STATION, NEWPORT, NEWPORT, RHODE ISLAND

Area	Description	History	Associated sampling locations	Available Data	Exceedances	Remedial Category	Other Information	Next Steps
TF2-018	Aerial photograph 1964; Access road leads to two circular ground scars east of Tank 26.	This AOC was GPS located and it was described as having stressed vegetation. It was recommended to extend the test pit outside the area boundary. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-018-1 through TF2-018-5	**Soil**: Petroflag™ screening	None	2		No further action.
TF2-019	Aerial photograph 1964; Access road leads to two circular ground scars east of Tank 26.	This AOC was GPS located and it was described as having a depression in the middle of the AOC. It was stated that the test pit would be extended outside the area boundary. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-019-1 through TF2-019-5	**Soil:** Petroflag™ screening	None	2		No further action.
TF2-020	Aerial photograph 1970; Ground scar is visible in wooded area at the west central portion of Tank Farm 2.	This AOC was GPS located. It was stated that the excavation would occur in AOC 20 and not AOC 39, which overlaps AOC 20. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-020-1 through TF2-020-5	**Soil**: Petroflag™ screening	None	2		No further action.
TF2-021	Aerial photograph 1972; Ground staining evident near Tank 19.	AOC was GPS located. Area that appeared to be staining in the 1972 aerial photographs is a bedrock outcrop. No excavation of this area was completed.	None	None	Not Applicable	Not Applicable		No further action.
TF2-022	Aerial photograph 1972; Open storage of thousands of stacked cylindrical containers visible within the circular access road west of Tanks 27 and 28. Containers remain in place throughout the 1970s. All are removed by 1988.	This AOC was GPS located and it was described as being defined by a 1'-1' concrete berm. A test pit was excavated and soil samples were screened for TPH using Petroflag™ and also sent to the laboratory for analysis. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-022-TP1-1 through TF2-022-TP1-5 and TF2-022-TP2-1 through TF2-022-TP2-5. Sent all samples to laboratory for analysis except TF2-022-TP2-2.	**Soil**: DRO, GRO, Petroflag™ screening	None	2	JP-5 soils	No further action.
TF2-023	Aerial photograph 1975; Two scarred or cleared areas are visible in the wooded area west of Tank 25.	This AOC was GPS located and it was described as having debris along the western edge. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-023-1 through TF2-023-5	**Soil**: Petroflag™ screening	None	2		No further action.

Table A-1
SUMMARY OF SITE CONDITIONS
SAMPLING AND ANALYSIS PLAN
REMEDIAL INVESTIGATION TANK FARM 2
NAVAL STATION, NEWPORT, NEWPORT, RHODE ISLAND

Area	Description	History	Associated sampling locations	Available Data	Exceedances	Remedial Category	Other Information	Next Steps
TF2-024	Aerial photograph 1975; Two scarred or cleared areas are visible in the wooded area west of Tank 25.	This AOC was GPS located and it was described as being previously cleared but currently with heavy, new growth. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-024-1 through TF2-024-9	**Soil**: Petroflag™ screening	None	2		No further action.
TF2-025	Aerial photograph 1975; Ground scar and/or liquid are located east of Tank 19.	GPS located area. Area that appeared to be ground staining/liquid in the 1975 aerial photograph is a bedrock outcrop. No excavation of this area was completed.	None	None	Not Applicable	Not Applicable		No further action.
TF2-026	Aerial photograph 1979; Low ground area containing probable liquid located north of stored containers. Also visible in 1980 photo.	Combined AOCs 033, 034, and 026 into one extended test pit. This AOC was GPS located and it was described as having heavy scrub vegetation present. A test pit was excavated and soil samples were screened for TPH using Petroflag™ and also sent to the laboratory for analysis. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**Monitoring Wells**: GZ-215 **TtEC 2005 soil exploration**:TF2-026-1 through TF2-026-8. Also including TF2-026-2A, TF2-026-3A, TF2-026-8A and TF2-026-8D. Sent all samples to laboratory for analysis.	**Groundwater**: DRO, GRO, PAH, TPH, Lead, VOC **Soil**: DRO, GRO, VOC, SVOC, Petroflag™ screening	None	2	JP-5 soils	No further action.
TF2-027	Aerial photograph 1979; Hose leads from structure to a discharge point at Tank 23/Hose observed in aerial photos lead from T23 vault.	This AOC was GPS located and it was described as having distressed vegetation. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-027-1 through TF2-027-5	**Soil**: Petroflag™ screening	None	2		No further action.
TF2-028	Aerial photograph 1979; Large stained areas west of hose and discharge point.	This AOC was GPS located and it was described as an open area with low vegetation. A test pit was excavated and soil samples were screened for TPH using Petroflag™ and also sent to the laboratory for analysis. A remedial excavation took place to the south, west, and north of TF2-028-9. Confirmatory samples were collected and screened for TPH using Petroflag™ and also sent to the laboratory for analysis. All sample locations were surveyed with a GPS, the area was photographed and the test pits and excavation area was backfilled with clean material.	**TtEC 2005 soil exploration**:TF2-028-1 through TF2-028-9. Sent samples TF2-028-8 and 9 for laboratory analysis **TtEC 2005 Remediation**: TF2-028-9-1 through TF2-028-9-4. Sent samples TF2-028-9-1, 2, 3, and 4 to the lab for analysis.	**Soil**: DRO, Petroflag™ screening	No exceedences post-remedial excavation.	2		No further action.
TF2-029	Aerial photograph 1979; Large stained areas west of hose and discharge point.	This AOC was GPS located and it was described as having stressed vegetation within the area of interest. A test pit was excavated and soil samples were screened for TPH using Petroflag™. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-029-1 through TF2-029-5	**Soil**: Petroflag™ screening	None	2		No further action.

Table A-1
SUMMARY OF SITE CONDITIONS
SAMPLING AND ANALYSIS PLAN
REMEDIAL INVESTIGATION TANK FARM 2
NAVAL STATION, NEWPORT, NEWPORT, RHODE ISLAND

Area	Description	History	Associated sampling locations	Available Data	Exceedances	Remedial Category	Other Information	Next Steps
TF2-030	Aerial photograph 1981; Hose or pipe leads from a structure or pit at Tank 20.	This AOC was GPS located and it was described as having a depression on the western side of the Tank 23 blower. A test pit was excavated and soil samples were screened for TPH using Petroflag™ and also sent to the laboratory for analysis. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-030-1 through TF2-030-5. Sent sample TF2-030-4 to laboratory for analysis.	**Soil**: DRO, VOC, SVOC, Petroflag™ screening	None	2		No further action.
TF2-031	Aerial photograph 1981; Hose or pipe leads from a structure or pit at Tank 20.	This AOC was GPS located and it was described as having minor stressed vegetation and a new, 4" hose on the ground. A test pit was excavated and soil samples were screened for TPH using Petroflag™ and also sent to the laboratory for analysis. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-031-1 through TF2-031-5. Sent all samples from test pit to laboratory for analysis.	**Soil**: DRO, Petroflag™ screening	None	2		No further action.
TF2-032	Aerial photograph 1986; Fill area in northwest portion of tank farm. Debris in area in 1995.	AOC was located with a GPS. The AOC was described as a fill area with large debris and slopes too steep to excavate. Fill made up of piles, tires, concrete. AOC investigated with the TF2-037 test pit.	See TF2-037	See TF2-037	See TF2-037	2		No further action.
TF2-033	Aerial photograph 1986; Mound of dark toned material west of container storage area.	GPS located area, mound present and will be excavated through the middle. Combined with AOCs 034 and 026 and investigated with the 026 test pit.	See TF2-026	See TF2-026	See TF2-026	2	JP-5 soils	No further action.
TF2-034	Aerial photograph 1986; Area of staining or liquid adjacent to container storage area.	GPS located area. Area contains construction/ demolition debris including drum with stained soil. Combined with AOCs 033 and 026 and investigated with the 026 test pit.	See TF2-026	See TF2-026	See TF2-026	2	JP-5 soils	No further action.
TF2-035	Aerial photograph 1988; Light-toned mounded material is visible in the former container storage area.	This AOC was GPS located and the mound was present. It was stated that the test pit would run through the center of the mounded material. A test pit was excavated and soil samples were screened for TPH using Petroflag™ and also sent to the laboratory for analysis. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-035-1 through TF2-035-9. Sent samples TF2-035-1, 2, 5,6, and 9 to laboratory for analysis.	**Soil**: DRO, GRO, Petroflag™ screening	None	2	JP-5 soils	No further action.
TF2-036	Aerial photograph 1988; Light-toned mounded material is visible in the former container storage area.	This AOC was GPS located and the mound was present. It was stated that the test pit would run through the center of the mounded material. Combined with AOC-035, investigated with TF2-035 test pit.	See TF2-035	See TF2-035	See TF2-035	2	JP-5 soils	No further action.

Table A-1
SUMMARY OF SITE CONDITIONS
SAMPLING AND ANALYSIS PLAN
REMEDIAL INVESTIGATION TANK FARM 2
NAVAL STATION, NEWPORT, NEWPORT, RHODE ISLAND

Area	Description	History	Associated sampling locations	Available Data	Exceedances	Remedial Category	Other Information	Next Steps
TF2-037	Aerial photograph 1988; Two large pits (one containing a cylindrical object) are in the north central portion of TF2.	AOC was GPS located and described as an area on top of fill with stressed vegetation present. The test pit was excavated and samples collected and screened for TPH by Petroflag™ and also sent to the laboratory for analysis. Remedial excavations were performed east, west, and north of TF2-037-2. Confirmatory samples were collected and screened for TPH by Petroflag™ and also sent to the laboratory for analysis. All sample locations were surveyed with a GPS, the area was photographed and the test pits and excavation area was backfilled with clean material.	**TtEC 2005 soil exploration**:TF2-037-1 through TF2-037-5. Sent all samples to laboratory for analysis. **TtEC 2005 Remediation**: TF2-037-2-1 through TF2-037-2-4. All samples sent to the laboratory.	**Soil**: DRO, VOC, SVOC, Petroflag™ screening	No exceedences post-remedial excavation.	2		No further action.
TF2-038	Aerial photograph 1988; Two large pits (one containing a cylindrical object) are in the north central portion of TF2.	AOC was located with a GPS. Area identified as a pit on the 1988 aerial photograph is a water valve. Will not excavate in this area.	None	None	Not Applicable	Not Applicable		No further action.
TF2-039	Aerial photograph 1988; Three pits (one polygon) and a ground scarred area are within and adjacent to wooded area on the western side of TF2.	AOC was located with a GPS. Area identified as three pits (TF2-039, TF2-040, TF2-041) on photographs are water valves, scarred area observed in photos due to installation of these valves. Will not excavate. AOC TF2-020, which overlaps TF2-039, was excavated.	See TF2-020	See TF2-020	See TF2-020	2		No further action.
TF2-040	Aerial photograph 1988; Three pits (one polygon) and a ground scarred area are within and adjacent to wooded area on the western side of TF2.	See TF2-039.	See TF2-039	See TF2-039	See TF2-039	2		No further action.
TF2-041	Aerial photograph 1988; Three pits (one polygon) and a ground scarred area are within and adjacent to wooded area on the western side of TF2.	See TF2-039.	See TF2-039	See TF2-039	See TF2-039	2		No further action.
TF2-042	Aerial photograph 1988; Three pits and a ground scarred area are within and adjacent to wooded area on the western side of TF2.	This AOC was GPS located and described as a ground scarred area and that the AOC follows drainage west, construction debris and water valve present. A test pit was excavated and soil samples were screened for TPH using Petroflag™ and also sent to the laboratory for analysis. Test pit sample locations were surveyed with a GPS, the area was photographed and the test pit was backfilled with the excavated material.	**TtEC 2005 soil exploration**:TF2-042-1 through TF2-042-9. Sent samples TF2-042-3 and TF2-042-6 to laboratory for analysis.	**Soil**: DRO, Petroflag™ screening	None	2		No further action.

Table A-1
SUMMARY OF SITE CONDITIONS
SAMPLING AND ANALYSIS PLAN
REMEDIAL INVESTIGATION TANK FARM 2
NAVAL STATION, NEWPORT, NEWPORT, RHODE ISLAND

Area	Description	History	Associated sampling locations	Available Data	Exceedances	Remedial Category	Other Information	Next Steps
TF2-043	Aerial photograph 1992; A large linear ground scar is on the west side of T26/Line from transformer building 219, vegetated area. Appears to be utility related as an underground line marker is present.	Appears to be utility related as an underground line marker is present. Will not excavate.	None	None	Not Applicable	Not Applicable		No further action.
Buoy Storage/ JP-5 Soil Area	Located west of Tank 28. Was previously investigaated as AOCs -022, -026, -033, -034, -035 and -036.	From historical photographs and documents it appears that this area was formerly used to store Naval Buoys and to store a pile of JP-5 impacted soil	see AOCs -022, -026, -033, -034, -035 and -036	**Soil and Groundwater**: DRO/GRO, VOCs, SVOCs **Groundwater**: lead **Soil**: Petroflag™	Not Applicable	1		Soil not tested for lead. Additional surface and subsurface soil sample collection and analysis for lead
Bldg 219	Former Electrical Service/ Transformer Building	This building was used for electrical equipment, including transformers.	**SIRAR 2006:** TF2-B219-1 through TF2-B219-4 surface soil samples collected around building perimeter all sent for laboratory analysis	**soil:** VOC, PCB	PCBs exceeded	1		Additional surface and subsurface soil sample collection and analysis for PCBs.

Notes:
1. Tables A3.1 through A.3.14 of this Appendix include the specific criteria used to determine exceedances in the column titled 'Exceedances'.

TABLE A-2
SUMMARY OF HISTORICAL GROUNDWATER SAMPLING
SAMPLING AND ANALYSIS PLAN
REMEDIAL INVESTIGATION TANK FARM 2
NAVAL STATION, NEWPORT, NEWPORT, RHODE ISLAND

Date	Activity	Wells	Analyses	Comments
October - December, 1996	GZA installed 11 monitoring wells	GZ-201 to GZ-211		
September and October, 1997	GZA installed an additional 17 monitoring wells	GZ-212 to GZ-228		
June, 1997	GZA collected groundwater samples.	GZ-201 through GZ-211	TPH, VOCs and PAHs	A water sample could not be collected from GZ-207 because it was dry.
December, 1997	GZA collected groundwater samples	GZ-212 through GZ-228 and GZ-207	TPH, VOCs and PAHs	
June, 1999	FwEC collected groundwater samples from nine of the 27 monitoring wells on site	GZ-207, GZ-208, GZ -212, GZ -213, GZ -214, GZ -218, GZ -221, GZ -225 and GZ -227		
March - May 2005	Tetra Tech EC collected water samples from all “serviceable” monitoring wells, totalling 32 monitoring wells.	GZ-201 to GZ-208; GZ-210 to GZ -228 and RW-1 to RW-5.	VOCs, SVOCs and TPH DRO	
		GZ-202 and GZ-208	Samples from these two wells were also analyzed as an oil-water mixture and the lab performed petroleum fingerprint analysis on the samples.	The samples were identified in the Number 2 Fuel Oil range.

TABLE A-2
SUMMARY OF HISTORICAL GROUNDWATER SAMPLING
SAMPLING AND ANALYSIS PLAN
REMEDIAL INVESTIGATION TANK FARM 2
NAVAL STATION, NEWPORT, NEWPORT, RHODE ISLAND

Date	Activity	Wells	Analyses	Comments
July, 2005	In July 2005, Tetra Tech EC submitted a Work Plan for additional monitoring well installations at the Site. The plan proposed 20 additional monitoring wells, to be installed, if necessary, in the backfilled areas surrounding each tank. RIDEM provided comments on this Work Plan, but the work was never initiated, because it was determined that, based upon the results of the SIRAR, additional groundwater monitoring wells were not required.			
2009	Tetra Tech EC collected groundwater samples from 15 site wells. All groundwater samples collected were analyzed for VOCs, SVOCs and total and dissolved lead.	GZ-203,-205, -209, -210, -211, -212,-213, -215, -217, -218, -219, -220, -222, -223, -225	VOCs, SVOCs, and total and dissolved lead	
		Five selected wells: GZ-205, -215, -219, -223, -225	TPH (GRO and DRO)	

Table A-3.1
Summary of Conditions at Tank 19
Tank Farm 2
NAVSTA, Newport, Rhode Island

Groundwater

			Sample ID	GZ-201		GZ-225		GZ-226
			Collection Date	03/11/05*	Jun-97	04/01/05	Jun-99	03/11/05
Analyte	**Unit**	**RIDEM GB GW Objectives**	**RIDEM GB GW Upper Concentration Limit**					
1-Methylnaphthalene	ug/L	NS	NS	ND	10	ND	ND	ND
Bis(2-Ethylhexyl)Phthalate	ug/L	NS	NS	ND	ND	ND	6.0	ND
Diesel Range Organics (DRO)	mg/L	NS	NS	15	NT	0.15	NT	ND
Diethylphthalate	ug/L	NS	NS	ND	ND	ND	2.0J	ND
Di-N-Butylphthalate	ug/L	NS	NS	ND	ND	ND	1.0J	ND
Methylene Chloride	ug/L	NS	NS	ND	ND	ND	3.0J	ND
TPH	mg/L	NS	NS	NT	1600	NT	0.73	NT
VOCs	mg/L	NS	NS	ND	ND	ND	NA	ND

*GZ-201 was analyzed at 10x dilution for VOCs

ND = Not detected above laboratory reporting limits

J=Estimated Value

NS= No Standard

NT = Not tested

NA = Not applicable

LNAPL Gauging

	GZ-201	GZ-225	GZ-226
Date	(ft)	(ft)	(ft)
Apr-09	NM	NG	ND
Feb-02	ND	ND	ND
Aug-01	ND	ND	ND
Jul-01	ND	ND	ND
Jun-99	ND	ND	NG
Mar-98	ND	NG	ND
Jul-97	0.12	NG	NG
Jun-97	0.12	NG	NG
May-97	ND	NG	NG
Apr-97	0.02	NG	NG
Mar-97	0.02	NG	NG
Feb-97	0.01	NG	NG
Jan-97	0.01	NG	NG

ND = Not detected

NG = Not gauged

NM = not measurable

Soil

				Sample ID	GZ-201	GZ-225	GZ-226	B-35	TF2-Tankpit19-3
				Collection Date	Nov-96	Oct-97	Oct-97	May-97	6/1/05
Analyte	**Unit**	**RIDEM Method 1 Industrial / Commercial Direct Exposure Criteria**	**Method 1 GB TPH Leachability Criteria**	**RIDEM Upper Concentration Limit**	**(0-2')**	**(0-2')**	**(4-6')**	**(10-12')**	**(10')**
Bis(2-ethylhexyl)phthalate	mg/kg	410	NS	10,000	NT	NT	NT	NT	0.25J
DRO	mg/kg	2,500	NS	30,000	NT	NT	NT	NT	ND
PAHs	mg/kg	NS	NS	NS	ND	ND	ND	NT	ND
TPH	mg/kg	2,500	NS	30,000	ND	ND	40	ND	NT
VOCs	mg/kg	NS	NS	NS	ND	ND	ND	NT	ND

ND = Not detected above laboratory reporting limits

NS= No Standard

NT = Not tested

J=Estimated Value

Table A-3.2
Summary of Conditions at Tank 20
Tank Farm 2
NAVSTA, Newport, Rhode Island

Groundwater

			Sample ID	GZ-202		GZ-218			RW-4
			Collection Date	4/7/05	Jun-97	04/01/05*	Jun-99	Dec-97	
Analyte	Unit	RIDEM GB GW Objectives	RIDEM GB GW Upper Concentration Limit						
1,2,4-Trimethylbenzene	ug/L	NS	NS	NT	ND	ND	7	5.3	
1-Methylnaphthalene	ug/L	NS	NS	NT	13	ND	ND	ND	
Bis(2-ethylHexyl)Phthalate	ug/L	NS	NS	NT	ND	ND	9	ND	
Diesel Range Organics (DRO)	mg/l	NS	NS	NT	NT	13	NT	NT	Not Sampled
Diethylphthalate	ug/L	NS	NS	NT	ND	ND	2.0J	ND	
Fluorene	ug/l	NS	NS	NT	ND	4	ND	ND	
Fuel Oil #2 (C9-C25)	mg/L	NS	NS	790**	NT	NT	NT	NT	
Methylene Chloride	ug/L	NS	NS	NT	ND	ND	3.0J	ND	
Naphthalene (VOC)	ug/L	NS	NS	NT	ND	ND	8	9.7	
PAHs	mg/L	NS	NS	NT	NA	NA	NA	ND	
Phenanthrene	ug/l	NS	NS	NT	ND	8.1	ND	ND	
P-Isopropyltoluene	ug/L	NS	NS	NT	ND	ND	ND	1.1	
TPH	mg/L	NS	NS	NT	2.1	NT	3.7	5.4	
VOCs	mg/L	NS	NS	NT	ND	ND	NA	NA	

*GZ-218 was analyzed at 100x dilution for VOCs

**GZ-202 was sampled as oil-water mixture

ND = Not detected above laboratory reporting limits

J=Estimated Value

NS= No Standard

NT = Not tested

NA = Not applicable

Soil

					Sample ID	GZ-202	GZ-218	B-8
					Collection Date	Nov-96	Oct-97	May-97
Analyte	Unit	RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria	Method 1 GB TPH Leachability Criteria	RIDEM Upper Concentration Limit	(0-2')	(5-7')	(10-12')	
PAHs	mg/kg	NS	NS	NS	ND	ND	NT	
TPH	mg/kg	2,500	2,500	30,000	ND	ND	ND	
VOCs	mg/kg	NS	NS	NS	ND	ND	NT	

ND = Not detected above laboratory reporting limits

NS= No Standard

NT = Not tested

LNAPL Gauging

	GZ-202	GZ-218
Date	(ft)	(ft)
7/27/2009	0.35	NG
7/9/2009	**0.5**	NG
6/12/2009	**1.13**	NG
6/1/2009	**1.17**	NG
5/21/2009	**0.79**	NG
5/6/2009	0.25	NG
4/29/2009	0.4	NG
4/13/2009	**1.66**	NG
Spring 2005	ND	NG
Feb-02	0.05	ND
Nov-01	0.01	ND
Oct-01	0.02	NG
8/20/2001	0.05	NG
Aug-01	NG	ND
Jul-01	0.03	ND
2001	0.05	NG
Jun-99	0.28	ND
Mar-98	0.23	NG
Feb-98	ND	NG
Jan-98	ND	NG
Dec-97	0.02	ND
Nov-97	0.03	NG
Oct-97	0.11	NG
Sep-97	0.02	NG
Aug-97	ND	NG
Jul-97	ND	NG
Jun-97	detected	NG
May-97	ND	NG
Apr-97	ND	NG
Mar-97	ND	NG
Feb-97	ND	NG
Jan-97	ND	NG

ND = Not detected

NG = Not gauged

Table A-3.3
Summary of Conditions at Tank 21
Tank Farm 2
NAVSTA, Newport, Rhode Island

Groundwater

			Sample ID	GZ-203			GZ-227		RW-2
			Collection Date	5/19/2009	04/05/05	Jun-97	04/05/05*	Jun-99	4/14/2005
Analyte	**Unit**	**RIDEM GB GW Objectives**	**RIDEM GB GW Upper Concentration Limit**						
2-Methylnaphthalene	ug/L	NS	NS	ND	ND	ND	3.5	3.0J	ND
Bis(2-EthylHexyl)Phthalate	ug/L	NS	NS	ND	ND	ND	ND	4.0J	ND
Diesel Range Organics (DRO)	mg/L	NS	NS	NT	2.8	NT	3.1	NT	0.35
Lead (Dissolved)	ug/L	NS	NS	3.2 B	NT	NT	NT	NT	NT
Lead (Total)	ug/L	NS	NS	1.9 B	NT	NT	NT	NT	NT
Naphthalene (VOC)	ug/L	NS	NS	ND	ND	ND	ND	1.0J	ND
PAHs	mg/L	NS	NS	ND	ND	ND	NA	NA	ND
Phenanthrene	ug/L	NS	NS	ND	ND	ND	2.9	1.0J	ND
TPH	mg/L	NS	NS	NT	NT	ND	NT	1.6	NT
VOCs	mg/L	NS	NS	ND	ND	ND	ND	ND	ND

*GZ227 was analyzed at 10x dilution for VOCs

ND = Not detected above laboratory reporting limits

J=Estimated Value

NS= No Standard

NT = Not tested

NA = Not applicable

LNAPL Gauging

	GZ-203	RW-2	GZ-227
Date	(ft)	(ft)	(ft)
Apr-09	NG	NG	ND
Feb-02	ND	ND	ND
Nov-01	ND	ND	0.01
Oct-01	NG	ND	ND
Aug-01	ND	NG	0.02
Jul-01	ND	NG	0.02
2001	NG	NG	0.02
Jun-99	ND	NG	ND
Aug-97	ND	NG	NG
Jul-97	ND	NG	NG
Jun-97	ND	NG	NG
May-97	ND	NG	NG
Apr-97	ND	NG	NG
Mar-97	ND	NG	NG
Feb-97	ND	NG	NG
Jan-97	ND	NG	NG

ND = Not detected

NG = Not gauged

Soil

				Sample ID	GZ-203	GZ-200	GZ-227	B-31	TF2-Tank21-1	TF2-Tankpit21-1
				Collection Date	Not Sampled	Oct-97	Oct-97	May-97	5/17/05	5/31/05
Analyte	**Unit**	**RIDEM Method 1 Industrial / Commercial Direct Exposure Criteria**	**Method 1 GB TPH Leachability Criteria**	**RIDEM Upper Concentration Limit**		**(0-2')**	**(0-2')**	**(10-12')**	**(1')**	**(5')**
Diesel Range Organics (DRO)	mg/kg	2,500	NS	30,000		NT	NT	NT	48	120
PAHs	mg/kg	NS	NS	NS		ND	ND	NT	NT	NT
SVOCs	mg/kg	NS	NS	NS		ND	ND	NT	NT	ND
TPH	mg/kg	2,500	NS	30,000		11	ND	ND	NT	NT
VOCs	mg/kg	NS	NS	NS		ND	ND	NT	NT	ND

ND = Not detected above laboratory reporting limits

NS= No Standard

NT = Not tested

GZ-200 is a duplicate of GZ-227

Table A-3.4
Summary of Conditions at Tank 22
Tank Farm 2
NAVSTA, Newport, Rhode Island

Groundwater

Sample ID				GZ-204	GZ-217	RW-5
Collection Date				Jun-97	Dec-97	Not Sampled
Analyte	**Unit**	**RIDEM GB GW Objectives**	**RIDEM GB GW Upper Concentration Limit**			
PAHs	mg/L	NS	NS	ND	ND	
TPH	mg/L	NS	NS	ND	2	
VOCs	mg/L	NS	NS	ND	ND	

ND = Not detected above laboratory reporting limits

NS= No Standard

Soil

Sample ID				GZ-204	GZ-217	B-27	B-28
Collection Date				Nov-96	Oct-97	5/1/97	5/1/97
Analyte	**Unit**	**RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**Method 1 GB TPH Leachability Criteria**	**RIDEM Upper Concentration Limit**	**(5-6')**	**(0-2')**	**(10-12')**	**(10-12')**
PAHs	mg/kg	NS	NS	NS	ND	ND	NT	NT
TPH	mg/kg	2,500	2,500	30,000	29	ND	ND	ND
VOCs	mg/kg	NS	NS	NS	ND	ND	NT	NT

ND = Not detected above laboratory reporting limits

NS= No Standard

NT = Not tested

LNAPL Gauging

	GZ-204	GZ-217	RW-5
Date	(ft)	(ft)	(ft)
2/1/2002	ND	ND	ND
Nov-01	ND	ND	ND
Oct-01	NG	NG	ND
Aug-01	ND	ND	NG
Jul-01	ND	ND	NG
Jun-99	ND	ND	NG
Aug-97	ND	NG	NG
Jul-97	ND	NG	NG
Jun-97	ND	NG	NG
May-97	ND	NG	NG
Apr-97	ND	NG	NG
Mar-97	ND	NG	NG
Feb-97	ND	NG	NG
Jan-97	ND	NG	NG

ND = Not detected

NG = Not gauged

Table A-3.5
Summary of Conditions at Tank 23
Tank Farm 2
NAVSTA, Newport, Rhode Island

Groundwater

			Sample ID	GZ-205			GZ-216	
			Collection Date	5/20/09	3/11/05*	Jun-97	3/9/05	Dec-97
Analyte	Unit	RIDEM GB GW Objectives	RIDEM GB GW Upper Concentration Limit					
1,3,5-Trimethylbenzene	ug/l	NS	NS	ND	ND	1.2	ND	ND
1-Methylnaphthalene	ug/l	NS	NS	ND	ND	84	ND	ND
2-Methylnaphthalene	ug/l	NS	NS	ND	35	10	ND	ND
Acenaphthene	ug/l	NS	NS	ND	3.6	ND	ND	ND
Diesel Range Organics (DRO)	mg/l	NS	NS	0.16	13	NT	0.35	NT
Fluorene	ug/l	NS	NS	ND	6.0	ND	ND	ND
Gasoline Range Organics (GRO)	mg/l	NS	NS	0.01	NT	NT	NT	NT
Isopropylbenzene	ug/l	NS	NS	ND	ND	2.3	ND	ND
Lead (Dissolved)	ug/l	NS	NS	ND	NT	NT	NT	NT
Lead (Total)	ug/l	NS	NS	1.7B	NT	NT	NT	NT
Naphthalene (SVOC)	ug/l	NS	NS	ND	ND	42	ND	ND
Naphthalene (VOC)	ug/l	NS	NS	ND	6.4	37	ND	ND
n-propylbenzene	ug/l	NS	NS	ND	ND	3.5	ND	ND
o-xylene	ug/l	NS	NS	ND	ND	1.1	ND	ND
PAHs	mg/l	NS	NS	ND	ND	NA	ND	ND
Phenanthrene	ug/l	NS	NS	ND	11	ND	ND	ND
sec-butylbenzene	ug/l	NS	NS	ND	ND	1.2	ND	ND
TPH	mg/l	NS	NS	NT	NT	ND	ND	ND
VOCs	mg/l	NS	NS	ND	ND	NA	ND	ND

*GZ-205 was analyzed at 50x dilution for VOCs

ND = Not detected above laboratory reporting limits

B = The result reported is less than reporting limit, but greater than instrument detection

NS= No Standard

NT = Not tested

NA = Not applicable

LNAPL Gauging

	GZ-205	GZ-216
Date	(ft)	(ft)
Dec-02	ND	NG
Feb-02	NG	ND
Aug-01	ND	ND
Jul-01	ND	ND
Jun-99	ND	ND
Aug-97	ND	NG
Jul-97	ND	NG
Jun-97	ND	NG
May-97	ND	NG
Apr-97	ND	NG
Mar-97	ND	NG
Feb-97	ND	NG
Jan-97	ND	NG

ND = Not detected

NG = Not gauged

Soil

				Sample ID	GZ-205	GZ-216	B-4
				Collection Date	Oct-96	Not Sampled	May-97
Analyte	Unit	RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria	Method 1 GB TPH Leachability Criteria	RIDEM Upper Concentration Limit	(25-27')		(10-12')
1-Methylnaphthalene	mg/kg	NS	NS	10,000	2.9		NT
2-Methylnaphthalene	mg/kg	10,000	NS	10,000	1.5		NT
Acenaphthene	mg/kg	10,000	NS	10,000	0.34		NT
Fluorene	mg/kg	10,000	NS	10,000	0.86		NT
Naphthalene (SVOC)	mg/kg	10,000	NS	10,000	0.41		NT
naphthalene (VOC)	mg/kg	10,000	NS	10,000	1.4		NT
n-butylbenzene	mg/kg	NS	NS	10,000	0.42		NT
Phenanthrene	mg/kg	10,000	NS	10,000	2.5		NT
sec-butylbenzene	mg/kg	NS	NS	10,000	0.3		NT
TPH	mg/kg	2,500	2,500	30,000	930		ND

ND = Not detected above laboratory reporting limits

NS= No Standard

NT = Not tested

Table A-3.6
Summary of Conditions at Tank 24
Tank Farm 2
NAVSTA, Newport, Rhode Island

Groundwater

			Sample ID	GZ-206	GZ-220
			Collection Date	Jun-97	12/1/1997
Analyte	Unit	RIDEM GB GW Objectives	RIDEM GB GW Upper Concentration Limit		
PAHs	mg/l	NS	NS	ND	ND
sec-butylbenzene	ug/l	NS	NS	2.7	ND
TPH	mg/l	NS	NS	ND	ND
VOCs	mg/l	NS	NS	NA	ND

ND = Not detected above laboratory reporting limits

NS= No Standard

NA = Not applicable

LNAPL Gauging

	GZ-206	GZ-220
Date	(ft)	(ft)
2/1/2002	ND	ND
Aug-01	ND	ND
Jul-01	ND	ND
Jun-99	NG	ND
Aug-97	ND	NG
Jul-97	ND	NG
35582	ND	NG
May-97	ND	NG
Apr-97	ND	NG
Mar-97	ND	NG
Feb-97	ND	NG
Jan-97	ND	NG

ND = Not detected NG = Not gauged

Soil

			Sample ID	GZ-206	GZ-220	B-14	B-13	TF2-Tank 24-2	TF2-Tank 24-2D
			Collection Date	Nov-96	Oct-97	May-97	May-97	5/17/05	unknown
Analyte	Unit	RIDEM Method 1 Industrial/ Commercial Direct Exposure Criteria	Method 1 GB TPH Leachability Criteria	RIDEM Upper Concentration Limit	(10-12')	(8-8.7')	(10-12')	(10-12')	(1')	unknown
DRO	mg/kg	2,500	2,500	30,000	NT	NT	NT	NT	34	80
PAHs	mg/kg	NS	NS	NS	ND	ND	NT	NT	NT	NT
TPH	mg/kg	2,500	2,500	30,000	ND	ND	ND	ND	NT	NT
VOCs	mg/kg	NS	NS	NS	ND	ND	NT	NT	NT	NT

ND = Not detected above laboratory reporting limits

NS= No Standard

NT = Not tested

Table A-3.7
Summary of Conditions at Tank 25
Tank Farm 2
NAVSTA, Newport, Rhode Island

Groundwater

			Sample ID	GZ-207		GZ-221			GZ-223			GZ-224
			Collection Date	4/1/05	Jun-99	4/13/05	Jun-99	Dec-97	5/20/09	4/1/05	Dec-97	4/1/05
Analyte	Unit	RIDEM GB GW Objectives	RIDEM GB GW Upper Concentration Limit									
Acetone	ug/l	NS	NS	ND	9.0J	ND	ND	ND	ND	ND	ND	ND
Bis(2-Ethylhexyl)Phthalate	ug/l	NS	NS	ND	4.0J	ND	2.0J	ND	ND	ND	ND	ND
Chloroform	ug/l	NS	NS	ND	ND	ND	ND	ND	ND	ND	1.3	ND
Diesel Range Organics (DRO)	mg/l	NS	NS	0.79	NT	4.9	NT	NT	0.12	0.23	NT	0.16
Diethylphthalate	ug/l	NS	NS	ND	1.0J	ND	ND	ND	ND	ND	ND	ND
Di-N-Butylphthalate	ug/l	NS	NS	ND	1.0J	ND	ND	ND	ND	ND	ND	ND
Isopropylbenzene	ug/l	NS	NS	1.3	ND	ND	ND	ND	ND	ND	ND	ND
Lead (Dissolved)	ug/l	NS	NS	NT	NT	NT	NT	NT	1.6B	NT	NT	NT
Lead (Total)	ug/l	NS	NS	NT	NT	NT	NT	NT	2.5B	NT	NT	NT
m,p-xylenes	ug/l	NS	NS	0.95	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	ug/l	NS	NS	ND	4.0J	ND	ND	ND	ND	ND	ND	ND
Naphthalene (VOC)	ug/l	NS	NS	ND	3.0J	ND	ND	ND	ND	ND	ND	ND
n-butylbenzene	ug/l	NS	NS	0.58	ND	ND	ND	ND	ND	ND	ND	ND
n-propylbenzene	ug/l	NS	NS	1.4	ND	ND	ND	ND	ND	ND	ND	ND
o-xylenes	ug/l	NS	NS	2.4	ND	ND	ND	ND	ND	ND	ND	ND
PAHs	mg/l	NS	NS	ND	NA	ND	ND	ND	ND	ND	ND	ND
TPH	mg/l	NS	NS	NT	3.5	NT	0.7	ND	NT	NT	ND	NT
VOCs	mg/l	NS	NS	NA	NA	ND	ND	ND	ND	ND	NA	ND

ND = Not detected above laboratory reporting limits

J = Estimated Value

B = The result reported is less than reporting limit, but greater than instrument detection

NS= No Standard

NT = Not tested

NA = Not applicable

LNAPL Gauging

	GZ-207	GZ-221	GZ-223	GZ-224
Date	(ft)	(ft)	(ft)	(ft)
Feb-02	ND	NG	ND	ND
Aug-01	ND	NG	ND	ND
Jul-01	ND	NG	ND	ND
Jun-05	NG	NG	NG	NG
Jun-99	ND	ND	ND	ND
Aug-97	ND	NG	NG	NG
Jul-97	ND	NG	NG	NG
Jun-97	ND	NG	NG	NG
May-97	ND	NG	NG	NG
Apr-97	ND	NG	NG	NG
Mar-97	ND	NG	NG	NG
Feb-97	ND	NG	NG	NG
Jan-97	ND	NG	NG	NG

ND = Not detected

NG = Not gauged

Soil

			Sample ID	GZ-221	GZ-223	GZ-224	B-10	B-12	TF2-Tank25-2	TF2-T25-R2	TF2-T25-R3	TF2-T25-R4	TF2-T25-R5	TF2-T25-R6	TF2-T25-R7	TF2-T25-R8	TF2-T25-R9	TF2-T25-R10B	TF2-T25-R11	TF2-T25-R12	TF2-T25-R14	TF2-T25-R16	TF2-T25-R18	TF2-T25-R19	TF2-T25-R20	TF2-T25-R23	TF2-T25-R27	TF2-T25-R30	TF2-T25-R32	TF2-T25-R33	TF2-T25-R34	TF2-T25-R35	TF2-T25-R36	TF2-T25-R37	TF2-T25-R38
			Collection Date	Oct-97	Oct-97	Oct-97	May-97	May-97	5/17/05									2/2/06								1/31/06	1/31/06	1/31/06	2/8/06	2/8/06	6/19/06	6/19/06	6/19/06	6/19/06	6/19/06
Analyte	Unit	RIDEM Method 1 Industrial / Commercial Direct Exposure Criteria	Method 1 GB TPH Leachability Criteria	RIDEM Upper Concentration Limit	(10-12')	(0-2')	(8-10')	(10-12')	(10-12')	(1')	sidewall of remedial excavation	sidewall of remedial excavation	base of remedial excavation	base of remedial excavation	base of remedial excavation	base of remedial excavation	base of remedial excavation	base of remedial excavation	base of remedial excavation	base of remedial excavation	base of remedial excavation	base of remedial excavation	base of remedial excavation	base of remedial excavation	base of remedial excavation	sidewall of remedial excavation	sidewall of remedial excavation	unknown	base of remedial excavation	sidewall of remedial excavation	base of remedial excavation	base(13') of remedial excavation	base of remedial excavation	base of remedial excavation	sidewall of remedial excavation
1,2,4-Trimethylbenzene	mg/kg	NS	NS	10,000	ND	ND	ND	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	mg/kg	NS	NS	10,000	ND	ND	ND	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1-Methylnaphthalene	mg/kg	NS	NS	10,000	ND	ND	ND	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	mg/kg	10,000	NS	10,000	ND	ND	ND	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	mg/kg	10000	NS	10,000	ND	ND	ND	NT	NT	0.14	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	mg/kg	7.8	NS	10,000	ND	ND	ND	NT	NT	0.48	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)pyrene	mg/kg	0.8	NS	10,000	ND	ND	ND	NT	NT	0.48	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)fluoranthene	mg/kg	7.8	NS	10,000	ND	ND	ND	NT	NT	0.38	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(ghi)perylene	mg/kg	10000	NS	10,000	ND	ND	ND	NT	NT	0.31	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(k)fluoranthene	mg/kg	78	NS	10,000	ND	ND	ND	NT	NT	0.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	mg/kg	780	NS	10,000	ND	ND	ND	NT	NT	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
DRO (Diesel Range Organics)	mg/kg	2,500	2,500	30,000	NT	NT	NT	NT	NT	210	71	140	9.9	450	17	210	12	44	13	9	380	350	110	430	82	340	11	6	20	ND	8.1	200	97	17	300	77
Fluoranthene	mg/kg	10000	NS	10,000	ND	ND	ND	NT	NT	1.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluorene	mg/kg	10,000	NS	10,000	ND	ND	ND	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	mg/kg	7.8	NS	10,000	ND	ND	ND	NT	NT	0.25	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene (SVOC)	mg/kg	10,000	NS	10,000	ND	ND	ND	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene (VOC)	mg/kg	10,000	NS	10,000	ND	ND	ND	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
PAHs	mg/kg	NS	NS	NS	ND	ND	ND	NT	NT	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	mg/kg	10,000	NS	10,000	ND	ND	ND	NT	NT	0.55	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	mg/kg	10000	NS	10,000	ND	ND	ND	NT	NT	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SVOC	mg/kg	NS	NS	NS	ND	ND	ND	NT	NT	NA	NT	NT	NT	NT	NT	NT	NT	NT	ND	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TPH	mg/kg	2,500	2,500	30,000	ND	ND	200	1,700	550	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT
VOCs	mg/kg	NS	NS	NS	ND	ND	ND	NT	NT	ND	NT	NT	NT	NT	NT	NT	NT	NT	ND	NT	NT	NT	NT	NT	NT	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND = Not detected above laboratory reporting limits

NS= No Standard

NT = Not tested

NA = Not applicable

Only currently applicable soil data is shown. Any samples from areas removed during the remedial excavation were not included in this table.

Table A-3.8
Summary of Conditions at Tank 26
Tank Farm 2
NAVSTA, Newport, Rhode Island

Groundwater

			Sample ID	GZ-208			GZ-222		RW-3
			Collection Date	4/6/2005	Jun-99	Jun-97	5/20/09	Dec-97	
Analyte	**Unit**	**RIDEM GB GW Objectives**	**RIDEM GB GW Upper Concentration Limit**						
1,2,4-Trimethylbenzene	ug/L	NS	NS	NT	16	ND	ND	ND	Not Sampled
1-Methylnaphthalene	ug/L	NS	NS	NT	ND	43	ND	ND	
2-Methylnaphthalene	ug/L	NS	NS	NT	6	ND	ND	ND	
bis(2-ethylhexyl)phthalate	ug/L	NS	NS	NT	4.0J	ND	ND	ND	
Fluorene	ug/L	NS	NS	NT	2.0J	ND	ND	ND	
Fuel Oil #2 (C9-C25)	mg/L	NS	NS	740**	NT	NT	NT	NT	
Lead (Dissolved)	ug/L	NS	NS	NT	NT	NT	ND	NT	
Lead (Total)	ug/L	NS	NS	NT	NT	NT	1.5 B	NT	
Naphthalene (SVOC)	ug/L	NS	NS	NT	8	ND	ND	ND	
Naphthalene (VOC)	ug/L	NS	NS	NT	20	ND	ND	ND	
PAHs	mg/L	NS	NS	NT	ND	NA	ND	ND	
Phenanthrene	ug/L	NS	NS	NT	3.0J	ND	ND	ND	
TPH	mg/L	NS	NS	NT	37	2	NT	0.36	
VOCs	mg/L	NS	NS	NT	NA	ND	ND	ND	

**GZ-208 was sampled as oil-water mixture.

ND = Not detected above laboratory reporting limits

J = Estimated Value

B = The result reported is less than reporting limit, but greater than instrument detection

NS= No Standard

NT = Not tested

NA = Not applicable

Soil

			Sample ID	GZ-208	GZ-222	B-16
			Collection Date	Nov-96	Oct-97	May-97
Analyte	**Unit**	**RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**Method 1 GB Leachability Criteria**	**RIDEM Upper Concentration Limit**	**(5-7')**	**(5-7')**	**(10-12')**
PAHs	mg/kg	NS	NS	NS	ND	ND	NT
TPH	mg/kg	2,500	2,500	30,000	ND	ND	ND
VOCs	mg/kg	NS	NS	NS	ND	ND	NT

ND = Not detected above laboratory reporting limits

NS= No Standard

NT = Not tested

LNAPL Gauging

	GZ-208	GZ-222
Date	(ft)	(ft)
7/27/2009	**1.25**	NG
7/9/2009	0.31	NG
6/12/2009	0.25	NG
6/1/2009	0.1	NG
5/21/2009	0.13	NG
5/6/2009	0.05	NG
4/29/2009	0.31	NG
4/13/2009	0.42	NG
Spring 2005	ND	NG
Feb-02	0.06	ND
Nov-01	0.41	ND
Oct-01	0.03	NG
8/28/2001	0.02	NG
8/20/2001	0.08	NG
Aug-01	NG	ND
Jul-01	0.1	ND
2001	0.01	NG
Jun-99	ND	ND
Mar-98	ND	NG
Feb-98	ND	NG
Jan-98	ND	NG
Dec-97	0.01	NG
Nov-97	ND	NG
Oct-97	0.01	NG
Sep-97	0.01	NG
Aug-97	0.02	NG
Jul-97	ND	NG
Jun-97	detected	NG
May-97	ND	NG
Apr-97	ND	NG
Mar-97	ND	NG
Feb-97	ND	NG
Jan-97	ND	NG

ND = Not detected

NG = Not gauged

Table A-3.9
Summary of Conditions at Tank 27
Tank Farm 2
NAVSTA, Newport, Rhode Island

Groundwater

			Sample ID	GZ-209	GZ-212			GZ-219	
			Collection Date	Jun-97	5/21/09	Jun-99	Dec-97	5/20/09	Dec-97
Analyte	Unit	RIDEM GB GW Objectives	RIDEM GB GW Upper Concentration Limit						
Diesel Range Organics (DRO)	mg/l	NS	NS	NT	NT	NT	NT	0.06	NT
1,2,4-Trimethylbenzene	ug/l	NS	NS	ND	ND	ND	1.6	ND	ND
1-Methylnaphthalene	ug/l	NS	NS	33	ND	ND	ND	ND	ND
2-Methylnaphthalene	ug/l	NS	NS	10	ND	ND	ND	ND	ND
Bis(2-EthylHexyl)Phthalate	ug/l	NS	NS	ND	ND	2.0 JB	ND	ND	ND
Chloroform	ug/l	NS	NS	ND	ND	ND	1.1	ND	ND
Lead (Dissolved)	ug/l	NS	NS	NT	ND	NT	ND	2.1B	NT
Lead (Total)	ug/l	NS	NS	NT	ND	NT	ND	1.6B	NT
PAHs	mg/l	NS	NS	ND	ND	ND	ND	ND	ND
TPH	mg/l	NS	NS	2.5	NT	0.45	ND	NT	ND
VOCs	mg/l	NS	NS	ND	ND	ND	NA	ND	ND

ND = Not detected above laboratory reporting limits

J = Estimated Value

B = The result reported is less than reporting limit, but greater than instrument detection

NS= No Standard

NT = Not tested

NA = Not applicable

LNAPL Gauging

	GZ-209	GZ-212	GZ-219
Date	(ft)	(ft)	(ft)
Feb-02	ND	ND	ND
Aug-01	ND	ND	ND
Jul-01	ND	ND	ND
Jun-99	ND	ND	ND
Aug-97	ND	NG	NG
Jul-97	ND	NG	NG
Jun-97	ND	NG	NG
May-97	ND	NG	NG
Apr-97	ND	NG	NG
Mar-97	ND	NG	NG
Feb-97	ND	NG	NG
Jan-97	ND	NG	NG

ND = Not detected

NG = Not gauged

Soil

Sample ID					GZ-209	B-18	TF2-Tank27-1	TF2-Tankpit27-2	TF2-Tankpit27-5
Collection Date					Oct-96	May-97	5/17/05	5/31/05	5/31/05
Analyte (Soil)	Unit	RIDEM Method 1 Industrial/ Commercial Direct Exposure Criteria	Method 1 GB Leachability Criteria	RIDEM Upper Concentration Limit	(15-17')	(10-12')	(1')	(5')	(5')
1,2,3-Trichlorobenzene	mg/kg	NS	NS	10,000	0.103	NT	NT	NT	ND
1,2,4-Trimethylbenzene	mg/kg	NS	NS	10,000	0.0441	NT	NT	NT	ND
1,3,5-Trimethylbenzene	mg/kg	NS	NS	10,000	0.01	NT	NT	NT	ND
1-Methylnaphthalene	mg/kg	NS	NS	10,000	20	NT	NT	NT	ND
2-Methylnaphthalene	mg/kg	10,000	NS	10,000	16	NT	NT	NT	ND
Diesel Range Organics (DRO)	mg/kg	2,500	2,500	30,000	NT	NT	41	ND	9.4
Fluorene	mg/kg	10,000	NS	10,000	5.6	NT	NT	NT	ND
Naphthalene (SVOC)	mg/kg	10,000	NS	10,000	4.9	NT	NT	NT	ND
Naphthalene (VOC)	mg/kg	10,000	NS	10,000	0.031	NT	NT	NT	ND
Phenanthrene	mg/kg	10,000	NS	10,000	9.6	NT	NT	NT	ND
TPH	mg/kg	2,500	2,500	30,000	5,600	ND	NT	NT	ND

ND = Not detected above laboratory reporting limits

NS= No Standard

NT = Not tested

Table A-3.10
Summary of Conditions at Tank 28
Tank Farm 2
NAVSTA, Newport, Rhode Island

Groundwater

			Sample ID	GZ-210	GZ-213	
			Collection Date	Jun-97	Jun-99	Dec-97
Analyte	**Unit**	**RIDEM GB GW Objectives**	**RIDEM GB GW Upper Concentration Limit**			
1,2,4-Trimethylbenzene	ug/l	NS	NS	22	ND	ND
1,3,5-Trimethylbenzene	ug/l	NS	NS	1.8	ND	ND
1-methylnaphthalene	ug/l	NS	NS	44	ND	ND
Benzene	ug/l	140	18,000	4.2	ND	ND
bis(2-ethylhexyl)phthalate	ug/l	NS	NS	NT	4.0JB	ND
Ethylbenzene	ug/l	1600	16,000	4.9	ND	ND
isopropylbenzene	ug/l	NS	NS	3.4	ND	ND
m+p xylene	ug/l	NS	NS	1.7	ND	ND
n-propylbenzene	ug/l	NS	NS	5.5	ND	ND
PAHs	mg/l	NS	NS	NT	ND	ND
p-isopropylbenzene	ug/l	NS	NS	6.4	ND	ND
TPH	mg/l	NS	NS	ND	0.3	1.1
VOCs	mg/l	NS	NS	NA	ND	ND

ND = Not detected above laboratory reporting limits

NS= No Standard

J=Estimated Value

B = The result reported is less than reporting limit, but greater than instrument detection

NT = Not tested

NA = Not applicable

LNAPL Gauging

	GZ-210	GZ-213
Date	(ft)	(ft)
4/13/2009	ND	NG
Feb-02	ND	ND
Aug-01	ND	ND
Jul-01	ND	ND
Jun-99	ND	ND
Jun-97	ND	NG
May-97	ND	NG
Apr-97	ND	NG
Mar-97	ND	NG
Feb-97	ND	NG
Jan-97	ND	NG

ND = Not detected

NG = Not gauged

Soil

			Sample ID	GZ-210	GZ-213	B-22
			Collection Date	Nov-96	Not Sampled	May-97
Analyte	**Unit**	**RIDEM Method 1 Industrial/Commercial Direct Exposure Criteria**	**Method 1 GB TPH Leachability Criteria**	**RIDEM Upper Concentration Limit**	**(5-7')**	**(10-12')**
PAHs	mg/kg	NS	NS	NS	ND	NT
TPH	mg/kg	2,500	2,500	30,000	ND	18
VOCs	mg/kg	NS	NS	NS	ND	NT

ND = Not detected above laboratory reporting limits

NS= No Standard

NT = Not tested

Table A-3.11
Summary of Conditions at Tank 29
Tank Farm 2
NAVSTA, Newport, Rhode Island

Groundwater

			Sample ID	GZ-211			GZ-228	RW-1
			Collection Date	5/20/2009	03/11/05*	Jun-97	3/9/2005	
Analyte	**Unit**	**RIDEM GB GW Objectives**	**RIDEM GB GW Upper Concentration Limit**	Not Sampled because product was observed in the sample tubing				Not Sampled
1,2,4-Trimethylbenzene	ug/L	NS	NS		47	ND	ND	
1-Methylnaphthalene	ug/L	NS	NS		ND	51	ND	
2-Methylnaphthalene	ug/L	NS	NS		1500	12	ND	
Diesel Range Organics (DRO)	mg/L	NS	NS		1200	NT	0.22	
Fluorene	ug/L	NS	NS		500	20	ND	
Phenanthrene	ug/L	NS	NS		900	32	ND	
Pyrene	ug/L	NS	NS		120	ND	ND	
TPH	mg/L	NS	NS		NT	190	NT	
VOCs	mg/L	NS	NS		NA	ND	ND	

*GZ211 was analyzed at 25x dilution for VOCs, and 20x for SVOC

ND = Not detected above laboratory reporting limits

NS= No Standard

NT = Not Tested

NA = Not Applicable

Soil

				Sample ID	GZ-211	GZ-228	B-25	TF2-Tank29-1
				Collection Date	Dec-96	Oct-97	May-97	05/17/05
Analyte	**Unit**	**RIDEM Method 1 Industrial /Commercial Direct Exposure Criteria**	**Method 1 GB TPH Leachability Criteria**	**RIDEM Upper Concentration Limit**	**(0-2')**	**(0-2')**	**(10-12')**	**(1')**
Diesel Range Organics (DRO)	mg/kg	2,500	2,500	30,000	NT	NT	NT	26
PAHs	mg/kg	NS	NS	NS	ND	ND	NT	NT
TPH	mg/kg	2,500	2,500	30,000	ND	ND	ND	NT
VOCs	mg/kg	NS	NS	NS	ND	ND	NT	NT

ND = Not detected above laboratory reporting limits

NS= No Standard

NT = Not Tested

LNAPL Gauging

	GZ-211	GZ-228
Date	(ft)	(ft)
4/13/2009	product observed during sampling	NG
Feb-02	0.01	ND
Nov-01	0.46	ND
Oct-01	0.17	ND
Aug-01	NG	ND
Jul-01	NG	0.01
2001	0.11	NG
Jun-99	0.08	ND
Mar-98	ND	NG
Feb-98	0.01	NG
Jan-98	0.02	NG
Dec-97	0.03	NG
10/97-11/97	0.02	NG
Sep-97	0.01	NG
Aug-97	ND	NG
Jul-97	ND	NG
Jun-97	detected	NG
May-97	ND	NG
Apr-97	ND	NG
Mar-97	ND	NG
Feb-97	ND	NG
Jan-97	ND	NG

ND = Not detected

NG = Not Gauged

Table A-3.12
Summary of Conditions along Fuel Transport Piping
Tank Farm 2
NAVSTA, Newport, Rhode Island

Soil

				Sample ID	**B-1**	**B-2**	**B-3**	**B-4**	**B-5**	**B-6**	**B-7**	**B-8**	**B-9**	**B-10**	**B-11**	**B-12**	**B-13**	**B-14**	**B-15**	**B-16**	**B-17**	**B-18**	**B-19**	**B-20**	**B-21**	**B-22**	**B-23**	**B-24**	**B-25**	**B-26**	**B-27**	**B-28**	**B-29**	**B-30**	**B-31**	**B-32**	**B-33**	**B-34**	**B-35**
				Collection Date	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97	May-97
Analyte	**Unit**	**RIDEM Method 1 Industrial/ Commercial Direct Exposure Criteria**	**Method 1 GB TPH Leachability Criteria**	**RIDEM Upper Concentration Limit**	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12') (Excavated during the remediation of Tank 25)	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')	(10-12')
TPH	mg/kg	2,500	2,500	30,000	20	63	<10	<10	28	<10	<10	<10	<10	1700	1800	550	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	18	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

ND = Not detected above laboratory reporting limits

NS= No Standard

Table A-3.13
Summary of Conditions at Former JP-5 Soil Piles/ Buoy Storage Area
Tank Farm 2
NAVSTA, Newport, Rhode Island

Groundwater

			Sample ID	GZ-215	
			Collection Date	5/21/2009	Dec-97
Analyte	Unit	RIDEM GB GW Objectives	RIDEM GB GW Upper Concentration Limit		
Diesel Range Organics (DRO)	mg/L	NS	NS	0.06	NT
Gasoline Range Organics (GRO)	mg/L	NS	NS	ND	NT
PAHs	mg/L	NS	NS	ND	ND
TPH	mg/L	NS	NS	NT	1.3
Lead (Dissolved)	ug/L	NS	NS	0.9B	NT
Lead (Total)	ug/L	NS	NS	2.1B	NT
p-isopropyltoluene	ug/L	NS	NS	ND	2.1
sec-butylbenzene	ug/L	NS	NS	ND	3.3

ND = Not detected above laboratory reporting limits

B = The result reported is less than reporting limit, but greater than instrument detection

NS= No Standard

NT= Not Tested

LNAPL Gauging

	GZ-215
Date	(ft)
4/13/2009	sheen
Feb-02	ND
Nov-01	ND
Oct-01	ND
Aug-01	ND
Jul-01	ND
Jun-99	ND

ND = Not detected

Soil

				Sample ID	GZ-215	TF2-026-1	TF2-026-2A	TF2-026-3A	TF2-026-4	TF2-026-5	TF2-026-6	TF2-026-7	TF2-026-8A	TF2-035-1	TF2-035-2	TF2-035-5	TF2-035-6	TF2-035-9
				Collection Date		5/23/05	7/5/05	7/5/05	5/23/05	5/23/05	5/23/05	5/23/05	7/5/05	5/24/05	5/24/05	5/24/05	5/24/05	5/24/05
Analyte	Unit	RIDEM Method 1 Industrial /Commercial Direct Exposure Criteria	Method 1 GB TPH Leachability Criteria	RIDEM Upper Concentration Limit		(1')	(1')	(1')	(1')	(1')	(2')	(1')	(1')	(1')	unknown	(2')	(0.5')	(1')
2-Butanone (Methyl Ethyl Ketone)	mg/kg	10,000	NS	10,000	Not Sampled	NT	ND	0.062	NT	ND	NT	ND	ND	NT	NT	NT	NT	NT
2-Methylnaphthalene	mg/kg	10,000	NS	10,000		NT	ND	0.13J	NT	ND	NT	ND	ND	NT	NT	NT	NT	NT
Acetone	mg/kg	10,000	NS	10,000		NT	ND	0.4	NT	ND	NT	ND	ND	NT	NT	NT	NT	NT
Benzo(a)anthracene	mg/kg	7.8	NS	10,000		NT	ND	0.2	NT	ND	NT	ND	ND	NT	NT	NT	NT	NT
Benzo(a)pyrene	mg/kg	0.8	NS	10,000		NT	ND	0.21	NT	ND	NT	ND	ND	NT	NT	NT	NT	NT
Benzo(b)fluoranthene	mg/kg	7.8	NS	10,000		NT	ND	0.26	NT	ND	NT	ND	ND	NT	NT	NT	NT	NT
Benzo(k)fluoranthene	mg/kg	78	NS	10,000		NT	ND	0.17	NT	ND	NT	ND	ND	NT	NT	NT	NT	NT
Chrysene	mg/kg	780	NS	10,000		NT	ND	0.27	NT	ND	NT	ND	ND	NT	NT	NT	NT	NT
Fluoranthene	mg/kg	10000	NS	10,000		NT	ND	0.27	NT	ND	NT	ND	ND	NT	NT	NT	NT	NT
Phenanthrene	mg/kg	10,000	NS	10,000		NT	ND	0.19	NT	ND	NT	ND	ND	NT	NT	NT	NT	NT
Pyrene	mg/kg	10000	NS	10,000		NT	ND	0.66	NT	ND	NT	ND	0.13J	NT	NT	NT	NT	NT
SVOCs	mg/kg	NS	NS	NS		NT	ND	NA	NT	ND	NT	ND	NA	NT	NT	NT	NT	NT
TPH (DRO+GRO)	mg/kg	2,500	2,500	30,000		15*	1100*	488	94	211	45*	203	746	16*	74	8.4*	38*	25*
VOCs	mg/kg	NS	NS	NS		NT	ND	NA	NT	ND	NT	ND	ND	NT	NT	NT	NT	NT

ND = Not detected above laboratory reporting limits

NS= No Standard

'*' = Only DRO were detected.

NT = Not tested

NA = Not applicable

J=Estimated Value

Table A-3.14
Summary of Conditions at B219
Tank Farm 2
NAVSTA Newport, RI

Soil

				Sample ID	**TF2-B219-1**	**TF2-B219-2**	**TF2-B219-3**	**TF2-B219-4**
				Collection Date	6/2/05	6/2/05	6/2/05	6/2/05
Analyte	**Unit**	**RIDEM Method 1 Residential Direct Exposure Criteria**	**RIDEM Method 1 Industrial/ Commercial Direct Exposure Criteria**	**Method 1 GB TPH Leachability Criteria**	(0-0.5')	(0-0.5')	(0-0.5')	(0-0.5')
Chlorinated Benzenes	mg/kg	NS	NS	NS	ND	ND	ND	ND
PCB (Aroclor 1260)	mg/kg	10	10	10	18	0.33	4.1	11

ND = Not detected above laboratory reporting limits

NS= No Standard

ND(0.210) = not detected at indicated laboratory reporting limit

C:\GIS\02710\DE.DE\TF2_HISTORIC-AERIALS.MXD 06/17/15 MKB

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

TANK FARM 2
OCTOBER 21, 1951

TANK FARM 2
DEFENSE FUEL SUPPORT

FILE	SCALE	
TF2_HISTORIC_AERIALS.MXD	PER SCALE BAR	
FIGURE NUMBER	REV	DATE
1	0	06/17/15

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N

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

TANK FARM 2
APRIL 22, 1954

TANK FARM 2
DEFENSE FUEL SUPPORT

FILE	SCALE	
TF2_HISTORIC_AERIALS.MXD	PER SCALE BAR	
FIGURE NUMBER	REV	DATE
2	0	06/17/15

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TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

TANK FARM 2
FEBRUARY 6, 1962

TANK FARM 2
DEFENSE FUEL SUPPORT

FILE	SCALE
TF2_HISTORIC_AERIALS.MXD	PER SCALE BAR
FIGURE NUMBER	REV / DATE
3	0 / 06/17/15

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TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

TANK FARM 2
APRIL 29, 1972

TANK FARM 2
DEFENSE FUEL SUPPORT

FILE	SCALE	
TF2_HISTORIC_AERIALS.MXD	PER SCALE BAR	
FIGURE NUMBER	REV	DATE
4	0	06/17/15

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TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

TANK FARM 2
APRIL 14, 1976

TANK FARM 2
DEFENSE FUEL SUPPORT

FILE	SCALE	
TF2_HISTORIC_AERIALS.MXD	PER SCALE BAR	
FIGURE NUMBER	REV	DATE
5	0	06/17/15

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3

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

TANK FARM 2
MARCH 28, 1979

TANK FARM 2
DEFENSE FUEL SUPPORT

FILE	SCALE
TF2_HISTORIC_AERIALS.MXD	PER SCALE BAR
FIGURE NUMBER	REV / DATE
-	0 / 09/03/15

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TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

TANK FARM 2
MARCH 3, 1986

TANK FARM 2
DEFENSE FUEL SUPPORT

FILE	SCALE	
TF2_HISTORIC_AERIALS.MXD	PER SCALE BAR	
FIGURE NUMBER	REV	DATE
6	0	06/17/15

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TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

TANK FARM 2
APRIL 26, 1988

TANK FARM 2
DEFENSE FUEL SUPPORT

FILE	SCALE	
TF2_HISTORIC_AERIALS.MXD	PER SCALE BAR	
FIGURE NUMBER	REV	DATE
7	0	06/17/15

AOC
START 003

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Page_1__ of ___

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2- 003-SS1011-0000.8
Sample Location:
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0940	0-0.5'	Brown	Sand - Little Gravel - Little Silt (Mostly f-M sand, poorly graded, <15% fine SR gravel 1/4"-1", ~10% non-plastic fines; damp soil (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 2.4			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K. Jackson

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-003-SS1012-000.7
Sample Location: SS1012
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0950	0-0.7'	Brown	Sand-Tr Gravel-Tr Silt (Mostly f. sand, #. med sand, poorly graded, <15% f-c SR gravel 1/4"-1/2", tr% of phyllitic gravel up to 3/4", SA, <5% non-plastic fines, moist
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 2.6			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): K. Jarhurt

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-003-SS1013-0000.7
Sample Location: SS1013
Sampled By: KJ, PS, MH

C.O.C. No.: _____

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0955	0-0.7'	Gray Brown	Sand - Little Gravel - Little Silt (Mostly f. sand, med sand, poorly graded, <15% ftc SR gravel ¼" - ¾" long, a couple pieces of phyllitic gravel ½" - 1", SA, ~10% non-plastic fines, dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.9			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): K. Jarbeau

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-003-551014-0001
Sample Location: SS1014
Sampled By: KJ, PS, MH

C.O.C. No.: _____

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1005	0-1'	Gray Brown	Sand- Little Gravel- Little Silt (Mostly f. sand, ≠ med sand, poorly graded, <15% f-c SR gravel ¼"-¾", few phyllitic rock fragments up to 1", SA+arg; ~10% non-plastic fines, dry (SP-SM)
Method: SS shovel, Hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.9			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stain
- PID reading in borehole up to 0.6ppm
- No reading from auger

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K. Jukent

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Page_1__ of ___

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-003-SS1015-000.8
Sample Location: SS1015
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1015	0-0.8'	Brown	Sand- Little Gravel - Little Silt (Mostly f-m sand, poorly graded, ≤15% f-c SR gravel ¼"-1¼", few phyllitic gravel up to 1", SA, ~10% non-plastic fines, dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 3.4			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains
- PID reading in borehole up to 2.5 ppm
- No PID readings off auger
- Collected for GRO + ExTPH but not a field dup for these analytes
- Field duplicate for PAH, metals, dioxin only

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	Yes TF2-003-SS-DUP06-1013 (0000hrs)

Signature(s): K. Jukant

✓

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2- 003-SS1016-0001.9
Sample Location: SS1016
Sampled By: KJ, PS, MH

C.O.C. No.: _____

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1025	0-0.9'	Brown	Sand-Little Gravel-Little Silt (Mostly f-m sand, poorly graded, <15% f-c SR gravel 1/4"-1 1/2" long, phyllite gravel up to 2 1/2 in long, SA ~10% non-plastic fines, dry (SP's m)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 4.4			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K-Jarbut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-003-SS1017-0000.8
Sample Location: SS 1017
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1055	0-0.8'	Brown	Sand - Few Gravel - Little Silt (Mostly f-m sand, poorly graded, >15% f-c SR gravel 1/2-1 1/2" long, phyllitic gravels up to 3" long, SA. ~10% silt (non-plastic fines), dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 2.2			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K. Jankunt

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-003-SS1018-0008
Sample Location: SS1018
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1105	0-0.8'	Gray Brown	Sand - Little Gravel - Little Silt (Mostly f-m sand, poorly graded, <15% SR ftc gravel 1/4" - 2", phyllite gravels up to 2" long, SA, ~10% non plastic fines, dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 2.4			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K. Jankunt

END AOC 003

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Page 1 of ___

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-003-551019-0005
Sample Location:
Sampled By: KJ, PS, MH
C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1115	0-0.5'	Brown	Sand - Trace Gravel - Little Silt (Mostly f-m sand, poorly graded, <15% f-c SR gravel ¼"-2" a couple phyllitic gravel up to 2" long, SA, ~10% non-plastic fines, dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 24.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K. Jolkut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-~~004/5~~-SS1020-0001
Sample Location: SS1020
Sampled By: KJ, PS, MH

C.O.C. No.: _____

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1140	0-1'	Light brown	Sand - Few Gravels - Some Silt (Mostly f. sand, tr. med sand, p. graded, >15% f-c SR gravel up to 1½ in, ~10% fines, dry. (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 9.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	(YES) / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	(YES) / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stains
- No olfactory evidence of odor from soil in pan
- PID reading in auger hole @ 35.2 ppm (nothing off auger)
- Sent GRO, ExTPH (10% confirmation) sample for

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	TF2-~~004/5~~-SS-DUP01-~~101813~~ 1013

-004/5

Signature(s): KJ

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-0045-SS1021-000.7
Sample Location: SS1021
Sampled By: KJ, PS, MH
C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1130	0-0.7'	Brown	Sand and Gravel - Tr silt (Mostly f-m sand, tr. c sand, poorly graded, >15% f-c SK gravel, 1/2-2 inches, ~5% non-plastic fines, dry - (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 2.4			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stains
- No olfactory evidence of odor

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K Jarbut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1022-000.9
Sample Location: SS1022
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1118	0-0.9'	Brown	Sand - Some Gravel - Trace Silt (Mostly f. sand, tr. med sand, poorly graded, >15% f+c SR gravel up to 2in, 10% non-plastic fines, dry - (SP-SM)
Method: SS shovel, (hand auger)			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 1.9			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stains
- No olfactory evidence of odor

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	NO

Signature(s): KJarkut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1023-000.8
Sample Location: SS1023
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1110	0-0.8'	Brown	Sand - Some Gravel - Tr Silt (Mostly f-m sand, p. graded, >15% c. gravel up to 3½ in, no round rocks, fissile pieces w/ graphitic sheen (phyllite), <5% nonplastic fines, dry (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 8.2			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor
- No visual evidence of stain

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	No.

Signature(s): K Jarkut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S-SS1024-000.6
Sample Location: SS1024
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10/18/13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1105	0-0.6'	Brown	Sand - Some Gravel - Tr Silt (Mostly f. sand, poorly graded, >15% f. + c. SR gravel up to 1.5 in, <5% non-plastic fines, dry - (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = ~~5.3~~ 7.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No visual evidence of ~~odor~~ stains
- No olfactory evidence of odor

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	No

Signature(s):

K Jarbut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1025-000.8
Sample Location: SS1025
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1045	0-0.8'	Brown	~~Mostly f. sand, poorly graded~~ Sand - some gravel - trace silt (Mostly f sand, poorly graded, f-+c. gravel, SA, SR (>15%) up to 3"; <5% fines, dry. wo [Poorly graded sand w/ gravel - SP]
Method: SS shovel, Hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 5.6			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	~~FBD~~
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	~~FBD~~
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stains
- No olfactory evidence of odor
- Near loop road

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): KJarkut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S-SS1026-000.8
Sample Location: SS1026
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10/18/13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1055	0-0.8'	Brown	Sand and Gravel - Tr Silt (Mostly f-m sand, tr. c. sand, poorly graded, c. gravel, SR up to 2.5 inches, <5% fines, dry nonplastic (>15%)
Method: SS shovel, Hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 5.3			
			[(SP) Poorly graded sand w/ gravel]

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stains
- No visual evidence of odor

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	NO

Signature(s): K Jarkut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S-SS1027-0001
Sample Location: SS1027
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1345	0-1'	Tan-Brown	Sand-Some Gravel-Little Silt (Mostly f: sand, poorly graded, ≥15% f to SR gravel, ½ to 2in, ~10% non-plastic fines, dry (SP-SM))
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 2.2			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	2 / 1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	3 / 1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	6 / 2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	3 / 1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor
- No visual evidence of stains
- Opting to send to lab for lab QC purposes only - all analyte (double+triplicate volume)

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
Yes	No

Signature(s):

K Jarlett

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1028-000.0
Sample Location: SS1028
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1335	0-0.8'	Gray Brown	Sand-Few Gravels-Tr Silt (Mostly fine sand, poorly graded, 15-20% C. gravel up to 2 inches long (shale pieces) and sub angular to angular (coal?), 5% non-plastic fines, dry (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 2.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stains
- No olfactory evidence of odor

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): KJarkut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1029-C00 6
Sample Location: SS1029
Sampled By: KJ, PS, MH

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1330	0-0.6'	Gray-Brown	Sand - Little Gravel - Tr Silt (Mostly f. sand, tr. med sand, poorly graded, <15% C gravel (rhyolite) to 3" (flat pieces, not rounded), <5% non-plastic fines, dry - (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stains
- No olfactory evidence of odor

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): K Jarkut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2- 0045-SS1030-000.6
Sample Location: SS1030
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1320	0-0.6	Gray-Brown	Sand - Few Gravel - Little Silt (Mostly f. sand, poorly graded, >15% f to c. SR gravel 1/2 - 1 1/2 in, ~5% non-plastic fines, dry (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.9			

Trace to

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains in soil
- PID reading from borehole = 365 ppm

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K Jarkut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1031-000.8
Sample Location: SS1031
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1205	0-0.8'	Gray-Brown	Sand-Few Silt- Little Gravel (Mostly f. sand, tr. med sand, poorly graded, <5% C. Sh gravel up to 1in, >15% non-plastic fines, dry (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 8.8 (condensation in jar)			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stains on soil in pan
- No olfactory evidence of odor from soil in pan

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	No

Signature(s):

KJ Jackert

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1032-000.9
Sample Location: SS1032
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1155	0-0.9'	Brown	Sand and Gravel - Little Silt (Mostly f. sand, tr. med sand, poorly graded, >15% f+c SR gravel up to 2in w/ elongated pieces of phyllite to 4", graphitic sheen on rock, ~10% non-plastic fines, dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 9.9			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stain in pan
- No olfactory evidence of odor in pan
- PID reading in borehole = 10.3 ppm (not off auger)

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K Jankunt

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S-SS1033-000.8
Sample Location: SS1033
Sampled By: KJ, PS, MH

C.O.C. No.: _____

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1455	0-0.8'	Brown	Sand - Little Gravel - Tr Silt (Mostly f. sand, tr. med sand, poorly graded, <15% f to c SR gravel to 1 1/2 in long, <5% non-plastic fines, dry (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 3.6			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): K Jarbut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S-551034-0000.6
Sample Location: SS1034
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1445	0-0.6'	Gray Brown	Sand- and Some Gravel- Tr Silt (Mostly f. sand, tr. med sand, poorly graded, >15% f to C SR gravel 1/2-3in, thin rectangular piece of phyllite up to 2 1/2in, <5% non-plastic fines, dry (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 4.7			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	NO

Signature(s): K Jankunt

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2- 004/5-SS1035-0001
Sample Location: SS1035
Sampled By: KJ, PS, MH

C.O.C. No.: _____

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1435	0-1'	Brown	Sand - Little Gravel - Tr Silt (Mostly f. sand tr. med sand, poorly graded, ≤15% SRC. gravel up to 1¼" long, ≤5% non-plastic fines, dry (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 4.6			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor
- No visual evidence of stains
- Sent GRO, ExTPH for QC purposes (DUP02) → Discarded

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	TF2-004/5-SS-DUP02-1013

Signature(s): K Jankunt

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S-SS1036-000.6
Sample Location: SS1036
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1425	0-0.6'	Gray-Brown	Sand - Little Gravel - Tr Silt (Mostly f. sand, tr. med sand, poorly graded, <15% f-c SR gravel + SA phyllite pieces to 2", <5% non-plastic fines, dry (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 3.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor
- No visual evidence of stain

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): KJackert

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1037-000.7
Sample Location: SS1037
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1415	0-0.7'	Gray Brown	Sand - Few Gravels - Tr Silt (Mostly f. sand, poorly graded, f-c SR gravel to 2 in, SA phyllite pieces to 1½ in, 5% non-plastic fines, dry (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.8			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): K Jarhunt

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S-SS1038-0000.7
Sample Location: SS1038
Sampled By: KJ, PS, MH

C.O.C. No.: _____

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1410	0-0.7'	Brown	Sand - Little Gravel - Tr Silt (Mostly f. sand, tr. med sand, poorly graded, <15% f-c SR gravel to 2", some elongated pieces of phyllite up to 2", ~5% fines, nonplastic, dry - SP)
Method: SS shovel, hand auger			
Sample Reading in part (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 2.1			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): K Jarhut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S-SS1039-000.9
Sample Location: SS1039
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1400	0-0.9'	Gray-Brown	Sand - Some Gravel - ~~Little~~ Trace Silt (Mostly f. sand, tr. med sand, poorly graded, >15% f to c SR gravel ½-1¼ inches long, phyllite pieces up to 2in length (flat, not rounded edges), ~10% to 25% non-plastic fines, dry (SP))
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.5			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains on soil
- PID reading in boring = 12.3 ppm (nothing off auger)
- Send GRO + ExTPH analysis (10% conf.) for

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K Jarbut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-0045-SS1040-000.9
Sample Location: SS1040
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-18-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1350	0-0.9'	Tan-brown	Sand-Few Gravels-Little Silt (mostly f. sand, tr. med sand, poorly graded, >15% ftC SR gravel ½-1½ inches long, dry lite rock frags up to 2" (flat w/ graphitic sheen) >15% non-plastic fines, dry - (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 3.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor
- No visual evidence of stains
- PID 27.0 in borehole

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): K Jarhurt

cast in 1st p/u

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1041-0000.7
Sample Location: SS1041
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1035	0-0.7'	Gray Brown	Sand & And Gravel- Little Silt (Mostly f. sand, tr. med sand, poorly graded, ≥15% c. SR gravel up to 2½ in long, some f SR gravel to ½ in, broken rock fragments to 1", ~5-10% non-plastic fines, dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.3			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	TF2-004/5-SS-DUP03-1013 (0000 hrs)

Signature(s):

K Jarkut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2- 004/5-SS1042-0005
Sample Location: SS 1042
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1020	0-0.5'	Brown	Sand - Little Gravel - Trace Silt (Mostly f. sand, tr. med sand, poorly graded, <15% f to c. gravel, SR to SA 1/2"-1", <5% non-plastic fines, dry (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.6			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No unusual evidence of stains
- PID reading in borehole @ 3.5 ppm (not off auger)

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K Jackunt

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S-SS1043
Sample Location: SS1043
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time:			
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID =			
Jar Headspace reading (ppm):			
PID =			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

NO SAMPLE COLLECTED - BEDROCK AT GROUND SURFACE AROUND PIN FLAG TAKE PHOTO

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): K Jarbeau

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-0045-SS1044-0000.5
Sample Location: SS1044
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1010	0-0.5'	Brown	sand - Few Gravel - Little Silt (Mostly f. sand, poorly graded, >15% c. gravel SR, SA 1-2in long, ~10% non-plastic fines, dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.7			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stains
- No olfactory evidence of odor from soil in pan

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): K Jarhurt

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS104S-000.5
Sample Location: SS104S
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1000	0-0.5'	Brown	Sand - Little Gravel - Little Silt (Mostly f. sand, tr. med sand, poorly graded, <15% c gravel, SR, up to 1½ in long, ~10-15% non-plastic fines, dry (SP-SM)
Method: SS shovel, Hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 1.8			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stains
- No olfactory evidence of odor from soil in pan

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	NO

Signature(s):

K Jarbeau

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2- 0045-551046-0000.5
Sample Location: 551046
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0950	0-0.5	Brown	Sand - Little Gravel - Tr Silt (Mostly f. sand, poorly graded, <15% SR, SA FC gravel 1/2 - 1 1/4 in long, <5% non-plastic fines, dry (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.6			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains
- PID reading of 2.3 ppm in borehole (not off auger)

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	NO

Signature(s):

K Jurkut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-0045-SS1047-0008
Sample Location: SS1047
Sampled By: KJ, PS, MH

C.O.C. No.: _____

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0940			Sand - Little Gravel - Little Silt (Mostly f. sand, poorly graded, <15% f+c SR, SA gravel ½ - 1in, ~10% non-plastic fines, dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.5			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stains
- No olfactory evidence of odor
- PID reading of 3.1 ppm in borehole - not off auger

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K Jakunt

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-0041S-SS1048-0000.8
Sample Location: SS1048
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0930	0-0.8'	Brown	Sand - Little Gravel - Some Silt (Mostly f. sand, poorly graded, <15% SR, SA gravel to 1 3/4 in - coarse + fine, >15% non-plastic fines, dry (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 1.5			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stains
- No olfactory evidence of odor

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K. Jankauskas

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1049-000.9
Sample Location: SS1049
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0920	0-0.9'	Brown	Sand and Gravel - Few Silt (Mostly f-m sand, poorly graded, >15% SR, SA gravel up to 2" long, >15% non-plastic fines, dry (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 1.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No visual evidence of stains
- No olfactory evidence of odor
- PID reading of 25.9 ppm in borehole (not off auger)
- Recalibrated PID - 0/100 ppm - ok
- Changed filter on PID.

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K Jukut

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Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Page 1 of ___

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S-SS1050-000.6
Sample Location: SS1050
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1440	0-0.6'	Brown	Sand - Few Gravel - Little Silt (Mostly f. sand, tr. med sand, poorly graded, >15% f to c SR gravel ½"-1½", phyllitic rock fragments up to 2½" long, SA, NO non-plastic fines, dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.7			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	NO

Signature(s): K Jurkut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S-SS1051-0000.8
Sample Location: SS1051
Sampled By: KJ, PS, MH

C.O.C. No.: _____

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1430	0-0.8'	Brown	Sand- Few Gravels - Few Silt (Mostly f. sand, tr. med sand, poorly graded, >15% f-c SR gravel 1/2-1 1/4" long, several pieces of broken phyllite fragments, angt SA up to 1", >15% non-plastic fines, dry (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 1.4			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	(YES) / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	(YES) / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains
- PID reading of 5.7 ppm in boring (not off auger)

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	NO

Signature(s):

K Jarbant

✓

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-0045-SS1052-0006
Sample Location:
Sampled By: KJ, PS, MH
C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1425	0-0.6'	Gray Brown	Sand and Gravel - Few Silt (Mostly f. sand, tr. med sand, poorly graded. >15% f-tc 1/2-3" long, SR, SA w/ phyllite rock fragments up to 3" long, >15% non-plastic fines, dry (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.2			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- Bare Ground
- No olfactory evidence of ~~soil~~ odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K Jarhurt

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S-SS1053-000.6
Sample Location: SS1053
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1415	0-0.6'	Dark Brown	Few Sand - Little Gravel - Little Silt (Mostly f. sand, tr. med sand, poorly graded, <15% f-c SR gravel ½-1¼" long, phyllitic rock fragments, SA, grey, up to 2" long, ≈15% non-plastic fines, dry. (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.9			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stain

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	No

Signature(s):

K Jarbert

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-0045-SS1054-0006
Sample Location: SS1054
Sampled By: KJ, PS, MH

C.O.C. No.: _____

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1405	0-0.6'	Gray Brown	Sand + Gravel - Some Silt (Mostly f sand, tr. med to c sand, poorly graded, ≥ 15% f to c SR gravel ½-1¼" >15% phyllite rock fragments, SA, ARG, up to 2" long, >15% non-plastic fines, dry (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.4			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	2 1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	2* 1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

* change - prev. sent 3 but that's too much vol. per lab

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
Yes (PAHs, metals, Dioxin only)	No

Signature(s):

K Jarhurt

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S-SS1055-000.8
Sample Location: SS 1055
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1400	0-0.8'	Dk brown	Sand - Some Gravel. Some Silt (Mostly f. sand, tr. med sand, poorly graded, >15% f. gravel up to 1/2" long, SA to angular phyllite rock fragments up to 2" long, >15% non-plastic fines, dry (SM)
Method: SS shovel, Hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.4			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): K Jarkut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

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Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-SD045-SS1056-000.6
Sample Location: SS 1056
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10/21/13	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1355	0-0.6'	Brown	Sand and Gravel - Little Silt (Mostly f. sand, tr. med sand, poorly graded, >15% f-c SR gravel to 1" c. phyllite rock fragments, angular to subangular to 3½ in long, ~10% non-plastic fines, dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 9.4			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	(YES) / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	(YES) / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- PID reading in borehole = 3.0 ppm
- No visual evidence of stains
- No reading off hand auger

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	No

Signature(s): K Jarkut

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Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2- 004/SS1057-0001
Sample Location: SS1057
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1345	0-1'	Brown	Sand - Little Gravel - Little Silt (Mostly f-m sand, tr. coarse sand, poorly graded, <15% f-c SR,SA gravel 1/2-2 in long, phyllite rock chips or fragments, ~10% non-plastic fines, dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading In pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.2			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): KJ

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1058-000.5
Sample Location: SS 1058
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0835	0-0.5	Brown	Sand and Gravel - some Silt (Mostly f. sand, tr. med sand, poorly graded, ≥15% SA+ang phyllitic gravel up to 2½" long, >15% non-plastic fines, dry (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 2.4			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	NO

Signature(s):

K. Jordan

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/S/SS1059-000.6
Sample Location: SS1059
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0825	0-0.6'	Brown	Sand and Gravel - some silt (Mostly f. sand, poorly graded, ≥ 15% f-c GR gravel ¼" to 2½" long; few phyllite pieces - SR, SA up to 1¾", ≥ 15% non-plastic fines, dry (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 3.8			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	NO

Signature(s):

K. Jarkut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1060-0.00.5
Sample Location: SS1060
Sampled By: KJ, PS, MH

C.O.C. No.: _____

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0815	0-0.5'	DK brown	Sand - Little Gravel - Little Silt (Mostly f-m sand, tr. C sand, poorly graded, ~15% f-c SR gravel ¼"-1", phyllitic rock fragments, SA, ars up to 2½" long, ~10% non-plastic fines; dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 3.2			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K. Jarhurt

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

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Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1001-000.6
Sample Location: SS1001
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1455	0-0.6'	Brown	Sand, Little Gravel - Little Silt (Mostly f. sand, tr. med sand, poorly graded, <15% f-c SR gravel 1/4"-1" phyllitic rock fragments up to 2", sA-ang, ~10% non-plastic fines, dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.5			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	2 1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	2 1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains
- DUP04 for PAHs, metals, dioxin only
- Did not duplicate GRO+EXTPH b/c PID reading was low.

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	Yes TF2-004/5-SS-DUP04-1013 (0000 hrs)

Signature(s):

K. Jankunt

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2- 0045-SS1062-000.8
Sample Location: SS1062
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1450	0-0.8'	Brown	Sand - Little Gravel - Some Silt (Mostly f. sand, tr. med sand, poorly graded, <15% SR gravel 1/2-3/4", trace phyllite rock fragments, angt SA up to 1", >15% non-plastic fines, dry (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 1.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	NO

Signature(s):

10/21/13 See K Jukart

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2- 004/5-SS1003-000.6
Sample Location: SS 1003
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0905	0-0.6'	Gray Brown	Sand - Little Gravel - Few Silt (Mostly f. sand, tr. med sand, poorly graded, <15% f to c SR gravel 1/4"-1", trace % of phyllitic gravels SA up to 1", >15% non-plastic fines, dry (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 1.5			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): K. Jarbeau

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1064-0006
Sample Location: SS1064
Sampled By: KJ, PS, MH

C.O.C. No.: _____

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0955	0-0.6'	Gray brown	Few Sand - f and Gravel - f Silt (Mostly f. sand, tr. med sand, poorly graded, >15% f+c SR, SA, org gravel + phyllitic rock chips 1/4" - 2 1/4", >15% fines (non plastic), dry (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 1.2			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	2 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	2 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
Yes	No

PAH metals + dioxin only

Signature(s):

K. Jalbert

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

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Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-0041S-SS1065-0005
Sample Location: SS1065
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0845	0-0.5'	Brown	Sand - Little Gravel - Little Silt (Mostly f. sand, tr. med sand, poorly graded, <15% f to c SR gravel ¼"-1½" f to c phyllite rock fragments, SA+ark ½" up to 1¼", ~10 non-plastic fines, dry (SP-SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 1.4			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	2 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	2 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains
- PID reading in borehole @ 22.6 ppm
- No reading off of hand auger
- Collect for GRO + EXTPH but did not duplicate b/c we have enough clops.

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
NO	TF2-0041S-SS-DUP05-1013 * (0000hrs)

* Pahs, metal, + dioxin only

Signature(s): K. Jackert

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1066-000.9
Sample Location: SS1066
Sampled By: KJ, PS, MH

C.O.C. No.: ___

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: ___
[ ] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1515	0-0.9'	Brown	Sand - Few Gravels - Few Silt (Mostly fi sand, tr. med + C sand, poorly graded, >15% ft C SR gravel ¼"-1½", phyllitic rock fragments up to 3" long, SA, SR, ≯15% non-plastic fines, dry (SM)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 1.7			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	(YES) / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / (NO)	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / (NO)	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	(YES) / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K. Jarbut

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2-004/5-SS1067-000.7
Sample Location: SS1067
Sampled By: KJ, PS, MH

C.O.C. No.: _____

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other: _____
[ ] QA Sample Type: _____

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-21-13	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1505	0-0.7'	Brown	Sand - Few Gravels - Little Silt (Mostly f sand, tr. med sand, poorly graded, >15% f+c SR gravel, ¼"-1¼" long, phyllite rock fragments up to 2" long-SA, ~10% non-plastic fines, (SP-SM) dry
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 0.8			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth Interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s): K-Jarlett

LAST SAMPLE 004/005

Tetra Tech, Inc.

SOIL AND SEDIMENT SAMPLE LOG SHEET

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Site Name: Portsmouth, RI
Portsmouth, RI
Project No.: 112G03019 FI.FS/ CTO WE30

Sample ID No.: TF2- 004/5-SS1068-000.5
Sample Location: SS 1068
Sampled By: KJ, PS, MH

C.O.C. No.:

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-22-13	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0915	0-0.5'	Gray Brown	Sand and Gravel - little Silt (Mostly f sand, tr. med sand, poorly graded, >15% f+c SR, SA gravel 1/2"-1½" long, phyllitic gravels + cobble up to 4" long, SA to angular, non plastic fines, dry (SP)
Method: SS shovel, hand auger			
Sample Reading in pan (ppm):			
PID = 0.0			
Jar Headspace reading (ppm):			
PID = 1.6			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth interval	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings				
(Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
Total solids, PAH, metals	≤6°C	1 X 8 oz glass jar	YES / NO	
ExTPH, Total solids	≤6°C	1 X 4 oz glass jar	YES / NO	
GRO	≤6°C, 10ml MeOH	2 X 40 ml vials	YES / NO	
Dioxin, Total solids	≤6°C	1 X 8 oz glass jar	YES / NO	

OBSERVATIONS / NOTES:

- No olfactory evidence of odor from soil in pan
- No visual evidence of stains

MAP: Not to scale

See Report

Circle if Applicable:

MS/MSD	Duplicate ID No.:
No	No

Signature(s):

K-Jarbert

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI
Project Number: 112G03019 / CTO WE30
Sample Location: AOC 004/5
QA Sample Type:

Sample ID Number: TF2-TBW01-1013
Sampled By: Jalkut/Seward/Horton
C.O.C. Number:

[X] Trip Blank
[ ] Source Water Blank (Field Blank)
[ ] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date: 10-18-13
Time: 1030
Method: Provided by the lab

WATER SOURCE:

[X] Laboratory Prepared
[] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: N/A
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: NA
Equipment Used:
Equipment Type:
[ ] Dedicated
[ ] Reusable
[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
GRO for soil	≤6°C, 10 ml MeOH	2 x 40 ml vials w/10 ml MeOH	(YES) / NO
Aq trip blank for GRO rinsate blanks	≤6°C, HCL	2 x 40 ml vials w/HCL	YES (NO)

OBSERVATIONS / NOTES:

MeOH trip blanks for soil

Signature(s): K Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	TF2-TB02-W-0-1013
Project Number:	112G03019 / CTO WE30	Sampled By:	Jalkut/Seward/Horton
Sample Location:	AOC 004/5	C.O.C. Number:	

QA Sample Type:

[X] Trip Blank
[ ] Source Water Blank (Field Blank)
[ ] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date: 10-18-13
Time: 1405
Method: Provided by the lab

WATER SOURCE:

[X] Laboratory Prepared
[] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: N/A
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: NA
Equipment Used:
Equipment Type:
[ ] Dedicated
[ ] Reusable
[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
GRO for soil	≤6°C, 10 ml MeOH	2 x 40 ml vials w/10 ml MeOH	YES / (NO)
Aq trip blank for GRO rinsate blanks	≤6°C, HCL	2 x 40 ml vials w/HCL	(YES) / NO

OBSERVATIONS / NOTES:

Aqueous trip blank for the TF2-SS-RB01-1013 rinsate blank

Signature(s): JC Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	TF2-TB02-1013
Project Number:	112G03019 / CTO WE30	Sampled By:	Jalkut/Seward/Horton
Sample Location:	AOC 004/5	C.O.C. Number:	

QA Sample Type:

[X] Trip Blank
[ ] Source Water Blank (Field Blank)
[ ] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date: 10-21-13
Time: 0900
Method: Provided by the lab

WATER SOURCE:

[X] Laboratory Prepared
[] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: N/A
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: NA
Equipment Used:
Equipment Type:
[ ] Dedicated
[ ] Reusable
[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
GRO for soil	≤6°C, 10 ml MeOH	2 x 40 ml vials w/10 ml MeOH	(YES) / NO
Aq trip blank for GRO rinsate blanks	≤6°C, HCL	2 x 40 ml vials w/HCL	YES / (NO)

OBSERVATIONS / NOTES:

MeOH trip blanks for soil

Signature(s): K Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	TF2-SS-RB01-1013
Project Number:	112G03019 / CTO WE30	Sampled By:	Jalkut/Seward/Horton
Sample Location:	AOC 004/5	C.O.C. Number:	

QA Sample Type:

[ ] Trip Blank
[ ] Source Water Blank (Field Blank)
[X] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date: 10-18-13
Time: 1400
Method: Direct Pour

WATER SOURCE:

[] Laboratory Prepared
[X] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: Reagent Grade Water
Supplier: Scientific Sales, Inc.
Manufacturer: NERL
Order Number:
Lot Number: 338241
Expiration Date: 2014-06

RINSATE INFORMATION (If Applicable):

Media Type: Surface Soil or Subsurface Soil
Equipment Used: SS hand augers
Equipment Type:
[ ] Dedicated
[X] Reusable
[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PAH	≤6°C	2 x 1 liter amber glass bottles	YES / NO
Metals	≤6°C, HNO3	1 x 250 ml HDPE bottle	YES / NO
GRO	≤6°C, HCL	2 x 40 ml vials	YES / NO
ExTPH	≤6°C, HCL	2 x 1 liter amber glass bottles	YES / NO
Dioxin	≤6°C	2 x 1 liter amber glass bottles	YES / NO
PCBs	≤6°C	2 x 1 liter amber glass bottles	YES / NO
Lead	≤6°C	1 x 250 ml plastic bottle w/HNO3	YES / NO

OBSERVATIONS / NOTES:

- Rinsate after collecting samples @ AOC 004/5 (0-1')
- Rinsate collected after collecting soil from AOC 004/5.

Signature(s): KJalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI
Project Number: 112G03019 / CTO WE30
Sample Location: AOC 004/5
QA Sample Type:

Sample ID Number: TF2-S-S-RB02-10/13
Sampled By: Jalkut/Seward/Horton
C.O.C. Number:

[ ] Trip Blank
[ ] Source Water Blank (Field Blank)
[X] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:		WATER SOURCE:	
Date:	10-21-13	[] Laboratory Prepared	[] Tap
Time:	1150	[X] Purchased	[] Fire Hydrant
Method:	Direct Pour	[] Other	

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):		RINSATE INFORMATION (If Applicable):	
Product Name:	Reagent Grade Water	Media Type:	Surface Soil or Subsurface Soil
Supplier:	Scientific Sales, Inc.	Equipment Used:	SS hand auger
Manufacturer:	NERL	Equipment Type:	
Order Number:			[ ] Dedicated
Lot Number:	338241		[X] Reusable
Expiration Date:	2014-06		[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PAH	≤6°C	2 x 1 liter amber glass bottles	YES / NO
Metals	≤6°C, HNO3	1 x 250 ml HDPE bottle	YES / NO
GRO	≤6°C, HCL	2 x 40 ml vials	YES / NO
ExTPH	≤6°C, HCL	2 x 1 liter amber glass bottles	YES / NO
Dioxin	≤6°C	2 x 1 liter amber glass bottles	YES / NO
PCBs	≤6°C	2 x 1 liter amber glass bottles	YES / NO
Lead	≤6°C	1 x 250 ml plastic bottle w/HNO3	YES / NO

OBSERVATIONS / NOTES:

- 2nd rinsate not yet needed for GRO or ExTPH (fewer samples collected than PAHs or metals at this point)
- Rinsate collected after collecting sample @ AOC 004/5.

Signature(s): KJalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	TF2-SS-RB03-1013 0
Project Number:	112G03019 / CTO WE30	Sampled By:	Jalkut/Seward/Horton
Sample Location:	AOC 003	C.O.C. Number:	

QA Sample Type:

[ ] Trip Blank
[ ] Source Water Blank (Field Blank)
[X] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date: 10-22-13
Time: 1200
Method: Direct Pour

WATER SOURCE:

[] Laboratory Prepared
[X] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: Reagent Grade Water
Supplier: Scientific Sales, Inc.
Manufacturer: NERL
Order Number:
Lot Number: 338241
Expiration Date: 2014-06

RINSATE INFORMATION (If Applicable):

Media Type: Surface Soil or Subsurface Soil
Equipment Used: Al. pan
Equipment Type:
[] Dedicated
[] Reusable
[X] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PAH	≤6°C	2 x 1 liter amber glass bottles	(YES) / NO
Metals	≤6°C, HNO3	1 x 250 ml HDPE bottle	(YES) / NO
GRO	≤6°C, HCL	2 x 40 ml vials	YES / (NO)
ExTPH	≤6°C, HCL	2 x 1 liter amber glass bottles	YES / (NO)
Dioxin	≤6°C	2 x 1 liter amber glass bottles	(YES) / NO
PCBs	≤6°C	2 x 1 liter amber glass bottles	YES / (NO)
Lead	≤6°C	1 x 250 ml plastic bottle w/HNO3	YES / (NO)

OBSERVATIONS / NOTES:

- 3rd rinsate not yet needed for GRO or EXTPH (fewer samples collected for these analyses than PAHs or metals)
- Rinsate collected after collecting soils from AOC 003.

Signature(s): KJalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	TF2-TB01-1113
Project Number:	112G03019 / CTO WE30	Sampled By:	Jalkut/Seward/Horton
Sample Location:	AOC 004/5	C.O.C. Number:	

QA Sample Type:

[X] Trip Blank
[ ] Source Water Blank (Field Blank)
[ ] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date: 11-13-13
Time: 1000
Method: Provided by the lab

WATER SOURCE:

[X] Laboratory Prepared
[] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: N/A
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: NA
Equipment Used:
Equipment Type:
[ ] Dedicated
[ ] Reusable
[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
GRO for soil	≤6°C, 10 ml MeOH	2 x 40 ml vials w/10 ml MeOH	(YES) / NO
Aq trip blank for GRO rinsate blanks	≤6°C, HCL	2 x 40 ml vials w/HCL	YES / (NO)

OBSERVATIONS / NOTES:

MeOH trip blanks for soil collected from AOC 004/5 for GRO analysis (SB 1021)

Signature(s): K Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	TF2-TB02-1113 (W)
Project Number:	112G03019 / CTO WE30	Sampled By:	Jalkut/Seward/Horton
Sample Location:	AOC 004/5	C.O.C. Number:	

QA Sample Type:

[X] Trip Blank
[ ] Source Water Blank (Field Blank)
[ ] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:		WATER SOURCE:	
Date:	11-13-13	[X] Laboratory Prepared	[] Tap
Time:	1200	[] Purchased	[] Fire Hydrant
Method:	Provided by the lab	[] Other	

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):		RINSATE INFORMATION (If Applicable):	
Product Name:	N/A	Media Type:	NA
Supplier:		Equipment Used:	
Manufacturer:		Equipment Type:	
Order Number:		[ ] Dedicated	
Lot Number:		[ ] Reusable	
Expiration Date:		[ ] Disposable	

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
GRO for soil	≤6°C, 10 ml MeOH	2 x 40 ml vials w/10 ml MeOH	(YES) / NO
Aq trip blank for GRO rinsate blanks	≤6°C, HCL	2 x 40 ml vials w/HCL	YES / (NO)

OBSERVATIONS / NOTES:

MeOH trip blank for soil collected from AOC 004/5 for GRO analysis - (SB1058)

Signature(s): K Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	TF2-TB03-1113 (W)
Project Number:	112G03019 / CTO WE30	Sampled By:	Jalkut/Seward/Horton
Sample Location:	AOC 004/5	C.O.C. Number:	

QA Sample Type:

[X] Trip Blank
[ ] Source Water Blank (Field Blank)
[ ] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date: 11-14-13
Time: 1205
Method: Provided by the lab

WATER SOURCE:

[X] Laboratory Prepared
[] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: N/A
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: NA
Equipment Used:
Equipment Type:
[ ] Dedicated
[ ] Reusable
[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
GRO for soil	≤6°C, 10 ml MeOH	2 x 40 ml vials w/10 ml MeOH	YES / (NO)
Aq trip blank for GRO rinsate blanks	≤6°C, HCL	2 x 40 ml vials w/HCL	(YES) / NO

OBSERVATIONS / NOTES:

Aqueous trip blank for TF2-SB-RB03-1113 (GRO fraction)

Signature(s): K Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI
Project Number: 112G03019 / CTO WE30
Sample Location: —
QA Sample Type:

Sample ID Number: TF2-TB0__ -1113
Sampled By: Jalkut/Seward/Horton
C.O.C. Number:

[X] Trip Blank
[ ] Source Water Blank (Field Blank)
[ ] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date:
Time:
Method: Provided by the lab

WATER SOURCE:

[X] Laboratory Prepared
[] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name:
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: NA
Equipment Used:
Equipment Type:
[ ] Dedicated
[ ] Reusable
[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
GRO for soil	≤6°C, 10 ml MeOH	2 x 40 ml vials w/10 ml MeOH	YES / NO
Aq trip blank for GRO rinsate blanks	≤6°C, HCL	2 x 40 ml vials w/HCL	YES / NO

OBSERVATIONS / NOTES:

No TF2-W-TB04-1113 soil trip blank. Cooler has some samples from TF3 in it so I used the trip blanks from TF3 to cover all of the samples.

Signature(s): K Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	TF2-TB05-1113 (W)
Project Number:	112G03019 / CTO WE30	Sampled By:	Jalkut/Seward/Horton
Sample Location:	AOC 001	C.O.C. Number:	

QA Sample Type:

[X] Trip Blank
[ ] Source Water Blank (Field Blank)
[ ] Rinsate Blank
[ ] Other Blank _____

SAMPLING DATA:

Date: 11-25-13
Time: 1105
Method: Provided by the lab

WATER SOURCE:

[X] Laboratory Prepared
[] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: N/A
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: NA
Equipment Used:
Equipment Type:
[ ] Dedicated
[ ] Reusable
[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
GRO for soil	≤6°C, 10 ml MeOH	2 x 40 ml vials w/10 ml MeOH	YES / (NO)
Aq trip blank for GRO rinsate blanks	≤6°C, HCL	2 x 40 ml vials w/HCL	(YES) / NO
Aq trip blank for VOC rinsate blank	≤ 6°C, HCL	2x40 ml vials w/HCL	(yes)

OBSERVATIONS / NOTES:

Aqueous trip blanks for VOC & GRO portions of TF2-SB-RB05-1113.

Signature(s): K Jalkut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	TF2-TB06-1113 (W)
Project Number:	112G03019 / CTO WE30	Sampled By:	Jaikut/Seward/Horton
Sample Location:	AOC 001	C.O.C. Number:	

QA Sample Type:

[X] Trip Blank [ ] Rinsate Blank

[ ] Source Water Blank (Field Blank) [ ] Other Blank

SAMPLING DATA:

Date: 11-25-13
Time: 1000
Method: Provided by the lab

WATER SOURCE:

[X] Laboratory Prepared [] Tap
[] Purchased [] Fire Hydrant
[] Other

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: N/A
Supplier:
Manufacturer:
Order Number:
Lot Number:
Expiration Date:

RINSATE INFORMATION (If Applicable):

Media Type: NA
Equipment Used:
Equipment Type:
[ ] Dedicated
[ ] Reusable
[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
GRO for soil	≤6°C, 10 ml MeOH	2 x 40 ml vials w/10 ml MeOH	(YES) / NO
VOC for soil (low, med)	≤6°C NaHSO4, 5ml MeOH	2x40 ml vials w/ NaHSO4 1x40 ml vial w/ 5ml MeOH	(Yes)
Aq trip blank for GRO rinsate blanks	≤6°C, HCL	2 x 40 ml vials w/HCL	YES (NO)

OBSERVATIONS / NOTES:

MeOH trip blank for soil collected from TF2-AOC 001 for GRO and VOC analyses (low, med) as well as for soil recollected from TF3, SB104 and SB105 (GRO + VOC analysis)

Signature(s): K Jaikut

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	TF2-SB-RB01-1113
Project Number:	112G03019 / CTO WE30	Sampled By:	Jalkut/Seward/Horton
Sample Location:	BSA B219	C.O.C. Number:	1
QA Sample Type:			

[ ] Trip Blank
[ ] Source Water Blank (Field Blank)
[X] Rinsate Blank
[ ] Other Blank _____

SAMPLING DATA:

Date: 11-18-13
Time: 1400
Method: Direct Pour

WATER SOURCE:

[] Laboratory Prepared
[X] Purchased
[] Other _____
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: Reagent Grade Water
Supplier: Scientific Sales, Inc.
Manufacturer: NERL
Order Number:
Lot Number: 338241
Expiration Date: 2014-06

RINSATE INFORMATION (If Applicable):

Media Type: Surface Soil or Subsurface Soil
Equipment Used: Trowel, Al Pan
Equipment Type:
[ ] Dedicated
[X] Reusable
[ ] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PAH	≤6°C	2 x 1 liter amber glass bottles	YES / NO
Metals	≤6°C, HNO3	1 x 250 ml HDPE bottle	YES / NO
GRO	≤6°C, HCL	2 x 40 ml vials	YES / NO
ExTPH	≤6°C, HCL	2 x 1 liter amber glass bottles	YES / NO
Dioxin	≤6°C	2 x 1 liter amber glass bottles	YES / NO
PCBs	≤6°C	2 x 1 liter amber glass bottles	YES NO
Lead	≤6°C	1 x 250 ml plastic bottle w/HNO3	YES NO

OBSERVATIONS / NOTES:

Signature(s):

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	TF2-SB-RB02-1113
Project Number:	112G03019 / CTO WE30	Sampled By:	Jalkut/Seward/(Horton)
Sample Location:	BSA	C.O.C. Number:	

QA Sample Type:

[ ] Trip Blank
[ ] Source Water Blank (Field Blank)
[X] Rinsate Blank
[ ] Other Blank _____

SAMPLING DATA:		WATER SOURCE:	
Date:	11-13-13	[] Laboratory Prepared	[] Tap
Time:	1530	[X] Purchased	[] Fire Hydrant
Method:	Direct Pour	[] Other	

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):		RINSATE INFORMATION (If Applicable):	
Product Name:	Reagent Grade Water	Media Type:	Surface Soil or Subsurface Soil
Supplier:	Scientific Sales, Inc.	Equipment Used:	Trowel, Al Pan
Manufacturer:	NERL	Equipment Type:	
Order Number:			[ ] Dedicated
Lot Number:	238241		[X] Reusable
Expiration Date:	2014-06		[X] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PAH	≤6°C	2 x 1 liter amber glass bottles	YES / (NO)
Metals	≤6°C, HNO3	1 x 250 ml HDPE bottle	YES / (NO)
GRO	≤6°C, HCL	2 x 40 ml vials	YES / (NO)
ExTPH	≤6°C, HCL	2 x 1 liter amber glass bottles	YES / (NO)
Dioxin	≤6°C	2 x 1 liter amber glass bottles	YES / (NO)
PCBs	≤6°C	2 x 1 liter amber glass bottles	YES / (NO)
Lead	≤6°C	1 x 250 ml plastic bottle w/HNO3	(YES) / NO

OBSERVATIONS / NOTES:

Signature(s):

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	TF2-SB-RB03-1113
Project Number:	112G03019 / CTO WE30	Sampled By:	Jalkut/Seward/(Horton)
Sample Location:	AOC 604/5	C.O.C. Number:	

QA Sample Type:

[ ] Trip Blank
[ ] Source Water Blank (Field Blank)
[X] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date: ~~11-13-13~~ 11-14-13
Time: 1200
Method: Direct Pour

WATER SOURCE:

[] Laboratory Prepared
[X] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: Reagent Grade Water
Supplier: Scientific Sales, Inc.
Manufacturer: NERL
Order Number:
Lot Number: 338241
Expiration Date: 2014-06

RINSATE INFORMATION (If Applicable):

Media Type: Surface Soil or Subsurface Soil
Equipment Used: Trowel, Al Pan
Equipment Type:
[ ] Dedicated
[X] Reusable
[X] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PAH	≤6°C	2 x 1 liter amber glass bottles	(YES) / NO
Metals	≤6°C, HNO3	1 x 250 ml HDPE bottle	(YES) / NO
GRO	≤6°C, HCL	2 x 40 ml vials	(YES) / NO
ExTPH	≤6°C, HCL	2 x 1 liter amber glass bottles	(YES) / NO
Dioxin	≤6°C	2 x 1 liter amber glass bottles	(YES) / NO
PCBs	≤6°C	2 x 1 liter amber glass bottles	YES / (NO)
Lead	≤6°C	1 x 250 ml plastic bottle w/HNO3	YES / (NO)

OBSERVATIONS / NOTES:

Signature(s):

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	SBR TF2-TB0_4 -1113
Project Number:	112G03019 / CTO WE30	Sampled By:	Jalkut/Seward~~Horton~~
Sample Location:	003	C.O.C. Number:	

QA Sample Type:

~~[ ] Trip Blank~~ [X] ~~Rinsate~~ Blank

[ ] Source Water Blank (Field Blank)

[ ] Other Blank

SAMPLING DATA:

Date: 11-15-13
Time: 1200
Method: Provided by the lab

WATER SOURCE:

[X] Laboratory Prepared
[ ] Purchased
[ ] Other
[ ] Tap
[ ] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: Reagent Grade Water
Supplier: Scientific Sales Inc.
Manufacturer: NERL
Order Number:
Lot Number: 338241
Expiration Date: 2014-06

RINSATE INFORMATION (If Applicable):

Media Type: NA
Equipment Used: Travel, Al Pan
Equipment Type:
[ ] Dedicated
[X] Reusable
[X] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
~~GRO for soil~~	≤6°C, 10 ml MeOH	~~2 x 40 ml vials w/10 ml MeOH~~	YES / NO
		SEE Below)	
Aq trip blank for GRO rinsate ~~blanks~~	~~≤6°C, HCL~~	~~2 x 40 ml vials w/HCL~~	~~YES~~ / NO

OBSERVATIONS / NOTES:

Analyzed for GRO, TPH, PAH, Metals & Dioxin (Ex TPH)

Signature(s):

Tetra Tech, Inc.

QA SAMPLE LOG SHEET

Project Site Name:	Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI	Sample ID Number:	TF2-SB-RB05-1113
Project Number:	112G03019 / CTO WE30	Sampled By:	Jalkut/Seward/Horton
Sample Location:	AOC 001	C.O.C. Number:	

QA Sample Type:

[ ] Trip Blank
[ ] Source Water Blank (Field Blank)
[X] Rinsate Blank
[ ] Other Blank

SAMPLING DATA:

Date: 11-25-13
Time: 1100
Method: Direct Pour

WATER SOURCE:

[] Laboratory Prepared
[X] Purchased
[] Other
[] Tap
[] Fire Hydrant

PURCHASED WATER INFORMATION (If Applicable as Source or Rinsate Water):

Product Name: Reagent Grade Water
Supplier: Scientific Sales, Inc.
Manufacturer: NERL
Order Number:
Lot Number: 338241
Expiration Date: 2014-06

RINSATE INFORMATION (If Applicable):

Media Type: Surface Soil or Subsurface Soil
Equipment Used: plastic liner
Equipment Type:
[ ] Dedicated
[ ] Reusable
[X] Disposable

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
PAH	≤6°C	2 x 1 liter amber glass bottles ✓	(YES) / NO
Metals	≤6°C, HNO3	1 x 250 ml HDPE bottle ✓	(YES) / NO
GRO	≤6°C, HCL	2 x 40 ml vials ✓	(YES) / NO
ExTPH	≤6°C, HCL	2 x 1 liter amber glass bottles ✓	(YES) / NO
Dioxin	≤6°C	2 x 1 liter amber glass bottles ✓	(YES) / NO
PCBs	≤6°C	2 x 1 liter amber glass bottles –	YES / (NO)
Lead	≤6°C	1 x 250 ml plastic bottle w/HNO3 –	YES / (NO)
VOC	≤6°C, HCL	3 x 40 ml vials ✓	(Yes) / No

OBSERVATIONS / NOTES:

Signature(s): K Jalkut

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** No. 027651 | **PAGE** 1 **OF** 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112503019 CTO WE 30	Wilmington, MA	Debra Faken	978 474 7445	Katahdin Analytical Service / T. Irwin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
[signature]		Kaylen Talbot	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Fedex ph - hand delivery (KT)		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)										PRESERVATIVE USED									TYPE OF ANALYSIS	COMMENTS
									G		G		G						MeOH ≤6°C	≤6°C	MeOH ≤6°C	≤6°C								
10/18	1030	TF2-W-TB01-1013	—	—	—	QC	G	2	2		—		—						4 mL vial - (5 w/ 10 mL MeOH in lab)	40 mL vial - PAH, metals, total Pb, GRO	4 mL vial w/ soil and MeOH (GRO)	40 mL vial - EXTPH, total cyanide								MeOH trip blank for soil
10/18	1045	TF2-004/5-SS1025-000.8	SS1025	0	0.8	SO	G	1	—		1		—		—														
10/18	1055	TF2-004/5-SS1026-000.8	SS1026	0	0.8	SO	G	1	—		1		—		—														
10/18	1105	TF2-004/5-SS1024-000.6	SS1024	0	0.6	SO	G	1	—		1		—		—														
10/18	1110	TF2-004/5-SS1023-000.8	SS1023	0	0.8	SO	G	1	—		1		—		—														
10/18	1118	TF2-004/5-SS1022-000.9	SS1022	0	0.9	SO	G	1	—		1		—		—														
10/18	1120	TF2-004/5-SS1021-000.7	SS1021	0	0.7	SO	G	1	—		1		—		—														
10/18	1140	TF2-004/5-SS1020-0001	SS1020	0	1	SO	G	4	—		1		2		1														4 D1
10/18	1155	TF2-004/5-SS1032-000.9	SS1032	0	0.9	SO	G	1	—		1		—		—														
10/18	1205	TF2-004/5-SS1031-000.8	SS1031	0	0.8	SO	G	1	—		1		—		—														
10/18	0000	TF2-004/5-SS-DUP01-1013	—	—	—	SO	G	4	—		1		2		1														4 D1
10/18	1320	TF2-004/5-SS-1030-000.6	SS 1030	0	0.6	SO	G	1	—		1		—		—														
10/18	1330	TF2-004/5-SS1029-000.6	SS1029	0	0.6	SO	G	1	—		1		—		—														

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY [signature]	10/21/13	1300	1. RECEIVED BY [signature]	10/21/13	1300
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 027654 | PAGE 1 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112602019	NAVSTA Newport	Debra Seiken	(978) 474-8400	Katahdin - Jen Olson
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Kaytlyn Jalkut Peter Seward		Kaytlyn Jalkut	(781) 801-0457	Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier plus @ RI - hand delivery		Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)										COMMENTS
									PRESERVATIVE USED		4°C	4°C	4°C						
									TYPE OF ANALYSIS	PCBs	Total Solids	Target Analyte List							
11/12	1220	TF2-B219-SS1082-0001	B219	0	1	SO	G	1		X	X								
	1225	TF2-B219-SB1082-0204		2	4			1		X	X								D2 ✓
	1207	TF2-B219-SS1083-0001		0	1			1		X	X								
	1212	TF2-B219-SB1083-0204		2	4			1		X	X								Lab QC (1 jar only)
	1140	TF2-B219-SS1086-0001		0	1			1		X	X								
	1145	TF2-B219-SB1086-0204		2	4			1		X	X								
	1155	TF2-B219-SS1085-0001		0	1			1		X	X								
	1200	TF2-B219-SB1085-0204		2	4			1		X	X								
	0000	TF2-SB-DUP02-1113		/	/			1		X	X								TF2-B219-SB1082-0204
	1130	~~TF2-SB~~ TF2-B219-SS1084-0001		0	1			1		X	X								
	1135	TF2-B219-SB1084-0204		2	4			1		X	X								
	1060	TF2-B219-SS1081-0001		0	1			1		X	X								
	1005	TF2-B219-SB1081-0204		2	4			1		X	X								

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: Peter Seward	11-13-13	1340	1. RECEIVED BY:	11-13-13	C
2. RELINQUISHED BY:			2. RECEIVED BY:		
3. RELINQUISHED BY:			3. RECEIVED BY:		

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER No. 027647 | PAGE 1 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019 CTOWE30	NAVSTA Newport	Debra Sexton	(973) 474-8400	Katahdin, Tom Oberg
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Michael Peter [illegible]		Kayhan Izbirak	(781) 801-0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier UPS RE [illegible]		Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									PRESERVATIVE USED									
									TYPE OF ANALYSIS	PCBs	Total Solids	(Lead) Total Solids						
11/12	1015	TF2 B219 SS1088-0001	B219	0	1	SO	G	1		X	X							
	1025	TF2 B219 SB1088-0204		2	4			1		X	X							
	1035	TF2-B219-SS1080-0001		0	1			1		X	X							
	1045	TF2 B219 SB1080-0204		2	4			1		X	X							
	1118	TF2 B219-SS1089-0001		0	1			1		X	X							
	1121	TF2 B219-SB1089-0204		2	4			1		X	X							D1
	0000	TF2-SB-DUP01-1113		/	/			1		X	X							TF2-B219-SB1089-0204
	1050	TF2 B219 SS1087-0001		0	1			1		X	X							
	1055	TF2 B219 SB1087-0204	↓	2	4	↓		1		X	X							
	1400	TF2 SB-RB01-1113	NA	/	/	QC		3 2		X		X						
	1530	TF2 BSA-SS1090-0001	BSA	0	1	SO		1			X	X						
	1320	TF2 BSA SS1091-0001		0	1			1			X	X						
↓	13 1	T 2-BSA SB1091-1204	↓	2	4	↓	↓	2			X	X						LAb QC

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-13-13	1340	1. RECEIVED BY	11-13-13	1340
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** No. 027645 | **PAGE** 3 **OF** 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019 CTO WE 30	NAVSTA Newport	Debra Sexton	(978) 474-8445	Katahdin Analytical Services / J. Obrien
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
		Kathleen Tetkut	(781) 801-0457	1 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier pick up RI - hand delivery		Scarborough ME

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: Lead	Total Solids	4,4 DDT						COMMENTS
11/12	1505	TF2-BSA-SS1096-0001	BSA	0	1	SO	G	1			X	X							D3 ✓
	1510	TF2-BSA-SB1096-0204		2	4			1			X	X							
	0000	TF2-SS-DUP03-1113		/	/			1			X	X							TF2-BSA-SS1096-0001 D
	1515	TF2-BSA-SS1097-0001		0	1			1			X	X							
	1520	TF2-BSA-SB1097-0204		2	4			1			X	X							
	1400	TF2-BSA-SS1092-0001		0	1			1			X	X							
	1410	TF2-BSA-SB1092-0204		2	4			1			X	X							
	1340	TF2-BSA-SS1093-0001		0	1			1			X	X							
	1350	TF2-BSA-SB1093-0204		2	4			1			X	X							
	1420	TF2-BSA-SS1094-0001		0	1			1			X	X							
	1430	TF2-BSA-SB1094-0204		2	4			1			X	X							
	1450	TF2-BSA-SS1095-0001		0	1			1			X	X							
↓	1500	TF2-BSA-SB1095-0204	↓	2	4	↓	↓	1			X	X							

1. RELINQUISHED BY	DATE 11-13-13	TIME 1340	1. RECEIVED BY	DATE 11-13-13	TIME 1340
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER NJ 1901 | PAGE 4 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019 CTOWE30	NAVSTA Newport	Debra Sehen	(978) 474-8445	Katahdin Analytical Services / J. Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Falkut, Peter Leonard		Kayleen Falkut	(781) 801-0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier plus @ RI, hand delivery		Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								
									PRESERVATIVE USED								
									TYPE OF ANALYSIS	Lead 4oz poly bottle	PAH, metals, total solids 4oz glass jar	GRO 2-40ml vials	ExtPH 1x4oz jar	≤6°C HNO3	≤6°C	10ml MeOH	≤6°C	COMMENTS
11/12	1530	TF2-SB-RB02-1113	—	—	—	QC	G	1		X								
11/13	1048	TF2-004/5-SB1021-0204	SB 1021	2	4	SO	G	4		—	X	X	X					D4 (excl. GRO, ExtPH)
11/13	1055	TF2-004/5-SB1021-0608	SB 1021	6	8	SO	G	1		—	X	—	—					
11/13	1015	TF2-004/5-SB1026-022.7	SB 1026	2	2.7	SO	G	1		—	X	—	—					
11/13	0800	TF2-004/5-SB1032-0204	SB 1032	2	4	SO	G	1		—	X	—	—					
11/13	0925	TF2-004/5-SB1048-0204	SB 1048	2	4	SO	G	1		—	X	—	—					
11/13	1045	TF2-004/5-SB1025-2.604	SB 1025	2.6	4	SO	G	1		—	X	—	—					
11/13	0000	TF2-SB-DUP04-1113	—	—	—	SO	G	1		—	X	—	—					D4
11/13	1000	TF2-W-TB01-1113	—	—	—	QC	G	2		—	—	X	—					

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-13-13	1340	1. RECEIVED BY	11-13-13	1340
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER NE 1902 | PAGE 1 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington, MA	D Seiken	978 474 8445	Katahdin Analytical Services/ J. Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Hazbut, CA		Kayleen Jalkut	781 801 0457	6010 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier pkt in RI - hand delivery		Scarborough, ME

STANDARD TAT [X]
RUSH TAT [ ]
[ ] 24 hr. [ ] 48 hr. [ ] 72 hr. [ ] 7 day [ ] 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS: GRO 3x 40ml vials	PAH, metals total 4oz jar	EXTPH 4oz jar	GRO - 40ml vials	1L Amber glass - PAHs	1L Amber glass - EXTPH	250ml poly bottle - Metals	COMMENTS
		CONTAINER TYPE PLASTIC (P) or GLASS (G)							G	G	G	G	G	G	P	
		PRESERVATIVE USED							10ml MeOH	≤6°C	≤6°C	HCl ≤6°C	≤6°C	HCl ≤6°C	HNO3 ≤6°C	
11/13	1200	TF2-W-TB02-1113	—	—	—	QC	G	2	X							
11/13	1250	TF2-004/5-SS1043-0.1-0.5	SS 1043	0.1	0.5	SO	G	1		X						
11/13	1320	TF2-004/5-SB1041-02-2.5	SB 1041	2	2.5	SO	G	1		X						
11/13	1405	TF2-004/5-SB1058-0204	SB 1058	2	4	SO	G	10	X	X	X					Lab QC
11/13	1440	TF2-004/5-SB1064-0204	SB 1064	2	4	SO	G	1		X						
11/13	1445	TF2-004/5-SB1064-0406	SB 1064	4	6	SO	G	1		X						
11/14	0945	TF2-004/5-SB1066-0203	SB 1066	2	3	SO	G	1		X						
11/14	1015	TF2-004/5-SB1057-~~0203~~ 0507	SB 1057	3	34	SO	G	1		X						
11/14	1025	TF2-004/5-SB1057-0608	SB 1057	6	8	SO	G	1		X						DS ✓
11/14	1050	TF2-004/5-SB1047-0204	SB 1047	2	4	SO	G	1		X						
11/14	1102	TF2-004/5-SB1047-0608	SB 1047	6	8	SO	G	1		X						
11/14	1200	TF2-SB-RB03-1113	—	—	—	QC	G	7	—	—	—	X	X	X	X		Rinsate Blank
11/14	1205	TF2-W-TB03-1113	—	—	—	QC	G	2	—	—	—	X	—	—	—		AQ trip blank for rinsate blank (GRO)

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-15-13	1345	1. RECEIVED BY	11-15-13	1345
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER NO 1903 | PAGE 1 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington MA	D Seiken	978 474 8445	Katahdin Analytical Services / J Obrien
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Kjalkut		Kayleen Jalkut	7812010457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier pick up RI - hand delivery		Scarborough, ME

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
									G	G	G						
									PRESERVATIVE USED								
									TYPE OF ANALYSIS								
									PAH, metals, total solids 4oz jar	≤6°C	10ml methanol ≤6°C						
									GRO 40ml vials								
									EXTPH 4oz jar								
11/14	0000	TF2-SB-DUP05-1113	—	—	—	SO	G	1	X	-	-						DS ✓
11/14	1240	TF2-SB004/5-SB1049-0204	SB1049	2	4	SO	G	1	X	-	-						
11/14	1255	TF2-004/5-SB1049-0810	SB1049	8	10	SO	G	1	X	-	-						
11/14	1315	TF2-004/5-SB1038-0204	SB1038	2	4	SO	G	1	X	-	-						
11/14	1325	TF2-004/5-SB1038-0810	SB1038	8	10	SO	G	1	X	-	-						
11/14	1340	TF2-004/5-SB1031-0204	SB1031	2	4	SO	G	1	X	-	-						
11/14	1345	TF2-004/5-SB1039-0406	SB1039	4	6	SO	G	1	X	-	-						
11/14	1355	TF2-004/5-SB1031-0810	SB1031	8	10	SO	G	1	X	-	-						
11/14	1415	TF2-004/5-SB1040-0204	SB1040	2	4	SO	G	1	X	-	-						
11/14	1430	TF2-004/5-SB1040-0810	SB1040	8	10	SO	G	4	X (1)	X (2)	X (3)						D7 (GRO, EXTPH only) ✓
11/14	1500	TF2-004/5-SB1068-0204	SB1068	2	4	SO	G	1	X	-	-						D6 ✓
11/14	0000	TF2-SB-DUP06-1113	—	—	—	SO	G	1	X	-	-						D6 ✓
11/14	1445	TF2-SB-004/5-SB1065-0204	SB1065	2	4	SO	G	1	X	-	-						

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-15-13	1345	1. RECEIVED BY		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER NE 1904 | PAGE 3 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03019	Wilmington MA	Debra Seiken	978 474 8945	Katahdin Analytical Services / T. Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Kjalkut		Kayleen Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier pkup RI - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	G							
									PRESERVATIVE USED									
									TYPE OF ANALYSIS									
									PAH, METALS, TOTAL SOLIDS 4oz jar	6GRO 40 ml vials	EXTPH 4oz jar							
11/14	1455	TF2-004/5-SB1005-0608	SB1005	6	8	SO	G	4	X	X	X							
11/14	0000	TF2-SB-DUP07-1113	—	—	—	SO	G	3	—	X	X							D7 (GRO, EXTPH only) ✓
11/15	0915	TF2-003-SB1017-011.6	SB1017	1	1.6	SO	G	4	X	X	X							
11/15	0920 ~~1025~~	TF2-003-SB1017-0204	SB1017	2	4	SO	G	1	X	—	—							
11/15	0940	TF2-003-SB1017-0810	SB1017	8	10	SO	G	1	X	—	—							
11/15	1100	TF2-003-SB1012-0204	SB1012	2	4	SO	G	1	X	—	—							LAB QC
11/15	1145	TF2-003-SB1012-0810	SB1012	8	10	SO	G	1	X	—	—							
11/15	1025	TF2-003-SB1011-0204	SB1011	2	4	SO	G	1	X	—	—							D8 ✓
11/15	1145	TF2-003-SB1014-0204	SB1014	2	4	SO	G	1	X	—	—							
11/15	1200	TF2-003-SB1014-0810	SB1014	8	10	SO	G	1	X	—	—							
11/15	1100	TF2-003-SB1015-0204	SB1015	2	4	SO	G	1	X	—	—							
11/15	0000	TF2-~~SB~~ 003-DUP08-1113	—	—	—	SO	G	1	X	—	—							D8 ✓
11/15	1120	TF2-003-SB1015-0810	SB1015	8	10	SO	G	1	X	—	—							

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-15-13	1345	1. RECEIVED BY	11-15-13	1345
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER NE 1908 | PAGE 4 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington, MA	D. Seiken	978 474 8445	Katahdin Analytical Services / J Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jarkut		K Jarkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier / Ice in RI - hand delivery		Scarborough, ME

STANDARD TAT ☐
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	P	G	G					
									PRESERVATIVE USED									
									TYPE OF ANALYSIS									
									GRO 40 ml vial; ≤6°C	PAH 1L amber	metals 250ml poly	EX TPH 1L amber	PAH, metals, total lead, cyanide 1L amber; ≤6°C					
11/15	1200	TF2-SB-RB04-1113	—	—	—	QC	G	7	X	X	X	X	—					
11/15	1015	TF2-003-SB1016-0204	SB 1016	2	4	SO	G	1	—	—	—	—	X					
11/15	1025	TF2-003-SB1016-0810	SB 1016	8	10	SO	G	1	—	—	—	—	X					
11/15	1000	TF2-003-SB1018-0204	SB 1018	2	4	SO	G	1	—	—	—	-	X					

K Jarkut 11/15/13

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
	11-15-13	1345		11-15-13	1345
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER [illegible] 1922 | PAGE 1 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G02710 CR59	Wilmington MA	D Seiken	978 474 8445	Katahdin Analytical Services / Tobin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jalkut 112G03019 CR030		K Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier pkg in RI - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

	DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
										PRESERVATIVE USED									
										TYPE OF ANALYSIS	VOC (low)	VOC (med)	GRO	PAH, met's	Extr TPH				
											40ml	40ml MeOH ≤6°C	40ml	40ml MeOH ≤6°C	≤6°C				
TF3	11/22	1200	TF3-W-TB09-1113	—	—	—	QC	G	5		2	1	2	—	—				Soil trip blank
	11/22	1245	TF3-001-SB101-0102	101	1	2	SO	G	7		2	1	2	1	1				
	11/22	1250	TF3-001-SB101-0204	101	2	4	SO	G	7		2	1	2	1	1				
	11/22	1320	TF3-001-SS106-0001	106	0	1	SO	G	7		2	1	2	1	1				
	11/22	1323	TF3-001-SB106-0204	106	2	4	SO	G	7		2	1	2	1	1				
	11/22	1330	TF3-001-SS107-0001	107	0	1	SO	G	7		2	1	2	1	1				
	11/22	1335	TF3-001-SB107-0204	107	2	4	SO	G	7		2	1	2	1	1				DG ✓
	11/22	1415	TF3-001-SS108-0001	108	0	1	SO	G	7		2	1	2	1	1				
	11/22	1418	TF3-001-SB108-0204	108	2	4	SO	G	7		2	1	2	1	1				
	11/22	0000	TF3-SB-DUP06-1113	—	—	—	SO	G	7		2	1	2	1	1				DG ✓
TF2	11/25	0815	TF2-003-SB1013-0204	1013	2	4	SO	G	1		—	—	—	1	—				
	11/25	0820	TF2-003-SB1013-0405	1013	4	5	SO	G	1		—	—	—	1	—				
	11/25	0835	TF2-003-SB1019-0204	1019	2	4	SO	G	1		—	—	—	1	—				

1. RELINQUISHED BY K Jalkut	DATE 11/25/13	TIME 1405	1. RECEIVED BY	DATE 11/25/13	TIME 1405
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER [illegible] 1923 | PAGE 2 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03019 CTO 30	Wilmington MA	D Selken	978 474 8445	Katahdin Anal. Services / J Obin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jaikut		K Jaikut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier plus in RI		Scarborough, ME

STANDARD TAT ☑ / RUSH TAT ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	G	G	G	G	G	P	G	G	
									PRESERVATIVE USED	≤6°C	≤6°C	10ml MeOH ≤6°C	≤6°C	HCl ≤6°C	HNO3 ≤6°C	HCl ≤6°C	HCl ≤6°C	
									TYPE OF ANALYSIS	PAH Metals total solids	EXTPH	6RO	PAH	EXTPH	Metals	VOC	6RO	COMMENTS
										40z	40z		40ml	1L amber	1L amb	250ml poly		
11/25	0850	TF2-003-SB1019-0810	1019	8	10	SO	G	4		1	1	2						
11/25	1005	TF2-001-SS1001-0001	1001	0	1	SO	G	1		1	—	—						
11/25	1010	TF2-001-SB1001-0204	1001	2	4	SO	G	1		1	—	—						
11/25	1025	TF2-001-SB1001-0810	1001	8	10	SO	G	1		1	—	—						
11/25	1035	TF2-001-SS1002-0001	1002	0	1	SO	G	1		1	—	—						
11/25	1040	TF2-001-SB1002-0204	1002	2	4	SO	G	1		1	—	—						
11/25	1045	TF2-001-SB1002-0405	1002	4	5	SO	G	1		1	—	—						
11/25	1140	TF2-001-SS1003-0001	1003	0	1	SO	G	4(1)		X(2)	X(2)	2(2)						DQ ✓ / also corrected for Labs QC
11/25	1145	TF2-001-SB1003-0204	1003	2	4	SO	G	1		1	—	—						
11/25	0000	TF2-SB-DUP09-1113	—	—	—	SO	G	4		1	1	2	X	X	X	B	X	DQ ✓
11/25	1100	TF2-SB-RB05-1113	—	—	—	QC	G	10		—	—	—	2	2	1	3	2	
11/25	1105	TF2-W-TB05-1113	—	—	—	QC	G	4		—	—	—	—	—	—	2	2	ag trip fr unsatt

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: K Jaikut	11/25/13	1405	1. RECEIVED BY: [signature]	11/25/13	1405
2. RELINQUISHED BY:	DATE	TIME	2. RECEIVED BY:	DATE	TIME
3. RELINQUISHED BY:	DATE	TIME	3. RECEIVED BY:	DATE	TIME

COMMENTS

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4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER NB 1919 | PAGE 1 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03014 ⊙30	Tewksbury MA	D. Serken	978 474 7415	Katahdin Analytical Services (T Chan
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jarkut		K. Jarkut	781 901 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier plus in RI - hand delivery		Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 12	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	G	G	G					
									PRESERVATIVE USED									
									TYPE OF ANALYSIS									
									PAH, MeOH, total solids	GRO	EXTPH	VOC (10w)	VOC (mS)					
									40ml ≤6°C			40ml ≤6°C	40ml ≤6°C					
11/25	1200	TF2-001-SS1009-0001	1009	0	1	SO	G	1	1	–	–							
11/25	1205	TF2-001-SB1009-0204	1009	2	4	SO	G	4	1	2	1							
11/25	1220	TF2-001-SB1009-0810	1009	8	10	SO	G	1	1	–	–							
11/25	1240	TF2-001-SS1008-0001	1008	0	1	SO	G	1	1	–	–							
11/25	1245	TF2-001-SB1008-0204	1008	2	4	SO	G	2	2	–	–					Vent 1/13		Lab QC
11/25	1300	TF2-001-SS1004-0001	1004	0	1	SO	G	1	1	–	–							
11/25	1310	TF2-001-SB1004-0204	1004	2	4	SO	G	1	1	–	–			PI				D10 ✓
11/25	1330	TF2-001-SS1007-0001	1007	0	1	SO	G	1	1	–	–							
11/25	1340	TF2-001-SB1007-0204	1007	2	4	SO	G	1	1	–	–							
11/25	0000	TF2-SB-DUP10-1113	–	–	–	SO	G	1	1	–	–							D10 ✓
11/26	0000	~~TF3~~ TF2-W-TB06-1113	–	–	–	QC	G	5	–	2	–	32	1					
11/25	1515	TF3-001-SB105-0204	105	2	4	SO	G	5	–	2	–	2	1					Recollected
11/25	1520	TF3-001-SB104-0204	104	2	4	SO	G	5	–	2	–	2	1					Recollected

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY K Jarkut	11/27/13	1225	1. RECEIVED BY	11/27/13	1225
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER NB 1920 | PAGE 1 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03019 (TT 30)	Wilmington, MA	D. Seiken	978 474 8445	Katahdin Analytical Services / J. Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jaikut		K. Jaikut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier plus RI - hand delivery		Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	G							
									PRESERVATIVE USED									
									TOMMT ≤6°C	≤6°C	≤6°C							
									TYPE OF ANALYSIS: GRO	40ml EXT TPH	4oz Pest, metals, total solids							
									4oz	4oz								
11/25	1140	TF2-001-SS1003-0001	1003	0	1	SO	G	6	4	1	1							Rest of Lab QC vol
11/27	0800	TF2-001-SS1000-0001	1000	0	1	SO	G	1	—	—	1							
11/27	0805	TF2-001-SB1000-0204	1000	2	4	SO	G	1	—	—	1							
11/27	0820	TF2-001-SB1000-0810	1000	8	10	SO	G	4	2	1	1							
11/27	0900	TF2-001-SS1006-0001	1006	0	1	SO	G	1	—	—	1							
11/27	0905	TF2-001-SB1006-0204	1006	2	4	SO	G	4	2	1	1							
11/27	0915	TF2-001-SS1005-0001	1005	0	1	SO	G	1	—	—	1							
11/27	0920	TF2-001-SB1005-0204	1005	2	4	SO	G	1	—	—	1							DII ✓
11/27	0940	TF2-001-SS1010-0001	1010	0	1	SO	G	1	—	—	1							
11/27	0945	TF2-001-SB1010-0204	1010	2	4	SO	G	2	—	—	2							Lab QC
11/27	0000	TF2-SB-DUP11-1113	—	—	—	SO	G	1	—	—	1							DII ✓

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
K Jaikut	11/27/13	1225		11/27/13	1225
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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4/02R
FORM NO. TINUS-001

DICK

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** NE 1906 | **PAGE** 1 **OF** 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington MA	Debra Seiken	978 474 8445	Test America / J Kellmann
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
KJalkut		Kayleen Jalkut	781 801 0457	880 Riverside Parkway
		CARRIER/WAYBILL NUMBER		**CITY, STATE** 916 373 5600
		FedEx AB# 8759 3797 5520		West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS	COMMENTS
									G	G		
										≤6°C		
										5°C		
											Dioxin, TOTAL SOLIDS	
											Dioxin Homologs	
11/13	0800	TT2-004/5-SB1032-0204	SB 1032	2	4	SO	G	1	X			
11/13	0825	TT2-004/5-SB1048-0204	SB 1048	2	4	SO	G	1	X			
11/13	1015	TT2-004/5-SB10K26-0204	SB 10K26	2	4	SO	G	1	X			
11/13	1045	TT2-004/5-SB1025-2.604	SB 1025	2.6	4	SO	G	1	X			
11/13	1048	TT2-004/5-SB1021-0204	SB 10.21	2	4	SO	G	1	X			D4
11/13	1250	TT2-004/5-SB1043-0.10.5	SB 1043	0.1	0.5	SO	G	1	X			
11/13	1320	TT2-004/5-SB1041-022.5	SB 1041	2	2.5	SO	G	1	X			
11/13	1405	TT2-004/5-SB1658-0204	SB 1658	2	4	SO	G	2	X			Lab QC
11/13	1440	TT2-004/5-SB1064-0204	SB 1064	2	4	SO	G	1	X			
11/13	0000	TT2-SB-DUP04-1113	—	—	—	SO	G	1	X			D4
11/14	0845	TT2-SB004/5-SB1666-0213	SB 1666	2	3	SO	G	1	X			
11/14	1015	TT2-004/5-SB1057-~~0213~~ 0304	SB 1057	23	24	SO	G	1	X			
11/14	1050	TT2-004/5-SB1047-0204	SB 1047	2	4	SO	G	1	X			

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
[signature]	11-15-13	1500	FedEx		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER NB 1905 | PAGE 2 OF 3

PROJECT NO: CTO 112603019 WE 30	FACILITY: Wilmington, MA	PROJECT MANAGER Dabia Seiken	PHONE NUMBER 972 474 8445	LABORATORY NAME AND CONTACT: Test America / T. Kellmann
SAMPLERS (SIGNATURE) KJalkut		FIELD OPERATIONS LEADER Kayleen Jalkut	PHONE NUMBER 781 201 0457	ADDRESS 880 Riverside Parkway
		CARRIER/WAYBILL NUMBER FedEx AB# 8759 3797 5520		CITY, STATE West Sacramento, CA 95605 916 373 5600

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G								
									PRESERVATIVE USED		≤6°C	≤6°C						
									TYPE OF ANALYSIS		DIOXIN, TOTAL SOLIDS - 8oz JAR	DIOXIN - 1L AMBER GLASS						
11/14	1315	TF2-004/5-SB1039-0204	SB1039	2	4	SO	G	1	X	—								
11/14	1340	TF2-004/5-SB1031-0204	SB1031	2	4	SO	G	1	X	—								
11/14	1415	TF2-004/5-SB1040-0204	SB1040	2	4	SO	G	1	X	—								
11/14	1240	TF2-004/5-SB1049-0204	SB1049	2	4	SO	G	1	X	—								
11/14	1445	TF2-004/5-SB1065-0204	SB1065	2	4	SO	G	1	X	—								
11/14	1500	TF2-004/5-SB1068-0204	SB1068	2	4	SO	G	1	X	—								D6
11/14	0000	TF2-SB-DUP06-1113 *	—	—	—	SO	G	1	X	—								D6
11/14	1200	TF2-SB-RB03-1113	—	—	—	QC	G	2	—	X								
11/15	1025	TF2-003-SB1011-0204	SB1011	2	4	SO	G	1	X	—								D8 (2 jars)
11/15	1110	TF2-003-SB1012-0204	SB1012	2	4	SO	G	2	X	—								Lab QC (3 jars)
11/15	0915	TF2-003-SB1017-0116	SB1017	1	1.6	SO	G	1	X	—								
11/15	0920	TF2-003-SB1017-0204	SB1017	2	4	SO	G	1	X	—								
11/15	1145	TF2-003-SB1014-0204	SB1014	2	4	SO	G	1	X	—								

Kjalkut 11-15-13

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
[signature]	11-15-13	1500	FedEx		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS * There is no DUP05 for dioxin or DUP07 for dioxin from AOC 004/5 (TF2) from AOC 003 (TF2)

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TINUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER NB 1909 | PAGE 3 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington, MA	Debra Seiken	978 474 8445	Test America / Jill Kellmann
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Hackett		Kayleen Jalkut	781 801 0457	880 Riverside Parkway
		CARRIER/WAYBILL NUMBER		**CITY, STATE** 916-373-6600
		FedEx AB # 879937975570		West Sacramento, CA 95605

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									PRESERVATIVE USED									
									TYPE OF ANALYSIS	DIOXIN, TOTAL SOLIDS & % Moisture	DIOXIN - 1L AMBER							
										≤6°C	≤6°C							
11/15	1100	TF2-003-SB1015-0204	SB 1015	2	4	SO	G	1		X	–							
11/15	1015	TF2-003-SB1016-0204	SB 1016	2	4	SO	G	1		X	–							
11/15	1000	TF2-003-SB1018-0204	SB 1018	2	4	SO	G	1		X	–							
11/15	1200	TF2-SB-RB04-1113	–	–	–	QC	G	2		–	X							
11/15	0000	TF2-SB-DUP08-1113	–	–	–	SO	G	1		X	–							DS
											¥ Hackett 11-15-13							

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY Hackett	11-15-13	1500	1. RECEIVED BY FedEx		
2. RELINQUISHED BY			2. RECEIVED BY		
3. RELINQUISHED BY			3. RECEIVED BY		

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

D10X

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** NS 1927 | **PAGE** 1 **OF** 2

PROJECT NO: 112603019 CTO 30	**FACILITY:** Wilmington, MA	**PROJECT MANAGER** Debra Seiken	**PHONE NUMBER** 978 474 8445	**LABORATORY NAME AND CONTACT:** Test America / J. Kellmann
SAMPLERS (SIGNATURE) KJalkut		**FIELD OPERATIONS LEADER** Kayleen Jalkut	**PHONE NUMBER** 781 801 0457	**ADDRESS** 880 Riverside Parkway
		CARRIER/WAYBILL NUMBER Fed Ex AD; # 8759 3797 5336		**CITY, STATE** West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED		TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS 90%	TYPE OF ANALYSIS: DIOXIN, IL Amber						COMMENTS
									G	G	≤6°C	≤6°C								
11/25	0815	TF2-003-SB1013-0204	1013	2	4	SO	G	1	1	1										
11/25	0835	TF2-003-SB1019-0204	1019	2	4	SO	G	1	1											
11/25	1005	TF2-001-SS1001-0001	1001	0	1	SO	G	1	1											
11/25	1010	TF2-001-SB1001-0204	1001	2	4	SO	G	1	1					11/27/13						
11/25	1035	TF2-001-SS1002-0001	1002	0	1	SO	G	1	1											
11/25	1040	TF2-001-SB1002-0204	1002	2	4	SO	G	1	1											
11/25	1140	TF2-001-SS1003-0001	1003	0	1	SO	G	1	1											D9
11/25	1145	TF2-001-SB1003-0204	1003	2	4	SO	G	1	1											
11/25	1300	TF2-001-SS1004-0001	1004	0	1	SO	G	1	1											
11/25	1310	TF2-001-SB1004-0204	1004	2	4	SO	G	1	1											D10
11/25	0000	TF2-SB-DUP09-1113	—	—	—	SO	G	1	1											D9
11/25	1330	TF2-001-SS1007-0001	1007	0	1	SO	G	1	1											
11/25	1340	TF2-001-SB1007-0204	1007	2	4	SO	G	1	1											

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY KJalkut	11/26/13	1600	1. RECEIVED BY Fed Ex	11/26/13	1600
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

D10X

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** NJ 1926 | **PAGE** 2 **OF** 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019 CTO 30	Wilmington MA	Debra Selken	978 474 8445	Test America / J. Kellmann
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
KJalkut		Kayleen Jalkut	781 801 0457	880 Riverside Parkway
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		FedEx AB # 8759 3797 5336		West Sacramento, CA 95605

STANDARD TAT ☒ **RUSH TAT** ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED		TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS 702	TYPE OF ANALYSIS: DIOXIN, 1L AMBER						COMMENTS
									G	G	≤6°C	≤6°C								
11/25	1245	TF2-001-SB1008-0204	1008	2	4	SO	G	2	2	—										Lab QC
11/25	1240	TF2-001-SS1008-0001	1008	0	1	SO	G	1	1	—										
11/25	1205	TF2-001-SB1009-0204	1009	2	4	SO	G	1	1	—										
11/25	1200	TF2-001-SS1009-0001	1009	0	1	SO	G	1	1	—										
11/25	0000	TF2-SB-DUP10-1113	—	—	—	SO	G	1	1	—										D10
11/25	1100	TF2-SB-RB05-1113	—	—	—	QC	G	2	—	2										

KJ 11/26/13

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
K Jalkut	11/26/13	1600	FedEx	11/26/13	1600
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

DIOX

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** 1937 | **PAGE** 1 **OF** 1

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112E03014 CTO 30	Wilmington, MA	Debra Seiler	978 474 8445	Test America Inc / J. Kellmann
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jarkut		Kayleen Jarkut	781 801 0457	880 Riverside Parkway
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		FedEx AB# 8759 3797 5314		West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS, 4[illegible]	COMMENTS
									G		
									PRESERVATIVE USED	4[illegible]	
11/27	0800	TF2-001-SS1000-0001	1000	0	1	SO	G	1	1		
11/27	0805	TF2-001-SB1000-0204	1000	2	4	SO	G	1	1		
11/27	0820	TF2-001-SB1000-0810	1000	8	10	SO	G	1	1		
11/27	0900	TF2-001-SS1006-0001	1006	0	1	SO	G	1	1		
11/27	0905	TF2-001-SB1006-0204	1006	2	4	SO	G	1	1		
11/27	0915	TF2-001-SS1005-0001	1005	0	1	SO	G	1	1		
11/27	0920	TF2-001-SB1005-0204	1005	2	4	SO	G	1	1		D11
11/27	0940	TF2-001-SS1010-0001	1010	0	1	SO	G	1	1		
11/27	0945	TF2-001-SB1010-0204	1010	2	4	SO	G	2	2		Lab QC
11/27	0000	TF2-SB-DUP11-1113	—	—	—	SO	G	1	1		D11

K Jarkut 12/9/13

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
K Jarkut	12/3/13	0915	FedEx	12/3/13	0915
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** No. 027653 | **PAGE** 2 **OF** 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019 CT LE30	Wilmington, MA	Debra Seiken	919 474 8445	Katahdin Analytical Services / J. Olsen
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
KJalkut		Kayleen Jalkut	781 801 0457	660 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Carrier pkg - hand delivery (RI)		Scarborough, ME

STANDARD TAT [X]
RUSH TAT [ ]
[ ] 24 hr. [ ] 48 hr. [ ] 72 hr. [ ] 7 day [ ] 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
									G	G	G	G	G	G	P	G	
									PRESERVATIVE USED								
									≤6°C	10 drops conc. H2SO4 ≤6°C	≤6°C	≤6°C	HCl ≤6°C	HNO3 ≤6°C	NaOH ≤6°C		
									TYPE OF ANALYSIS								
									8021 BTEX + MTBE + Naphthalene - VOCs	40 ml vials w/ sulfuric acid - TPH-GRO	40 ml vials w/ HCl - EXTPH, total solids	2 1L amber bottles - PAH	1L amber bottle, w/ HCl - EXTPH	250 ml HDPE plastic - total RCRA metals	40 ml vials w/ HCl - GRO		
10/18	1335	TF2-004/5-SS1028-000.8	SS1028	0	0.8	SO	G	1	1	—	—	—	—	—	—		
10/18	1345	TF2-004/5-SS1027-0001	SS1027	0	1	SO	G	11	2	6	3	—	—	—	—		Lab QC volume #1
10/18	1350	TF2-004/5-SS1040-000.9	SS1040	0	0.9	SO	G	1	1	—	—	—	—	—	—		
10/18	1400	TF2-004/5-SS1039-000.9	SS1039	0	0.9	SO	G	4	1	2	1	—	—	—	—		
10/18	1400	TF2-SS-RPC1-1013	—	—	—	GC	G	7	—	—	—	2	2	1	2		Rinsate off auger used today
10/18	1405	TF2-W-TB2-1013	—	—	—	QC	G	2	—	—	—	—	—	—	2		GRO(aq) trip blank for rinsate sample
10/18	1410	TF2-004/5-SS1038-000.7	SS1038	0	0.9	SO	G	1	1	—	—	—	—	—	—		
10/18	1415	TF2-004/5-SS1037-000.7	SS1037	0	0.7	SO	G	1	1	—	—	—	—	—	—		
10/18	1425	TF2-004/5-SS1036-000.6	SS1036	0	0.6	SO	G	1	1	—	—	—	—	—	—		
10/18	0000	TF2-004/5-SS-DUP03-1013	—	—	—	SO	G	~~1~~ 0	~~1~~ 0	~~X~~	~~X~~	—	—	—	—	D2	KJ eliminated need for GRO + EXTPH 10/24/13 *
10/18	1445	TF2-004/5-SS1034-000.6	SS1034	0	0.6	SO	G	1	1	—	—	—	—	—	—		
10/18	1435	TF2-004/5-SS1035-0001	SS1035	0	1	SO	G	~~1~~ 0	~~1~~ 0	~~X~~	~~X~~	—	—	—	—	D2	KJ eliminated need for GRO + EXTPH 10/24/13 *
10/18	1455	TF2-004/5-SS1033-000.8	SS1033	0	0.8	SO	G	1	1	—	—	—	—	—	—		

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: KJalkut	10/21/13	1300	1. RECEIVED BY:	10/21/13	1300
2. RELINQUISHED BY:	DATE	TIME	2. RECEIVED BY:	DATE	TIME
3. RELINQUISHED BY:	DATE	TIME	3. RECEIVED BY:	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** 26580 | **PAGE** 2 **OF** 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03049 - CTO WE 30	Wilmington MA	Debra Seiken	917 474 2445	Katahdin Analytical Services / J. Chorn
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jalkut		Kayleen Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier pick-hand delivery (KJ)		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: 4oz glass jar - PAH, metals, total solids	40ml vials w/ MeOH - GRO	4oz glass jar - EXTPH, % solids	1L amber glass - PAHs	250ml HDPE - metals	COMMENTS
									G	≤6°C		MeOH ≤6°C	≤6°C	≤6°C	HNO3 ≤6°C	P
10/21	0920	TF2-004/5-SS1049-000.9	SS1049	0	0.9	SO	G	4	1	2	1	—	—			
10/21	0930	TF2-004/5-SS1048-000.8	SS1048	0	0.8	SO	G	1	1	—	—	—	—			
10/21	0940	TF2-004/5-SS1047-000.8	SS1047	0	0.8	SO	G	1	1	—	—	—	—			
10/21	0950	TF2-004/5-SS1046-000.5	SS1046	0	0.5	SO	G	1	1	—	—	—	—			
10/21	1000	TF2-004/5-SS1045-000.5	SS1045	0	0.5	SO	G	1	1	—	—	—	—			
10/21	1010	TF2-004/5-SS1044-000.5	SS1044	0	0.5	SO	G	1	1	—	—	—	—			
10/21	1020	TF2-004/5-SS1042-000.5	SS1042	0	0.5	SO	G	1	1	—	—	—	—			
10/21	1035	TF2-004/5-SS1041-000.7	SS1041	0	0.7	SO	G	~~1~~ 0	~~1~~ 0	~~—~~	~~—~~	—	—			KJ eliminated need for GRO+EXTPH 10/24/13 D3
10/21	0000	TF2-004/5-SS-DUP03-1013	—	—	—	SO	G	~~1~~ 0	~~1~~ 0	~~—~~	~~—~~	—	—			KJ eliminated need for GRO + EXTPH 10/24/13 D3
10/21	1150	TF2-CS-RB02-1013	—	—	—	QC	G	3	—	—	—	2	1			Rinsate off auger used
																KJ 10/21/13

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
K Jalkut	10/21/13	1300		10/21/13	1300
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26581 | PAGE 1 OF 3

PROJECT NO: 112G03019 CTO WE30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445	LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J. Obrin
SAMPLERS (SIGNATURE): K Jalkut, Peter Sevard		FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781 801 0457	ADDRESS: 600 Technology Way
		CARRIER/WAYBILL NUMBER: Courier p/u - hand delivery (Wil)		CITY, STATE: Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
									G	G	G	G					
									PRESERVATIVE USED								
									MeOH ≤6°C		MeOH ≤6°C	≤6°C					
									TYPE OF ANALYSIS: 40ml vials w/ MeOH only - GRO	8oz jar - PAH, metals, total solids	40ml vials w/ soil + MeOH (lvm) GRO solids	4oz jar - Ex TPH + total solids					
10/21	0900	TF2-W-TB03-1013	—	—	—	QC	G	2	2	—	—	—					MeOH trip blank for soil
10/21	1345	TF2-004/5-SS1057-0001	SS1057	0	1	SO	G	1	—	1	—	—					
10/21	1355	TF2-004/5-SS1056-000.6	SS1056	0	0.6	SO	G	4	—	1	2	1					
10/21	1400	TF2-004/5-SS1055-000.8	SS1055	0	0.8	SO	G	1	—	1	—	—					
10/21	1405	TF2-004/5-SS1054-000.6	SS1054	0	0.6	SO	G	2	—	2	—	—					Lab QC volume #2
10/21	1415	TF2-004/5-SS1053-000.6	SS1053	0	0.6	SO	G	1	—	1	—	—					
10/21	1425	TF2-004/5-SS1052-000.6	SS1052	0	0.6	SO	G	1	—	1	—	—					
10/21	1430	TF2-004/5-SS1051-000.8	SS1051	0	0.8	SO	G	4	—	1	2	1					
10/21	1440	TF2-004/5-SS1050-000.6	SS1050	0	0.6	SO	G	1	—	1	—	—					
10/21	1450	TF2-004/5-SS1062-000.8	SS1062	0	0.8	SO	G	1	—	1	—	—					✓ D4
10/21	0000	TF2-004/5-SS-DUP04-1013	—	—	—	SO	G	1	—	1	—	—					✓ D4
10/21	1455	TF2-004/5-SS1061-000.6	SS1061	0	0.6	SO	G	1	—	1	—	—					
10/21	1505	TF2-004/5-SS1067-000.7	SS1067	0	0.7	SO	G	1	—	1	—	—					

KJ 10/23/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: K Jalkut	10/23/13	1335	1. RECEIVED BY:	10/24/13	1325
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26582 | PAGE 2 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03019 CTO WE30	Wilmington, MA	Debra Sirken	978 474 8445	Katahdin Analytical Services / J Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jalkut, Peter Senecal		Kayleen Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier plu - hand delivery (WI)		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									PRESERVATIVE USED									TYPE OF ANALYSIS									COMMENTS
									G	G	G							≤6°C	≤6°C	NaOH, ≤6°C							8021 Jan - PAHs, total solids, metals	462 Jan - Ex TPH, total solids	46 ml vials w/ MeOH 3511 - ERO						
10/21	1515	TF2-004/5-SS1066-000.9	SS1066	0	0.9	SO	G	1	1									—	—															
10/22	0815	TF2-004/5-SS1060-000.5	SS1060	0	0.5	SO	G	1	1									—	—															
10/22	0825	TF2-004/5-SS1059-000.6	SS1059	0	0.6	SO	G	1	1									—	—															
10/22	0835	TF2-004/5-SS1058-000.5	SS1058	0	0.5	SO	G	1	1									—	—															
10/22	0845	TF2-004/5-SS1065-000.5	SS1065	0	0.5	SO	G	4	1									1	2														D5 - only for PAHs, metals	
10/22	0855	TF2-004/5-SS1064-000.6	SS1064	0	0.6	SO	G	2	2									—	—														Lab QC volume #3	
10/22	0905	TF2-004/5-SS1063-000.6	SS1063	0	0.6	SO	G	1	1									—	—															
10/22	0915	TF2-004/5-SS1068-000.5	SS1068	0	0.5	SO	G	1	1									—	—															
10/22	0940	TF2-003-SS1011-000.8	SS1011	0	0.8	SO	G	1	1									—	—															
10/22	0000	TF2-004/5-SS-DUP05-1013	—	—	—	SO	G	1	1									1	2	KK 10/24/13													D5 only for PAHs, metals - coordinated change w/ KAS on 10/24/13	
10/22	0950	TF2-003-SS1012-000.7	SS1012	0	0.7	SO	G	1	1									—	—															
10/22	0955	TF2-003-SS1013-000.7	SS1013	0	0.7	SO	G	1	1									—	—															
10/22	1005	TF2-003-SS1014-0001	SS1014	0	1	SO	G	1	1									—	—															

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: K Jalkut	10/23/13	1335	1. RECEIVED BY		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** Nº 027646 | **PAGE** 3 **OF** 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03019 CTO WE 30	Wilmington, MA	Debra Seiken	978 474 8445	Katahdin Analytical Services / J Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
KTalkut Peter Seward		Kayleen Talkut	781-801-0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Carver plus - hand delivery (601)		Scarborough, ME

STANDARD TAT [X]
RUSH TAT [ ]
[ ] 24 hr. [ ] 48 hr. [ ] 72 hr. [ ] 7 day [ ] 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	G	G	P					
									PRESERVATIVE USED									
									≤6°C	≤6°C	MeOH ≤6°C	≤6°C	HNO3, ≤6°C					
									TYPE OF ANALYSIS									
									8021 plus - PAHs, total solids, metals	402 plus - Ext TPH, total solids	40 ml VOA w/ soil (MeOH) - 8260	1L amber - PAHs	250 ml HDPE w/ HNO3 - metals					
10/22	1015	TF2-003-SS1015-000.8	SS1015	0	0.8	SO	G	4	1	1	2	—	—					✓ D6 - only for PAHs, metals
* 10/22	1025	TF2-003-SS1016-000.9	SS1016	0	0.9	SO	G	1	1	—	—	—	—					Lab QC vol. #4? - yes say KAS
10/22	1055	TF2-003-SS1017-000.8	SS1017	0	0.8	SO	G	1	1	—	—	—	—					
10/22	1105	TF2-003-SS1018-000.8	SS1018	0	0.8	SO	G	1	1	—	—	—	—					
10/22	1115	TF2-003-SS1019-000.5	SS1019	0	0.5	SO	G	1	1	—	—	—	—					
10/22	0000	TF2-003-SS-DUP06-1013	—	—	—	SO	G	1	1	~~1~~	~~2~~	—	—	KJ 10/24/13				Dup only for PAH, metals D6 Coordinates change on COC w/ KAS on 10/24/13
10/22	1200	TF2-SS-RB03-1013	—	—	—	QC	G	3	—	—	—	2	1					Rinsate off disposable pan

KJ 10/23/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY KTalkut	10/23/13	1335	1. RECEIVED BY	10/24/13	
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS * Please try to perform lab QC analysis on TF2-003-SS1016-000.9 (forgot to collect 2x 802 jars) for PAH, metals analyses ✓

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Attn: TestAmerica Sacramento
Jill Kellmann

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Page 1 of 5

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Debra Seiken	(978) 474 8445	(978) 474-847

Address 250 Andover St Suite 200 City Wilmington State MA Zip Code 01887

Purchase Order # Proj. Name / No. ~~Katahdin Quote #~~

Bill (if different than above) Address

Sampler (Print / Sign) Kayleen Jalkut Kayleen Jalkut Peter Seyfold

Copies To:

LAB USE ONLY WORK ORDER #:

~~KATAHDIN PROJECT NUMBER~~

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: Filt. ☐Y ☒N — TOTAL SOLIDS + DIOXIN - 8oz amb. glass jar
	TF2-004/5-SS1025-000.8	10/18 / 1045	SO	1	1
	TF2-004/5-SS1026-000.8	10/18 / 1055	SO	1	1
	TF2-004/5-SS1024-000.6	10/18 / 1105	SO	1	1
	TF2-004/5-SS1023-000.8	10/18 / 1110	SO	1	1
	TF2-004/5-SS1022-000.9	10/18 / 1118	SO	1	1
	TF2-004/5-SS1021-000.7	10/18 / 1130	SO	1	1
D1 ✓	TF2-004/5-SS1020-0001	10/18 / 1140	SO	1	1
	TF2-004/5-SS1032-000.9	10/18 / 1155	SO	1	1
	TF2-004/5-SS1031-000.8	10/18 / 1205	SO	1	1
D1 ✓	TF2-004/5-SS-DUP01-1013	10/18 / 0000	SO	1	1
	TF2-004/5-SS1030-000.6	10/18 / 1320	SO	1	1
	TF2-004/5-SS1029-000.6	10/18 / 1330	SO	1	1
	TF2-004/5-SS1028-000.8	10/18 / 1335	SO	1	1
*	TF2-004/5-SS1027-0001	10/18 / 1345	SO	3	3
	TF2-004/5-SS1040-000.9	10/18 / 1350	SO	1	1
	TF2-004/5-SS1039-000.9	10/18 / 1400	SO	1	1

KH 10/23/13

COMMENTS * = Lab QC volume

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
KJalkut	10/23/13 1800	FedEx AB# 875937975510	10/23/13	1800	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

CUSTOMER COPY

KAS-COC1

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Attn: TestAmerica Sacramento
Jill Kellmann

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Dabra Seiken	(978) 474 8445	(978) 474 8499

Address	City	State	Zip Code
250 Andover St Suite 200	Wilmington	MA	01887

Purchase Order #	Proj. Name / No.	~~Katahdin~~ Quote #

Bill (if different than above)	Address

Sampler (Print / Sign)	Copies To:
Kayleen Jalkut Kayleen Jalkut / Peter Seigid Peter Seigid	

LAB USE ONLY WORK ORDER #: ~~KATAHDIN PROJECT NUMBER~~

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	Filt. ☐Y ☒N: DI/ZN – 1L amber glass jar	Filt. ☐Y ☒N: TOTALS/DISS – 250z amber glass jar	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐
	TF2-SS-RB01-1013	10/18 / 1400	QC	2	2									
	TF2-~~SS~~004/5-SS1038-000.7	10/18/ 1410	SO	1	—	1								
	TF2-004/5-SS1037-000.7	10/18/ 1415	SO	1	—	1								
	TF2-004/5-SS1036-000.6	10/18/ 1425	SO	1	—	1								
D2 ✓	TF2-004/5-SS1035-0001	10/18 / 1435	SO	1	—	1								
D2 ✓	TF2-004/5-SS-DUP02-1013	10/18/ 0000	SO	1	—	1								
	TF2-004/5-SS1034-000.6	10/18/ 1445	SO	1	—	1								
	TF2-004/5-SS1033-000.8	10/18/ 1455	SO	1	—	1								
	TF2-004/5-SS1049-000.9	10/21/ 0920	SO	1	—	1								
	TF2-004/5-SS1048-000.8	10/21 /0930	SO	1	—	1								
	TF2-004/5-SS1047-000.8	10/21 /0940	SO	1	—	1								
	TF2-004/5-SS1046-000.5	10/21/0950	SO	1	—	1								
	TF2-004/5-SS1045-000.5	10/21/1000	SO	1	—	1								
	TF2-004/5-SS1044-000.5	10/21/1010	SO	1	—	1								
	TF2-004/5-SS1042-000.5	10/21/1020	SO	1	—	1								
D3 ✓	TF2-004/5-SS1041-000.7	10/21/1035	SO	1	—	1								

KJ 10/23/13

COMMENTS RB01 - rinsed a hand auger

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
K Jalkut 10/23/13	1800	FedEx AB# 875937975510	— 10/23/13	1800	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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KAS-COC1

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Attn: Test America Sacramento
Jill Kellmann

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Tetra Tech, Inc.	Contact	Dabra Seiken	Phone #	(978) 474 8445
Fax #	(978) 474-849				
Address	250 Andover St. Suite 200	City	Wilmington	State	MA
Zip Code	01887				
Purchase Order #		Proj. Name / No.		~~Katahdin Quote~~ #	
Bill (if different than above)		Address			
Sampler (Print / Sign)	Kayleen Jalkut Kjalkut	Peter Seipold		Copies To:	

LAB USE ONLY WORK ORDER #:

~~KATAHDIN PROJECT~~ NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: Filt. ☐Y ☒N — DIOXIN + TOTAL SOLIDS 16oz amber glass	Filt. ☐Y ☐N — DIOXIN - 1L amber glass jars	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐
D3 ✓	TF2-004/5-SS-DUP03-1013	10/21/0000	SO	1	1	—								
	TF2-SS-RB02-1013	10/21/1150	QC	2	—	2								
	TF2-SS-004/5-SS1057-0001	10/21/1345	SO	1	1	—								
	TF2-004/5-SS1056-000.6	10/21/1355	SO	1	1	—								
	TF2-004/5-SS1055-000.8	10/21/1400	SO	1	1	—								
*	TF2-004/5-SS1054-000.6	10/21/1405	SO	2	2	—								
	TF2-004/5-SS1053-000.6	10/21/1415	SO	1	1	—								
	TF2-004/5-SS1052-000.6	10/21/1425	SO	1	1	—								
	TF2-004/5-SS1051-000.8	10/21/1430	SO	1	1	—								
	TF2-004/5-SS1050-000.6	10/21/1440	SO	1	1	—								
	TF2-004/5-SS1062-000.8	10/21/1450	SO	1	1	—								
D4 ✓	TF2-004/5-SS1061-000.6	10/21/1455	SO	1	1	—								
D4 ✓	TF2-004/5-SS-DUP04-1013	10/21/0000	SO	1	1	—								
	TF2-004/5-SS1067-000.7	10/21/1505	SO	1	1	—								
	TF2-004/5-SS1066-000.9	10/21/1515	SO	1	1	—								
	TF2-004/5-SS1060-000.5	10/22/0815	SO	1	1	—								

COMMENTS * Lab QC volume RB02 - rinsed another auger

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
Kjalkut	10/23/13 1700	FedEx AB# 875937975510	10/23/13 1700		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

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Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Test America Sacramento
Attn: Jill Kellmann

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Dabra Seiken	(978) 474 8445	(978) 474 8499

Address 250 Andover St. Suite 200 City Wilmington State MA Zip Code 01887

Purchase Order # Proj. Name / No. ~~Katahdin Quote #~~

Bill (if different than above) Address

Sampler (Print / Sign) Kayleen Jalkut Kayleen Jalkut Peter Sogard

Copies To:

LAB USE ONLY WORK ORDER #:

~~KATAHDIN PROJECT NUMBER~~

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	DIGNT TOTAL SOLIDS 2oz amber glass jar	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐
	TF2-004/5-SS1059-000.6	10/22/0825	SO	1	1										
	TF2-004/5-SS1058-000.5	10/22/0835	SO	1	1										
DS ✓	TF2-004/5-SS1065-000.5	10/22/0845	SO	1	1										
*	TF2-004/5-SS1064-000.6	10/22/0855	SO	2	2										
	TF2-004/5-SS1063-000.6	10/22/0905	SO	1	1										
	TF2-004/5-SS1068-000.5	10/22/0915	SO	1	1										
DS ✓	TF2-004/5-SS-DUP05-1013	10/22/0000	SO	1	1										
	TF2-003-SS1011-000.8	10/22/0940	SO	1	1										
	TF2-003-SS1012-000.7	10/22/0950	SO	1	1										
	TF2-003-SS1013-000.7	10/22/0955	SO	1	1										
✓	TF2-003-SS1014-0001	10/22/1005	SO	1	1										
D6	TF2-003-SS1015-000.8	10/22/1015	SO	1	1										
	TF2-003-SS1016-000.9	10/22/1025	SO	1	1										
	TF2-003-SS1017-000.8	10/22/1055	SO	1	1										
	TF2-003-SS1018-000.8	10/22/1105	SO	1	1										
**	TF2-003-SS1019-000.5	10/22/1115	SO	1	1										

10/23/13

COMMENTS * Lab QC volume ** No extra volume but please perform lab QC on this sample, if you ran

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
K Jalkut 10/23/13	1800	FedEx AB #8759 7975510	10/23/13	1800	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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CUSTOMER COPY

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Test America Sacramento
Attn: Jill Kellmann

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Dabra Seiken	(978) 474 8445	(978) 474 8499

Address	City	State	Zip Code
250 Andover St. Suite 200	Wilmington	MA	01887

Purchase Order #	Proj. Name / No.	~~Katahdin Quote #~~

Bill (if different than above)	Address

Sampler (Print / Sign)	Copies To:
Kayleen Jalkut Kayleen Jalkut	Peter Sevigne

LAB USE ONLY

WORK ORDER #:

~~KATAHDIN PROJECT NUMBER~~

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: Filt. ☐Y ☐N — DIOXIN + TOTAL SOLIDS 8oz amber glass jar	Filt. ☐Y ☐N — DIOXIN - 1L amber glass jar	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐
DUP	TF2-003-SS-DUP06-1013	10/22/ 0000	SO	1	1	—								
	TF2-SS-RB03-1013	10/22/ 1200	QC	2	—	2								
	IF KJ 10/23/13	/												
		/												
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10/23/13 KJ

COMMENTS: RB03- rinsed a disposable aluminum pan (unused)

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
K Jalkut	10/23/13 1700	FedEx AB# 7759 37975510	—	10/23/13 1700	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

CUSTOMER COPY

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** No. 027651 | **PAGE** 1 **OF** 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
162-03019 CTO WE 30	Wilmington, NH	Dave Nelson	978 474 1445	Katahdin Analytical Service / T. Irwin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Plaisted		Marleen Talbot	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Fedex ph-based delivery (KI)		Scarborough, ME

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
PRESERVATIVE USED																	
									TYPE OF ANALYSIS								
									4oz unpres w/ ice/MECH soil	4oz jar - PAH, metals, TPH 8015	4oz unpres w/ ice soil MECH (VOA)	4 oz jar - EXTPH, Total Cr, Pb					
10/16	1030	TF2-W-TB01-1013	—	—	—	QC	G	2	2	—	—	—					Mech trip blank for soil
10/16	1045	TF2-004/5-SS1025-000.8	SS1025	0	0.8	SO	G	1	—	1	—	—					
10/16	1055	TF2-004/5-SS1026-000.6	SS1026	0	0.6	SO	G	1	—	1	—	—					
10/16	1105	TF2-004/5-SS1024-000.6	SS1024	0	0.6	SO	G	1	—	1	—	—					
10/16	1110	TF2-004/5-SS1023-000.8	SS1023	0	0.8	SO	G	1	—	1	—	—					
10/16	1118	TF2-004/5-SS1022-000.9	SS1022	0	0.9	SO	G	1	—	1	—	—					
10/16	1130	TF2-004/5-SS1021-000.7	SS1021	0	0.7	SO	G	1	—	1	—	—					
10/16	1140	TF2-004/5-SS1020-0001	SS1020	0	1	SO	G	4	—	1	2	1					4 Di
10/16	1155	TF2-004/5-SS1032-000.9	SS1032	0	0.9	SO	G	1	—	1	—	—					
10/16	1205	TF2-004/5-SS1031-000.6	SS1031	0	0.8	SO	G	1	—	1	—	—					
10/16	0000	TF2-004/5-SS-DUP01-1013	—	—	—	SO	G	4	—	1	2	1					4 Di
10/16	1320	TF2-004/5-SS-1030-000.6	SS1030	0	0.6	SO	G	1	—	1	—	—					
10/16	1330	TF2-004/5-SS1029-000.6	SS1029	0	0.6	SO	G	1	—	1	—	—					

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY K Plaisted	10/21/13	1300	1. RECEIVED BY	10/21/13	1300
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 4/02R

FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** No. 027653 | **PAGE** 2 **OF** 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03019.CT.1E30	Wilmington, MA	Debra Seiken	978 474 8445	Katahdin Analytical Services / T. Glenn
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
KJalkut		Kayleen Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier pick-up/hand delivery (RI)		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	G	G	G	G	G	P	G	COMMENTS
									PRESERVATIVE USED	≤6°C	Dominant ≤6°C	≤6°C	≤6°C	HCl ≤6°C	HNO3 ≤6°C	ACL ≤6°C	
									TYPE OF ANALYSIS	8260 list - BTEX, methyl, tert butyl acetate	4 oil and GRO - GRO	8021 list - EXTPH, total oils	2 IL amber bottles - EAH	1 IL amber bottle, w/HCl - EXTPH	2 clear HDPE plastic - w/HNO3 for lab	4 oil and GRO - GRO	
10/18	1335	TF2-004/5-SS1028-000.8	SS1028	0	0.8	SO	G	1		1	—	—	—	—	—	—	
10/18	1345	TF2-004/5-SS1027-0001	SS1027	0	1	SO	G	11		2	6	3	—	—	—	—	Lab QC volume #1
10/18	1350	TF2-004/5-SS1040-000.9	SS1040	0	0.9	SO	G	1		1	—	—	—	—	—	—	
10/18	1400	TF2-004/5-SS1039-000.9	SS1039	0	0.9	SO	G	4		1	2	1	—	—	—	—	
10/18	1400	TF2-SS-RPC1-1013	—	—	—	GC	G	7		—	—	—	2	2	1	2	Rinsate off auger used today
10/18	1405	TF2-W-TB2-1013	—	—	—	QC	G	2		—	—	—	—	—	—	2	GRO(2) trip blank for rinsate sample
10/18	1410	TF2-004/5-SS1038-000.7	SS1038	0	0.9	SO	G	1		1	—	—	—	—	—	—	
10/18	1415	TF2-004/5-SS1037-000.7	SS1037	0	0.7	SC	G	1		1	—	—	—	—	—	—	
10/18	1425	TF2-004/5-SS1036-000.6	SS1036	0	0.6	SO	G	1		1	—	—	—	—	—	—	
10/18	0000	TF2-004/5-SS-DUP2-1013	—	—	—	SC	G	X1		1	X	X	—	—	—	—	4 D2 KJ eliminated need for GRO + EXTPH 10/24/13 *
10/18	1445	TF2-004/5-SS1034-000.6	SS1034	0	0.6	SO	G	1		1	—	—	—	—	—	—	
10/18	1435	TF2-004/5-SS1035-0001	SS1035	0	1	SC	G	X1		1	X	X	—	—	—	—	4 D2 KJ eliminated need for GRO + EXTPH 10/24/13 *
10/18	1455	TF2-004/5-SS1033-000.8	SS1033	0	0.8	SO	G	1		1	—	—	—	—	—	—	

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
KJalkut	10/21/13	1300		10/21/13	1300
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** 26580 | **PAGE** 2 **OF** 3

PROJECT NO: 112G03011 = CTO WE 30	**FACILITY:** Wilmington MA	**PROJECT MANAGER** Debra Seiken	**PHONE NUMBER** 973 474 7355	**LABORATORY NAME AND CONTACT:** Katahdin Analytical Service / J. Chinn
SAMPLERS (SIGNATURE) K Jackut		**FIELD OPERATIONS LEADER** Kathleen Jalkut	**PHONE NUMBER** 781 801 0457	**ADDRESS** 600 Technology Way
		CARRIER/WAYBILL NUMBER Courier pick-hand delivery (RE)		**CITY, STATE** Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: 4oz glass jar - TAL Metals, mercury, total cyanide	40ml vials of soil MeOH	4oz glass jar - EXTPH, total cyanide	1L amber glass - PPHS	250ml HDPE - metals	COMMENTS
									G	≤6°C		MeOH ≤6°C	≤6°C	≤6°C	HNO3 ≤6°C	
10/21	0920	TF2-004/K-SS1049-000.9	SS1049	0	0.9	SO	G	4	1	2	1	—	—			
10/21	0930	TF2-004/K-SS1048-000.2	SS1048	0	0.2	SO	G	1	1	—	—	—	—			
10/21	0940	TF2-004/K-SS1047-000.8	SS1047	0	0.8	SO	G	1	1	—	—	—	—			
10/21	0950	TF2-004/K-SS1046-000.5	SS1046	0	0.5	SO	G	1	1	—	—	—	—			
10/21	1000	TF2-004/K-SS1045-000.5	SS1045	0	0.5	SO	G	1	1	—	—	—	—			
10/21	1010	TF2-004/K-SS1044-000.5	SS1044	0	0.5	SO	G	1	1	—	—	—	—			
10/21	1020	TF2-004/K-SS1042-000.5	SS1042	0	0.5	SO	G	1	1	—	—	—	—			
10/21	1035	TF2-004/K-SS1041-000.7	SS1041	0	0.7	SO	G	~~1~~ 0	~~1~~ 0	~~—~~	~~—~~	—	—			D3 KJ eliminated need for GRO+EXTPH 10/24/13
10/21	0000	TF2-004/K-SS-DUP03-1013	—	—	—	SO	G	~~1~~ 0	~~1~~ 0	~~—~~	~~—~~	—	—			D3 KJ eliminated need for GRO + EXTPH 10/24/13
10/21	1150	TF2-CS-RBC2-1013	—	—	—	QC	G	3	—	—	—	2	1			Rinsate off auger used

KJ 10/21/13

1. RELINQUISHED BY		DATE 10/21/13	TIME 1300	1. RECEIVED BY		DATE 10/21/13	TIME 1300
2. RELINQUISHED BY		DATE	TIME	2. RECEIVED BY		DATE	TIME
3. RELINQUISHED BY		DATE	TIME	3. RECEIVED BY		DATE	TIME
COMMENTS							

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** 26581 | **PAGE** 1 **OF** 3

PROJECT NO: 112G03019 CTO WE80	**FACILITY:** Wilmington, MA	**PROJECT MANAGER** Debra Eiken
PHONE NUMBER 978 474 8445	**LABORATORY NAME AND CONTACT:** Katahdin Analytical Services / J. Obrin	
SAMPLERS (SIGNATURE) K Jalkut	**FIELD OPERATIONS LEADER** Kayleen Jalkut	**PHONE NUMBER** 721 801 0457
ADDRESS 600 Technology Way		
CARRIER/WAYBILL NUMBER Courier plu - hand delivery (will)	**CITY, STATE** Scarborough, ME	

STANDARD TAT ☒ **RUSH TAT** ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	G	G	G					
									PRESERVATIVE USED	MeOH ≤6°C	≤6°C	MeOH ≤6°C	≤6°C					
									TYPE OF ANALYSIS	40ml vials w/MeOH only - GRO	8oz jar - PAHs, metals, total solids	40ml vials w/soil + MeOH (lime) GRO	4oz jar - Ext TPH + total solids					
10/21	0900	TF2-W-TB03-1013	—	—	—	QC	G	2	2	—	—	—						MeOH trip blank for soil
10/21	1345	TF2-004/5-SS1057-0001	SS 1057	0	1	SO	G	1	—	1	—	—						
10/21	1355	TF2-004/5-SS1056-000.6	SS 1056	0	0.6	SO	G	4	—	1	2	1						
10/21	1400	TF2-004/5-SS1055-000.8	SS 1055	0	0.8	SO	G	1	—	1	—	—						
10/21	1405	TF2-004/5-SS1054-000.6	SS 1054	0	0.6	SO	G	2	—	2	—	—						Lab QC volume #2
10/21	1415	TF2-004/5-SS1053-000.6	SS 1053	0	0.6	SO	G	1	—	1	—	—						
10/21	1425	TF2-004/5-SS1052-000.6	SS 1052	0	0.6	SO	G	1	—	1	—	—						
10/21	1430	TF2-004/5-SS1051-000.8	SS 1051	0	0.8	SO	G	4	—	1	2	1						
10/21	1440	TF2-004/5-SS1050-000.6	SS 1050	0	0.6	SO	G	1	—	1	—	—						
10/21	1450	TF2-004/5-SS1062-000.8	SS 1062	0	0.8	SO	G	1	—	1	—	—						✓D4
10/21	0000	TF2-004/5-SS-DUP04-1013	—	—	—	SO	G	1	—	1	—	—						✓D4
10/21	1455	TF2-004/5-SS1061-000.6	SS 1061	0	0.6	SO	G	1	—	1	—	—						
10/21	1505	TF2-004/5-SS1067-000.7	SS 1067	0	0.7	SO	G	1	—	1	—	—						

1. RELINQUISHED BY K Jalkut	DATE 10/23/13	TIME 1535	1. RECEIVED BY	DATE 10/24/13	TIME 1530
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME
COMMENTS					

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FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26582 | PAGE 2 OF 3

PROJECT NO: 112G03019 CTO WE30	FACILITY: Wilmington, MA	PROJECT MANAGER Debra Soken	PHONE NUMBER 978 474 8445	LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J Ohnin
SAMPLERS (SIGNATURE) K Jalkut P. Tendewald		FIELD OPERATIONS LEADER Kayleen Jalkut	PHONE NUMBER 781 801 0457	ADDRESS 600 Technology Way
		CARRIER/WAYBILL NUMBER Courier plu - hand delivery (WH)		CITY, STATE Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)				PRESERVATIVE USED				TYPE OF ANALYSIS				COMMENTS
									G	G	G		≤6°C	≤6°C	MeOH ≤6°C		8021 Jan - PAHs, total solids, metals	462 Jan - Ex TPH, total solids	40 ml vials w/ MeOH, 5011 - EPH		
10/21	1515	TF2-004/5-SS1066-000.9	SS 1066	0	0.9	SO	G	1	1	—	—										
10/22	0815	TF2-004/5-SS1060-000.5	SS 1060	0	0.5	SO	G	1	1	—	—										
10/22	0825	TF2-004/5-SS1059-000.6	SS 1059	0	0.6	SO	G	1	1	—	—										
10/22	0835	TF2-004/5-SS1058-000.5	SS 1058	0	0.5	SO	G	1	1	—	—										
10/22	0845	TF2-004/5-SS1065-000.5	SS 1065	0	0.5	SO	G	4	1	1	2										DS - only for PAHs, metals
10/22	0855	TF2-004/5-SS1064-000.6	SS 1064	0	0.6	SO	G	2	2	—	—										Lab QC volume #3
10/22	0905	TF2-004/5-SS1063-000.6	SS 1063	0	0.6	SO	G	1	1	—	—										
10/22	0915	TF2-004/5-SS1068-000.5	SS 1068	0	0.5	SO	G	1	1	—	—										
10/22	0940	TF2-003-SS1011-000.8	SS 1011	0	0.8	SO	G	1	1	—	—										
10/22	0000	TF2-004/5-SS-DUP05-1013	—	—	—	SO	G	1	1	1	2										DS only for PAHs, metals - coordinated change w/ RAS on 10/24/13
10/22	0950	TF2-003-SS1012-000.7	SS 1012	0	0.7	SO	G	1	1	—	—										
10/22	0955	TF2-003-SS1013-000.7	SS 1013	0	0.7	SO	G	1	1	—	—										
10/22	1005	TF2-003-SS1014-0001	SS 1014	0	1	SO	G	1	1	—	—										

1. RELINQUISHED BY	DATE 10/23/13	TIME 1355	1. RECEIVED BY	DATE	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME
COMMENTS					

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FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 027646 | PAGE 3 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019 CO WE 30	Wilmington, MA	Debra Seiken	978 474 8445	Katahdin Analytical Services / T Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Kaikut Peter Seward		Kayleen Talkut	781-801-0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Carver plu-hand delivery (651)		Scarborough, ME

STANDARD TAT [X]
RUSH TAT [ ] 24 hr. [ ] 48 hr. [ ] 72 hr. [ ] 7 day [ ] 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								
									G	G	G	G	P				
									PRESERVATIVE USED								
									≤6°C	≤6°C	NaOH ≤6°C	≤6°C	HNO3, ≤6°C				
									TYPE OF ANALYSIS								
									8021 yes - PAHs, total solids, metals	8021 yes - Ext TPH, total solids	40 ml vials w/ soil, salt, weight (MADEP) - VPH	1L amber - PAHs	250ml HDPE w/ HNO3 - metals				COMMENTS
10/22	1015	TF2-003-SS1015-000.8	SS1015	0	0.8	SO	G	4	1	1	2	—	—				✓ DL - only for PAHs, metals
* 10/22	1025	TF2-003-SS1016-000.9	SS1016	0	0.9	SO	G	1	1	—	—	—	—				Lab QC vol. #4? - yes say KAS
10/22	1055	TF2-003-SS1017-000.8	SS1017	0	0.8	SO	G	1	1	—	—	—	—				
10/22	1105	TF2-003-SS1018-000.8	SS1018	0	0.8	SO	G	1	1	—	—	—	—				
10/22	1115	TF2-003-SS1019-000.5	SS1019	0	0.5	SO	G	1	1	—	—	—	—				
10/22	0000	TF2-003-SS-DUP06-1013	—	—	—	SO	G	1	1	1	2	—	—	KB 10/24/13			Dup only for PAH, metals DL Coordinates change on COC w/ KAS on 10/24/13
10/22	1200	TF2-SS-RB03-10B	—	—	—	QC	G	3	—	—	—	2	1				Rinsate off disposable pan

KJ 10/23/13

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
K Talkut	10/23/13	1335	Christa Hall	10/24/13	—
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS * Please try to perform lab QC analysis on TF2-003-SS1016-000.9 (forgot to collect 2x 8021 yes) for PAH, metals analytes ✓

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4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** Nº 027654 | **PAGE** 1 **OF** 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G02019	NAVSTA Newport	Doris Seiden	(978) 474-3400	Katahdin - Jen Olsen
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Kaytlyn Jalkut, Peter Sinnard		Kaytlyn Jalkut	(781) 801-0457	Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier plus @ RI - hand delivery		Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: PCBs	TYPE OF ANALYSIS: Total Solids	COMMENTS
11/12	1220	TF2-B219-SS1082-0001	B219	0	1	SO	G	1	G		X	X	
	1225	TF2-B219-SB1082-0204		2	4			1			X	X	D2 ✓
	1207	TF2-B219-SS1083-0001		0	1			1			X	X	
	1212	TF2-B219-SB1083-0204		2	4			1			X	X	Lab QC (1 jar only)
	1140	TF2-B219-SS1086-0001		0	1			1			X	X	
	1145	TF2-B219-SB1086-0204		2	4			1			X	X	
	1155	TF2-B219-SS1085-0001		0	1			1			X	X	
	1200	TF2-B219-SB1085-0204		2	4			1			X	X	
	0000	TF2-SB-DUP02-1113		/	/			1			X	X	TF2-B219-SB1082-0204
	1130	~~DUP-SB~~ TF2-B219-SS1084-0001		0	1			1			X	X	
	1135	TF2-B219-SB1084-0204		2	4			1			X	X	
	1000	TF2-B219-SS1081-0001		0	1			1			X	X	
↓	1005	TF2-B219-SB1081-0204	↓	2	4	↓	↓	1			X	X	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: Peter Sinnard	11-13-13	1340	1. RECEIVED BY:	11-13-13	
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** No. 027647 | **PAGE** 1 **OF** 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019 CTOWE30	NAVSTA Newport	Debbie Green	(978) 474-8400	Katahdin, Tom Doig
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
		Kayleen Isham	(781) 801-0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Overnight Express Courier		Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	G							
									L06	L06	L06							
									PRESERVATIVE USED									
									TYPE OF ANALYSIS	PCBs	Total Solids	Lead	Total Solids					
													402 jar					
11/12	1015	TF2 B219 SS1088-0001	B219	0	1	SO	G	1		X	X							
	1025	TF2 B219 SB1088-0204		2	4			1		X	X							
	1035	TF2-B219-SS1089-0001		0	1			1		X	X							
	1045	TF2 B219 SB1089-0204		2	4			1		X	X							
	1118	TF2 B219-SS1089-0001		0	1			1		X	X							
	1121	TF2 B219-SB1089-0204		2	4			1		X	X							D1
	0000	TF2-SB-DUP01-1113		—	—			1		X	X							TF2-B219-SB10 89-0204
	1050	TF2 B219 SS1087-0001		0	1			1		X	X							
	1055	TF2 B219 SB1087-0204	↓	2	4	↓		1		X	X							
	1400	TF2 SB-RB01-1113	NA	—	—	QC		3 2		X		X						
	1530	TF2 BSA-SS1090-0001	BSA	0	1	SO		1			X	X						
	1320	TF2 BSA SS1091-0001		0	1			1			X	X						
↓	1311	TF2-BSA SB1091-0204	↓	2	4	↓	↓	2			X	X						Lab QC

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-13-13	1340	1. RECEIVED BY	11-13-13	1340
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** No. 027645 | **PAGE** 3 **OF** 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019 CTO WE 30	NAVSTA Newport	Debra Sexton	(978) 474-8445	Katahdin Analytical Services / Jobin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
		Kathleen Tetrault	(781) 801-0457	17 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Federal Express KI [illegible]		Scarborough ME

STANDARD TAT ☐
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: Lead	Total Solids							COMMENTS
11/12	1505	TF2-BSA-SS1096-0001	BSA	0	1	SO	G	1			X	X							D3 ✓
	1510	TF2-BSA-SB1096-0204		2	4			1			X	X							
	0000	TF2-SS-DUP03-1113		/	/			1			X	X							TF2-BSA-SS1096-0001 D
	1515	TF2-BSA-SS1097-0001		0	1			1			X	X							
	1520	TF2-BSA-SB1097-0204		2	4			1			X	X							
	1400	TF2-BSA-SB1092-0001		0	1			1			X	X							
	1410	TF2-BSA-SB1092-0204		2	4			1			X	X							
	1340	TF2-BSA-SS1093-0001		0	1			1			X	X							
	1350	TF2-BSA-SB1093-0204		2	4			1			X	X							
	1420	TF2-BSA-SS1094-0001		0	1			1			X	X							
	1430	TF2-BSA-SB1094-0204		2	4			1			X	X							
	1450	TF2-BSA-SS1095-0001		0	1			1			X	X							
↓	1500	TF2-BSA-SB1095-0204	↓	2	4	↓	↓	1			X	X							

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11/13	1340	1. RECEIVED BY		1340
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** NE 1901 | **PAGE** 4 **OF** 4

PROJECT NO: 112603019 CTO WE30	**FACILITY:** NAVSTA Newport	**PROJECT MANAGER** Debra Sehen	**PHONE NUMBER** (978) 474-8445	**LABORATORY NAME AND CONTACT:** Katahdin Analytical Services / J. Obrin
SAMPLERS (SIGNATURE) K Parker, Peter Secard		**FIELD OPERATIONS LEADER** Kathleen Jelkut	**PHONE NUMBER** (781) 801-0457	**ADDRESS** 600 Technology Way
		CARRIER/WAYBILL NUMBER Courier pick@RI, hand delivery		**CITY, STATE** Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									P	G	G	G						
									PRESERVATIVE USED				≤6°C HNO3	≤6°C	10ml MeOH	≤6°C		
									TYPE OF ANALYSIS	Lead 4oz poly bottle	PAH, metal, total solids 4oz jar	GRO 2-40ml vials	EXTPH 1x40z jar					
11/12	1530	TF2-SB-RB02-1113	—	—	—	QC	G	1	X									
11/13	1048	TF2-0045-SB1021-0204	SB1021	2	4	SO	G	4	—	X	X	X						D4 (ALL GRO, EXTPH)
11/13	1055	TF2-0045-SB1021-0608	SB1021	6	8	SO	G	1	—	X	—	—						
11/13	1015	TF2-0045-SB1026-0227	SB1026	2	2.7	SO	G	1	—	X	—	—						
11/13	0800	TF2-0045-SB1033-0204	SB1033	2	4	SO	G	1	—	X	—	—						
11/13	0925	TF2-0045-SB1048-0204	SB1048	2	4	SO	G	1	—	X	—	—						
11/13	1045	TF2-0045-SB1025-2.604	SB1025	2.6	4	SO	G	1	—	X	—	—						
11/13	0000	TF2-SB-DUP04-1113	—	—	—	SO	G	1	—	X	—	—						D4
11/13	1001	TF2-W-TB01-1113	—	—	—	QC	G	2	—	—	X	—						

1. RELINQUISHED BY	DATE 11-13-13	TIME 1340	1. RECEIVED BY	DATE 11-13-13	TIME 1340
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** NE 1902 | **PAGE** 1 **OF** 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington, MA	D Seiken	978 474 8445	Katahdin Analytical Services / J. Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Hayhurst, J		Kayleen Jaikut	781 201 0457	1600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier p/u in RI - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									PRESERVATIVE USED								COMMENTS
		TYPE OF ANALYSIS							G	G	G	G	G	G	G	P		10ml MeOH	≤6°C	≤6°C	HCL ≤6°C	≤6°C	HCL ≤6°C	HNO3 ≤6°C		
									GRO - 2x 40ml vials	PAH, methyls (Total Cal)	EXTPH 402 jar	GRO - 40ml vials	1L Amber glass - PAHs	1L Amber glass - EXTPH	250ml poly bottle - Metals											
11/13	1200	TF2-W-TB02-1113	—	—	—	QC	G	2	X																	
11/13	1250	TF2-004/5-SS1043-0.10.5	SS 1043	0.1	0.5	SO	G	1		X																
11/13	1320	TF2-004/5-SB1041-022.5	SB 1041	2	2.5	SO	G	1		X																
11/13	1405	TF2-004/5-SB1058-0204	SB 1058	2	4	SO	G	10	X	X	X															Lab QC
11/13	1440	TF2-004/5-SB1064-0204	SB 1064	2	4	SO	G	1		X																
11/13	1445	TF2-004/5-SB1064-0406	SB 1064	4	6	SO	G	1		X																
11/14	0945	TF2-004/5-SB1066-0203	SB 1066	2	3	SO	G	1		X																
11/14	1015	TF2-004/5-SB1057-~~0203~~ 0307	SB 1057	3	3.4	SO	G	1		X																
11/14	1025	TF2-004/5-SB1057-0608	SB 1057	6	8	SO	G	1		X																DS ✓
11/14	1050	TF2-004/5-SB1047-0204	SB 1047	2	4	SO	G	1		X																
11/14	1102	TF2-004/5-SB1047-0608	SB 1047	6	8	SO	G	1		X																
11/14	1200	TF2-SB-RB03-1113	—	—	—	QC	G	7	—	—	—	X	X	X	X											Rinsate Blank
11/14	1205	TF2-W-TB03-1113	—	—	—	QC	G	2	—	—	—	X	—	—	—											AQ trip blank for rinsate blank (GRO)

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
	11-15-13	1345		11-15-13	1345
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 1903 | PAGE 1 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03019	Wilmington MA	D Seiken	978 474 8445	Katahdin Analytical Services / J Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jalkut		Kayleen Jalkut	781 201 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Carner pick up in RI - hand delivery		Scarborough, ME

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								
									PRESERVATIVE USED								
									TYPE OF ANALYSIS	PAH, Metals, total solids	GRO 40ml vials	EXTPH 402 jar					COMMENTS
11/14	0000	TF2-SB-DUP05-1113	—	—	—	SO	G	1	X	-	-						DS ✓
11/14	1240	TF2-SB-0049-SB1049-0204	SB1049	2	4	SO	G	1	X	-	-						
11/14	1255	TF2-0049-SB1049-0810	SB1049	8	10	SO	G	1	X	-	-						
11/14	1305	TF2-0038-SB1038-0204	SB1038	2	4	SO	G	1	X	-	-						
11/14	1325	TF2-0038-SB1038-0810	SB1038	8	10	SO	G	1	X	-	-						
11/14	1340	TF2-0031-SB1031-0204	SB1031	2	4	SO	G	1	X	-	-						
11/14	1345	TF2-0039-SB1039-0406	SB1039	4	6	SO	G	1	X	-	-						
11/14	1355	TF2-0031-SB1031-0810	SB1031	8	10	SO	G	1	X	-	-						
11/14	1415	TF2-0040-SB1040-0204	SB1040	2	4	SO	G	1	X	-	-						
11/14	1430	TF2-0040-SB1040-0810	SB1040	8	10	SO	G	4	X (1)	X (2)	X (3)						D7 (GRO, EXTPH only) ✓
11/14	1500	TF2-0066-SB1066-0204	SB1066	2	4	SO	G	1	X	-	-						D6 ✓
11/14	0000	TF2-SB-DUP06-1113	—	—	—	SO	G	1	X	-	-						D6 ✓
11/14	1445	TF2-0065-SB1065-0204	SB1065	2	4	SO	G	1	X	-	-						

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-15-13	1345	1. RECEIVED BY		
2. RELINQUISHED BY			2. RECEIVED BY		
3. RELINQUISHED BY			3. RECEIVED BY		

COMMENTS

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FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER NE 1904 | PAGE 3 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03019	Wilmington MA	Dana Seiken	978 474 8445	Katahdin Analytical Services / T. Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Kayleen Jalkut		Kayleen Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Carrier pkup in RI - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									PRESERVATIVE USED			6°C	6°C	6°C				
									TYPE OF ANALYSIS	PAH, METALS, TOTAL SOLIDS 4oz jar	6RO 40 ml vials	EXTPH 1/2 jar						
11/14	1455	TF2-004/5-SB1005-0608	SB 1005	6	8	SO	G	4	X	X	X							
11/14	0000	TF2-SB-DUP07-1113	—	—	—	SO	G	3	—	X	X							D7 (GRO, EXTPH only)
11/15	0915	TF2-003-SB1017-011.6	SB 1017	1	1.6	SO	G	4	X	X	X							
11/15	0920	TF2-003-SB1017-0204	SB 1017	2	4	SO	G	1	X	—	—							
11/15	0940	TF2-003-SB1017-0810	SB 1017	8	10	SO	G	1	X	—	—							
11/15	1100	TF2-003-SB1012-0204	SB 1012	2	4	SO	G	1	X	—	—							LAB QC
11/15	1145	TF2-003-SB1012-0810	SB 1012	8	10	SO	G	1	X	—	—							
11/15	1625	TF2-003-SB1011-0204	SB 1011	2	4	SO	G	1	X	—	—							D8 ✓
11/15	1145	TF2-003-SB1014-0204	SB 1014	2	4	SO	G	1	X	—	—							
11/15	1200	TF2-003-SB1014-0810	SB 1014	8	10	SO	G	1	X	—	—							
11/15	1100	TF2-003-SB1015-0204	SB 1015	2	4	SO	G	1	X	—	—							
11/15	0000	TF2-SB003-DUP08-1113	—	—	—	SO	G	1	X	—	—							D8 ✓
11/15	1120	TF2-003-SB1015-0810	SB 1015	8	10	SO	G	1	X	—	—							

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-15-13	1345	1. RECEIVED BY	11-15-13	1345
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** 1908 | **PAGE** 4 **OF** 4

PROJECT NO: 112G0309	**FACILITY:** Wilmington, MA	**PROJECT MANAGER** D. Seiken	**PHONE NUMBER** 978 474 8445	**LABORATORY NAME AND CONTACT:** Katahdin Analytical (Environ) / J Obrin
SAMPLERS (SIGNATURE) K Jarkut		**FIELD OPERATIONS LEADER** K Jarkut	**PHONE NUMBER** 781 801 0457	**ADDRESS** 600 Technology Way
		CARRIER/WAYBILL NUMBER Courier pkg in RI - hand delivery		**CITY, STATE** Scarborough, ME

STANDARD TAT ☐
RUSH TAT ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	P	G	G					
									PRESERVATIVE USED									
									TYPE OF ANALYSIS: GRO 40 ml vial	PAH 1L amber	metals 250ml poly	EX TPH 1L amber	PAH, metals, total rec. Cr, Pb					
11/15	1200	TF2-SB-RB04-1113	—	-	-	QC	G	7	X	X	X	X	—					
11/15	1015	TF2-003-SB1016-0204	SB 1016	2	4	SO	G	1	—	—	—	—	X					
11/15	1025	TF2-003-SB1016-0810	SB 1016	8	10	SO	G	1	—	—	—	—	X					
11/15	1000	TF2-003-SB1018-0204	SB 1018	2	4	SO	G	1	—	—	—	-	X					

K Jarkut 11/15/13

1. RELINQUISHED BY	DATE 11-15-13	TIME 1345	1. RECEIVED BY	DATE 11-15-13	TIME 1345
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER NE 1922 | PAGE 1 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G02710 CO59	Williamsburg MA	D Seiken	978 474 8445	Katahdin Analytical Services / Johnson
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jaikut 112G03019 CO30		K Jaikut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier in RI - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	G	G	G					
									PRESERVATIVE USED									
									TYPE OF ANALYSIS									
									VOC (low) 40ml MeOH ≤6°C	VOC (med) 5ml MeOH ≤6°C	GRO 10ml MeOH ≤6°C	PAH, pest, total solids 4oz ≤6°C	ETPH 4oz ≤6°C					
11/22	1200	TF3-W-TB09-1113	—	—	—	QC	G	5	2	1	2	—	—					soil trip blank
11/22	1245	TF3-001-SB101-0102	101	1	2	SO	G	7	2	1	2	1	1					
11/22	1250	TF3-001-SB101-0204	101	2	4	SO	G	7	2	1	2	1	1					
11/22	1320	TF3-001-SS106-0001	106	0	1	SO	G	7	2	1	2	1	1					
11/22	1323	TF3-001-SB106-0204	106	2	4	SO	G	7	2	1	2	1	1					
11/22	1330	TF3-001-SS107-0001	107	0	1	SO	G	7	2	1	2	1	1					
11/22	1335	TF3-001-SB107-0204	107	2	4	SO	G	7	2	1	2	1	1					D6 ✓
11/22	1415	TF3-001-SS108-0001	108	0	1	SO	G	7	2	1	2	1	1					
11/22	1418	TF3-001-SB108-0204	108	2	4	SO	G	7	2	1	2	1	1					
11/22	0000	TF3-SB-DUP06-1113	—	—	—	SO	G	7	2	1	2	1	1					D6 ✓
11/25	0815	TF2-003-SB1013-0204	1013	2	4	SO	G	1	—	—	—	1	—					
11/25	0820	TF2-003-SB1013-0405	1013	4	5	SO	G	1	—	—	—	1	—					
11/25	0835	TF2-003-SB1019-0204	1019	2	4	SO	G	1	—	—	—	1	—					

TF3
TF2

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
K Jaikut	11/25/13	1405		11/25/13	1405
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** 1923 | **PAGE** 2 **OF** 2

PROJECT NO: 112G03019 CTO 30	**FACILITY:** Wilmington MA	**PROJECT MANAGER** D Seiken	**PHONE NUMBER** 978 474 8445	**LABORATORY NAME AND CONTACT:** Katahdin Anal. Services / Jobin
SAMPLERS (SIGNATURE) Kfackert		**FIELD OPERATIONS LEADER** K Jalkut	**PHONE NUMBER** 781 801 0457	**ADDRESS** 600 Technology Way
		CARRIER/WAYBILL NUMBER Courier pick up RI		**CITY, STATE** Scarborough, ME

STANDARD TAT ☑ **RUSH TAT** ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)											
									G	G	G	G	G	P	G	G				
									PRESERVATIVE USED			≤6°C	≤6°C	NaOH pH>12	≤6°C	HCl ≤6°C	HNO3 pH<2	HCl ≤6°C	H2SO4 pH<2	
									TYPE OF ANALYSIS	PAH Metals total cnidr	EXTPH	GRO	PAH	EXTPH	Metals	VOC	GRO			COMMENTS
										4oz	4oz		40ml	1L amber	1L amb	250ml poly				
11/25	0850	TF2-003-SB1019-0810	1019	8	10	SO	G	4	1	1	2									
11/25	1005	TF2-001-SS1001-0001	1001	0	1	SO	G	1	1	—	—									
11/25	1010	TF2-001-SB1001-0204	1001	2	4	SO	G	1	1	—	—									
11/25	1025	TF2-001-SB1001-0810	1001	8	10	SO	G	1	1	—	—									
11/25	1035	TF2-001-SS1002-0001	1002	0	1	SO	G	1	1	—	—									
11/25	1040	TF2-001-SB1002-0204	1002	2	4	SO	G	1	1	—	—									
11/25	1045	TF2-001-SB1002-0405	1002	4	5	SO	G	1	1	—	—									
11/25	1140	TF2-001-SS1003-0001	1003	0	1	SO	G	4(1)	1(2)	1(2)	2(2)									Dq / also collected for Lab QC
11/25	1145	TF2-001-SB1003-0204	1003	2	4	SO	G	1	1	—	—									
11/25	0000	TF2-SB-DUP09-1113	—	—	—	SO	G	4	1	1	2	2	2	1	3	2				Dq
11/25	1100	TF2-SB-RB05-1113	—	—	—	QC	G	10	—	—	—	2	2	1	3	2				
11/25	1105	TF2-W-TB05-1113	—	—	—	QC	G	4	—	—	—	—	—	—	2	2				ag trip fr unsatt

1. RELINQUISHED BY Kfackert	DATE 11/25/13	TIME 1405	1. RECEIVED BY	DATE 11/25/13	TIME 1405
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** NE 1919 | **PAGE** 1 **OF** 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G02114 ⊙ 30	Southington MA	D. Sexton	978 474 9415	Katahdin Analytical Services (T Chase)
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jarhut		K Jarhut	781 701 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier plum RI - hand delivery		Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: PAH, metals, total solids	GRO	Ex-TPH	VOC (low)	VOC (med)				COMMENTS
									G	≤4°C				40ml	4oz	40ml	40ml		
11/25	1200	TF2-001-SS1009-0001	1009	0	1	SO	G	1	1	–	–								
11/25	1215	TF2-001-SB1009-0204	1009	2	4	SO	G	4	1	2	1								
11/25	1220	TF2-001-SB1009-0810	1009	8	10	SO	G	1	1	–	–								
11/25	1240	TF2-001-SS1008-0001	1008	0	1	SO	G	1	1	–	–								
11/25	1245	TF2-001-SB1008-0204	1008	2	4	SO	G	2	2	–	–						1 bottle	13	Lab QC
11/25	1300	TF2-001-SS1004-0001	1004	0	1	SO	G	1	1	–	–								
11/25	1310	TF2-001-SB1004-0204	1004	2	4	SO	G	1	1	–	–								D10 ✓
11/25	1330	TF2-001-SS1007-0001	1007	0	1	SO	G	1	1	–	–								
11/25	1340	TF2-001-SB1007-0204	1007	2	4	SO	G	1	1	–	–								
11/25	0000	TF2-SB-DUP10-1113	–	–	–	SO	G	1	1	–	–								D10 ✓
11/25	1010	~~TF3~~ TF2-W-TB06-1113	–	–	–	QC	G	5	–	2	–	32	1						
11/25	1515	TF3-001-SB105-0204	105	2	4	SO	G	5	–	~~2~~ 2	–	2	1						Reanalyzed
11/25	1520	TF3-001-SB104-0204	104	2	4	SO	G	5	–	2	–	2	1						Reanalyzed

1. RELINQUISHED BY	DATE 11/25/13	TIME 1525	1. RECEIVED BY	DATE 11/26/13	TIME 1225
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME
COMMENTS					

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** NE 1920 | **PAGE** 1 **OF** 2

PROJECT NO: 112G03019 (TT) 30	**FACILITY:** Wilmington, MA	**PROJECT MANAGER** D. Seiken	**PHONE NUMBER** 978 474 8945
SAMPLERS (SIGNATURE) K Jalkut		**FIELD OPERATIONS LEADER** K. Jalkut	**PHONE NUMBER** 781 801 0457
		CARRIER/WAYBILL NUMBER Courier plus RI - hand delivery	

LABORATORY NAME AND CONTACT: Katahdin Analytical Services / T. Oburn
ADDRESS 600 Technology Way
CITY, STATE Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)										COMMENTS
									PRESERVATIVE USED										
									TYPE OF ANALYSIS	GRO 40ml	EXTPH	Pb, metals, % solids 4oz	4oz						
11/25	1140	TF2-001-SS1003-0001	1003	0	1	SO	G	6	4	1	1								Rest of Lab SC vol
11/27	0800	TF2-001-SS1000-0001	1000	0	1	SO	G	1	—	—	1								
11/27	0805	TF2-001-SB1000-0204	1000	2	4	SO	G	1	—	—	1								
11/27	0820	TF2-001-SB1000-0810	1000	8	10	SO	G	4	2	1	1								
11/27	0900	TF2-001-SS1006-0001	1006	0	1	SO	G	1	—	—	1								
11/27	0905	TF2-001-SB1006-0204	1006	2	4	SO	G	4	2	1	1								
11/27	0915	TF2-001-SS1005-0001	1005	0	1	SO	G	1	—	—	1								
11/27	0920	TF2-001-SB1005-0204	1005	2	4	SO	G	1	—	—	1								DII ✓
11/27	0940	TF2-001-SS1010-0001	1010	0	1	SO	G	1	—	—	1								
11/27	0945	TF2-001-SB1010-0204	1010	2	4	SO	G	2	—	—	2								Lab QC
11/27	0000	TF2-SB-DUP11-1113	—	—	—	SO	G	1	—	—	1								DII ✓

1. RELINQUISHED BY	DATE 11/27/13	TIME 1325	1. RECEIVED BY		DATE 11/27/13	TIME 1325
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY		DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY		DATE	TIME
COMMENTS						

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 4/02R

FORM NO. TINUS-001

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Attn: TestAmerica Sacramento
Jill Kellmann

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Page 1 of 5

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Debra Seiken	(978) 474 8445	(978) 474-847

Address	City	State	Zip Code
250 Andover St Suite 200	Wilmington	MA	01887

Purchase Order #	Proj. Name / No.	~~Katahdin Quote #~~

Bill (if different than above)	Address

Sampler (Print / Sign)	Copies To:
Kayleen Jalkut Kayleen Jalkut	

LAB USE ONLY | WORK ORDER #:

~~KATAHDIN PROJECT NUMBER~~ _____

REMARKS: _____

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO: _____

TEMP°C _____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE
PRESERVATIVES

*	Sample Description	Date / Time coll'd	Matrix	No. of Cntrs.	TOTAL SCENES + DIOXIN - 8oz amb. glass jar	Filt. ☐Y ☒N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt ☐Y ☐
	TF2-004/5-SS1025-000.8	10/18/1045	SO	1	1										
	TF2-004/5-SS1026-000.8	10/18/1055	SO	1	1										
	TF2-004/5-SS1024-000.6	10/18/1105	SO	1	1										
	TF2-004/5-SS1023-000.8	10/18/1110	SO	1	1										
	TF2-004/5-SS1022-000.9	10/18/1118	SO	1	1										
	TF2-004/5-SS1021-000.7	10/18/1130	SO	1	1										
D1 ✓	TF2-004/5-SS1020-0001	10/18/1140	SO	1	1										
	TF2-004/5-SS1032-000.9	10/18/1155	SO	1	1										
	TF2-004/5-SS1031-000.8	10/18/1205	SO	1	1										
D1 ✓	TF2-004/5-SS-DUP01-1018	10/18/0000	SO	1	1										
	TF2-004/5-SS1030-000.6	10/18/1320	SO	1	1										
	TF2-004/5-SS1029-000.6	10/18/1330	SO	1	1										
	TF2-004/5-SS1028-000.8	10/18/1335	SO	1	1										
*	TF2-004/5-SS1027-0001	10/18/1345	SO	3	3										
	TF2-004/5-SS1040-000.9	10/18/1350	SO	1	1										
	TF2-004/5-SS1039-000.9	10/18/1400	SO	1	1										

KK 10/23/13

COMMENTS * = Lab QC volume

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
K Jalkut	10/23/13 1800	FedEx AB# 875937975510	10/23/13 1800		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

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Katahdin ANALYTICAL SERVICES

600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Attn: Test America Sacramento
Jill Kellmann

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Page 2 of 5

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Dabra Seiken	(978) 474 8445	(978) 474 8499

Address 250 Andover St Suite 200 City Wilmington State MA Zip Code 01887

Purchase Order # | Proj. Name / No. | Katahdin Quote #

Bill (if different than above) | Address

Sampler (Print / Sign) Kayleen Jalkut Kayleen Jalkut Peter Seigrid Peter Sd | Copies To:

LAB USE ONLY WORK ORDER #:

KATAHDIN PROJECT NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE / PRESERVATIVES

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	Filt. ☐Y ☐N — DIOXIN - 1L amber glass jar	Filt. ☐Y ☐N — DIOXIN - 8oz amber glass jar
	TF2-SS-RB01-1013	10/18 / 1400	QC	2	2	
	TF2-SS004/5-SS1038-000.7	10/18 1410	SO	1	—	1
	TF2-004/5-SS1037-000.7	10/18/1415	SO	1	—	1
	TF2-004/5-SS1036-000.6	10/18/1425	SO	1	—	1
D2	TF2-004/5-SS1035-0001	10/18 / 1435	SO	1	—	1
D2	TF2-004/5-SS-DUP02-1013	10/18/ 0000	SO	1	—	1
	TF2-004/5-SS1034-000.6	10/18/ 1445	SO	1	—	1
	TF2-004/5-SS1033-000.8	10/18/ 1455	SO	1	—	1
	TF2-004/5-SS1049-000.9	10/21/0920	SO	1	—	1
	TF2-004/5-SS1048-000.8	10/21 /0930	SO	1	—	1
	TF2-004/5-SS1047-000.8	10/21 /0940	SO	1	—	1
	TF2-004/5-SS1046-000.5	10/21/0950	SO	1	—	1
	TF2-004/5-SS1045-000.5	10/21/1000	SO	1	—	1
	TF2-004/5-SS1044-000.5	10/21/1010	SO	1	—	1
	TF2-004/5-SS1042-000.5	10/21/1020	SO	1	—	1
D3	TF2-004/5-SS1041-000.7	10/21/1035	SO	1	—	1

KJ 10/23/13

COMMENTS RB01 - rinsed a hand auger

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
K Jalkut	10/23/13 1800	FedEx AB# 875937975510	—— 10/23/13 1800		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Attn: Test America Sacramento
Jill Kellmann

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Dabra Seiken	(978) 474 8445	(978) 474-849

Address 250 Andover St. Suite 200 City Wilmington State MA Zip Code 01887

Purchase Order # Proj. Name / No. ~~Katahdin Quote #~~

Bill (if different than above) Address

Sampler (Print / Sign) Kayleen Falkut Kfalkut Peter Seiwald

Copies To:

LAB USE ONLY WORK ORDER #:

KATAHDIN ~~PROJECT~~ NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE
PRESERVATIVES

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	Filt. ☐Y ☐N DIOXINS + TOTAL SOLIDS 4oz amber glass	Filt. ☐Y ☐N DIOXINS - 1L amber glass jars	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt ☐Y ☐
DJ ✓	TF2-004/5-SS-DUP03-1013	10/21 / 0000	SO	1	1	—								
	TF2-SS-RB02-1013	10/21 / 1150	QC	2	—	2								
	TF2-SS-004/5-SS1057-000.1	10/21 / 1345	SO	1	1	—								
	TF2-004/5-SS1056-000.6	10/21 / 1355	SO	1	1	—								
	TF2-004/5-SS1055-000.8	10/21 / 1400	SO	1	1	—								
*	TF2-004/5-SS1054-000.6	10/21 / 1405	SO	2	2	—								
	TF2-004/5-SS1053-000.6	10/21 / 1415	SO	1	1	—								
	TF2-004/5-SS1052-000.6	10/21 / 1425	SO	1	1	—								
	TF2-004/5-SS1051-000.8	10/21 / 1430	SO	1	1	—								
	TF2-004/5-SS1050-000.6	10/21 / 1440	SO	1	1	—								
	TF2-004/5-SS1062-000.8	10/21 / 1450	SO	1	1	—								
DJ ✓	TF2-004/5-SS1061-000.6	10/21 / 1455	SO	1	1	—								
DJ ✓	TF2-004/5-SS-DUP04-1013	10/21 / 0000	SO	1	1	—								
	TF2-004/5-SS1067-000.7	10/21 / 1505	SO	1	1	—								
	TF2-004/5-SS1066-000.9	10/21 / 1515	SO	1	1	—								
	TF2-004/5-SS1060-000.5	10/22 / 0815	SO	1	1	—								

COMMENTS * Lab QC volume RB02 - rinsed another auger

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
K Falkut	10/23/13 1700	FedEx AB# 875937975510	10/23/13 1700		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

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Katahdin ANALYTICAL SERVICES

600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

TestAmerica Sacramento
Attn: Jill Kellmann

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Page 4 of 5

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Dabra Seiken	(978) 474 8445	(978) 474 8499

Address	City	State	Zip Code
250 Andover St. Suite 200	Wilmington	MA	01887

Purchase Order #	Proj. Name / No.	~~Katahdin~~ Quote #

Bill (if different than above)	Address

Sampler (Print / Sign)	Copies To:
Kayleen Jalkut / Kayleen Jalkut	Peter Sigrd / Peter Sigrd

LAB USE ONLY WORK ORDER #:

~~KATAHDIN PROJECT NUMBER~~

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE / PRESERVATIVES

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	DIOXIN TOTAL SOLIDS 8oz amber glass jar	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐
	TF2-004/5-SS1059-000.6	10/22/0825	SO	1	1										
	TF2-004/5-SS1058-000.5	10/22/0835	SO	1	1										
DS ✓	TF2-004/5-SS1065-000.5	10/22/0845	SO	1	1										
*	TF2-004/5-SS1064-000.6	10/22/0855	SO	2	2										
	TF2-004/5-SS1063-000.6	10/22/0905	SO	1	1										
✓	TF2-004/5-SS1068-000.5	10/22/0915	SO	1	1										
DS ✓	TF2-004/5-SS-DUP05-1013	10/22/0000	SO	1	1										
	TF2-003-SS1011-000.8	10/22/0940	SO	1	1										
	TF2-003-SS1012-000.7	10/22/0950	SO	1	1										
	TF2-003-SS1013-000.7	10/22/0955	SO	1	1										
✓	TF2-003-SS1014-0001	10/22/1005	SO	1	1										
D6	TF2-003-SS1015-000.8	10/22/1015	SO	1	1										
	TF2-003-SS1016-000.9	10/22/1025	SO	1	1										
	TF2-003-SS1017-000.8	10/22/1055	SO	1	1										
	TF2-003-SS1018-000.8	10/22/1105	SO	1	1										
**	TF2-003-SS1019-000.5	10/22/1115	SO	1	1										

10/23/13

KB

COMMENTS * Lab QC volume ** No extra volume but please perform lab QC on this sample, if you can

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
K Jalkut	10/23/13 1200	FedEx AB# 8759 7975510	10/23/13 1800		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

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Katahdin ANALYTICAL SERVICES

600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Test America Sacramento
Attn: Jill Kellmann

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Page 5 of 5

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Dabra Seiken	(978) 474 8445	(978) 474 8499

Address 250 Andover St. Suite 200 City Wilmington State MA Zip Code 01887

Purchase Order # Proj. Name / No. ~~Katahdin Quote #~~

Bill (if different than above) Address

Sampler (Print / Sign) Kayleen Jalkut Kayleen Jalkut Peter Sievert

Copies To:

LAB USE ONLY WORK ORDER #:

~~KATAHDIN PROJECT NUMBER~~

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE / PRESERVATIVES

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	Filt. ☐Y ☐N DIOXIN + TOTAL SOLIDS 2oz amber glass jar	Filt. ☐Y ☐N DIOXIN - ILAmber 9/oz jar	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt ☐Y ☐N
~~DG~~	TF2-003-SS-DUP06-1013	10/22/ 0000	SO	1	1	1								
	TF2-SS-RB03-1013	10/22/ 1200	QC	2	—	2								
	If ~~NJ~~ 10/23/13	/												
		/												
		/												
		/												
		/												
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		/												
		/												

KJ 10/23/13

COMMENTS RB03- rinsed a disposable aluminum pan (unused)

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
K Jalkut	10/23/13 1700	FedEx AB# 759 37975510	—	10/23/13 1700	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

CUSTOMER COPY

KAS-COC1

TETRA TECH NUS, INC. **CHAIN OF CUSTODY** | **NUMBER** NE 1906 | **PAGE** 1 **OF** 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603.19	Wilmington MA	Debra Seiken	978 474 8445	Test America / J. Kellman
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Kjalkut		Kayleen Jalkut	781 801 0457	880 Riverside Parkway
		CARRIER/WAYBILL NUMBER		**CITY, STATE** (916 373 5600)
		FedEx AB# 8759 3797 5520		West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS, Dioxin TEQ conforms	COMMENTS
									G	≤6°C		
11/13	0820	TF2-004/5-SB1032-0204	SB 1032	2	4	SO	G	1	X			
11/13	0825	TF2-004/5-SB1048-0204	SB 1048	2	4	SO	G	1	X			
11/13	1015	TF2-004/5-SB1026-0204	SB 1026	2	4	SO	G	1	X			
11/13	1045	TF2-004/5-SB1025-2.604	SB 1025	2.6	4	SO	G	1	X			
11/13	1048	TF2-004/5-SB1021-0204	SB 1021	2	4	SO	G	1	X			DY
11/13	1250	TF2-004/5-SB1043-0.10.5	SB 1043	0.1	0.5	SO	G	1	X			
11/13	1320	TF2-004/5-SB1041-0.22.5	SB 1041	2	2.5	SO	G	1	X			
11/13	1405	TF2-004/5-SB1058-0204	SB 1058	2	4	SO	G	2	X			Lab QC
11/13	1440	TF2-004/5-SB1064-0204	SB 1064	2	4	SO	G	1	X			
11/13	0000	TF2-SB-DUP04-1113	—	—	—	SO	G	1	X			DY
11/14	0845	TF2-SB004/5-SB1066-0203	SB 1066	2	3	SO	G	1	X			
11/14	1015	TF2-004/5-SB1057-0304	SB 1057	2.3	3.4	SO	G	1	X			
11/14	1050	TF2-004/5-SB1047-0204	SB 1047	2	4	SO	G	1	X			

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-15-13	1500	1. RECEIVED BY FedEx		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** NB 1905 | **PAGE** 2 **OF** 3

PROJECT NO: 112G03019 CTO WE30	**FACILITY:** Wilmington, MA	**PROJECT MANAGER** Debra Seiken	**PHONE NUMBER** 972 474 8445
SAMPLERS (SIGNATURE) KJaikut		**FIELD OPERATIONS LEADER** Kayleen Jaikut	**PHONE NUMBER** 7/12 610 1457
		CARRIER/WAYBILL NUMBER FedEx AB.# 7759375975520	

LABORATORY NAME AND CONTACT: Test America / J. Kellmann
ADDRESS 880 Riverside Parkway Tel: 513 5600
CITY, STATE West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS - 1oz JAR	DIOXIN - 1L AMBER GLASS	COMMENTS
									G	≤6°C			
11/14	1315	TF2-004/5-SB1038-0204	SB 1038	2	4	SO	G	1	X	—			
11/14	1340	TF2-004/5-SB1031-0204	SB 1031	2	4	SO	G	1	X	—			
11/14	1415	TF2-004/5-SB1040-0204	SB 1040	2	4	SO	G	1	X	—			
11/14	1240	TF2-004/5-SB1044-0204	SB 1044	2	4	SO	G	1	X	—			
11/14	1445	TF2-004/5-SB1065-0204	SB 1065	2	4	SO	G	1	X	—			
11/14	1500	TF2-004/5-SB1066-0204	SB 1066	2	4	SO	G	1	X	—			
11/14	0000	TF2 SB-DUP06-1113 *	—	—	—	SO	G	1	X	—			D6
11/14	1200	TF2 SB-RB03-1113	—	—	—	QC	G	2	—	X			D6
11/15	1025	TF2-003-SB1011-0204	SB 1011	2	4	SO	G	1	X	—			D8 (2 jars)
11/15	1110	TF2-003-SB1012-0204	SB 1012	2	4	SO	G	2	X	—			Lab QC (3 jars)
11/15	0915	TF2-003-SB1017-0116	SB 1017	1	1.6	SO	G	1	X	—			
11/15	0920	TF2-003-SB1017-0204	SB 1017	2	4	SO	G	1	X	—			
11/15	1145	TF2-003-SB1014-0204	SB 1014	2	4	SO	G	1	X	—			

1. RELINQUISHED BY	DATE 11-15-13	TIME 1500	1. RECEIVED BY FedEx	DATE	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS * There is no DUP05 for dioxin & DUP07 for DIOXIN FROM AOC 003 (TF2) (from AOC 003 (TF2))

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TINUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER NJ 1909 | PAGE 3 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington, MA	Dabin Seiken	978 474 8445	Test America / Jill Kellmann
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Haikut		Kayleen Jaikut	781 801 0457	880 Riverside Parkway
		CARRIER/WAYBILL NUMBER		**CITY, STATE** 916-373-5600
		FedEx AB# 8729 3777 5570		West Sacramento, CA 95605

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G								
									PRESERVATIVE USED									
									5oC	4oC								
									TYPE OF ANALYSIS									
									DIOXIN, TOTAL SOLIDS (1x2 GALLON)	DIOXIN - 1L AMBER								
11/15	1100	TF2-003-SB1015-0204	SB 1015	2	4	SO	G	1	X	–								
11/15	1015	TF2-003-SB1016-0204	SB 1016	2	4	SO	G	1	X	–								
11/15	1000	TF2-003-SB1018-0204	SB 1018	2	4	SO	G	1	X	–								
11/15	1200	TF2-SB-RB04-1113	–	–	–	QC	G	2	–	X								
11/15	0000	TF2-SB-DUP08-1113	–	–	–	SO	G	1	X	–								DS

1. RELINQUISHED BY	DATE 11-15-13	TIME 1500	1. RECEIVED BY FedEx	DATE	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME
COMMENTS					

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TINUS-001

DIOX

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** NE 1927 | **PAGE** 1 **OF** 2

PROJECT NO: 112G03019 CTO 30	**FACILITY:** Wilmington, MA	**PROJECT MANAGER** Debra Seiken	**PHONE NUMBER** 978 474 8445	**LABORATORY NAME AND CONTACT:** Test America / J. Kellmann
SAMPLERS (SIGNATURE) K Jalkut		**FIELD OPERATIONS LEADER** Kayleen Jalkut	**PHONE NUMBER** 781 201 0457	**ADDRESS** 880 Riverside Parkway
		CARRIER/WAYBILL NUMBER FedEx AL # 8759 3797 5336		**CITY, STATE** West Sacramento, CA 95605

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS 9071	DIOXIN, 1L Amber	COMMENTS
									G	≤6°C			
									G	≤6°C			
11/25	0815	TF2-003-SB1013-0204	1013	2	4	SO	G	1	1		1	1	
11/25	0835	TF2-003-SB1019-0204	1019	2	4	SO	G	1	1		1	1	
11/25	1005	TF2-001-SS1001-0001	1001	0	1	SO	G	1	1		1	1	
11/25	1010	TF2-001-SB1001-0204	1001	2	4	SO	G	1	1		1	1	
11/25	1035	TF2-001-SS1002-0001	1002	0	1	SO	G	1	1		1	1	
11/25	1040	TF2-001-SB1002-0204	1002	2	4	SO	G	1	1		1	1	
11/25	1140	TF2-001-SS1003-0001	1003	0	1	SO	G	1	1		1	1	D9
11/25	1145	TF2-001-SB1003-0204	1003	2	4	SO	G	1	1		1	1	
11/25	1300	TF2-001-SS1004-0001	1004	0	1	SO	G	1	1		1	1	
11/25	1310	TF2-001-SB1004-0204	1004	2	4	SO	G	1	1		1	1	D10
11/25	0000	TF2-SB-DUP09-1113	—	—	—	SO	G	1	1		1	1	D9
11/25	1330	TF2-001-SS1007-0001	1007	0	1	SO	G	1	1		1	1	
11/25	1340	TF2-001-SB1007-0204	1007	2	4	SO	G	1	1		1	1	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY K Jalkut	11/26/13	1600	1. RECEIVED BY FedEx	11/26/13	1600
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

D10X

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** NJ 1926 | **PAGE** 2 **OF** 2

PROJECT NO: 112G03014 CTO 30	**FACILITY:** Wilmington MA	**PROJECT MANAGER** Debra Selken	**PHONE NUMBER** 978 474 8445	**LABORATORY NAME AND CONTACT:** Test America / J. Kellmann
SAMPLERS (SIGNATURE) KJalkut		**FIELD OPERATIONS LEADER** Kayleen Jalkut	**PHONE NUMBER** 781 801 0457	**ADDRESS** 880 Riverside Parkway
		CARRIER/WAYBILL NUMBER Fed Ex AB # 8759 3797 5336		**CITY, STATE** West Sacramento, CA 95605

STANDARD TAT ☒ **RUSH TAT** ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G								
									PRESERVATIVE USED		≤6°C	≤6°C						
									TYPE OF ANALYSIS		DIOXIN, TOTAL SOLIDS 1613	DIOXIN, 1L AMBER						
11/25	1245	TF2-001-SB1008-0204	1008	2	4	SO	G	2	2	—								Lab QC
11/25	1240	TF2-001-SS1008-0001	1008	0	1	SO	G	1	1	—								
11/25	1205	TF2-001-SB1009-0204	1009	2	4	SO	G	1	1	—								
11/25	1200	TF2-001-SS1009-0001	1009	0	1	SO	G	1	1	—								
11/25	0000	TF2-SB-DUP10-1113	—	—	—	SO	G	1	1	—								D10
11/25	1100	TF2-SB-RB05-1113	—	—	—	QC	G	2	—	2								

1. RELINQUISHED BY K Jalkut	DATE 11/26/13	TIME 1600	1. RECEIVED BY FedEx	DATE 11/26/13	TIME 1600
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

D10X

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** NB 1937 | **PAGE** 1 **OF** 1

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
142030141 Op 30	Wilmington MA	Debra Seiter	978 474 8445	Test America Inc / J. Kellmann
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jarkut		Kayleen Jarkut	781 801 0457	880 Riverside Parkway
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		FedEx AB# 8759 3797 5314		West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS	COMMENTS
									G	4°C		
11/27	0800	TF2-001-SS1000-0001	1000	0	1	SO	G	1	1			
11/27	0805	TF2-001-SB1000-0204	1000	2	4	SO	G	1	1			
11/27	0820	TF2-001-SB1000-0810	1000	8	10	SO	G	1	1			
11/27	0900	TF2-001-SS1006-0001	1006	0	1	SO	G	1	1			
11/27	0905	TF2-001-SB1006-0204	1006	2	4	SO	G	1	1			
11/27	0915	TF2-001-SS1005-0001	1005	0	1	SO	G	1	1			
11/27	0920	TF2-001-SB1005-0204	1005	2	4	SO	G	1	1			D10
11/27	0940	TF2-001-SS1010-0001	1010	0	1	SO	G	1	1			
11/27	0945	TF2-001-SB1010-0204	1010	2	4	SO	G	2	2			Lab QC
11/27	0000	TF2-SB-DUP11-1113	—	—	—	SO	G	1	1			D10

K Jarkut 12/2/13

1. RELINQUISHED BY	DATE	TIME	1. RECEIVED BY	DATE	TIME
K Jarkut	12/3/13	0915	FEDEX	12/3/13	0915
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Date: May 2013 Picture No. 1 Location: AOC 001

Comment: Looking NNW at cleared drilling area on east side of Tank 21 access building

Date: May 2013 Picture No. 2 Location: AOC 003

Comment: Looking SW at cleared drilling area on south side of Tank 21 access building

Date: May 2013 Picture No. 3 Location: AOC 004/5

Comment: Looking NW at cleared drilling area in open field

Date: May 2013 Picture No. 4 Location: B219

Comment: Looking S at cleared drilling area on north side of building

Date: May 2013 Picture No. 5 Location: BSA
Comment: Looking NW at concrete impoundment wall

Date: May 2013 Picture No. 6 Location: BSA
Comment: Looking W at drilling area inside concrete impoundment

Date: Nov 2013 Picture No. 7 Location: AOC 004/5
Comment: DPT drilling using a GeoProbe 6610DT machine

Date: Nov 2013 Picture No. 8 Location: AOC 001
Comment: DPT drilling using a lightweight GeoProbe 425M machine

APPENDIX B

FIELD MODIFICATION RECORDS

TETRA TECH NUS, INC. **FIELD MODIFICATION RECORD**

Site Name: NAVSTA Newport, Tank Farm 2 Location: AOC-003 / AOC-004/005

Project Number: 112G03019 Task Assignment: CTO WE30

To: Kayleen Jalkut Location: Tt Wilmington Date: 10/11/13

Description: Change sample collection method from direct-push using DPT rig to hand collection using stainless steel shovels, trowels, etc.

Reason for Change: Bedrock is very shallow. It outcrops in some of these areas. Estimate bedrock is from 0.5 to 1.0 foot.

Recommended Action: proceed as described

Field Operations Leader (Signature): K Jalkut Date: 10/11/13

Disposition/Action: proceed as described

Project Manager (Signature): Debra Seiler Date: 10/11/13

Distribution:

Program Manager:	J. Trepanowski	Others as Required:
Project Manager:	D. Seiler	K. Keckler (EPA)
Quality Assurance Officer:	T. Johnston	P. Crump (RIDEM)
Field Operations Leader:	K. Jalkut	G. Kemp (Wahbath)
Project File:	112G03019 - 4.4	R. Hazelman (Weavy) D. Ward (Navy)

TtNUS Form 0003

TETRA TECH NUS, INC.

FIELD MODIFICATION RECORD

Site Name: NAVSTA Newport, Tank Farm 2 Location: Buoy Storage Area

Project Number: 112603019 Task Assignment: CTO WE 30

To: K. Jalkut Location: Tt Wilmington Date: 11/11/13

Description: Check to see if there is a floor @ impoundment. – 2 extra borings to 10-ft or refusal. Move sample locations as shown on attached figure.

Reason for Change: EPA and RIDEM comments during site walk

Recommended Action: proceed as shown

Field Operations Leader (Signature): K Jalkut Date: 11-11-13

Disposition/Action:

Project Manager (Signature): [signature] Date: 11/11/13

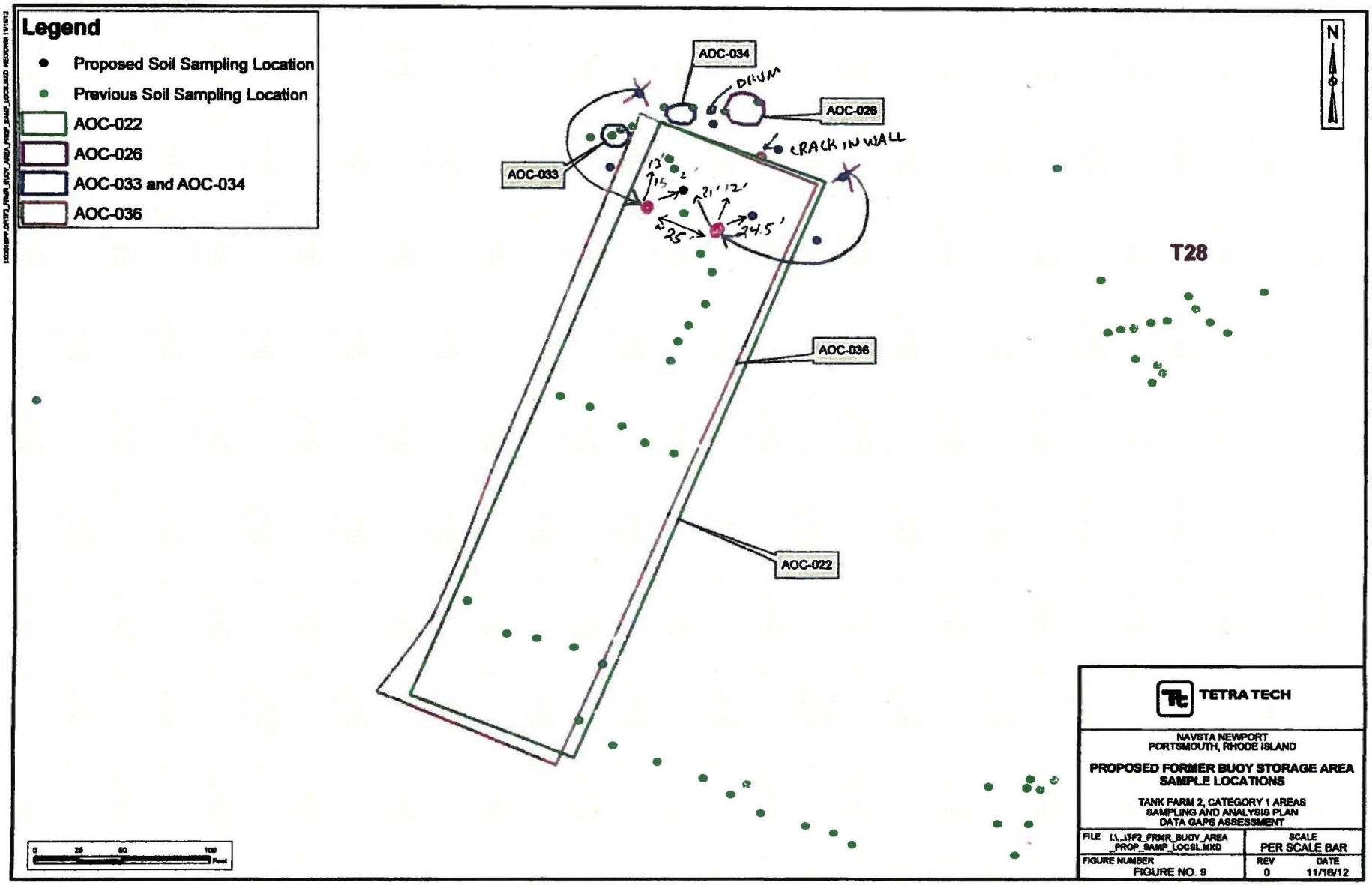
Distribution:

Program Manager:	J. Trepanowski
Project Manager:	D. Seiken
Quality Assurance Officer:	T. Johnston
Field Operations Leader:	K. Jalkut
Project File:	112603019-4.4

Others as Required:
K. Keckler (EPA)
P. Crump (RIDEM)
J. Kemp (Mabbett)
R. Pagtalunan (Navy)
D. Ward (Navy)

TtNUS Form 0003

① Check if there is a floor @ impoundment – 2 extra borings inside to 10-ft



TETRA TECH NUS, INC.

FIELD MODIFICATION RECORD

Site Name: NAVSTA Weeport, Tank Farm 2 Location: B219

Project Number: 112603019 Task Assignment: CTO WE 30

To: K. Jalkut Location: T+ Wilmington Date: 11/11/13

Description: Sampling locations moved as shown on attached figure. Step out locations now 5-10 ft. from original location, not 10-15 ft. Make sure step-out samples are downslope of original

Reason for Change: EPAs comments on Final SAP and at site walk indicated they wanted additional/altered coverage of area. 2005 Sample locations were in front of doors; no need to resample those surface soil locations that were sampled in 2005.

Recommended Action: Proceed

Field Operations Leader (Signature): K Jalkut Date: 11-11-13

Disposition/Action: proceed

Project Manager (Signature): [signature] Date: 11/11/13

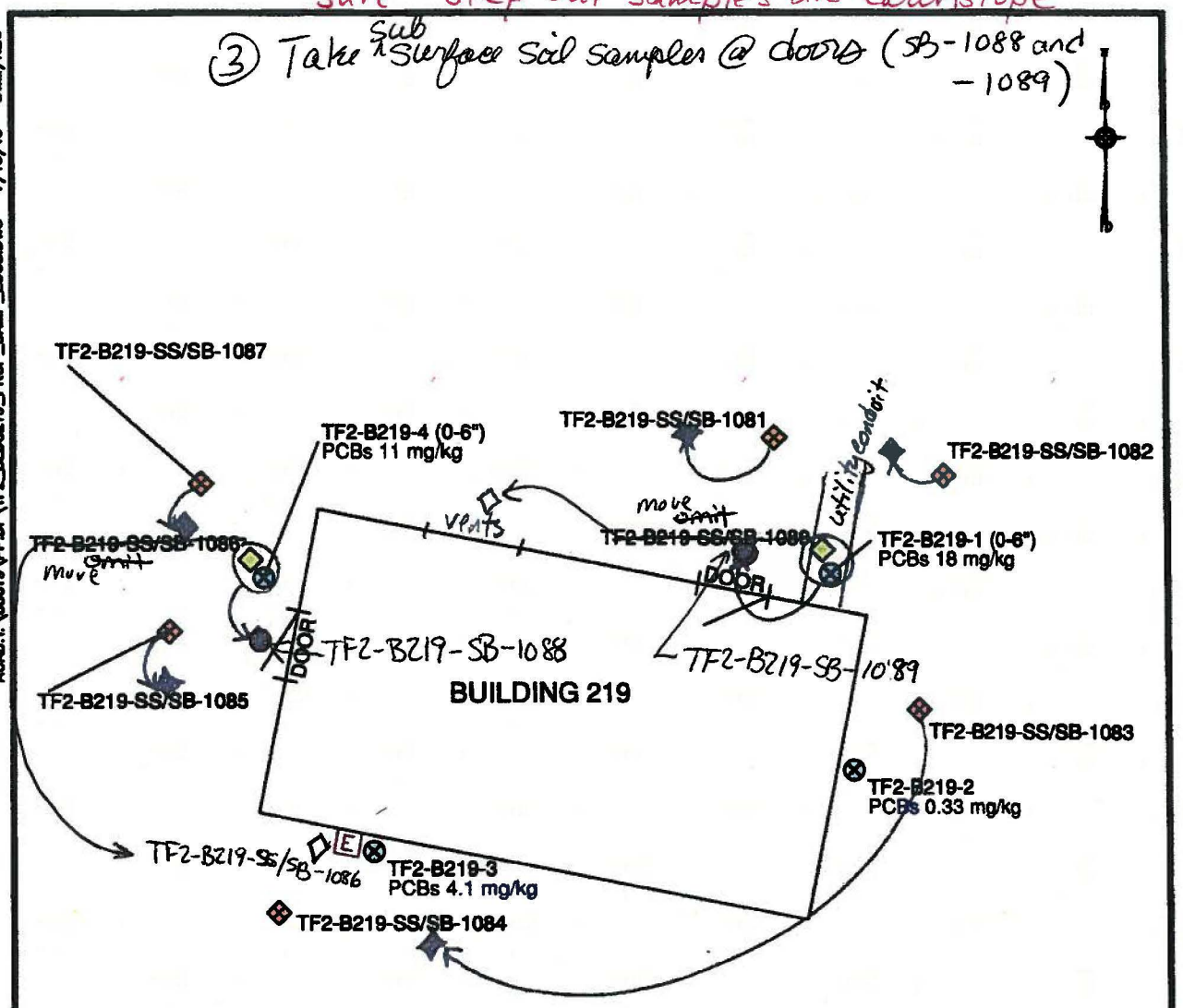
Distribution:

Program Manager:	J. Trepanowski
Project Manager:	D. Seiken
Quality Assurance Officer:	T. Johnston
Field Operations Leader:	K. Jalkut
Project File:	112603019-4.4

Others as Required:
K. Kockler (EPA)
P. Crump (RIDEM)
G. Kemp (Maibatt)
R. Pastaluran (Navy)
D. Ward (Navy)

TtNUS Form 0003

(1) Make step-out lcns 5-10' from original samples
(2) original samples were in front of doors. Make sure step-out samples are downslope
(3) Take Subsurface Soil samples @ doors (SB-1088 and -1089)



LEGEND

- PROPOSED BORING/SAMPLE LOCATION
- PROPOSED STEPOUT LOCATION APPROXIMATELY 10-15 FEET FROM SIRAR LOCATIONS (5-10)
- 2005 SAMPLE LOCATION - TO BE RESAMPLED
- [E] ELECTRICAL BOX

TETRA TECH

NAVAL STATION NEWPORT
PORTSMOUTH, RHODE ISLAND

PROPOSED BUILDING 219 SAMPLE LOCATIONS

TANK FARM 2, CATEGORY 1 AREAS
SAMPLING AND ANALYSIS PLAN
DATA GAPS ASSESSMENT

SCALE	NOT TO SCALE
FILE	\...\TF2_BLDG219_PROP_SAMP_LOCS.DWG
REV	0
DATE	7/15/13
FIGURE NUMBER	FIGURE NO. 5

ACAD: I:\03019\PP DF\TF2_BLDG219_PROP_SAMP_LOCS.DWG 7/15/13 DWM/NEC

APPENDIX C

SOIL BORING LOGS

driller's core 1130

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2 001 SB1000

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-27-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-27-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.5/2'	TF2-001-SB1000-0001 rock nets, dilution, ts		Loose	Orange	S-1A (0-0.3') ROOT MAT, GRASS S-1B (0.3-0.7) SAND - LITTLE SILT, LITTLE GRAVEL (FM sand, 8% f+c SR gravel to 1", 10% fines, no stains no odors)		Dry 0-2 (1x)	SR= ND
	/			Dense	Tan/Brn	S-1C (0.7-1.1') SAME S-C sand, 15% fines no stains, no odors, c. gravel to 1" SR (layer)	SM		JHS= 0.2 (Created)
2	/	S-1 0800		Dense	Brn	S-1D (1.1'-1.5') SAND LITTLE SILT LITTLE GRAVEL (F-C sand, wg, 10% fines, fine gravel to 1/2", SR phyllite chips @ bottom		moisture?	
	1.8/2'	TF2-001-SB1000-0104 same as above						2-4 (1x)	SR=0.0
				Dense	Brn	S-2A (0-0.9') SAND - LITTLE SILT - LITTLE GRAV (F-C sand, wg, 10% fines, fine SR gravel to 1", phyllite chunks/slivers, no stains, no odors			JHS= 0.3
4	/	S-2 0805		Dense	Brn/Gray	S-2B (0.9-1.4') SIMILAR TO S-2A, color change to tan brown - red brn, more f-m sand, tr. c. sand, more f. gravel than c. gravel			
	1.8/2'	no sample to lab			Gray Brown	S-2C (1.4-1.8) SIMILAR TO S-2A, another color change to dk gray w/phyllite slivers			SR= 0.0
	/			Dense	Dk Gray	S-3A (0-1.3') Extremely weathered phyllite, Grade		Saturated THC-like	JHS= 0.3
6		S-3 0810		Dense	Gray/Brn	S-3B (1.3-1.8') SAND - SOME SILT - SOME GRAV (F-C sand, wg, >15% fines, fine SR gravel (mostly phyllite) to 1" (slivers) - no stains no odors			
	1.8/2	no sample to lab							SR= 0.0
				Dense	Brn/Gray	S-4 (0-1.8) SAND - LITTLE SILT - TR GRAV (F-M sand, 10% fines, f gravel to 1", SR (few pieces) no stains or odors			
	/								JHS= 0.2
8		S-4 0815		↓	↓	↓			

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2 001 SB1000

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-27-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-27-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
8									
	1.8/2'	TF2-001-SB1000-0810 poh anbels dioxin fs extra qc		Dense	Gray Brn	S-5A (0-0.7') SAND - some SILT - some GRAVEL (F-C sand, vg, f-c SA gravel to 1" (non phyllite) w/ 1" phyllite pieces (few)		Dry TH-like	SR=0.0
						no stains, no odors, 15% fine		8-10 (2x)	JHS=0.1
10		S-5 0820			DK Gray	S-5B (0.7-1.8') Extremely weathered phyllite			
						EOB @ 10'			

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-001-SB1001

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-25-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-25-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0		6							
	1.6/2	TF2-001-SB1001-0001 PAH METALS DIOXIN TS		Loose	Brn	S-1A (0-0.2') ROOT MAT, GRASS S-1B (0.2-1.4') SAND-LITTLE SILT-SOME GRAVEL (F-M		Dry	SR=0.0
				Loose	Lt Brn	Sand, fr. c. sand, pg, f-c SR gravel to 1", rock fragments (not phyllite) to 1", SA, <10% fines, no stains or odors)	SP-SM		
	/			Dense	Dk Brn	S-1C (1.4-1.6') SAND-LITTLE SILT-TR GRAVEL (F SAND	SP-SM		JHS 0.2
2		S-1 1005		↓	↓	pg, ~10% fines, no stains, no odors, f gravel SR to 1/2" (1 piece)			
	1.8/2	TF2-001-SB1001-0204 PAH METALS DIOXIN TS			BRN	S-2 (0-1.8') SAND-SOME SILT-SOME GRAVEL (F-M, fr. c sand.	SM		SR=0.1
						pg, f-c SR gravel to 1 1/4", stak pieces up to 1", SR, >15% fines no stains, no odors			JHS=0.1
	/								
4		S-2 1010							
	1.7/2	No sample to lab		Loose	Gray Brn	S-3A (0-1.1') SAND-SOME SILT-SOME GRAVEL-similar to S-2, except color to gray brown, and more coarse sand (wet)	SM	Dry	SR=5.0
				↓	↓				
	/			Dense	Brn	S-3B (1.1-1.7') ~~Similar~~ SAND-SOME SILT-TR GRAVEL (F-M			JHS=0.0
6		S-3 1015		↓	↓	sand, pg, f SR gravel to 1/2", 15% fines, no stains or odors			
	1.8/2	No sample		Dense	Brn	S-4A (0-0.4') similar to S-3B		Damp	SR=0.0
				Loose	Gray Brn	S-4B (0.4-1.3') similar to S-3A			
	/			Loose	GRAY	S-4C (1.3-1.8') BROKEN ROCK FRAGMENTS (not phyllik)		Dry	JHS=0.0
8		S-4 1020		↓	↓	↓			

TYPE OF DRILLING RIG: ~~Track-mounted GeoProbe Model 6620~~; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-001-SB1001

START DATE: 11-25-13

COMPLETION DATE: 11-25-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
4									
	1.8/2	TF2-001-SB1001-0810 PAH, metals, tx		Dense	Gray Brn	S-5 (0-1.8') SAND - some silt - some gravel CF-C sand, wg; f-c sr gravel to 1", phyllite mixed in - up to 1", SA	SM	Dry	SR=0.1
						>15% fines, no stains, no odors			JHS=0.1
10	/	S-5 1625				EOB @ 10'			
	/								
	/								
	/								
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: ~~Track-mounted GeoProbe Model 6620~~; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-001-SB1002

START DATE: 11-25-13

COMPLETION DATE: 11-25-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8/2	TF2-001-SB1002-0001 pah, metals, tx, dioxin		LOOSE	BRN	S-1A (0-0.1') ROOT MAT., GRASS			
				Denser	Grey BRN	S-1B (0.1-1.8') SAND, LITTLE SILT-SOME GRAVEL (FC sand, wg, ffc SR gravel to 3/4", SA gravel to 1" (phyllite), ~10% fines	SP-SM	Dry T@0.2 (1x)	SR=0.0
						no stains, no odor			JHS= 0.2
2		S-1 1035							
	1.4'/2	TF2-001-SB1002-0204 pah, metals, tx, dioxin			BRN	S-2 (0-1.4') SAND-SOME SILT-LITTLE GRAVEL (F-C sand, wg, >15% fines, ffc SR gravel to 1 1/2", no stains, no odors)	SM	Damp T@2-4 (1x)	SR= 0.1
									JHS= 0.1
4		S-2 1040							
	0.9'/2'	TF2-001-SB1002-0405 pah, metals, tx, ~~dioxin~~		Denser	BRN	S-3 (0-0.9') similar to S-2, except less silt	SP-SM	T@4-5 (1x) 2 attempts - both refusal @ 5'	SR=0.0
									JHS= 0.1
6		S-3 1045				Refusal @ 5' (2 attempts)			
8		S-4 1050							

TYPE OF DRILLING RIG: ~~Track-mounted GeoProbe Model 6620;~~ Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

PAGE: 1 OF 1

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-001-SB1003

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-25-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-25-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.4'/2'	TF2-001-SS1003-0001 + Lab QC		Loose	Brn	S-1A (0-0.2') ROOTMAT, GRASS		Dry 0-2 (3x)	SR=0.0
		DUP 09 pah, metals, dioxin, gro, extph, ts 1140				S-1B (0.2-0.8') SAND-LITTLE SILT-LITTLE GRAVEL (F-M, tr C. Sand, pg, f. gravel, SR to ½", ~10% fines, no stains, no odors)	SP-SM		
	/				DK Gray	S-1C (0.8-1.4') SAND-LITTLE SILT-LITTLE GRAVEL (F-C sand, wg, f. SR gravel to ½", phyllite pieces up to 1" SR, no stains or odors)		Dry	JHS=0.1
2									
	0.9'/2'	TF2-001-SB1003-0204 pah, metals, dioxin no gro no extph		Dense	Brn	S-2A (0-0.9') SAND-LITTLE SILT-LITTLE GRAVEL (F-M sand, pg, f. SR gravel to ½", ~10% fines, no stains, no odors)	SP-SM	For Moist 2-4 (3x)	SR=0.0
									JHS=0.11
4	/	S-2 1145				Refusal @ 4' EOB (2 attempts)			
	/								
	/								
6									
	/								
	/								
	/								
8									

TYPE OF DRILLING RIG: ~~Track-mounted GeoProbe Model 6620~~; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30
LOGGED BY: K. Jalkut
DRILLED BY (Company/Driller): TDS / D. Newton
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-001-SB1004
START DATE: 11-25-13
COMPLETION DATE: 11-25-13
MON. WELL NO.: NA
CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8'/2'	TF2-001-SS1004-0001 poly metals & dioxin		Loose	Brn	S-1A (0-0.3) ROOT MAT	SP-SM	Dry 0-2(1x)	SR=0.0
						S-1B (0.3-1.8') SAND - LITTLE SILT - LITTLE GRAVEL (F-C sand, wg, ~10% Grvl, f-c SR gravel to 3/4" mixed w/ phyllite chips SA to 1", no stains, no odors			
					↓				JHS=0.1
2		S-1 1300		Denser		- denser closer to bottom	SP-SM		
	1.8'/2'	TF2-001-SB1004-0204 same as above DUP 10		Loose	Gray Brn	S-1C (1A-1.8') similar to S-1B w/ more broken rock		2-4 (1x) Dry	SR=0.0
				Loose	Gray Brn	S-2A (0-0.3') Similar to S-1C LITTLE	SP-SM		JHS=0.0
				Denser	Brn	S-2B (0.3-1') SAND - LITTLE SILT - SOME GRAVEL (F-M sand, tr. C sand, Pg, f-c SR gravel to 1½", few phyllite pcs to 1", ~10% Grvl, no stains, no odors			
4		S-2 1310		↓	Yellow Brn	S-2C (1-1.4') SAND - SOME SILT - LITTLE GRAVEL (F-M sand tr. C sand, Pg, f. SR gravel to ½", SA phyllite to 1", no stains no odors SM		- iron staining area @ bottom - till-like ??	
						Refusal @ 4' EOB @ 4' checked dog house - (likely bedrock) (attempt)			
6									
8									

TYPE OF DRILLING RIG: ~~Track-mounted GeoProbe Model 6600~~ Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING: Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING: Not Applicable
GROUNDWATER LEVELS:
OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

PAGE: 1 OF 1

1600 TB09 SOIL GRO
104 1520 11/25 2 liners
105 1515 11/25 2 liners
VOA, GRO

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30
LOGGED BY: K. Jalkut
DRILLED BY (Company/Driller): TDS / D. Newton
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

Windy, rainy, 60°F, Gusts to ~40 mph

BORING NO.: TF2 001 1005
START DATE: 11-27-13
COMPLETION DATE: 11-27-13
MON. WELL NO.: NA
CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.5/2'	TF2-001-SS1005-0001 ph, nets, tr, dioxin no go no extph		Loose	Dk Gray	S-1A (0-0.3') ROOT MAT, GRASS S-1B (0.3-0.7') WEATHERED ROCK-Phyllite, fissile		Dry OR Chips	SR=0.0
				Dense	Dk Brn	S-1C (0.7-1.5') SAND - SOME SILT - SOME GRAVEL (F-M sand, tr. C. sand, Pg, fc SR gravel, intervals up to 1" of C. sand (tan/brown) in the silty sand ≥15% fines, no stains, no odors	SM	Till like?	JHS=0.3
2	/	S-1 0915							
	/	TF2-001-SB1005-0204 ph nets, tr dioxin no go, no extph (DUP) (collected at extph)		Loose	Red Tan Brn	S-2A (0-0.2') SAND - TR SILT - SOME GRAVEL (CF-C sand) mg, c gravel to 1", SR, 5% fines no stains no odors	SW	2-4 + (1x)	SR=0.0
	1.5/2			Dense	Dk Brown	S-2B (0.2-0.3') SAND - LITTLE SILT (CF sand, tr med sand, Pg, 10% fines, no stains or odors	SP	Dry	JHS=0.3
4		S-2 0920		Loose	Red Tan Brn	S-2C (0.3-0.5') SIMILAR TO S-2A	SW		
	/			Dense	Dk Brn	S-2D (0.5-0.7') SIMILAR TO S-2B	SP		
				Loose	Red Tan Brn	S-2E (0.7-0.9') SIMILAR TO S-2A	SW		
	/			V. Dense 5+ft	Dk Brown Red	S-2F (0.9-1.5') SILT - LITTLE SAND - LITTLE GRAVEL (≥15% fines, F sand, Pg, f SR gravel to 1/2"	ML	Core will not advance till-like Damp	
6	/	6-3				Refusal @ 4' (2 attempts) Tank Top.			
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING: Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING: Not Applicable
GROUNDWATER LEVELS:
OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:
PAGE: 1 OF

Move downs 0950-

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2 001 SB1006

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-27-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-27-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.3'/2'	TF2-001-SS1006-0001 path met ts diox		Dense	brn	S-1A (0-0.25) ROOT MAT, GRASS S-1B (0.25-1.3') SAND - SOME SILT - LITTLE GRAV (F-M sand, tr. C. sand, pg, >15% fines, f gravel to ½" (1-2 pieces) no stains no odor	SM	Dry f-2 (1x)	SR=0.0
	/			↓	↓	↓			JHS=0.4 (heated)
2		S-1 0900							
	1.8/2'	TF2-001-SB1006-0204 path met ts diox gro ext ph		Dense	Gray Brn	S-2A (0-0.8') SAND - LITTLE SILT - LITTLE GRAVEL (F-M Sand tr. f sand, pg, <10% fines, f gravel to ½", SA phyllite frags to ¾", no stains, no odors		Dry 2-4 ft (1x)	SR=0.0
					Dk Gray Red	S-2B (0.8-1.3') SAM. TO ABOVE DISTINCT COLOR change to dk gray w/ deep red coloration - iron stains		Dry	JHS=0.5 heated
4	/	S-2 0905		↓	Tan Brn	S-2C (1.3-1.8') SAND - LITTLE SILT - LITTLE GRAVEL (F-M sand, tr. C. sand, f-fC gravel to 1", no stains no odors			
	/					Refusal @ 4' (tank top) Gatlomatic			SR=
									JHS=
	/								
6	/	S-3 0910							
	/								SR=
	/								JHS=
	/								
8	/	S-4 0915							

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-001-SB1007

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-25-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-25-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8/2'	TF2-001-SS1007-0001 pah metals ts dioxin		Loose	Brn	S-1A (0-0.6') ROOT MAT, GRASS CF-M sand, little silt)		Dry 0-2(ID)	SR= 0.0
				Denser	Brn	S-1B (0.6'-1.1') SAND- LITTLE SILT - TR LITTLE GRAVEL (CF-M sand, pg, ~10% fines, F. SR gravel to ½" (1-2 pieces), Phyllite chips, thin fissile (weathered) to ½", SA, no stains no odors	SP-SM		
2		S-1 1330		↓	Gray Brn	S-1C (1.1-1.8') Similar to S-1B w/ more gravel (little) F-M sand, tr. C. sand, 10% fines, less phyllite chips	SR gravel to 1" SP-SM		JHS= 0.1
	1.8/2	TF2-001-SB1007-0204 pah, metals, ts dioxins		↓	Brn	S-2A (0-1.1') SAND- LITTLE SILT - LITTLE GRAVEL (F-M sand tr. C-sand, pg, F SR gravel to ½" ~10% fines no stains, no odors, no phyllite chunks or slivers	SP-SM	Dry no Xtra vol.	SR= 0.0
				↓	↓				JHS= 0.0
				Loose	Gray	S-2B (1.1-1.3') C. Broken Rock- slate-like	Broken rock	Dry	
4		S-2 1340		Denser	Tan Brn	S-2C (1.3-1.8') SAND- LITTLE SILT- LITTLE GRAVEL (F-C sand, pg, F SR, F SA gravel (not phyllite) to ½", ~10% fines, no stains, no odors	SP-SM		
						Refusal @ 4' EOB @ 4' 1 attempt			

TYPE OF DRILLING RIG: ~~Track-mounted GeoProbe Model 6620~~; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-001-SB1008

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-25-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-25-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						S-1A (0-0.2) ROOT MAT			
	1.4'/2'	TF2-001-SS1008-0001 pah metals to dioxin		Dense	Brown	S-1B (0.2-1.1') SAND-LITTLE SILT-LITTLE GRAVEL (CF-M, tr. C. sand, pg, FtC SR gravel to 1", 1-2 piece C. phyllite, SA to 1" ~10% fines, no odors no stains)	SP-SM	Dry 0-2 (1x)	SR=0.0
	/			Loose	GRAY	S-1C (1.1-1.4') WEATHERED PHYLLITE PIECES	ROCK FILL		JHS=1.0
2		S-1 1240		↓	↓	↓			
	1.8'/2'	TF2-001-SB1008-0204 pah metals to dioxin ~~grain size~~	lab qc no ms no dup	Dense	BRN	S-2A (0-1.7) SAND-LITTLE SILT-LITTLE GRAVEL (F sand tr. med sand, pg, F-SR gravel to 1/2", 1-2 piece C. SA phyllite, 10% fines, no stains, no odors)	SP-SM	Dry 2-4 (1x)	SR=0.0
					↓		↓		JHS=
	/				Grey Brn	S-2B (1.7-1.8') Similar to S-2A, color change only		- color change	
4		S-2 1245		↓	↓	↓	↓		
	/								~~SR=~~
						Refusal @ 4' EOB @ 4' (1 attempt)			~~NO JHS~~
	/								
6		~~S-3 1250~~							
	/								
	/								
8		~~S-4 1255~~							

TYPE OF DRILLING RIG: ~~Track-mounted GeoProbe Model 6600;~~ Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-001-SB1009

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-25-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-25-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.4/2'	TF2-001-SS1009-0001 pah metals dioxins ts no gro no extph		Frozen	Brn	S-1A (0-0.2') ROOT MAT		Dry 0-2 (1x)	SR=0.0
				Loose	Brn	S-1B (0.2-1.4') ~~SAND-LITTLE SILT-LITTLE GRAVEL~~ (FM Sand, tr. C. sand, pg, ftc SR gravel to 1", 10% fines, no odors, no stains	SP-SM		
	/			↓	↓	↓	↓		JHS=0.2
2		S-1 1200		↓	↓	↓	↓		
	1.8/2'	TF2-001-SB1009-0204 pah metals dioxins ts gro extph		Dense	BRN	S-2A (0-1.2') SAND-LITTLE SILT-LITTLE GRAVEL (F-C Sand, wg >10% fines, ftc SR gravel to 1"	SP-SM	Dry 2-4 (1x)	SR=0.0
				↓	↓	few phyllite pieces, SR to 1/2", no stains, no odors	↓		
				Loose	DK Gray	S-2B (1.2-1.3') PHYLLITE CHUNK	ROCK FILL		JHS=0.2
4	/	S-2 1205		↓	↓	S-2C (1.3-1.8') Similar to S-2A	SP-SM		
	1.4/2'	No sample to lab		Loose	BRN	S-3A (0-0.6') SAND-LITTLE SILT-LITTLE GRAVEL (F-C sand, wg, ftc SR, SR gravel to 1/4", phyllite rock frags, ~10% fines, no stains, no odors)	↓	Damp	SR=0.0
				↓	↓		↓		NO JHS
				Loose	Lt Gray	S-3B (0.6-0.9) weathered phyllite	rock FILL mixed	Dry	
	/			Dense	Brn	S-3C (0.9-1.4') Similar to S-3A	SP-SM	Damp	
6		S-3 1210							
	0.7/2'	No sample to lab		Dense	Gray Brn	S-4 (0-0.7') SAND-SOME GRAVEL-SOME SILT (F-C sand, wg ftc SR+SA gravel w/ phyllite chunk, to 1 1/2", 15% fines, no stains, no odors	SM	Silt> than above	SR=0.0
				↓	↓	↓	↓		NO JHS
	/								
8		S-4 1215		↓	↓	↓	↓		

TYPE OF DRILLING RIG: ~~Track-mounted GeoProbe Model 6620;~~ Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

TF2-001-

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: SB1009

START DATE: 11-25-13

COMPLETION DATE: 11-25-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
8									
	1.4'/2'	TF2-001-SB1009-0810 pcbs, metals, ts. ~~grain size~~		Dense	Gray Brn	S-5 (6-14') SIMILAR TO S-4	SM		SR=0.1
				↓	↓	↓			JHS: 0.0
10	/	S-5 1230		↓	↓	↓			
						EOB @ 10'			
	/								
	/								
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: ~~Track-mounted GeoProbe Model 6620~~; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2 001 - SBJ010

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-27-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-27-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.1/2	TF2-001-SS1010-0000; wash wet dec ts no gro no extph		De-ses	Brn	S-1A (0-0.3') ROOT MAT + ~~phyllite~~ coarse chunks, grass S-1B (0.3 - 1.1') SAND - ~~GRAVEL~~ LITTLE SILT - LITTLE GRAVEL	SM	Dry 0x2 +C(1x)	SR=0.0
						(F-M Sand, tr. C. Sand, pg, f. gravel, SR to 1/2", 15% fines, no odors no stains			
	/								JHS=0.0
2		S-1 0940							
	1.8/2	TF2-001-SB1010-0204 wash wet ts dark (LAB QC)	no gro no extph		Dk Brn	S-2A (0-0.6) SAND - LITTLE SILT - LITTLE GRAVEL (F-M sand, vg, f. SR gravel to 1/2", few phyllite stones, no stains no odors 10% fines	SP-SM	Dry +2-4 C(1x)	SB=0.0
					Gray Brn	S-2B (0.6-1.8') SAND - LITTLE SILT - LITTLE GRAVEL (F-C sand, vg, f-c SR gravel to 1" 10% fines, no stains no odors, color change to gray-brn	SP-SM		JHS=0.1
4	/	S-2 0945							
	/					Refusal @ 4' 2 attempts			
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-SB003-M011

START DATE: 11-15-13

COMPLETION DATE: 11-15-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.3/2'	NO SAMPLE; 0-1' PREV. COLLECTED				S-1A (0-0.2') ROOT MAT, GRASS, LEAF LITTER		DRY	NM
				LOOSE	BRN	S-1B (0.2'-0.4') SILTY F. SAND - TR - F SR GRAVEL TO 1/2" >15% FINES, NO STAINS	SM		
	/			DENSER	DK BRN	S-1C (0.4-1.3') SAND - SOME GRAVEL - SOME SILT		DAMP	
						(MOSTLY F. SAND, PG, F-C SR GRAVEL TO 1 1/2", F-C SA TO ANG. GRAVEL (PHYLLITE PIECES) TO 1", >15%			
	/					FINES, NO STAINS			
2		S-1 1015							
	1.3/2'	TF2-003-SB10111-0204		DENSER	DK BRN	S-2A (0-0.5') SILTY F. SAND - TR F GRAVEL, SR, TO 1/2",	SM	DAMP	SR=0.0
						>15% FINES, NO STAINS)			JHS=0.1
	/	DIOX PAH METALS LAB QC		LOOSE	DK GRAY	S-2B (0.5'-0.65') WEATHERED ROCK INTERVAL - PHYLLITE	ROCK INTERVAL	DRY	
				DENSER	DK BRN	S-2C (0.65'-0.8') SIMILAR TO S-2A	SM	DAMP	
	/			LOOSE	DK GRAY	S-2D (0.85-0.95') SIMILAR TO S-2B	ROCK INTERVAL	DAMP DRY	
4		S-2 1025		DENSER	DK BRN	S-2E (0.95-1.3') SIMILAR TO S-2C	SM	DAMP (FINES HOLDING WATER)	
	0.6/1'	NO SAMPLE		LOOSE	DK BRN	S-3 (0-0.6') SAND - LITTLE GRAVEL - SOME SILT	SM	DAMP	NM
						(MOSTLY F. SAND, TR MED SAND, PG, F SR GRAVEL TO 1/2",			
	/					F SA GRAVEL (PHYLLITE PIECES TO 1/2", >15% FINES, NO STAINS			
5		S-3 1038				REFUSAL @ 5' EOB @ 5'			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

R 5'

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-003-SB1012

START DATE: 11-15-13

COMPLETION DATE: 11-15-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.5/2'	NO SAMPLE; 0-1' PREV.			BRN	S-1A (0-0.3') ROOT MAT, LEAF LITTER, GRASS, TWIGS		DRY	NM
				LOOSE	DK BRN	S-1B (0.3'-0.7') SAND-LITTLE GRAVEL-LITTLE SILT	SP-SM		
	/	COLLECTED				(MOSTLY F SAND, PG, F-C SR GRAVEL TO 1", TR PHYLLITE PIECES, SA, TO 1", ~10% FINES, NO STAINS)			
				LOOSE	LIGHT GRAY	S-1C (0.7-2') ROCK INTERVAL, WEATHERED, UP TO 1½"	ROCK INTERVAL	DRY	
	/					(NOT PHYLLITE)			
				LOOSE	BRN	S-1D-(1-1.5') SIMILAR TO S-1B, EXCEPT DEGREE OF COLORATION	SP-SM	DRY	
	/			↓	↓	↓	↓		
2		S-1 1100		↓	↓	↓			
	1.1/2'	TF2-003-SB1012-0204		DENSER	BRN	S-2A (0-0.3') SAND-SOME SILT-TR GRAVEL	SM	SILTIER THAN ABOVE	SR=0.1
						(MOSTLY F SAND, PG, >15% FINES, F, SR GRAVEL TO ½"			JHS=0.2
	/	DIOX PAH METALS LAB QC				NO STAINS			
				LOOSE	SR GRAY	S-2B (0.3-0.5') WEATHERED CRUSHED PHYLLITE PIECES	ROCK INTERVAL	DRY	
	/			DENSER	DK BRN	S-2C (0.5'-0.9') SAND-SOME SILT-LITTLE GRAVEL	SM	DAMP - A LITTLE MORE GRAVEL THAN ABOVE	
						(MOSTLY F. SAND, PG, F SR GRAVEL TO ½", TR % OF WEATHERED PHYLLITE SLIVERS, >15% FINES, NO STAINS			
	/							ADD VOL NEEDED-1X	
4		S-2 1110		↓	↓	↓	↓		

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: PAGE: 1 OF 2

1110 LOOSE LIGHT GRAY S-2D (0.9-1.1') BROKEN ROCK PIECES ROCK INTERVAL DRY

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-003-SB1012

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-15-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-15-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
4	1.3'/2'	NO SAMPLE TO LAB		DENSER	BRN	S-3 (0-1.3') SAND - LITTLE GRAVEL - SOME SILT	SM	DAMP	NM
				↓		(MOSTLY F SAND, PG, TR MED SAND, F SR GRAVEL TO	↓		
				↓		1/2", TR % OF PHYLLITE SLIVERS/CHIPS, >15% FINES			
6	/	S-3 1120		↓		NO STAINS	↓		
	1.5/2'	NO SAMPLE TO LAB		DENSER	DK BRN	S-4A (0.0-0.3') SAND - LITTLE GRAVEL - SOME SILT	SM	DAMP	
				↓		(MOSTLY F SAND, TR MED SAND, PG, F SR GRAVEL TO	↓		
	/			↓		1/2", F SA PHYLLITE SLIVERS TO 1/2", >15% FINES,			
				↓		NO STAINS	↓		
	/			LOOSE	WHITE	S-4B (0.3-0.5') ROCK, WEATHERED, FILL	ROCK INTERVAL	DRY	
	/			DENSER	DK BRN	S-4C (0.5-1.5') SAND - SOME GRAVEL - SOME	SM	DAMP	
	/			↓	↓	SILT (MOSTLY F SAND, TR MED SAND), PG, F+C	↓	↓	
	/			↓	↓	SR GRAVEL TO 1", F+C PHYLLITE SLIVERS TO 1", SA TO	↓	↓	
	/			↓	↓	ANGULAR, GLASS SHARDS, METALLIC DEBRIS, BRICK;	↓	↓	
	/			↓	↓	>15% FINES, NO STAINS	↓	↓	
	/	↓		↓	↓	↓	↓	↓	
8	/	S-4 1135		↓	↓	↓	↓	↓	

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-003-SB1012

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-15-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-15-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0	1.7/2'	TF2-003-SB1012-0810		LOOSE	LIGHT GRAY-BRN	S-5A (0-0.3') SAND-SOME SILT-LITTLE GRAVEL (MOSTLY F-M SAND, PG, >15% FINES, FEW SR GRAVEL TO 1", POWDERED MATERIAL, NO STAINS	SM	DRY	SR=0.0 JHS=
		PAH, METAL		LOOSE	WHITE/GRAY	S-5B (0.3-0.6') ROCK FILL INTERVAL, WHITE/GRAY WEATHERED, NOT PHYLLITE	ROCK FILL		
						S-5C (0.6'-1.3') SAND-SOME GRAVEL-SOME SILT (MOSTLY F-M SAND, PG, FEW PIECES OF F SR GRAVEL TO 1/2", MOSTLY WEATHERED BROKEN PHYLLITE SLIVERS/CHUNKS UP TO 1 1/4", >15% FINES, NO STAINS)	SM	MORE GRAVEL MIXED IN THAN ABOVE ADD. VOC REQUESTED 1X	
10		S-5 1145			DK GRAY	S-5D (1.3'-1.7') WEATHERED PHYLLITE, PIECES UP TO 1 1/2"; LESS FISSILE, CHUNKY PIECES AS OPPOSED TO THIN SLIVERS)	BEDROCK OR FILL?		
						END OF BORING @ 10'			

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-003-SB1013

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-25-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-25-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.6/2	NO SAMPLE - 0-1' 0-1 PREV. COLLECTED		LOOSE	BRN	S-1A (0-0.2') ROOT MAT, GRASS, TOP SOIL S-1B (0.2-0.8') SAND-LITTLE SILT-LITTLE GRAVEL	SP-SM	Dry	SR= 0.0
				LOOSE	BRN	CF-M sand, tr. C. sand, Pg, f-c SA+SA gravel to 1" (incl phyllite), no stains, no odors, NPNS fines	↓		JHS= 0.0
				LOOSE	DK GRAY	S-2 RK (0.8-0.95') WEATHERED PHYLLITE INTERVAL	ROCK INTERVAL	Dry	
2		S-1 0810		LOOSE	TAN BRN	S-1D (0.95-1.6') SIMILAR TO S-1B, except lighter color	SP-SM		
	1.5'/2'	TF2-003-SB1013-0204 PAH, metals, TS, dioxin		↓	↓	S-2A (0-0.8') SAND-LITTLE SILT-LITTLE GRAVEL-SIMILAR TO S-1D	SP-SM	Dry (24,2X)	SR=0.1
					GRY BRN	S-2B (0.8-1.5') SIMILAR TO S-2A, except color change	SP SM		JHS= 1.1
4		S-2 0815							
	0.7/1	TF2-003-SB1013-0405 PAH, metals, TS, Dioxin				S-3 (0-0.7') SIMILAR TO S-2B, w/ more phyllite pieces up to 1", SA	SP-SM	1st refusal @ 5' - 2 more attempts w/ refusal @ 5' - (15' total)	SR= 0.0
5									JHS= 0.0
						Refusal @ 5' (3X) - concrete in tip on tank top?			
6		S-3 0820							
8									

TYPE OF DRILLING RIG: ~~Track-mounted GeoProbe Model 6620~~; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

TF2-

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: 003-SB1014

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-15-13

LOGGED BY: ~~K. Jalkut~~ M. Horten

TRANSCRIBED BY:

COMPLETION DATE: 11-15-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						ROOT MAT 2"			
	2.0/2	NO SAMPLE - previously collected	sand / gravelly sand		BROWN	(F) Sand - little silt, trace small gravel	SP-SM	DRY	N.M
						(F) Sand - little silt, few phyllitic fragments up to 1.5", smaller phyllite throughout			
	1.9/2					(F) Sand - little silt, few angular to subangular gravel up to 1.5" some phyllite			
2									
	1.4/2	TF2-003-SB1014-0204 1145	PAH Metals Dioxin / little Black Material / gravelly sand		Grey Brown	(F) Sand - little silt, few small gravel up to 0.5"		DRY	
					Black	pulverized cobble Black material (F-M) grained, shiny, possible asphalt			
	/				DK. Brown	(F) Sand - little silt, few small gravel up to 0.5"	SP-SM	DRY	
4								MOIST	
	1.5/2	NO SAMPLE			DK. Brown	(F) Sand - little silt, few angular to sub angular gravel up to 0.5"	SP-SM		
	/								
6						Fractured phyllitic fragment			
	0.8/2	NO SAMPLE	cobble / gravelly sand		Lt. Grey	pulverized cobble			
						(F) Sand - little silt, few small angular to sub angular gravel up to 0.5"			
	/								
8						SEE NEXT PAGE			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: ~~SR=PID reading over open liner, JH3=PID jar headspace reading~~

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

TF2 -

BORING NO.: 003-SB1014

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-15-13

LOGGED BY: ~~K. Jellett~~ M. Horton

TRANSCRIBED BY:

COMPLETION DATE: 11-15-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
8									
	1.3/2	TF2-003-SB1014-0810 1200	PAH METALS gravelly sand		Brown	(F) Sand - little silt, few gravels up to 1.5" about 50% are phyllite	SP-SM	MOIST	
	/		cobble			pulverized cobble			
10									
	/					END OF BORING			
	/								
12									
	/								
	/								
6									
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: ~~SP=PID reading over open liner; HS= PID for headspace reading~~

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-003-SB1015

START DATE: 11-15-13

COMPLETION DATE: 11-15-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						Root Mat 2"			
	1.7/2	NO SAMPLE - previously collected	gravelly Sand		Brown	(F) Sand - little silt, little small gravel up to 0.5" mostly consisting of phyllite	SP-SM	DRY	NM
					Grey/Brown	(F) Sand - little silt, little small subangular to angular gravel up to 0.5", trace (M-C) Sand			
	/								
2						Large cobble - pulverized			
	1.6/2	TF2-003-SB1015-0204 1100	PAH Metals Diesin cobble			SAA	SP-SM	DRY	0.2
					Light Grey	Pulverized cobble layer with interspersed (F) sand layers - little silt			
	/								
4									
	1.9/2	NO SAMPLE	gravelly Sand cobble		Brown	(F) Sand - little silt, few small angular to sub angular gravel up to 0.5", trace (M) sand		DRY	NM
					Lt. Grey	Cobble - pulverized		MOIST	
	/		gravelly sand		Brown/ Lt. Grey	(F) Sand - little silt / Cobble - pulverized			
6					Brown	(F) Sand - little silt, few small angular to sub angular gravel up to 0.5", trace (M) Sand			
	1.3/2	NO SAMPLE			Brown/ Grey	SAA		DRY	NM
						pulverized cobble			
	/				Dk. Brown			MOIST	
8						SEE NEXT PAGE			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: ~~SB=PID reading over open liner, JHS=PID jar headspace reading.~~

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-003-SB1015

START DATE: 11-15-13

COMPLETION DATE: 11-15-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
8									
	1.7/2	TF2-003-SB1015-0810 1120	PAH METHL gravelly Sand		Brown	(F) Sand - little silt, some gravel 0.5-1" - trace (M) Sand	SP	MOIST	
			Sand		Brown	cobble - pulverized (F-M) Sand - little silt, trace small gravel up to 0.25"			
	/								
10			Sandy Silt		DK Brown	Sandy Silt - little (F) sand, trace (C) Sand	ML		
	/					END OF BORING			
	/								
12									
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: ~~SB-PID reading over open liner, JHG - PID for headspace reading~~

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30
LOGGED BY: ~~K. Dalkot~~ M. Horton
DRILLED BY (Company/Driller): TDS / D. Newton
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: TF2-003-SB1016
START DATE: 11-15-13
COMPLETION DATE: 11-15-13
MON. WELL NO.: NA
CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						Rock Mat 2"			
	1.2/2	NO SAMPLE - previously collected	Silty Sand		Brown	(F) Sand - little silt, trace (C) Sand	SP	DRY	NM
						2" stone in tip - NO RECOVERY BELOW			
2	/								
	0.4/2	TF2-003-SB1016-0204 1015	PAH Metals Dioxin (3 borings for volume)			(F) Sand, little silt, trace small gravel up to 0.25"	SP	DRY	2.4
						VERY LOW RECOVERY - PUSHED 2" COBBLE			
4	/								
	1.5/2	NO SAMPLE	gravelly Sand		DK Brown	(F) Sand - little silt, trace (C) sand, few angular to subangular gravel up to 1"	SP-SM	DRY	NM
						SAA - gravel consists of more phyllite		MOIST	
6	/								
	1.6/2	NO SAMPLE			DK. Brown / DK. Grey	SAA (F-M) Sand - little silt, few small gravel - mostly phyllite up to 1"		MOIST	NM
						large Cobble in bottom 0.4 of steel			
8	/					SEE NEXT PAGE			

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-003-SB1016

START DATE: 11-15-13

COMPLETION DATE: 11-15-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
8	1.3/2	TF2-003-SB1016-0810 1035	PAH Metals gravelly Sand		DK grey/ Brown	(F)Sand - little silt - some phyllite fragments up to 1.5"	SP-SM	MOIST	0.1
						~~Large~~ Large cobble			
10			Bedrock			Phyllite in tip - fairly competent			
						END OF BORING			
12									

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-003-SB1017

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

ELEVATION FROM:

START DATE: 11-15-13

COMPLETION DATE: 11-15-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.6'/2'	NO SAMPLE; 0-1' PREVIOUSLY COLLECTED				S-1A (0-0.2') ROOTMAT, GRASS WITH LITTLE		DRY	NM
				LOOSE	BRN	S-1B (0.2-0.7') SAND-SOME SILT-TR GRAVEL	SP-SM		
					↓	(MOSTLY F SAND, PG, ~10% FINES, F-C SA GRAVEL TO 1" (PHYLLITE CHIPS)) NO STAINS			
				LOOSE	BRN	S-1C (0.7-1.1') SAND-SOME GRAVEL-SOME SILT	SM	SILTIER THAN ABOVE	
					↓	(MOSTLY F. SAND, PG, F-C SR GRAVEL TO 1" (not phyllite), F-C SA & ANG. GRAVEL (PHYLLITE PIECES) TO 1", >15% FINES, NO STAINS			
		TF2-003-SB1017-011.6 XTRA SAMPLE BASED ON USUAL FINDING OF			JET BLACK	S-1D (1.1-1.2') SAND-SIZE MATERIAL W/ SHINY SPECS (MOSTLY F. SAND SIZE - UNIDENTIFIED MATERIAL, LIGHT)	SP? GROUND ASPHALT	DRY: COLLECT AS AN XTRA SAMPLE - EXTRA VOL 3X	SR=0.1
		JET BLACK MATERIAL DIOX PAH METALS		LOOSE	BRN	S-1E (1.2-1.6') SIMILAR TO S-1C	SM		JHS=0.2
2		S-1 0915			↓	↓			
	1.8'/2'	TF2-003-SB1017-0204		LOOSE	LIGHT GRAY	S-2A (0-0.6') WEATHERED ROCK-SLATE-LIKE W/ IRON STAINS	ROCK INTERVAL	DRY	SR=0.1
				DENSER	DARK BRN	S-2B (0.6-1.8') SAND-SOME GRAVEL-SOME SILT	SM.	RETURNED FOR ADD. VOL DX	JHS=0.1
		DIOX METALS PAH				(MOSTLY F SAND, PG, F-C SR GRAVEL TO 1½" (NOT PHYLLITE) F-C SA & ANG GRAVEL TO 1" (PHYLLITE), >15% FINES, NO STAINS)			
				↓	↓		↓		
4		S-2 0920							

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

TF2-SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: 003-1017

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-15-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-15-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
4						A			
	1.1'/2'	NO SAMPLE TO LAB		DENSER	BRN	S-3 (0-1') SAND-SOME GRAVEL-SOME SILT	SM	DRY	NM
					↓	(MOSTLY F SAND, TR MED SAND, PG, F+C SR GRAVEL TO 1", F SA GRAVEL (PHYLLITE PIECES) TO ½", >15% FINES			
					↓	NO STAINS			
				LOOSE	LIGHT GRAY	S-3B (1-1.') ROCK CHIPS - PUSHED A ROCK AT BOTTOM	ROCK INTERVAL		
				↓	↓	↓			
6		S-3 0925		↓	↓	↓			
	1.2/2'			LOOSE	TAN BRN	S-4A (0-0.2') SILTY F SAND (MOSTLY F. SAND, PG,	SM	DRY	
						>15% FINES, NO STAINS			
				LOOSE	DK GRAY	S-4B (0.2-0.4') PHYLLITE ROCK CHIPS-WEATHERED	ROCK INTERVAL		
						S-4C (0.4-0.6') SIMILAR TO S-4A	SM		
				↓	DK GRAY BRN	S-4D (0.6-1.2') SAND-SOME GRAVEL-SOME SILT	SM	MOIST	
				↓	↓	(MOSTLY F-M SAND, PG, >15% FINES, NO STAINS	↓		
				↓	↓	F+C SR GRAVEL TO 1¼", F+C PHYLLITE CHIPS TO 1")	↓		
8		S-4 0930		↓	↓	↓	↓		
	1.7'/2'	TF2-003-SB1017-0810 ~~DUP~~ PAH METALS		LOOSE	LIGHT GRAY	S-5A (0-0.6') WEATHERED ROCK- SLATE/PHYLLITE	ROCK INTERVAL	DRY	
				LOOSE	BRN	S-5B (0.6-1.7') GRAVEL-LITTLE SAND-LITTLE SILT (MOSTLY F SA TO ANG PHYLLITE CHIPS-BROKEN, F-M SAND, PG, ~10% FINES, NO STAINS)	GP-GM	~~DRY~~ MOIST	SR=0.0 JHS=1.6
10'	↓	↓		DENSER	RED-BRN	S-5C (1-1.7') SAND-SOME GRAVEL-LITTLE SILT (MOSTLY F-M SAND, PG, F+C SR GRAVEL TO 1¼", F+C PHYLLITE CHUNKS TO 1", NO STAINS	SM	MOIST	

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-003-SB1018

START DATE: 11-15-13

COMPLETION DATE: 11-15-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						Root Mat 2"			
	1.3/2	NO SAMPLE - previously collected	Silty Sand		Brown	(F) Sand - little silt	SP	DRY	NM
					Brown/Grey	(F) Sand - little silt - trace angular gravel up to 1.5"			
	/				Black	Black shiny material (F-M) grained - possibly asphalt			
2			Weathered Rock		Grey	weathered Phyllite - extremely weathered			
	1.3/2	TF2-003-SB1018-0204 1000	PAH Metals Dioxin gravelly sand		Brown/Tan	(F-M) Sand - trace silt, few gravel (angular to sub angular) up to 1", poorly graded	SP	DRY	0.5
	/								
4									
	1.5/2	NO SAMPLE				large 8" gravel in top		MOIST	NM
					Brown/Tan	(F-M) Sand - trace silt, little small rounded to angular gravel, trace large gravel up to 2"			
	/								
6						Phyllite in tip			
	/					Refusal - END OF BORING			
	/								
8									

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: SB1018

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-003-SB1019

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-25-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-25-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8/2	NO SAMPLE 0-1' PREV. COLLECTED		Loose	BRN	S-1A (0-0.8') ROOT MAT, LITTLE C. GRAVEL to 3/4", LITTLE SILT		Dry	SR=0.0
				Loose	GRAY/WHT	S-1B (0.45-0.6) C. GRAVEL (2 pieces, not phyllite) S-1C (0.6-1.1') SAND - LITTLE SILT - LITTLE GRAVEL	ROCK FILL		
	/			Loose	DK BRN	(F-M sand, tr. C. sand, pg, frc SR gravel to 1", ~10% fines, no stains no odors	SP-SM		JHS=0.2
2		S-1 0830		Loose	GRAY/WHT	S-1D (1.1-1.3') C. GRAVEL - similar to S-1B	ROCK FILL		
	0.9'/2'	TF2-003-SB1019-0204 PAH, METALS, TB, DIOXIN		Loose	DK BRN	S-1E (1.3'-1.8') similar to S-1C w/phyllite pieces	SP-SM	2-4 (1X)	
				Loose	DK BRN	S-2A (0-0.7') similar to S-1E	SP-SM	DRY	SR=0.0
	/			↓	↓	S-2B (0.7-0.9')			JHS=0.1
4		S-2 0835		↓	↓	↓			
	1.4/2			LOOSE	DK GRAY	S-3A (0-1') WEATHERED PHYLLITE, BROKEN ROCK	ROCK INTERVAL	DRY	SR=0.0
				DENSER	DK GRAY BRN	S-3B (1-1.4') SAND - SOME SILT - LITTLE GRAVEL (F-M w/ tr. C. sand, pg, phyllite fragments SAUP to 1", 15% fines, no stains, no odors)	SM	Damp	
	/			↓	↓	↓	↓		JHS=0.1
6		S-3 0840		↓	↓	↓	↓		
	1.2'/2'			↓	↓	S-4 (0-1.2') SAND - SOME SILT - SOME GRAVEL (F-M, tr. C sand, pg, frc SR gravel to 1", v. few pieces of SA phyllite to 1/2", >15% fines, no stains, no odors)	SM	Damp - TILL LIKE	SR=0.0
				↓	↓	↓	↓		JHS=0.1
	/			↓	↓	↓	↓		
8		S-4 0845		↓	↓	↓	↓		

TYPE OF DRILLING RIG: ~~Track-mounted GeoProbe Model 6620~~; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-003-SB1019

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-25-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-25-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	0.9/2'	TF2-003-SB1019-0810 PAH, metals, TS, GRO, EXTPH	(NO DIOXIN)	DENSE	DK GRAY BRN	S-5 (0-0.9') SIMILAR TO S-4	SM	DAMP TILLLIKE	SR=0.1
									JHS = 0.2
10	/	S-4 0850 5				EOB @ 10'			
	/								
	/								
	/								
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: ~~Track-mounted GeoProbe Model 6620;~~ Lightweight Geoprobe Model 420M machine ✓

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

TF2-

BORING NO.: CX04/2-SB1020

START DATE: 11/13/13

COMPLETION DATE: 11/13/13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	NO SAMPLE - previously collected	gravelly Sand some silt		Brown	root mat 3" (F) Sand - some silt, trace angular gravel upto 0.5"	SM-SP	DRY	NM
					Brown/	↓			
	1.9/2				Grey	(F-M) Sand - some silt, angular gravel up to 1"			
2			~ Bedrock		Grey	↓ weathered phyllite - extremely weathered		↓	
	/					Refusal - END OF BORING			
	/								
4									
	/								
	/								
6									
	/								
	/								
8									

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: ~~SB=PID reading over open liner; IHS= PID jar headspace reading~~

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-ADC 004/5-SB 1021

START DATE: 11-13-13

COMPLETION DATE: 11-13-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0'	/	NO SAMPLE 0-1' PREVIOUSLY COLLECTED FOR ANALYSIS			BRN	S-1A (0-0.2') ROOT MAT			
				LOOSE	BRN-GRAY	S-1B (0.2-0.7') SAND & GRAVEL-LITTLE SILT (f-m sand, pg, f-c SA to arg. gravel to 1", f. SR	SP-SM	DRY	NM
	1.7'/2'			↓	↓	gravel to 3/4", weathered quartz nodule, ~10% non-			↓
				↓		plastic fines, no stains			
	/			Loose	DK-GRAY	S-1C (0.7-1.1') WEATHERED PHYLLITE	ROCK INTERVAL		
				LOOSE	BRN-GRAY	S-1D (1.1-2') SAND & GRAVEL-SOME SILT (f-m sand, pg, f-c SA gravel to 1", ~10% non-	GP-GM	MORE GRAVEL THAN SAND	
	/			↓	↓	plastic fines, no stains			
2		S-1 1045hr		↓	↓	↓			↓
	1.8'/2'	TF2-004/5-SB1021-0204 TF2-SB-DUP04-1113 (0006 hrs)		Denser	GRAY-BRN	S-2A (0-0.5') SAND & GRAVEL-SOME SILT	SM	DRY	SR=0.0
				↓	↓	(f-m sand, pg, f-c SA gravel to 1 1/4", SR gravel to 1/2", ~15% fines, no stains)			JHS=0.0
	/	DIOXIN, PAH, METALS GRO, EXTPH DUP04= SAA, except no GRO, no EXTPH		LOOSE	DK-GRAY	S-2B (0.5-0.9') EXTREMELY WEATHERED PHYLLITE	ROCK INTERVAL		↓
4		S-2 1048hr		Denser	GRAY-BRN	S-2C (0.9-1.8') SIMILAR TO S-2A	SM		↓
	/	NO SAMPLE TO LAB		Denser		S-3A (0-0.8') SAND-LITTLE GRAVEL-SOME SILT (f-m sand, pg, f-c SR gravel to 3/4", tr. SA gravel to		Damp	NM
				↓	↓	1" (phyllite), >15% fines,			↓
	/			LOOSE	DK-GRAY	S-3B (0.8'-1.4') EXTREMELY WEATHERED PHYLLITE	ROCK INTERVAL		
6		S-3 1052hr		↓	↓	↓			↓

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1021 PAGE: 1 OF 2

NOTE- REQUESTED ADDITIONAL VOLUME FROM 2-4'- 2" BORINGS

f = fine m = medium c = coarse
SA = subangular SR = subrounded

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2 SB 004/S-1021

START DATE: 1-13-13

COMPLETION DATE: 1-13-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.7'/2'	No sample to lab			Brown	S-1A (0-0.2') ROOT MAT S-1B (0.2-0.7') SAND+GRAVEL-LITTLE SILT (mostly f-m		dry	NM
				Loose	Brown Gray	sand, pg, f-c SA gravel up to 1" weathered quartz nodule, some SR gravel to 3/4", ~10% NP fines, dry, loose, no stains,	SP-SM Rock		
				Loose	DK Gray	S-1C (0.7-1.1') POLVERIZED ROCK-Phyllite ~~slate~~ weathered	GP-GM		SE
2		S-1 1045		Loose	DK Gray & Brn Gray	S-1D (1.1-2) - Sand + gravel - some silt (f-m sand f-c gravel up to 1" (more gravel than sand) 10% fines loose, dry, no stains			
	1.5'/2'	Sample to lab for DUOX, Pb, metals etc - TF2-004/5-SB1021-C204+ DUP04 (0008) - GRO + EXTPH - no GRO EXTPH for DUP.		Dense	Gray Brn	S-2A (0-0.5) Sand & gravel - some ~~little~~ Silt (mostly f-m sand, pg f-c SA gravel up to 1/4" SR gravel up to 1/2", ~15 fines, dry, ~~loose~~ dense no stains,	SM	requested 2nd boring 2-4' for 1021 volume req. 3rd boring 2B 4-6' for GRO + EXTPH	SR=0.0
									JHS=0.0
					DK Gray	S-2B (0.5-0.9') POLVERIZED ROCK- ~~SLATE~~/PHYLLITE, WEATHERED loose	ROCK INTERVAL		
4		S-2 1048			Gray Brn	S-2C (0.9-1.8') Similar to S-2A	SM		
	1.8'/2'	No sample to lab			Gray Brn	S-3A (0-0.8) Sand & ~~little~~ gravel - some silt (Mostly f-m sand, f-c SR gravel up to 3/4" SA gravel (mininge) up to 1" (~~slate~~ piece) damp, ~~loose~~, denser than S-2A, no stains) >15% fines	SM	DAMP	
					Dark Gray	S-3B (0.8-1.4') POLVERIZED ROCK-~~SLATE~~/ Phyllite weathered, loose	ROCK INTERVAL		
6		S-3 1052				↓			
	1.5'/2'	Sample to lab - ~~chrom~~, Pb, metals etc - TF2-004/5-SB1021+0008 - no GRO, no EXTPH			Gray Brn	S-4A (0-1.5') Sand & gravel - little silt (Mostly f-m sand, pg, f-c SA gravel & broken rock fragments 1/2"-1 1/4" slat/phyllite, dry, loose, ~10% NP fines, no stains ~~SLATE~~	SP-SM	DRY	SR=0.0
									JHS=0.0
8		S-4 1055				↓			

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620 ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

PAGE: 1 OF 2

6610 DT

Refusal @ 9'

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-A0E004/5-SB1021

START DATE: 11-13-13

COMPLETION DATE: 11-13-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
6	1.5'/2'	TF2-004/5-SD1021-0608 DIOXIN, PAH, METALS, NO GRO, NO EXTPH		LOOSE	GRAY-BRN	S-4A (0-1.5') SAND & GRAVEL - LITTLE SILT (f-m sand, pg, ftC SA gravel 1/4" 1 1/4" (phyllite) ~10% fines, no stains)	SP-SM	DRY	SR=0.0 JHS=0.0
8		S-4 1055 hr		↓	↓	↓			
9	1.1/1	NO SAMPLE TO LAB S-5 1102 hr		LESS LOOSE	DK-GRAY	S-5 (0-1.1') SLIGHTLY MORE COMPETENT PHYLLITE ↓ REFUSAL @ 9' EOB @ 9'	BEDROCK		

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1021

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-SB004/5-1021

START DATE: 11-13-13

COMPLETION DATE: 11-13-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
8									
	1.1/2'	No sample to lab			Dark Gray	5-5 (0-1.1') ~~DECOMPOSED ROCK~~ - Phyllite/Slate weathered, ~~Fissile~~, ~~Loose~~	Bedrock?		
						Refusal @ 9'			
10		5-5 1102				End of boring @ 9'			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

Refusal @ 9'

D

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-0004/5 - SB 10B2

START DATE: 11/13/13

COMPLETION DATE: 11/13/13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	NO SAMPLE previously collected	gravelly sand		Brown	Root mat 2"		DRY	NM
					↓ Brown/	(F) Sand - some silt - angular gravel up to 1.5" trace (M) sand	SP		
1	1.6/2				Grey				
						↓ (F-M) Sand - some silt, gravel up to 1"			
	/				↓	↓			
2			Bedrock		grey	weathered phyllite			
	/					Refusal - END OF BORING			
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: ~~SR=PID reading over open liner; HS= PID jar headspace reading~~

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30
LOGGED BY: K. Jalkut
DRILLED BY (Company/Driller): TDS / D. Newton
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: TF2-SB004/S-1023
START DATE: 11-13-13
COMPLETION DATE: 11-13-13
MON. WELL NO.: NA
CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8'/2'	NO sample from 0-1' to lay			Brn	S-1A (0-0.2') ROOT MAT S-1B (0.2-0.6') SAND + GRAVEL - LITTLE SILT GRAVELLY fn sand	SP-SM		NM
					Gray Brn	Pg, f-c SR gravel to 1", phyllite/slate pieces - weathered, (Lwero, Fissile, dry, no stains, loose)			
	/				Dark Gray	S-1C (0.6-1.8') POWDERIZED ROCK - FISSILE LAYERS OF PHYLLITE/SHALE	Bedrock?		
2		S-1 1035				↓	↓		
	1.8'/2'	no sample to lab - see rock			DK Gray	S-2 (0-1.8') ALL POWDERIZED ROCK PHYLLITE/SLATE			
						Refusal @ 4' End of boring @ 4'			
	/					↓			
4		S-2 1038							
	/								
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING: Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING: Not Applicable
GROUNDWATER LEVELS:
OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: PAGE: OF

Refusal @ 4'

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-1004/5 -SB1024

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: ~~K. Jellett~~ M. Horton

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						Root Mat 1"			
	1.9/2	NO SAMPLE - previously collected	Silty Sand		Brown	(F)Sand - little silt, trace small rounded gravel up to 0.5"	SM-SP	DRY	NM
			gravel		Grey	Gravel layer - quartz - pulverized			
	/		gravelly Sand		Dark grey	Mixture (F)Sand/ Phyllite - little silt	SM/SP		
2			Bedrock			Weathered Phyllite			
	0.7/1	NO SAMPLE - previously sampled							
						Refusal - END BORING			
4	/								
	/								
	/								
6									
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1024 PAGE: 1 OF 1

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/5-SB1025

START DATE: 11/13/13

COMPLETION DATE:

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.9/2	0-1 - collected previously	sand/ silt/ gravel		Brown	Root mat - 1"	SM-SP	DRY	NM
2					grey	(F) Sand - silt (10-20%) - trace gravel - upto 0.5" weathered phyllite - extremely weathered			
	1.9/2	TF2-004/5-SB1025-2.6.04 1045 #45	(VOX PAH METALS)		Brown/tan	(F) Sand - silt (20%) - Trace gravel - less than 0.5"	SM-SP		0.2
4									
	0.8/1				Brown/Grey	SAA - more gravel up to 1.5"		moist	
6						Refusal - END OF BORING			
	/								
8									
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: ~~SR=PID reading over open liner; HS= PID jar headspace reading~~

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-SB 004/5 - 1026

START DATE: 11-13-13

COMPLETION DATE: 11-13-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.7/2	No sample to lab				S-1A (0-0.2') ROOT MAT w/ plant stems, wood chunks	—	dry	NM
					Yellow Brown	S-1B (0.2-0.6') SAND - LITTLE GRAV - TR SILT (Mostly f-c sand, wg, f. gravel sb up to 4½", c. gravel to 1", <5% fines, loose, dry, no straw	SW		
					GRAY BRN RED + BRN	S-1C (0.6-1.7') BROKEN ROCK FRAGS - SLATE/PHYLLITE, ~~S-1D (1.2-1.7')~~ & OTHER RED ROCK	ROCK		
2	/	S-1 1010				↓			
	1.5/2'	2-2.7' material PAH, metals, dioxin TF2-004/5-SB1026-022.7	no gw, no PID		Tan brn	S-2A (0-0.7') SAND + GRAVEL - TR SILT (Mostly f-m sand, pg. f-c sd gravel to 1½", <5% fines, dry	SP	All broken rock @ 2.7' - collected soil above it for analysis	SR=0.0
					DK Gray	no staining S-2B (0.7-1.5') ALL ROCK - PULVERIZED - BEDROCK?	BEDROCK?		JHS=0.0
4	/	S-2 1015			↓	↓	↓	Requested Xtra Sample for volume	
	1.7/2'	No sample to lab				S-3 (0-1.7') ALL ROCK - WEATHERED - PULVERIZED PHYLITE/SLATE			
6	/	S-3 1020			↓	↓ Refusal @ 6' End of boring @ 6'	↓		
	/	X							
8	/	S-4 1025							

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: PAGE: OF

refusal @ 6' Requested return by driller for more vol 2-4' (extra sleeve)

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/5 - SB1027

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11/13/13

LOGGED BY: ~~K. Jalkut~~ M. Horton

TRANSCRIBED BY:

COMPLETION DATE: 11/13/13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.9/2	NO SAMPLE - previously sampled	Silty Sand		Brown	root mat 1" (F) Sand - some silt	SM	DRY	NM
					Brown/Tan	(F) Sand - trace silt			
	/		Bedrock		Brown/Grey	weathered phyllite - extremely weathered			
2					Grey				
	1.9/2	NO SAMPLE - weathered rock						DRY	
	/								
4									
	1.8/2	NO SAMPLE - weathered rock						DRY	
	/								
6									
	/					Refusal - END OF BORING			
	/								
8									

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: ~~SA=PID reading over open liner; H=G - PID jar headspace reading~~

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Ishut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/5-SB028

START DATE: 11/13/13

COMPLETION DATE: 11/13/13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	2/2	NO SAMPLE- previously sampled	Gravelly Sand		Brown	Root Mat 2"			
					Brown/ Grey	(F) Sand - some silt, some angular gravel up to 1"	SP	DRY	NM
						(F) Sand - some silt, some angular gravel up to 2", trace (M) Sand			
	~~1.0~~		Bedrock		grey	↓			
2						weathered phyllite - extremely weathered			
	1.0/2	NO SAMPLE - weathered rock				↓		DRY	NM
	/								
4						↓			
	/					Refusal - END OF BORING			
	/								
6									
	/								
	/								
8									

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: ~~GR- PID reading over open liner; HS- PID jar headspace reading~~

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

TF2 - SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: 0045-1029

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	NO SAMPLE; 0-1' PREVIOUSLY COLLECTED			BRN	S-1A (0-0.2') ROOT MAT		DRY	NM
				LOOSE	BRN	S-1B (0.2-0.55') SAND - SOME GRAVEL - SOME SILT	SM		
	/	WEATHERED BEDROCK @ 1.6'				(MOSTLY F SAND, TR MED SAND, PG, F-C SR GRAVEL UP TO 1", F-C SR F ANG. GRAVEL (PHYLLITE CHIPS) UP TO 1"	↓		
						>15% FINES, NO STAINS	↓		
	/	↓		LOOSE	LIGHT GRAY	S-1C (0.35-0.7') WEATHERED PHYLLITE, FISSILE	ROCK INTERVAL		
					GRAY BRN	S-1D (0.7'-1.6') SIMILAR TO S-1B	SM		
	/	↓			DK GRAY	S-1E (1.6-1.6') WEATHERED PHYLLITE	BEDROCK		
2		S-1 0840				↓	↓		
	/					REFUSAL @ 2' EOB @ 2'			
	/								
	/								
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

TF2' SD

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: ^ C004/S-1030

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8'/2'	NO SAMPLE; C-1' PREVIOUSLY COLLECTED			BRN	S-1A (0-0.2') ROOT MAT			NM
				DENSE	BRN	S-1B (0.2-1.1') SAND-SOME GRAVEL-SOME SILT	SM		
	/					GNGSTLY F SAND, TR MED SAND, PB, F-C SR GRAVEL TO 1½" F-C SR to ANG. GRAVEL TO 1" (PHYLLITE CHIPS), >15% FINES, NO STAINS			
	/	WEATHERED ROCK		LOOSE	LIGHT GRAY	S-1C (1.1'-1.5') WEATHERED PHYLLITE, FISSILE, BROKEN	ROCK INTERVAL		
	/			LOOSE	GRAY-BRN	S-1D (1.5-1.8') SIMILAR TO S-1B W/ MORE GRAVEL (PHYLLITE)	SM GR G.M		
2	/	S-1 0910				↓		TOOK PHOTO OF BOTH SOIL CORES	
	1.8'/2'	NO SAMPLE - BEDROCK		LOOSE	DK GRAY	S-2 (0-1.8') EXTREMELY WEATHERED PHYLLITE, V. BROKEN	BEDROCK		
4	/	S-2 0915				REFUSAL @ 4' ECB @ 4'			
	/								
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1030 PAGE: 1 OF 1

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/S-SB1031

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.6/2	NO SAMPLE TO LAB			BRN	S-1A (0-0.2') ROOT MAT, GRASS, TWIGS	—	DRY	
				LOOSE	BRN	S-1B (0.2'-0.6') SAND-LITTLE GRAVEL-LITTLE SILT	SP-SM		
	/	0-1' PREVIOUSLY COLLECTED			↓	(MOSTLY F SAND, PG, F GRAVEL, SR, UP TO 1/2", ~10%	↓	↓	
					↓	FINES, NO STAIN)			
	/			LOOSE	GRAY BRN	S-1C (0.6-1') SIMILAR TO S-1B, EXCEPT FOR COLOR			
					↓	AND MORE CHUNKS OF PHYLLITE	↓		
	/			LOOSE	DK GRAY	S-1D (1-1.2') BROKEN PHYLLITE PIECES, FISSILE (WEATHERED	ROCK INTERVAL		
				LOOSE	GRAY BRN	S-1E (1.2-1.6') SIMILAR TO S-1C	SP-SM		
	/			↓	↓	↓	↓	↓	
2		S-1 1330		↓	↓	↓	↓	↓	
	1.7/2'	TF2-004/S-SB1031-0204 DIOX PAH METAL	-0204	DENSER	GRAY BRN	S-2 (0-1.7') ~~SIMILAR TO S-1C~~ Rf 11-14-13 SAND-SOME GRAVEL-SOME SILT	SM	MOIST	SR=0.0
				↓	↓	(MOSTLY F SAND, PG, F-C SA and ANG GRAVEL UP TO 1½",	↓	↓	JHS= 0.0
	/			↓	↓	(PHYLLITE CHUNKS), >15% FINES, NO STAINS)	↓	↓	
4		S-2 1340		↓	↓	↓	↓	↓	
	1.3'/2'			↓	↓	S-3 (0-1.3') SIMILAR TO S-2, W/WHITE QUARTZ PIECES	SM	↓	
6		S-3 1345		↓	↓	↓	↓	↓	

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1031 PAGE: 1 OF 2

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/S-SB1031

START DATE: 11-14-13

COMPLETION DATE: 11-14-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
6									
	1'/2'	NO SAMPLE TO LAB		DENSER	GRAY BRN TO RED BRN	S-4 (0-1') SAND - LITTLE GRAVEL - SOME SILT	SM	DAMP	NM
				↓	↓	(MOSTLY F SAND, PG, F-C SA TO ANG GRAVEL UP TO	↓	↓	
				↓	↓	1" [PHYLLITE CHUNKS], 2-15% FINES, NO STAINS	↓	↓	
8		S-4 1350		↓	↓	↓	↓	↓	
	1.0'/2'	TF2-004/S-SB1031-0810 PAH, METAL		LOOSE	TAN-BRN	S-5 (0-1') GRAVEL - SOME SAND - LITTLE SILT	GP-GM	DRY	SR=0.0
				↓	↓	(MOSTLY F-C GRAVEL UP TO 1 3/4" (DARK, NOT PHYLLITE, SA	↓	REQUESTED MORE VOL. (1x)	JHS=0.1
				↓	↓	VERY COMPETENT), ~10% FINES, NO STAINS)	↓	↓	
10		S-5 1355		↓	↓	↓	↓	↓	
	1.0'/2'	NO SAMPLE TO LAB		DENSER	BRN	S-6 (0-0.6 1.0') SIMILAR TO S-5 W/ ALL WEATHERED	GP-GM	WET	
				↓	↓	PHYLLITE AT BOTTOM OF LINER	↓	↓	
				↓	↓	↓	↓	↓	
12		S-6 1400		↓	↓	- WEATHERED BEDROCK	BEDROCK	↓	
						REFUSAL @ 12' EOB @ 12'			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1031

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

Check depth location

BORING NO.: TF2-SB 004/5-1032

START DATE: 11-13-13

COMPLETION DATE: 11-13-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.7'/2.0'	No sample to lab				S-1A (0-0.2') = ROOT MAT	—	dry	NM
					Brn	S-1B (0.2-1') SAND - LITTLE GRAV - LITTLE SILT			
						(Mostly f. sand; pg L f. gravel up to ½" SR, ~10% NP fines; dry, no stains)	SP-SM		
2	/	S-1 0755			DK Grey	S-1C (1-1.2') POWDERIZED ROCK - CHIPS (shown as phyllite/slate) — SM			SR=
	1.6'/2'	Send to lab for pesticides dioxin; etc.	no grd no petph		Grey Brn	S-2A (0-0.6) SAND & GRAVEL - LITTLE SILT (Mostly f. sand, vg ft C SR, 1A gravel to 1½", ~10% NP fines; dry, loose, no stains	SP-SM		SR=0.0
					Grey Brn	S-2B (0.6-1.6) Similar to above w/ f-m sand	SP-SM		SHS=0.0
						↓			
4	/	S-2 0800				↓			
	1.7'/2'	No sample to lab			Grey Brn	S-3 (0-1.7') Similar to S-2B	SP-SM		
						↓			
						↓			
6	/	S-3 0805				↓			
	1'/2'	No sample to lab			Brn	S-4 (0-0.6) SAND - LITTLE GRAV - LITTLE SILT (Mostly f. sand, ft C SR gravel to 1½", ~10% NP fines; dry, no stains	SP-SM		
	/								
8		S-4 0810							

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

PAGE: OF 2

AM 28°F w/ strong wind - feels like 16°F

PM 37°F w/ lower winds - temp rpt a wind chill (considerably) for PM. need to check feels like temp

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30
LOGGED BY: K. Jalkut
DRILLED BY (Company/Driller): TDS / D. Newton
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: TF2- SB 0045- 1032
START DATE: 11-13-13
COMPLETION DATE: 11-13-13
MON. WELL NO.: NA
CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
8									
	1.8'/2'	NO sample to lab				S-1 (0-1.8') POLY. ROCK - PHYLLITE/SLATE UNWEATHERED			
	/								
10		S-5 0815							
	/					END @ 10' REFUSAL @ 10'			
	/								
	/								
	/								
	/								
	/								
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING: Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING: Not Applicable
GROUNDWATER LEVELS:
OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jellett~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

TF2-

BORING NO.: 004/5-SB633

START DATE: 11/13/13

COMPLETION DATE: 11/13/13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8/2	NO SAMPLE - previously collected	gravelly sand			Root mat - 2"			
						(F) Sand, some silt, some angular gravel up to 1.5"	SP	DRY	NM
						↓			
	/		Bedrock			Weathered phyllite - extremely weathered			
2						↓			
	1.6/2	NO SAMPLE - weathered rock				SAA			
						↓			
	/								
4						↓			
	/					Refusal - END OF BORING			
	/								
6									
	/								
	/								
8									

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	~~SR=PID reading over open liner; HS=PID jar headspace reading~~

Tetra Tech, Inc.

BORING NO.: PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/S-1034 SB

PROJECT NO: 112G03019 CTO WE 30

START DATE:

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE:

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8'/2'	No sample to lab			Brn	S-1A (0-0.2') ROOT MAT	—	dry.	NM
					Grey Brn	S-1B (0.2-1.8') sand + gravel - some silt (mostly f-m sand, pg; f+c SA gravel up to 1"; >15% RP Anal, no staining, loose)	SP-SM		
					Dark Grey	S-1C (1.8-1.8') POWDERIZED ROCK - FISSILE LAYERS phyllite/slate	BED ROCK	dry	NM
2		S-1 1135				↓	↓		
	0.6'/3'	No sample to lab				S-2 (0-0.6') POWDERIZED ROCK - similar to S-1C			
						↓ Refusal @ 3' EOB @ 3'	↓		
4		S-2 1138							
6		S-3							
8		S-4							

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: PAGE: OF

Refusal @ 3'

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-SB-004/S-1035

START DATE: 11-13-13

COMPLETION DATE: 11-13-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8'/2'	No sample to lab			DK Brown	S-1A (0-0.5') 5'+ Gravel - Little Silt (Mostly f-c sand) fg f-c SR gravel 1/4"-1", phyllite cobble/chunks up to 1", ~10% NP fines, dry, no stains	SP-SM	dry	NM
					DK Gray	S-1B (0.5-1.8') PULVERIZED ROCK - PHYLLITE/SLATE (FISSILE)	ROCK		
2		S-1 0925			↓	↓			
		No sample to lab				S-2 (0-1.8') similar to S-1B - ALL ROCK		dry	No headspace all rock
4		S-2 0930			↓	↓			
						END @ 4'			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight GeoProbe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

BORING NO.:

PAGE: 1 OF 1

Tetra Tech, Inc.

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/5-SB1036

START DATE: 11-14-13

COMPLETION DATE: 11-14-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.9/2	NO SAMPLE - previously collected	Gravelly Sand		Brown	(F) Sand - little silt	SM	DRY	NM
			Bedrock		Dk. Grey	Mixture Phyllite/(F) Sand w/ little silt, Weathered Phyllite - Extremely weathered	SM-SP		
	/		↓			↓			
2									
	/					Refusal - END OF BORING			
	/								
4									
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/5-SB1037

START DATE: 11-14-13

COMPLETION DATE: 11-14-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						Root Mat < 1"			
	2.0/2	NO SAMPLE - Previously collected	gravelly Sand		Brown	(F) Sand - little silt, few angular gravel up to 1.5"	SM-SP	DRY	NM
						(F) Sand - little silt, little angular gravel up to 0.5"			
	/		Bedrock		Grey	Weathered Phyllite - extremely weathered			
2									
	/	NO SAMPLE - Weathered Rock				SAA		DRY	NM
	/								
4									
	/					Refusal - END OF BORING			
	/								
6									
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1037

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/5-SB1038

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: ~~K. Jalkut~~ M. Horton

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						2" Root Mat			
	2.0/2	NO SAMPLE - previously collected	gravelly Sand		Brown	(F) Sand - little silt, few small gravel up to 0.5" Mix - (F) Sand / Phyllite (weathered) - little silt	~~SM~~ SM-SP	DRY	NM
			↓			↓			
			weathered Rock		Grey	weathered phyllite			
2	/		↓			↓			
	1.4/2	TF2-004/5-SB1038-0204 1315	PAH SVOC metals Dioxin		Brown	(F) Sand - little silt, trace small gravel up to 0.5"	SM	DRY	0.4
			↓		Lt. Grey	Gravel - Pulverized - Quartz	GP		
			gravelly Sand		Brown	(F) Sand - little silt, few gravel up to 1.5"	SM-SP		
4	/		↓			↓			
	1.5/2	NO SAMPLE	↓		Grey	Mixture - (F) Sand / Phyllite - little silt - phyllite fragments up to 1.5" poorly graded	SM-SP	Moist	NM
			↓		Brown	↓			
			↓			↓			
	/		weathered Rock			↓			
6			↓			Weathered Phyllite			
	1.7/2	NO SAMPLE	gravelly Sand		Brown/ Grey	(F) Sand - little silt, some phyllite fragments up to 2"	SP	moist	NM
			↓			↓			
			↓			↓			
	/		↓			↓			
8			↓			↓			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/5-SB1038

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: ~~K. Jalkut~~ M. Horton

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
8									
	1.2/2	TF2-064/5-SB1038-03010 1325	PAH metals		Brown	(F) Sand - little silt, few phyllite fragments up to 1"	SM-SP	Moist	1.3
			gravelly sand ↓		↓	↓			
10	/				↓	↓			
	/					END OF BORING			
	/								
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1038

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

TF2-

BORING NO.: 004/5-SB1039

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: ~~K. Jellett~~ M. Horton

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						2" Root Mat			
	2.0/2	NO SAMPLE - previously collected	Gravelly Sand		Brown	(F) Sand - little silt, trace small angular gravel up to 0.5"	SM	DRY	NM
					Grey Brown	competent phyllite fragment (F) Sand - little silt, few angular gravel up to 1"			
	/						SM-SP		
2									
	1.9/2	~~TF2-004/5-SB1039-0204~~ 1345	Sandy Gravel		Grey	Weathered phyllite - ~~little sand~~ (F) sand, little silt		DRY	NM
	/								
4			gravelly sand		Brown	(F) Sand - little silt, few phyllite frags. up to 0.5"	SM-SP		
	1.7/2	TF2-004/5-SB1039-0406 1345	PAH Metals			(F) Sand - little silt, few phyllite frags. up to 0.5", trace rounded gravel up to 1.5"	SM-SP	DRY	0.5
	/								
6					Grey	Weathered phyllite			
	1/2	NO SAMPLE			Brown	(F) Sand - little silt, few phyllite frags. up to 0.5"	SM-SP	DRY	NM
	/		Bedrock		Grey	Weathered phyllite			
8						↓ SEE NEXT PAGE			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/5-SB1039

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: ~~K. Jalkut~~ M. Horton

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0	0.7 ~~0.7~~ ~~0.1~~	NO SAMPLE -	Bedrock ↓		Grey	Weathered phyllite ↓		DRY	N.M
						Refusal - END OF BORING			
10	/								
	/								
	/								
	/								
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Dalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/S-SB1040

START DATE: 11-14-13

COMPLETION DATE: 11-14-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						2" Root Mat			
	1.9/2	NO SAMPLE - previously sampled	gravelly sand		Brown	(F) Sand - little silt, large frag ments of phyllite throughout	SP-SM	DRY	NM
					Tan	(F) Sand			
					Brown	(F) Sand - little silt, few gravel, rounded, up to 1"			
2	/				Grey	phyllite - weathered (F) Sand - little silt, few phyllite fragments up to one"	SM-SP		
	1.5/2	TF2-004/S-SB1040-0204 1415	PAHs metals Dioxin		Brown/Tan	(F-M) Sand - trace (C) sand, few small rounded gravel	SP		0.1
					DK. Grey	(F) Sand - little silt, few phyllite fragments - up to 2" many small	SM-SP		
								DRY	
4	/				Brown	(F) Sand - little silt - trace small phyllite frags.	SM-SP		
	1.7/2	NO SAMPLE				(F) Sand - little silt - few small phyllite frags. trace large phyllite frags up to 2"	SM-SP	MOIST	NM
	/								
6									
	1.3/2	NO SAMPLE				SAA			NM
	/							WET	
8									

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

1 photo to show silt ribbon

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/5-SB1040

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: ~~K. Jalkut~~ M. Horton

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
8									
	0.9/2	TF2-004/5-SB1040-0810 1430	PAH metals		Brown	(F) Sand - little silt, few small phyllite frags.	SM-SP	wet Extra volume needed 8-10' (IX)	24.9
						3" rounded gravel			
	/		gravelly Sand			Sandy Silt - (F) Sand - little gravel up to 2"	ML		
10									
	/					END OF BORING			
	/								
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/5-S31041

START DATE: 11/18/13

COMPLETION DATE: 11/13/13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.7/2	NO SAMPLE - Previously Collected	gravelly sand		Brown	Root Mat - 2" (F) ~~Sand~~ - some silt, some rounded gravel up to 1.5" Trace (M) Sand	SP	DRY	NM
					Brown/ Grey	(F) Sand/ Phyllite mix - some silt	SP		
	/					↓			
2					Grey	weathered Phyllite - extremely weathered			
	1.8/2	TF2-004/5-S31041-020225 1320	Silty Sand / Bedrock		Brown/Tan	(F) Sand - some silt, trace small gravel 0.5"	SM-SP	DRY	0.0
					grey	weathered Phyllite			
	/	PAH, METALS, DIOX				↓			
4						↓			
	1.9/2	NO SAMPLE - weathered Rock				SAA		DRY	
						↓			
	/					↓			
6						↓			
	/					Refusal - END OF BORING			
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: ~~SR- PID reading over open liner, HS- PID headspace reading~~

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/5-SB1042

START DATE: 11/13/13

COMPLETION DATE: 11/13/13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.9/2	NO SAMPLE - Previously Sampled	gravelly sand		Brown	Root Mat - 2"	SP	DRY	NM
					Brown/Grey	(F) Sand - some silt, some angular gravel up to 1.5"			
			Bedrock		Grey	(F) Sand/weathered phyllite mix			
	/					Weathered Phyllite - extremely weathered			
2						↓			
	1.9/2	NO SAMPLE - Weathered Rock				SAA		DRY	
						↓			
	/					↓			
4						↓			
	/					Refusal - END OF BORING			
	/								
6									
	/								
	/								
8									

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: ~~SB=PID reading over open liner; IHS= PID jar headspace reading~~

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2- SB 004/5-1043

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-13-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-13-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8'/2'	~~Not~~ Sample to lab from ~~0 to 5~~ 0.1-0.5' TF2-004/5-SB1043 0.1-0.5 pds, metals, dioxin only no gro, no ext TPH S-1 1250			Dk brn	S-1A (0-0.1') - TWIGS/ROOTS S-1B (0.1-0.55) Sand-Little Gravel-Little Silt (Mostly f-sand, pg, f+c SR gravel to 1 1/2", slate/phyllite piece to 3/4", dry, dense, no stains, ~10% NP Fines)	— SP-SM	Dry ~~on~~ interval not sampled, ~~hand auger refusal~~ at soil/bedrock interface	~~Note~~ SR=0.0 JHS=0.5
					Gray Brn				
					Dk gray	S-1C (0.55-1.8') PULVERIZED ROCK-weathered phyllite or slate	Bedrock		
2									
						Refusal @ 2' EOB @ 2'			
						Requested driller return to location for add. volume (0-2') + 2nd time = 4'			
X									

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: PAGE: OF

Andrew
Call from NAS phu @ 1320 today
MTC Gate 1

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/5-SB1044

START DATE: 11/14/13

COMPLETION DATE: 11/14/13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	2.0/2	NO SAMPLE - previously collected	gravelly Sand		Brown Tan/Brown	(F) Sand, little silt, few gravel small and angular up to 0.5"	SM-SP	DRY	NM
			Bedrock		Grey	weathered Phyllite			
	/								
2									
	/					Refusal - END OF BORING			
	/								
4									
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1044

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-SB 004/5-1045

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8/2'	NO SAMPLE; 0-1' PREVIOUSLY COLLECTED;			BRN	S-1A (0-0.1') ROOT MAT			NM
				LOOSE	YELLOW-BRN	S-1B (0.1'-0.3') SAND-SOME GRAVEL-LITTLE SILT	SP-SM		
	/	BEDROCK LESS THAN 1'		↓	↓	(MOSTLY F SAND, PG, F-C SR GRAVEL ¼"-1"; ~10% FINES			
				↓	↓	NO STAINS			
	/			LOOSE	DARK GRAY	S-1C (0.3-1.8') EXTREMELY WEATHERED PHYLLITE FISSILE, LOOSE, BROKEN CHIPS			
2		S-1 0835		↓	↓	↓			
	/			↓	↓	REFUSAL @ 2' EOB @ 2'			
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1045

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/5-SB1046

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: ~~K. Jelliot~~ M. Horton

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						Root MAT 1"			
	1.2/2	NO SAMPLE - previously collected	Silty Sand / gravelly Sand / Bedrock		Brown	(F) Sand - little silt Mixture (F) Sand/Phyllite - little silt - phyllite fragments up to 1"	SM SP-SM	DRY	NM
						↓			
	/					↓			
2						weathered phyllite			
	/					Refusal - END OF BORING			
	/								
4									
	/								
	/								
6									
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1046 PAGE: 1 OF 1

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-SB 004/S-01047

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8/2	NO SAMPLE 0-1'; PREV. COLLECTED			BRN	S-1A (0-0.2') ROOT MAT, GRASS, TWIGS		DRY	NM
				LOOSE	LGT BRN	S-1B (0.2'-0.75') SAND-SOME GRAVEL-SOME SILT	SM		
						(MOSTLY F. SAND, PG, F+C SA to ang. gravel up to 1¼" (phyllite chunks), >15% fines, no stains)			
	/			LOOSE	LIGHT GRAY	S-1C (0.75'-0.9') C GRAVEL LAYER - PHYLLITE FILL UP TO 1¼"	ROCK INTERVAL		
	/			LOOSE	LT BRN	S-1D (0.9'-1.1') SIMILAR TO S-1B	SM		
				LOOSE	DK GRAY	S-1E (1.1'-1.55') WEATHERED PHYLLITE, FISSILE, FILL	ROCK INTERVAL		
	/			LOOSE	BRN	S-1F (1.55-1.8') SILTY F. SAND.	SM		
2		S-1 1045							
	1.8/2	TF2-004/S-SB1047-0204 DIOX PAH METALS		DENSER	YELLOW-BRN	S-2 (0-1.8') SAND-LITTLE GRAVEL-SOME SILT	SM	DRY	SR=0.0
						(MOSTLY F SAND, PG, TR. MED SAND, F+C SA + ANG GRAVEL			
	/					(PHYLLITE PIECES/CHUNKS) UP TO 1"; >15% FINES, NO STAINS)			JHS=0.0
4		S-2 1050							
	1.4'/2'				BRN	S-3 (0-1.4') SAND-SOME GRAVEL-SOME SILT	SM	MOIST	NM
						(MOSTLY F SAND, PG, F+C SA TO ANG. GRAVEL (PHYLLITE FILL) >15% FINES, NO STAINS			
	/								
6		S-3 1057							

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1047 PAGE: 1 OF 2

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/S-SB1047

START DATE: 11-14-13

COMPLETION DATE: 11-14-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
6									
	1.3'/2'	TF2-004/S-SB1047 ~~DUP~~ PAH METALS		DENSER	BRN	S-4 (0-1.3') SAND AND GRAVEL - SOME SILT	SM	DAMP	SR=0.0
				↓	↓	(MOSTLY F SAND, TR MED SAND, PG, F+CSR GRAVEL TO 1¼";			JHS=0.0
	/			↓	↓	F+C SA TO ANG GRAVEL [PHYLLITE CHUNKS] TO 1"; >15%	↓		
8		S-4 1107 2		↓	↓	FINES, NO STAINS)		WET @ BOTTOM OF SAMPLE	
	1.4/2'	NO SAMPLE - MOSTLY WEATHERED		↓	↓	S-5A (0-0.2') SIMILAR TO S-4	↓	↓ (FINES HOLDING WATER ?)	
				LOOSE	DK GRAY	S-5B (0.2 - 1.4') WEATHERED PHYLLITE - FISSILE, BROKEN	BEDROCK		
	/	BEDROCK		↓	↓	↓	↓	ROCK APPEARED DRY	
10		S-5 1107		↓	↓	REFUSAL @ 10' EOB @ 10'			
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-SB 004/5-1048

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-13-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-13-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0					—	S-1A (0-0.2') ROOT MAT	—		NR
	1.8'/2'	No sample to lab			Brn	S-1B (0.2-1') SAND+GRAV - LITTLE SILT Mostly F sand, fg, frc SR gravel ½-1", SA gravel up to 1½, pieces of phyllite/slate, ~10% NP fines, dry, loose	SP-SM		
2		S-1 0820			yellow Brn	S-1B (1-1.8') SILTY F SAND, TR GRAV (F. up to ½")	SM		
					Brn	S-1C (1.8-2.8') similar to S-1B	SP-SM		
	1.8'/2'	Send to lab Dioxin PAH metals	no gro no petph		Brn to Grey Brn	S-2A (0-0.7') SAND & GRAV - LITTLE SILT Mostly f-m sand, fr c SR gravel ½-1", SA gravel w/ phyllite pieces up to 1½", ~10% NP fines, no stain, dry	SP-SM		SR= 0.1
									OTB= 0.0
					DK GRAY BLK TO GRAY BRN	S-2B (0.7-1.1') BROKEN ROCK FRAGS - SLATE/PHYLLITE	— ROCK		
4		S-2 0825				S-2C (1.1-1.8') similar to S-2A	SP-SM		
	1.8'/2'	No sample to lab			GRAY BRN	S-3A (0-0.8') SAND AND GRAV LITTLE SILT Coarse, f-m sand, fg, frc SA+SR gravel ½"-1½" w/ phyllite/slate rock frags, ~10% NP fines, dry, loose Rootlets	SP-SM		
6					Yellow Brn	S-3B (0.8-1.1') SILTY F SAND, TR fr gravel up to ½" SR	SM		
6		S-3 0830			DK gray to black	S-3C (1.1-1.8') Similar to S-3A w/ more rock pieces	SP-SM		
	1.8'/2'	No sample to lab			DK gray to black	S-4 (0-1.8') PULVERIZED ROCK SLATE/PHYLLITE w/ refusal @ ~7'	ROCK		
					↓	End @ ~7'			
8		S-4 0835							

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

PAGE: 1 OF 1

refusal @ 7'

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30
LOGGED BY: K. Jalkut
DRILLED BY (Company/Driller): TDS / D. Newton
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: TF2-004/S-1049 SB
START DATE: 11-14-13
COMPLETION DATE: 11-14-13
MON. WELL NO.: NA
CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8'/2'	NO SAMPLE; 0-1' PREV. COLLECTED			BRN	S-1A (0-0.2') ROOT MAT, GRASS, TWIGS		DRY	NM
				LOOSE		S-1B (0.2'-1.3') SAND - SOME GRAVEL - SOME SILT	SM		
	/			|	|	(MOSTLY F SAND, TR MED. SAND, PG, F+C SR GRAVEL TO 1" (1-5 PIECES), F+C SA+ANG. GRAVEL UP TO 1" (PHYLLITE CHUNKS), >15% FINES, NO STAINS	↓		
				↓	↓				
	/			LOOSE	DARK GRAY	S-1C (1.3'-1.8') POWERIZED, WEATHERED PHYLLITE	ROCK INTERVAL		
2		S-1 1235				S-1D ↓	↓		
	1.7'/2'	TF2-004/S-SB1049-0204 DIOX, PAH, METALS		↓	↓	S-2A (0-0.7') SIMILAR TO S-1C	ROCK INTERVAL	DRY	SR=0.6
				DENSER	BRN	S-2B (0.7-1.7') SIMILAR TO S-1B, LESS GRAVEL	SM		JHS=0.0
	/	TO LAB				LIMITED TO BROKEN PHYLLITE CHUNKS			
4		S-2 1240				S-3 ↓			
	1.6'/2'	NO SAMPLE TO LAB				S-3A (0-1') SAND - LITTLE GRAVEL - SOME SILT		MOIST	
						(MOSTLY F. SAND, PG, F SA GRAVEL UP TO 1/2" (PHYLLITE PIECES), >15% FINES, NO STAINS	↓		
	/	↓		LOOSE	DK GRAY	S-3B (1-1.1') CRUSHED/BROKEN PIECES OF PHYLLITE, WEATHERED	ROCK INTERVAL ↓		
	/	↓				S-3C (1.1'-1.6') SIMILAR TO S-3A	SM		
6		S-3 1245		↓	↓	↓	↓		

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING: Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING: Not Applicable
GROUNDWATER LEVELS:
OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

TF2 SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30
LOGGED BY: K. Jalkut
DRILLED BY (Company/Driller): TDS / D. Newton
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: TF2-004/S-SB1049
START DATE: 11-14-13
COMPLETION DATE: 11-14-13
MON. WELL NO.: NA
CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
6	1'/2'	NO SAMPLE TO LAB		DENSER	DK BRN	S-4A (0-0.4') SAND - LITTLE GRAVEL - SOME SILT	SM	DAMP	NM
				↓	↓	(MOSTLY F. SAND, TR MED SAND, PG, C. SA + ANG GRAVEL UP			
	/			↓	↓	TO 1½" (PHYLLITE CHUNKS), >15% FINES, NO STAINS	↓		
				LOOSE	DK GRAY	S-4B (0.4'-0.8') PULVERIZED, WEATHERED, BROKEN	ROCK INTERVAL	DRY	
	/					PHYLLITE PIECES UP TO 1½"	↓		
8		S-4 1250		DENSER	DK BRN	S-4C (0.8-1') SIMILAR TO S-4A	SM	DAMP	
	1'/2'	TF2-004/S-SB1049-0810		↓	↓	S-5 (0-1') SIMILAR TO S-4C	SM	DAMP ~~TO~~ AA	SR=0.0
		DAH, METAL		↓	↓	↓	↓		JHS=0.1
	/	NO DIOXIN		↓	↓	↓	↓		
10		S-5 1255		↓	↓	↓	↓		
	0.7/2'	NO SAMPLE TO LAB		↓	↓	S-6 (0-0.7') SAND - SOME GRAVEL - SOME SILT	SM	DAMP TO WET (FINES HOLDING WATER?)	NM
				↓	↓	(MOSTLY F. SAND, PG, F-C SA and ANG. GRAVEL TO 1½",	↓		
	/			↓	↓	(PHYLLITE CHUNKS), >15% FINES, NO STAINS	↓		
12		S-6 1300		↓	↓	↓	↓		
	0.6/2'1'	NO SAMPLE TO LAB		↓	↓	S-7 (0-0.6') SIMILAR TO S-6	SM	WET	NM
13		S-7 1305		↓	↓	↓ REFUSAL @ 13' EOB @ 13'	↓	↓	

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

TF2 -

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: 004/5-SB1050

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11/13/13

LOGGED BY: ~~K. Jalkut~~ M. HORTON

TRANSCRIBED BY:

COMPLETION DATE: 11/13/13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	2D/2	NO SAMPLE - Previously Collected	Silty Sand		Brown	Root Mat - 1"			
					Grey/Brown	(F) Sand - some silt, some gravel angular up to 0.5"	SM-SP	DRY	NM
			Bedrock		Grey	Weathered Phyllite - extremely weathered			
2	/						Rock		
						- weathering increase with depth			
	1.9/2	NO SAMPLE - Weathered Rock			Dark Grey			DRY	NM
4	/					- little more competent			
					Grey				
	/					Refusal - END OF BORING			
	/								
6									
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: ~~SB-PID reading over open liner; IHC - PID for headspace reading~~

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/5-SB1051

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11/13/13

LOGGED BY: ~~K. Jalkut~~ M. HERTEN

TRANSCRIBED BY:

COMPLETION DATE: 11/13/13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	0-1 foot sample previously collected	~~Sand~~ Silty Sand		Brown/ Tan	Root Mat - 1" (F) sand - some silt - trace small gravel - 0.5"	SM	DRY	NM
	2/2		gravelly sand, some silt			SAA - more gravel up to 1"	SM - SP		
1									
	/		Bedrock		grey	weathered phyllite - extremely weathered			
2									
	1.8/2	No sample to lab - pulverized rock							
3					grey/Brown				
	/								
4					grey	END OF BORING			

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; ~~lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	~~SR- PID reading over open liner; JHC - PID jar headspace reading~~

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30
LOGGED BY: K. Jalkut
DRILLED BY (Company/Driller): TDS / D. Newton
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: TF2-SB004/5-1052
START DATE: 11-13-13
COMPLETION DATE: 11-13-13
MON. WELL NO.: NA
CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8/2'	No sample to lab			Brown	S-1A (0-0.1') root mat	—	dry	NM
					Gray Brn	S-1B (0.1-1.8') Sand and gravel - some silt (mostly f-m sand, pg. fr. c. sand, f to c SR gravel to 1", SA phyllite/shale to 1 1/2", >15% NP fines, dry, no stains)	SM		
	/					↓			
2		S-1 1332							
	1.8/2'	No sample to lab			Dark Gray	~~Refusal @ 2'~~ S-2 (0-1.8') POWER FEED ROCK - Weathered, fissile, phyllite/shale	Bedrock		
						↓			
	/								
4		S-2 1348							
	/					Refusal @ 4' EOB @ 4'			
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING: Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING: Not Applicable
GROUNDWATER LEVELS:
OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

TF2' SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: 004/S1 1053

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8/2	NO SAMPLE 0-1' PREVIOUSLY COLLECTED;			BRN	S-1A (0-0.1') ROOT MAT		DRY	NM
				LOOSE	GRAY TO TAN BRN	S-1B (0.1-0.7) SAND-LITTLE GRAVEL-LITTLE SILT (MOSTLY F. SAND, TR MED SAND, PG, F SR GRAVEL TO 1/2", F-C SA+ANG. GRAVEL TO 1" (PHYLLITE PIECES),	SP-SM		
	/	WEATHERED BEDROCK				N/O % FINES, NO STAINS)			
		S-1 0820							
	/	↓ ↓		LOOSE	DK GRAY	S-1C (0.7-2') EXTREMELY WEATHERED PHYLLITE	BEDROCK		
2						↓			
	/					REFUSAL @ 2' EOB @ 2'			
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

TPZ- SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: A004/5-1054

START DATE: 11-14-13

COMPLETION DATE: 11-14-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.6/2'	NO SAMPLE; 0-1' PREVIOUSLY COLLECTED;			BRN	S-1A (0-0.4') ROOT MAT			NM
				LOOSE	TAN-BRN	S-1B (0.4-1) SAND-LITTLE GRAVEL-LITTE SILT	SP-SM		
	/	WEATHERED BEDROCK BELOW 1'				(Mostly f sand, tr. med sand, pg, f-c SR gravel 1/4"-1"			
						f. SA gravel to 1/2" (phyllite chips), ~10% fines, no stains			
	/			LOOSE	D/C GRAY	S-1C (1-1.6') EXTREMELY WEATHERED PHYLLITE	BEDROCK		
2		S-1 0828				↓			
	/					REFUSAL @ 2' EOB @ 2'			
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1054 PAGE: 1 OF 1

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/5-SB1055

START DATE: 11/14/13

COMPLETION DATE: 11/14/13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						Root MAT 1"			
	1.9/2	NO SAMPLE - previously collected	gravelly sand ↓ Bedrock ↓		Brown Dark Grey	(F) Sand - little silt, few angular gravel up to 0.5" Weathered Phyllite fragment ↓	SM-SP	DRY	N/M
					Tan Grey	(F) Sand - trace silt Weathered Phyllite - extremely weathered ↓	SM		
2	/					Refusal - END OF BORING			
	/								
	/								
4									
	/								
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620~~, Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1055 PAGE: 1 OF 1

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/5-1056

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8'/2'	NO SAMPLE; 0-1' PREVIOUSLY			BRN	S-1A (0-0.2') ROOT MAT, GRASS, TWIGS		DRY	NM
				LOOSE	TAN-BRN	S-1B (0.2-0.8') SAND & GRAVEL-SOME SILT	SM		
	/	COLLECTED				(MOSTLY F SAND, PG; F+C SR GRAVEL TO 1"; >15% FINES, NO STAINS	|		
				LOOSE	GRAY-BRN	S-1C (0.8'-1.3') SAND+GRAVEL-SOME SILT	SM		
	/	WEATHERED BEDROCK @ 1.3'				(F-M SAND, TR C. SAND, PG, MOSTLY BROKEN SA TO ANG. PHYLLITE PIECES, >15% SILT, NO STAINS)	↓		
				LOOSE	DK GRAY	S-1D (1.3'-1.8') WEATHERED PHYLLITE, FISSILE,	BEDROCK		
	/					↓			
2		S-1 0925				↓	↓		
	/					REFUSAL @ 2' EOB @ 2'			
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1056

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/5-SB1057

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: ~~K. Jalkut~~ M. Horton

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.9/2	NO SAMPLE - previously collected	Silty Sand		Brown	(F) Sand - little silt - trace angular & sub angular gravel up to 1.5" quartz	SM	DRY	NM
			gravelly sand		Dk. Brown	Mix (F) Sand/Phyllite - little silt			
	/								
2			weathered Rock		Dk. Grey	Weathered Phyllite - extremely weathered			
	2.0/2.0	TF2-004/5-SB1057-0304 1015	PAH metals Diesel					DRY	
	/		gravelly sand		Brown	(F) Sand - trace silt, few small angular gravel up to 0.5"			0.0
4					Grey	Weathered phyllite			
	1.9/2	NO SAMPLE						DRY	NM
					Dk. Grey	Mix - Phyllite/(F) Sand - little silt - phyllite frags. up to 1"			
	/								
6					Grey/Brown	(F) Sand - little silt - many small angular phyllite		MOIST	
	1.9/2	TF2-004/5-SB1057-0608 1025	PAH Metals			Mix - (F) Sand/Phyllite (extremely weathered) - little silt - phyllite fragments up to 1"			0.0
	/	DUP05							
8					↓	SEE NEXT PAGE		↓	

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/S-581057

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

TRANSCRIBED BY:

START DATE: 11-14-13

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
8									
	0.9/2	NO SAMPLE - Weathered Rock	sandy gravel		DK Grey	Mix Phyllite/(F) Sand - little silt, trace (M) sand	SM-SP	Moist	NM
			Bedrock			Weathered Phyllite		Extra volume needed (1x)	
	/								
10						Refusal - END OF BORING			
	/								
	/								
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/S-1058 SB

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-13-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-13-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8'/2'	No sample to lab			Brn/DK brn	S-1A (0-0.1') ROOT MAT S-1B (0.1-0.3) Sand + Gravel - Some Silt (Mostly f sand, pg, f+c SA gravel. to 1"ψ - mostly slate/phyllite, no stains, dry, loose >15% NP fines)	- SM		
	/				DK Gray	S-1C (0.3-1') POWERIZED ROCK - Phyllite/Slate, Fissile weathered, broken	Rock Interval		
2		S-1 1400			Tan/Brown	S-1D (1-1.8') SAND - TR GRAVEL - LITTLE SILT (Mostly f. sand, pg, f gravel (slate/phyllite chips) to ½", dry, no stains, loose, ~10% NP fines	SP-SM		
	1.8'/2'	To lab for analysis - Lab QC too TF2-004/S-SB1058-0204 Diox, pcbs, metals, grain, extph							
					Grey Brn	S-2 (0-1.8') Sand and Gravel - Little Silt (Mostly f. sand, tr. med sand, pg, f+c gravel SR to 1½" f+c slate/phyllite pieces, dry, loose, no stains, ~10% NP fines)	SP-SM		SR=0.0 JHS=0.0
4	/	S-2 1405			Dark Gray	↓ S-2B (1.6-1.8') POWERIZED ROCK - phyllite/slate weathered/broken Fissile	Bedrock	1.6' - this portion not in sample	
	1'/2'	No sample to lab			DK Gray	S-3 (0-1') POWERIZED ROCK - phyllite/slate - Similar to S-2B, very broken, Pieces up to 1½"			
						↓			
6	/	S-3 1410				↓	↓		
	1.5'/2'	No sample to lab				S-4 (0-1.5') Similar to S-3	Bedrock		
						↓	↓		
	/					↓	↓		
8						Refusal @ 8' EOB @ 8			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: PAGE: OF

Request 2 additional liners from 2-4' for lab QC vol.

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-1004/5 - ~~1050~~ SB 1059

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-13-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-13-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8'/2'	No sample to lab			Brn	S-1A (0-0.2') ROOT MAT	-	dry	NM
					Gray Brn	S-1B (0.2-0.55) sand - little gravel - some silt (Mostly f sand, pg, f gravel SB 1/4"-1/2", slate/phyllite up to 9", SA, dry, loose, no stains >15% NP Grav.)	SM		
2	/	S-1 1345 ~~1350~~			Dark Gray	& S-1C (0.5-1.8) PULVERIZED ROCK - phyllite/slate, fissile layers, weathered	Bedrock		
	1.8'/2'	No sample to lab				S-2 (0-1.8') Pulverized rock - similar to S-1C			
4	/	S-2 1348							
	1.8'/2'	No sample to lab				S-3 (0-1.8) Pulverized rock - similar to S-2			
6	/	S-3 1351				Actual refusal @ 6' - rock more competent EOB @ 6'			
	/								
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30
LOGGED BY: ~~K. Jalkut~~ M. Horton
DRILLED BY (Company/Driller): TDS / D. Newton
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: TF2-0004/5-SB1060
START DATE: 11/14/13
COMPLETION DATE: 11/14/13
MON. WELL NO.: NA
CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	2.0/2	NO SAMPLE - previously collected	gravelly Sand		Brown	(F) Sand, little silt, few angular gravel up to 1", trace (M) sand	SM-SP	DRY	NM
2					Dark Grey	Mixed Phyllite/(F) Sand, little silt			
	/					Weathered Phyllite - extremely weathered			
			Sand		Brown/ Grey	(F) Sand - trace silt weathered Phyllite	SM		
4	1.9/2	NO SAMPLE - Weathered Rock	Bedrock		Dark Grey			DRY	NM
	/								
6	2.0/2	NO SAMPLE - Weathered Rock			Grey	SAA - little more competent		DRY	NM
	/								
	/					END OF BORING			
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING: Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING: Not Applicable
GROUNDWATER LEVELS:
OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1060 PAGE: 1 OF 1

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jelkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/5-SB1061

START DATE: 11-14-13

COMPLETION DATE: 11-14-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						Root Mat 1"			
	1.9/2	NO SAMPLE - previously collected	Silty Sand		Brown	(F) Sand - little silt, trace small gravel up to 0.5"	SM-SP	DRY	NM
			gravelly Sand		Brown/Red	(F) Sand - little silt, few small angular gravel up to 1", trace (M) sand			
	/		Bedrock ↓		Grey	weathered phyllite - extremely weathered ↓			
2									
	/					Refusal - END OF BORING			
	/								
4									
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-004/5-SB106

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11/13/13

LOGGED BY: ~~K. Jalkut~~ M. Hebert

TRANSCRIBED BY:

COMPLETION DATE: 11/13/13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	0-1 ft. interval sampled previously	Root Mat / Sand - Silt		Brown	Root Mat - 1" (F) Sand - some silt (10-20%), some gravel, angular - up to 0.5"	SM	DRY	NM
					Tan/ Brown	-SAA - evidence of larger fragments of phyllite	SP		
1	1.8/2								
	/		Weathered Bedrock		Grey	Weathered phyllite - mixed w/ (F) sand and some silt			
						Weathered phyllite			
	/								NM
2									
	0.6/1	Weathered rock - NO SAMPLE TO LAB							
	/								
3									
	/					Refusal - END OF BORING			
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: SB106

TF2-

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: 1063 SB304/5-~~SB3~~

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11/13/13

LOGGED BY: ~~K. Ialkut~~ M. Horton

TRANSCRIBED BY:

COMPLETION DATE: 11/13/13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0	1.8/2	NO SAMPLE previously collected	Silty Sand		Brown	Root Mat 3" (F) Sand, some silt, some small angular gravel up to 0.5"	SM-SP	DRY	NM
					grey	Weathered Bedrock (Phyllite)			
	/								
2					Tan	(F) Sand	SM		
	2/2	NO SAMPLE - Weathered Rock	Bedrock			(F) Sand/Phyllite mix Weathered Phyllite	SM	DRY	NM
	/								
4									
	1.9/2	NO SAMPLE - Weathered Rock				Extremly Weathered Phyllite		DRY	NM
	/								
6									
	1.9/2	NO SAMPLE - Weathered Rock				SAA - slightly more competent		DRY	NM
	/								
8						Refusal - END OF BORING			

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	~~SR=PID reading over open liner; JHS= PID jar headspace reading~~

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/5-SB1064

START DATE: 11-13-13

COMPLETION DATE: 11-13-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8'/2'	No sample to lab			Brn	S-1A (0-0.2') ROOT MAT		dry	NM
					Gray Brn	S-1B (0.2-1.8') SAND AND GRAVEL - SOME SILT (Mostly f-m sand, tr. c. sand, f to c SR gravel 1/4"-1", SA slate/phyllite pieces up to 1 1/2", loose, dry, no stains, >5% NP fines	SM		
2	/	S-1 1435							
	1.8'/2'	Sample to lab - TF2-004/5-SB1064-0204 Diox, pah, metals	no geo change		Gray Brn	S-2 (0-1.8') Sand + Gravel - Little silt (Mostly f-m sand, tr. c. sand, f to c SR gravel up to 1", f to c slate/phyllite up to 1 1/2", SA, SR, ~10% NP fines, dry, loose, no stains	SP-SM	Less silt than above	SR = 0.0 ppm JHS = 0.2
4	/	S-2 1440							
	1.8'/2'	Sample to lab - TF2-004/5-SB1064-0406	just above TK			S-3 (0-1.8') similar to S-2	SP-SM		SR = 0.0 JHS = 0.2
		~~Diox~~ pah, metals	no geo change DEPTH						
6	/	S-3 1445							
	1.4'/2'	No sample to lab			Dark Gray	S-4 (0-1.4') Pulverized rock - phyllite/slate, weathered/broken, fissile layers	Bedrock		
	/								
8		S-4 1450				Refusal @ 8' EOB @ 8'			

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: PAGE: OF

Requested return for add. vol from 4-6' interval

Driller Crew 1550 We leave 4:30

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-004/S-SB1065

START DATE: 11-14-13

COMPLETION DATE: 11-14-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8'/2'	NO SAMPLE; 0-1' PREVIOUSLY COLLECTED			BRN	S-1A (0-0.2') ROOT MAT		DRY	NM
				LOOSE	GRAY BRN	S-1B (0.2'-1.2') SAND-LITTLE GRAVEL-LITTLE SILT	SP-SM		
	/				↓	(MOSTLY F SAND, PG, FTC SA to ANG GRAVEL UP TO 1", (PHYLLITE CHUNKS), ~10% FINES, NO STAINS)	↓		
				LOOSE	DK GRAY	S-1C (1.2-1.3") WEATHERED PHYLLITE, FISSILE	ROCK INTERVAL		
	/				GRAY BRN	S-1D (1.3-1.8) SIMILAR TO S-1B	SP-SM		
2		S-1 1440		LOOSE	↓	↓			
	1.8/2'	TF2-004/S-SB1065-0204 DIOX PAH METAL		LOOSE	BRN	S-2 (0-1.8') GRAVEL-SOME SAND-LITTLE SILT	GP-GM	DRY; MORE GRAVEL THAN SAND; XTRA VOL. NEEDED (MS)	SR=0.0
						(MOSTLY C. GRAVEL UP TO 1", SLATE-LIKE, SA; F SAND,			JHS=0.2
	/					PG, ~10% FINES, NO STAINS)			
4		S-2 1445		↓	↓	↓	↓		
	1.8/2					S-3 (0-1.8') SIMILAR TO S-2			
6		S-3 1450		↓	↓	↓	↓		
	1.8/2'	TF2-004/S-SB1065-0608 PAH, METAL		↓	GRAY BRN	S-4 (0-1.8') SIMILAR TO S-3	GP-GM		SR=0.0
				↓	↓	↓	↓		JHS=0.5
	/			↓	YELLOW-GRAY	_ WEATHERED PHYLLITE @ BOTTOM OF SAMPLE (1.7')	BEDROCK		
8		S-4 1455		DENSER	↓	↓ REFUSAL @ 8' END OF BORING @ 8'	↓		

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: TF2-064/5-SB1066

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-14-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-14-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.8'/2'	NO SAMPLE; 0-1' PREVIOUSLY COLLECTED			BRN	S-1A (0-0.4') ROOT MAT; GRASS		DRY	NM
				LOOSE	BRN	S-1B (0.4'-1.8') SAND - SOME GRAVEL - SOME SILT	SM		
	/			↓	↓	(MOSTLY F. SAND, PG, FTC SR & SA GRAVELS UP TO 1"Ø [NOT PHYLLITE], ≥15% FINES, NO STAINS	↓		
2		S-1 0938			↓	↓			
	/	TF2-064/5-SB1066-0203		↓	BRN	S-2" (0-1') SIMILAR TO S-1B	SM	DRY	SR= 0.0
	/	DIOX PAH METALS TO LAB		LOOSE	DK GRAY	S-2B (1-1.8') WEATHERED PHYLLITE - FISSILE, BROKEN	BEDROCK	+2 HOLES FOR VOLUME	JHS=0.0
	/			↓	↓	↓	↓		
4		S-2 0945		↓	↓	↓	↓		
	/					REFUSAL @ 2' EOB @ 4'			
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1066 PAGE: 1 OF 1

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TP2-004/5-581067

START DATE: 11-14-13

COMPLETION DATE: 11-14-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						Root Mat 2"			
	2.0/2	NO SAMPLE - previously collected	Silty Sand		Brown	(F-M) Sand - little silt, trace small angular gravel up to 0.5"	SM-SP	DRY	NM
			gravelly Sand		Tan	(F-M) Sand - few rounded gravel up to 1" (quartz), trace ~~grave~~ (C) Sand	SM-SP		
	/								
2			Bedrock		Grey	weathered phyllite			
	/					Refusal - END OF BORING			
	/								
4									
	/								
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

TF2-

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: ~~K. Jalkut M.H.~~ M. Horton

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: 004/5-SB1068

START DATE: 11-14-13

COMPLETION DATE: 11-14-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						Root Mat 2"			
	2.0/2	NO SAMPLE - previously collected	gravelly sand weathered Rock		Brown	(F) sand - little silt, few phyllite fragments up to 1.5" weathered phyllite	SM-SP	DRY	NM
					Grey				
2	/								
	1.9/2	TF2-004/5-SB1068-0204 DUP06 1500	DAH metals Dioxins Sand		Brown/Tan	(F) sand - trace small gravel up to 0.5" (phyllite/quartz), trace silt	SP	DRY	JHS 0.1
			gravelly sand		Grey/Tan	(F) sand - trace silt, little gravel up to 1", trace (M) sand	SM-SP		
4	/								
	1.9/2	NO SAMPLE				SAA		DRY	NM
					Brown	(F) sand - trace silt, trace small gravel up to 0.5"	SP-SM		
	/				Grey	(F) sand - little silt, little gravel up to 1", trace (M) sand weathered Phyllite			
6									
	1.7/2	NO SAMPLE	weathered Bel Rock			weathered phyllite - extremely weathered		DRY	NM
	/								
8						BR Refusal - END OF BORING			

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: 1068 PAGE: 1 OF 1

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30
LOGGED BY: K. Jalkut
DRILLED BY (Company/Driller): TDS / D. Newton
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: TF2-BSA-SB&1090
START DATE: 11-12-13
COMPLETION DATE: 11-12-13
MON. WELL NO.: NA
CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0						S-1A (0-0.2') root mat			
	/	S-1' to lab for analysis Pb, TS			DK BR	S-1B (0.2-0.4') SILTY F SAND-LITTLE GRAV (Mostly fi sand, PBs, f. gravel, SR to R 1/2", wood pieces	SM	Dry	NM
	1.8/2'	Pb, TS ↓				S-1C (0.4-1.8') SAND AND GRAV - some LITTLE SILT (Mostly fi and, fi-med sand, f. gravel to 1/2" SR, C. gravel up to 1 1/2" SR, slate or phyllite fragments >15% no pl fines, no stains, damp, loose	SP-SM		
2	/	S-1 1530							
	/	2-4' to lab Pb, TS			D&M	S-2 ALL PULVERIZED ROCK-SLATE/ PHYLLITE — NO SAMPLE 2-4'	ROCK	Dry	
	1.6/2	TF2-BSA-SB-Dup-0804 ↓							
						End @ 4'			
4	/	S-2 1535							
	/								
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING: Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING: Not Applicable
GROUNDWATER LEVELS:
OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: BSA-SB1090 PAGE: 1 OF 1

Drillers leave 1550

TF2 - SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: BSA-109 #1

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-12-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-12-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	0-1' to lab for Lead, TS			Dark brn	S-1A (0-1') Sand - Some Gravel - Little Silt (Mostly f sand, fgr to med sand, fg f to f SA, SR gravel (chert non platy) 1/2" to 1 1/2", ~10% non pl fines, dry, no stains, loose	SP-SM	Dry	NM
	1.6/2.0'	↓							
		↓			Tan Brn	S-1B (1-1.6') Sand, Some Gravel - Little Silt (Mostly f-m sand, fgr, f to C SA stale pieces/chunks up to 1 1/4", ~10% non pl fines, dry, loose no stains	SP-SM	Dry	
2	/	S-1 1320							
	/	2-4' to lab for Lead, TS			Brn/ Tan Grey	S-2 (0-1.3') Sand and Gravel - Little Silt (Mostly f-m sand, trc C. sand, BJ, f to C gravel up to 1", SR, SA, 1" rock fragment platelike (thin slivers), ~10% non pl fines, dry, loose, no stains	SP-SM	Dry	
	1.3/2.0'	↓ Lab QC 2+40z jars							
	/	↓				End @ 4'			
4		S-2 1331							
	/								
	/								
	/								

TYPE OF DRILLING RIG: ✓ Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: BSA-SB109 PAGE: 1 OF 1

Move to BSA @ 1PM
Show dunbers locations

Check for flow meter @ 1PM

TF2 SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: BSA-1092

START DATE: 11-12-13

COMPLETION DATE: 11-12-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	0-4' to lab for ~~BS~~ lead; TI			Gray brn	S-1 (0-2') Sand and Gravel, little Silt (Mostly f-m sand, pg, f-c SR-SA gravel (slate pieces) up to 1 1/4", ~15% non-plastic fines, dry, loose, no stains	SM	Dry	NS
	1.5'/2'	↓				↓			
2	/	S-1 1400							
	/	2-4' to lab for lead, TI analysis			Gray brn	S-2A (0-1.3') similar to above	SM	Dry	
					brn	S-2B (1.3-1.5') Sand (fine, pg) little Silt dry, no stains, tight	SP-SM		
	1.5'/2'								
						End @ 4'			
4	/	S-2 1410							
	/								
	/								

TYPE OF DRILLING RIG: ✓Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: BSA-SB1092 PAGE: 1 OF 1

Check for floor to 10' — no refusal

TF2 - SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: BSA-1093

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-12-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-12-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	0-1' to lab for Lead, TS 1x4oz jar			DK grayish brown	S-1A (0-0.2') WOOD CHUNK-ROOT	SP-SM	Dry	NM
						S-1B (0.2'-1') SAND - SOME GRAVEL-LITTLE SILT (F-M sand, pg; f-c SR, SA gravel up to 1" (some slate like pieces, some not phyllite; ~10% fines, mod pl. dry, loose no stains			
	18/24								
					Bright tan	S-1C (1-1.8') PULVERIZED ROCK - some phyllite weathered some	—		
2	/	S-1 1340				S-2 (1-1.5')		Dry	
	/	2-4' to lab Lead, TS 1x4oz jar				S-2A (0-0.5') SAND - LITTLE GRAVEL-LITTLE SILT (Mostly f-M sand, pg, f SRA gravel pieces (rock frags) up to 1/2"; ~10% fines, dry loose, no stains	SP-SM	Dry sm portion only for sample above weathered rock.	
	15/24								
		↓			GRAY	S-2B (0.5'-1.5') ALL PULVERIZED ROCK SLATE OR PHYLLITE PIECES - weathered	—	did not send to lab	
4	/	S-2 1350							
	/					End @ 4'			
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: BSA-SB1093 PAGE: 1 OF 1

went to 10' no refusal

Daniel Stufkan on ground had to dig out manually 1350-2

TF2 - SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: BSA-109Y

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-12-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-12-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET) 0	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
	/	TO lab - 0-1'				S-1A (0-0.2') ROOT MAT		dry	NM
					Dk Gray BRN	S-1B (0.2'-0.9') Sand and Gravel Coke	SP-SM		
	1.5/2	lead, TS				Silt (Mostly F sand to Med sand, Pcj ptc SA, SA granules, ½"-1½", ~10% non pl fines, dry, Coke no stains, metal band		fragments to lab	
	/				Tan BRN	S-1C (0.9-1.5') Similar to above, lighter in color, no stains, no debris	SP-SM	did not send to lab	
2		S-1 1420							
	1.3'/2'	TO lab @ 1-4' Lead, TS			DK Gray	S-2A (0-0.8') PULVERIZED ROCK - phyllite weathered, slivers up to 1"	—		
	/				BRN	S-2B (0.8-1.1') SILTY FINE SAND - LITTLE GRAVEL (Mostly F sand, Pcj, F gravel CR up to ½", ~15% non plastic fines, no stains		damp	
4	/	S-2 1430							
	/					End @ 4'			
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: BSA-SB109Y PAGE: 1 OF 1

~~Checked for floor no refusal @ 4'~~

refusal @ 1' moved over 1' went to 2' (0-2')

No recovery 2-4' - moved over 1' and try (2-4')

TF2-SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: BSA-SB1095

START DATE: 11-12-13

COMPLETION DATE: 11-12-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	0-1' to lab for lead, TT 1x402 jar			DK Brown	S-1A (0-0.2') ROOT MAT/WOOD CHUNK			NM
						S-1B (0.2-1.6') SILTY F SAND-SOME GRAVEL (mostly f sand, fg, 2.5Y4/3 olive brown, dense, no stains, no odors, no NAPL, no debris, SR gravel 1/2"-1" w/ some slate, prep to 1 1/2" slate	SM	DRY	
	1.6'/2'								
2	/	S-1 1450							
	2'/2'	2-4' to lab for lead, TT			DK Brown	S-2A (0-0.5') Similar to above	SM	DRY	NM
					DK Gray	S-2B (0.5-1.5') POWDERIZED ROCK-dull brown, weathered (physically slate)	did not include in sample for lab BRKN RTHR		
	/	↓							
						S-2C (1.5-2') SILTY F SAND-LITTLE GRAVEL, TR SLATE PIECES	SM		
4	/	S-2 1500							
						ENCP 4'			
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: BSA-SB1095 PAGE: 1 OF 1

After 1094, moved rig around to next location did not have to dig over water

(Near Chem)

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-SB-BSA-1096

START DATE: 11-12-13

COMPLETION DATE: 11-12-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	0-1' to lab for Pb+TS			DK Brown	S-1A (0-0.4) SAND-SOME SILT-LITTLE GRAV (Mostly silty f sand w/ ≥15% non-pl fines, pg, f-c SR gravel up to 1", dense, damp, no stains	SM	damp	NM
	1.4'/3'	TF2-BSA-SB-D-PG3--0001				S-1B (0.4-1.4") SAND-SOME GRAV-LITTLE SILT (Mostly f-sand, fr. med sand, pg, f-c SR gravel to 1", damp, no stains, dense, ~10% non-pl fines	SP-SM	0-1' to lab	
2	/	S-1 1505							
	1.4'/2'	2-4' to lab for Lead, TS			Grey Brown	S-2A (0-0.7') SILTY SAND-~~SOME~~ LITTLE GRAV (Mostly f. sand, ≥15% non-pl fines, f-c SR gravel 1/2-1", no stains, ~~loose~~, damp)	SM	Damp	
	/				Dk Brown	S-2B (0.7-1.4') SILTY SAND-TR GRAV Mostly silty f sand, pg, f. gravel up to 1/2", dense, no stains	SM		
4	/	S-2 1510							
	/					End @ 4'			
	/								
	/								

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

(BY THE RACK)

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-SB-GSA-1097

START DATE: 11-12-13

COMPLETION DATE: 11-12-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition; odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	0-1' to lab for lead, TS				S-1A (0-0.2') ROOT MAT, WOOD CHUNK	—	Damp	NM
					DK Brown	S-1B (0.2-1') SAND - LITTLE GRAVEL - LITTLE SILT	SP-SM		
	1.4'/2'	↓				Mostly f sand, pg, tr. med sand, f gravel up to 1/2", SR, 10% non plastic fines, damp, loose no stains, faint		fragments for sample	
					Yellow Brown	S-1C (1-1.2') Similar to above/ slate or phyllite pieces - different color, damp, loose, no stains	SP-SM		
2	/	S-1 1515							
	/	2-4' to lab for Pb, TS						Damp	
					DK Gray	S-1TS (1.2-1.4') Pulverized phyllite pieces - weathered.	ROCK		
	1.8'/2'	↓			DK Gray	S-2A (0-1.2') Pulverized phyllite or rock - weathered.	ROCK	did not send to lab	
					DK Brown	S-2B (1.2-1.8') SILTY F SAND - TR GRAVEL	SM	only this portion to lab	
4	/	S-2 1520				Mostly f sand, pg, dense, f gravel up to 1/2", SR, no stains, damp		Damp	
	/								
	/					END @ 4'			

TYPE OF DRILLING RIG: Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~

METHOD OF ADV. BORING: Direct Push Technology (DPT)

METHOD OF SOIL SAMPLING: MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth

METHOD OF ROCK CORING: Not Applicable

GROUNDWATER LEVELS:

OTHER OBSERVATIONS:: SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

TF2

SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: B219-1080

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-12-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-12-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.1' / 2.0'	Sample to Lab (0-1') B2B219-SS1080-0001			Brn	S-1 (0-1.1') Sand - Some Gravel - Tr Silt (C-F sand, pg, f-c SR gravel to 1", phyllite, Slivers, chunks (dark gray), <5% non-pl fines, dry, no stains, no odors root mat @ top = 0.2'	SP	Driller hits rock @ 1' (poor recovery)	N/M
					↓				
2	/	S-1 1035			Reddish Tan				
	2.8' / 2.0'	Tobs 2-4'				S-2 (0-1.8') Sand and Gravel - Tr Silt (C-F sand, well graded, f-c SR up to 1", rock fragments, SA to 3/4, dry, <5% fines)	SP		
	/								
	/					End @ 4'			
4	/	S-2 1045							
	/								
	/								
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; ~~Lightweight Geoprobe Model 420M machine~~
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: PAGE: OF

f = fine
m = medium
c = coarse

tr = trace
pg = poorly graded
SA = subangular
SR = subrounded

non-pl = non plastic

TF2-B219-SB1081

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: SB1081

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-12-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-12-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0	1.7'/2.0'	TF2-B219-SS1081-0001	Pebs only 1x40z Jar TS		Brn	S-1A (0-11") Sand-~~Some~~ Little ~~Silt~~ Few ~~Some~~ Little Gravel-Little Silt (Mostly f sand, poorly graded, <15% f+c SR gravel to 1", <15% non plastic fines, dry, root hrzt (0-0.5')	SP-SM	dry	NM
	/	S-1 1000				S-1B (11"-16") concrete - gray ~~Some~~ pieces up to 2"+ long			
	/					S-1C (16"-17") Sand-~~Some~~ Gravel-Little Silt (Mostly f sand, poorly graded, trace sand, f+c SR+SA gravel up to 1", dark brown,			
2	1.8'/2.0'	TF2-B219-SS1081-0201	Pebs only 1x40z Jar		Brn	S-2A (0-1.3') Sand-Some gravel, Tr. Silt Mostly f sand, trace sand, thin sections of weathered rock (fragments), tr fines, dry	SP		
4	/	S-2 1005			Dk Brn	S-2A (1.3-1.8) Sand-~~Some~~ Little gravel Tr Silt (Mostly f sand, poorly graded, f+c SR gravel, tr. fines	SP		
	/					End @ 4'			
	/								
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-SB-B219-1082

START DATE: 11-12-13

COMPLETION DATE: 11-12-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	0-1' to lab for PCB, TS Analysis				S-1A (0-0.3') root mat	—	dry	~0
					lt brown to brown	S-1B (0.3-0.8') SAND - Little gravel, Tr Silt (Mostly f sand, f SR gravel up to ½", <5% non pl fines, dry, no stains	SP		
	2.1' ≈ 2'0"								
					Dk brown to lt brn	S-1C (0.8-1.1') ROCK FRAG SR to ang up to 1" length (slate) w/ f sand	—		
2	/	S-1 1220				S-1D (1.1-1.6') Sand + Gravel - Little Silt	SP-SM		
	/	2-4' to lab for analysis			Dk brown	(Mostly f-m sand, Pg, loose, dry, f-c SR gravel ½" - 1½" (not phyllite) ≈10% non pl. fines, no stains, brick pieces			
	1.8' 2'0"	DUP02 PCBs, TS TF2-SB-DUP02-1113			Blk to brn	S-2 (0-1.0') Sand and Gravel, Little Silt (Mostly f-m sand, f-c SR gravel ½-1½" 1" rock fragments - slivery pieces (not phyllite) ≈10% non pl. fines, dry, no stains	SP-SM		
4	/	S-2 1225							
	/					End @ 4'			
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: PAGE: OF

Drillers @ BKA after looking up from 1225-1 Show ends

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-SB B219-1083

START DATE: 11-12-13

COMPLETION DATE: 11-12-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	—	0-1' to lab for PCB, TS				S-1A (0-0.2') root mat			N.M
					Dk Brown	S-1B (0.2'-1.8') Sand - Some Gravel - Little Silt (Mostly fi sand, pg, f-c SR gravel up to 1¼", SA pieces up to 1" (slate?), ~10% non pl. fines, dry, no stains, glass shard up to 1")	SP-SM		
	1.8'/2.0'								
2	—	S-1 1207							
	—	2-4' to lab for PCB, TS				S-2A (0-0.5') Similar to S-1B	SP-SM		
					Brown to Tan	S-2.B (0.5-1.8') Sand and Gravel, Little Silt (Mostly f-m sand, pg, f-c SR gravel ½"-1¼", 1" rock fragments - slivers to larger or thicker pieces (not phyllite) ~10% non pl fines, dry, no stains			
	1.8'/2.0'								
	—								
4		S-2 1220							
	—					End @ 4'			
	—								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-SB B219 1084

START DATE: 11-12-13

COMPLETION DATE: 11-12-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	0-1' to lab for PCB, TS			Brn	S-1A (0-0.2') ROOT MAT	—		NM
	/				Brn	S-1B (0.2'-1') Sand-some Silt-Tr Gravel (Mostly f. sand, pg, tr. med sand, ≥15% non pl. fines, dry, ≤15% f. gravel to 1/2", SR, tr. rock frag. roots	SM		
	1.8'/2.0'								
	/				Gray	S-1C (1'-1.3') PULVERIZED ROCK FRAGS all phyllite w/ graphite seam	Rock Frags	not to lab	
2	/	S1 1130							
	/					S-1D (1.3-1.8') Similar to S-1B	SM		
	1.8'/2.0'	Sample to lab for PCB + TS			forgot to tan	S-2A (0-1.8') Sand and Gravel, Little Silt (Mostly f-m sand, f-c SR gravel to 1", rock frags to 1" (pulverized rock), ~10% non pl fines, dry, no stains, no obvious fill debris	SP-SM	to lab	
	/								
4	/	1135							
	/					End @ 4'			
	/								
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: TF2-SB-B219-1085

START DATE: 11-12-13

COMPLETION DATE: 11-12-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/ 4'	0-1' to lab for PCB;TS				S-1A (0-0.2') root mat	—	dry	NM
					Dk brown	S-1B (0.2'-0.5') SAND-LITTLE GRAVEL-LITTLE SILT (Mostly f sand, v. gravel, f-c gravel ½-1" rock frags-phyllite up to 1¼" slivers, brick, wood chunks	SP-SM		
	1.8'/2.0'								
					Dk Gray	S-1C (0.5-0.8') PULVERIZED ROCK-PHYLLITE	—		
2	/	S-1 1155			Dk brown	S-1D (0.8-1.4') similar to S-1B	SP-SM		
	/ 4'	2-4' to lab for PCB;TS							
					Beige to Brn	S-2 (0-1.8') Sand and Gravel-Little Silt (Mostly f-m sand, vg, f-c gravel ½"-1", rock fragments (wet phyllite) up to 1¼" slivers + chunks, ~10% non-pl fines, dry, no stains	SP-SM	dry	
	1.8'/2.0'	↓						↓	↓
4	/	S-2 1200							
	/					End @ 4'			
	/								
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.:

PAGE: OF

TF2- SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

BORING NO.: B219-1086

PROJECT NO: 112G03019 CTO WE 30

START DATE: 11-12-13

LOGGED BY: K. Jalkut

TRANSCRIBED BY:

COMPLETION DATE: 11-12-13

DRILLED BY (Company/Driller): TDS / D. Newton

MON. WELL NO.: NA

GRD. SURFACE ELEVATION:

ELEVATION FROM:

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	0.6/2.0'	0-1' to lab PCB, TS bx402 jar				S-1A (0-0.1') root mat			
					Dark Brown	S-1B (0.1'-0.6') Sand, Little Gravel, Little Silt (Mostly f sand, pb, f gravel, Slt to ½", ~10% non pl. fines, dry, loose, no stains)	SP-SM	dry	NRA
	/							regolith added vol.=	Extra Sleeve
2	4'	S-1 1140							
	1.8'/2.0'	2-4' to lab PCB, TS bx402 jar			Dark Brn Beige to Tan	S-2A (0-0.4') Similar to S-1B S-2B (0.4-1.4') Sand and Gravel, Little Silt (Mostly f-m sand, fine Slt, gravel to ¾", rock fragments up to ¾" (subrounded) Slivers of rock (not phyllite), ~10% non pl fines, dry, no stains	SP-SM to lbL	dry	
	/								
4	/	S-2 1145				End @ 4'			
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: PAGE: OF

Extra sleeve - +2'

TF2 SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30
LOGGED BY: K. Jalkut
DRILLED BY (Company/Driller): TDS / D. Newton
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.: B219-1087
START DATE: 11-12-13
COMPLETION DATE: 11-12-13
MON. WELL NO.: NA
CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
	1.5'/2.0'	0-1' for lab PCBs, TT			Brn	S-1A (0-0.2') root mat			NM
		↓			Tan to Brn	S-1B (0.2-1.1') Sand - Little Gravel - Little Silt (~Mostly f sand, pg, 3-4 pieces SR gravel to 1 1/2 in, phyllite rock fragments up to 1 1/4" (SA), ~10% non pl. fines, dry	SP-SM	dry	
	/								
	/								
	/					S-1C (Chip -1.5') Sand + Gravel - Tr Silt (Mostly f->C sand, wg, brick, Clinkers, phyllite Chunks f gravel to 3/4", SA; SR, <5% fines; dry) no stains no odors		not sent to lab	
2	/	S-1 1050			Dk Gray Brn				
	/	To lab - 2-4'							
	/								
	1.6'/2.0'				Beige to Tan	S-2A (0-1.6') Sand and Gravel - Little Silt CF-M sand, pg, f-C SR gravel to 1", rock fragments up to 1/2" (pulverized), ~10% non pl. fines; dry, no stains, no obvious fill debris	SP-SM	dry	
	/								
4	/	S-2 1055							
	/								
	/					End @ 4'			
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: PAGE: OF

driller breaks 14-11:15

TF2- SB
B219-1088

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30
LOGGED BY: K. Jalkut
DRILLED BY (Company/Driller): TDS / D. Newton
GRD. SURFACE ELEVATION:

TRANSCRIBED BY:
ELEVATION FROM:

BORING NO.:
START DATE: 11-12-13
COMPLETION DATE: 11-12-13
MON. WELL NO.: NA
CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	1.5 / 2.0'	No sample for Lab			Brown	S-1A (root mat = 0.3')	SP-SM	Dry	
						S-1B (0.3'-1.2') Sand - little gravel, little Silt (Mostly f-m sand, rg, f-c SR gravel to 1" tr. broken dark grey phyllite pieces-phyllite 1/2 coal; ≤10% non plastic fines, dry			
	/							Dry	
	/				DK Brown	S-1C (1.2'-1.5') SAND - some Gravel - Tr Silt (Mostly f-m sand to f. sand, (coarser than above) f-c SR gravel up to 1 1/4", <5% non plastic fines, saturated	SW	Saturated (rain?)	
2	/	S-1 1015 Sample to lab for PCBs, TS only 1x4oz jar							
	1.7' / 2.0'				DK Brown	S-2A (0-0.4') SAND - Little Gravel, - Tr Silt - (Mostly f. sand, tr. m-c sand, rg, f-c SR gravel to 1", broken phyllite pieces, <5% non plastic fines, dry	SP	Dry	
	/				Tan	S-2B (0.4'-1.3') Sand, some Gravel - Tr Silt (F-M sand, rg, f-c SR gravel to 1 1/4", phyllite slivers - weathered, <5% non plastic fines, dry	SP	Dry	
4		S-2 1025							
	/								
	/					End @ 4'			

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: PAGE: OF

TF2- SB

BORING LOG FOR: Tank Farm 2, Category 1 Areas, Naval Station Newport, Portsmouth, RI

PROJECT NO: 112G03019 CTO WE 30

LOGGED BY: K. Jalkut

DRILLED BY (Company/Driller): TDS / D. Newton

GRD. SURFACE ELEVATION:

TRANSCRIBED BY:

ELEVATION FROM:

BORING NO.: B219-1089

START DATE: 11-12-13

COMPLETION DATE: 11-12-13

MON. WELL NO.: NA

CHECKED BY:

DEPTH (FEET)	SAMP REC./ SAMP LENG.	SAMPLING TIME & SAMPLE NO. (QA/QC STATUS)	DEPTH MAT'L CHG/WELL PROF'L	SOIL DENSITY/ CONSIS. OR ROCK HARD	CLR	MATERIAL CLASSIFICATION	USCS OR ROCK BRKN	REMARKS (moisture condition;odors; geological classification; rock weathering; etc.)	FIELD SCREENING DATA [PID]
0									
	/	No sample to lab			Dk brown	S-1A (0-0.1') ROOT MAT			NM
						S-1B (0.1-0.7') SAND - LITTLE GRAVEL - LITTLE SILT (Mostly f. sand, Pg, fAc SR gravel ½"-1", rock frags (non phyllite) up to 1¼", 10% non pl. fines, dry	SP-SM		
	1.7' / 2.0'								
						S-1C (0.7'-1.7") PULVERIZED ROCK - slivers of weathered phyllite	—		
2	/	S-1 1118							
	0.9' / 2.0'	2-4' to lab for PCB, TS (TF2-SB Dup01-20000) 1113			Beige to Tan	S-2 (0-0.9') Sand and Gravel - little Silt FSM sand, Pg, fAc SR, SA gravel + fragments to 1", ~10% non pl. fines, dry	SP-SM	(J) no wet Closed piston - too much sloughing	NM
	/								
						End @ 4'			
4	/	S-2 1121							
	/								
	/								

TYPE OF DRILLING RIG:	Track-mounted GeoProbe Model 6620; Lightweight Geoprobe Model 420M machine
METHOD OF ADV. BORING:	Direct Push Technology (DPT)
METHOD OF SOIL SAMPLING:	MacroCore Sampling System; continuous sampling in 2-foot intervals w/plastic liner to target depth
METHOD OF ROCK CORING:	Not Applicable
GROUNDWATER LEVELS:	
OTHER OBSERVATIONS::	SR=PID reading over open liner; JHS= PID jar headspace reading

Tetra Tech, Inc.

BORING NO.: PAGE: OF

APPENDIX D

PREVIOUS INVESTIGATION INFORMATION

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPLY CENTER TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-201 SHEET 1 of 2 FILE NO. 4101.18 CHKD BY ABU

BORING CO.	GZA DRILLING	BORING LOCATION See Location Plan	
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	D. CAPPACHIONE	DATE START 11/5/96	DATE END 11/8/96

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" to 31' OTHER NX rock core from 6 to 51 ft

GROUNDWATER READINGS				
DATE	TIME	WATER	CASING	STABILIZATION TIME
11/12/96		46.8	Well	4 Days
12/4/96		37.3	Well	1 Month

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED			FIELD TESTING PID	FIELD TESTING FID	R K
		S-1	24/13	0-2	8-15	Dense, brown, fine to medium SAND, some			PVC	Grout	ND	ND	1
					17-11	Silt, little Gravel		2'	R				
							SILTY GRAVELLY	Bent	I	Sand			
							SAND		S				
5	CORE TIME							4'	E				
	(min/ft)					Apparent Top of Bedrock	6'		R	6'			
	10	R-1	60/12	6-11	RQD=0%	Hard, gray, highly fractured, slightly weathered,							
	8				REC=20%	stratified SANDSTONE, with quartz veins			P				
	7								V				
10	7								C				
	8												
	6	R-2	60/4	11-16	RQD=0%	Hard, gray, highly fractured, slightly weathered,			S				
	5				REC=7%	SANDSTONE and slightly metaphorphosed			C	Filter			
	6					SHALE with .2 mm quartz veins	SANDSTONE AND		R	Sand			
15	4						METAMORPHOSED		E				
	4						SHALE WITH		E				
	3	R-3	60/1	16-21	RQD=0%	Hard, gray-black, highly fractured, slightly	QUARTZ VEINS		N				
	4				REC=2%	weathered SANDSTONE and slightly							
	3					metamorphosed SHALE, iron staining at							
20	2					fractures 1 1/2" quart veins							
	3												
	4	R-4	60/0	21-26	RQD=0%	No Recovery							
	2				REC=0%								
	3												
25	5												
	7												
	3	R-5	60/8	26-31	RQD=10%	Soft, top 6" gray, highly fractured							
	4				REC=13%	SANDSTONE, bottom 2" black SHALE, iron							
	4					staining at fractures							
30	3												
	4												4
	3	R-6	60/37	31-36	RQD=37%	Soft, gray-black, moderately fractured, slightly							
	3				REC=62%	weathered, metamorphosed SHALE, iron							
	3					staining at fractures (visible oil-sheen and							
35	6					noticeable petroleum odor)							

REMARKS:

-1- Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580B photoionization detector (PID) equipped with a 10.6 electron volt lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector (FID). Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPLY CENTER TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-201 SHEET 2 of 2 FILE NO. 4101.18 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED		FIELD TESTING PID	FIELD TESTING FID	R K
35	4											
	3	R-7	60/60	36-41	RQD=40%	Soft, gray-black, highly fractured, moderately						
	5				REC=100%	weathered, moderately metamorphosed		S				
	3					SHALE with 1" quartz vein (oil sheen and		C				
40	4					obvious petroleum odor)		R				
	5						SANDSTONE AND	E				
	7	R-8	60/46	41-46	RQD=40%	Soft, gray-black, moderately fractured, slightly	METAMORHOSED	E	Filter			
	9				REC=77%	weathered, metamorphosed SHALE	SHALE WITH	N	Sand			
	10						QUARTZ VEINS					
45	12											
	10											
	8	R-9	60/50	46-51	RQD=40%	Soft, gray-black, moderately fractured, slightly						
	5				REC=83%	weathered, metamorphosed SHALE						
	6											
50	3											2
	5								51'			3
						END OF EXPLORATION AT 51 FT						
55												
60												
65												
70												
75												

REMARKS:

-2- A groundwater observation well was installed using 2" PVC, 20 slotted screen for 51' to 6'. A 2" PVC solid riser was installed from 6' to the surface. Filter sand was installed around the well screen from 51' to 4'. A bentonite seal was installed from 4' to 2'. Grout was used from 2'-0.5'. A flush mounted curb box was installed in a 2'x2' concrete pad at grade.

-3- Approximately 1,250 gallons of drill water remained in the formation upon well completion.

-4- An oil sheen and petroleum odor was observed in the rock core between 30 and 40 feet.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA

BORING NO. GZ-201

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND
GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DEFENSE FUEL SUPPLY CENTER
TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-202
SHEET 1 of 2
FILE NO. 4101.18
CHKD BY ABU

BORING CO. GZA DRILLING
FOREMAN CHRIS LENLING
GZA ENGINEER D. CAPPACHIONE/J. MUHA

BORING LOCATION See Location Plan
GROUND SURFACE ELEV. _____ DATUM _____
DATE START 11/8/96 DATE END 11/14/96

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" to 45' OTHER : Nx rock core from 5' to 50'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
11/15/96		41.9	Well	1 Day
12/11/96		28.3	Well	1 Month

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
		S-1	24/13	0-2'	12-14	Medium dense, top 3" dark brown TOPSOIL,		PVC Grout	ND	ND	1
					14-12	Bottom 12", brown-tan, fine SAND, some					
						Silt, little Gravel	SILTY GRAVELY				
	Core Time	S-2	18/14	3-5	28-60-50/2"	Very dense, tan, gray, fine to medium SAND	SAND		ND	ND	
5	min/ft					and fractured SHALE, little Silt	5'	RISER			
	5	R-1	60/17	5-10	REC=28%	Apparent Top of Bedrock at 5 ft					
	7				RQD=13%	Soft, gray-black, moderately fractured,		7' Bent. Seal			
	10					moderately weathered, metamorphosed					
	8					SHALE with quartz veins		8'			
10	9							10'			
	3	R-2	60/10	10-15	REC=17%	Soft, gray-black, highly fractured, moderately					
	3				RQD=0%	weathered SHALE, 1/8"-3/16" quartz veins	SHALE	PVC			
	3										
	3										
15	3										
	3	R-3	60/6	15-20	REC=10%	Soft, gray-black, highly fractured, moderately		SCREEN Filter Sand			
	2				RQD=0%	weathered SHALE, some orange staining					
	3										
	2										
20	2										
	7	R-4	60/4	20-25	REC=6%	Soft, gray-black, highly fractured, moderately					
	5				RQD=0%	weathered SHALE					
	4										
	3										
25	3										
	4	R-5	60/10	25-30	REC=17%	Soft, gray-black, highly fractured, moderately					
	3				RQD=0%	weathered SHALE					
	2										
	2										
30	2										
	4	R-6	60/16	30-35	REC=26%	Soft, gray-black, highly fractured, moderately					2
	3				RQD=0%	weathered SHALE					
	2										
	2										
35	2										

REMARKS:

-1- Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580B photoionization detector (PID) equipped with a 10.6 electron volt lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector (FID). Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.

-2- Petroleum odor noted on rock core from 30 to 35 feet; noticed sheen on water in re-circulating tub.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPLY CENTER TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-202 SHEET 2 of 2 FILE NO. 4101.18 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
	2	R-7	60/1	35-40	REC=2%	Soft, gray-black, highly fractured, moderately		P			
	2				RQD=0%	weathered SHALE		V			
	2							C Filter			
	2							Sand			
40	2							S			
	2	R-8	60/11	40-45	REC=18%	Soft to very soft, gray-black, highly fractured,		C			3
	1				RQD=0%	moderately weathered SHALE		R			
	2							E			
	2						SHALE	E			
45	1							N			
	3	R-9	60/57	45-50	REC=95%	Top 7" medium soft, gray-black, highly					
	3				RQD=17%	fractured, moderately weathered SHALE,					
	4					little iron staining changing to more					
	3					metamorphic state					
50	4							50' Well Plug			4
						End of Exploration at 50 ft.					5
55											
60											
65											
70											
75											

REMARKS:

-3- About 3" of 11" recovery was very soft (silty) with petroleum odor.

-4- Approximately 1,500 gallons of drill water remained in the formation upon well completion.

-5- 40' of .02" slotted 2.0" diameter, Sch. 40 PVC wellscreen was placed from 50.' up t 10.0' and topped with 10' of solid PVC riser tube. Filter sand was poured up to 8.0' and a bentonite seal was placed from 8.0' up to 7.0', bentonite grout was placed from 7.0' up to the ground surface. Surface seal - 2'x2'x4" pad. The wellhead was secured with a flush mounted 1' long aluminum curb box grouted into the surface.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA

BORING NO. GZ-202

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND
GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DEFENSE FUEL SUPPLY CENTER
TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-203
SHEET 1 of 2
FILE NO. 4101.18
CHKD BY ABU

BORING CO. GZA DRILLING
FOREMAN CHRIS LENLING
GZA ENGINEER D. CAPPACHIONE

BORING LOCATION See Location Plan
GROUND SURFACE ELEV. _____ DATUM _____
DATE START 11/1/96 DATE END 11/5/96

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.
CASING SIZE: 3 3/4" HSA to 5 ft OTHER : NX rock core from 6 to 44.5 ft

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
11/13/96		30.5	Well	1 Week
12/11/96		13.8	Well	1 Month

DPTH (FT)	CASING BLOWS	SAMPLE NO	PEN/REC	DEPTH (FT)	BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
		S-1	24/18	0-2	12-8	4" Top Soil, 8" Brown, fine SAND and Silt,	SILTY GRAVELLY	PVC	ND	ND	1
					14-25	some Gravel, 6" SHALE	SAND				
	Core Time					Apparent Top of Rock at 2'					
	min/ft							Grout			
5								R			
		S-2	2/2	5-5.2	120 (refusal)	Slightly weathered SHALE		I	ND	ND	
	5	R-1	60/56	6-11	RQD=63%	Soft, gray, moderately fractured SHALE with		S 7'			
	3				REC=93%	2 1/2" sections highly weathered, 1-3 mm		Bent E Seal			
	4					intrusion quartz veins - vertical fractures		R			
10	3							9' 9.5'			
	3										
	4	R-2	40/42	11-14.5	RQD=11%	Soft, gray, highly fractured, metamorphosed		P			
	3				REC=100%	SHALE, moderately to highly weathered		V			
	3					with 1' length highly fractured SLATE		C			
15	4	R-3	60/60	14.5-19.5	RQD=73%	Soft, dark gray/black, moderately fractured,					
	3				REC=100%	slightly weathered metamorphosed SHALE,		S			
	2					iron staining on fractures	SHALE	C			
	3							R Filter			
	3							E Sand			
20	2.5	R-4	60/57	19.5-24.5	RQD=37%	Soft, gray/black, moderately fractured, and		E			
	3				REC=95%	moderately weathered metamorphosed		N			
	3					SHALE, iron staining at fractures					
	2.5										
	2.5										
25	4	R-5	60/50	24.5-29.5	RQD=57%	Soft, gray/black fractured, moderately					
	5				REC=83%	fractured, slightly weathered, metamorphosed					
	6					SHALE, iron staining at fractures					
	11										
	13										
30	4	R-6	60/60	29.5-24.5	RQD=70%	Soft, gray/black, slightly fractured, slightly					
	3				REC=100%	weathered, metamorphosed SHALE, iron					
	3					staining at fractures, vertical fractures					
	3										
	2										
	3										

REMARKS:

-1- Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580B photoionization detector (PID) equipped with a 10.6 electron volt lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector (FID). Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPLY CENTER TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-203 SHEET 2 of 2 FILE NO. 4101.18 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
35	4	R-7	60/60	34.5-39.5	RQD=47%	Soft, gray/black, moderately fractured, slightly					
	7				REC=100%	weathered metamorphosed SHALE,					
	6					vertical fractures, iron staining at fractures		S			
	4							C Filter			
40	3	R-8	60/60	39.5-44.5	RQD=33%	Soft, gray/black moderately fractured, slightly	SHALE	R Sand			
	6				REC=100%	weathered, slightly metamorposed SHALE,		E			
	5					vertical fractures, iron staining at fractures		E			
	8							N			
	7										2
45	6							6" plug 44.5'			3
						End of Exploration at 44.5 ft.					
50											
55											
60											
65											
70											
75											

REMARKS:

-2- Installed observation well to a depth of 44.5' consisting of 2" PVC (0.020" slotted) screen with bottom plug from 44.5 to 9.5'. Filter sand from 44.5' to 9'. A bentonite seal was installed from 9' to 7'. Two-inch PVC solid riser was installed from 9.5' to just below ground surface. Grout was poured from 7' to just below top of 2" PVC. A flush munted curb box was I installed in a 2'x2' concrete pad.

-3- Approximately 900 gallons of drill water remained in the formation upon well completion

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DEFENSE FUEL SUPPLY CENTER
TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-204
SHEET 1 of 1
FILE NO. 4101.18
CHKD BY ABU

BORING CO. GZA DRILLING
FOREMAN CHRIS LENLING
GZA ENGINEER D. CAPPACHIONE

BORING LOCATION See Location Plan
GROUND SURFACE ELEV. _____ DATUM _____
DATE START 11/27/96 DATE END 11/27/96

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.
CASING SIZE: OTHER 3 3/4" HSA to 10' 11"

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
		S-1	24/20	0--2	Auger Cuttings	3" brown, fine to medium SAND, little Silt (loam) changing to brown/gray, fine to coarse SAND and Gravel, little Silt	SILTY GRAVELY SAND	None	ND	ND	
5		S-2	12/8	5-6	7-37 120/0"	Very dense, gray, fine SAND and Silt, some Gravel			0.1	ND	
10		S-3	11/11	10-10'11"	46-120/5"	Very dense, gray, fine SAND and Silt, some Gravel and highly fractured SILTSTONE			0.3	ND	1
						End of Exploration at 10.9 ft.					2
15											
20											
25											
30											
35											

REMARKS:

-1- Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580B photoionization detector (PID) equipped with a 10.6 electron volt lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector (FID). Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.

-2- Subsurface utility may have been encountered, so boring was moved to new location (i.e., GZ-204A).

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA

BORING NO. GZ-204

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND
GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DEFENSE FUEL SUPPLY CENTER
TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-204A
SHEET 1 of 2
FILE NO. 4101.18
CHKD BY ABU

BORING CO.	GZA DRILLING	BORING LOCATION	See Location Plan
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	D. CAPPACHIONE	DATE START 12/2/96	DATE END 12/3/96

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3 3/4" HSA to 13' OTHER: NX rock core from 13 to 40 ft

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
12/4/96		17.1	Well	1 Day
12/12/96		10.2	Well	9 Days

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION
						For Soil Description see GZ-204	SILTY GRAVELY SAND
10						Apparent Top of Rock at 10 ft	
	Core Time min/lit						
	5	R-1	60/48	13-18	RQD=53%	Soft, gray/black, moderately fractured, and	
15	6				REC=80%	slightly metamorphosed SHALE, some iron	SLIGHTLY
	6					staining, 1 1/2" vein of QUARTZ	METAMORPHOSED
	3						SHALE WITH THIN
	3						QUARTZ VEINS
	4	R-2	60/41	18-23	RQD=60%	Soft, gray/black, slightly fractured, slightly	
20	5				REC=68%	metamorphosed SHALE with 1 cm to 3 cm	
	4					quartz veins, slight iron staining	
	6						
	5						
	4	R-3	60/50	23-28	RQD=67%	Soft, gray/black, slightly fractured, slightly	
25	3				REC=83%	metamorphosed SHALE with 1 cm to 3 cm	
	6					quartz veins, slight iron staining	
	3						
	4						
	5	R-4	60/54	28-33	RQD=47%	Soft, gray/black, slightly fractured, slightly	
30	4				REC=90%	metamorphosed SHALE, slight iron staining	
	5						
	6						
	4					Soft, gray/black, slightly fractured, slightly	
	5	R-5	60/60	33-38	RQD=60%	metamorphosed SHALE, slight iron staining	
35	6				REC=100%	with 1 to 3 cm quartz veins	

EQUIPMENT INSTALLED: Sand, Seal, RISER PVC, SCREEN, Filter Sand

FIELD TESTING: PID, FID

REMARKS:
-1- GZA-204A is located 20 feet to the west of GZ-204.

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPLY CENTER TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-204A SHEET 2 of 2 FILE NO. 4101.18 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
35	4										
	5						SLIGHTLY				
	6						METAMORPHOSED	Filter			
	6	R-6	24/24	38-40	REC=100%	Soft, gray/black, slightly fractured, slightly	SHALE WITH THIN	Sand			
40	5				RQD=70%	metamorphosed SHALE, slight iron staining	QUARTZ VEINS	40'			2
						with 1 to 3 cm quartz veins					3
						End of Exploration at 40 ft.					
45											
50											
55											
60											
65											
70											
75											

REMARKS:

-2- Installed a groundwater monitoring well with 2" PVC, 20 slotted screen from 40' to 5'. 2" PVC solid riser from 5' to just below the ground surface. Filter sands was placed from 40' to 3'. A bentonite seal was placed from 3' to 1'. The well was finished with a flush mounted curb box in a 2'x2' cement pad.

-3- Approximately 1,225 gallons of drill water was lost in the formation.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.	PROJECT	REPORT OF BORING NO. GZ-205
140 BROADWAY, PROVIDENCE, RHODE ISLAND	DEFENSE FUEL SUPPLY CENTER	SHEET 1 of 2
	TANK FARM 2	FILE NO. 4101.18
GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PORTSMOUTH, RHODE ISLAND	CHKD BY ABU

BORING CO.	GZA DRILLING	BORING LOCATION	See Location Plan
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	D. CAPPACHIONE	DATE START 10/28/96	DATE END 10/29/96

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN. OTHER: NX rock core from 29'-39'
CASING SIZE: 3 3/4" HAS to 29' Rollerbit and casing advanced 39 to 50'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
11/8/96		26.8	Well	10 Days
12/3/96		44.1	Well	1 Month

DPTH (FT)	CASING BLOWS	SAMPLE NO	PEN/REC	DEPTH (FT)	BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
		S-1	24/12	0-2	2-11	Medium dense, greenish/gray, coarse to fine		PVC Riser	ND	ND	1
					15-20	SAND, some(-) Silt, some Gravel		5' Bent. Grout			
							SILTY GRAVELY SAND	7' Bent. Seal 9' 10'			
5											
		s-2	24/12	5-7	9-7	Medium dense, greenish/gray, coarse to fine			ND	ND	
					8-9	SAND and Silt, some gravel					
10											
		S-3	24/8	10-12	11-11	Medium dense, orange-brown, coarse to fine+		PVC	ND	ND	
					10-7	SAND and Silt, some+ Gravel					
							13'				
							COMPLETELY WEATHERED SHALE	Screen Filter Sand			
15											
		S-4	24/14	15-17	11-10	Medium dense, dark gray, completely			ND	4.4	
					7-10	weathered SHALE					
20											
		S-5	24/8	20-22	5-4	Medium dense, dark gray, completely			18	41	2
					7-5	weathered SHALE					
25						APPARENT TOP OF ROCK at 25 ft	25'				
		S-6	24/5	25-27	16-12	Medium, dense, severely weathered SHALE			36	94	2
					7-3						
30		R-1	60/0	29-34	RQD=0%	No Recovery	SHALE				
					REC=0%						
35		R-2	60/0	34-39	RQD=0%	No Recovery					3
					REC=0%						

REMARKS:

-1- Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580B photoionization detector (PID) equipped with a 10.6 electron volt lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector (FID). Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.

-2- Petroleum odor noted in samples S-5 and S-6.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPLY CENTER TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-205 SHEET 2 of 2 FILE NO. 4101.18 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
35											
							SHALE	P V C Filter Sand S C R E E N 50'			4
40											
45											
50											5
						End of Exploration at 50 ft					
55											
60											
65											
70											
75											

REMARKS:

-3- Due to lack of recovery from the coring events, the rollerbit was advanced from 39 to 50 ft.

-4- Installed a groundwater observation well to a depth of 50' consisting of 2" diameter PVC well screen (20 slotted) and 10 feet of solid PVC riser pipe. Filter sand was backfilled around the well screen and a bentonite seal was placed around the riser pipe from 7 to 9 feet. Grout was placed around the riser pipe from 0 to 7 feet. The well was topped off with a flush mounted aluminum curb box set in a 2x2 foot concrete pad.

-5- Approximately 650-gallons of drilling water remained in the formation upon well completion.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND
GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DEFENSE FUEL SUPPLY CENTER
TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-206
SHEET 1 of 2
FILE NO. 4101.18
CHKD BY ABU

BORING CO. GZA DRILLING
FOREMAN CHRIS LENLING
GZA ENGINEER JOHN MUHA

BORING LOCATION See Location Plan
GROUND SURFACE ELEV. _____ DATUM _____
DATE START 11/14/96 DATE END 11/18/96

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.
CASING SIZE: 3" Casing to 14' OTHER: NX Core from 14' to 46'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
11/27/96		19.6	Well	9 Days
12/12/96		11.8	Well	1 Month

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
		S-1	24/24	0-2'	12-16	Dense, dark brown, fine SAND (Topsoil - top	5" TOPSOIL	PVC	ND	ND	1
					18-14	5") gray, fine to medium SAND and Silt,		Bent. R Grout			
						little Gravel	SILTY SAND	I			
								4' S			
5								Bent. E Seal			
		S-2	24/8	5-7	6-7	Medium dense, olive gray/gray, fine SAND		5' R 6'	ND	ND	
					5-6	and Silt, trace fine Gravel					
						APPARENT TOP OF ROCK AT 8 FT	8'				
10								P			
		S-3	24/21	10-12	16-18	Dense, dark gray, fine SAND and Silt, trace	SEVERELY	V	ND	ND	
					15-22	Gravel (severely weathered SHALE)	WEATHERED	C			
	Core Time						SHALE				
	min/ft						14'	S Filter			
15	4	R-1	36/33	14-17	REC=92%	Dark gray, fine grained, slightly weathered,		C Sand			
	4				RQD=28%	medium soft SHALE/SLATE, with occasional		R			
	5					quartz veins 1/8" thick, moderately fractured		E			
	3	R-2	60/56	17-22	REC=93%	Dark gray, fine grained, slightly weathered,	SHALE/SLATE	E			
	3				RQD=8%	soft SHALE, highly fractured	WITH OCCASIONAL	N			
20	4						THIN QUARTZ				
	4						VEINS				
	4										
	3	R-3	60/60	22-27	REC=100%	Dark gray, fine grained, slightly weathered,					
	4				RQD=33%	moderately fractured medium soft SHALE/					
25	4					SLATE, with occasional 1/16" quartz seams,					
	4										
	4										
	3	R-4	60/60	27-32	REC=100%	Dark gray, fine grained, slightly weathered,					
	3				RQD=47%	slightly fractured, medium soft SHALE/					
30	3					SLATE, with occasional 1/16" quartz seams,					
	3										
	3										
	7	R-5	60/60	32-37	REC=100%	Dense, gray, fine grained, medium soft,					
	5				RQD=42%	SHALE/SLATE, slightly fractured					
35	4										

REMARKS:

-1- Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580B photoionization detector (PID) equipped with a 10.6 electron volt lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector (FID). Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPLY CENTER TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-206 SHEET 2 of 2 FILE NO. 4101.18 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
35	4							PVC			
	3										
	3	R-6	48/46	37-41	REC=96%	Dense, gray, fine grained, medium soft SHALE,		S			
	3				RQD=23%	moderately fractured	SHALE	C			
40	3							R Filter			
	4							E Sand			
	3	R-7	60/56	41-46	REC=93%	Dense, gray, fine grained, medium soft SHALE,		E			
	4				RQD=32%	slightly fractured		N			
	3										
45	3							Well			2
	3							Plug 46'			3
						End of Exploration at 46 ft					
50											
55											
60											
65											
70											
75											

REMARKS:

-2- Installed a groundwater monitoring well with 2" PVC, 20 slotted screen from 46' to 6'. 2" PVC solid riser from 6' to just below the ground surface. Filter sands was poured up to 5' and a bentonite seal placed from 5' up to 4'. Bentonite/Cement seal was placed from 4' up to ground surface. The well was finished with a flush mounted curb box in a 2'x2' x4" cement pad.

-3- Approximately 600-gallons of drill water remained in the formation upon completion.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.	PROJECT	REPORT OF BORING NO. GZ-207
140 BROADWAY, PROVIDENCE, RHODE ISLAND	DEFENSE FUEL SUPPLY CENTER	SHEET 1 of 2
	TANK FARM 2	FILE NO. 4101.18
GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PORTSMOUTH, RHODE ISLAND	CHKD BY ABU

BORING CO.	GZA DRILLING	BORING LOCATION See Location Plan	
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	ABE DOHERTY	DATE START 10/31/96	DATE END 11/1/96

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN. OTHER: NX Core from 24-29'

CASING SIZE: 3 3/4" HSA to 24' Roller bit and casing advanced 29-35'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
11/22/96		30.2	Well	21 Days
12/2/96		21.5	Well	t Month

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
		S-1	6/6	0-0.5	40-120/0"	Very dense, brown, coarse to fine SAND, some Silt, little Gravel	6" TOPSOIL; TILL	Bent 2.5' Bent. 4.5' R I S E R 5' Grout Neat	ND	ND	1
5		S-2	24/7	5-7	8-4	Loose, dark gray/brown SILT, little fine Sand,	4'	P V C	0.3	0.2	
					3-6	some Gravel (completely weathered SHALE)	COMPLETELY WEATHERED SHALE				
10		S-3	24/18	10-12	12-22	Medium dense, dark gray, completely to		S C R E E Filter Sand	68.0	<1000	2
					8-12	slightly weathered SHALE					
15		S-4	24/21	15-17	10-12	Medium, dark gray SILT, trace Gravel, trace		N	0.4	560	2
					6-12	Clay (completely weathered SHALE)					
20		S-5	24/18	20-22	6-5	Moderately dense, tan, fine SAND, and Silt,			0.3	110	
					5-5	little Gravel, trace Clay (completely weathered					
	Core Time min/ft					SHALE) APPARENT TOP OF ROCK AT 24'					
25	1:30	R-1	60/5	24-29	RQD=0%	Slightly metamorphosed, moderate weathered,	SHALE				
	1:00				REC=8%	highly fractured SHALE					
	1:10										
	1:40										
	1:20										
30											
35											

REMARKS:

-1- Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580B photoionization detector (PID) equipped with a 10.6 electron volt lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector (FID). Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.

-2- Petroleum odor noted in Samples S-3 and S-4.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPLY CENTER TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-207 SHEET 2 of 2 FILE NO. 4101.18 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
35								35'			3
						End of Exploration at 35'					4
											5
											6
40											7
45											
50											
55											
60											
65											
70											

REMARKS:

-3- Due to low rock core recoveries the casing was driven and the roller bit advanced from 29'-35'.

-4- Approximately 750 gallons of drilling water remained in the formation upon well completion.

-5- Approximately 50 gallons of contaminated soil cuttings were containerized.

-6- Apparent oil staining noted on hollow stem augers.

-7- Installed a groundwater observation well to a depth of 35 feet comprised of 30 ft of 2" PVC well screen (20 slot) and 5 feet of solid PVC riser pipe. Filter sand was backfilled around the wellscreen and a bentonite seal was placed from 2.5 to 3.5 ft. Grout was placed around the remainder of the PVC riser pipe. The well was topped with a flush mounted aluminum curb box set in a concrete pad.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA

BORING NO. GZ-207

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPLY CENTER TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-208 SHEET 1 of 1 FILE NO. 4101.18 CHKD BY ABU

BORING CO.	GZA DRILLING	BORING LOCATION	See Location Plan
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	JOHN MUHA	DATE START 11/18/96	DATE END 11/19/96

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" casing to 20' OTHER: NX rock core from 14' to 26'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
11/20/96	0930	None	24'	18 Hr.

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
		S-1	24/24	0-2	8-12	Dense, dark brown, fine SAND, some Silt,			ND	ND	1
					10-8	little Gravel (FILL)					
							FILL				
5											
		S-2	24/8	5-7	4-3	Loose, gray/brown, fine SAND and Silt, trace		NONE	ND	ND	
					3-5	Gravel (FILL)					
10											
		S-3	24/15	10-12	15-18	Medium dense, gray/black, fine SAND and			ND	ND	
					12-14	Gravel, trace Silt (FILL)					
	Core Time										
	(min/ft)						14'				
15		R-1	60/3	14-19	REC=5%	Blast Rock FILL					
	3				RQD=0%						
	2						BLAST ROCK FILL				
	3										
	2										
20	3	R-2	60/4	19-24	REC=5%	Blast Rock FILL					
	4				RQD=0%						
	3										
	2										
	3										
25	2	R-3	24/6	24-26.8	REC=25%	Blast Rock FILL					
	2				RQD=0%						
	2										2
						End of Exploration at 26.8'					3
30											

REMARKS:

-1- Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580B photoionization detector (PID) equipped with a 10.6 electron volt lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector (FID). Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.

-2- Boring abandoned when rock core sample contained concrete (apparent roof of pump sump vault).

-3- Boring backfilled with native soil. Boring was relocated to GZ-208A.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND
GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DEFENSE FUEL SUPPLY CENTER
TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-208A
SHEET 1 of 2
FILE NO. 4101.18
CHKD BY ABU

BORING CO. GZA DRILLING
FOREMAN CHRIS LENLING
GZA ENGINEER JOHN MUHA

BORING LOCATION See Location Plan
GROUND SURFACE ELEV. _____ DATUM _____
DATE START 11/22/96 DATE END 11/27/96

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" casing to 15.5' OTHER: NX core from 15.5' to 39.0'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
12/3/96		29.4	Well	1 Week
12/12/96		17.3	Well	2 Weeks

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
								PVC			1
						SEE BORING GZ-208 FOR SOIL					2
						DESCRIPTION	TILL	R			
								I			
5								S			
								E			
								7' R			
								R			
								Bent		Seal	
										9'	
10											
						APPARENT TOP OF ROCK AT 11'					
	Core Time						SHALE	P			
15	(min/ft)							V			
	4	R-1	60/60	15.5-20.5	REC=100%	Top 18" severely fractured SHALE changing to	16'	C			
	6				RQD=70%	gray, medium hard, fresh, slightly fractured				Filter	
	6					SILTSTONE, vertical fracture angle with iron		S		Sand	
	6					staining on fracture surface		C			
20	6							R			
	5	R-2	60/49	20.5-25.5	REC=80%	Hard, slightly fractured, light gray		E			
	6				RQD=60%	metamorphosed SANDSTONE, 80-90° quartz		E			
	6					seam, fractures with iron staining on fracture		N			
	6					surfaces					
25	6										
	6	R-3	24/20	25.5-27.5	REC=83%	Hard, slightly fractured, light gray					
	5				RQD=83%	metamorphosed SANDSTONE	SANDSTONE				
	5	R-4	18/18	27.5-29.0	REC=100%						
	6				RQD=61%						
30	6	R-5	60/60	29-34.0	REC=100%	Hard, slightly fractured, light gray					
	5				RQD=85%	metamorphosed SANDSTONE, 90° Quartz					
	5					seam, horizontal, 3" seam of iron staining					
	5										
	5										
35	5	R-6	60/60	34-39	REC-100%						
	5				RQD=47%						

REMARKS:

-1- Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580B photoionization detector (PID) equipped with a 10.6 electron volt lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector (FID). Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.

-2- GZ-208A relocated 60 feet to the east of GZ-208.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DEFENSE FUEL SUPPLY CENTER
TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-208A
SHEET 2 of 2
FILE NO. 4101.18
CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
35	3					Top 12" of core is hard, light gray, metamorphosed SANDSTONE, 48" of medium hard, fresh, dark gray SHALE, slightly fractured	SHALE	Filter Sand Well Plug 39'			
	3										
	3										
	3										
40											3
						End of Exploration at 39'					4
45											
50											
55											
60											
65											
70											
75											

REMARKS:

-3- 30' of .02" slotted 2.0" diameter, Sch. 4.0 PVC well screen was placed 39.0' up to 9.0' and topped with 9.0' of solid PVC riser tube. Filter sand was poured up to 8' and a bentonite seal from 8' up to 7', bentonite/cement grout was placed from 7' up to ground surface. Surface seal 2'x2'x4" pad, the wellhead was secured with a flush mounted 1' long, aluminum curb box.

-4- Approximately 1,000 gallons of drill water remained in the formation upon well completion.

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA

BORING NO. GZ-208A

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DEFENSE FUEL SUPPLY CENTER
TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-209
SHEET 1 of 2
FILE NO. 4101.18
CHKD BY ABU

BORING CO.	GZA DRILLING	BORING LOCATION	See Location Plan
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	D. CAPPACHIONE	DATE START 10/30/96	DATE END 10/31/96

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3 3/4" HSA to 24 ft OTHER: Nx rock core from 24 to 46 ft

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
11/1/96		29.7	Well	1 Day
12/11/96		17.8	Well	5 Weeks

DPTH (FT)	CASING BLOWS	SAMPLE NO	PEN/REC	DEPTH (FT)	BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
		S-1	24/19	0-2	3-5	Medium dense, orange/tan, fine SAND and	6" TOPSOIL	PVC Riser Pipe; Grout	0.6	ND	1
					6-6	Silt, little Gravel (slightly weathered SHALE)					
5		S-2	24/16	5-7	10-6	Medium dense, medium to coarse(+) SAND,	SILTY GRAVELLY SAND	5' Bent. 7' Seal; 9'	ND	ND	
					11-18	some Silt, some Gravel (severely weathered					
						Shale)					
10		S-3	24/14	10-12	10-10	APPARENT TOP OF ROCK AT 11'					
					15-10	Medium dense, severely weathered SHALE		PVC Filter Sand Screen	ND	ND	
15		S-4	24/16	15-17	4-5	Medium dense,, severely weathered SHALE			56.3	38 -	2
					6-10		SEVERELY WEATHERED SHALE				
20		S-5	24/14	20-22	10-11	Dense, severely weathered SHALE			ND	ND	
					26-29						
	Core time min/ft						24'				
25	2:25	R-1	60/4	24/29	RQD=0%	Slightly metamorphosed, severely fractured,					
	1:40				REC=7%	slightly weathered SHALE					
	1:35										
	2.3										
	1:40										
30	1:48	R-2	60/49	29-34	RQD=70%	Slightly weathered, slightly fractured, slightly	SHALE				
	1:50				REC=82%	metamorphosed SHALE					
	1:55										
	1:35										
	1:55										
35	1:45	R-3	60/59	34-39	RQD=91%	Slightly fractured, slightly weathered, slightly					
	1:20				REC=99%	metamorphosed SHALE					

REMARKS:

-1- Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580B photoionization detector (PID) equipped with a 10.6 electron volt lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector (FID). Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.

-2- Petroleum odor noted in Sample S-4.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPLY CENTER TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-209 SHEET 2 of 2 FILE NO. 4101.18 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
35	1:20										
	1:40										
	1:20							Filter			
	1:50						SHALE	Sand			
40		R-4	24/11	39-41	RQD=0%	Moderately fractured, moderately weathered,					
					REC=46%	moderately, metamorphosed SHALE					
		R-5	60/58	41-46	RQD=93%	Slightly fractured, slightly weathered, moderately					
					REC=97%	metamorphosed SHALE					
45								44'			3
						End of Exploration at 46'					4
50											
55											
60											
65											
70											
75											

REMARKS:

-3- Installed observation well to a depth of 44' comprised of 35' of 2-inch diameter Schedule 40 slotted PVC well screen (20 slot) and a 9 feet of a solid PVC riser pipe. Filter sand was backfilled around the well screen and a bentonite seal was placed from 5 to 7 feet around the riser pipe. Grout was placed from 0 to 5 feet around the solid riser pipe. The well was topped off with a flush mounted, aluminum road box concreted in place. installed in a 2'x2' concrete pad.

-4- Approximately 1,000 gallons of drill water remained in the formation upon well completion.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DEFENSE FUEL SUPPLY CENTER
TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-210
SHEET 1 of 2
FILE NO. 4101.18
CHKD BY ABU

BORING CO. GZA DRILLING
FOREMAN CHRIS LENLING
GZA ENGINEER J. MUHA

BORING LOCATION See Location Plan
GROUND SURFACE ELEV. _____ DATUM _____
DATE START 11/20/96 DATE END 11/22/96

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" casing to 33 ft OTHER: Nx rock core from 9 to 40 ft

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
11/27/96		34.2	Well	5 Days
12/11/96		19.1	Well	3 Weeks

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
		S-1	24/12	0-2	3-4	Medium dense, brown/black, fine SAND, and	3" TOPSOIL	PVC Riser	ND	ND	1
					9-`6	Silt, little Gravel		Grout			
							SILTY GRAVELLY SAND				
5		S-2	24/16	5-7	11-11	Medium dense, black, fine to coarse SAND			ND	ND	
					18-31	and Silt, little Gravel, trace Silt					
	Core Time										
	(min/ft)							8' Bent.			
10	4	R-1	24/0	9-11	REC=0%	APPARENT TOP OF ROCK AT 9'		Seal			
	4				RQD=0%	No Recovery		9' 10'			2
							SHALE AND SANDSTONE	PVC Riser			
15	3	R-2	60/53	14-19	REC=88%	Moderately hard, light gray SHALE/SLATE,					
	3				RQD=45%	slightly fractured and thinly foliated					
	3							Filter Sand			
	4										
	4										
20	5	R-3	60/58	19-24	REC=97%	Moderately hard, light gray SANDSTONE,					
	4				RQD=72%	slightly fractured, medium grained					
	4										
	3										
	4										
25	4	R-4	60/60	24-29	REC=100%	Moderately hard, light gray SANDSTONE,					
	3				RQD=72%	slightly fractured, trace of iron staining on					
	4					fractured surfaces					
	3										
	3										
30	3	R-5	36/33	29-32	REC=92%	Moderately hard, light gray SANDSTONE,					
	4				RQD=92%	slightly fractured, coarse grained, last 3" a					
	4					fractured dark gray SHALE w/soft areas					
	3	R-6	60/59	32-37	REC=99%	Moderately hard, light gray SHALE, slightly					
	4				RQD=64%	fractured, slightly weathering, trace iron					
35	4					staining					
	3										

REMARKS:

-1- Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580B photoionization detector (PID) equipped with a 10.6 electron volt lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector (FID). Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.

-2- Core barrel jammed - No Recovery.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DEFENSE FUEL SUPPLY CENTER
TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-210
SHEET 2 of 2
FILE NO. 4101.18
CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
35	3										
	3										
	4	R-7	36/36	37-40	REC=100%	Moderately hard, fresh, light gray SHALE,		Filter			
	3				RQD=28%	moderately fractured (slight iron staining on		Sand			
40	3					fracture surfaces)					
								40'			3
						End of Exploration at 40'					4
45											
50											
55											
60											
65											
70											
75											

REMARKS:

-3- 30' of .02 slotted 2.0" diameter Sch. 40 PVC well screen was placed from 40' up to 10' and topped with 10' of solid PVC riser tube. Filter sand was poured up to 9' and bentonite seal up to 8' and bentonite/cement grout was placed from 8' up to the ground surface. Surface seal - 2'x2'x4" pad, the wellhead was secured with a flush mounted 12' long, aluminum curb box grouted into the surface.

-4- Approximately 900 gallons of drill water remained in the formation upon well completion

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND
GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DEFENSE FUEL SUPPLY CENTER
TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-211
SHEET 1 of 1
FILE NO. 4101.18
CHKD BY ABU

BORING CO. GZA DRILLING
FOREMAN CHRIS LENLING
GZA ENGINEER J. MUHA

BORING LOCATION See Location Plan
GROUND SURFACE ELEV. _____ DATUM _____
DATE START 12/4/96 DATE END 12/10/96

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.
CASING SIZE: 3" casing to 15 ft OTHER: Nx rock core from 5 to 35 ft

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
12/10/96		27.1	Well	18 Hrs.
12/12/96		27.3	Well	2 Days

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	R K
		S-1	24/18	0-2	10-15	Dense brown, fine SAND and Silt, little	0.2' TOPSOIL	PVC	ND	ND	1
					20-15	Gravel	SILTY GRAVELLY	R Bent./			
						APPARENT TOP OF BEDROCK AT 2.8'	SAND	I Cement			
	Core Time							S Grout			
5	(min/ft)							4' E			
	4	R-1	60/32	5-10	REC=53%	Soft, gray/black, moderately fractured and		Sand R Seal			
	4				RQD=12%	slightly metamorphosed SHALE, some iron		5'		5'	
	3					staining on fracture surfaces					
	3							P			
10	3							V			
	4	R-2	60/60	10-15	REC=100%	Soft, gray/black, moderately fractured and	SLIGHTLY	C			
	3				RQD=22%	slightly metamorphosed SHALE, some	METAMORPHOSED				
	4					Quartz veins from 1/16"-1", some iron	SHALE/SILTSTONE	S			
	4					staining on fracture surfaces	AND SANDSTONE	C Filter			
15	3						WITH THIN QUARTZ	R Sand			
	4	R-3	60/49	15-20	REC=82%	Soft, gray, slightly fractured, slightly	VEINS	E			
	4				RQD=35%	metamorphosed SHALE, trace of iron		E			
	4					staining on fracture surfaces		N			
	3										
20	4										
	4	R-4	60/60	20-25	REC=100%	Medium hard, light gray, slightly fractured,					
	5				RQD=52%	slightly metamorphosed SHALE, trace of					
	4					iron staining at fractured surfaces, trace of					
	4					weathering, 3/4" seam (Quartz)					
25	4										
	4	R-5	60/60	25-30	REC=100%	Medium hard, light gray, slightly fractured,					
	4				RQD=58%	SANDSTONE, slightly weathered, slight					
	5					staining on fracture surfaces, occasional					
	4					seams 1/16" Quartz					
30	4										
	4	R-6	60/60	30-35	REC=100%	Medium hard, gray, slightly fractured SILT/					
	4				RQD=76%	SANDSTONE, slight iron staining at fractured					
	4					surfaces, occasional seams 1/16" Quartz					
	4										
	4							Well			2
35	4							Plug 35'			3
						End of Exploration at 35'					

REMARKS:

-1- Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580B photoionization detector (PID) equipped with a 10.6 electron volt lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector (FID). Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.

-2- 30' of .02 slotted 2.0" diameter Sch. 40 PVC well screen was placed from 35' up to 5' and topped with 5' of solid PVC riser tube. Filter sand was poured up to 5' and bentonite seal up to 4' and bentonite/cement grout was placed from 4' up to the ground surface. Surface seal - 2'x2'x4" pad, the wellhead was secured with a flush mounted 12' long, aluminum curb box grouted into the surface.

-3- Approximately 1,500 gallons of drill water remained in the formation upon well completion.

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DFSP - TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO GZ-212
SHEET 1 OF 2
FILE NO 31288 15
CHKD BY ABU

BORING CO. GZA DRILLING, INC.
FOREMAN CHRIS LENLING
GZA ENGINEER MARK DALPE

BORING LOCATION SEE EXPLORATION LOCATION PLAN
GROUND SURFACE ELEV. ____ DATUM ____
DATE START 9/22/97 DATE END 9/23/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 19' OTHER NX rock core from 26' to 41'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
9/24/97	1130	20.75	WELL	16 HRS

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FID	ODOR	R K
		S-1	24/12	0-2	3-6	Medium dense grey, coarse to fine+ SAND,	REWORKED	P R	ND	ND	N	1
					5-14	and Silt, trace+ Gravel (SHALE)	TILL	Bent. V I Seal				
							2'	2' C S				
								E 4.5'				
5							TILL	R				
		S-2	<1/0	5	100/<1"	Refusal: No Sample						
							7.5'+					
		C-1R-1	18/17	8-9 5	RQD=94%	Hard, fresh sound, coarse, grained, grey/white	BOULDER	P				
10					REC=94%	GRANITE	(GRANITE)	V				
							10'+	C				
								S Filter				
								C Sand				
15		S-3	24/14	14-16	22-29	Very dense, grey/tan, coarse to fine+ SAND,		R	ND	0.4	N	
					36-50	some+ Silt, little+ Gravel (Till)	(TILL)	E				
								E				
	min.					TOP OF ROCK	18'+	N				
							WEATHERED					
20	4	C-2R-1	60/5	19-24	RQD=0%	Soft, severely weathered, highly fractured with	SHALE					
	3				REC=8%	horizontal to 90° fracture angles, very thinly						
	4					bedded grey SHALE						
	5											
	4						24'+					
25	5	C-2R-1	60/21	24-29	RQD=7%	Soft, very slightly weathered, slightly fractured,	VERY					
	5				REC=35%	(with horizontal to 90° fracture angles and	SLIGHTLY					
	6					manganese staining on fracture surfaces)	WEATHERED					
	4					grey, metamorphosed SHALE	SHALE					
	5											
30	5	C-2R-3	60/55	29-34	RQD-83%	Soft, fresh, sound, grey, metamorphosed	29'+					
	4				REC=92%	SHALE						
	4											2.
	4											
	4						SHALE					
35	4	C-2R-4	36/36	34-37	RQD=33%	Soft, fresh, sound, grey, metamorphosel						
	4				REC=100%	SHALE, changing at 36'+ to soft weathered,	36'+					
	4					fractured with horizontal to 90° fracture angles,						
						with iron staining on fracture surface, tan/	WEATHERED					
						grey metamorphosed SILTSTONE	SILTSTONE					
40												

1. Soil headspace screening was conducted emploting a Thermo Enviromental Organic Vapor Monitor Model 580 A photoionization detector(PID) employing a 10.6 electron volt lamp, and a Century Model OVA-128 equipped with a hydrogen flame ionization detected(FID) . Readings are reportedin parts pwe million (ppm). ND indicates not detected above the instrument detection limit of oil ppm.
2. Roller bit was advanced from 37' to 45'+.
3. Approximately 1100 gallons of drill water remained in the formation upon completion.
4. 40' of 0.02" slotted, 2.0" diameter, SCH 40, PVC wellscreen was placed from 44.5' up to 4.5' and topped with 4.5' solid PVC riser tube. Filter sand was poured up to 2'+ and a bentonite seal placed from 2' up to 1'+. The well head was secured with a 1' long, flush mounted, aluminum curb box grouted into the surface with concrete (2'x2'x4" pad).

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DFSP - TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-212 SHEET 2 of 2 FILE NO 31288.15 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	R K
							SILTSTONE/ SHALE	Filter Sand 44.5'		3 4
45						45'+ BOTTOM OF BORING				
50										
55										
60										

REMARKS:

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DFSP - TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO.	GZ-213
SHEET	1 OF 1
FILE NO.	31288.15
CHKD BY	ABU

BORING CO.	GZA DRILLING, INC.	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	MARK DALPE	DATE START 9/24/97	DATE END 9/25/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 19' OTHER NX rock core from 19' to 34'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
9/25/97	1000	21.82	WELL	1 HR.

DPTH (FT)	CASING BLOWS	SAMPLE NO	PEN/REC	DEPTH (FT)	BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FID	ODOR	RK
		S-1	24/10	0-2	5-12	Medium dense, brown TOPSOIL changing at	TOPSOIL	1' Conc.	ND	ND	N	1.
					17-24	1'± to gray coarse to fine+ SAND and Shale,		Bent. Seal				
						little+ Silt		2' 3'				
5									ND	ND	N	
		S-2	24/21	5-7	5-6	Medium dense, tan, medium-fine+ SAND and	TILL					
					6-6	silt, little Gravel(SUBSOIL)						
						TOP OF BEDROCK	8'±	P				
								V				
10		S-3	<1/0	10-	100/<1"	REFUSAL: No Sample	MODERATELY WEATHERED SHALE/ SILTSTONE	C				
								S Filter				
								C Sand				
								R				
15								E				
								E				
								N				
	MIN/FT											
20	5	C-1 R-1	60/51	19-24	RQD=37%	Soft, Slightly Weathered, Moderately	19'± SLIGHTLY WEATHERED SHALE					
	5				REC=85%	Fractured(with horizontal to 90 ° Fracture						
	5					angles) Metamorphosed,Grey, SHALE						
	5											
	5											
25	5	C-1R-2	60/60	24-29'	RQD=78%	Soft, Fresh, Very Slightly Fractured,	24'± SHALE					
	5				REC=100%	Metamorphosed Grey SHALE						
	5											
	4											
	4											
30	4	C-1 R-3	60/60	29-34	RQD=73%	Medium, Fresh, Very, Slightly Fractured,						
	4				REC=100%	metamorphosed Grey, SHALE						
	4											2.
	4											3.
	4							33'				
35						END OF EXPLORATION AT 34'±						

REMARKS:

1. Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor. Model 580A photoionization detector (PID) equipped with a 10.6 electron volt lamp and a Century Model OVA-128 equipped with hydrogen Flame ionization detector(FID). Readings are reported in parts per million (ppm).ND indicates not detected above the instrument detection limits of 0.1ppm.
2. Approximately 1400 gallons of drill water remained in the formation upon well completion.
3. 30' of 0.02" SLOTTED, 2.0" diametr, SCH 40, PVC wellscreen was placed from 33' to 3' and topped with 3' of solid PVC Riser Tube. Filter sand was poured up to 2'+ and a BENTONITE Seal placed from2' up to 1'+. The well Head was secure with a 1' long flush mounted, Aluminum curb box grouted into the suface with concrete(2'x2'x6" PAD).

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED: FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DFSP - TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-214 SHEET 1 OF 1 FILE NO. 31288.15 CHKD BY ABU

BORING CO.	GZA DRILLING, INC.	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	MARK DALPE	DATE START 9/25/97	DATE END 9/29/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 34' OTHER NX rock core from 9' to 39'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
9/26/97	0800	11.5	19'	17 HOURS
9/29/97	0920	28.85	WELL	4 DAYS

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	FIELD TESTING ODOR	RK
		S-1	24/18	0-2	4-4	Loose, tan/grey, medium fine+ SAND, llittle+	SANDY	Conc.	ND	ND	N	1.
					5-7	Silt, trace- Gravel		Bent. Seal				
							FILL	2' 3'				
						APPARENT TOP OF BEDROCK AT 4'						
5							SILSTONE/ SANDSTONE 7'±					
								P				
							SANDSTONE	V				
10	5	C-1 R-1	60/45	9-14	RQD=38%	Medium, slightly weathered. Fractured with		C				2.
	6				REC=75%	45°-90° fracture angles and heavy iron/man-	10 5'±					
	4					ganese staining on fracture surfaces. Grey		S Filter				
	4					SANDSTONE changing at 10.5'± to medium,		C Sand				
	4					slightly moderate fractured, slightly grey SHALE		R				
15	4	C-1 R-2	60/48	14-19	RQD=46%	Medium, fresh, slightly fractured with extensive		E				
	5				REC=80%	vertical fracturing and iron/manganese	SHALE	E				
	5					staining on morphosed SHALE (Slaty)		N				
	5											
	5											
20	5	C-1 R-3	60/60	19-24	RQD=87%	Medium, fresh, slightly fractured with extensive						
	5				REC=100%	vertical fracturing and iron/manganese						
	5					staining on morphosed SHALE (Slaty)						
	5											
	5											
25	4	C-1 R-4	60/60	24-29	RQD=78%	Soft, fresh, slightly fractured, slightly meta-						
	5				REC=100%	morphosed, grey SHALE						
	4											
	4											
	5											
30	5	C-1 R-5	60/60	29-34	RQD=63%	Soft, fresh, slightly fractured, slightly meta-						
	5				REC=100%	morphosed, grey SHALE						
	5											
	5											
	5											
35	5	C-1 R-6	60/53	34-39	RQD=83%	Soft, fresh, slightly fractured, slightly meta-						
					REC=88%	morphosed, grey SHALE						
												3
												4
								38'				
						END OF EXPLORATION AT 39'±						

REMARKS:

1. Soil headspace screening was conducted employing Thermos Environmental Organic Vapor Monitor Model 580A photoionization detector (PID) equipped with a 1.0.6 electron volt lamp, and a Century Model OVA-128 equipped with a hydrogen Flame ionization detector (FID). Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.
2. Fracture zone observed during drilling from 10'-10.5' (change in drilling water color).
3. Approximately 750 gallons of drill water remained in the formation upon well completion.
4. 35' of 0.02" slotted, 2.0" diameter, SCH 40 PVC wellscreen was placed from 38'± to 3'± and topped with 3' of solid PVC riser tube. Filter sand was poured up to 2'± and a bentonite seal placed from 2' up to 1'±. The well head was secured with a 1' long aluminum, flush mounted curb box grouted into the surface with concrete (2'x2'x6" pad).

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DFSP - TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO GZ-215 SHEET 1 OF 2 FILE NO 31288.15 CHKD BY ABU

BORING CO.	GZA DRILLING, INC.	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	MARK DALPE	DATE START 9/29/97	DATE END 9/30/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 36' OTHER NX rock core from 26' to 41'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
9/30/97	0700	17'	15	16 HRS
10/2/97	0700	20	WELL	2.5 DAYS

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	FIELD TESTING ODOR	R K
		S-1	24/19	0-2	2-8	Medium dense brown, TOPSOIL changing at	TOPSOIL	Back Fill	ND	ND	N	1.
					18-15	0.2' to grey, course to fine+ SAND, some	0.2'±	PVI				
						Silt, little Shale	COARSE TO	2' CSE				
							FINE	Bent. Seal				
5							SAND	3' R	ND	0.6	N	
		S-2	24/22	5-7	2-4	Loose tan, medium to fine+ Sand and Silt,		6'				
					5-4	Silt, trace Gravel(Shale)						
						APPARENT TOP OF BEDROCK AT 8'+						
							WEATHERED	P				
10							SHALE	V				2.
								C				
							12'±	S Filter				
							SHALE	C Sand				
15								R				
							15'±	E				
								E				
								N				
							SANDSTONE					
20												
												3.
25												
	5	C-1R-1	60/58	26-31	RQD=91%	Medium, Very slightly weathered, very slightly						
	5				REC=97%	fractured tan SANDSTONE changing at 27'± to	27'±					
	5					grey SILTSTONE with 1-4 mm thick Quartz	SILTSTONE					
30	4					veins(intrusive) Medium, slightly weathered,						
	4						31'±					
	5	C-1R-2	60/53	31-36	RQD=38%	Medium, slightly weathered, fractured(heavy	SANDSTONE					
	5				REC=88%	iron/manganese staining) with horizontal to						4.
	4					80° fracture angles, Grey, metamorphosed						5.
35	4					SANDSTONE						
	4											
	5	C-1R-3	60/60	36-41	RQD=76%	Soft, slightly weathered, slightly fractured,						
	5				REC=100%	tan/grey, slightly metamorphosed CON-						
	5					GLOMERATE changing at 37.5'± to grey						
40	6					SHALE	SHALE					

1. Soil headspace screening was conducted employing a Thermo Enviromental Organic Vapor Monitor Model 580 A photoionization detector(PID) employing a 10.6 electron volt lamp, and a Century Model OVA-128 equipped with a hydrogen flame ionization detected(FID). Readings are reportedin parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.
2. Roller bit advanced to 25'± due to poor rock quality
3. Petroleum- like odor noted on rock core from 26-31' (C-1/R-1)
4. Orange/Maroon drill water noted at 35'±.
5. Approximately 500 gallons of drill water remained in the formation upon completion.

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPORT POINT TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO GZ-215 SHEET 2 OF 2 FILE NO 31288.15 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	R K
							SHALE			6
						END OF EXPLORATION AT 41'±				
45										
50										
55										
60										
65										
70										
75										
80										

REMARKS

6. 35 feet of 0.02" slotted, 2.0" diameter, SCH 40, PVC wellscreen was placed from 41'± up to 6'± and topped with 6.0' of solid PVC riser tube. Filter sand was poured up to 3'±, and a BENTONITE Seal placed from 3' up ro 2'±. The well head was secured with a 1' long aluminum, flush mounted curb box, grouted into the surface with concrete(2'x2'x6"PAD)

NOTES:

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.

2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DFSP - TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-216 SHEET 1 OF 2 FILE NO. 31288.15 CHKD BY ABU

BORING CO.	GZA DRILLING, INC.	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	MARK DALPE	DATE START 10/01/97	DATE END 10/2/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 30' OTHER NX rock core from 19' to 44'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
11/6/97	1245	28.75	WELL	35 DAYS

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FID	ODOR	R K
		S-1	24/24	0-2	10-14	Dense, brown, TOPSOIL changing at 0.2' to		PVC Conc.				
					21-27	tan SUBSOIL: medium to fine+ SAND and silt,		2'	ND	ND	N	1.
						little + gravel changing at 1-3'+ to grey. Till=		Bent. CS Seal				
						coarse to fine+ SAND and gravel, little silt	TILL	3' E				
5								R 4'				
						APPARENT TOP OF BEDROCK AT 8'+						2.
								P				
10							WEATHERED	V				
							SHALE	C				
								Filter				
								S Sand				
								C				
15								R				
								E				
							15'	E				
							SLIGHTLY	N				
							WEATHERED					
20	5	C-1R-1	60/58	19-24	RQD=42%	Medium, Slightly weathered, fractured	SHALE					
	6				REC=97%	(moderately iron stained fracture surface with						
	6					horizontal to 30° fracture angles) grey,						
	5					metamorphosed SHALE(slaty) changing at						
	5					23'+ to severely weathered QUARTZ	23' QUARTZ					
25	5	C-1R-2	60/60	24-29	RQD=72%	Medium, fresh, slightly fractured(with iron	24'					
	5				REC=100%	stained fracture surfaces and horizontal to						
	5					80° fracture angles) Grey, moderately						
	5					metamorphosed SHALE						
	6											
30	6	C-1R-3	60/60	29-34	RQD=65%	Medium, fresh, slightly fractured(with iron	SHALE					
	6				REC=100%	stained fracture surfaces and horizontal to						
	4					80° fracture angles) Grey, moderately						
	5					metamorphosed SHALE						
	5											
35	5	C-1R-4	60/60	34-39	RQD=97%	Medium, fresh, very slightly fractured, grey,						
	5				REC=100%	metamorphosed SHALE						
	5											
	6											
	6											
40	6	C-1R-5	60/60	39-44	RQD=60%	Medium, fresh, very slightly fractured, grey,						3
						metamorphosed SHALE						

1. Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580A photoionization detector(PID) equipped with a 10-6 electron volt lamp and a Century Model OVA-128 equipped with hydrogen flame ionization detector (FID). Readings are reported in parts per million(ppm). ND indicates tht not detected above the instrument detection limit of 0.1ppm.
2. Roller-bit was advanced from 8'± to 19'±.
3. Approximately 500 gallons of drill water remained in the formation upon well commpletion.
4. 40' of 0.02" slotted, 2.0" diameter, SCH 40, PVC well screen was placed from 44' to 4'± and topped with 4' of solid PVC riser. Filter sand was poured up to 3' and a bentonite seal placed from filter sand 3'± up to 2'±. The well head was secured with a 1' long aluminum flush mounted curb box grouted into the surface with concrete(2'x2'x6"PAD)

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPORT POINT TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-216 SHEET 2 OF 2 FILE NO. 31288.15 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	R K
	6				REC=100%					
	6						METAMORPHOSED			
	5						SHALE			
	5									4
45						44± END OF EXPLORATION				
50										
55										
60										
65										
70										
75										
80										

REMARKS:

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DFSP - TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-217
SHEET 1 OF 1
FILE NO. 31288.15
CHKD BY ABU

BORING CO.	GZA DRILLING, INC.	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	MARK DALPE	DATE START 10/2/97	DATE END 10/3/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 8' OTHER NX rock core from 8' to 38'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
11/6/97	1315	19.87	WELL	34 DAYS

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FIELD TESTING FID	FIELD TESTING ODOR	RK
		S-1	6/6	0-0.5	120/6"	Brown, topsoil, changing at 0.3'+ to grey, severely weathered SHALE.	TOPSOIL 0.3'±	0.5' PVC Riser; Back Fill; 2' Bent. Seal; 3.5'	0.3	2.7	N	1.
						TOP OF ROCK AT 0.3±						
5							WEATHERED SHALE	4.5'±				
		C-1R-1	60/60	8-13	RQD=62% REC=100%	Medium, very slightly weathered, fractured (with iron/manganese staining on fracture surfaces and horizontal to 90° fracture angles) Grey, metamorphosed, SHALE	8'± VERY SLIGHTLY WEATHERED SHALE	Pvc				
10								Filter Sand				
		C-1R-2	60/60	13-18	RQD=32% REC=100%	Medium, severely weathered, severly fractured (with iron manganese staining on fracture surfaces and horizontal to 90° fracture angles) Brown SANDSTONE changing at 15' to grey metamorphosed SHALE	13'± SEVERLY WEATHERED SANDSTONE; 15'±	Screen				
15												
20		C-1R-3	60/58	18-23	RQD=73% REC=97%	Medium, fresh, slightly weathered, slightly fractured, metamorphosed grey SHALE.						
25		C-1R-4	60/60	23-28	RQD=52% REC=100%	Medium, fresh, slightly weathered, slightly fractured, metamorphosed grey SHALE.	MODERATELY WEATHERED SHALE					
30		C-1R-5	60/51	28-33	RQD=71% REC=85%	Soft, modereately weathered, severely fractured(extensive vertical fractures with heavy iron/manganese staining on fracture surface)Grey, metamorphosed SHALE changing at 32'+ to tan/grey SANDSTONE/ SILTSTONE	32'± SANDSTONE/ SILTSTONE					
35		C-1R-6	60/56	33-38	RQD=35% REC=93%	Medium, fresh, fractured,(horizontal to 90° fracture angles with iron staining on fracture surface)Grey, metamorphosed SHALE changing at 37'+ to tan/grey SILTSTONE/ SANDSTONE.	33'± SHALE; 37'± SILTSTONE					2. 3.
40						40' END OF EXPLORATION						

1. Soil headspace screening was conducted employing a Thermo Environimental Organic Vapor Monitor Model 580A photoionization detector(PID) equipped with a 10.6 electron volt(ev) lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector(FID). Readings are reported in parts per million(ppm). ND indicates not detected above the instrument detector limit of 0.1 ppm.
2. Approximately 250 gallons of drill water remained in the formation upon well completion.
3. Roler-bit was advanced from 38-40'±.
4. 35' of 0.02" diameter SCH 40, PVC well screen was placed from 39.5'± up to 4.5'± and topped with 4 6' of solid PVC riser tube. Filter sand was poured up to 3.5'+ and a Bentonite Seal placed from 3.5'+ up to 2'+. The well was secured with a 1' long, flush mounted, aluminum curb box frouted into the surface with concrete(2'x2'x6"PAD)

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DFSP - TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-218
SHEET 1 OF 2
FILE NO. 31288.15
CHKD BY ABU

BORING CO.	GZA DRILLING, INC.	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV	DATUM
GZA ENGINEER	MARK DALPE	DATE START 10/2/97	DATE END 10/7/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 49' OTHER NX rock core from 19' to 24' and from 49' to 59'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
10/6/97	0800	DRY	40'	18 HRS
10/7/97	0700	29	WELL	41 HRS

DPTH (FT)	CASING BLOWS	SAMPLE NO	PEN/REC	DEPTH (FT)	BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED			FIELD TESTING PID	FID	ODOR	RK
		S-1	24/12	0-2	9-14	Dense brown TOPSOIL changing at 0.3'± to	TOPSOIL	0 5'	P		ND	ND	N	
					18-42	grey SHALE, little + Silt, little coarse to fine	0.3'	Back	V	Fill				
						sand.	SHALE FILL		C					
							3'		R					
5								5'	I					
		S-2	24/18	5-7	2-4	Medium dense, grey coarse to fine+ SAND and		Bent	S	Seal	ND	0.4	N	
					9-14	Gravel, some + Silt		6'	E					
									R	7 5'				
10							FILL		P					
		S-3	24/18	10-12	22-37	Very dense, grey, coarse to fine+ SAND and			V		ND	ND	N	
					28-19	Gravel, little + Silt(Fill)			C	Filter				
										Sand				
									S					
15									C					
		S-4	24/17	15-17	15-21	Very dense, grey, coarse to fine+ SAND and			R		ND	ND	N	
					41-51	Gravel, little + Silt(Fill)			E					
						APPARENT TOP OF BEDROCK AT 18'+			E					2
									N					
20		C-1R-1	60/22	19-24	RQD=0%	Medium, very slightly weathered, severely								
					REC=37%	fractured, grey metamorphosed SHALE								
							VERY SLIGHTLY WEATHERED SHALE							
25														
							29'							
30		C-2R-1	60/11	29-34	RQD=7%	Medium, very slightly weathered, fractured	VERY SLIGHTLY							
					REC=18%	(horizontal to 45° fracture angles with iron	WEATHERED							
						staining on fracture surfaces) Grey	SILTSTONE							
						metamorphosed SILTSTONE								
		C-2R-2	60/24	34-39	RQD=15%	Medium, very slightly weathered, fractured								
35					REC=40%	(horizontal to 45° fracture angles with iron								
						staining on fracture surfaces) Grey								
						metamorphosed SILTSTONE								3

1. Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580A photoionization detector(PID) equipped with a 10.6 electron volt(eV) lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector(FID). Readings are reported in parts per million(ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.
2. Roller-bit was advanced from 24-29'± and from 39 to 49'±.
3. Approximately 1600 gallons of drill water remained in the formation upon well completion.
4. 50' of 0.02 slotted, 2.0" diameter, SH40, PVC wellscreen was placed from 57.5'+ up to 7.5'+ and topped with 7.5' of solid PVC riser tube. Filter sand was poured up to 6' and a Bentonite Seal placed from 6' up to 5'+. The well head was secured with a 1" long flush mounted aluminum curb box grouted into the surface with concrete.(2'x2'x4"PAD)

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPORT POINT TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-218 SHEET 2 OF 2 FILE NO. 31288.15 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	R K
					REC=100%	metamorphosed SHALE				
40							VERY SLIGHTLY WEATHERED SILTSTONE	P V C		
45								S Filter C Sand R E E		
50		C-3 R-1	60/60	49-54	RQD=53% REC=100%	SILTSTONE changing at 49.5'± to moderately hard, slightly fractured. Slightly metamorphosed grey SANDSTONE changing at 53'± to grey SANDSTONE/ CONGLOMERATE	53'± SANDSTONE/ CONGLOMERATE	N		
55		C-3 R-2	60/52	54-59	RQD=70% REC=87%	Moderately hard, slightly weathered, slightly fractured grey metamorphosed SANDSTONE/CONGLOMERATE changing at 57'± to SHALE/CONGLOMERATE	57'± SHALE CONGLOMERATE	57.5		
60						END OF EXPLORATION AT 59'±				
65										
70										
75										

REMARKS:

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DFSP - TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO GZ-219 SHEET 1 OF 1 FILE NO. 31288 15 CHKD BY ABU

BORING CO.	GZA DRILLING, INC.	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	MARK DALPE	DATE START 10/3/97	DATE END 10/7/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 35' OTHER NX rock core from 23' to 40'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
10/7/97	0800	23'	WELL	1 HR

DPTH (FT)	CASING BLOWS	SAMPLE NO	PEN/REC	DEPTH (FT)	BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED			FIELD TESTING PID	FID	ODOR	RK
		S-1	24/12	0-2	4-7	Medium dense, brown, TOPSOIL, changing at	TOPSOIL	0.5'	PR	Back	ND	ND	N	1.
					7-13	0.5'± to grey/tan, coarse to fine+ SAND, some+	0.5'±	2'	V I	Fill				
						Gravel, little + SILT		Bent.	CS	Seal				
								3'	E					
5		S-2	24/20	4-6	11-13	Dense, grey /tan, coarse to fine+ SAND and			R	4'	ND	ND	N	
					19-18	Gravel, little + Silt(till)								
							TILL							
									P					
10		S-3	24/14	9-11	20-23	Dense, grey /tan, coarse to fine+ SAND and			V		ND	ND	N	
					21-19	Gravel, little + Silt(till)			C					
										Filter				
									S	Sand				
					19-25				C		ND	ND	N	
15		S-4	24/19	14-16	37-42	Very dense, brown, coarse to fine+ SAND and			R					2.
						Gravel, little + Silt			E					
									E					
						APPARENT TOP OF BEDROCK			N					
		S-5	20/10	18-20	18-25	Very dense, grey, coarse to fine+ SAND and silt,	19'							
20					41-62	little gravel (till) changing at 19'± to grey weathered	WEATHERED				ND	ND	N	
						SHALE.	SHALE							
							23' SLIGHTLY							
		C-1R-1	24/16	23-25	RQD=0%	Moderately hard, slightly weathered, severely	WEATHERED							
25					REC=67%	fractured, tan metamorphosed SANDSTONE/	SANDSTONE/							
		C-1R-2	60/42	25-30	RQD=17%	SILTSTONE	SILTSTONE							
					REC=70%	Moderately hard, slightly weathered, severely								
						fractured, tan metamorphosed SANDSTONE/								
						SILTSTONE								
30							30'							
		C-1R-3	60/60	30-35	RQD=65%	Soft, fresh, very slightly fractured(horizontal to								
					REC=100%	90° fracture angles with moderate iron/								
						manganese) grey, metamorphosed SHALE	SHALE							
35														
		C-1R-4	60/60	35-40	RQD=78%	Soft, fresh, very slightly fractured(horizontal to								
					REC=100%	90° fracture angles with moderate iron/								
						manganese staining on fracture surface)								
						light gray, metamorphosed SHALE				39'				3
40						40' END OF EXPLORATION								

1. Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580A photoionization detector(PID) equipped with a 10.6 electron volt(eV) lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector(FID). Readings are reported in parts per million(ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.
2. Approximately 1000 gallons of drill water remained in the formation upon well completion.
3. 35' of 0.02" diameter, SCH 40, PVC well screen was placed from 39'± up to 4'± and topped with 4' of solid PVC riser tube. Filter sand was poured up to 3'± and a BENTONITE SEAL placed from 3' up to 2'±. The well head was secured with a 1' long aluminum flush mounted curb box grouted into the surface with concrete(2'x2'x4" PAD)

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DFSP - TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-220
SHEET 1 OF 1
FILE NO. 31288.15
CHKD BY ABU

BORING CO.	GZA DRILLING, INC.	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	MARK DALPE	DATE START 10/9/97	DATE END 10/11/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 19'± OTHER NX rock core from 9' to 39'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
11/7/97	1200	1008	WELL	28 DAYS

DPTH (FT)	CASING BLOWS	SAMPLE NO	PEN/REC	DEPTH (FT)	BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED			FIELD TESTING PID	FID	ODOR	RK
		S-1	24/10	0-2	2-5	Medium dense brown, TOPSOIL, changing at	TOPSOIL	Back	PR	Conc Fill	ND	ND	N	1
					5-8	0.5'+ to tan/grey, fine SAND and Silt, trace gravel	0.5'±		VI					
									CS					
							SILTY FINE	4'	E					
5		S-2	24/12	4-6	2-1	Very loose, tan, fine SAND and Silt	SAND	Bent.	R	Seal	ND	ND	N	
					3-7		7'±	6"						
						TOP OF ROCK	SEVERELY							
							WEATHERED SHALE			7.5'	ND	0.6		
		S-3	8/3	8-8.7	53-100/2"	Refusal: very dense grey, severely weathered	9'±		P					
10		C-1R-1	60/50	9-14	RQD=60%	SHALE			V					
					REC=83%	Soft, slightly weathered, slightly fractured,			C					
						metamorphosed grey SHALE with 1-5mm thick	SLIGHTLY			Filter				
						veins of limestone.	WEATHERED		S	Sand				
							SHALE		C					
15		C-1R-2	60/60	14-19	RQD=50%	Soft, slightly weathered, slightly fractured,			R					
					REC=100%	metamorphosed grey SHALE with 1-5mm thick			E					
						veins of limestone			E					
									N					
							19'±							
20		C-1R-3	60/60	19-24	RQD=68%	Medium, fresh, very slightly fractured(horizontal								
					REC=100%	to 60° fracture angles with moderate iron staining								
						on fracture surfaces)grey, metamorphosed,								
						SHALE with 1-3mm thick limestone veins(pitted)								
25		C-1R-4	60/60	24-29	RQD=65%	Medium, fresh, very slightly fractured(horizontal								
					REC=100%	to 60° fracture angles with moderate iron staining								
						on fracture surfaces)grey, metamorphosed,								
						SHALE with 1-3mm thick limestone veins(pitted)								
							SHALE							
30		C-1R-5	60/60	29-34	RQD=100%	Medium, fresh, very slightly fractured(horizontal								
					REC=100%	to 60° fracture angles with moderate iron staining								
						on fracture surfaces)grey, metamorphosed,								
						SHALE with 1-3mm thick limestone veins(pitted)								
35		C-1R-6	60/60	34-39	RQD=43%	Medium, fresh, very slightly fractured(horizontal								
					REC=100%	to 60° fracture angles with moderate iron staining								
						on fracture surfaces)grey, metamorphosed,								2.
						SHALE with 1-3mm thick limestone veins(pitted)				37.5'				
														3.
40						39' END OF EXPLORATION								

1. Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580A photoionization detector(PID) equipped with a 10.6 electron volt(eV) lamp and a Century Model OVA-128 equipped with a hydrogen flame ionization detector(FID). Readings are reported in parts per million(ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.
2. Approximately 100 gallons of drill water remained in the formation upon well completion.
3. 30' of 0.02" slotted, 2.0" diameter, SCH 40, PVC wellscreen was placed from 37.5' up to 7.5'± and topped with 7.5' of solid PVC riser tube. Filter sand was poured up to 6' and a bentonite seal placed 6' up to 4'±. The well head was secured with a 1' long aluminum flush mounted curb box, grouted in the surface with concrete(2'x2'x4"PAD).

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DFSP - TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO GZ-221 SHEET 1 OF 2 FILE NO 31288 15 CHKD BY ABU

BORING CO.	GZA DRILLING, INC.	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	MARK DALPE	DATE START 10/8/97	DATE END 10/9/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 30' OTHER NX rock core from 15' to 55'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
10/20/97	0830	31.09	WELL	4 DAYS

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FID	ODOR	RK
		S-1	9/8	0-0.8	7-100/3"	Refusal: very dense brown TOPSOIL, changing	TOPSOIL	PVC RISER 0.5'	ND	ND	N	1.
						at 0.2'± to grey, coarse to fine+ SAND and Gravel	2'±	Back Fill				
						(SHALE) little silt changing at 0.7'± to weathered						
						SHALE		3.5' Bent.				
5								5'				
		S-2	24/12	5-7	4-5	Medium dense, tan/grey(mottled) medium to			ND	0.4	N	
					5-7	fine+ SAND and Silt, trace Gravel(SHALE)(FILL)		7'				
							FILL					
								PVC				
10												
		S-3	24/10	10-12	34-36	Very dense, dark grey, coarse to fine+ SAND and			0.2	1.0	N	
					30-38	gravel(SHALE) little + silt (TILL)						
								Filter				
						14'± APPARENT TOP OF BEDROCK	14'±	Sand				
15												
		C-1R-1	60/28	15-20	RQD=10%	Medium, very slightly weathered, severely						
					REC=47%	fractured, grey, moderately metamorphosed,						
						SHALE						
20												
		C-1R-2	60/53	20-25	RQD=65%	Medium, very slightly weathered, severely	VERY SLIGHTLY					
					REC=88%	fractured, grey, moderately metamorphose,	WEATHERED					
						SHALE	SHALE					
25												
		C-1R-3	60/60	25-30	RQD=58%	Medium, very slightly weathered, severely						
					REC=100%	fractured, grey, moderately metamorphosed,						
						SHALE						
30												
		C-1R-4	60/60	30-35	RQD=50%	Medium, very slightly weathered, severely						
					REC=100%	fractured, grey, moderately metamorphose,						
						SHALE						
35												
		C-1R-5	60/60	35-40	RQD=17%	Medium, very slightly weathered, severely						
					REC=100%	fractured, grey, moderately metamorphosed,						
						SHALE changing at 38'+ to medium, slightly	38' SLIGHTLY					
						weathered, severely fractured , tan/grey	WEATHERED					
40						metamorphosed SANDSTONE(fine grained)	SANDSTONE					

REMARKS:

1. Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580 A photoionization detector(PID) employing a 10.6 electron volt lamp, and a Century Model OVA-128 equipped with a hydrogen flame ionization detected(FID) . Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.
2. Approximately 450 gallons of drill water remained in the formation upon completion.
3. Core barrel was over advanced (2') from 55' to 57'±.
4. 50' of 0.02" slotted, 2.0" diameter, SCH 40, PVC wellscreen was placed from 57'± up to 7'± and topped with 7' of solid PVC riser tube. Filter sand was poured up to 5' and a Bentonite Seal placed from 5' up to 3.5'±. The well head was secured with a 1' long, flush mounted, aluminum curb box grouted into the surface with concrete(2'x2'x4"pad)

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPORT POINT TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-221 SHEET 2 OF 2 FILE NO. 31288.15 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	R K
		C-1R-6	60/60	40-45	RQD=0%	Soft, fresh, severely fractured(horizontal, to 90°				
					REC=100%	fracture angles with slight iron staining on fracture				
						surfaces) Moderately metamorphosed grey				
						SHALE	SHALE	P		
45						Soft, fresh, severely fractured(horizontal, to 90°		V		
		C-1R-7	60/60	45-50	RQD=13%	fracture angles with slight iron stainin on fracture		C		
					REC=100%	surfaces) Moderately metamorphosed grey		Filter		
						SHALE changing at 47.5'± to medium, fresh,	47.5'±	S Screen		
						moderately fractured, metamorphosed, grey	SANDSTONE	C		
50						SANDSTONE/SILTSTONE	SILTSTONE	R		
		C-1R-8	60/60	50-55	RQD=83%	Soft, fresh, slightly fractured, slightly	50'±	E		
					REC=100%	metamorphosed, grey SHALE		E		
								N		
							SHALE			
55										2.
										3.
										4.
						57'± END OF EXPLORATION				
60										
65										
70										
75										
80										

REMARKS

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DFSP - TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-222'
SHEET 1 OF 1
FILE NO. 31288.15
CHKD BY ABU

BORING CO.	GZA DRILLING, INC.	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	MARK DALPE	DATE START 10/8/97	DATE END 10/9/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 13' OTHER NX rock core from 8' to 38'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
10/9/97	1400	19	WELL	3.5 HRS
11/11/97	1300	17.10	WELL	33 DAYS

DPTH (FT)	CASING BLOWS	SAMPLE NO	PEN/REC	DEPTH (FT)	BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED			FIELD TESTING PID	FID	ODOR	R K
		S-1	24/19	0-2	4-4	Medium dense, brown TOPSOIL, changing at	TOPSOIL	0.5'	P R		ND	ND	N	1
					12-27	0.3'± to tan, medium to fine+ SAND, some -Silt	0.3' MEDIUM TO	Back	V I	Fill				
						trace+ Gravel	FINE SAND		C S	Bentonite				
							(SUBSOIL)	4'	E	Seal				
5							TILL	5'	R		ND	ND	N	
		S-2	24/9	5-7	10-8	Medium dense, tan/grey, coarse to fine+ SAND								
					16-19	Some - Gravel, some Silt(till)								
						7.5' APPARENT TOP OF BEDROCK	7.5' ± VERY			7.5'				
		C-1R-1	60/49	8-13	RQD=25%	Moderately hard, very slightly weathered, fractured	SLIGHTLY		P					
10					REC=82%	(vertical to 20° fracture angles with heavy	WEATHERED		V					
						Manganese/iron staining on fracture surfaces)	SANDSTONE		C					
						lt. grey, slightly metamorphosed SANDSTONE								
						Moderately hard, very slightly weathered, fractured			S	Filter				
		C-1R-2	60/60	13-18	RQD=60%	(vertical to 20° fracture angles with heavy	14'±		C	Sand				
15					REC=100%	Manganese/iron staining on fracture surfaces)			R					
						light grey, slightly metamorphosed	CONGLOMERATE		E					
						SANDSTONE changing at 14'± to hard fresh,			E					
						very slightly fractured, hard grey metamorphosed	18'		N					
		C-1R-3	60/56	18-23	RQD=83%	CONGLOMERATE	SHALE							
20					REC=93%	Soft, fresh, sound, grey moderately Metamorphose								
						SHALE								
		C-1R-4	60/60	23-28	RQD=93%	Soft, fresh, sound, grey moderately								
					REC=100%	Metamorphosed SHALE								
25														
		C-1R-5	60/60	28-33	RQD=73%	Soft, fresh, sound, grey moderately Metamorphosed								
30					REC=100%	SHALE								
														2
		C-1R-1	60/60	33-38	RQD=100%	Soft, fresh, sound, grey moderately								
35					REC=100%	Metamorphosed SHALE								
										37 5'				3
						38'± END OF EXPLORATION								
40														

1. Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580 A photoionization detector(PID) employing a 10.6 electron volt lamp, and a Century Model OVA-128 equipped with a hydrogen flame ionization detected(FID) . Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.
2. Approximately 600 gallons of drill water remained in the formation upon completion of well.
3. 30' of 0.02" slotted, 2.0" diameter, SCH 40, PVC wellscreen was placed from 37.5'± up to 7.5'± and topped with 7.5 of solid PVC riser tube. Filter sand was poured up to 5'± and a Bentonite Seal placed from 5'± up to 4'±. The well head was secured with a 1' long, flush mounted, aluminum curb box grouted into the surface with concrete(2'x2'x4"pad)

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA

BORING NO GZ-222

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DFSP - TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-223
SHEET 1 OF 2
FILE NO. 31288.15
CHKD BY ABU

BORING CO. GZA DRILLING, INC.
FOREMAN CHRIS LENLING
GZA ENGINEER MARK DALPE

BORING LOCATION SEE EXPLORATION LOCATION PLAN
GROUND SURFACE ELEV. _____ DATUM _____
DATE START 10/7/97 DATE END 10/8/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 29' OTHER NX rock core from 24' to 44'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
10/22/97	1400	31.55	WELL	14 DAYS

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FID	ODOR	RK
		S-1	24/15	0-2	4-16	Medium dense, brown TOPSOIL, changing at		0.5' PR	ND	ND	N	1.
					12-27	0.3'± to light grey, coarse to fine+ SAND and Silt		Back VI Fill				
						little Shale(re-worked Till)	FILL	3' CS				
								Bent. E Seal				
5							5'± BOULDER	5' R				
		S-2	1/0	5-	120/<1"	REFUSAL. No sample						
							7'±	7'				
							TAN		ND	ND	N	
		S-3	24/10	8-10	2-4	Loose, tan, medium to fine± SAND and Silt	SILTY	P				
10					4-9		FINE	V				
							SAND	C				
								S Filter				
								C Sand				
15						APPARENT TOP OF BEDROCK AT 15'±		R				
		S-4	1/0	15-	120/<1"	REFUSAL: No sample		E				
								E				
							SLIGHTLY	N				
							WEATHERED					
20							SHALE					
25		C-1R-1	60/56	24-29	RQD=67%	Soft, very slightly weathered, sound, grey	24'±					
					REC=93%	slightly metamorphosed SHALE	VERY SLIGHTLY					
							WEATHERED					
							SHALE					
30		C-1R-2	60/60	29-34	RQD=73%	Soft, very slightly weathered, very slightly						
					REC=100%	fractured(horizontal fracture angles with						
						moderate iron staining on fracture surfaces)						
						Grey, slightly metamorphosed, SHALE						2.
												3
35		C-1R-3	60/48	34-39	RQD=76%	Soft, very slightly weathered, very slightly						
					REC=80%	fractured(horizontal fracture angles with						
						moderate iron staining on fracture surfaces)						
						Grey, slightly metamorphosed, SHALE						
40												

1. Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580 A photoionization detector(PID) employing a 10.6 electron volt lamp, and a Century Model OVA-128 equipped with a hydrogen flame ionization detected(FID) . Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.
2. Rolller bit was advanced from 44 to 47'±.
3. Approximately 600 gallons of drill water remained in the formation upon completion of well.
4. 40' of 0.02" slotted, 2.0" diameter, SCH 40, PVC wellscreen was placed from 47'± up to 7'± and topped with 7' of solid PVC riser tube. Filter sand was poured up to 5' and a bentonite seal placed from 5' up to 3'±. The well head was secured with a 1' long, flush mounted, aluminum curb box grouted into the surface with concrete(2'x2'x4"pad).

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DEFENSE FUEL SUPPORT POINT TANK
FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-223
SHEET 2 of 2
FILE NO. 31288.15
CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	R K
		C-1 R-4	60/60	39-44	RQD=100%	Soft, very slightly weathered, very slightly	VERY SLIGHTLY	P S		
					REC=100%	fractured(horizontal fracture angles with	WEATHERED	V C		
						moderate iron staining on fracture surfaces)	SHALE	C R FILTER		
						grey, slightly metamorphosed, SHALE		E SAND		
45								E		
								N		
										4
						47'± END OF EXPLORATION				
50										
55										
60										

REMARKS:

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DFSP - TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-224
SHEET 1 OF 2
FILE NO. 31288.15
CHKD BY ABU

BORING CO	GZA DRILLING, INC	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	MARK DALPE	DATE START 10/1097	DATE END 10/15/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 13' OTHER NX rock core from 13' to 48'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
10/21/97	0900	29.02	WELL	6 DAYS

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED			FIELD TESTING PID	FIELD TESTING FID	FIELD TESTING ODOR	R K
		S-1	24/8	0-2	2-4	Medium dense, brown TOPSOIL, changing at	TOPSOIL		P R	Back	ND	0.4	N	1.
					7-10	0 5'± to tan, coarse to fine+ SAND and Gravel	0.5'±		V I	Fill				
						little silt changing at 1 5' to wood(TIMBER)			C S	Bentonite				2.
		S-2	24/0	3-5	12-13	NO RECOVERY/ NO SAMPLE		4'	E	Seal				
5					6-7		FILL		R					
								6'						
										8'	1.2	7.8	SL	
		S-3	24/18	8-10	22-18	Medium dense, black/grey, coarse to fine±			P					
10					11-7	SAND and Silt, little + Gravel			V					
									C					
						APPARENT TOP OF BEDROCK AT 12'±								
									S	Filter				
		C-1R-1	60/13	13-18	RQD=43%	Medium slightly weathered, fractured(horizontal	SLIGHTLY		C	Sand				
15					REC=72%	to 30° fracture angles with moderate iron staining	WEATHERED		R					
						on fracture surface) Slightly metamorphosed	SANDSTONE/		E					
						tan, grey SANDSTONE/SILTSTONE	SILTSTONE		E					
									N					
		C-1R-2	60/60	18-23	RQD= 87%	Soft, slightly weathered, slightly fractured,	18'							
20					REC=100%	moderately metamorphosed, grey SHALE	SLIGHTLY WEATHERED SHALE							
		C-1R-3	60/60	23-28	RQD=93%	Medium, fresh, sound, moderately	23							
25					REC=60%	metamorphosed, grey SANDSTONE(fine grained)	SANDSTONE							
							27' VERY							
		C-1R-4	60/60	28-33	RQD=78%	Soft, very slightly weathered, very slightly	SLIGHTLY							
30					REC=100%	fractured, grey, moderately metamorphosed	WEATHERED							
						SHALE, changing at 31 5'± to tan/grey	SHALE							
						SANDSTONE	SANDSTONE							
		C-1R-5	60/60	33-38	RQD=100%	Soft, fresh, sound, moderately metamorphosed,	33'							
35					REC=100%	grey SHALE								
							SHALE							
		C-1R-6	60/60	38-43	RQD=100%	Soft, fresh, sound, moderately metamorphosed,								
40					REC=100%	grey SHALE								

1. Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580 A photoionization detector(PID) employing a 10.6 electron volt lamp, and a Century Model OVA-128 equipped with a hydrogen flame ionization detected(FID) . Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.
2. SL indicates slight odor.
3. Approximately 400 gallons of drill water remained in the formation upon well completion.
4. 40' of 0.02" slotted, 2.0" diameter, SCH 40, PVC wellscreen was placed from 48'± up to 8'± and topped with 8' of solid PVC riser tube. Filter sand was poured up to 6' and a bentonite seal placed from 6' up to 4'±. The well head was secured with a 1' long, flush mounted, aluminum curb box grouted into the surface with concrete.

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPORT POINT TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-224 SHEET 2 OF 2 FILE NO. 31288.15 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	R K
								PVC		
								S		
		C-1R-7	60/60	43-48	RQD=100%	Soft, fresh, sound, moderately, metamorphosed,	SHALE	C		
45					REC=100%	grey, SHALE		R Filter		
								E Sand		
								E		3
								N		4
						48' END OF EXPLORATION				
50										
55										
60										
65										
70										
75										
80										

REMARKS:

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT	REPORT OF BORING NO.	GZ-225
DFSP - TANK FARM 2	SHEET	1 OF 2
PORTSMOUTH, RHODE ISLAND	FILE NO	31288 15
	CHKD BY	ABU

BORING CO.	GZA DRILLING, INC.	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	MARK DALPE	DATE START 10/9/97	DATE END 10/10/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" to 49' OTHER NX rock core from 49' to 59'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
10/22/97	420	31.15	WELL	12 DAYS

DPTH (FT)	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FID	ODOR	R K
		S-1	24/10	0-2	5-5	Medium dense, brown TOPSOIL, changing at	TOPSOIL	PVC RISER	ND	ND	N	1.
					12-9	0.5'± to grey, coarse to fine+ SAND and Silt,	0.5'±	Backfill				
						little Gravel(SHALE)						
5								6'				
								7'	ND	0.4	N	
		S-2	24/6	8-10	16-33	Very dense, grey, coarse to fine± SAND and		9'				
10					47-93	SHALE, little Silt.		PVC				
								Filter Sand				
		S-3	<1/0	13-	100/<1"	REFUSAL: No Sample	FILL	SCREEN				
15												
		S-4	6/6	18-18.5	133/6"	REFUSAL:						
20						Very dense, dark grey, SHALE/SANDSTONE			ND	0.1	N	
						little+ coarse to fine+ SAND						
		S-5	24/15	23-25	27-20	Dense, grey, coarse to fine+ SAND and Gravel			ND	0.4	N	
25					19-44	(SHALE), little+ Silt						
30												
35												
40						APPARENT TOP OF BEDROCK AT 44'±						

1. Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580 A photoionization detector(PID) employing a 10.6 electron volt lamp, and a Century Model OVA-128 equipped with a hydrogen flame ionization detected(FID) . Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.
2. Roller bit was advanced to 49'± due to poor borehole stability.
3. Approximately 300 gallons of drill water remained in the formation upon completion of well.
4. 50' of 0.02" slotted, 2.0" diameter, SCH 40, PVC wellscreen was placed from 59'± up to 9'± and topped with 9' of solid PVC riser tube. Filter sand was poured up to 7'± and a bentonite seal placed from 7'± up to 6'±. The well head was secured with a 1' long, flush mounted, aluminum curb box grouted into the surface with concrete(2'x2'x4"PAD).

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA

BORING NO. GZ-225

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPORT POINT TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-225 SHEET 2 OF 2 FILE NO. 31288.15 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	PEN/REC	DEPTH (FT)	BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED		FIELD TESTING	R K
											2.
45								P			
								V			
								C			
							SANDSTONE		Filter		
						Medium, moderately weathered, fractured	CONGLOMERATE		Sand		
50		C-1R-1	60/26	49-54	RQD=0%	(vertical to 45° fracture angles with heavy iron/		S			
					REC=43%	manganese, grey, metamorphosed		C			
						SANDSTONE CONGLOMERATE		R			
								E			
								E			
55		C-1R-2	60/25	54-59	RQD=42%	Medium, moderately weathered, fractured		N			
					REC=42%	(vertical to 45° fracture angles with heavy iron/					
						manganese, grey, metamorphosed					3.
						SANDSTONE CONGLOMERATE					4.
60						59' END OF EXPLORATION					
65											
70											
75											
80											

REMARKS

NOTES 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DFSP - TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-226
SHEET 1 OF 2
FILE NO. 31288.15
CHKD BY ABU

BORING CO.	GZA DRILLING, INC.	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	MARK DALPE	DATE START 10/14/97	DATE END 10/16/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 55' OTHER NX rock core from 19' to 24'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
10/22/97	1415	36.32	WELL	6 DAYS

DPTH (FT)	CASING BLOWS	SAMPLE NO	PEN/REC	DEPTH (FT)	BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED			FIELD TESTING PID	FID	ODOR	RK
		S-1	24/24	0-2	2-4	Medium dense, brown TOPSOIL, changing at	0.3' TOPSOIL	0.5'	P		ND	ND	N	1.
					7-14	0.3± to grey, coarse to fine+ SAND and Gravel			V	Back				
						(SHALE) little+ Silt			C	Fill				
											ND	0.6	N	
5		S-2	24/14	4/6	2-2	Loose, tan, medium to fine± SAND and Silt,	FILL	5'	R	Bentonite				
					2-11	trace- Gravel(SHALE)			I	Seal				
								7'	S					
							7'±		E					
									R	9'				
10							TILL							
		S-3	24/10	10-12	14-10	Medium, dense, grey/tan, coarse to fine+ SAND					ND	0.2	N	
					12-9	and Gravel(SHALE) little+ Silt								
						APPARENT TOP OF BEDROCK	13.5'±							2.
							WEATHERED SHALE							
15							15±							
							SHALE/ SILTSTONE							
									P					
20		C-1R-1	60/6	19-24	RQD=0%	Medium, fresh, fractured, grey, metamorphosed			V	Filter				
					REC=10%	SHALE/SILTSTONE			C	Sand				
									S					
									C					
25									R					
									E					
									E					
									N					
30		C-2R-1	60/56	29-34	RQD=67%	Medium/soft, fresh, slightly fractured	29'							
					REC=93%	(horizontal to 10° fracture angles with minor								
						iron staining on fracture surfaces; grey,								
						moderately metamorphosed SHALE								
							SHALE							
35		C-2R-2	60/56	34-39	RQD=77%	Medium/soft, fresh, slightly fractured								
					REC=93%	(horizontal to 10° fracture angles with minor								
						iron staining on fracture surfaces) grey,								
						moderately metamorphosed SHALE								
40		C-2R-3	60/60	34-44	RQD=85%	Medium, fresh, slightly fractured								

1 Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580 A photoionization detector(PID) employing a 10.6 electron volt lamp, and a Century Model OVA-128 equipped with a hydrogen flame ionization detected(FID) . Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.

2 Roller bit was advanced from 12' to 19', from 24'to 29', and 49' to 64'.

3 Approximately 450 gallons of drill water remained in the formation upon completion of well.

4 55' of 0.02" slotted, 2.0" diameter, SCH 40, PVC wellscreen was placed from 64' up to 9'± and topped with 9' of solid PVC riser tube. Filter sand was poured up to 7'± and a Bentonite Seal placed from 7' up to 5'±. The well head was secured with a 1' long, flush mounted, aluminum curb box grouted into the surface with concrete(2'x2'x4"PAD).

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DEFENSE FUEL SUPPORT POINT TANK
FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-226
SHEET 2 OF 2
FILE NO. 31288.15
CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	R K
					REC=100%	(horizontal to 45° fracture angles with slight				
						iron staining on fracture surfaces),	SHALE			
						metamorphosed, grey SHALE				
45		C-2R-4	60/60	44-49	RQD=68%	Medium, fresh, moderately fractured(horizontal	44'			
					REC=100%	to 80° fracture angles with heavy iron/				
						manganese staining on fracture surfaces)		P		
						Moderately metamorphosed(SHALE/SILTSTONE		V		
								C		
50										
								S		
								C		
								R		
							SHALE/	E		
55							SILTSTONE	E		
								N		
60										
										3.
										4.
65						64'± END OF EXPLORATION				
70										
75										
80										

REMARKS:

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA GEOENVIRONMENTAL INC.
140 BROADWAY, PROVIDENCE, RHODE ISLAND

GEOTECH/GEOHYDROLOGICAL CONSULTANTS

PROJECT
DFSP - TANK FARM 2
PORTSMOUTH, RHODE ISLAND

REPORT OF BORING NO. GZ-227
SHEET 1 OF 2
FILE NO. 31288.15
CHKD BY ABU

BORING CO.	GZA DRILLING, INC.	BORING LOCATION	SEE EXPLORATION LOCATION PLAN
FOREMAN	CHRIS LENLING	GROUND SURFACE ELEV.	DATUM
GZA ENGINEER	MARK DALPE	DATE START 10/17/97	DATE END 10/21/97

SAMPLER: UNLESS OTHERWISE NOTED, SAMPLER CONSISTS OF A 2" SPLIT SPOON DRIVEN USING A 140 lb. HAMMER FALLING 30 IN

CASING: UNLESS OTHERWISE NOTED, CASING DRIVEN USING A 300 LB HAMMER FALLING 24 IN.

CASING SIZE: 3" TO 55' OTHER NX rock core from 19' to 24'

GROUNDWATER READINGS

DATE	TIME	WATER	CASING	STABILIZATION TIME
10/22/97	0800	30.09	WELL	1 DAY
11/1197	0700	23.0	WELL	20 DAYS

DPTH (FT)	CASING BLOWS	SAMPLE NO	PEN/REC	DEPTH (FT)	BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING PID	FID	ODOR	RK
		S-1	24/18	0-2	7-21	Very dense, brown, TOPSOIL, changing at 0.5'±	0.5'± TOPSOIL	0.5' PVC Bent. Seal	ND	ND	N	1.
					37-44	to grey, coarse to fine+ SAND and Gravel		1'				
						(SHALE) little+ Silt		2'				
5								4'				
		S-2	24-20	7-9	12-37	Very dense, dark grey, coarse to fine± SAND			ND	ND	N	
					15-22	and Gravel(SHALE) little+ Silt	FILL					
10												
15		S-3	24/5	14-16	11-38	Very dense, dark grey, coarse to fine± SAND			ND	ND	N	
					31-44	and Gravel(SHALE) little+ Silt						
20		S-4	24/10	19-21	27-6	Medium dense, grey, coarse to fine± SAND		Filter Sand	12.0	180	SL	2.
					7-6	and Gravel(SHALE) little+ Silt						
							23' BOULDER (SHALE)					
25												
							26.5'					
30							BLAST ROCK/ BOULDERY FILL					3. 4.
35												
						39'± APPARENT TOP OF BEDROCK						
40							39' SHALE					5.

1. Soil headspace screening was conducted employing a Thermo Environmental Organic Vapor Monitor Model 580 A photoionization detector(PID) employing a 10.6 electron volt lamp, and a Century Model OVA-128 equipped with a hydrogen flame ionization detected(FID) . Readings are reported in parts per million (ppm). ND indicates not detected above the instrument detection limit of 0.1 ppm.
2. SL indicates slight odor.
3. Approximately 400 gallons of drill water remained in the formation upon completion of well.
4. Roller bit was advanced from 21' to 44'±.
5. 40' of 0.02" slotted, 2.0" diameter, SCH 40, PVC wellscreen was placed from 44'± up to 4'± and topped with 4' of solid PVC riser tube. Filter sand was poured up to 6' and a bentonite seal placed from 6' up to 4'±. The well head was secured with a 1' long, flush mounted, aluminum curb box grouted into the surface with concrete(2'x2'x6"PAD).

NOTES:
1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

GZA

BORING NO. GZ-227

GZA GEOENVIRONMENTAL INC. 140 BROADWAY, PROVIDENCE, RHODE ISLAND GEOTECH/GEOHYDROLOGICAL CONSULTANTS	PROJECT DEFENSE FUEL SUPPORT POINT TANK FARM 2 PORTSMOUTH, RHODE ISLAND	REPORT OF BORING NO. GZ-227 SHEET 2 OF 2 FILE NO. 31288.15 CHKD BY ABU

DPTH	CASING BLOWS	SAMPLE NO	SAMPLE PEN/REC	SAMPLE DEPTH (FT)	SAMPLE BLOWS/6"	SAMPLE DESCRIPTION BURMISTER CLASSIFICATION	STRATUM DESCRIPTION	EQUIPMENT INSTALLED	FIELD TESTING	R K
							SHALE	44'		
45						44± END OF EXPLORATION				
50										
55										
60										
65										
70										
75										
80										

REMARKS:

NOTES: 1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES; TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED; FLUCTUATIONS OF GROUNDWATER TABLE MAY OCCUR DUE TO OTHER FACTORS THAN THOSE PRESENT AT THE TIME MEASUREMENTS WERE MADE.

NAVSTA Newport - Tank Farm 2, Buoy Storage Area/ JP5 Soil Pile Area
Summary of Investigations
Tetra Tech, Inc.
January 5, 2012

A review of the buoy storage area at Tank Farm 2 was conducted by Tetra Tech in response to requests from RIDEM to investigate the buoy storage area. These RIDEM requests were made in the comment and response cycle on the Draft Sampling and Analysis Plan (SAP) for Tank Farm 2. The information herein is provided for clarity regarding the sampling and analysis previously performed in this area, and in doing so, assist in resolving RIDEMs General Comment 9, and part of RIDEM Specific Comment 8 on the Draft SAP.

The possible former presence of a buoy storage area was reportedly based upon an aerial photograph of the site taken in 1981. A description of this buoy storage area in this aerial photograph provided in the Work Plan for Site Closure – Tank Farm 2 (FwEC, 2003) states: *"A large rectangular area was observed near the eastern central portion of the tank farm. A series of round features were visible at the northern portion of this area, representing Naval buoys.(page 3-2)"* This description of the area indicates that this area coincides with the JP-5 soil pile area. The AOCs in this area are: AOC-022, -026, -033, -034, -035 and -036. Their locations are shown on Figure 7 of the Site Investigation and Remedial Action Report (SIRAR) for Tank Farm 2 (attached).

The six AOCs identified above were investigated during the SIRAR using the advancement of test pits and collection of soil samples for field analysis for total petroleum hydrocarbons (TPH) using Petroflag™ field analysis. Shallow test pits were excavated within each AOC and samples were collected from the four sidewalls and bottom of the test pits. The thresholds for further analysis and/or remediation that were used during the SIRAR at these AOCs are:

1) If Petroflag™ analysis of a sample indicated less than 100 mg/kg total petroleum hydrocarbon (TPH) during screening, no further action was taken.

2) If Petroflag™ analysis of a sample indicated greater than 100 mg/kg, the sample was sent to the laboratory for diesel range organic (DRO) and for gasoline-range organic (GRO) analysis. If lab analysis revealed a TPH (defined as the sum of DRO and GRO analytical results) of less than 100 mg/kg, no further action was taken.

3) If laboratory analysis indicated TPH was between 100 and 500 mg/kg, the sample was analyzed for VOCs and SVOCs to determine if any of these analytes exceeded RIDEM Residential Direct Exposure Criteria (RDEC) and/or Industrial/ Commercial Direct Exposure Criteria (ICDEC).

4) Where laboratory analysis revealed a concentration of greater than 500 mg/kg TPH (RIDEMs RDEC) but less than 2,500 mg/kg TPH (RIDEMs ICDEC), the sampling location was re-sampled. Re-sampled locations were again analyzed for TPH (GRO and DRO), and if TPH results were greater than 100 mg/kg, were also analyzed for VOC and SVOCs.

5) If laboratory TPH concentration was greater than 2,500 mg/kg (RIDEMs ICDEC), the area was automatically flagged for remediation.

None of the samples from these AOCs were above 2,500 mg/kg TPH.

In the case of the samples collected at AOC-022, -035 and -036, all of the results indicated that the TPH was less than 100 mg/Kg:

- At AOC-022, two test pits were advanced and ten soil samples were taken. The sample locations within the test pits are shown on the attached field sketch. Nine of the ten soil samples were analyzed in the laboratory for DRO/GRO. Six of the samples did not contain TPH above laboratory reporting limits. Three of the samples contained TPH at low concentrations. Based on these results, no further action was performed for AOC-022. Analytical results from AOC-022 samples are shown below:

Sample ID	GRO(mg/kg)	DRO(mg/kg)
TF2-022-TP1-01	U(7.3)	5.6
TF2-022-TP1-02	U(7.4)	U(3.7)
TF2-022-TP1-03	U(7)	7.2
TF2-022-TP1-04	U(5.4)	U(3.8)
TF2-022-TP1-05	U(9.2)	U(3.8)
TF2-022-TP2-01	U(25)	U(3.8)
TF2-022-TP2-03	U(5.7)	U(3.7)
TF2-022-TP2-04	U(4.8)	U(3.7)
TF2-022-TP2-05	U(5.2)	6.1

Note: U indicates not detected above laboratory reporting limit indicated

- Because AOCs-035 and -036 are superimposed on top of each other (Figure 7) they were investigated together. One test pit was excavated and nine soil samples collected. These samples were identified as TF2-035-## although they represent both AOCs. The locations of the soil samples within the test pit are shown on the attached sketch. Five of the nine samples were analyzed in the laboratory for DRO/GRO. TPH concentrations in these five samples were low (16, 74, 8.4, 38 and 25 mg/kg). Based on these results, no further action was performed for AOC-035 and AOC-036. Analytical results from AOC-035 and -036 these samples are shown below:

Sample ID	GRO(mg/kg)	DRO(mg/kg)
TF2-035-01	U(9.4)	16
TF2-035-02	17	57
TF2-035-05	U(8)	8.4
TF2-035-06	U(8.9)	38
TF2-035-09	U(5.5)	25

Note: U indicates not detected above laboratory reporting limit indicated

Because AOCs -026, -033 and -034 are superimposed on top of each other (Figure 7), these three AOCs were investigated together using one test pit and eight soil samples. These samples were identified as TF2-026-### although they represent all three AOCs. The locations of the soil samples within the test pit and the DRO/GRO results are shown on the attached sketch. All of the soil samples were analyzed in the laboratory for DRO/GRO. Analytical results from these samples are shown below. Results indicated TPH concentrations in two samples were between

500 and 2,500 mg/kg (540 and 912 mg/kg) and they were re-sampled for analysis of TPH (DRO and GRO), and the results are also shown below.

Sample ID	GRO(mg/kg)	DRO(mg/kg)
TF2-026-01	U(7.7)	15
TF2-026-02	U(8.3)	540
TF2-026-02A	U(5.3)	1100
TF2-026-03	12	900
TF2-026-03A	8.0	480
TF2-026-04	36	58
TF2-026-05	21	190
TF2-026-06	U(8.9)	45
TF2-026-07	13	190
TF2-026-08	95	340
TF2-026-08A	16	730

Note: U indicates not detected above laboratory reporting limit indicated

TF2-026-05 and TF2-026-07 were analyzed for SVOCs and VOCs in accordance with the plan summarized above. In addition, the replacement samples TF2-026-02A, TF2-026-03A and TF2-026-08A were also analyzed for SVOCs and VOCs. The VOC and SVOC analytical results are presented on Table 1 (attached). Results indicated that measured concentrations in these samples did not exceed RIDEM RDECs.

Results of the extensive soil sampling and analysis that occurred in the vicinity of the buoy storage/ JP-5 soil pile indicates that the only area where a RIDEM RDEC was exceeded was at AOC-026 (four samples at three locations). During the first round of testing for TPH, two locations (TF2-026-02 and TF2-026-03 contained TPH above the RDEC). During the second round of sampling and analysis for TPH, TF2-026-02 and TF2-026-8A, contained TPH above the RDEC. None of these locations contained SVOCs or VOCs above RDECs.

Furthermore, subsequent to the SIRAR, GZA installed monitoring well GZ-215 in this area. Analytical results from groundwater from GZ-215, located within this area are presented on Table 2. Groundwater results indicate that only very low concentrations of several compounds were detected and no compounds were detected greater than RIDEM GB groundwater objectives.

Therefore, the conclusion is that in this possible former buoy storage/ JP-5 soil pile location, there were no compounds found to indicate a release.

Table 1

Summary of Detected VOCs and SVOCs in Soil at Former Bouy Storage / JP-5 Soil Pile Area
Tank Farm 2 , NAVSTA Newport, RI

				Sample ID	TF2-026-2A	TF2-026-3A	TF2-026-5	TF2-026-7	TF2-026-8A
				Collection Date	7/5/05	7/5/05	5/23/05	5/23/05	7/5/05
Analyte	**Unit**	**RIDEM RDEC**	**RIDEM IC DEC**						
VOC Analysis									
Acetone	mg/kg	7,800	10,000		ND(0.210)	0.400	ND(0.230)	ND(0.210)	ND(0.230)
2-Butanone (Methyl Ethyl Ketone)	mg/kg	10,000	10,000		ND(0.017)	0.062	ND(0.019)	ND(0.016)	ND(0.019)
SVOC Analysis									
2-Methylnaphthalene	mg/kg	123	10,000		ND(0.180)	0.130J	ND(0.180)	ND(0.190)	ND(0.170)
Benzo(a)anthracene	mg/kg	0.9	7.8		ND(0.180)	0.200	ND(0.180)	ND(0.190)	ND(0.170)
Benzo(a)pyrene	mg/kg	0.4	0.8		ND(0.180)	0.210	ND(0.180)	ND(0.190)	ND(0.170)
Benzo(b)fluoranthene	mg/kg	0.9	7.8		ND(0.180)	0.260	ND(0.180)	ND(0.190)	ND(0.170)
Benzo(k)fluoranthene	mg/kg	0.9	78		ND(0.180)	0.170	ND(0.180)	ND(0.190)	ND(0.170)
Chrysene	mg/kg	0.4	780		ND(0.180)	0.270	ND(0.180)	ND(0.190)	ND(0.170)
Fluoranthene	mg/kg	20	10,000		ND(0.180)	0.270	ND(0.180)	ND(0.190)	ND(0.170)
Phenanthrene	mg/kg	40	10,000		ND(0.180)	0.190	ND(0.180)	ND(0.190)	ND(0.170)
Pyrene	mg/kg	13	10,000		ND(0.180)	0.660	ND(0.180)	ND(0.190)	0.130J

ND = Not detected above laboratory reporting limits given

J=Estimated Value

Table 2

Summary of Detected Componds in Groundwtaer
at Former Bouy Storage/ JP5 Soil Storage Area
Tank Farm 2 - NAVSTA Newport, RI

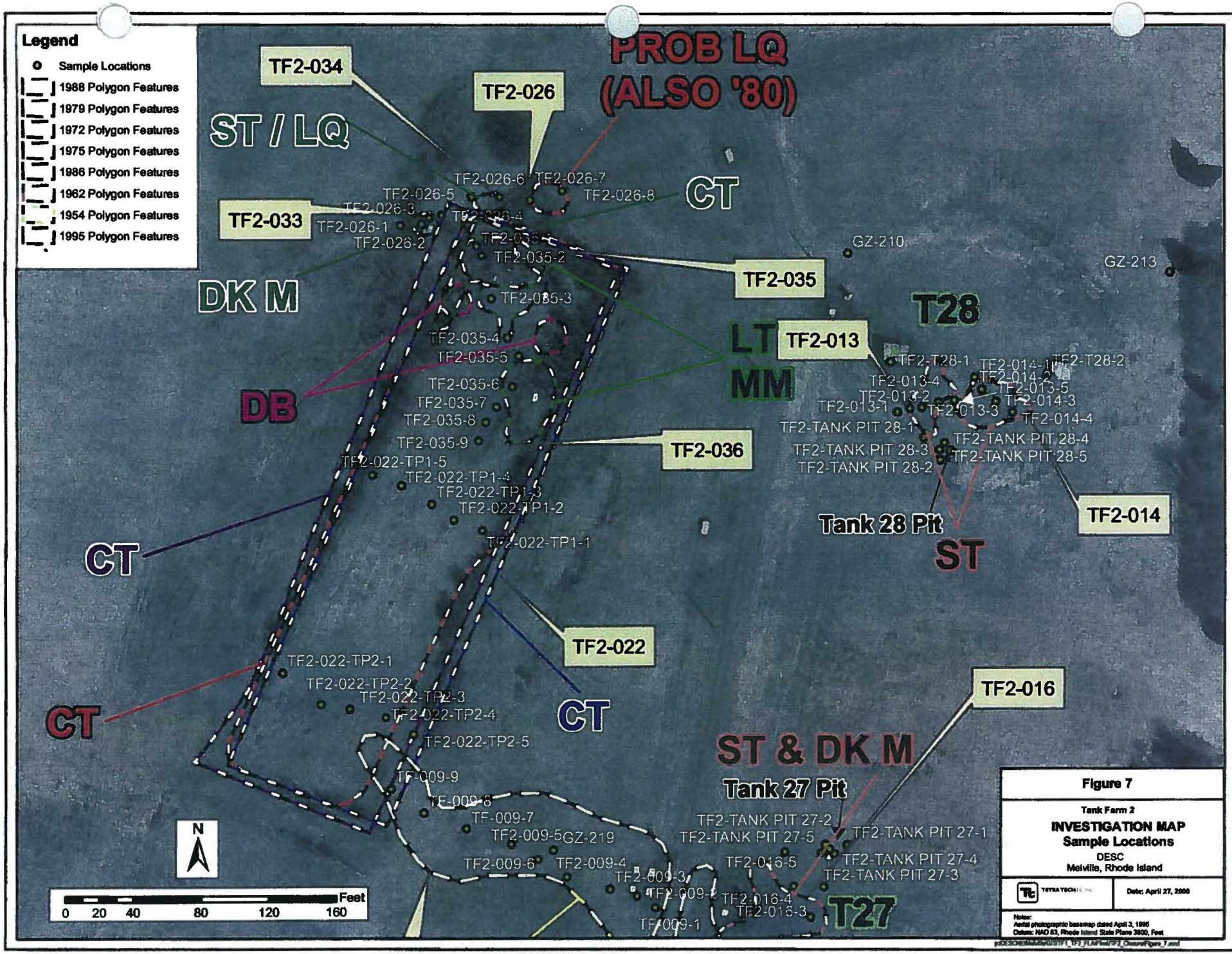
		Sample ID	GZ-215	
		Collection Date	5/21/2009	12/1/1997
Analyte	Unit	RIDEM GB GW Obj		
Diesel Range Organics (DRO)	mg/L	NS	0.06	NT
Gasoline Range Organics (GRO)	mg/L	NS	ND	NT
TPH	mg/L	NS	NT	1.3
Lead (Dissolved)	ug/L	NS	0.9B	NT
Lead (Total)	ug/L	NS	2.1B	NT
p-isopropyltoluene	ug/L	NS	ND	2.1
sec-butylbenzene	ug/L	NS	ND	3.3

ND = Not detected above laboratory reporting limits

B = The result reported is less than reporting limit, but greater than instrument detection

NS= No Standard

NT= Not Tested


Legend
Sample Locations
1988 Polygon Features
1979 Polygon Features
1972 Polygon Features
1975 Polygon Features
1986 Polygon Features
1962 Polygon Features
1954 Polygon Features
1995 Polygon Features
TF2-034
TF2-026
PROB LQ
(ALSO '80)
ST / LQ
CT
TF2-033
DK M
TF2-035
T28
LT
MM
TF2-013
DB
TF2-036
TF2-014
Tank 28 Pit
ST
CT
TF2-022
CT
CT
TF2-016
ST & DK M
Tank 27 Pit
T27
GZ-210
GZ-213
GZ-219
TF2-026-1
TF2-026-2
TF2-026-3
TF2-026-4
TF2-026-5
TF2-026-6
TF2-026-7
TF2-026-8
TF2-035-1
TF2-035-2
TF2-035-3
TF2-035-4
TF2-035-5
TF2-035-6
TF2-035-7
TF2-035-8
TF2-035-9
TF2-022-TP1-1
TF2-022-TP1-2
TF2-022-TP1-3
TF2-022-TP1-4
TF2-022-TP1-5
TF2-022-TP2-1
TF2-022-TP2-2
TF2-022-TP2-3
TF2-022-TP2-4
TF2-022-TP2-5
TF2-T28-1
TF2-T28-2
TF2-013-1
TF2-013-2
TF2-013-3
TF2-013-4
TF2-013-5
TF2-014-1
TF2-014-2
TF2-014-3
TF2-014-4
TF2-TANK PIT 28-1
TF2-TANK PIT 28-2
TF2-TANK PIT 28-3
TF2-TANK PIT 28-4
TF2-TANK PIT 28-5
TF2-TANK PIT 27-1
TF2-TANK PIT 27-2
TF2-TANK PIT 27-3
TF2-TANK PIT 27-4
TF2-TANK PIT 27-5
TF2-016-1
TF2-016-2
TF2-016-3
TF2-016-4
TF2-016-5
TF-009-1
TF-009-2
TF2-009-3
TF2-009-4
TF2-009-5
TF2-009-6
TF-009-7
TF-009-8
TF-009-9
N
0 20 40 80 120 160 Feet
Figure 7
Tank Farm 2
INVESTIGATION MAP
Sample Locations
DESC
Melville, Rhode Island
TETRA TECH
Date: April 27, 2006
Notes:
Aerial photographic basemap dated April 3, 1995
Datum: NAD 83, Rhode Island State Plane 3800, Feet

SECTION 1 POSSIBLE SOURCE AREA IDENTIFICATION

SITE Tank Farm 2

AREA AOC-022

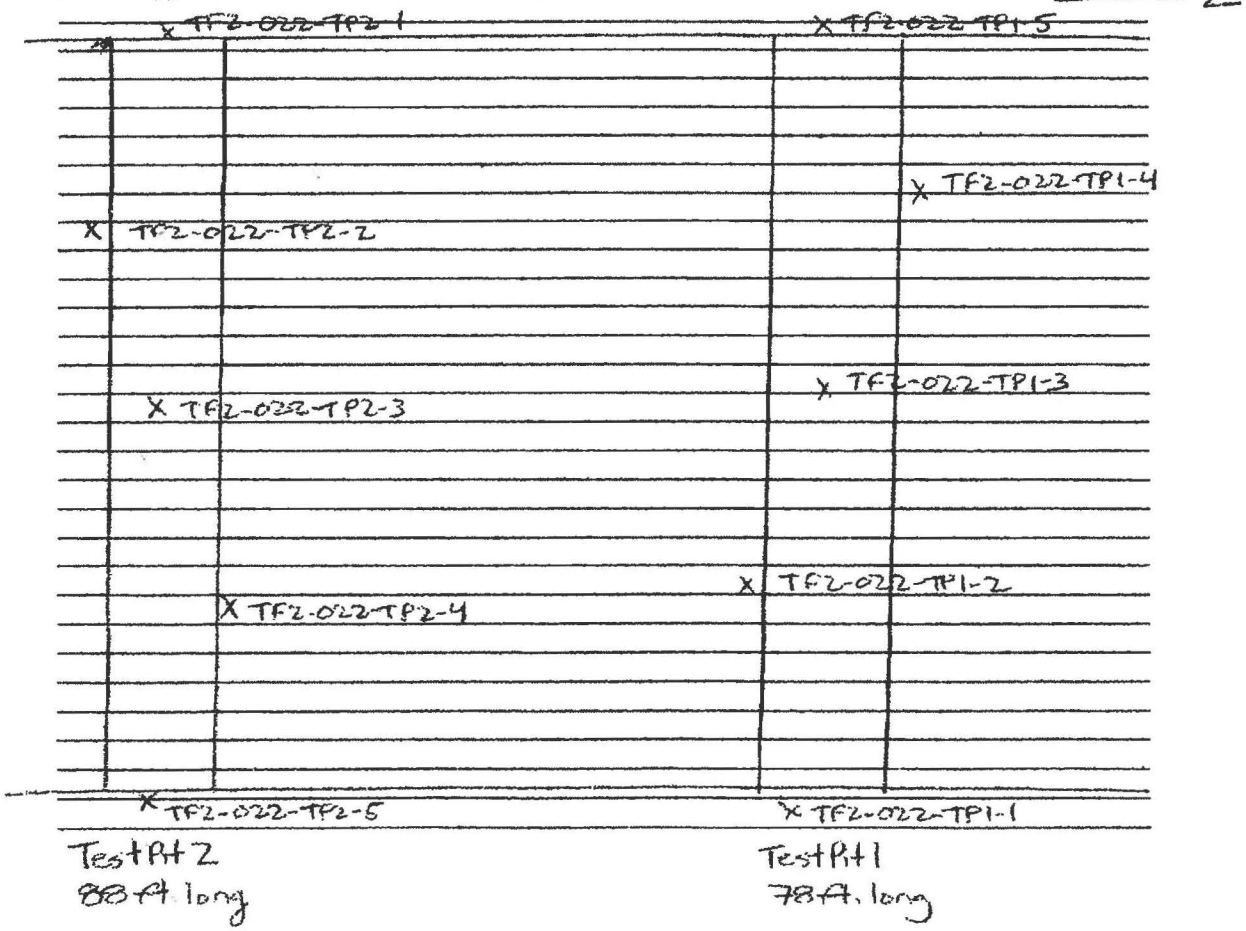
SIZE (approx.)
Length 500ft. **Width** 90ft.
Area 45,000ft.²

DESCRIPTION OF AREA AND OPERATIONAL USE

Flat, grassy area within berm. Two test pits running east-west, with AOC-035 test pit, cover the AOC-022 area. Former drum storage.

FIELD OBSERVATION

Magnetometer survey yielded no ferrous metals.



SECTION 1 POSSIBLE SOURCE AREA IDENTIFICATION

SITE Tank Farm 2

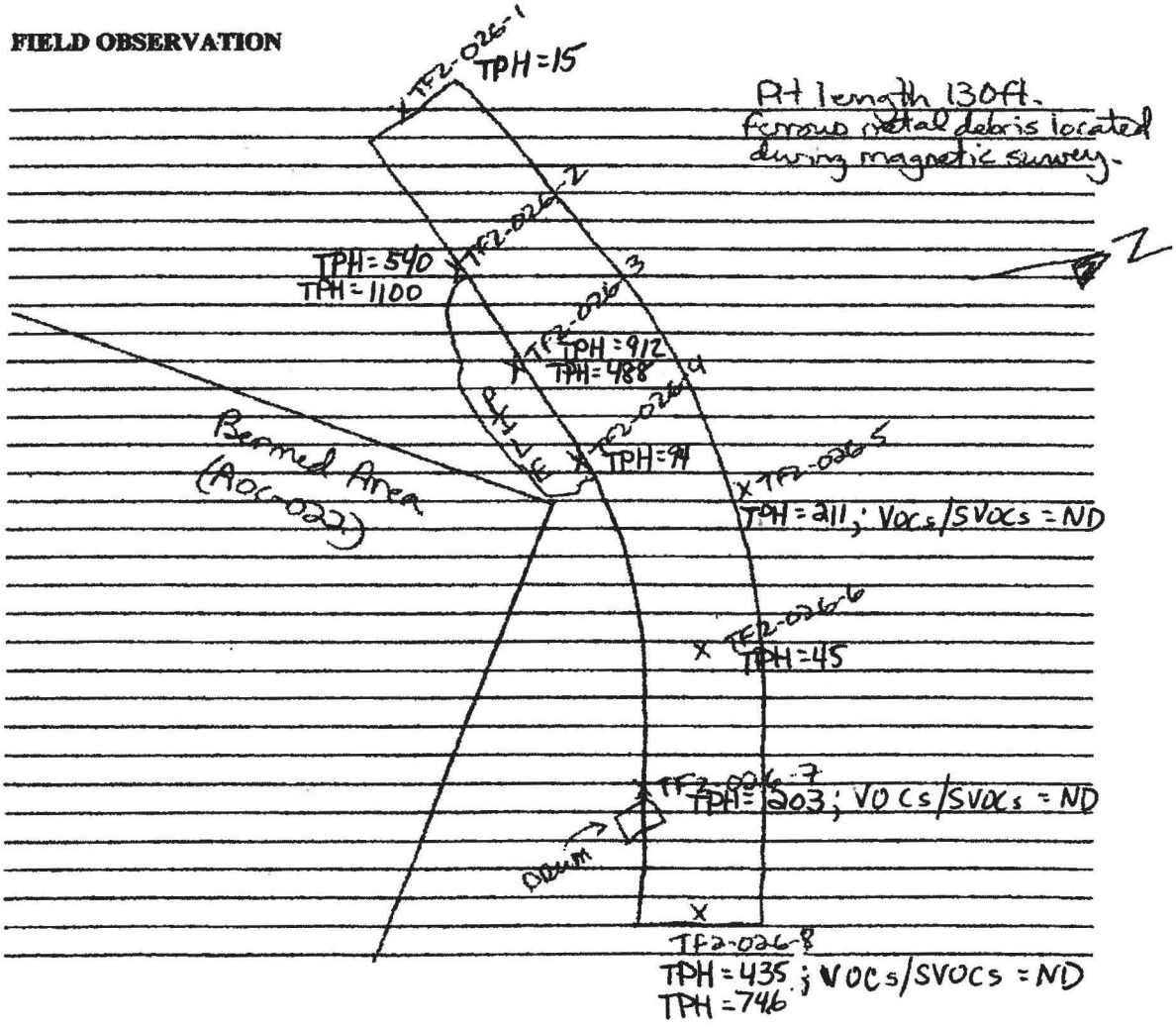
AREA AOC-026

SIZE (approx.)
Length NA **Width** NA
Area combined 3 AOC's w/ 1 pit

DESCRIPTION OF AREA AND OPERATIONAL USE

Brushy area with some mounded material. One test pit combined AOC's 33, 34 and 26. Located NW of bermed area.

FIELD OBSERVATION



SECTION 1 POSSIBLE SOURCE AREA IDENTIFICATION

SITE Tank Farm 2

AREA AOC-035

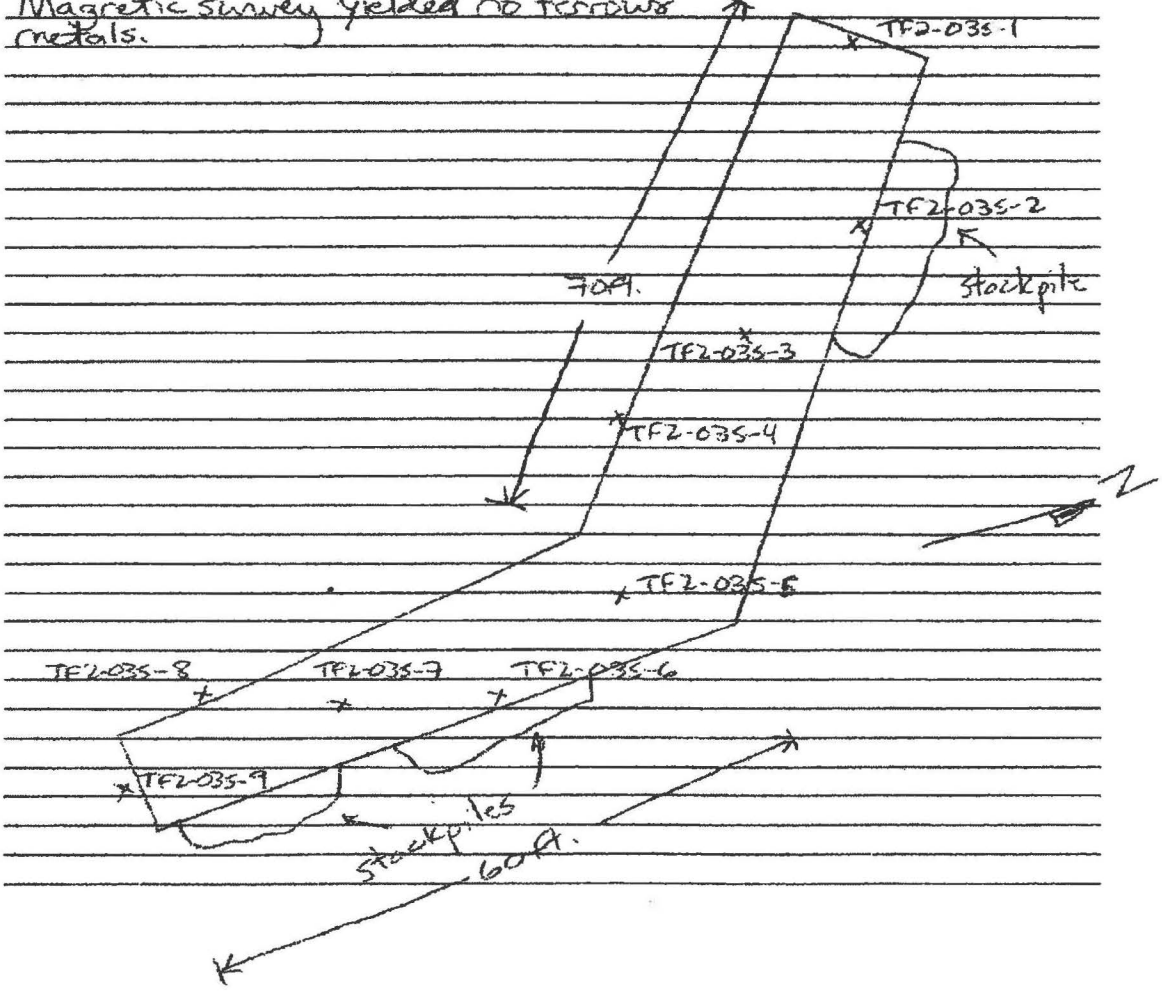
SIZE (approx.)
Length NA **Width** NA
Area various areas of interest linked by 1 test pit

DESCRIPTION OF AREA AND OPERATIONAL USE

Test pit combines AOC's 035 and 036 (piles) within the bermed area. Flat area covered w/ grass and small trees.

FIELD OBSERVATION

Magnetic survey yielded no ferrous metals.



APPENDIX E

ANALYTICAL DATA RESULTS

E-1 SOIL SAMPLE ANALYTICAL DATA – AOC-001 SURFACE SOIL

E-2 SOIL SAMPLE ANALYTICAL DATA – AOC-001 SUBSURFACE SOIL

E-3 SOIL SAMPLE ANALYTICAL DATA – AOC-003 SURFACE SOIL

E-4 SOIL SAMPLE ANALYTICAL DATA – AOC-003 SUBSURFACE SOIL

E-5 SOIL SAMPLE ANALYTICAL DATA – AOC-004/5 SURFACE SOIL

E-6 SOIL SAMPLE ANALYTICAL DATA – AOC-004/5 SUBSURFACE SOIL

E-7 SOIL SAMPLE ANALYTICAL DATA – BUILDING 219 SURFACE SOIL

E-8 SOIL SAMPLE ANALYTICAL DATA – BUILDING 219 SUBSURFACE SOIL

E-9 SOIL SAMPLE ANALYTICAL DATA – BUOY STORAGE AREA SURFACE SOIL

E-10 SOIL SAMPLE ANALYTICAL DATA – BUOY STORAGE AREA SUBSURFACE SOIL

E-1 SOIL SAMPLE ANALYTICAL DATA – AOC-001 SURFACE SOIL

APPENDIX E-1
SOIL SAMPLE ANALYTICAL DATA - AOC-001 SURFACE SOIL

SAMPLE ID	TF2-001-SS1000-0001	TF2-001-SS1001-0001	TF2-001-SS1002-0001	TF2-001-SS1003-0001	TF2-001-SS1003-0001-	TF2-001-SS1003-0001-D	TF2-001-SS1004-0001	TF2-001-SS1005-0001	TF2-001-SS1006-0001	TF2-001-SS1007-0001	TF2-001-SS1008-0001	TF2-001-SS1009-0001	TF2-001-SS1010-0001
LOCATION ID	TF2-001-SB1000	TF2-001-SB1001	TF2-001-SB1002	TF2-001-SB1003	TF2-001-SB1003	TF2-001-SB1003	TF2-001-SB1004	TF2-001-SB1005	TF2-001-SB1006	TF2-001-SB1007	TF2-001-SB1008	TF2-001-SB1009	TF2-001-SB1010
SAMPLE DATE	11/27/2013	11/25/2013	11/25/2013	11/25/2013	20131125	11/25/2013	11/25/2013	11/27/2013	11/27/2013	11/25/2013	11/25/2013	11/25/2013	11/27/2013
TOP DEPTH (FT)	0	0	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH (FT)	1	1	1	1	1	1	1	1	1	1	1	1	1
SACODE	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	2900	4500	4700 J	6400	6850	7300	4900	4400	5300	6000	6600	4000	5000
1,2,3,4,6,7,8,9-OCDF	31	2.1 J	2.4 J	2.2 J	2.45	2.7 J	3.5 J	6 J	4 J	6.6 J	2 J	9.4 J	6 J
1,2,3,4,6,7,8-HPCDD	54	29	30	36	36	36	34	36	31	50	33	46	39
1,2,3,4,6,7,8-HPCDF	11	0.92 U	1.6 J	1.6 J	1.2	1.6 U	2.5 J	3.8 J	1.8 J	4.8 J	1.3 U	5.6	3.8 J
1,2,3,4,7,8,9-HPCDF	0.1 U	0.031 U	0.049 U	0.053 U	0.15825	0.29 J	0.14 J	0.065 U	0.045 U	0.044 U	0.15 J	0.31 J	0.053 U
1,2,3,4,7,8-HXCDD	0.78 J	0.19 J	0.22 J	0.29 J	0.295	0.3 J	0.3 J	0.27 J	0.22 J	0.48 J	0.29 J	0.44 J	0.34 J
1,2,3,4,7,8-HXCDF	0.96 J	0.29 J	0.51 J	0.76 J	0.69	0.62 J	0.53 J	0.67 J	0.6 J	1 J	0.36 U	0.88 J	0.68 J
1,2,3,6,7,8-HXCDD	1.7 J	0.22 J	0.4 J	0.54 J	0.48	0.42 J	0.57 J	0.86 J	0.39 J	1.1 J	0.54 J	1.2 J	0.82 J
1,2,3,6,7,8-HXCDF	0.8 J	0.19 J	0.48 J	0.46 J	0.485	0.51 J	0.41 J	0.61 J	0.42 J	0.73 J	0.52 J	0.65 J	0.57 J
1,2,3,7,8,9-HXCDD	1.6 J	0.31 J	0.31 J	0.44 J	0.44	0.44 J	0.52 J	0.92 J	0.45 J	1.1 J	0.55 J	1.1 J	0.77 J
1,2,3,7,8,9-HXCDF	0.05 U	0.031 U	0.034 U	0.039 U	0.037 U	0.035 U	0.037 U	0.037 U	0.039 U	0.034 U	0.027 U	0.026 U	0.031 U
1,2,3,7,8-PECDD	0.19 J	0.062 U	0.07 U	0.092 U	0.0695	0.093 J	0.063 U	0.26 J	0.073 U	0.2 J	0.11 J	0.056 U	0.18 J
1,2,3,7,8-PECDF	0.2 J	0.04 U	0.04 U	0.045 U	0.13125	0.24 J	0.13 J	0.28 J	0.042 U	0.26 J	0.077 U	0.2 J	0.15 J
2,3,4,6,7,8-HXCDF	1.2 J	0.096 J	0.19 J	0.33 J	0.45	0.57 J	0.22 J	0.53 J	0.32 J	0.73 J	0.4 J	0.61 J	0.52 J
2,3,4,7,8-PECDF	0.32 J	0.13 J	0.12 J	0.29 J	0.26	0.23 J	0.18 J	0.32 J	0.19 J	0.43 J	0.15 J	0.21 J	0.26 J
2,3,7,8-TCDD	0.037 U	0.044 U	0.043 U	0.042 U	0.04 U	0.038 U	0.033 U	0.041 U	0.042 U	0.044 U	0.032 U	0.031 U	0.035 U
2,3,7,8-TCDF	0.63 U	0.26 U	0.36 U	0.36 J	0.2425	0.25 U	0.3 U	0.33 J	0.14 U	0.77 U	0.29 U	0.24 U	0.19 J
TEQ	2.5253	1.80923	1.97372	2.70166	2.855285	3.00891	2.15035	2.5032	2.2162	3.20078	2.6971	2.27892	2.5813
TOTAL HPCDD	100	51	54	66	66	66	64	71	55	100	60	81	73
TOTAL HPCDF	31	1.6 J	3.3 J	2.9 J	2.95	3 J	4.7 J	7.4	3 J	9.7	2.5 J	11	7.2
TOTAL HXCDD	14	3.2 J	4 J	5.6 J	5.25	4.9 J	6 J	8.2 J	4.2 J	11 J	5.3 J	9.4 J	8.4 J
TOTAL HXCDF	15 J	2.3 J	3.8 J	5.9 J	5.65	5.4 J	5 J	6.6 J	4.1 J	9.5	4.5 J	8.4	6.2 J
TOTAL PECDD	2.1 J	0.6 J	1.1 J	1.3 J	1.105	0.91 J	1.3 J	2.1 J	1.2 J	3 J	1.1 J	1.6 J	1.5 J
TOTAL PECDF	7.7 J	1.6 J	2.7 J	3.8 J	4.1	4.4 J	3.1 J	6.4 J	3 J	7.6 J	2.9 J	4.1 J	3.8 J
TOTAL TCDD	0.42 J	0.054 U	0.35 J	0.46 J	0.55	0.64 J	0.36 J	0.74 J	0.36 J	1.1 J	0.86 J	0.4 J	0.62 J
TOTAL TCDF	3.5 J	1.1 J	1 J	3 J	2.75	2.5 J	1.5 J	3.9 J	1.6 J	4.2 J	1.9 J	1.2 J	1.9 J
METALS (MG/KG)													
ALUMINUM	12200	12600	14200	14600	14300	14000	12700	14000	14600	14000	14600	11900	13400
ANTIMONY	0.18 J	0.13 J	0.08 J	0.09 J	0.085	0.08 J	0.08 J	0.17 J	0.12 J	0.2 J	0.08 J	0.26 J	0.08 J
ARSENIC	4.1	5.1	6.1	7.1	6.75	6.4	5.4	7.7	6.8	5.8	6.6	4.9	6.4
BARIUM	17.1	15.4	14.6	14.2	13.3	12.4	15.8	18.5	17.7	22.8	17.7	12.6	15.5
BERYLLIUM	0.26	0.3	0.3	0.34	0.345	0.35	0.3	0.34	0.33	0.34	0.36	0.27	0.32
CADMIUM	0.08 J	0.08	0.1	0.08	0.075	0.07 J	0.11	0.11	0.12	0.14	0.12	0.07 J	0.09
CALCIUM	794	843	833	666 J	584	502	604	2630	728	1090	923	1090	758
CHROMIUM	15.1	16.5	17.5	18	17.65	17.3	14.9	16.6	16.7	16	17	15.8	17.3
COBALT	10.9	14.4	16.6	12	11.5	11	10.4	10.4	11.6	9.6	13.1	15.6	12.6
COPPER	14.2	17	17.3	18.5	18.3	18.1	16.2	18.5	17.1	15	18	17.6	20.4
IRON	23800	25600	27800	27000	25850	24700	22600	24100	24800	22900	27200	27700	26800
LEAD	18.3 J	11.4	12.2	16.4	15.2	14	12.1 J	18.6 J	14.1 J	26.7 J	12.6 J	12.3 J	13.6
MAGNESIUM	3740	3920	4560	4190	4145	4100	3750	4220	4230	3450	4450	4170	4280
MANGANESE	311	458	394	332	304.5	277	294	267	314	270	356	459	336
MERCURY	0.02 U	0.016 U	0.02 U	0.21 J	0.15	0.09 J	0.17	0.07	0.04	0.11	0.07	0.016 U	0.05
NICKEL	21.5	26.2	26.6	23.2	23.2	23.2	21.1	20.7	21.8	18.6	24.4	28.4	24.7
POTASSIUM	405	302 J	390	390 J	373.5	357 J	379	453	501	463	498	336	360
SELENIUM	0.26 U	0.2 J	0.21 J	0.29 J	0.2	0.11 J	0.29 U	0.25 U	0.26 U	0.24 U	0.26 U	0.23 U	0.31 J
SILVER	0.04 J	0.03 J	0.04 J	0.07 J	0.06	0.05 J	0.05 J	0.04 J	0.56	0.05 J	0.04 J	0.03 J	0.04 J
SODIUM	51.2 J	47.6 J	60.9 J	53.1 J	56.2	59.3 J	39.7 J	48.8 J	44.2 J	47.5 J	46.6 J	42.8 J	39.4 U
THALLIUM	0.05 J	0.04 J	0.04 J	0.05 J	0.045	0.04 J	0.05 J	0.06 J	0.06 J	0.08 J	0.05 J	0.03 J	0.04 J
VANADIUM	20.9	17.9	20.6	21.1	19.75	18.4	17.4	17.8	19	19.9	19.2	20	20
ZINC	52.1	56.6	61.5	52.6	52.65	52.7	46.8	53	49.9	53.9	56	64.4	57.7
MISCELLANEOUS PARAMETERS (%)													
TOTAL SOLIDS	85	90	90	89	89	89	87	90	84	83	88	89	88
PETROLEUM HYDROCARBONS (MG/KG)													
ExTPH (C08-C44)	NA	NA	NA	18 J	20.5	23	NA	NA	NA	NA	NA	NA	NA
GRO (C05-C12)	NA	NA	NA	2 U	2.25 U	2.5 U	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)													
2-METHYLNAPHTHALENE	12 UJ	11 U	11 U	11 U	11 U	11 U	11 UJ	440 U	12 U	13 J	11 U	11 U	11 U
ACENAPHTHENE	2.2 J	11 U	11 U	11 U	7.8 J	7.8 J	11 U	1000	6.8 J	170	11 U	2.6 J	11 U
ACENAPHTHYLENE	12 U	11 U	11 U	11 U	11 U	11 U	11 U	26	12 U	12 J	11 U	11 U	11 U
ANTHRACENE	4.4 J	11 U	2.8 J	11 U	10.25	15 J	2.6 J	2200	14 J	340	11 U	4.2 J	2.7 J
BENZO(A)ANTHRACENE	31	5.2 J	15 J	24 J	37	50 J	15 J	4500	45	1200	11 U	24	19 J
BENZO(A)PYRENE	31	4.2 J	12 J	20 J	28.5	37 J	13 J	3700	35	880	8.4 J	23 J	16 J
BENZO(B)FLUORANTHENE	50	6.5 J	18 J	28 J	39	50 J	25	5800	53	1500	16 J	37	32
BENZO(G,H,I)PERYLENE	16 J	2.7 J	7 J	10 J	16	22 J	4.3 J	1800	16 J	410	11 UJ	9 J	8.9 J
BENZO(K)FLUORANTHENE	22 J	11 UJ	12 J	19 J	25.5	32	7.4 J	1700	23 J	370	5.2 J	17 J	11 J
CHRYSENE	39	6.4 J	16 J	22 J	32.5	43 J	14 J	4900	45	1100	7.9 J	28	19 J
DIBENZO(A,H)ANTHRACENE	7.6 J	11 UJ	3.5 J	3.7 J	5.65	7.6 J	3.9 J	590 J	7.4 J	130	1.9 U	4.8 J	4.6 J
FLUORANTHENE	70	8.4 J	35	28 J	79	130 J	34	12000 J	97	2700 J	18 J	55	40
FLUORENE	12 U	11 U	11 U	11 U	6.6 J	6.6 J	11 U	1300	7.6 J	180	11 U	11 U	11 U
INDENO(1,2,3-CD)PYRENE	32 J	3.2 J	7.5 J	13 J	19.5	26	13 J	2800 J	31 J	700 J	7.9 J	21 J	17 J
NAPHTHALENE	12 U	11 U	11 U	11 U	11 U	11 U	11 U	1800	12 U	66	11 U	11 U	11 U
PHENANTHRENE	32	3.1 J	17 J	3.9 J	44.95	86 J	18 J	11000	82	2000	9.9 J	33	21 J
PYRENE	63	6.9 J	22 J	20 J	50	80	26	11000 J	100	3200 J	15 J	62	44
TOTAL PAHS	400.2	46.6	167.8	191.6	392.3	593	176.2	66116	562.8	14971	88.3	320.6	235.2

E-2 SOIL SAMPLE ANALYTICAL DATA – AOC-001 SUBSURFACE SOIL

APPENDIX E-2
SOIL SAMPLE ANALYTICAL DATA - AOC-001 SUBSURFACE SOIL

SAMPLE ID	TF2-001-SB1000-0204	TF2-001-SB1000-0810	TF2-001-SB1001-0204	TF2-001-SB1001-0810	TF2-001-SB1002-0204	TF2-001-SB1002-0405	TF2-001-SB1003-0204	TF2-001-SB1004-0204	TF2-001-SB1004-0204-AVG	TF2-001-SB1004-0204-D	TF2-001-SB1005-0204	TF2-001-SB1005-0204-AVG	TF2-001-SB1005-0204-D
LOCATION ID	TF2-001-SB1000	TF2-001-SB1000	TF2-001-SB1001	TF2-001-SB1001	TF2-001-SB1002	TF2-001-SB1002	TF2-001-SB1003	TF2-001-SB1004	TF2-001-SB1004	TF2-001-SB1004	TF2-001-SB1005	TF2-001-SB1005	TF2-001-SB1005
SAMPLE DATE	11/27/2013	11/27/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	20131125	11/25/2013	11/27/2013	20131127	11/27/2013
TOP DEPTH (FT)	2	8	2	8	2	4	2	2	2	2	2	2	2
BOTTOM DEPTH (FT)	4	10	4	10	4	5	4	4	4	4	4	4	4
SACODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	ORIG	AVG	DUP
QC TYPE	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	FD
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	3900	5200	4600	NA	5900 J	NA	4500	6000	6750	7500	4400	3950	3500
1,2,3,4,6,7,8,9-OCDF	2.9 J	3.5 J	1.4 J	NA	1.3 J	NA	0.96 U	2.1 J	1.29	0.96 U	1.3 U	2.625	4.6 J
1,2,3,4,6,7,8-HPCDD	19	25	25	NA	30	NA	29	33	34	35	31	27.5	24
1,2,3,4,6,7,8-HPCDF	0.86 U	1.1 U	0.95 U	NA	0.51 U	NA	0.44 U	0.71 U	0.6 U	0.49 U	0.89 U	1.5225	2.6 J
1,2,3,4,7,8,9-HPCDF	0.035 U	0.087 U	0.078 J	NA	0.039 U	NA	0.03 U	0.032 U	0.027 U	0.022 U	0.04 U	0.048 U	0.056 U
1,2,3,4,7,8-HXCDD	0.15 J	0.11 U	0.13 J	NA	0.27 J	NA	0.2 J	0.22 J	0.12525	0.061 U	0.099 U	0.13975	0.23 J
1,2,3,4,7,8-HXCDF	0.65 J	0.39 J	0.28 U	NA	0.18 U	NA	0.13 U	0.27 U	0.23 U	0.19 U	0.23 J	0.57	0.91 J
1,2,3,6,7,8-HXCDD	0.15 J	0.079 U	0.21 J	NA	0.25 J	NA	0.31 J	0.26 J	0.27	0.28 J	0.31 J	0.295	0.28 J
1,2,3,6,7,8-HXCDF	0.023 U	0.22 J	0.51 J	NA	0.29 J	NA	0.42 J	0.49 J	0.565	0.64 J	0.26 J	0.335	0.41 J
1,2,3,7,8,9-HXCDD	0.23 J	0.17 J	0.26 J	NA	0.32 J	NA	0.33 J	0.32 J	0.345	0.37 J	0.59 J	0.505	0.42 J
1,2,3,7,8,9-HXCDF	0.03 U	0.067 U	0.031 U	NA	0.038 U	NA	0.027 U	0.03 U	0.0255 U	0.021 U	0.031 U	0.0355 U	0.04 U
1,2,3,7,8-PECDD	0.07 U	0.13 U	0.069 U	NA	0.092 U	NA	0.075 U	0.075 U	0.07875	0.12 J	0.11 J	0.0755	0.082 U
1,2,3,7,8-PECDF	0.045 U	0.07 U	0.04 U	NA	0.041 U	NA	0.07 U	0.035 U	0.03775	0.058 J	0.035 U	0.09875	0.18 J
2,3,4,6,7,8-HXCDF	0.15 U	0.06 U	0.13 J	NA	0.034 U	NA	0.071 J	0.027 U	0.07175	0.13 J	0.14 J	0.145	0.15 J
2,3,4,7,8-PECDF	0.033 U	0.073 U	0.042 U	NA	0.077 J	NA	0.089 J	0.037 U	0.035 U	0.033 U	0.13 J	0.14	0.15 J
2,3,7,8-TCDD	0.035 U	0.086 U	0.042 U	NA	0.05 U	NA	0.043 U	0.041 U	0.0405 U	0.04 U	0.042 U	0.046 U	0.05 U
2,3,7,8-TCDF	0.22 U	0.52 U	0.34 U	NA	0.38 U	NA	0.33 U	0.28 U	0.27 U	0.26 U	0.055 U	0.077 U	0.099 U
TEQ	1.47887	1.88905	1.7552	NA	2.20649	NA	1.7998	2.25963	2.561685	2.86374	1.932	1.76989	1.60778
TOTAL HPCDD	34	44	44	NA	61	NA	65	63	64.5	66	63	57	51
TOTAL HPCDF	1.6 J	1.7 J	1.2 J	NA	0.51 U	NA	0.65 U	0.86 U	0.795 U	0.73 U	1.6 J	2.65	3.7 J
TOTAL HXCDD	2.1 J	1.3 J	3 J	NA	4.7 J	NA	6.9 J	5.2 J	5.35	5.5 J	7.3	6.9	6.5 J
TOTAL HXCDF	1.7 J	0.86 J	2.3 J	NA	0.67 J	NA	1.2 J	1 J	1 J	1.3 U	1.8 J	2.3	2.8 J
TOTAL PECDD	0.39 J	0.72 J	1.3 J	NA	0.98 J	NA	1.7 J	2.1 J	2.2	2.3 J	1.7 J	1.19	0.68 J
TOTAL PECDF	1.1 J	0.27 J	1.8 J	NA	0.37 J	NA	1.1 J	0.41 J	0.555	0.7 J	1.6 J	1.65	1.7 J
TOTAL TCDD	0.09 J	0.086 U	0.29 J	NA	0.96 J	NA	1.7 J	1.3 J	1.25	1.2 J	0.87 J	0.635	0.4 J
TOTAL TCDF	0.54 J	0.25 J	0.88 J	NA	2.1 J	NA	2.3 J	2.2 J	2.25	2.3 J	1.6 J	1.55	1.5 J
METALS (MG/KG)													
ALUMINUM	16600	15300	14900	20500	15200	12200	11600	13800	13850	13900	9880	10640	11400
ANTIMONY	0.06 J	0.06 J	0.07	0.03 U	0.09	0.11	0.07 J	0.09 J	0.09	0.09 J	0.08 J	0.09	0.1 J
ARSENIC	8.4	7.3	11.3	6.2	11.9	12.5	7.7	8	8.4	8.8	5	5.3	5.6
BARIUM	15.2	12.6	16.2	7.2	19.8	19.2	17.9	25	24.35	23.7	20.3	19.95	19.6
BERYLLIUM	0.37	0.42	0.36	0.28	0.36	0.39	0.36	0.43	0.43	0.43	0.38	0.365	0.35
CADMIUM	0.08	0.08	0.13	0.06 J	0.07 J	0.28	0.1 J	0.06 J	0.07	0.08 J	0.11	0.11	0.11
CALCIUM	874	719	825	1550	720	1210	1030	608	719	830	1250	1240	1230
CHROMIUM	19.6	19.2	18.3	26.5	17.9	14.9	14.4	15.2	15.3	15.4	12.9	13.1	13.3
COBALT	30.3	8.9	14.9	20.3	8.7	7.4	6.2	7.3	7.3	7.3	5.2	6.4	7.6
COPPER	19.1	16.9	19	20.6	15	12.1	11.4	15.6	14.45	13.3	10.2	11.1	12
IRON	29800	28200	28100	42500	23000	17000	18500	23700	22200	20700	16200	17050	17900
LEAD	14.5 J	13.6 J	14.8	11.4	13.5	15.4	12.8	12.4 J	12.75	13.1 J	13 J	13.05	13.1 J
MAGNESIUM	5040	4440	4270	7010	3760	2380	2930	3710	3555	3400	2860	2970	3080
MANGANESE	383	228	374	385	225	227	168	188	196.5	205	179	204	229
MERCURY	0.04	0.06	0.06 J	0.015 UJ	0.06 J	0.1 J	0.04 J	0.05	0.05	0.05	0.04	0.045	0.05
NICKEL	25.5	20.8	26.1	34.7	16	12.5	13.5	17.3	16.3	15.3	11.4	12.65	13.9
POTASSIUM	407	380	362	221	461	526	581	608	605.5	603	655	659.5	664
SELENIUM	0.22 U	0.21 U	0.33 J	0.17 J	0.37 J	0.36 J	0.31 J	0.19 U	0.225 U	0.26 U	0.21 U	0.215 U	0.22 U
SILVER	0.04 J	0.04 J	0.03 J	0.02 J	0.04 J	0.04 J	0.04 J	0.02 J	0.025	0.03 J	0.04 J	0.04	0.04 J
SODIUM	37.7 J	31.3 J	43.6 J	42.6 J	56.4 J	56.9 J	58 J	43 J	46.15	49.3 J	48.1 J	48.55	49 J
THALLIUM	0.05 J	0.06 J	0.05 J	0.02 J	0.08 J	0.1	0.07 J	0.06 J	0.07	0.08 J	0.08	0.075	0.07
VANADIUM	18.8	19.2	16.7	20.3	20.5	19.7	17.7	17.2	18.3	19.4	15.4	15.7	16
ZINC	53.1	47.4	55	73.6	43.4	41.6	34.7	44.2	42.55	40.9	33.6	35.95	38.3
MISCELLANEOUS PARAMETERS (%)													
TOTAL SOLIDS	90	87	89	92	88	86	87	88	88	88	85	85.5	86
PETROLEUM HYDROCARBONS (MG/KG)													
ExTPH (C08-C44)	NA	13 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO (C05-C12)	NA	2.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)													
2-METHYLNAPHTHALENE	11 U	12 U	11 U	11 U	11 U	11 U	11 U	10 UJ	10.5 U	11 UJ	190	235	280 J
ACENAPHTHENE	11 U	12 U	11 U	11 U	11 U	11 U	11 U	10 U	10.5 U	11 U	240 J	565	890 J
ACENAPHTHYLENE	11 U	12 U	11 U	11 U	11 U	11 U	11 U	10 U	10.5 U	11 U	29 J	58.5	88 J
ANTHRACENE	11 U	12 U	11 U	11 U	11 U	11 U	2.3 J	4 J	3	2 J	740 J	1270	1800 J
BENZO(A)ANTHRACENE	11 U	3.6 J	5.5 J	11 U	3.6 J	5.5 J	16 J	22	19.5	17 J	1500 J	2800	4100 J
BENZO(A)PYRENE	11 U	12 U	4.2 J	11 UJ	11 UJ	5.2 J	13 J	16 J	15	14 J	1200 J	2150	3100 J
BENZO(B)FLUORANTHENE	3.1 J	5.8 J	6.5 J	11 U	5.1 J	7.5 J	16 J	30	28	26	1800 J	3300	4800 J
BENZO(G,H,I)PERYLENE	11 U	12 U	2.2 UJ	11 UJ	2.3 J	3.6 J	8 J	3.6 J	4.4	5.2 J	540 J	1020	1500 J
BENZO(K)FLUORANTHENE	11 U	12 U	11 UJ	11 U	4.3 J	5.6 J	12 J	10 J	9.3	8.6 J	560 J	1030	1500 J
CHRYSENE	11 U	12 U	6.2 J	2.7 J	6.1 J	8.4 J	16 J	24	21	18 J	1400 J	2600	3800 J
DIBENZO(A,H)ANTHRACENE	11 U	12 U	11 UJ	11 UJ	11 UJ	11 UJ	2.5 J	5.2 J	4.7	4.2 J	160 J	325	490 J
FLUORANTHENE	11 U	5 J	9.4 J	11 U	8 J	10 J	32	45	38.5	32	3800 J	6900	10000 J
FLUORENE	11 U	12 U	11 U	11 U	11 U	11 U	11 U	10 U	10.5 U	11 U	530 J	1115	1700 J
INDENO(1,2,3-CD)PYRENE	11 U	2.8 J	3 J	11 U	2.5 J	4.1 J	8.7 J	16 J	14.5	13 J	860 J	1630	2400 J
NAPHTHALENE	11 U	12 U	11 U	11 U	11 U	11 U	11 U	10 U	10.5 U	11 U	370 J	785	1200 J
PHENANTHRENE	11 U	2.4 J	4.6 J	11 U	2.7 J	4.6 J	11 J	23	18	13 J	3500 J	7250	11000 J
PYRENE	11 U	12 U	8 J	11 U	5.3 J	8.2 J	21 J	32	28	24	3600 J	6800	10000 J
TOTAL PAHS	3.1	19.6	47.4	2.7	39.9	62.7	158.5	230.8	203.9	177	21019	39833.5	58648

APPENDIX E-2
SOIL SAMPLE ANALYTICAL DATA - AOC-001 SUBSURFACE SOIL

SAMPLE ID	TF2-001-SB1006-0204	TF2-001-SB1007-0204	TF2-001-SB1008-0204	TF2-001-SB1009-0204	TF2-001-SB1009-0810	TF2-001-SB1010-0204
LOCATION ID	TF2-001-SB1006	TF2-001-SB1007	TF2-001-SB1008	TF2-001-SB1009	TF2-001-SB1009	TF2-001-SB1010
SAMPLE DATE	11/27/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/27/2013
TOP DEPTH (FT)	2	2	2	2	8	2
BOTTOM DEPTH (FT)	4	4	4	4	10	4
SACODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	NM	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)						
1,2,3,4,6,7,8,9-OCDD	5000	14000	5000	7400	NA	4900
1,2,3,4,6,7,8,9-OCDF	3.1 J	2.1 J	1 U	1.1 U	NA	2.4 J
1,2,3,4,6,7,8-HPCDD	41	150	35	33	NA	28
1,2,3,4,6,7,8-HPCDF	1.3 J	1.1 U	0.69 U	0.51 U	NA	1.5 J
1,2,3,4,7,8,9-HPCDF	0.15 U	0.026 U	0.082 J	0.075 J	NA	0.04 U
1,2,3,4,7,8-HXCDD	0.33 U	0.45 J	0.44 J	0.18 J	NA	0.19 J
1,2,3,4,7,8-HXCDF	0.13 U	0.32 U	0.34 U	0.28 U	NA	0.31 J
1,2,3,6,7,8-HXCDD	0.23 U	0.78 J	0.54 J	0.22 J	NA	0.38 J
1,2,3,6,7,8-HXCDF	0.48 J	0.2 J	0.3 J	0.42 J	NA	0.48 J
1,2,3,7,8,9-HXCDD	0.24 U	0.88 J	0.74 J	0.26 J	NA	0.41 J
1,2,3,7,8,9-HXCDF	0.12 U	0.12 J	0.023 U	0.14 J	NA	0.032 U
1,2,3,7,8-PECDD	0.24 U	0.05 U	0.16 J	0.051 U	NA	0.063 U
1,2,3,7,8-PECDF	0.16 U	0.08 J	0.15 J	0.07 J	NA	0.15 J
2,3,4,6,7,8-HXCDF	0.11 U	0.15 J	0.21 J	0.2 J	NA	0.17 J
2,3,4,7,8-PECDF	0.17 U	0.097 J	0.034 U	0.1 J	NA	0.11 J
2,3,7,8-TCDD	0.16 U	0.038 U	0.039 U	0.029 U	NA	0.038 U
2,3,7,8-TCDF	0.61 U	0.29 U	0.34 U	0.2 U	NA	0.068 U
TEQ	1.97193	5.99013	2.23832	2.72485	NA	1.99722
TOTAL HPCDD	88	270	86	57	NA	50
TOTAL HPCDF	1.3 J	1.9 J	0.98 U	1 U	NA	2.9 J
TOTAL HXCDD	8.8 J	22 J	9.5	2.5 J	NA	4.2 J
TOTAL HXCDF	1.1 J	1.9 U	1.5 U	2.2 U	NA	3.1 J
TOTAL PECDD	1.4 J	2.7 J	1.8 J	1.4 J	NA	1.5 J
TOTAL PECDF	0.34 J	1.4 J	1.8 J	1.7 J	NA	1.9 J
TOTAL TCDD	0.95 J	1.2 J	0.69 J	0.46 J	NA	0.59 J
TOTAL TCDF	1.8 J	1.6 J	4.1 J	1 J	NA	1.4 J
METALS (MG/KG)						
ALUMINUM	13000	13000	14700	16400	21000	16000
ANTIMONY	0.08 J	0.15 J	0.1 J	0.05 J	0.03 J	0.07 J
ARSENIC	8.4	7.1	14.3	7.4	5.6	6.9 J
BARIUM	17.1	18.5	27.2	16.1	7.7	16
BERYLLIUM	0.37	0.35	0.47	0.36	0.32	0.36
CADMIUM	0.13	0.13	0.15	0.11	0.09	0.09
CALCIUM	1000	1610	1060	752	1660	874
CHROMIUM	15.8	15.4	16.2	19	25.4	18.3
COBALT	7.9	11.3	6.5	18	23.1	13.1
COPPER	13.5	13.6	13.5	17.6	20.6	14.8
IRON	20000	21000	17900	29000	45100	31200
LEAD	14.5 J	13.4 J	19.3 J	16.1 J	11.2 J	13.5
MAGNESIUM	3300	3540	2660	4920	6720	4900
MANGANESE	212	276	163	409	458	344
MERCURY	0.06	0.06	0.11	0.04	0.015 U	0.07
NICKEL	15.4	18	13.2	25.2	34	23
POTASSIUM	557	484	607	428	222	330 J
SELENIUM	0.23 U	0.23 U	0.37 J	0.23 U	0.25 U	0.22 U
SILVER	0.04 J	0.06 J	0.05 J	0.05 J	0.02 J	0.03 J
SODIUM	52 J	43.4 J	53.2 J	34.4 J	20.6 J	26.5 J
THALLIUM	0.08	0.09	0.12	0.05 J	0.02 J	0.05 J
VANADIUM	19.3	17.5	21.5	19.2	29.2	20.5
ZINC	40.3	45.4	38.8	54.2	85	58.8
MISCELLANEOUS PARAMETERS (%)						
TOTAL SOLIDS	87	88	87	90	92	90
PETROLEUM HYDROCARBONS (MG/KG)						
ExTPH (C08-C44)	29	NA	NA	11 U	NA	NA
GRO (C05-C12)	2.3 U	NA	NA	2.4 U	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)						
2-METHYLNAPHTHALENE	11 U	76	11 UJ	10 U	11 UJ	11 U
ACENAPHTHENE	11 U	230	11 U	10 U	11 U	6.9 J
ACENAPHTHYLENE	11 U	22 J	11 U	10 U	11 U	11 U
ANTHRACENE	5.6 J	910	2.7 J	10 U	11 U	19 J
BENZO(A)ANTHRACENE	34	2000	12 U	10 U	11 U	59 J
BENZO(A)PYRENE	29	1700	9.6 J	10 UJ	11 UJ	71 J
BENZO(B)FLUORANTHENE	53	2600	18 J	4.8 J	11 U	100 J
BENZO(G,H,I)PERYLENE	14 J	860	11 UJ	10 UJ	11 UJ	49 J
BENZO(K)FLUORANTHENE	15 J	770	5.7 J	10 U	11 U	40 J
CHRYSENE	37	2000	9.4 J	10 U	11 U	56 J
DIBENZO(A,H)ANTHRACENE	6.1 J	220	2.5 J	10 U	11 U	15 J
FLUORANTHENE	64	5000 J	22 J	10 U	11 U	140 J
FLUORENE	11 U	410 J	11 U	10 U	11 U	7.8 J
INDENO(1,2,3-CD)PYRENE	26 J	1300 J	9 J	2.1 J	11 U	76 J
NAPHTHALENE	11 U	150	11 U	10 U	11 U	6 J
PHENANTHRENE	35	3700	15 J	2.7 J	11 U	120 J
PYRENE	67	4800 J	13 J	10 U	11 U	160 J
TOTAL PAHS	385.7	26748	106.9	9.6	0 U	925.7

E-3 SOIL SAMPLE ANALYTICAL DATA – AOC-003 SURFACE SOIL

APPENDIX E-3
SOIL SAMPLE ANALYTICAL DATA - AOC-003 SURFACE SOIL

SAMPLE ID	TF2-003-SS1011-000.8	TF2-003-SS1012-000.7	TF2-003-SS1013-000.7	TF2-003-SS1014-0001	TF2-003-SS1015-000.8	TF2-003-SS1015-000.8-	TF2-003-SS1015-000.8-D	TF2-003-SS1016-000.9	TF2-003-SS1017-000.8	TF2-003-SS1018-000.8	TF2-003-SS1019-000.5
LOCATION ID	TF2-003-SB1011	TF2-003-SB1012	TF2-003-SB1013	TF2-003-SB1014	TF2-003-SB1015	TF2-003-SB1015	TF2-003-SB1015	TF2-003-SB1016	TF2-003-SB1017	TF2-003-SB1018	TF2-003-SB1019
SAMPLE DATE	10/22/2013	10/22/2013	10/22/2013	10/22/2013	10/22/2013	20131022	10/22/2013	10/22/2013	10/22/2013	10/22/2013	10/22/2013
TOP DEPTH (FT)	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH (FT)	0.8	0.7	0.7	1	0.8	0.8	0.8	0.9	0.8	0.8	0.5
SACODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)											
1,2,3,4,6,7,8,9-OCDD	18000	4000	3300	3300	5400	5750	6100	6900	3300	3300	3000
1,2,3,4,6,7,8,9-OCDF	17	12	13	12	8.9 J	9.95	11	11	8 J	4.5 J	15
1,2,3,4,6,7,8-HPCDD	130	81	67	70	84	86	88	110	58	41	72
1,2,3,4,6,7,8-HPCDF	13	12	12	12	7.4	8.25	9.1	7	5.9	3.6 J	16
1,2,3,4,7,8,9-HPCDF	0.37 J	0.74 J	0.74 J	0.61 J	0.54 J	0.57	0.6 J	0.11 U	0.093 U	0.18 J	0.79 J
1,2,3,4,7,8-HXCDD	0.97 J	1.8 J	1.1 J	1.9 J	1.1 J	1.25	1.4 J	1.6 J	1.1 J	0.91 J	2.4 J
1,2,3,4,7,8-HXCDF	1.3 J	3 J	2.6 J	2.6 J	1.7 J	2	2.3 J	1.7 J	1.3 J	1 J	6
1,2,3,6,7,8-HXCDD	2.5 J	4 J	3.9 J	4.4 J	2.8 J	2.95	3.1 J	2.6 J	1.6 J	1.4 J	5.7
1,2,3,6,7,8-HXCDF	1.3 J	1.3 J	1.1 J	1.2 J	0.82 J	1.01	1.2 J	0.88 J	0.78 J	0.68 J	2.4 J
1,2,3,7,8,9-HXCDD	5.6	4.4 J	4.2 J	4.8 J	2.9 J	3	3.1 J	3.5 J	2.1 J	1.6 J	5.4
1,2,3,7,8,9-HXCDF	0.1 U	0.085 U	0.094 U	0.083 U	0.074 U	0.0815 U	0.089 U	0.086 U	0.068 U	0.047 U	0.098 U
1,2,3,7,8-PECDD	0.72 J	1.4 J	1.1 J	1.1 J	0.73 J	0.835	0.94 J	0.67 J	0.11 U	0.4 J	1.7 J
1,2,3,7,8-PECDF	0.4 J	0.74 J	1.2 J	0.83 J	0.9 J	0.93	0.96 J	0.67 J	0.38 J	0.3 J	1.4 J
2,3,4,6,7,8-HXCDF	0.96 J	1.1 J	1.4 J	1.3 J	0.85 J	0.87	0.89 J	0.78 J	0.83 J	0.39 J	1.9 J
2,3,4,7,8-PECDF	0.68 J	1.2 J	1.2 J	1.1 J	0.85 J	0.905	0.96 J	0.8 J	0.6 J	0.43 J	1.1 J
2,3,7,8-TCDD	0.23 J	0.26 J	0.22 J	0.43 J	0.15 J	0.2	0.25 J	0.23 J	0.27 J	0.11 J	0.4 J
2,3,7,8-TCDF	0.76 J	1 J	1.4	1.3	1.5 UJ	0.84 J	0.84 J	1.1	0.69 J	0.46 J	1.5
TEQ	9.3438	5.8432	5.0773	5.4546	4.72107	5.160585	5.6001	5.6194	2.9328	2.73115	6.7944
TOTAL HPCDD	240	160	130	150	190	195	200	260	120	88	140
TOTAL HPCDF	25	22	25	23	15	16.5	18	14	12	6.8 J	29 J
TOTAL HXCDD	31 J	42	37 J	45 J	31 J	32	33	33	20 J	18	85 J
TOTAL HXCDF	20 J	17 J	17 J	15 J	13 J	14.5	16 J	15	9.2 J	5.2 J	23 J
TOTAL PECDD	9 J	31 J	26 J	26 J	12 J	13.5	15 J	6.7 J	7.1 J	7.5 J	45 J
TOTAL PECDF	15	15 J	16 J	14 J	12 J	13	14 J	15 J	7.1 J	4.5 J	19 J
TOTAL TCDD	5.5 J	64 J	19 J	20 J	7.6 J	7.7	7.8 J	3.8 J	4.8 J	5.9 J	37 J
TOTAL TCDF	9.6 J	13	14	25 J	8.9 J	9.45	10 J	12 J	5.8 J	4.7 J	17 J
METALS (MG/KG)											
ALUMINUM	11000 J	9360	9530	10900	9570	9135	8700	9360 J	8920	9630	9340
ANTIMONY	0.2 J	0.2	0.27	0.51	0.28	0.26	0.24	0.53 J	0.41	0.18	0.29
ARSENIC	8.9	5.6	6	6	5.2	5.05	4.9	6	5.5	5.2	6.2
BARIUM	27.4	23.5	25.6	22.7	31	28.5	26	41.5	23	26.6	24.5
BERYLLIUM	0.38	0.4	0.36	0.38	0.42	0.39	0.36	0.51	0.38	0.38	0.35
CADMIUM	0.2	0.14	0.17	0.16	0.16	0.15	0.14	0.28	0.23	0.1	0.29
CALCIUM	520 J	857	914	904	754	793	832	719 J	549	576	1080
CHROMIUM	14.7	11.6	12.4	14.8	12.1	11.35	10.6	12.3	44.5	13.2	12.7
COBALT	11.4	7.7	8.6	8.6	7.2	6.85	6.5	7.7	7.6	9.2	8.7
COPPER	16.3	21.7	18.6	17.8	15.2	15.4	15.6	16.7	14.6	11.6	18.3
IRON	25100 J	18300	17700	20800	15700	15350	15000	15800 J	18700	18400	17500
LEAD	79.3 J	33.6	57.6	36.7	50.8	50	49.2	101 J	62.5	16.6	32.1
MAGNESIUM	2620 J	2430	2730	3260	2140	2060	1980	1500 J	2470	2720	2790
MANGANESE	512 J	263	268	311	371	357	343	658 J	332	649	311
MERCURY	0.14 J	0.07 J	0.07 J	0.07 J	0.09 J	0.085	0.08	0.13 J	0.06 J	0.04	0.04
NICKEL	18.5	17.2	16	18.7	14.3	13.65	13	13.4	24	16.2	16.1
POTASSIUM	335	429	328	443	414	362.5	311	354	391	474	501
SELENIUM	0.26 U	0.2 J	0.26 J	0.19 J	0.28 J	0.28	0.28 J	0.41 U	0.14 J	0.22 J	0.23 J
SILVER	0.04 J	0.05 J	0.06 J	0.05 J	0.07 J	0.06	0.05 J	0.08	0.06 J	0.04 J	0.06 J
SODIUM	16.8 U	37.5 J	29.2 J	25.1 U	27.6 J	19.35	22.2 U	28 J	24.5 U	22.2 U	29.2 J
THALLIUM	0.06 J	0.05 J	0.06 J	0.05 J	0.08	0.07	0.06 J	0.1	0.06 J	0.07 J	0.06 J
VANADIUM	24.9 J	17.3	20	21.6	19.2	18.4	17.6	21.8 J	19.8	17.2	21.6
ZINC	71.8 J	46.3	50	61.4	53.6	49.9	46.2	99.1 J	86.7	39.6	55.4
MISCELLANEOUS PARAMETERS (%)											
TOTAL SOLIDS	87	89	93	93	93	93	93	91	92	95	92
PETROLEUM HYDROCARBONS (MG/KG)											
ExTPH (C08-C44)	NA	NA	NA	NA	48 J	48 J	NA	NA	NA	NA	NA
GRO (C05-C12)	NA	NA	NA	NA	2.3 U	2.3 U	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)											
2-METHYLNAPHTHALENE	18 J	23	12 J	10 U	9.5 U	9.75 U	10 U	4.3 J	10 U	9.5 U	9.9 U
ACENAPHTHENE	71	100	160	15 J	5.4 J	5.05	4.7 J	14 J	9.5 J	5 J	15 J
ACENAPHTHYLENE	3 J	5 J	10 U	1.8 J	2.3 J	2.05	1.8 J	4.3 J	1.4 J	9.5 U	2.1 J
ANTHRACENE	110	220	310	26	16 J	15	14 J	30	20 J	9 J	51
BENZO(A)ANTHRACENE	310 J	670 J	740	180 J	120 J	120	120	200 J	140 J	63 J	400
BENZO(A)PYRENE	190 J	440 J	580 J	99 J	79 J	89.5	100 J	150 J	92 J	38 J	220 J
BENZO(B)FLUORANTHENE	280 J	640 J	840 J	160 J	140 J	155	170 J	240 J	140 J	58 J	300 J
BENZO(G,H,I)PERYLENE	77 J	160 J	200 J	44 J	39 J	43	47 J	66 J	45 J	18 J	86 J
BENZO(K)FLUORANTHENE	130	170	300	52	42	49	56	80 J	46	18 J	120
CHRYSENE	240	630	750	170	110	120	130	180	120	56	410
DIBENZO(A,H)ANTHRACENE	52	95	110	27	24	20.5	17 J	42 J	28	11 J	59
FLUORANTHENE	620	1800	1900	330	230	215	200	340	230	100	740
FLUORENE	62	120	140	10 J	4.7 J	4.4	4.1 J	14 J	5.7 J	9.5 U	8.3 J
INDENO(1,2,3-CD)PYRENE	260 J	630 J	420 J	130 J	130 J	107	84 J	230 J	130 J	53 J	260 J
NAPHTHALENE	60	70	43	2.9 J	9.5 U	9.75 U	10 U	9.2 J	10 U	9.5 U	9.9 U
PHENANTHRENE	510	1200	1700	220	120	115	110	220	160	78	450
PYRENE	480	1300	2000	410	200	220	240	320	260	130	840
TOTAL PAHS	3473	8273	10205	1877.7	1262.4	1280.5	1298.6	2143.8	1427.6	637	3961.4

E-4 SOIL SAMPLE ANALYTICAL DATA – AOC-003 SUBSURFACE SOIL

APPENDIX E-4
SOIL SAMPLE ANALYTICAL DATA - AOC-003 SURFACE SOIL

SAMPLE ID	TF2-003-SB1011-0204	TF2-003-SB1011-0204-AVG	TF2-003-SB1011-0204-D	TF2-003-SB1012-0204	TF2-003-SB1012-0810	TF2-003-SB1013-0204	TF2-003-SB1013-0405	TF2-003-SB1014-0204	TF2-003-SB1014-0810	TF2-003-SB1015-0204	TF2-003-SB1015-0810	TF2-003-SB1016-0204	TF2-003-SB1016-0810	TF2-003-SB1017-011.6
LOCATION ID	TF2-003-SB1011	TF2-003-SB1011	TF2-003-SB1011	TF2-003-SB1012	TF2-003-SB1012	TF2-003-SB1013	TF2-003-SB1013	TF2-003-SB1014	TF2-003-SB1014	TF2-003-SB1015	TF2-003-SB1015	TF2-003-SB1016	TF2-003-SB1016	TF2-003-SB1017
SAMPLE DATE	11/15/2013	20131115	11/15/2013	11/15/2013	11/15/2013	11/25/2013	11/25/2013	11/15/2013	11/15/2013	11/15/2013	11/15/2013	11/15/2013	11/15/2013	11/15/2013
TOP DEPTH (FT)	2	2	2	2	8	2	4	2	8	2	8	2	8	1
BOTTOM DEPTH (FT)	4	4	4	4	10	4	5	4	10	4	10	4	10	1.6
SACODE	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)														
1,2,3,4,6,7,8,9-OCDD	3100	3000	2900	3200	NA	2600	NA	2000	NA	3100	NA	3100	NA	2500
1,2,3,4,6,7,8,9-OCDF	2.8 U	4.25 U	5.7 U	4.3 U	NA	0.82 U	NA	4.2 U	NA	4.3 U	NA	4.4 U	NA	7 U
1,2,3,4,6,7,8-HPCDD	20	19	18 J	27	NA	24	NA	41	NA	41	NA	35	NA	56
1,2,3,4,6,7,8-HPCDF	4.2 J	4.95	5.7	5.3	NA	0.44 U	NA	12	NA	9.1	NA	8.2	NA	18
1,2,3,4,7,8,9-HPCDF	0.033 U	0.0435 U	0.054 U	0.44 U	NA	0.033 U	NA	0.63 J	NA	0.56 U	NA	0.38 U	NA	0.97 J
1,2,3,4,7,8-HXCDD	0.22 J	0.132	0.088 U	0.73 J	NA	0.12 J	NA	2.6 J	NA	2.2 J	NA	1.5 J	NA	5 J
1,2,3,4,7,8-HXCDF	0.74 U	0.935	1.5 J	1.2 J	NA	0.11 U	NA	2.9 J	NA	1.9 J	NA	3.5 J	NA	3.8 J
1,2,3,6,7,8-HXCDD	0.38 J	0.2095	0.078 U	1.6 J	NA	0.21 J	NA	6.9	NA	5.3 J	NA	3.6 J	NA	12
1,2,3,6,7,8-HXCDF	0.45 J	0.625	0.8 J	0.76 J	NA	0.31 J	NA	2.4 J	NA	1.9 J	NA	1.8 J	NA	3.3 J
1,2,3,7,8,9-HXCDD	0.53 J	0.46	0.39 J	1.5 J	NA	0.46 J	NA	6.3	NA	4.9 J	NA	3.5 J	NA	11
1,2,3,7,8,9-HXCDF	0.022 U	0.031 U	0.04 U	0.037 U	NA	0.028 U	NA	0.029 U	NA	0.023 U	NA	0.3 J	NA	0.031 U
1,2,3,7,8-PECDD	0.14 J	0.0945	0.098 U	0.59 J	NA	0.048 U	NA	2.9 J	NA	2.3 J	NA	1.3 J	NA	5.2 J
1,2,3,7,8-PECDF	0.029 U	0.14225	0.27 J	0.43 J	NA	0.043 U	NA	1.5 J	NA	1.3 J	NA	0.7 J	NA	2.4 J
2,3,4,6,7,8-HXCDF	0.29 J	0.26	0.23 J	0.53 J	NA	0.025 U	NA	1.9 J	NA	1.4 J	NA	1.1 J	NA	2.6 J
2,3,4,7,8-PECDF	0.26 J	0.14725	0.069 U	0.39 J	NA	0.033 U	NA	1.9 J	NA	1.5 J	NA	1.3 J	NA	3.3 J
2,3,7,8-TCDD	0.029 U	0.0425 U	0.056 U	0.031 U	NA	0.027 U	NA	0.043 U	NA	0.039 U	NA	0.098 U	NA	0.1 U
2,3,7,8-TCDF	0.13 U	0.0955 U	0.061 UJ	0.35 J	NA	0.23 U	NA	1.1	NA	0.87 J	NA	0.047 UJ	NA	2
TEQ	1.577	1.49205	1.4071	2.6699	NA	1.13	NA	7.0613	NA	6.067	NA	4.603	NA	11.7317
TOTAL HPCDD	36	36	36 J	50	NA	42 J	NA	81	NA	80	NA	75	NA	110
TOTAL HPCDF	6.8	7.4	8	9	NA	0.68 U	NA	15	NA	12	NA	12 J	NA	23
TOTAL HXCDD	4.4 J	3.95	3.5 J	17	NA	4.9 J	NA	79	NA	60	NA	41 J	NA	140
TOTAL HXCDF	4.6 J	5.2	5.8 J	6.8 J	NA	0.74 J	NA	19	NA	14 J	NA	13 J	NA	29 J
TOTAL PECDD	2.1 J	1.75	1.4 J	16 J	NA	1 J	NA	87 J	NA	70 J	NA	44 J	NA	180 J
TOTAL PECDF	2.8 J	3.25	3.7 J	6.1 J	NA	0.31 J	NA	22 J	NA	15	NA	13 J	NA	25
TOTAL TCDD	1.5 J	0.764	0.056 U	11 J	NA	1.1 J	NA	63 J	NA	55 J	NA	29 J	NA	160
TOTAL TCDF	2.4 J	2.65	2.9 J	5.4 J	NA	0.96 J	NA	19 J	NA	17 J	NA	12 J	NA	37
METALS (MG/KG)														
ALUMINUM	14700	14050	13400	11700	12200	10400	11700	10400	11400	12000	12700	11000	13200	14500
ANTIMONY	0.17 J	0.17	0.17 J	0.18 J	0.06 U	0.07 J	0.06 J	0.31 J	0.1 J	0.14 J	0.07 J	0.18 J	0.11 J	0.21 J
ARSENIC	7.7	7.2	6.7	6.5	4.7	4.5	3.8	7.8	4.9	6.2	5.2	6.4	5.7	8.8
BARIUM	17.9	22.95	28	23.8	11.6	14.3	17.6	19.4	13.7	19.2	11.6	20.5	15	23
BERYLLIUM	0.4	0.37	0.34	0.5	0.3	0.28	0.34	0.33	0.31	0.34	0.32	0.38	0.32	0.44
CADMIUM	0.14	0.13	0.12	0.19	0.09 J	0.07 J	0.07 J	0.15	0.16	0.16	0.15	0.17	0.11	0.13
CALCIUM	853	1066.5	1280	1170	939	614	1110	1520	1110	1110	801	1010	1070	1270
CHROMIUM	19.2	17.8	16.4	15	16.4	12.9	15.8	13.7	17	15.1	14.3	14.1	17	18.1
COBALT	12.9	12	11.1	10	10.2	7.4	6.1	10.6	9.6	11	9.3	10.1	10	15.2
COPPER	20.8 J	19.15	17.5 J	34.3 J	15.2 J	13.2	12.6	25.4 J	15.6 J	21 J	11.7 J	19.6 J	15.7 J	46 J
IRON	29400	28900	28400	24100	24700	20400	19400	24100	22900	24700	25400	22700	27000	32000
LEAD	25.4	26.4	27.4	18.4	11	9.8	9.4	21.3	14.8	17.2	11.8	26.4	16.4	16.4
MAGNESIUM	5130	4755	4380	3570	4370	3490	3300	3560	4200	4360	4520	3790	4580	4800
MANGANESE	346	322	298	314	284	221	179	403	318	339	292	351	309	387
MERCURY	0.04 U	0.04 U	0.04 U	0.07	0.05	0.015 U	0.014 U	0.04 U	0.03 U	0.04 U	0.04 U	0.04 U	0.02 U	0.09
NICKEL	24.2	22.15	20.1	19.1	21.6	17.2	15.4	18.6	19.9	20.5	20	18.4	21.6	27.5
POTASSIUM	402 J	450.5	499 J	428 J	284 J	487	628	398 J	346 J	410 J	264 J	418 J	336 J	518 J
SELENIUM	0.29 J	0.305	0.32 J	0.3 J	0.24 J	0.26 J	0.29 J	0.31 J	0.24 J	0.26 J	0.25 J	0.29 J	0.16 J	0.45 J
SILVER	0.05 J	0.045	0.04 J	0.05 J	0.03 J	0.03 J	0.04 J	0.04 J	0.03 J	0.04 J	0.03 J	0.04 J	0.03 J	0.04 J
SODIUM	39 U	38.5 U	38 U	42.8 U	36 U	61.9 J	84.4	39 U	37 U	37 U	38 U	32.9 U	38 U	41 U
THALLIUM	0.04 J	0.035	0.03 J	0.04 J	0.02 J	0.04 J	0.07 J	0.04 J	0.03 J	0.04 J	0.03 J	0.05 J	0.03 J	0.05 J
VANADIUM	18.2	17.6	17	15.2	14.6	14.5	17.5	13.9	14.9	15.2	15	14.8	15.5	17.2
ZINC	67.1	68.3	69.5	56.2	48.6	39.5	37.4	52.4	50.3	56	47.8	55.9	60.1	63.3
MISCELLANEOUS PARAMETERS (%)														
TOTAL SOLIDS	82	86.5	91	91	91	93	92	93	94	93	89	92	93	80
PETROLEUM HYDROCARBONS (MG/KG)														
ExTPH (C08-C44)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	250 J
GRO (C05-C12)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.4 U
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)														
2-METHYLNAPHTHALENE	12 U	11.5 U	11 U	10 U	7.7 J	10 U	11 U	10 U	32 J	6.7 J	9.2 J	11 UJ	11 UJ	6.5 J
ACENAPHTHENE	51 J	28	5 J	28	190	10 U	11 U	20 J	320	54	9 J	22	6.9 J	66
ACENAPHTHYLENE	12 U	11.5 U	11 U	2.2 J	16 J	10 U	11 U	2.7 J	20 J	3.2 J	11 U	11 U	1.8 J	2.4 J
ANTHRACENE	26	17.8	9.6 J	50	200	2.6 J	2.2 J	34	410	92	13 J	67	17 J	150
BENZO(A)ANTHRACENE	77 J	55.5	34 J	300	330	9 J	11 J	140	510	420	76	480	120	1100
BENZO(A)PYRENE	54 J	41	28 J	180 J	240 J	7 J	8.5 J	52 J	240 J	240 J	84 J	260 J	74 J	570 J
BENZO(B)FLUORANTHENE	63	51	39	250	340	8.6 J	8.9 J	82	260	320	89	450	110	980
BENZO(G,H,I)PERYLENE	25 J	21.5	18 J	87 J	150 J	3.8 J	4.8 J	14 J	95 J	100 J	69 J	100 J	29 J	240 J
BENZO(K)FLUORANTHENE	22 J	18.5	15 J	79 J	93	10 U	8.7 J	26	100	110	26 J	130	39	240
CHRYSENE	74 J	56	38 J	300	300	8.7 J	12 J	150	480	460	120	500	110	1100
DIBENZO(A,H)ANTHRACENE	15 J	14.5	14 J	36 J	59 J	10 UJ	2.1 J	15 J	34	48	31 J	49	19 J	98
FLUORANTHENE	130 J	100	70 J	480	500	20 J	31	320	750	640	76	680	180	1600
FLUORENE	18 J	11	4 J	12 J	56	10 U	11 U	8 J	170	32	5.1 J	7.9 J	4 J	31
INDENO(1,2,3-CD)PYRENE	52	44	36	160 J	240	4.8 J	4.9 J	38	170	190	59	190	64	400
NAPHTHALENE	20 J	12.1	4.2 J	10 U	6.7 J	10 U	11 U	10 U	9.9 J	7.2 J	3.4 J	4.8 J	11 U	6.5 J
PHENANTHRENE	130 J	91.5	53 J	520	600	16 J	14 J	280	1500	720	100	590	140	1500
PYRENE	190 J	136.5	83 J	750	770	16 J	18 J	410	1100	1000	330	960	250	2500
TOTAL PAHS	947	698.9	450.8	3234.2	4098.4	96.5	126.1	1591.7	6200.9	4443.1	1099.7	4490.7	1164.7	10590.4

APPENDIX E-4
SOIL SAMPLE ANALYTICAL DATA - AOC-003 SURFACE SOIL

SAMPLE ID	TF2-003-SB1017-0204	TF2-003-SB1017-0810	TF2-003-SB1018-0204	TF2-003-SB1019-0204	TF2-003-SB1019-0810
LOCATION ID	TF2-003-SB1017	TF2-003-SB1017	TF2-003-SB1018	TF2-003-SB1019	TF2-003-SB1019
SAMPLE DATE	11/15/2013	11/15/2013	11/15/2013	11/25/2013	11/25/2013
TOP DEPTH (FT)	2	8	2	2	8
BOTTOM DEPTH (FT)	4	10	4	4	10
SACODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)					
1,2,3,4,6,7,8,9-OCDD	3700	NA	1500	4200	NA
1,2,3,4,6,7,8,9-OCDF	0.48 U	NA	1 U	6.4 J	NA
1,2,3,4,6,7,8-HPCDD	23	NA	8.3	64	NA
1,2,3,4,6,7,8-HPCDF	0.39 U	NA	0.51 U	14	NA
1,2,3,4,7,8,9-HPCDF	0.054 U	NA	0.12 U	0.73 J	NA
1,2,3,4,7,8-HXCDD	0.096 J	NA	0.056 U	3.6 J	NA
1,2,3,4,7,8-HXCDF	0.095 U	NA	0.23 U	3.8 J	NA
1,2,3,6,7,8-HXCDD	0.092 J	NA	0.049 U	8	NA
1,2,3,6,7,8-HXCDF	0.24 J	NA	0.29 J	2.6 J	NA
1,2,3,7,8,9-HXCDD	0.33 J	NA	0.045 U	5.9	NA
1,2,3,7,8,9-HXCDF	0.014 U	NA	0.033 U	0.08 J	NA
1,2,3,7,8-PECDD	0.035 U	NA	0.081 U	2.9 J	NA
1,2,3,7,8-PECDF	0.02 U	NA	0.044 U	1.7 J	NA
2,3,4,6,7,8-HXCDF	0.013 U	NA	0.031 U	2.3 J	NA
2,3,4,7,8-PECDF	0.02 U	NA	0.046 U	2.1 J	NA
2,3,7,8-TCDD	0.017 U	NA	0.048 U	0.47 J	NA
2,3,7,8-TCDF	0.013 U	NA	0.039 U	1.1	NA
TEQ	1.4158	NA	0.562	8.83822	NA
TOTAL HPCDD	42	NA	14	120	NA
TOTAL HPCDF	0.54 U	NA	0.74 U	19 J	NA
TOTAL HXCDD	1.2 J	NA	0.57 J	98	NA
TOTAL HXCDF	0.47 U	NA	0.68 U	24 J	NA
TOTAL PECDD	0.4 J	NA	0.3 J	110 J	NA
TOTAL PECDF	0.02 U	NA	0.046 U	24 J	NA
TOTAL TCDD	0.31 J	NA	0.048 U	86 J	NA
TOTAL TCDF	0.13 J	NA	0.21 J	25 J	NA
METALS (MG/KG)					
ALUMINUM	10500	14500	10400	11000	13200
ANTIMONY	0.1 J	0.09 J	0.08 J	0.11	0.07 J
ARSENIC	5.3	8.7	5.6	5.6	4.1
BARIUM	13	16.6	11.5	19.6	11.5
BERYLLIUM	0.31	0.61	0.32	0.31	0.28
CADMIUM	0.1	0.07 J	0.14	0.09	0.04 J
CALCIUM	511	946	654	1060	908
CHROMIUM	13	19	13.1	13.9	18
COBALT	9.5	13.1	9.1	8.7	11.3
COPPER	17.5 J	20.4 J	15.3 J	17.1	15.6
IRON	21000	31200	23100	21400	27200
LEAD	11	14.1	12	13.9	10.9
MAGNESIUM	3530	3920	3790	3630	4610
MANGANESE	276	464	273	279	226
MERCURY	0.02 U	0.03 U	0.016 U	0.02 U	0.016 U
NICKEL	17.9	24.3	17	17.8	20.4
POTASSIUM	354 J	349 J	359 J	598	528
SELENIUM	0.2 J	0.47	0.16 J	0.24 J	0.24 J
SILVER	0.04 J	0.05 J	0.02 J	0.04 J	0.03 J
SODIUM	39 U	31 U	36 U	52.4 J	53.9 J
THALLIUM	0.04 J	0.04 J	0.03 J	0.06	0.05 J
VANADIUM	12.8	19.6	14.2	15.4	16.5
ZINC	38	56.2	39	46.4	49.7
MISCELLANEOUS PARAMETERS (%)					
TOTAL SOLIDS	93	89	95	93	89
PETROLEUM HYDROCARBONS (MG/KG)					
ExTPH (C08-C44)	NA	NA	NA	NA	11 J
GRO (C05-C12)	NA	NA	NA	NA	2 U
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)					
2-METHYLNAPHTHALENE	10 U	11 U	3.8 J	11 U	11 U
ACENAPHTHENE	10 U	1.9 J	34	23	11 U
ACENAPHTHYLENE	10 U	11 U	10 U	2.4 J	11 U
ANTHRACENE	1.7 J	11 U	31	75	2.9 J
BENZO(A)ANTHRACENE	6.6 J	3.7 J	87	410	46
BENZO(A)PYRENE	3.6 J	11 UJ	44 J	250 J	29 J
BENZO(B)FLUORANTHENE	12 J	10 J	58	280 J	32 J
BENZO(G,H,I)PERYLENE	10 UJ	11 UJ	18 J	120 J	17 J
BENZO(K)FLUORANTHENE	10 U	11 U	19 J	350 J	22 J
CHRYSENE	7.3 J	4.4 J	82	440	38
DIBENZO(A,H)ANTHRACENE	8.8 J	8.7 J	12 J	66 J	7.5 J
FLUORANTHENE	15 J	6.5 J	160	1100	64
FLUORENE	10 U	11 U	20 J	13 J	11 U
INDENO(1,2,3-CD)PYRENE	7.2 J	5.8 J	39	140 J	17 J
NAPHTHALENE	10 U	11 U	10 U	6.7 J	11 U
PHENANTHRENE	9.1 J	3.5 J	290	660	31
PYRENE	14 J	7.4 J	270	740 J	84
TOTAL PAHS	85.3	51.9	1167.8	4676.1	390.4

E-5 SOIL SAMPLE ANALYTICAL DATA – AOC-004/5 SURFACE SOIL

APPENDIX E-5
SOIL SAMPLE ANALYTICAL DATA - AOC 004/5 SURFACE SOIL

SAMPLE ID	TF2-004/5-SS1020-0001	TF2-004/5-SS1020-0001-AVG	TF2-004/5-SS1020-0001-D	TF2-004/5-SS1021-000.7	TF2-004/5-SS1022-000.9	TF2-004/5-SS1023-000.8	TF2-004/5-SS1024-000.6	TF2-004/5-SS1025-000.8	TF2-004/5-SS1026-000.8	TF2-004/5-SS1027-0001	TF2-004/5-SS1028-000.8	TF2-004/5-SS1029-000.6	TF2-004/5-SS1030-000.6
LOCATION ID	TF2-004/5-SB1020	TF2-004/5-SB1020	TF2-004/5-SB1020	TF2-004/5-SB1021	TF2-004/5-SB1022	TF2-004/5-SB1023	TF2-004/5-SB1024	TF2-004/5-SB1025	TF2-004/5-SB1026	TF2-004/5-SB1027	TF2-004/5-SB1028	TF2-004/5-SB1029	TF2-004/5-SB1030
SAMPLE DATE	10/18/2013	20131018	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/18/2013
TOP DEPTH (FT)	0	0	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH (FT)	1	1	1	0.7	0.9	0.8	0.6	0.8	0.8	1	0.8	0.6	0.6
SACODE	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	6000	6300	6600	3000	6400	2200	4100	3400	1400	6100	2200	6300	3100
1,2,3,4,6,7,8,9-OCDF	4.9 J	6.1	7.3 J	79	5.3 J	22	29	34	12	4.5 J	49	49	15
1,2,3,4,6,7,8-HPCDD	44	46.5	49	140	46	65	120	99	40	39	78	170	70
1,2,3,4,6,7,8-HPCDF	3.6 J	3.85	4.1 J	47	2.9 J	13	20	27	11	2.1 J	26	30	9.1
1,2,3,4,7,8,9-HPCDF	0.39 J	0.35	0.31 J	3.2 J	0.059 U	1 J	1.5 J	1.7 J	0.87 J	0.08 U	1.5 J	1.8 J	0.67 J
1,2,3,4,7,8-HXCDD	0.62 J	0.585	0.55 J	3.2 J	0.51 J	1.2 J	2.1 J	2.2 J	0.84 J	0.28 J	1.3 J	3.1 J	1.4 J
1,2,3,4,7,8-HXCDF	0.41 J	0.435	0.46 J	3.6 J	0.27 J	2.2 J	2.8 J	4.4 J	1.1 J	0.3 J	2.9 J	3.5 J	1.2 J
1,2,3,6,7,8-HXCDD	0.9 J	1.05	1.2 J	7.1	0.98 J	2.8 J	5.1 J	4.5 J	1.6 J	0.47 J	3.3 J	7.3	2.7 J
1,2,3,6,7,8-HXCDF	0.81 J	1.105	1.4 J	3.7 J	0.52 J	1.6 J	3.1 J	2.8 J	1.7 J	0.92 J	2.1 J	2.2 J	0.95 J
1,2,3,7,8,9-HXCDD	1.2 J	1.3	1.4 J	6	1.2 J	2.5 J	5.2 J	4.3 J	1.5 J	0.57 J	2.8 J	4.6 J	2.7 J
1,2,3,7,8,9-HXCDF	0.058 U	0.0635 U	0.069 U	0.12 U	0.059 U	0.072 U	0.11 U	0.1 U	0.12 U	0.056 U	0.084 U	0.069 U	0.08 U
1,2,3,7,8-PECDD	0.27 J	0.255	0.24 J	1.6 J	0.058 U	0.65 J	1.1 J	0.91 J	0.28 J	0.095 U	0.55 J	1.3 J	0.48 J
1,2,3,7,8-PECDF	0.054 U	0.063 U	0.072 U	0.64 J	0.052 U	0.55 J	0.6 J	0.81 J	0.31 J	0.049 U	0.58 J	1.1 J	0.48 J
2,3,4,6,7,8-HXCDF	0.44 J	0.495	0.55 J	3.5 J	0.28 J	1.4 J	2.8 J	3.1 J	2.1 J	0.05 U	1.9 J	1.8 J	0.81 J
2,3,4,7,8-PECDF	0.14 J	0.145	0.15 J	1.1 J	0.054 U	0.93 J	1.4 J	1.6 J	0.44 J	0.051 U	0.6 J	1.5 J	0.43 J
2,3,7,8-TCDD	0.12 J	0.07125	0.045 U	0.18 J	0.071 U	0.19 J	0.22 J	0.16 J	0.076 U	0.041 U	0.036 U	0.29 J	0.16 J
2,3,7,8-TCDF	0.19 J	0.18	0.17 J	0.69 J	0.071 U	1 J	1.2 UJ	1 J	0.21 J	0.051 U	0.54 J	1.7	0.71 J
TEQ	3.17037	3.27233	3.37429	7.7339	2.78659	3.8621	6.5217	6.1115	2.2686	2.49635	3.9611	8.4157	3.5626
TOTAL HPCDD	75	80.5	86	260	81	130	230	190	78	66	140	290	150
TOTAL HPCDF	8.1	9.05	10	140	6.7	33	50	60	26	4.6 J	66	74	22
TOTAL HXCDD	8.8 J	9.4	10 J	50 J	8.2 J	22	44 J	38 J	12 J	4.6 J	23 J	50 J	23 J
TOTAL HXCDF	9.9 J	9.95	10 J	91 J	3.6 J	30	55	64 J	34	2.6 J	37	40 J	17
TOTAL PECDD	2 J	1.9	1.8 J	7.8 J	1.7 J	3.9 J	7 J	7.9 J	1.3 J	1.2 J	4 J	9.1 J	3.1 J
TOTAL PECDF	4.8 J	4.5	4.2 J	30 J	0.79 J	13 J	160 J	30 J	15 J	0.38 J	12 J	22 J	6.6 J
TOTAL TCDD	1.3 J	0.94	0.58 J	1.1 J	0.71 J	2.4 J	2.7 J	3.4 J	0.076 U	0.43 J	0.94 J	4 J	0.78 J
TOTAL TCDF	4.8 J	3.05	1.3 J	6 J	0.72 J	7.9	11 J	12 J	3.1 J	0.64 J	5.6 J	14 J	3.4 J
METALS (MG/KG)													
ALUMINUM	10100	11400	12700	16000	11600	12600	11200	11600	4950	10900	15200	14500	14900
ANTIMONY	0.14 J	0.14	0.14 J	0.13 J	0.16 J	0.17 J	2.5 J	0.17 J	0.05 J	0.11 J	0.14 J	0.46 J	0.29 J
ARSENIC	7.6	7.1	6.6	8.1	6.8	7.2	6.2	6.4	2.2	6.2	6.6	8.3	7.7
BARIUM	14.9 J	15.9	16.9 J	20.2 J	17.8 J	16.3 J	19.8 J	17.5 J	11.3 J	15.4 J	11.6 J	21.5 J	17.3 J
BERYLLIUM	0.35	0.33	0.31	0.51	0.4	0.34	0.35	0.33	0.23	0.37	0.37	0.44	0.87
CADMIUM	0.06 J	0.06	0.06 J	0.08 J	0.07 J	0.06 J	0.08 J	0.09	0.07 J	0.06 J	0.06	0.08 J	0.09 J
CALCIUM	551 J	609.5	668 J	748 J	484 J	810 J	765 J	956 J	564 J	388 J	766 J	624 J	694 J
CHROMIUM	12.6	14.3	16	20.8	15.2	17.8	15.3	18.3	7.1	13.6	21.1	19.1	18.9
COBALT	13.4 J	11.85	10.3 J	5.2 J	12 J	8.4 J	7.6 J	8.6 J	3.3 J	8.5 J	11.2 J	9.2 J	13.8 J
COPPER	16.3	16	15.7	22.5	20.4	17.3	18.1	19.4	7.8	14.2	20.1	23.7	22.2
IRON	21100	21500	21900	28500	23900	25300	19200	22600	9760	20300	30600	26500	30600
LEAD	12.4	12.45	12.5	26	11.4	25.1	66.3	31.9	7.6	9.2	18.7	37.9	25.2
MAGNESIUM	3150 J	3150	3150 J	1970 J	3440 J	3820 J	2750 J	3570 J	1520 J	3080 J	4800 J	3920 J	4410 J
MANGANESE	345 J	315.5	286 J	156 J	498 J	227 J	216 J	230 J	155 J	271 J	251 J	243 J	320 J
MERCURY	0.02 U	0.017 U	0.014 U	0.04	0.01 U	0.03	0.03	0.04	0.015 U	0.02 U	0.04	0.04	0.05
NICKEL	17.6	17.15	16.7	9.8	24.8	18.8	14.9	17.9	9.2	15.1	22.7	20.6	24
POTASSIUM	447	406.5	366	439	476	418	470	344	390	445	313	448	332
SELENIUM	0.25 U	0.265 U	0.28 U	0.25 U	0.34 U	0.42 U	0.48 U	0.41 U	0.23 U	0.24 U	0.2 U	0.32 U	0.37 U
SILVER	0.02 J	0.02	0.02 J	0.04 J	0.03 J	0.04 J	0.05 J	0.06 J	0.02 J	0.02 J	0.04 J	0.11	0.04 J
SODIUM	45.9 U	47.45 U	49 U	54.8 U	51.8 U	56.8 U	70.2 U	59.4 U	44.5 U	42.1 U	37.7 U	53.3 U	45.5 U
THALLIUM	0.04 U	0.045 U	0.05 U	0.05 U	0.05 U	0.04 U	0.06 U	0.05 U	0.04 U	0.05 J	0.04 J	0.07 U	0.05 J
VANADIUM	16.2	17.85	19.5	25.9	17.1	28.1	24.8	26.1	9	16.5	25	34.7	22.7
ZINC	39	40.85	42.7	57.2	50.5	45	41.7	44.9	21.7	38	53.7	52.9	59.7
MISCELLANEOUS PARAMETERS (%)													
TOTAL SOLIDS	98	97.5	97	96	95	94	95	94	97	94	95	97	95
PETROLEUM HYDROCARBONS (MG/KG)													
ExTPH (C08-C44)	32 J	32	32 J	NA	NA	NA	NA	NA	NA	15 J	NA	NA	NA
GRO (C05-C12)	2.4 J	5.9	9.4 J	NA	NA	NA	NA	NA	NA	2 U	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)													
2-METHYLNAPHTHALENE	10 U	10 U	10 U	24	10 U	19 J	9.7 U	5.9 J	9.6 U	10 U	9.9 U	9.9 U	9.4 U
ACENAPHTHENE	1.6 J	1.6 J	10 U	300	10 U	59	3.1 J	56	30	10 U	1.8 J	4.7 J	4.8 J
ACENAPHTHYLENE	10 U	10 U	10 U	9.5 J	10 U	10 U	2.2 J	10 U	9.6 U	10 U	2.6 J	7.4 J	2 J
ANTHRACENE	5.8 J	4.55	3.3 J	650	10 U	150	18 J	91	57	10 U	4.1 J	11 J	18 J
BENZO(A)ANTHRACENE	17 J	14	11 J	1500	5.9 J	260	44	270	210	2.9 J	36	88	66
BENZO(A)PYRENE	16 J	13	10 J	1200	5.7 J	190	54	200 J	180	10 UJ	36	86	57
BENZO(B)FLUORANTHENE	27	22	17 J	2000	9.4 J	330	110	310 J	320	5.2 J	58	160	100
BENZO(G,H,I)PERYLENE	8.2 J	6.75	5.3 J	540	2.8 J	58	32	84 J	83	10 UJ	19 J	42	27
BENZO(K)FLUORANTHENE	9.7 J	8.15	6.6 J	660	4.3 J	140	37	130 J	90	10 U	26	50	37
CHRYSENE	20 J	17	14 J	1800	7.5 J	270 J	62	300	250	4.4 J	43	110	79
DIBENZO(A,H)ANTHRACENE	3.5 J	2.75	2 J	210	2.4 J	32	14 J	39 J	41	10 UJ	7.9 J	22	12 J
FLUORANTHENE	48 J	38	28 J	3700	15 J	690	120	680	520	8.2 J	86	180	130
FLUORENE	10 U	10 U	10 U	230	10 U	67	3.5 J	51	23	10 U	9.9 U	5 J	4.4 J
INDENO(1,2,3-CD)PYRENE	5.2 J	5.2 J	10 U	830	10 U	120	44 J	150 J	150 J	10 U	23	70	48
NAPHTHALENE	10 U	10 U	10 U	58	10 U	31	9.7 U	14 J	9.6 U	10 U	9.9 U	9.9 U	9.4 U
PHENANTHRENE	24	18	12 J	2800	5.7 J	650	54	580	330	3.4 J	33	81	66
PYRENE	36 J	28.5	21 J	3400	11 J	540	89	620	500	6.5 J	69	170	130
TOTAL PAHS	222	176.1	130.2	19911.5	69.7	3606	686.8	3580.9	2784	30.6	445.4	1087.1	781.2

APPENDIX E-5
SOIL SAMPLE ANALYTICAL DATA - AOC 004/5 SURFACE SOIL

SAMPLE ID	TF2-004/5-SS1031-000.8	TF2-004/5-SS1032-000.9	TF2-004/5-SS1033-000.8	TF2-004/5-SS1034-000.6	TF2-004/5-SS1035-0001	TF2-004/5-SS1035-0001-AVG	TF2-004/5-SS1035-0001-D	TF2-004/5-SS1036-000.6	TF2-004/5-SS1037-000.7	TF2-004/5-SS1038-000.7	TF2-004/5-SS1039-000.9	TF2-004/5-SS1040-000.9	TF2-004/5-SS1041-000.7	TF2-004/5-SS1041-000.7-AVG
LOCATION ID	TF2-004/5-SB1031	TF2-004/5-SB1032	TF2-004/5-SB1033	TF2-004/5-SB1034	TF2-004/5-SB1035	TF2-004/5-SB1035	TF2-004/5-SB1035	TF2-004/5-SB1036	TF2-004/5-SB1037	TF2-004/5-SB1038	TF2-004/5-SB1039	TF2-004/5-SB1040	TF2-004/5-SB1041	TF2-004/5-SB1041
SAMPLE DATE	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/18/2013	20131018	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/18/2013	10/21/2013	20131021
TOP DEPTH (FT)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH (FT)	0.8	0.9	0.8	0.6	1	1	1	0.6	0.7	0.7	0.9	0.9	0.7	0.7
SACODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
QC TYPE	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)														
1,2,3,4,6,7,8,9-OCDD	3800	3900	4500	2400	4000	3800	3600	6800	3400	3500	5700	6400	5600	5800
1,2,3,4,6,7,8,9-OCDF	15	18	19	22	280 J	195	110 J	63	26	27	18	37	15	16.5
1,2,3,4,6,7,8-HPCDD	71	96	88	59	330	330	330	270	57	100	81	140	46	54.5
1,2,3,4,6,7,8-HPCDF	9	14	9.3	17	110 J	85	60 J	40	16	17	11	19	6.4	6.85
1,2,3,4,7,8,9-HPCDF	0.52 J	1.1 J	0.16 U	1.3 J	5.7	4.5	3.3 J	2.1 J	1.5 J	0.89 J	0.1 U	1.2 J	0.098 U	0.124 U
1,2,3,4,7,8-HXCDD	1.2 J	1.9 J	0.81 J	1.2 J	4.5 J	4.5	4.5 J	3.3 J	0.97 J	1.5 J	1.4 J	1.7 J	0.43 J	0.46
1,2,3,4,7,8-HXCDF	1.4 J	2.2 J	0.9 J	2.7 J	11	8.15	5.3 J	3.5 J	3.9 J	2 J	1.7 J	2.4 J	0.54 J	0.72
1,2,3,6,7,8-HXCDD	2.5 J	3.6 J	2.3 J	2.7 J	14	15	16	12	2.1 J	4.2 J	2.9 J	4.7 J	0.86 J	0.905
1,2,3,6,7,8-HXCDF	1.1 J	2.2 J	0.83 J	2.4 J	4.6 J	3.95	3.3 J	2.4 J	2.2 J	1.5 J	1.2 J	1.8 J	0.74 J	0.75
1,2,3,7,8,9-HXCDD	2.4 J	3.8 J	1.7 J	2.7 J	11	9.9	8.8	8.2	2.5 J	3.8 J	2.7 J	4 J	0.76 J	0.93
1,2,3,7,8,9-HXCDF	0.07 U	0.11 U	0.095 U	0.12 U	0.13 U	0.145 U	0.16 U	0.096 U	0.11 U	0.12 U	0.094 U	0.099 U	0.089 U	0.0915 U
1,2,3,7,8-PECDD	0.44 J	0.71 J	0.23 J	0.56 J	2.1 J	1.95	1.8 J	1.5 J	0.58 J	0.73 J	0.63 J	0.86 J	0.14 J	0.125
1,2,3,7,8-PECDF	0.4 J	0.86 J	0.084 U	0.77 J	1.1 J	1.05	1 J	0.97 J	1 J	0.54 J	0.59 J	0.91 J	0.067 U	0.07 U
2,3,4,6,7,8-HXCDF	0.67 J	1.7 J	0.59 J	2.4 J	3.3 J	2.9	2.5 J	2 J	0.66 J	2.1 J	0.78 J	1.6 J	0.2 J	0.27
2,3,4,7,8-PECDF	0.49 J	0.49 J	0.17 J	1.1 J	2 J	1.6	1.2 J	1.4 J	1 J	0.73 J	0.68 J	0.74 J	0.18 J	0.109
2,3,7,8-TCDD	0.14 J	0.053 U	0.039 U	0.24 J	0.41 J	0.355	0.3 J	0.27 J	0.13 J	0.11 J	0.3 U	0.044 U	0.035 U	0.0375 U
2,3,7,8-TCDF	0.66 J	0.97 U	0.088 U	0.94 J	1.3	1.3	1.5 UJ	1.4 J	0.8 J	0.88 J	0.64 J	0.95 J	0.12 U	0.105
TEQ	3.6817	4.7092	3.3227	4.1567	13.854	12.715	11.576	10.679	4.1258	4.9102	4.6191	6.3574	2.7555	2.92145
TOTAL HPCDD	130	190	160	110	580	585	590	460	110	190	150	270	82	101
TOTAL HPCDF	21	34	23	38	210	180	150	100	28	41	24	51	15	16.5
TOTAL HXCDD	20 J	31 J	15 J	23 J	94	95	96	67 J	18	29	24 J	32 J	6.2 J	6.95
TOTAL HXCDF	14 J	36	9.8 J	48 J	81	75	69 J	53 J	23 J	26 J	17	34	5.3 J	6.05
TOTAL PECDD	2.5 J	4.5 J	1.8 J	4.7 J	13 J	13	13 J	10 J	4.3 J	4.4 J	5.2 J	3.8 J	1.9 J	1.85
TOTAL PECDF	6.6 J	27 J	2.2 J	33 J	25 J	23	21 J	20 J	38 J	11 J	10 J	14 J	1.1 J	1.2
TOTAL TCDD	1.5 J	0.76 J	0.44 J	2.2 J	4.4 J	4.2	4 J	4.5 J	1.9 J	1.9 J	1.4	0.77 J	0.63 J	0.61
TOTAL TCDF	4.2 J	3.2 J	2.2 J	12 J	12 J	11.5	11	14 J	7.4 J	5.7 J	6.3 J	5.5 J	1 J	1
METALS (MG/KG)														
ALUMINUM	8920	8540	11200	14100	18200	17700	17200	15100	13900	14400	13700	13500	8900	8695
ANTIMONY	0.13 J	0.15 J	0.12 J	0.18 J	0.18 J	0.2	0.22 J	0.22 J	0.28 J	0.15 J	0.31 J	0.2 J	0.13 J	0.12
ARSENIC	7.2	5.2	6.4	8.5	9.5	9	8.5	10.4	7	8	7.3	6.3	5.8	5.65
BARIUM	17.4 J	19.1 J	15.1	16.2	14.2	14.8	15.4 J	16.4 J	20 J	18.4 J	169 J	15.7 J	15.9	15.2
BERYLLIUM	0.32	0.34	0.34	0.42	0.44	0.455	0.47	0.37	0.46	0.42	0.36	0.34	0.36	0.335
CADMIUM	0.08	0.09 J	0.09	0.07 J	0.09	0.08	0.07 J	0.08 J	0.08 J	0.08 J	0.1	0.07 J	0.08 J	0.08
CALCIUM	400 J	739 J	600 J	594 J	1140 J	861	582 J	549 J	843 J	681 J	726 J	740 J	393 J	350
CHROMIUM	11.8	12.2	14.5 J	20.7 J	24.4 J	24.3	24.2	20.8	19.2	21	18.2	17	13.4 J	12.1
COBALT	10.1 J	8.8 J	11.7	13	13.2	13.95	14.7 J	11.2 J	10.7 J	8.3 J	10.9 J	10.1 J	11	11.5
COPPER	16.7	15.6	17.6	22.4	31.5	33.8	36.1	23.4	19.2	21.7	19.1	18.7	17.5	17.05
IRON	19200	15200	23000	29800	37800	36250	34700	29600	27300	28900	24700	24100	19600	19550
LEAD	18.1	19.4	12.3 J	28.9 J	33.5 J	33.85	34.2	29.7	28.6	25.4	18.4	28.5	11.5 J	10.9
MAGNESIUM	3700 J	3670 J	3560 J	4300 J	5850 J	5560	5270 J	4240 J	4100 J	3260 J	3680 J	3990 J	2950 J	2985
MANGANESE	247 J	230 J	385 J	282 J	266 J	269.5	273 J	265 J	278 J	206 J	334 J	256 J	313 J	331.5
MERCURY	0.04	0.07	0.015 U	0.03 J	0.04	0.045	0.05	0.05	0.03	0.04	0.04	0.06	0.005 J	0.005
NICKEL	19	18.5	19.1	23.6	32.4	30.7	29	22.3	20.3	15.7	53	20.9	16.7	16.8
POTASSIUM	323	504	445	482	308	316.5	325	392	404	333	404	393	483	465
SELENIUM	0.37 U	0.46 U	0.24 U	0.28 U	0.33 J	0.33 J	0.34 U	0.33 U	0.27 U	0.29 U	0.23 U	0.35 U	0.24 U	0.21
SILVER	0.05 J	0.06 J	0.03 J	0.06 J	0.07 J	0.075	0.08 J	0.06 J	0.04 J	0.04 J	0.05 J	0.04 J	0.02 J	0.02
SODIUM	37 U	59.2 U	35 U	42.2 U	34.6 U	36.5 U	38.4 U	45.2 U	50.4 U	43.6 U	45.2 U	52.1 U	33 U	32.85 U
THALLIUM	0.06 U	0.06 U	0.05 J	0.05 J	0.05 J	0.055	0.06 J	0.06 U	0.05 J	0.05 J	0.06 J	0.04 U	0.04 J	0.04
VANADIUM	14.2	18.9	17.3	28.8	35.2	33.95	32.7	29.9	23.2	26.2	25	23.4	15.4	14.9
ZINC	46.5	50.2	43.4 J	58.2 J	71.9 J	69.75	67.6	54.3	52.4	44.5	51.8	52.1	39.3 J	38.25
MISCELLANEOUS PARAMETERS (%)														
TOTAL SOLIDS	93	92	95	95	95	95	95	97	97	94	93	90	96	96
PETROLEUM HYDROCARBONS (MG/KG)														
ExTPH (C08-C44)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	52 J	NA	NA	NA
GRO (C05-C12)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)														
2-METHYLNAPHTHALENE	9.8 U	11 U	9.8 U	9.7 U	10 U	10 U	10 U	10 J	9.8 U	9.9 U	10 U	11 U	10 U	9.85 U
ACENAPHTHENE	1.9 J	5.3 J	9.8 U	2 J	3 J	3.3	3.6 J	23	1.9 J	3.2 J	2.8 J	6.8 J	10 U	9.85 U
ACENAPHTHYLENE	1.4 J	11 U	9.8 U	4 J	4.9 J	5.05	5.2 J	4.9 J	1.5 J	3.5 J	4.5 J	1.8 J	10 U	9.85 U
ANTHRACENE	4.7 J	15 J	1.9 J	5.8 J	7.6 J	7.75	7.9 J	52	4.5 J	7.6 J	8.8 J	16 J	10 U	1.7 J
BENZO(A)ANTHRACENE	32	53	14 J	47	72	77.5	83	140	34	52	54	74	6.5 J	7.05
BENZO(A)PYRENE	31	51	11 J	48	74	77.5	81	120	32	55	53	65	6.7 J	7
BENZO(B)FLUORANTHENE	47	82	22	87	140	150	160	180	57	86	95	130	11 J	12
BENZO(G,H,I)PERYLENE	16 J	18 J	5.1 J	23	37	37.5	38	48	19 J	21	25	30	4.3 J	4
BENZO(K)FLUORANTHENE	26	40	7.6 J	25	41	42.5	44	82	20 J	43	28	37	5.4 J	5.2
CHRYSENE	36 J	69 J	17 J	56	87	93.5	100	150	45	70 J	60	84	9 J	9.45
DIBENZO(A,H)ANTHRACENE	7.7 J	9.3 J	3.1 J	12 J	18 J	18.5	19 J	26	9.1 J	12 J	12 J	15 J	3.8 J	3.8 J
FLUORANTHENE	75	130	33	97	160	170	180	320	72	120	120	180	14 J	17.5
FLUORENE	9.8 U	3.7 J	9.8 U	9.7 U	10 U	10 U	10 U	25	9.8 U	6 J	10 U	5.2 J	10 U	9.85 U
INDENO(1,2,3-CD)PYRENE	20 J	31	2.4 J	34	60	62.5	65	89	25	38	36	49	10 UJ	9.85 U
NAPHTHALENE	9.8 U	11 U	9.8 U	9.7 U	10 U	10 U	10 U	13 J	9.8 U	9.9 U	10 U	11 U	10 U	9.85 U
PHENANTHRENE	33	66	14 J	35	56	60	64	250	33	50	48	92	6.6 J	7.6
PYRENE	60	110	23	82	130	150	170	290	70	110	94	150	14 J	14.5
TOTAL PAHS	391.7	683.3	154.1	557.8	890.5	955.6	1020.7	1822.9	424	677.3	641.1	935.8	81.3	87.05

APPENDIX E-5
SOIL SAMPLE ANALYTICAL DATA - AOC 004/5 SURFACE SOIL

SAMPLE ID	TF2-004/5-SS1041-000.7-D	TF2-004/5-SS1042-000.5	TF2-004/5-SS1043-0.10.5	TF2-004/5-SS1044-000.5	TF2-004/5-SS1045-000.5	TF2-004/5-SS1046-000.5	TF2-004/5-SS1047-000.8	TF2-004/5-SS1048-000.8	TF2-004/5-SS1049-000.9	TF2-004/5-SS1050-000.6	TF2-004/5-SS1052-000.6	TF2-004/5-SS1051-000.8	TF2-004/5-SS1053-000.6	TF2-004/5-SS1054-000.6
LOCATION ID	TF2-004/5-SB1041	TF2-004/5-SB1042	TF2-004/5-SB1043	TF2-004/5-SB1044	TF2-004/5-SB1045	TF2-004/5-SB1046	TF2-004/5-SB1047	TF2-004/5-SB1048	TF2-004/5-SB1049	TF2-004/5-SB1050	TF2-004/5-SB1051	TF2-004/5-SB1051	TF2-004/5-SB1053	TF2-004/5-SB1054
SAMPLE DATE	10/21/2013	10/21/2013	11/13/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013
TOP DEPTH (FT)	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH (FT)	0.7	0.5	0.5	0.5	0.5	0.5	0.8	0.8	0.9	0.6	0.6	0.8	0.6	0.6
SACODE	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)														
1,2,3,4,6,7,8,9-OCDD	6000	3000	1700	3500	6400	3600	10000	5400	4400	2800	4000	5700	7000	3100
1,2,3,4,6,7,8,9-OCDF	18	140	10 J	55	420	18	110	36	38	96	200	35	250	53
1,2,3,4,6,7,8-HPCDD	63	170	32	140	360	100	850	110	160	62	270	67	510	98 J
1,2,3,4,6,7,8-HPCDF	7.3	75	5.9	28	130	13	99	22	24	34	92	15	120	26
1,2,3,4,7,8,9-HPCDF	0.15 U	2.9 J	0.077 U	1.1 J	8.9	0.75 J	4.2 J	1.3 J	1.2 J	1.6 J	4.6 J	0.73 J	5.2	1.2 J
1,2,3,4,7,8-HXCDD	0.49 J	3.3 J	0.44 J	2.4 J	5.2	2.6 J	16	2.1 J	2.9 J	1 J	4.5 J	0.95 J	6.5 J	1.7 J
1,2,3,4,7,8-HXCDF	0.9 J	5.4	0.98 J	2.4 J	5.5	1.7 J	7.5	3.3 J	2.6 J	4.1 J	4.9 J	1.1 J	7.1	1.9 J
1,2,3,6,7,8-HXCDD	0.95 J	7.1	1.4 J	6.3	17	5.6	52	4.8 J	8.1	2.3 J	12	2 J	23	4.3 J
1,2,3,6,7,8-HXCDF	0.76 J	3.7 J	0.64 J	1.6 J	3.6 J	1.1 J	6	2 J	1.6 J	1.7 J	4.2 J	1.2 J	5.1 J	1.2 J
1,2,3,7,8,9-HXCDD	1.1 J	6.7	1 J	4.8 J	11	5.2	34	4.1 J	5.8	2.3 J	9.7	1.8 J	14	3.2 J
1,2,3,7,8,9-HXCDF	0.094 U	0.13 U	0.19 J	0.12 U	0.18 U	0.085 U	0.17 U	0.12 U	0.13 U	0.093 U	0.15 U	0.087 U	0.14 U	0.12 U
1,2,3,7,8-PECDD	0.11 J	1.1 J	0.047 U	0.82 J	1.3 J	1.1 J	5.4	0.75 J	1 J	0.5 J	1.8 J	0.41 J	2.7 J	0.58 J
1,2,3,7,8-PECDF	0.073 U	0.85 J	0.15 J	0.64 J	1.2 J	0.25 U	1.1 J	0.87 J	0.1 U	0.43 J	1.1 J	0.3 J	0.81 J	0.23 J
2,3,4,6,7,8-HXCDF	0.34 J	3 J	0.88 J	1.2 J	3.2 J	0.94 J	5.5	1.7 J	1.3 J	0.75 J	4.1 J	0.58 J	4.4 J	0.78 J
2,3,4,7,8-PECDF	0.076 U	1.5 J	0.18 J	0.67 J	1.5 J	0.59 J	1.4 J	1.3 J	0.76 J	0.65 J	1.6 J	0.35 J	0.98 J	0.36 J
2,3,7,8-TCDD	0.04 U	0.045 U	0.028 U	0.15 J	0.26 J	0.037 U	0.54 J	0.23 J	0.13 U	0.16 J	0.14 J	0.035 U	0.63 J	0.094 J
2,3,7,8-TCDF	0.15 J	1.2	0.32 U	0.64 J	1.2	0.48 J	1.2	1.8	0.66 J	0.43 J	1.2	0.33 J	0.77 J	0.17 J
TEQ	3.0874	8.0365	1.5035	5.8817	13.751	5.2619	31.178	6.3399	6.7074	3.9707	11.439	3.8678	18.2623	4.3118
TOTAL HPCDD	120	300	57	240	580	200	1500	210	280	110	470	120	860	170
TOTAL HPCDF	18	180 J	14	70 J	460	31	240	51	61 J	62	240	39	330	67
TOTAL HXCDD	7.7 J	52	9.1 J	40	81 J	43 J	320 J	35	53	18 J	79	14	130 J	27
TOTAL HXCDF	6.8 J	63	10	28	110 J	21 J	150 J	32	30 J	20 J	95	13 J	120	24 J
TOTAL PECDD	1.8 J	6.9 J	0.047 U	4.4 J	8.4 J	5.6 J	36	7.7 J	5.1 J	3.4 J	10 J	2.9 J	12 J	3.2 J
TOTAL PECDF	1.3 J	20 J	4.4 J	10 J	20 J	8.3 J	34 J	22 J	10 J	8.8 J	29 J	3.4 J	24 J	5.8 J
TOTAL TCDD	0.59 J	2 J	0.36 J	1.5 J	2.2 J	0.91 J	4.7 J	3.2 J	1.2	1.8 J	2.2 J	1.2 J	2.7 J	0.92 J
TOTAL TCDF	1 J	11 J	2.4 J	6 J	13 J	5.2 J	11 J	15 J	7.9 J	6.6 J	11 J	2.7 J	9.4 J	1.7 J
METALS (MG/KG)														
ALUMINUM	8490	15000	18200	13400	16200	14700	12500	13400	12800	8650 J	15700 J	11600 J	13000 J	12500 J
ANTIMONY	0.11 J	0.17 J	0.07 U	0.22 J	0.17 J	0.43 J	0.66 J	0.59 J	0.28 J	0.15 J	0.23 J	0.14 J	0.19 J	0.11 J
ARSENIC	5.5	8.5	5.4	11.4	8.4	5.8	7.1	8.2	5.6	4.8	8.7	8.1	8	6.9 J
BARIUM	14.5	14.7	11.5	14.9	15.3	13.9	20.2	18.5	13.8	12.8	17.2	17.2	12.3	15.8
BERYLLIUM	0.31	0.46	0.38	0.52	0.34	0.36	0.38	0.38	0.33	0.32	0.56	0.42	0.39	0.39
CADMIUM	0.08	0.06 J	0.07 J	0.09	0.1	0.09	0.1	0.1	0.1	0.05 J	0.07 J	0.07 J	0.06 J	0.08 J
CALCIUM	307 J	536 J	908 J	789 J	740 J	790 J	660 J	673 J	742 J	363 J	578 J	419 J	573 J	718 J
CHROMIUM	10.8 J	21.2 J	24.2 J	19.1 J	22 J	20.8 J	16.6 J	18.6 J	16.7 J	12.3	22.3	14.4	18.8	17.1
COBALT	12	11.5	14.8	12.7	11.8	12.6	8.1	8.9	10.8	7.4	11.8	13.9	10.8	11.9
COPPER	16.6	28.7	19.5	24.2	23	19.6	19.1	19.8	16.7	17.3	25.3	29.8	27.2	19.8
IRON	19500	33400	34500	28900	31000	28600	21500	25800	23800	17500 J	31100 J	24100 J	24800 J	23100 J
LEAD	10.3 J	30.7 J	14.9	22.5 J	31.3 J	26.9 J	47.1 J	47.1 J	25.4 J	13.2 J	31.1 J	12.4 J	22.1 J	18
MAGNESIUM	3020 J	4950 J	6180	4070 J	5160 J	4540 J	3280 J	3830 J	4360 J	2630 J	4760 J	3790 J	3970 J	3640 J
MANGANESE	350 J	259 J	294	284 J	261 J	270 J	196 J	206 J	223 J	211 J	238 J	400 J	231 J	298 J
MERCURY	0.005 J	0.04	0.02 J	0.04	0.05	0.02 U	0.04	0.04	0.04	0.02 U	0.03	0.02 U	0.04	0.04
NICKEL	16.9	25.9	28.8	24.5	27.6	25.6	18.2	21.1	22.4	14.2	26.5	24	23.3	20.3
POTASSIUM	447	374	282	429	368	372	440	338	309	341	332	383	306	363
SELENIUM	0.3 J	0.31 J	0.25 U	0.35 J	0.26 U	0.24 U	0.32 J	0.28 J	0.25 U	0.34 U	0.43 U	0.26 U	0.39 U	0.39 J
SILVER	0.02 J	0.05 J	0.03 J	0.22	0.05 J	0.04 J	0.07 J	0.07 J	0.04 J	0.04 J	0.06 J	0.03 J	0.05 J	0.03 J
SODIUM	32.7 U	35.1 U	33 U	41.4 U	34.2 U	38 U	42.7 U	38.5 U	38.8 U	17 U	28.2 J	21.8 U	23.4 J	38 U
THALLIUM	0.04 J	0.04 J	0.033 U	0.06 J	0.05 J	0.04 J	0.08	0.06 J	0.04 J	0.04 J	0.06 J	0.05 J	0.05 J	0.05 J
VANADIUM	14.4	33.2	19.6	25.8	32.4	21.8	30.4	30.6	22.2	17.4 J	30.7 J	19.2 J	24.2 J	19.8
ZINC	37.2 J	64.4 J	61.2	56.8 J	63.4 J	62.4 J	49.2 J	53.7 J	52 J	34.5 J	58.8 J	51.5 J	52.1 J	49.3 J
MISCELLANEOUS PARAMETERS (%)														
TOTAL SOLIDS	96	94	94	96	96	97	93	94	94	95	94	96	94	97
PETROLEUM HYDROCARBONS (MG/KG)														
ExTPH (C08-C44)	NA	NA	NA	NA	NA	NA	NA	NA	160 J	NA	NA	27 J	NA	NA
GRO (C05-C12)	NA	NA	NA	NA	NA	NA	NA	NA	2.4 U	NA	NA	2.6 J	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)														
2-METHYLNAPHTHALENE	9.7 U	10 U	10 U	9.8 U	10 U	9.7 U	72	2.2 J	10 U	10 U	9.9 U	9.6 U	10 U	9.8 U
ACENAPHTHENE	9.7 U	2.1 J	10 U	1.9 J	8.1 J	9.7 U	140	3.8 J	1.8 J	10 U	2.8 J	9.6 U	1.6 J	9.8 U
ACENAPHTHYLENE	9.7 U	4.1 J	10 U	3.1 J	5 J	1.3 J	10 U	11 J	2.4 J	10 U	3.6 J	9.6 U	10 U	9.8 U
ANTHRACENE	1.7 J	4.8 J	10 U	4.1 J	21	4.1 J	360	16 J	4.7 J	2.2 J	6.7 J	1.6 J	3 J	1.9 J
BENZO(A)ANTHRACENE	7.6 J	40	19 J	45	110	24	530	95	36	26	64	18 J	33	23
BENZO(A)PYRENE	7.3 J	48	14 J	46	100	28 J	390	110	39	21	59	15 J	30	19 J
BENZO(B)FLUORANTHENE	13 J	77	30	74	170	42 J	500	210	67	39	110	26	50	35
BENZO(G,H,I)PERYLENE	3.7 J	27	6.9 J	23	46	17 J	110	47	20 J	12 J	31 J	8.6 J	17 J	11 J
BENZO(K)FLUORANTHENE	5 J	30	9.8 J	30	59	21 J	180	62	27	10 J	31	6.5 J	20 J	11 J
CHRYSENE	9.9 J	54	23	58	130	37	480	130	50	24	66	15 J	34	21
DIBENZO(A,H)ANTHRACENE	9.7 U	12 J	9.4 J	11 J	25	7.3 J	58	23	10 J	7.9 J	21 J	6.5 J	9.7 J	7.7 J
FLUORANTHENE	21	92	40 J	87	240	57	1100	190	80	54	120	33	76	44
FLUORENE	9.7 U	10 U	10 U	9.8 U	8.7 J	9.7 U	130	3.7 J	10 U	10 U	9.9 U	9.6 U	10 U	9.8 U
INDENO(1,2,3-CD)PYRENE	9.7 U	43 J	18 J	33 J	76 J	20 J	210	84	27	37 J	100 J	24 J	56 J	33 J
NAPHTHALENE	9.7 U	10 U	10 U	9.8 U	10 U	9.7 U	96	9.7 U	10 U	10 U	9.9 U	9.6 U	10 U	9.8 U
PHENANTHRENE	8.6 J	39	10 U	31	130	27	1100	73	34	19 J	46	12 J	27	15 J
PYRENE	15 J	83	30	80	210	57	960	190	78	39	98	24	58	32
TOTAL PAHS	92.8	556	200.1	527.1	1338.8	342.7	6416	1250.7	476.9	291.1	759.1	190.2	415.3	253.6

APPENDIX E-5
SOIL SAMPLE ANALYTICAL DATA - AOC 004/5 SURFACE SOIL

SAMPLE ID	TF2-004/5-SS1055-000.8	TF2-004/5-SS1056-000.6	TF2-004/5-SS1057-0001	TF2-004/5-SS1058-000.5	TF2-004/5-SS1059-000.6	TF2-004/5-SS1060-000.5	TF2-004/5-SS1061-000.6	TF2-004/5-SS1061-000.6-AVG	TF2-004/5-SS1061-000.6-D	TF2-004/5-SS1062-000.8	TF2-004/5-SS1063-000.6	TF2-004/5-SS1064-000.6	TF2-004/5-SS1065-000.5	TF2-004/5-SS1065-000.5-AVG
LOCATION ID	TF2-004/5-SB1055	TF2-004/5-SB1056	TF2-004/5-SB1057	TF2-004/5-SB1058	TF2-004/5-SB1059	TF2-004/5-SB1060	TF2-004/5-SB1061	TF2-004/5-SB1061	TF2-004/5-SB1061	TF2-004/5-SB1062	TF2-004/5-SB1063	TF2-004/5-SB1064	TF2-004/5-SB1065	TF2-004/5-SB1065
SAMPLE DATE	10/21/2013	10/21/2013	10/21/2013	10/22/2013	10/22/2013	10/22/2013	10/21/2013	20131021	10/21/2013	10/21/2013	10/22/2013	10/22/2013	10/22/2013	20131022
TOP DEPTH (FT)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BOTTOM DEPTH (FT)	0.8	0.6	1	0.5	0.6	0.5	0.6	0.6	0.6	0.8	0.6	0.6	0.5	0.5
SACODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	ORIG	AVG
QC TYPE	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)														
1,2,3,4,6,7,8,9-OCDD	1900	3700	6400	1400	6400	5500	3400	3500	3600	4900	1700	1900	3000	3050
1,2,3,4,6,7,8,9-OCDF	22	21	43	42	20	210	40	44.5	49	29	34	44	100	94.5
1,2,3,4,6,7,8-HPCDD	55	130	420	48	59	300	110	115	120	120	50	87	170	170
1,2,3,4,6,7,8-HPCDF	13	16	44	14	6.9 J	95	22	22.5	23	17	15	22	51	48.5
1,2,3,4,7,8,9-HPCDF	0.76 J	0.73 J	1.6 J	0.91 J	0.11 U	4.9 J	1.4 J	1.2	1 J	1.2 J	1 J	1.3 J	2.9 J	2.65
1,2,3,4,7,8-HXCDD	0.87 J	3 J	7.2	0.64 J	0.53 J	4.9 J	2.3 J	2.25	2.2 J	2.2 J	0.66 J	1.2 J	2.7 J	2.65
1,2,3,4,7,8-HXCDF	1.4 J	1.9 J	3.2 J	1.5 J	0.51 J	8.1	1.9 J	2	2.1 J	2 J	1.8 J	1.8 J	4.1 J	4.05
1,2,3,6,7,8-HXCDD	2.4 J	6.7	23	1.6 J	1 J	13	5.7	5.65	5.6	5.7	2 J	3.8 J	6.8	6.65
1,2,3,6,7,8-HXCDF	0.84 J	1.7 J	2.8 J	1 J	0.64 J	5.6	1.3 J	1.3	1.3 J	1.3 J	1.4 J	1.3 J	3.1 J	3.1
1,2,3,7,8,9-HXCDD	1.7 J	6.4	14	1.5 J	1.1 J	10	4.7 J	4.8	4.9 J	4.9 J	1.7 J	2.6 J	5.4	5.65
1,2,3,7,8,9-HXCDF	0.12 U	0.11 U	0.11 U	0.081 U	0.059 U	0.098 U	0.088 U	0.092 U	0.096 U	0.099 U	0.087 U	0.1 U	0.099 U	0.1245 U
1,2,3,7,8-PECDD	0.31 J	1.2 J	2.5 J	0.3 J	0.18 J	1.9 J	0.98 J	0.945	0.91 J	1.2 J	0.27 J	0.59 J	1.1 J	1.1
1,2,3,7,8-PECDF	0.14 J	0.45 J	0.5 J	0.066 U	0.048 U	2 J	0.3 J	0.32	0.34 J	0.58 J	0.4 J	0.53 J	0.94 J	0.905
2,3,4,6,7,8-HXCDF	0.59 J	0.98 J	2.2 J	0.94 J	0.41 J	5.7	1.2 J	1.2	1.2 J	1.1 J	1.1 J	2.3 J	3.3 J	3.15
2,3,4,7,8-PECDF	0.16 J	0.25 J	1 J	0.34 J	0.05 U	2.4 J	0.51 J	0.51	0.51 J	0.84 J	0.48 J	0.64 J	1.4 J	1.4
2,3,7,8-TCDD	0.043 U	0.31 J	0.19 J	0.036 U	0.042 U	0.28 J	0.056 U	0.114	0.2 J	0.17 J	0.05 U	0.16 J	0.18 J	0.104
2,3,7,8-TCDF	0.18 J	0.19 J	0.56 J	0.42 J	0.065 U	2	0.43 J	0.425	0.42 J	0.76 J	0.49 J	0.44 J	1	1.1
TEQ	2.4244	6.2691	14.8899	2.2237	3.184	13.602	5.261	5.42045	5.5799	6.2961	2.5212	3.9881	7.5372	7.427
TOTAL HPCDD	93	250	730	82	100	510	200	210	220	210	90	150	290	290
TOTAL HPCDF	31	37	110	42	17 J	240	56	59	62	39	40	56	130	125
TOTAL HXCDD	15	49	140	10 J	7.5 J	87	34 J	35	36	41 J	14 J	27 J	45	46
TOTAL HXCDF	13 J	23	77	14	6.6 J	120 J	28	29	30	24	38 J	28 J	68 J	68
TOTAL PECDD	2.4 J	8.4 J	14 J	1.5 J	1.6 J	14 J	4.7 J	4.75	4.8 J	6.9 J	2.8 J	4.6 J	7.4 J	7.85
TOTAL PECDF	6.5 J	8 J	16 J	3.7 J	1.4 J	45 J	9.5 J	9.35	9.2 J	13 J	9.9 J	12 J	26 J	27.5
TOTAL TCDD	0.46 J	1.3 J	1.7 J	0.48 J	1.3	5.1 J	1.3 J	1.25	1.2 J	2.2 J	0.76 J	2.1 J	1.8 J	2.3
TOTAL TCDF	2.4 J	3.4 J	6.2 J	2.8 J	1.2 J	23	5 J	4.55	4.1 J	8.5 J	4.6 J	5.8 J	11 J	10.3
METALS (MG/KG)														
ALUMINUM	16200 J	12400 J	6960 J	15100 J	10100 J	16200 J	9090 J	10695	12300 J	11400 J	14600 J	14000 J	13600 J	13550
ANTIMONY	0.07 J	6.6 J	0.43 J	0.18 J	0.09 J	0.22 J	0.2 J	0.375	0.55 J	0.36 J	0.23 J	0.15 J	0.19 J	0.17
ARSENIC	6.7	7.8 J	3.2 J	8.3	5.1	7.8	3.8	4.7	5.6	5.3	10.6	6.4	6.6	8.55
BARIUM	13.1	17.2	15.8	11.8	17.9	15.9	12.8	14.55	16.3	17.8	14	15.2	18.1	16.35
BERYLLIUM	0.39	0.39	0.33	0.84	0.37	0.42	0.3	0.31	0.32	0.35	0.62	0.46	0.41 J	0.855
CADMIUM	0.08	0.08	0.08 J	0.07 J	0.07 J	0.07 J	0.07 J	0.085	0.1	0.08 J	0.06 J	0.08 J	0.07 J	0.07
CALCIUM	1190 J	739 J	588 J	653 J	467 J	731 J	890 J	785	680 J	710 J	550 J	428 J	561 J	516.5
CHROMIUM	23.6	18.3	9.4	21.7	12.8	22.7	12.2	13.5	14.8	15	20.4	19.3	18.6	18.7
COBALT	16.2	11.7	5	16.4	9.3	13.2	7.3	8.15	9	7.4	11.7	13.3	12.7	12.45
COPPER	24.9	18.1	11.5	32.6	16.1	27.1	13.9	15.6	17.3	16.4	39.9	35.5	25.9	29.8
IRON	31800 J	22900 J	11700 J	32000 J	19000 J	31600 J	17100 J	19700	22300 J	18500 J	30600 J	27200 J	26300 J	29350
LEAD	27.4 J	30.3	47	20.2 J	10.3 J	34.5 J	20.7 J	25.35	30 J	51.2 J	17.2 J	20.9 J	22 J	23.15
MAGNESIUM	5440 J	3750 J	1810 J	4850 J	3170 J	5260 J	2740 J	3230	3720 J	3060 J	4400 J	4150 J	4300 J	4255
MANGANESE	297 J	266 J	195 J	353 J	297 J	265 J	179 J	216	253 J	188 J	266 J	262 J	256 J	261.5
MERCURY	0.014 U	0.03	0.02 U	0.02 U	0.013 U	0.08 J	0.04 J	0.04	0.04 J	0.04 J	0.02 U	0.03 J	0.03 J	0.035
NICKEL	30.5	20.8	10.7	29.6	17.5	28.6	13.2	15.7	18.2	17	25	23	22.2	24.95
POTASSIUM	258	343	318	291	461	301	260	285	310	310	296	267	371	319.5
SELENIUM	0.38 U	0.39 J	0.33 J	0.34 U	0.28 U	0.29 U	0.26 U	0.27 U	0.28 U	0.28 U	0.48 U	0.28 U	0.33 U	0.305 U
SILVER	0.02 J	0.03 J	0.04 J	0.05 J	0.02 J	0.08	0.03 J	0.035	0.04 J	0.05 J	0.04 J	0.05 J	0.06 J	0.055
SODIUM	20.7 U	34.4 U	40 U	25 U	21.6 U	25.9 J	19.1 J	19.1 J	23.4 U	30.6 J	22.6 U	23.5 U	27.1 J	19.5
THALLIUM	0.03 J	0.04 J	0.05 J	0.04 J	0.05 J	0.05 J	0.04 J	0.04	0.04 J	0.06 J	0.04 J	0.05 J	0.04 J	0.04
VANADIUM	19 J	18.7	18	23.1 J	16.8 J	33.4 J	14.1 J	16.9	19.7 J	23.6 J	22 J	22.8 J	26.4 J	25
ZINC	63.4 J	50.2 J	35.4 J	64.6 J	40.8 J	62 J	36.7 J	43	49.3 J	45.6 J	60.6 J	50.4 J	52.1 J	58.5
MISCELLANEOUS PARAMETERS (%)														
TOTAL SOLIDS	95	96	96	95	96	94	96	96	96	93	97	97	96	96
PETROLEUM HYDROCARBONS (MG/KG)														
ExTPH (C08-C44)	NA	100 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	38 J	38 J
GRO (C05-C12)	NA	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3 U	3 U
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)														
2-METHYLNAPHTHALENE	9.3 U	9.8 U	10 U	10 U	10 U	9.8 U	9.4 U	9.55 U	9.7 U	9.8 U	9.7 U	9.3 U	9.2 U	9.3 U
ACENAPHTHENE	9.3 U	1.6 J	4.2 J	10 U	10 U	3.6 J	2.8 J	7.4	12 J	13 J	9.7 U	9.3 U	1.6 J	1.6 J
ACENAPHTHYLENE	9.3 U	9.8 U	10 U	10 U	10 U	6.4 J	1.9 J	1.9 J	9.7 U	3 J	9.7 U	9.3 U	2.4 J	2.2
ANTHRACENE	2.8 J	3.2 J	7.4 J	2 J	10 U	8 J	8.3 J	22.15	36	22	2.8 J	1.4 J	3.4 J	2.95
BENZO(A)ANTHRACENE	22	23	37	20 J	13 J	91	71	75.5	80	140	25	14 J	39	27.75
BENZO(A)PYRENE	16 J	22	33	17 J	12 J	88	61	62.5	64	110	21	13 J	38	34
BENZO(B)FLUORANTHENE	27	40	64	30	20 J	170	120	110	100	200	38	21	75	65
BENZO(G,H,I)PERYLENE	8.1 J	9.8 J	20 J	9.1 J	7.4 J	43 J	32 J	29.5	27 J	39 J	10 J	5.2 J	18 J	17
BENZO(K)FLUORANTHENE	7.8 J	13 J	19 J	8.2 J	4.5 J	46	39	35.5	32	57	10 J	11 J	21	20
CHRYSENE	18 J	28	47	17 J	9 J	92	82	84	86	140	21	19	44	38
DIBENZO(A,H)ANTHRACENE	6.3 J	3.9 J	10 U	7.2 J	6.2 J	31 J	14 J	13.5	13 J	16 J	7.7 J	1.8 J	12 J	11.5
FLUORANTHENE	40	46	78	41	21	170	110	125	140	260	52	34	90	76.5
FLUORENE	9.3 U	9.8 U	3.7 J	10 U	10 U	3.5 J	9.4 U	7.85	11 J	12 J	9.7 U	9.3 U	9.2 U	9.3 U
INDENO(1,2,3-CD)PYRENE	22 J	22	35	26 J	20 J	150 J	63	58	53	89	33 J	11 J	62 J	57
NAPHTHALENE	9.3 U	9.8 U	10 U	10 U	10 U	9.8 U	9.4 U	3 J	3 J	4 J	9.7 U	9.3 U	9.2 U	9.3 U
PHENANTHRENE	13 J	22	50	17 J	8.2 J	62	49 J	84.5	120 J	180	19 J	15 J	33	28.5
PYRENE	25	43	74	30	15 J	130	120	130	140	240	35	29	66	58
TOTAL PAHS	208	277.5	472.3	224.5	136.3	1094.5	774	845.5	917	1525	274.5	175.4	505.4	430.95

APPENDIX E-5
SOIL SAMPLE ANALYTICAL DATA - AOC 004/5 SURFACE SOIL

SAMPLE ID	TF2-004/5-SS1065-000.5-D	TF2-004/5-SS1066-000.9	TF2-004/5-SS1067-000.7	TF2-004/5-SS1068-000.5
LOCATION ID	TF2-004/5-SB1065	TF2-004/5-SB1066	TF2-004/5-SB1067	TF2-004/5-SB1068
SAMPLE DATE	10/22/2013	10/21/2013	10/21/2013	10/22/2013
TOP DEPTH (FT)	0	0	0	0
BOTTOM DEPTH (FT)	0.5	0.9	0.7	0.5
SACODE	DUP	NORMAL	NORMAL	NORMAL
QC TYPE	FD	NM	NM	NM
DIOXINS/FURANS (NG/KG)				
1,2,3,4,6,7,8,9-OCDD	3100	5800	3700	2400
1,2,3,4,6,7,8,9-OCDF	89	69	40	65
1,2,3,4,6,7,8-HPCDD	170	150	130	160
1,2,3,4,6,7,8-HPCDF	46	33	24	41
1,2,3,4,7,8,9-HPCDF	2.4 J	1.8 J	1.4 J	1.7 J
1,2,3,4,7,8-HXCDD	2.6 J	3.1 J	2.9 J	2.3 J
1,2,3,4,7,8-HXCDF	4 J	2.4 J	2.1 J	2.5 J
1,2,3,6,7,8-HXCDD	6.5	7.2	6.8	7.2
1,2,3,6,7,8-HXCDF	3.1 J	1.8 J	2.1 J	1.9 J
1,2,3,7,8,9-HXCDD	5.9	6.2	6.3	5.2 J
1,2,3,7,8,9-HXCDF	0.15 U	0.088 U	0.13 U	0.11 U
1,2,3,7,8-PECDD	1.1 J	1.4 J	1.3 J	0.75 J
1,2,3,7,8-PECDF	0.87 J	0.35 J	0.1 U	0.48 J
2,3,4,6,7,8-HXCDF	3 J	1.5 J	1.9 J	1.8 J
2,3,4,7,8-PECDF	1.4 J	0.64 J	0.56 J	0.72 J
2,3,7,8-TCDD	0.056 U	0.26 J	0.14 U	0.098 U
2,3,7,8-TCDF	1.2	0.51 J	0.71 J	0.33 U
TEQ	7.3168	7.7422	6.425	5.8369
TOTAL HPCDD	290	270	240	270
TOTAL HPCDF	120 J	88	57	100
TOTAL HXCDD	47 J	44	47	44
TOTAL HXCDF	68	36	38	43
TOTAL PECDD	8.3 J	5.5 J	7.4 J	6.1 J
TOTAL PECDF	29	9.8 J	11 J	14 J
TOTAL TCDD	2.8 J	1.1 J	0.82 J	2.3 J
TOTAL TCDF	9.6 J	4.8 J	4.3 J	5.9 J
METALS (MG/KG)				
ALUMINUM	13500 J	9960 J	9460 J	15600 J
ANTIMONY	0.15 J	2 J	0.45 J	0.13 J
ARSENIC	10.5	6	5	8.1
BARIUM	14.6	18.7	20.2	12.8
BERYLLIUM	1.3 J	0.37	0.36	0.47
CADMIUM	0.07 J	0.1	0.08 J	0.06
CALCIUM	472 J	656 J	651 J	696 J
CHROMIUM	18.8	13.5	13.2	19.3
COBALT	12.2	8.5	7.6	11.1
COPPER	33.7	14.5	14.9	31.1
IRON	32400 J	17000 J	17000 J	29900 J
LEAD	24.3 J	60 J	34 J	24.7 J
MAGNESIUM	4210 J	2390 J	2590 J	4870 J
MANGANESE	267 J	189 J	202 J	265 J
MERCURY	0.04 J	0.05 J	0.03 J	0.04 J
NICKEL	27.7	14.4	14.1	22.5
POTASSIUM	268	328	384	312
SELENIUM	0.28 U	0.28 U	0.29 U	0.23 U
SILVER	0.05 J	0.04 J	0.03 J	0.08
SODIUM	23.8 U	27.4 J	28.2 J	24.5 U
THALLIUM	0.04 J	0.06 J	0.06 J	0.04 J
VANADIUM	23.6 J	22.7 J	18.7 J	25.5 J
ZINC	64.9 J	43.5 J	41.9 J	50.4 J
MISCELLANEOUS PARAMETERS (%)				
TOTAL SOLIDS	96	92	94	94
PETROLEUM HYDROCARBONS (MG/KG)				
ExTPH (C08-C44)	NA	NA	NA	NA
GRO (C05-C12)	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)				
2-METHYLNAPHTHALENE	9.4 U	10 U	10 U	10 U
ACENAPHTHENE	9.4 U	2.3 J	38	10 U
ACENAPHTHYLENE	2 J	10 U	10 U	1.4 J
ANTHRACENE	2.5 J	6.6 J	94	1.9 J
BENZO(A)ANTHRACENE	33 U	50	350	26 U
BENZO(A)PYRENE	30 J	40	190	26 J
BENZO(B)FLUORANTHENE	55 J	87	380	43 J
BENZO(G,H,I)PERYLENE	16 J	21 J	65 J	14 J
BENZO(K)FLUORANTHENE	19 J	22	120	14 J
CHRYSENE	32	54	370	24
DIBENZO(A,H)ANTHRACENE	11 J	9.2 J	37	8.9 J
FLUORANTHENE	63	91	750	46
FLUORENE	9.4 U	10 U	43	10 U
INDENO(1,2,3-CD)PYRENE	52	41	140	40
NAPHTHALENE	9.4 U	10 U	13 J	10 U
PHENANTHRENE	24	43	620	18 J
PYRENE	50	98	830	38
TOTAL PAHS	356.5	565.1	4040	275.2

E-6 SOIL SAMPLE ANALYTICAL DATA – AOC-004/5 SUBSURFACE SOIL

APPENDIX E-6
SOIL SAMPLE ANALYTICAL DATA - AOC-004/5 SUBSURFACE SOIL

SAMPLE ID	TF2-004/5-SB1021-0204	TF2-004/5-SB1021-0204-D	TF2-004/5-SB1021-0204-D	TF2-004/5-SB1021-0608	TF2-004/5-SB1025-2.604	TF2-004/5-SB1026-022.7	TF2-004/5-SB1026-0204	TF2-004/5-SB1031-0204	TF2-004/5-SB1031-0810	TF2-004/5-SB1032-0204	TF2-004/5-SB1038-0204	TF2-004/5-SB1038-0810	TF2-004/5-SB1039-0406	TF2-004/5-SB1040-0204
LOCATION ID	TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1025	TF2-004/5-SB1026	TF2-004/5-SB1026	TF2-004/5-SB1031	TF2-004/5-SB1031	TF2-004/5-SB1032	TF2-004/5-SB1038	TF2-004/5-SB1038	TF2-004/5-SB1039	TF2-004/5-SB1040
SAMPLE DATE	11/13/2013	20131113	11/13/2013	11/13/2013	11/13/2013	11/13/2013	11/13/2013	11/14/2013	11/14/2013	11/13/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013
TOP DEPTH (FT)	2	2	2	6	2.6	2	2	2	8	2	2	8	4	2
BOTTOM DEPTH (FT)	4	4	4	8	4	2.7	4	4	10	4	4	10	6	4
SACODE	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
DIOXINS/FURANS (NG/KG)														
1,2,3,4,6,7,8,9-OCDD	5700	4250	2800	NA	2000	NA	1700	1900	NA	5500	5000	NA	NA	3400
1,2,3,4,6,7,8,9-OCDF	1.5 U	1.65 U	1.8 U	NA	0.69 U	NA	9.5 J	1.1 U	NA	1.5 U	1.8 U	NA	NA	1 U
1,2,3,4,6,7,8-HPCDD	22	18.5	15	NA	9.1	NA	19	7.9	NA	24	25	NA	NA	17
1,2,3,4,6,7,8-HPCDF	0.47 U	0.545 U	0.62 U	NA	0.32 U	NA	5.9	1.3 U	NA	0.34 U	0.82 U	NA	NA	0.56 U
1,2,3,4,7,8,9-HPCDF	0.034 U	0.036 U	0.038 U	NA	0.028 U	NA	0.085 U	0.023 U	NA	0.086 J	0.052 U	NA	NA	0.02 U
1,2,3,4,7,8-HXCDD	0.088 J	0.06375	0.079 U	NA	0.08 J	NA	0.36 J	0.081 J	NA	0.19 J	0.16 J	NA	NA	0.03 U
1,2,3,4,7,8-HXCDF	0.15 U	0.155 U	0.16 U	NA	0.22 U	NA	0.5 J	0.65 U	NA	0.08 U	0.44 J	NA	NA	0.18 U
1,2,3,6,7,8-HXCDD	0.087 U	0.0715 U	0.056 U	NA	0.071 U	NA	0.71 J	0.14 J	NA	0.099 U	0.19 J	NA	NA	0.2 J
1,2,3,6,7,8-HXCDF	0.36 J	0.35	0.34 J	NA	0.16 J	NA	0.7 J	0.42 J	NA	0.6 J	0.22 U	NA	NA	0.35 J
1,2,3,7,8,9-HXCDD	0.15 J	0.0895	0.058 U	NA	0.13 J	NA	0.81 J	0.19 J	NA	0.18 J	0.061 U	NA	NA	0.13 J
1,2,3,7,8,9-HXCDF	0.031 U	0.031 U	0.031 U	NA	0.024 U	NA	0.044 U	0.094 J	NA	0.032 U	0.04 U	NA	NA	0.018 U
1,2,3,7,8-PECDD	0.072 U	0.061 U	0.05 U	NA	0.039 U	NA	0.18 J	0.035 U	NA	0.069 U	0.078 U	NA	NA	0.035 U
1,2,3,7,8-PECDF	0.028 U	0.03 U	0.032 U	NA	0.051 J	NA	0.045 U	0.026 U	NA	0.035 U	0.054 J	NA	NA	0.024 U
2,3,4,6,7,8-HXCDF	0.12 J	0.12	0.12 J	NA	0.022 U	NA	1 J	0.02 U	NA	0.029 U	0.12 J	NA	NA	0.016 U
2,3,4,7,8-PECDF	0.029 U	0.031 U	0.033 U	NA	0.062 J	NA	0.18 J	0.12 J	NA	0.037 U	0.046 U	NA	NA	0.062 J
2,3,7,8-TCDD	0.032 U	0.0305 U	0.029 U	NA	0.033 U	NA	0.03 U	0.027 U	NA	0.033 U	0.051 U	NA	NA	0.028 U
2,3,7,8-TCDF	0.43 U	0.237 U	0.044 UJ	NA	0.28 U	NA	0.34 U	0.099 U	NA	0.42 U	0.072 UJ	NA	NA	0.19 U
TEQ	2.0018	1.5189	1.036	NA	0.74813	NA	1.40385	0.7775	NA	1.98786	1.84262	NA	NA	1.2766
TOTAL HPCDD	38	31.5	25	NA	16	NA	38	13	NA	40	43	NA	NA	25
TOTAL HPCDF	1 U	1.05	1.6 J	NA	0.43 U	NA	15	1.5 U	NA	0.62 U	1.6 J	NA	NA	0.89 U
TOTAL HXCDD	1.6 J	1.085	0.57 J	NA	0.93 J	NA	6 J	1.2 J	NA	1 J	1.5 J	NA	NA	0.95 J
TOTAL HXCDF	1.6 J	1.7	1.8 J	NA	0.48 J	NA	19 J	1.8 J	NA	0.92 J	1.7 J	NA	NA	1.1 U
TOTAL PECDD	0.072 U	0.353	0.67 J	NA	0.043 J	NA	0.18 J	1 J	NA	0.069 U	0.83 J	NA	NA	0.53 J
TOTAL PECDF	1.1 J	1.05	1 J	NA	0.31 J	NA	9.6 J	0.88 J	NA	0.1 J	0.85 J	NA	NA	0.45 J
TOTAL TCDD	0.81 J	0.575	0.34 J	NA	0.49 J	NA	0.19 J	0.5 J	NA	0.84 J	0.54 J	NA	NA	0.14 J
TOTAL TCDF	0.63 J	0.635	0.64 J	NA	0.86 J	NA	2 J	1 J	NA	0.67 J	0.92 J	NA	NA	0.47 J
METALS (MG/KG)														
ALUMINUM	13900	14500	15100	20700	12800	11800	NA	12300	17200	12800	15800	16800	12900	13300
ANTIMONY	0.04 J	0.05	0.06 J	0.1 J	0.06 J	0.15 J	NA	0.08 U	0.04 U	0.06 J	0.07 U	0.1 U	0.07 U	0.07 U
ARSENIC	7.4 J	8.65	9.9 J	13.4 J	5 J	7.1 J	NA	4.8	2.8	7.1 J	6.6	5.7	5.4	5
BARIUM	10.2	11.6	13	12.5	15.1	13.3	NA	16.1	7.7	13.9	16	12.5	14.2	13.1
BERYLLIUM	0.26	0.33	0.4	1	0.37	0.62	NA	0.36	0.25	0.34	0.4	0.34	0.35	0.34
CADMIUM	0.07	0.075	0.08	0.08 J	0.05 J	0.06 J	NA	0.05 J	0.1	0.1	0.06 J	0.06 J	0.06 J	0.06 J
CALCIUM	655	684	713	382	524	592	NA	607 J	782 J	880	863 J	690 J	716 J	587 J
CHROMIUM	18.9 J	18.95	19 J	28.8 J	14.8 J	13.6 J	NA	13.9 J	17.5 J	16.4 J	21.9 J	22 J	16 J	15.9 J
COBALT	14.6	16.8	19	25.4	8.4	11.3	NA	8.5	11.3	12	10.5	12.2	8.3	13.2
COPPER	22.6 J	23.7	24.8 J	63.9 J	12.7 J	34.9 J	NA	15.9	10.9	16 J	19.5	20.2	15.6	19.3
IRON	29100	30300	31500	45200	21400	27000	NA	19700	37600	25000	31700	32600	20900	24800
LEAD	8.9	10.7	12.5	19.9	9.4	19.2	NA	10	6.3	9.7	11.6	14.4	9	11.6
MAGNESIUM	4690	4750	4810	6870	3460	3710	NA	3260	5200	3940	4900	5330	3490	4470
MANGANESE	276	308	340	433	215	275	NA	225	244	312	250	265	219	300
MERCURY	0.04	0.025	0.01 J	0.02 J	0.03 J	0.02 J	NA	0.04	0.02 U	0.17	0.03	0.03 J	0.07	0.02 U
NICKEL	27 J	27.05	27.1 J	51.8 J	16.5 J	18.4 J	NA	15	17.8	23.2 J	22.3	23.7	17.2	20.6
POTASSIUM	226	271.5	317	270	384	333	NA	431	184	337	403	363	328	334
SELENIUM	0.28 U	0.31 U	0.34 U	0.4 U	0.34 U	0.54 U	NA	0.16 J	0.05 J	0.27 U	0.22 J	0.27 J	0.19 J	0.09 J
SILVER	0.02 J	0.02	0.02 J	0.02 J	0.03 J	0.03 J	NA	0.02 J	0.01 J	0.02 J	0.03 J	0.02 J	0.02 J	0.02 J
SODIUM	19.2 J	20.6	22 J	19.3 J	28 J	23.7 J	NA	47.6 U	29 U	23.5 J	47.7 U	46 U	51.7 U	34.3 U
THALLIUM	0.02 J	0.025	0.03 J	0.02 J	0.05 J	0.03 J	NA	0.06 U	0.028 U	0.04 J	0.04 U	0.03 U	0.05 U	0.03 U
VANADIUM	15	16.1	17.2	20.5	16.2	13.4	NA	15.9	29.1	16.4	18.5	20.6	17.2	13.6
ZINC	58.9 J	58.2	57.5 J	129 J	34.3 J	46.9 J	NA	40	58.1	46.9 J	52.8	54.9	36.9	44.9
MISCELLANEOUS PARAMETERS (%)														
TOTAL SOLIDS	92	92.5	93	95	91	95	NA	90	94	92	92	92	90	93
PETROLEUM HYDROCARBONS (MG/KG)														
ExTPH (C08-C44)	6.1 J	6.1 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GRO (C05-C12)	2 U	2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)														
2-METHYLNAPHTHALENE	4.8 J	4.8 J	9.8 U	10 U	3.7 J	10 U	NA	10 U	10 U	10 U	10 U	11 U	11 U	9.2 U
ACENAPHTHENE	11 U	10.4 U	9.8 U	10 U	11 U	14 J	NA	10 U	4.6 J	10 U	10 U	1.6 U	11 U	9.2 U
ACENAPHTHYLENE	3.5 J	3.5 J	9.8 U	1.9 J	11 U	3.3 J	NA	10 U	10 U	10 U	10 U	11 U	11 U	9.2 U
ANTHRACENE	11 U	10.4 U	9.8 U	10 U	11 U	24	NA	10 U	6.3 J	10 U	10 U	2.6 J	11 U	9.2 U
BENZO(A)ANTHRACENE	22 J	13.8	5.6 J	17 J	3.3 J	110 J	NA	10 U	6.2 J	2.7 J	10 U	5.3 J	4.8 J	2 J
BENZO(A)PYRENE	22 J	12.75	3.5 J	13 J	11 UJ	90 J	NA	10 U	4.3 J	10 UJ	10 U	4.4 J	11 U	9.2 U
BENZO(B)FLUORANTHENE	27 J	19	11 J	17 J	10 J	140 J	NA	8.8 J	9.7 J	9.2 J	8.7 J	12 J	12 J	8.1 J
BENZO(G,H,I)PERYLENE	11 J	7.95	9.8 U	5.5 J	11 U	52	NA	10 U	10 U	10 U	10 U	2.4 J	11 U	9.2 U
BENZO(K)FLUORANTHENE	10 J	7.45	9.8 U	6.1 J	11 U	44	NA	10 U	10 U	10 U	10 U	4.2 J	11 U	9.2 U
CHRYSENE	22 J	14.2	6.4 J	17 J	3.4 J	110 J	NA	10 U	5.7 J	2.9 J	2.2 J	5.9 J	5.7 J	2.2 J
DIBENZO(A,H)ANTHRACENE	10 J	7.45	9.8 U	10 U	11 U	25	NA	10 U	8 J	10 U	10 U	10 J	11 U	7.1 J
FLUORANTHENE	30 J	22	14 J	30 J	11 U	230 J	NA	2.1 J	11 J	10 U	4 J	9.3 J	9.4 J	3.8 J
FLUORENE	11 U	10.4 U	9.8 U	10 U	11 U	11 J	NA	10 U	10 U	10 U	10 U	11 U	11 U	9.2 U
INDENO(1,2,3-CD)PYRENE	22 J	14	6 J	13 J	6.4 J	100 J	NA	4.7 J	5.8 J	5.9 J	10 U	7.6 J	7.1 J	4 J
NAPHTHALENE	11 U	10.4 U	9.8 U	10 U	11 U	10 U	NA	10 U	10 U	10 U	10 U	11 U	11 U	9.2 U
PHENANTHRENE	20 U	15.5 U	11 U	18 U	11 U	130	NA	10 U	22	10 U	2.6 J	5.8 J	6.6 J	2.2 J
PYRENE	21 J	12.95	9.8 U	32	11 U	170	NA	10 U	12 J	10 U	3.2 J	8.3 J	11 J	3.5 J
TOTAL PAHS	205.3	125.9	46.5	152.5	26.8	1253.3	NA	15.6	95.6	20.7	20.7	77.8	56.6	32.9

APPENDIX E-6
SOIL SAMPLE ANALYTICAL DATA - AOC-004/5 SUBSURFACE SOIL

SAMPLE ID	TF2-004/5-SB1040-0810	TF2-004/5-SB1040-0810-	TF2-004/5-SB1040-0810-D	TF2-004/5-SB1041-022.5	TF2-004/5-SB1047-0204	TF2-004/5-SB1047-0608	TF2-004/5-SB1048-0204	TF2-004/5-SB1049-0204	TF2-004/5-SB1049-0810	TF2-004/5-SB1057-0304	TF2-004/5-SB1057-0608	TF2-004/5-SB1057-0608-	TF2-004/5-SB1057-0608-D	TF2-004/5-SB1058-0204
LOCATION ID	TF2-004/5-SB1040	TF2-004/5-SB1040	TF2-004/5-SB1040	TF2-004/5-SB1041	TF2-004/5-SB1047	TF2-004/5-SB1047	TF2-004/5-SB1048	TF2-004/5-SB1049	TF2-004/5-SB1049	TF2-004/5-SB1057	TF2-004/5-SB1057	TF2-004/5-SB1057	TF2-004/5-SB1057	TF2-004/5-SB1058
SAMPLE DATE	11/14/2013	20131114	11/14/2013	11/13/2013	11/14/2013	11/14/2013	11/13/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	20131114	11/14/2013	11/13/2013
TOP DEPTH (FT)	8	8	8	2	2	6	2	2	8	3	6	6	6	2
BOTTOM DEPTH (FT)	10	10	10	2.5	4	8	4	4	10	4	8	8	8	4
SACODE	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
QC TYPE	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM
DIOXINS/FURANS (NG/KG)														
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	8800	5800	NA	1400	1300	NA	1600	NA	NA	NA	2000
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	1.3 U	1 U	NA	0.64 U	2.2 U	NA	0.32 U	NA	NA	NA	1.9 U
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	40	27	NA	9.3	6	NA	7	NA	NA	NA	8.4
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	0.27 U	0.59 U	NA	0.65 U	1.1 U	NA	0.19 U	NA	NA	NA	0.58 U
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	0.035 U	0.048 U	NA	0.12 J	0.038 U	NA	0.038 U	NA	NA	NA	0.031 U
1,2,3,4,7,8-HXCDD	NA	NA	NA	0.13 J	0.22 J	NA	0.1 J	0.033 U	NA	0.064 U	NA	NA	NA	0.032 U
1,2,3,4,7,8-HXCDF	NA	NA	NA	0.096 U	0.5 J	NA	0.5 J	0.43 U	NA	0.08 U	NA	NA	NA	0.13 U
1,2,3,6,7,8-HXCDD	NA	NA	NA	0.11 U	0.27 J	NA	0.24 J	0.095 J	NA	0.045 U	NA	NA	NA	0.022 U
1,2,3,6,7,8-HXCDF	NA	NA	NA	0.17 J	0.4 U	NA	0.45 J	0.4 J	NA	0.25 U	NA	NA	NA	0.29 J
1,2,3,7,8,9-HXCDD	NA	NA	NA	0.13 J	0.26 J	NA	0.25 J	0.19 J	NA	0.047 U	NA	NA	NA	0.11 J
1,2,3,7,8,9-HXCDF	NA	NA	NA	0.049 J	0.17 J	NA	0.26 J	0.025 U	NA	0.03 U	NA	NA	NA	0.024 U
1,2,3,7,8-PECDD	NA	NA	NA	0.048 U	0.1 U	NA	0.039 U	0.047 UJ	NA	0.068 U	NA	NA	NA	0.039 U
1,2,3,7,8-PECDF	NA	NA	NA	0.03 U	0.092 J	NA	0.054 J	0.034 UJ	NA	0.035 U	NA	NA	NA	0.027 U
2,3,4,6,7,8-HXCDF	NA	NA	NA	0.022 U	0.074 J	NA	0.66 J	0.1 J	NA	0.027 U	NA	NA	NA	0.021 U
2,3,4,7,8-PECDF	NA	NA	NA	0.031 U	0.12 J	NA	0.18 J	0.13 J	NA	0.037 U	NA	NA	NA	0.029 U
2,3,7,8-TCDD	NA	NA	NA	0.033 U	0.059 U	NA	0.031 U	0.03 U	NA	0.043 U	NA	NA	NA	0.037 J
2,3,7,8-TCDF	NA	NA	NA	0.02 U	0.12 UJ	NA	0.55 U	0.13 UJ	NA	0.021 U	NA	NA	NA	0.017 U
TEQ	NA	NA	NA	3.0879	2.19816	NA	0.81582	0.5675	NA	0.55	NA	NA	NA	0.761
TOTAL HPCDD	NA	NA	NA	69	45	NA	19	10	NA	12	NA	NA	NA	14 J
TOTAL HPCDF	NA	NA	NA	0.4 U	1.1 U	NA	1.4 J	1.6 U	NA	0.26 U	NA	NA	NA	1.2 J
TOTAL HXCDD	NA	NA	NA	1.3 J	3.1 J	NA	3.3 J	1 J	NA	0.27 J	NA	NA	NA	0.46 J
TOTAL HXCDF	NA	NA	NA	0.49 J	2.6 J	NA	6 J	1.4 U	NA	0.33 U	NA	NA	NA	0.62 J
TOTAL PECDD	NA	NA	NA	0.048 U	1.7 J	NA	0.039 U	0.37 J	NA	0.82 J	NA	NA	NA	0.36 J
TOTAL PECDF	NA	NA	NA	0.18 J	3.7 J	NA	5.2 J	0.43 J	NA	0.037 U	NA	NA	NA	0.11 J
TOTAL TCDD	NA	NA	NA	0.4 J	0.55 J	NA	0.26 J	0.47 J	NA	0.7 J	NA	NA	NA	0.2 J
TOTAL TCDF	NA	NA	NA	0.55 J	2.2 J	NA	2 J	0.46 J	NA	0.33 J	NA	NA	NA	0.11 J
METALS (MG/KG)														
ALUMINUM	13800	13800	NA	15600	13200	15600	16300	12000	14600	12200	17400	16600	15800	20000
ANTIMONY	0.1 U	0.1 U	NA	0.06 U	0.08 U	0.07 U	0.04 J	0.07 U	0.08 U	0.09 J	0.1 J	0.1	0.1 J	0.06 U
ARSENIC	4.7	4.7	NA	6.1	6.6	7.8	5.9 J	4.4	8.3	5.3	8.9	7.75	6.6	7.4
BARIUM	15.3	15.3	NA	14	18.1	15.8	13.5	15.3	18.4	14.2	12.9	13	13.1	10.8
BERYLLIUM	0.36	0.36	NA	0.44	0.4	0.35	0.44	0.36	0.38	0.38	1.3 J	0.9	0.5 J	0.46
CADMIUM	0.05 J	0.05 J	NA	0.07 J	0.06 J	0.07	0.06 J	0.05 J	0.07 J	0.14	0.05 J	0.055	0.06 J	0.05 J
CALCIUM	822 J	822 J	NA	534 J	674 J	770 J	373	611 J	827 J	545 J	746 J	721.5	697 J	554 J
CHROMIUM	17.7 J	17.7 J	NA	19.9 J	16 J	18.6 J	21.4 J	14.2 J	17.8 J	15.1 J	23 J	21.3	19.6 J	27 J
COBALT	9	9	NA	11.2	8.7	15.4	10.4	7.4	13.7	8.3	23.5 J	18.55	13.6 J	15.2
COPPER	15.7	15.7	NA	16.5	13	22	21.1 J	11.8	15.7	13	23.3	21.25	19.2	26.4
IRON	23200	23200	NA	27600	20300	26600	30600	18900	24300	21600	41200	35400	29600	43500
LEAD	11.8	11.8	NA	14.8	11.7	11.4	13.6	8.6	11.6	8.4	15.4	13.9	12.4	15.1
MAGNESIUM	4020	4020	NA	4660	3340	4720	5050	3160	4220	3500	5660	5370	5080	7150
MANGANESE	236	236	NA	254	240	345	249	216	326	223	322	310.5	299	364
MERCURY	0.05	0.05	NA	0.03 J	0.02 J	0.02 J	0.005 J	0.02 J	0.07	0.02 J	0.02 J	0.025	0.03	0.016 U
NICKEL	17.5	17.5	NA	23.1	15.8	22.9	24.1 J	13.3	21.1	15.8	31	28.05	25.1	32.8
POTASSIUM	394	394	NA	371	427	397	300	412	480	588	324	336	348	310
SELENIUM	0.22 J	0.22 J	NA	0.28 U	0.24 U	0.18 U	0.3 U	0.24 U	0.29 J	0.86	0.2 U	0.225 U	0.25 U	0.33 U
SILVER	0.03 J	0.03 J	NA	0.02 J	0.032 U	0.024 U	0.02 J	0.031 U	0.04 J	0.03 U	0.027 U	0.0305 U	0.034 U	0.01 J
SODIUM	37.5 U	37.5 U	NA	34 U	37.1 U	31.4 U	22.5 J	34.1 U	45.4 U	34.7 U	28.3 U	31.15 U	34 U	29 U
THALLIUM	0.05 U	0.05 U	NA	0.05 U	0.2	0.05 J	0.03 J	0.05 J	0.06 U	0.25	0.04 J	0.03	0.04 U	0.06 U
VANADIUM	16.3	16.3	NA	18.8	18.6	17.1	17.8	16.2	17.9	14	18.3	18.1	17.9	19.1
ZINC	40.4	40.4	NA	47.1	36.2	50	49 J	34.8	46.9	33.5	60.5	55.95	51.4	75.1
MISCELLANEOUS PARAMETERS (%)														
TOTAL SOLIDS	86	87	88	94	90	88	94	91	88	91	91	91	91	94
PETROLEUM HYDROCARBONS (MG/KG)														
ExTPH (C08-C44)	7.8 J	7.8 J	11 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10 U
GRO (C05-C12)	2.2 U	2.15 U	2.1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1 U
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)														
2-METHYLNAPHTHALENE	10 U	10 U	NA	10 U	11 U	11 U	3.4 J	10 U	11 U	10 U	10 U	10.5 U	11 U	10 U
ACENAPHTHENE	10 U	10 U	NA	10 U	11 U	11 U	10 U	10 U	11 U	10 U	10 U	10.5 U	11 U	10 U
ACENAPHTHYLENE	10 U	10 U	NA	10 U	11 U	11 U	10 U	10 U	11 U	10 U	10 U	10.5 U	11 U	10 U
ANTHRACENE	10 U	10 U	NA	10 U	11 U	11 U	10 U	10 U	11 U	10 U	10 U	10.5 U	11 U	10 U
BENZO(A)ANTHRACENE	4.1 J	4.1 J	NA	3.9 J	8 J	2.8 J	2.7 J	10 U	2.2 J	2.2 J	5.2 J	3.65	2.1 J	10 U
BENZO(A)PYRENE	4.9 J	4.9 J	NA	10 U	5.3 J	11 U	10 UJ	10 U	11 U	10 U	4.8 J	4.8 J	11 U	10 UJ
BENZO(B)FLUORANTHENE	12 J	12 J	NA	9.5 J	14 J	11 J	9.5 J	8.5 J	9.4 J	10 U	12 J	10.75	9.5 J	8.3 J
BENZO(G,H,I)PERYLENE	3 J	3 J	NA	10 U	2.8 J	11 U	2.2 J	10 U	11 U	10 U	2.8 J	2.8 J	11 U	10 UJ
BENZO(K)FLUORANTHENE	3.5 J	3.5 J	NA	10 U	3.3 U	11 U	10 U	10 U	11 U	10 U	10 U	10.5 U	11 U	10 UJ
CHRYSENE	6.2 J	6.2 J	NA	3.9 J	8.2 J	3.6 J	3.4 J	1.8 U	2.4 J	2.4 J	6.2 J	4.4	2.6 J	1.9 J
DIBENZO(A,H)ANTHRACENE	8.3 J	8.3 J	NA	7.9 J	11 UJ	11 UJ	10 U	10 UJ	11 UJ	10 UJ	10 UJ	10.5 U	11 UJ	10 UJ
FLUORANTHENE	7.5 J	7.5 J	NA	12 U	24	11 U	10 U	10 U	11 U	10 U	10 U	10.5 U	11 U	10 U
FLUORENE	10 U	10 U	NA	10 U	11 U	11 U	10 U	10 U	11 U	10 U	10 U	10.5 U	11 U	10 U
INDENO(1,2,3-CD)PYRENE	8.7 J	8.7 J	NA	4.8 J	8.5 J	6.8 J	5.6 J	10 UJ	11 UJ	10 UJ	7.7 J	7.7 J	11 UJ	10 UJ
NAPHTHALENE	10 U	10 U	NA	10 U	11 U	11 U	10 U	10 U	11 U	10 U	10 U	10.5 U	11 U	10 U
PHENANTHRENE	3.8 J	3.8 J	NA	10 U	11 U	11 U	10 U	10 U	11 U	10 U	10 U	10.5 U	11 U	10 U
PYRENE	8 J	8 J	NA	10 U	19 J	11 U	10 U	10 U	11 U	10 U	10 U	10.5 U	11 U	10 U
TOTAL PAHS	70	70	NA	30	89.8	24.2	26.8	8.5	14	4.6	38.7	26.45	14.2	10.2

APPENDIX E-6
SOIL SAMPLE ANALYTICAL DATA - AOC-004/5 SUBSURFACE SOIL

SAMPLE ID	TF2-004/5-SB1064-0204	TF2-004/5-SB1064-0406	TF2-004/5-SB1065-0204	TF2-004/5-SB1065-0608	TF2-004/5-SB1066-0203	TF2-004/5-SB1068-0204	TF2-004/5-SB1068-0204-	TF2-004/5-SB1068-0204-D
LOCATION ID	TF2-004/5-SB1064	TF2-004/5-SB1064	TF2-004/5-SB1065	TF2-004/5-SB1065	TF2-004/5-SB1066	TF2-004/5-SB1068	TF2-004/5-SB1068	TF2-004/5-SB1068
SAMPLE DATE	11/13/2013	11/13/2013	11/14/2013	11/14/2013	11/14/2013	11/14/2013	20131114	11/14/2013
TOP DEPTH (FT)	2	4	2	6	2	2	2	2
BOTTOM DEPTH (FT)	4	6	4	8	3	4	4	4
SACODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	NM	NM	NM	NM	NM	NM	NM	FD
DIOXINS/FURANS (NG/KG)								
1,2,3,4,6,7,8,9-OCDD	2100	NA	3000	NA	7300	1900	2250	2600
1,2,3,4,6,7,8,9-OCDF	7.6 J	NA	1.6 U	NA	21	0.91 U	0.84 U	0.77 U
1,2,3,4,6,7,8-HPCDD	20	NA	11	NA	75	6.3	6.95	7.6
1,2,3,4,6,7,8-HPCDF	3.5 J	NA	1 U	NA	11	0.73 U	0.725 U	0.72 U
1,2,3,4,7,8,9-HPCDF	0.067 U	NA	0.2 U	NA	0.12 U	0.11 U	0.067 U	0.024 U
1,2,3,4,7,8-HXCDD	0.15 J	NA	0.1 J	NA	1.1 J	0.026 U	0.0265 U	0.027 U
1,2,3,4,7,8-HXCDF	0.38 J	NA	0.37 U	NA	1.3 J	0.31 U	0.355 U	0.4 U
1,2,3,6,7,8-HXCDD	0.68 J	NA	0.13 J	NA	2.7 J	0.023 U	0.03875	0.066 J
1,2,3,6,7,8-HXCDF	0.48 J	NA	0.49 J	NA	0.99 J	0.12 J	0.11	0.1 J
1,2,3,7,8,9-HXCDD	0.42 J	NA	0.15 J	NA	2.6 J	0.13 J	0.12	0.11 J
1,2,3,7,8,9-HXCDF	0.04 U	NA	0.022 U	NA	0.19 J	0.017 U	0.017 U	0.017 U
1,2,3,7,8-PECDD	0.069 U	NA	0.034 U	NA	0.74 J	0.038 U	0.041 U	0.044 U
1,2,3,7,8-PECDF	0.034 U	NA	0.021 U	NA	0.2 J	0.022 U	0.0225 U	0.023 U
2,3,4,6,7,8-HXCDF	0.26 J	NA	0.16 J	NA	1.7 J	0.07 J	0.0685	0.067 J
2,3,4,7,8-PECDF	0.035 U	NA	0.086 J	NA	0.41 J	0.065 J	0.0655	0.066 J
2,3,7,8-TCDD	0.038 U	NA	0.03 U	NA	0.051 U	0.023 U	0.0285 U	0.034 U
2,3,7,8-TCDF	0.071 UJ	NA	0.084 U	NA	0.23 J	0.015 U	0.05 U	0.085 U
TEQ	1.10428	NA	1.1388	NA	5.0063	0.6845	0.7973	0.9101
TOTAL HPCDD	35	NA	19	NA	150	10	11.5	13
TOTAL HPCDF	8.9	NA	1.7 U	NA	26	0.99 U	0.855 U	0.72 U
TOTAL HXCDD	3.8 J	NA	1 J	NA	21 J	0.79 J	0.82	0.85 J
TOTAL HXCDF	5.5 J	NA	1.9 J	NA	22 J	0.67 U	0.76 U	0.85 U
TOTAL PECDD	0.069 U	NA	0.18 J	NA	6.1 J	1 J	1.05	1.1 J
TOTAL PECDF	2.3 J	NA	1 J	NA	11 J	0.15 J	0.165	0.18 J
TOTAL TCDD	0.29 J	NA	0.1 J	NA	2.5 J	1.6 J	1.55	1.5 J
TOTAL TCDF	1.2 J	NA	0.69 J	NA	5.4 J	0.35 J	0.43	0.51 J
METALS (MG/KG)								
ALUMINUM	16100	16600	16200	20200	12900	10600	10025	9450
ANTIMONY	0.09 U	0.05 U	0.06 U	0.08 U	0.12 U	0.06 U	0.055 U	0.05 U
ARSENIC	7.7	6.6	6.9	7.7	12.1	4.3	3.8	3.3
BARIUM	10.2	10.8	11.4	10.1	20.9	12.9	12.3	11.7
BERYLLIUM	0.51	0.34	0.58	0.44	0.36	0.33	0.305	0.28
CADMIUM	0.07 J	0.06 J	0.05 J	0.07	0.17	0.06 J	0.055	0.05 J
CALCIUM	637 J	408 J	520 J	101 J	870 J	773 J	712.5	652 J
CHROMIUM	22.1 J	22.1 J	20.8 J	26.5 J	15.8 J	13.3 J	12.5	11.7 J
COBALT	12.4	16.3	14.7	26.3	11.2	7	6.75	6.5
COPPER	26.6	27.7	22	41.5	18.5	10.6	9.7	8.8
IRON	38600	35400	35000	42000	25500	17700	16450	15200
LEAD	14.6	20.2	13.6	20.4	39.5	8	7.4	6.8
MAGNESIUM	5720	5840	5500	6880	3740	3050	2875	2700
MANGANESE	293	338	299	467	307	200	199.5	199
MERCURY	0.004 J	0.016 U	0.018 U	0.016 U	0.04	0.03 U	0.03 U	0.03 U
NICKEL	29.1	27.4	25.7	35.6	21	13.6	12.55	11.5
POTASSIUM	282	295	306	279	428	427	408.5	390
SELENIUM	0.24 U	0.24 U	0.09 J	0.21 U	0.3 U	0.22 U	0.1 J	0.1 J
SILVER	0.01 J	0.02 J	0.02 J	0.02 J	0.05 J	0.02 J	0.02	0.02 J
SODIUM	29 U	32 U	43.6 U	44 U	34.5 U	45.4 U	41.45 U	37.5 U
THALLIUM	0.029 U	0.032 U	0.03 U	0.028 U	0.05 U	0.05 U	0.04 J	0.04 J
VANADIUM	17.4	16.9	15.8	16.8	18.6	15.2	14.6	14
ZINC	64.5	60.7	54.8	70.8	61.5	29	27.05	25.1
MISCELLANEOUS PARAMETERS (%)								
TOTAL SOLIDS	93	95	94	96	96	91	90	89
PETROLEUM HYDROCARBONS (MG/KG)								
ExTPH (C08-C44)	NA	NA	NA	15 J	NA	NA	NA	NA
GRO (C05-C12)	NA	NA	NA	2.3 U	NA	NA	NA	NA
POLYCYCLIC AROMATIC HYDROCARBONS (UG/KG)								
2-METHYLNAPHTHALENE	9.8 U	10 U	10 U	9.6 U	3.3 J	11 U	10.5 U	10 U
ACENAPHTHENE	9.8 U	10 U	32	9.6 U	15 J	11 U	1.8 J	1.8 J
ACENAPHTHYLENE	9.8 U	10 U	3.1 J	9.6 U	6.3 J	11 U	10.5 U	10 U
ANTHRACENE	9.8 U	10 U	32	9.6 U	35	11 U	6.15 U	1.3 U
BENZO(A)ANTHRACENE	2.6 J	4.7 J	44	2.4 J	170	11 U	2.7 J	2.7 J
BENZO(A)PYRENE	9.8 U	3.6 J	28	9.6 U	140	11 U	10.5 U	10 U
BENZO(B)FLUORANTHENE	9.8 U	11 J	28	7.1 J	210	11 U	9.6 J	9.6 J
BENZO(G,H,I)PERYLENE	9.8 U	10 U	6.7 J	4.7 J	66	11 U	10.5 U	10 U
BENZO(K)FLUORANTHENE	9.8 U	3.1 U	12 J	9.6 U	62	11 U	10.5 U	10 U
CHRYSENE	3.2 J	5.6 J	36	9.6 U	160	11 U	2.7 J	2.7 J
DIBENZO(A,H)ANTHRACENE	9.8 UJ	10 UJ	10 J	9.6 U	33 J	11 U	8.2 J	8.2 J
FLUORANTHENE	9.8 U	10 U	89	9.6 U	300	11 U	4.5 J	4.5 J
FLUORENE	9.8 U	10 U	7.3 J	9.6 U	15 J	11 U	10.5 U	10 U
INDENO(1,2,3-CD)PYRENE	9.8 UJ	6.2 J	20 J	9.6 U	160 J	11 U	5.2 J	5.2 J
NAPHTHALENE	9.8 U	10 U	10 U	9.6 U	9.9 U	11 U	10.5 U	10 U
PHENANTHRENE	9.8 U	10 U	53	9.6 U	170	11 U	4.4 J	4.4 J
PYRENE	9.8 U	10 U	110	9.6 U	240	11 U	4.9 J	4.9 J
TOTAL PAHS	5.8	31.1	511.1	14.2	1785.6	0 U	22	44

E-7 SOIL SAMPLE ANALYTICAL DATA – BUILDING 219 SURFACE SOIL

APPENDIX E-7
SOIL SAMPLE ANALYTICAL DATA - BUILDING 219 SURFACE SOIL

SAMPLE ID	TF2-B219-SS1080-0001	TF2-B219-SS1081-0001	TF2-B219-SS1082-0001	TF2-B219-SS1083-0001	TF2-B219-SS1084-0001	TF2-B219-SS1085-0001	TF2-B219-SS1086-0001	TF2-B219-SS1087-0001
LOCATION ID	TF2-B219-SB1080	TF2-B219-SB1081	TF2-B219-SB1082	TF2-B219-SB1083	TF2-B219-SB1084	TF2-B219-SB1085	TF2-B219-SB1086	TF2-B219-SB1087
SAMPLE DATE	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013
TOP DEPTH (FT)	0	0	0	0	0	0	0	0
BOTTOM DEPTH (FT)	1	1	1	1	1	1	1	1
SACODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	NM	NM	NM	NM	NM	NM	NM	NM
PCBS (UG/KG)								
AROCLOR-1016	96 U	9.2 U	9 U	9 U	8.9 U	9 U	9.6 U	8.9 U
AROCLOR-1221	96 U	9.2 U	9 U	9 U	8.9 U	9 U	9.6 U	8.9 U
AROCLOR-1232	110 U	11 U	11 U	10 U	10 U	10 U	11 U	10 U
AROCLOR-1242	96 U	9.2 U	9 U	9 U	8.9 U	9 U	9.6 U	8.9 U
AROCLOR-1248	96 U	9.2 U	9 U	9 U	8.9 U	9 U	9.6 U	8.9 U
AROCLOR-1254	96 U	9.2 U	9 U	9 U	8.9 U	9 U	9.6 U	8.9 U
AROCLOR-1260	4400	2400	360	24	42	1300	2800 J	600
AROCLOR-1262	96 U	9.2 U	9 U	9 U	8.9 U	9 U	9.6 U	8.9 U
AROCLOR-1268	96 U	9.2 U	9 U	9 U	8.9 U	9 U	9.6 U	8.9 U
TOTAL AROCLOR	4400	2400	360	24	42	1300	2800	600
MISCELLANEOUS PARAMETERS (%)								
TOTAL SOLIDS	88	91	94	94	96	94	88	94

E-8 SOIL SAMPLE ANALYTICAL DATA – BUILDING 219 SUBSURFACE SOIL

APPENDIX E-8
SOIL SAMPLE ANALYTICAL DATA - BUILDING 219 SUBSURFACE SOIL

SAMPLE ID	TF2-B219-SB1080-0204	TF2-B219-SB1081-0204	TF2-B219-SB1082-0204-D	TF2-B219-SB1082-0204	TF2-B219-SB1082-0204-AVG	TF2-B219-SB1083-0204	TF2-B219-SB1084-0204	TF2-B219-SB1085-0204	TF2-B219-SB1086-0204	TF2-B219-SB1087-0204	TF2-B219-SB1088-0204	TF2-B219-SB1089-0204	TF2-B219-SB1089-0204-AVG	TF2-B219-SB1089-0204-D
LOCATION ID	TF2-B219-SB1080	TF2-B219-SB1081	TF2-B219-SB1081	TF2-B219-SB1082	TF2-B219-SB1082	TF2-B219-SB1083	TF2-B219-SB1084	TF2-B219-SB1085	TF2-B219-SB1086	TF2-B219-SB1087	TF2-B219-SB1088	TF2-B219-SB1089	TF2-B219-SB1089	TF2-B219-SB1089
SAMPLE DATE	11/12/2013	11/12/2013	11/12/2013	11/12/2013	20131112	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	20131112	11/12/2013
TOP DEPTH (FT)	2	2	2	2	2	2	2	2	2	2	2	2	2	2
BOTTOM DEPTH (FT)	4	4	4	4	4	4	4	4	4	4	4	4	4	4
SACODE	NORMAL	NORMAL	DUP	ORIG	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP
QC TYPE	NM	NM	FD	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD
PCBS (UG/KG)														
AROCLOR-1016	9.1 U	9.4 U	8.8 UJ	8.8 U	8.8 U	8.9 U	8.8 U	8.8 U	8.9 U	8.6 U	9.1 U	9.2 U	9.15 U	9.1 U
AROCLOR-1221	9.1 U	9.4 U	8.8 UJ	8.8 U	8.8 U	8.9 U	8.8 U	8.8 U	8.9 U	8.6 U	9.1 U	9.2 U	9.15 U	9.1 U
AROCLOR-1232	11 U	11 U	10 UJ	10 U	10 U	10 U	10 U	10 U	10 U	10 U	11 U	11 U	11 U	11 U
AROCLOR-1242	9.1 U	9.4 U	8.8 UJ	8.8 U	8.8 U	8.9 U	8.8 U	8.8 U	8.9 U	8.6 U	9.1 U	9.2 U	9.15 U	9.1 U
AROCLOR-1248	9.1 U	9.4 U	8.8 UJ	8.8 U	8.8 U	8.9 U	8.8 U	8.8 U	8.9 U	8.6 U	9.1 U	9.2 U	9.15 U	9.1 U
AROCLOR-1254	9.1 U	9.4 U	8.8 UJ	8.8 U	8.8 U	8.9 U	8.8 U	8.8 U	8.9 U	8.6 U	9.1 U	9.2 U	9.15 U	9.1 U
AROCLOR-1260	84	110	8.8 UJ	8.8 U	8.8 U	8.9 U	8.8 U	8.8 U	8.9 U	8.6 U	9.1 U	25	26.5	28
AROCLOR-1262	9.1 U	9.4 U	8.8 UJ	8.8 U	8.8 U	8.9 U	8.8 U	8.8 U	8.9 U	8.6 U	9.1 U	9.2 U	9.15 U	9.1 U
AROCLOR-1268	9.1 U	9.4 U	8.8 UJ	8.8 U	8.8 U	8.9 U	8.8 U	8.8 U	8.9 U	8.6 U	9.1 U	9.2 U	9.15 U	9.1 U
TOTAL AROCLOR	84	110	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	25	26.5	28
MISCELLANEOUS PARAMETERS (%)														
TOTAL SOLIDS	93	90	95	95	95	95	96	95	94	95	93	92	92	92

E-9 SOIL SAMPLE ANALYTICAL DATA – BUOY STORAGE AREA SURFACE SOIL

APPENDIX E-9
SOIL SAMPLE ANALYTICAL DATA - BUOY STORAGE AREA SURFACE SOIL

SAMPLE ID	TF2-BSA-SS1090-0001	TF2-BSA-SS1091-0001	TF2-BSA-SS1091-0204	TF2-BSA-SS1092-0001	TF2-BSA-SS1093-0001	TF2-BSA-SS1094-0001	TF2-BSA-SS1095-0001	TF2-BSA-SS1096-0001	TF2-BSA-SS1096-0001-	TF2-BSA-SS1096-0001-D	TF2-BSA-SS1097-0001
LOCATION ID	TF2-BSA-SB1090	TF2-BSA-SB1091	TF2-BSA-SB1091	TF2-BSA-SB1092	TF2-BSA-SB1093	TF2-BSA-SB1094	TF2-BSA-SB1095	TF2-BSA-SB1096	TF2-BSA-SB1096	TF2-BSA-SB1096	TF2-BSA-SB1097
SAMPLE DATE	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	20131112	11/12/2013	11/12/2013
TOP DEPTH (FT)	0	0	2	0	0	0	0	0	0	0	0
BOTTOM DEPTH (FT)	1	1	4	1	1	1	1	1	1	1	1
SACODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
QC TYPE	NM	NM	NM	NM	NM	NM	NM	NM	NM	FD	NM
METALS (MG/KG)											
LEAD	23.5 J	19.5 J	NA	43.4 J	15.5 J	19.1 J	15.5 J	46.5 J	42.05	37.6 J	73.8 J
MISCELLANEOUS PARAMETERS (%)											
TOTAL SOLIDS	90	93	93	90	91	97	89	88	88	88	90

E-10 SOIL SAMPLE ANALYTICAL DATA – BUOY STORAGE AREA SUBSURFACE SOIL

APPENDIX E-10
SOIL SAMPLE ANALYTICAL DATA - BUOY STORAGE AREA SUBSURFACE SOIL

SAMPLE ID	TF2-BSA-SB1091-0204	TF2-BSA-SB1092-0204	TF2-BSA-SB1093-0204	TF2-BSA-SB1094-0204	TF2-BSA-SB1095-0204	TF2-BSA-SB1096-0204	TF2-BSA-SB1097-0204
LOCATION ID	TF2-BSA-SB1091	TF2-BSA-SB1092	TF2-BSA-SB1093	TF2-BSA-SB1094	TF2-BSA-SB1095	TF2-BSA-SB1096	TF2-BSA-SB1097
SAMPLE DATE	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013
TOP DEPTH (FT)	2	2	2	2	2	2	2
BOTTOM DEPTH (FT)	4	4	4	4	4	4	4
SACODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
QC TYPE	NM	NM	NM	NM	NM	NM	NM
METALS (MG/KG)							
LEAD	10 J	10.7 J	20.1 J	30.3 J	15.4 J	31.1 J	55.9 J
MISCELLANEOUS PARAMETERS (%)							
TOTAL SOLIDS	93	93	94	88	92	87	87

E-11

SOIL SAMPLE ANALYTICAL DATA

COMPARED TO RIDEM CRITERIA

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-001-SB1000	TF2-001-SB1000	TF2-001-SB1000	TF2-001-SB1001	TF2-001-SB1001	TF2-001-SB1001	TF2-001-SB1002	TF2-001-SB1002	TF2-001-SB1002	TF2-001-SB1003
SAMPLE ID				TF2-001-SS1000-0001	TF2-001-SB1000-0204	TF2-001-SB1000-0810	TF2-001-SS1001-0001	TF2-001-SB1001-0204	TF2-001-SB1001-0810	TF2-001-SS1002-0001	TF2-001-SB1002-0204	TF2-001-SB1002-0405	TF2-001-SS1003-0001
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/27/2013	11/27/2013	11/27/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SB	SB	SS	SB	SB	SS	SB	SB	SS
TOP DEPTH				0	2	8	0	2	8	0	2	4	0
BOTTOM DEPTH				1	4	10	1	4	10	1	4	5	1
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	2900	3900	5200	4500	4600	--	4700 J	5900 J	--	6400
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	31	2.9 J	3.5 J	2.1 J	1.4 J	--	2.4 J	1.3 J	--	2.2 J
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	54	19	25	29	25	--	30	30	--	36
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	11	0.86 U	1.1 U	0.92 U	0.95 U	--	1.6 J	0.51 U	--	1.6 J
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	0.1 U	0.035 U	0.087 U	0.031 U	0.078 J	--	0.049 U	0.039 U	--	0.053 U
1,2,3,4,7,8-HXCDD	NA	NA	NA	0.78 J	0.15 J	0.11 U	0.19 J	0.13 J	--	0.22 J	0.27 J	--	0.29 J
1,2,3,4,7,8-HXCDF	NA	NA	NA	0.96 J	0.65 J	0.39 J	0.29 J	0.28 U	--	0.51 J	0.18 U	--	0.76 J
1,2,3,6,7,8-HXCDD	NA	NA	NA	1.7 J	0.15 J	0.079 U	0.22 J	0.21 J	--	0.4 J	0.25 J	--	0.54 J
1,2,3,6,7,8-HXCDF	NA	NA	NA	0.8 J	0.023 U	0.22 J	0.19 J	0.51 J	--	0.48 J	0.29 J	--	0.46 J
1,2,3,7,8,9-HXCDD	NA	NA	NA	1.6 J	0.23 J	0.17 J	0.31 J	0.26 J	--	0.31 J	0.32 J	--	0.44 J
1,2,3,7,8,9-HXCDF	NA	NA	NA	0.05 U	0.03 U	0.067 U	0.031 U	0.031 U	--	0.034 U	0.038 U	--	0.039 U
1,2,3,7,8-PECDD	NA	NA	NA	0.19 J	0.07 U	0.13 U	0.062 U	0.069 U	--	0.07 U	0.092 U	--	0.092 U
1,2,3,7,8-PECDF	NA	NA	NA	0.2 J	0.045 U	0.07 U	0.04 U	0.04 U	--	0.04 U	0.041 U	--	0.045 U
2,3,4,6,7,8-HXCDF	NA	NA	NA	1.2 J	0.15 U	0.06 U	0.096 J	0.13 J	--	0.19 J	0.034 U	--	0.33 J
2,3,4,7,8-PECDF	NA	NA	NA	0.32 J	0.033 U	0.073 U	0.13 J	0.042 U	--	0.12 J	0.077 J	--	0.29 J
2,3,7,8-TCDD	NA	NA	NA	0.037 U	0.035 U	0.086 U	0.044 U	0.042 U	--	0.043 U	0.05 U	--	0.042 U
2,3,7,8-TCDF	NA	NA	NA	0.63 U	0.22 U	0.52 U	0.26 U	0.34 U	--	0.36 U	0.38 U	--	0.36 J
TEQ	NA	NA	NA	2.5253	1.47887	1.88905	1.80923	1.7552	--	1.97372	2.20649	--	2.70166
TEQ BIRD	NA	NA	NA	1.4991	0.50629	0.62335	0.70951	0.58452	--	0.80024	0.77413	--	1.56112
TEQ BIRD HALFND	NA	NA	NA	1.8356	0.702165	1.04678	0.900815	0.85332	--	1.040685	1.052525	--	1.632585
TEQ HALFND	NA	NA	NA	2.5783	1.56262	2.056785	1.882135	1.8549	--	2.050765	2.31245	--	2.77155
TOTAL HPCDD	NA	NA	NA	100	34	44	51	44	--	54	61	--	66
TOTAL HPCDF	NA	NA	NA	31	1.6 J	1.7 J	1.6 J	1.2 J	--	3.3 J	0.51 U	--	2.9 J
TOTAL HXCDD	NA	NA	NA	14	2.1 J	1.3 J	3.2 J	3 J	--	4 J	4.7 J	--	5.6 J
TOTAL HXCDF	NA	NA	NA	15 J	1.7 J	0.86 J	2.3 J	2.3 J	--	3.8 J	0.67 J	--	5.9 J
TOTAL PECDD	NA	NA	NA	2.1 J	0.39 J	0.72 J	0.6 J	1.3 J	--	1.1 J	0.98 J	--	1.3 J
TOTAL PECDF	NA	NA	NA	7.7 J	1.1 J	0.27 J	1.6 J	1.8 J	--	2.7 J	0.37 J	--	3.8 J
TOTAL TCDD	NA	NA	NA	0.42 J	0.09 J	0.086 U	0.054 U	0.29 J	--	0.35 J	0.96 J	--	0.46 J
TOTAL TCDF	NA	NA	NA	3.5 J	0.54 J	0.25 J	1.1 J	0.88 J	--	1 J	2.1 J	--	3 J
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	12200	16600	15300	12600	14900	20500	14200	15200	12200	14600
ANTIMONY	10	820	NA	0.18 J	0.06 J	0.06 J	0.13 J	0.07	0.03 U	0.08 J	0.09	0.11	0.09 J
ARSENIC	7	7	NA	4.1	**8.4 [R,I]**	**7.3 [R,I]**	5.1	**11.3 [R,I]**	6.2	6.1	**11.9 [R,I]**	**12.5 [R,I]**	**7.1 [R,I]**
BARIUM	5500	10000	NA	17.1	15.2	12.6	15.4	16.2	7.2	14.6	19.8	19.2	14.2
BERYLLIUM	1.5	1.5	NA	0.26	0.37	0.42	0.3	0.36	0.28	0.3	0.36	0.39	0.34
CADMIUM	39	1000	NA	0.08 J	0.08	0.08	0.08	0.13	0.06 J	0.1	0.07 J	0.28	0.08
CALCIUM	NA	NA	NA	794	874	719	843	825	1550	833	720	1210	666 J
CHROMIUM	NA	NA	NA	15.1	19.6	19.2	16.5	18.3	26.5	17.5	17.9	14.9	18
COBALT	NA	NA	NA	10.9	30.3	8.9	14.4	14.9	20.3	16.6	8.7	7.4	12
COPPER	3100	10000	NA	14.2	19.1	16.9	17	19	20.6	17.3	15	12.1	18.5
IRON	NA	NA	NA	23800	29800	28200	25600	28100	42500	27800	23000	17000	27000
LEAD	150	500	NA	18.3 J	14.5 J	13.6 J	11.4	14.8	11.4	12.2	13.5	15.4	16.4
MAGNESIUM	NA	NA	NA	3740	5040	4440	3920	4270	7010	4560	3760	2380	4190
MANGANESE	390	10000	NA	311	383	228	**458 [R]**	374	385	**394 [R]**	225	227	332
MERCURY	23	610	NA	0.02 U	0.04	0.06	0.016 U	0.06 J	0.015 UJ	0.02 U	0.06 J	0.1 J	0.21 J
NICKEL	1000	10000	NA	21.5	25.5	20.8	26.2	26.1	34.7	26.6	16	12.5	23.2
POTASSIUM	NA	NA	NA	405	407	380	302 J	362	221	390	461	526	390 J
SELENIUM	390	10000	NA	0.26 U	0.22 U	0.21 U	0.2 J	0.33 J	0.17 J	0.21 J	0.37 J	0.36 J	0.29 J
SILVER	200	10000	NA	0.04 J	0.04 J	0.04 J	0.03 J	0.03 J	0.02 J	0.04 J	0.04 J	0.04 J	0.07 J
SODIUM	NA	NA	NA	51.2 J	37.7 J	31.3 J	47.6 J	43.6 J	42.6 J	60.9 J	56.4 J	56.9 J	53.1 J
THALLIUM	5.5	140	NA	0.05 J	0.05 J	0.06 J	0.04 J	0.05 J	0.02 J	0.04 J	0.08 J	0.1	0.05 J
VANADIUM	550	10000	NA	20.9	18.8	19.2	17.9	16.7	20.3	20.6	20.5	19.7	21.1
ZINC	6000	10000	NA	52.1	53.1	47.4	56.6	55	73.6	61.5	43.4	41.6	52.6

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-001-SB1000	TF2-001-SB1000	TF2-001-SB1000	TF2-001-SB1001	TF2-001-SB1001	TF2-001-SB1001	TF2-001-SB1002	TF2-001-SB1002	TF2-001-SB1002	TF2-001-SB1003
SAMPLE ID				TF2-001-SS1000-0001	TF2-001-SB1000-0204	TF2-001-SB1000-0810	TF2-001-SS1001-0001	TF2-001-SB1001-0204	TF2-001-SB1001-0810	TF2-001-SS1002-0001	TF2-001-SB1002-0204	TF2-001-SB1002-0405	TF2-001-SS1003-0001
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/27/2013	11/27/2013	11/27/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SB	SB	SS	SB	SB	SS	SB	SB	SS
TOP DEPTH				0	2	8	0	2	8	0	2	4	0
BOTTOM DEPTH				1	4	10	1	4	10	1	4	5	1
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	85	90	87	90	89	92	90	88	86	89
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	--	--	13 J	--	--	--	--	--	--	18 J
TPH (C05-C12)	NA	NA	NA	--	--	2.4 U	--	--	--	--	--	--	2 U
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.012 UJ	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
ACENAPHTHENE	43	10000	NA	0.0022 J	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
ACENAPHTHYLENE	23	10000	NA	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
ANTHRACENE	35	10000	NA	0.0044 J	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.0028 J	0.011 U	0.011 U	0.011 U
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.031	0.011 U	0.0036 J	0.0052 J	0.0055 J	0.011 U	0.015 J	0.0036 J	0.0055 J	0.024 J
BENZO(A)PYRENE	0.4	0.8	240	0.031	0.011 U	0.012 U	0.0042 J	0.0042 J	0.011 UJ	0.012 J	0.011 UJ	0.0052 J	0.02 J
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.05	0.0031 J	0.0058 J	0.0065 J	0.0065 J	0.011 U	0.018 J	0.0051 J	0.0075 J	0.028 J
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.016 J	0.011 U	0.012 U	0.0027 J	0.0022 UJ	0.011 UJ	0.007 J	0.0023 J	0.0036 J	0.01 J
BENZO(K)FLUORANTHENE	0.9	78	NA	0.022 J	0.011 U	0.012 U	0.011 UJ	0.011 UJ	0.011 U	0.012 J	0.0043 J	0.0056 J	0.019 J
CHRYSENE	0.4	780	NA	0.039	0.011 U	0.012 U	0.0064 J	0.0062 J	0.0027 J	0.016 J	0.0061 J	0.0084 J	0.022 J
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.0076 J	0.011 U	0.012 U	0.011 UJ	0.011 UJ	0.011 UJ	0.0035 J	0.011 UJ	0.011 UJ	0.0037 J
FLUORANTHENE	20	10000	NA	0.07	0.011 U	0.005 J	0.0084 J	0.0094 J	0.011 U	0.035	0.008 J	0.01 J	0.028 J
FLUORENE	28	10000	NA	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.032 J	0.011 U	0.0028 J	0.0032 J	0.003 J	0.011 U	0.0075 J	0.0025 J	0.0041 J	0.013 J
NAPHTHALENE	54	10000	0.8	0.012 U	0.011 U	0.012 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
PHENANTHRENE	40	10000	NA	0.032	0.011 U	0.0024 J	0.0031 J	0.0046 J	0.011 U	0.017 J	0.0027 J	0.0046 J	0.0039 J
PYRENE	13	10000	NA	0.063	0.011 U	0.012 U	0.0069 J	0.008 J	0.011 U	0.022 J	0.0053 J	0.0082 J	0.02 J
TOTAL PAHS	NA	NA	NA	0.4002	0.0031	0.0196	0.0466	0.0474	0.0027	0.1678	0.0399	0.0627	0.1916

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-001-SB1003	TF2-001-SB1003	TF2-001-SB1003	TF2-001-SB1004	TF2-001-SB1004	TF2-001-SB1004	TF2-001-SB1004	TF2-001-SB1005	TF2-001-SB1005	TF2-001-SB1005
SAMPLE ID				TF2-001-SS1003-0001-	TF2-001-SS1003-0001-D	TF2-001-SB1003-0204	TF2-001-SS1004-0001	TF2-001-SB1004-0204	TF2-001-SB1004-0204-	TF2-001-SB1004-0204-D	TF2-001-SS1005-0001	TF2-001-SB1005-0204	TF2-001-SB1005-0204-
SAMPLE DATE	RIDEM	RIDEM	RIDEM	20131125	11/25/2013	11/25/2013	11/25/2013	11/25/2013	20131125	11/25/2013	11/27/2013	11/27/2013	20131127
SAMPLE CODE	DIRECT	DIRECT	GA	AVG	DUP	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	ORIG	AVG
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SB	SS	SB	SB	SB	SS	SB	SB
TOP DEPTH				0	0	2	0	2	2	2	0	2	2
BOTTOM DEPTH				1	1	4	1	4	4	4	1	4	4
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	6850	7300	4500	4900	6000	6750	7500	4400	4400	3950
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	2.45	2.7 J	0.96 U	3.5 J	2.1 J	1.29	0.96 U	6 J	1.3 U	2.625
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	36	36	29	34	33	34	35	36	31	27.5
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	1.2	1.6 U	0.44 U	2.5 J	0.71 U	0.6 U	0.49 U	3.8 J	0.89 U	1.5225
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	0.15825	0.29 J	0.03 U	0.14 J	0.032 U	0.027 U	0.022 U	0.065 U	0.04 U	0.048 U
1,2,3,4,7,8-HXCDD	NA	NA	NA	0.295	0.3 J	0.2 J	0.3 J	0.22 J	0.12525	0.061 U	0.27 J	0.099 U	0.13975
1,2,3,4,7,8-HXCDF	NA	NA	NA	0.69	0.62 J	0.13 U	0.53 J	0.27 U	0.23 U	0.19 U	0.67 J	0.23 J	0.57
1,2,3,6,7,8-HXCDD	NA	NA	NA	0.48	0.42 J	0.31 J	0.57 J	0.26 J	0.27	0.28 J	0.86 J	0.31 J	0.295
1,2,3,6,7,8-HXCDF	NA	NA	NA	0.485	0.51 J	0.42 J	0.41 J	0.49 J	0.565	0.64 J	0.61 J	0.26 J	0.335
1,2,3,7,8,9-HXCDD	NA	NA	NA	0.44	0.44 J	0.33 J	0.52 J	0.32 J	0.345	0.37 J	0.92 J	0.59 J	0.505
1,2,3,7,8,9-HXCDF	NA	NA	NA	0.037 U	0.035 U	0.027 U	0.037 U	0.03 U	0.0255 U	0.021 U	0.037 U	0.031 U	0.0355 U
1,2,3,7,8-PECDD	NA	NA	NA	0.0695	0.093 J	0.075 U	0.063 U	0.075 U	0.07875	0.12 J	0.26 J	0.11 J	0.0755
1,2,3,7,8-PECDF	NA	NA	NA	0.13125	0.24 J	0.07 U	0.13 J	0.035 U	0.03775	0.058 J	0.28 J	0.035 U	0.09875
2,3,4,6,7,8-HXCDF	NA	NA	NA	0.45	0.57 J	0.071 J	0.22 J	0.027 U	0.07175	0.13 J	0.53 J	0.14 J	0.145
2,3,4,7,8-PECDF	NA	NA	NA	0.26	0.23 J	0.089 J	0.18 J	0.037 U	0.035 U	0.033 U	0.32 J	0.13 J	0.14
2,3,7,8-TCDD	NA	NA	NA	0.04 U	0.038 U	0.043 U	0.033 U	0.041 U	0.0405 U	0.04 U	0.041 U	0.042 U	0.046 U
2,3,7,8-TCDF	NA	NA	NA	0.2425	0.25 U	0.33 U	0.3 U	0.28 U	0.27 U	0.26 U	0.33 J	0.055 U	0.077 U
TEQ	NA	NA	NA	2.855285	3.00891	1.7998	2.15035	2.25963	2.561685	2.86374	2.5032	1.932	1.76989
TEQ BIRD	NA	NA	NA	1.455245	1.34937	0.6632	0.93245	0.72781	0.877705	1.0276	1.7477	0.8361	0.80393
TEQ BIRD HALFND	NA	NA	NA	1.5678525	1.50312	0.900948	1.1323	0.96612	1.0874515	1.208783	1.770375	0.89509	0.892315
TEQ HALFND	NA	NA	NA	2.910855	3.05016	1.886694	2.2152	2.357765	2.6378795	2.917994	2.525875	1.96762	1.824315
TOTAL HPCDD	NA	NA	NA	66	66	65	64	63	64.5	66	71	63	57
TOTAL HPCDF	NA	NA	NA	2.95	3 J	0.65 U	4.7 J	0.86 U	0.795 U	0.73 U	7.4	1.6 J	2.65
TOTAL HXCDD	NA	NA	NA	5.25	4.9 J	6.9 J	6 J	5.2 J	5.35	5.5 J	8.2 J	7.3	6.9
TOTAL HXCDF	NA	NA	NA	5.65	5.4 J	1.2 J	5 J	1 J	1 J	1.3 U	6.6 J	1.8 J	2.3
TOTAL PECDD	NA	NA	NA	1.105	0.91 J	1.7 J	1.3 J	2.1 J	2.2	2.3 J	2.1 J	1.7 J	1.19
TOTAL PECDF	NA	NA	NA	4.1	4.4 J	1.1 J	3.1 J	0.41 J	0.555	0.7 J	6.4 J	1.6 J	1.65
TOTAL TCDD	NA	NA	NA	0.55	0.64 J	1.7 J	0.36 J	1.3 J	1.25	1.2 J	0.74 J	0.87 J	0.635
TOTAL TCDF	NA	NA	NA	2.75	2.5 J	2.3 J	1.5 J	2.2 J	2.25	2.3 J	3.9 J	1.6 J	1.55
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	14300	14000	11600	12700	13800	13850	13900	14000	9880	10640
ANTIMONY	10	820	NA	0.085	0.08 J	0.07 J	0.08 J	0.09 J	0.09	0.09 J	0.17 J	0.08 J	0.09
ARSENIC	7	7	NA	6.75	6.4	**7.7 [R,I]**	5.4	**8 [R,I]**	**8.4 [R,I]**	**8.8 [R,I]**	**7.7 [R,I]**	5	5.3
BARIUM	5500	10000	NA	13.3	12.4	17.9	15.8	25	24.35	23.7	18.5	20.3	19.95
BERYLLIUM	1.5	1.5	NA	0.345	0.35	0.36	0.3	0.43	0.43	0.43	0.34	0.38	0.365
CADMIUM	39	1000	NA	0.075	0.07 J	0.1 J	0.11	0.06 J	0.07	0.08 J	0.11	0.11	0.11
CALCIUM	NA	NA	NA	584	502	1030	604	608	719	830	2630	1250	1240
CHROMIUM	NA	NA	NA	17.65	17.3	14.4	14.9	15.2	15.3	15.4	16.6	12.9	13.1
COBALT	NA	NA	NA	11.5	11	6.2	10.4	7.3	7.3	7.3	10.4	5.2	6.4
COPPER	3100	10000	NA	18.3	18.1	11.4	16.2	15.6	14.45	13.3	18.5	10.2	11.1
IRON	NA	NA	NA	25850	24700	18500	22600	23700	22200	20700	24100	16200	17050
LEAD	150	500	NA	15.2	14	12.8	12.1 J	12.4 J	12.75	13.1 J	18.6 J	13 J	13.05
MAGNESIUM	NA	NA	NA	4145	4100	2930	3750	3710	3555	3400	4220	2860	2970
MANGANESE	390	10000	NA	304.5	277	168	294	188	196.5	205	267	179	204
MERCURY	23	610	NA	0.15	0.09 J	0.04 J	0.17	0.05	0.05	0.05	0.07	0.04	0.045
NICKEL	1000	10000	NA	23.2	23.2	13.5	21.1	17.3	16.3	15.3	20.7	11.4	12.65
POTASSIUM	NA	NA	NA	373.5	357 J	581	379	608	605.5	603	453	655	659.5
SELENIUM	390	10000	NA	0.2	0.11 J	0.31 J	0.29 U	0.19 U	0.225 U	0.26 U	0.25 U	0.21 U	0.215 U
SILVER	200	10000	NA	0.06	0.05 J	0.04 J	0.05 J	0.02 J	0.025	0.03 J	0.04 J	0.04 J	0.04
SODIUM	NA	NA	NA	56.2	59.3 J	58 J	39.7 J	43 J	46.15	49.3 J	48.8 J	48.1 J	48.55
THALLIUM	5.5	140	NA	0.045	0.04 J	0.07 J	0.05 J	0.06 J	0.07	0.08 J	0.06 J	0.08	0.075
VANADIUM	550	10000	NA	19.75	18.4	17.7	17.4	17.2	18.3	19.4	17.8	15.4	15.7
ZINC	6000	10000	NA	52.65	52.7	34.7	46.8	44.2	42.55	40.9	53	33.6	35.95

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-001-SB1003	TF2-001-SB1003	TF2-001-SB1003	TF2-001-SB1004	TF2-001-SB1004	TF2-001-SB1004	TF2-001-SB1004	TF2-001-SB1005	TF2-001-SB1005	TF2-001-SB1005
SAMPLE ID				TF2-001-SS1003-0001-	TF2-001-SS1003-0001-D	TF2-001-SB1003-0204	TF2-001-SS1004-0001	TF2-001-SB1004-0204	TF2-001-SB1004-0204-	TF2-001-SB1004-0204-D	TF2-001-SS1005-0001	TF2-001-SB1005-0204	TF2-001-SB1005-0204-
SAMPLE DATE	RIDEM	RIDEM	RIDEM	20131125	11/25/2013	11/25/2013	11/25/2013	11/25/2013	20131125	11/25/2013	11/27/2013	11/27/2013	20131127
SAMPLE CODE	DIRECT	DIRECT	GA	AVG	DUP	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	ORIG	AVG
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SB	SS	SB	SB	SB	SS	SB	SB
TOP DEPTH				0	0	2	0	2	2	2	0	2	2
BOTTOM DEPTH				1	1	4	1	4	4	4	1	4	4
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	89	89	87	87	88	88	88	90	85	85.5
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	20.5	23	--	--	--	--	--	--	--	--
TPH (C05-C12)	NA	NA	NA	2.25 U	2.5 U	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.011 U	0.011 U	0.011 U	0.011 UJ	0.01 UJ	0.0105 U	0.011 UJ	0.44 U	0.19	0.235
ACENAPHTHENE	43	10000	NA	0.0078 J	0.0078 J	0.011 U	0.011 U	0.01 U	0.0105 U	0.011 U	1	0.24 J	0.565
ACENAPHTHYLENE	23	10000	NA	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U	0.0105 U	0.011 U	0.026	0.029 J	0.0585
ANTHRACENE	35	10000	NA	0.01025	0.015 J	0.0023 J	0.0026 J	0.004 J	0.003	0.002 J	2.2	0.74 J	1.27
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.037	0.05 J	0.016 J	0.015 J	0.022	0.0195	0.017 J	**4.5 [R]**	**1.5 J [R]**	**2.8 [R]**
BENZO(A)PYRENE	0.4	0.8	240	0.0285	0.037 J	0.013 J	0.013 J	0.016 J	0.015	0.014 J	**3.7 [R,I]**	**1.2 J [R,I]**	**2.15 [R,I]**
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.039	0.05 J	0.016 J	0.025	0.03	0.028	0.026	**5.8 [R]**	**1.8 J [R]**	**3.3 [R]**
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.016	0.022 J	0.008 J	0.0043 J	0.0036 J	0.0044	0.0052 J	**1.8 [R]**	0.54 J	**1.02 [R]**
BENZO(K)FLUORANTHENE	0.9	78	NA	0.0255	0.032	0.012 J	0.0074 J	0.01 J	0.0093	0.0086 J	**1.7 [R]**	0.56 J	**1.03 [R]**
CHRYSENE	0.4	780	NA	0.0325	0.043 J	0.016 J	0.014 J	0.024	0.021	0.018 J	**4.9 [R]**	**1.4 J [R]**	**2.6 [R]**
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.00565	0.0076 J	0.0025 J	0.0039 J	0.0052 J	0.0047	0.0042 J	**0.59 J [R]**	0.16 J	0.325
FLUORANTHENE	20	10000	NA	0.079	0.13 J	0.032	0.034	0.045	0.0385	0.032	12 J	3.8 J	6.9
FLUORENE	28	10000	NA	0.0066 J	0.0066 J	0.011 U	0.011 U	0.01 U	0.0105 U	0.011 U	1.3	0.53 J	1.115
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.0195	0.026	0.0087 J	0.013 J	0.016 J	0.0145	0.013 J	**2.8 J [R]**	0.86 J	**1.63 [R]**
NAPHTHALENE	54	10000	0.8	0.011 U	0.011 U	0.011 U	0.011 U	0.01 U	0.0105 U	0.011 U	**1.8 [L]**	0.37 J	0.785
PHENANTHRENE	40	10000	NA	0.04495	0.086 J	0.011 J	0.018 J	0.023	0.018	0.013 J	11	3.5 J	7.25
PYRENE	13	10000	NA	0.05	0.08	0.021 J	0.026	0.032	0.028	0.024	11 J	3.6 J	6.8
TOTAL PAHS	NA	NA	NA	0.3923	0.593	0.1585	0.1762	0.2308	0.2039	0.177	66.116	21.019	39.8335

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-001-SB1005	TF2-001-SB1006	TF2-001-SB1006	TF2-001-SB1007	TF2-001-SB1007	TF2-001-SB1008	TF2-001-SB1008	TF2-001-SB1009	TF2-001-SB1009	TF2-001-SB1009	TF2-001-SB101
SAMPLE ID				TF2-001-SB1005-0204-D	TF2-001-SS1006-0001	TF2-001-SB1006-0204	TF2-001-SS1007-0001	TF2-001-SB1007-0204	TF2-001-SS1008-0001	TF2-001-SB1008-0204	TF2-001-SS1009-0001	TF2-001-SB1009-0204	TF2-001-SB1009-0810	TF2-001-SS1010-(
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/27/2013	11/27/2013	11/27/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/27/2013
SAMPLE CODE	DIRECT	DIRECT	GA	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SS	SB	SS	SB	SS	SB	SS	SB	SB	SS
TOP DEPTH				2	0	2	0	2	0	2	0	2	8	0
BOTTOM DEPTH				4	1	4	1	4	1	4	1	4	10	1
DIOXINS/FURANS (NG/KG)														
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	3500	5300	5000	6000	14000	6600	5000	4000	7400	--	5000
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	4.6 J	4 J	3.1 J	6.6 J	2.1 J	2 J	1 U	9.4 J	1.1 U	--	6 J
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	24	31	41	50	150	33	35	46	33	--	39
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	2.6 J	1.8 J	1.3 J	4.8 J	1.1 U	1.3 U	0.69 U	5.6	0.51 U	--	3.8 J
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	0.056 U	0.045 U	0.15 U	0.044 U	0.026 U	0.15 J	0.082 J	0.31 J	0.075 J	--	0.053 U
1,2,3,4,7,8-HXCDD	NA	NA	NA	0.23 J	0.22 J	0.33 U	0.48 J	0.45 J	0.29 J	0.44 J	0.44 J	0.18 J	--	0.34 J
1,2,3,4,7,8-HXCDF	NA	NA	NA	0.91 J	0.6 J	0.13 U	1 J	0.32 U	0.36 U	0.34 U	0.88 J	0.28 U	--	0.68 J
1,2,3,6,7,8-HXCDD	NA	NA	NA	0.28 J	0.39 J	0.23 U	1.1 J	0.78 J	0.54 J	0.54 J	1.2 J	0.22 J	--	0.82 J
1,2,3,6,7,8-HXCDF	NA	NA	NA	0.41 J	0.42 J	0.48 J	0.73 J	0.2 J	0.52 J	0.3 J	0.65 J	0.42 J	--	0.57 J
1,2,3,7,8,9-HXCDD	NA	NA	NA	0.42 J	0.45 J	0.24 U	1.1 J	0.88 J	0.55 J	0.74 J	1.1 J	0.26 J	--	0.77 J
1,2,3,7,8,9-HXCDF	NA	NA	NA	0.04 U	0.039 U	0.12 U	0.034 U	0.12 J	0.027 U	0.023 U	0.026 U	0.14 J	--	0.031 U
1,2,3,7,8-PECDD	NA	NA	NA	0.082 U	0.073 U	0.24 U	0.2 J	0.05 U	0.11 J	0.16 J	0.056 U	0.051 U	--	0.18 J
1,2,3,7,8-PECDF	NA	NA	NA	0.18 J	0.042 U	0.16 U	0.26 J	0.08 J	0.077 U	0.15 J	0.2 J	0.07 J	--	0.15 J
2,3,4,6,7,8-HXCDF	NA	NA	NA	0.15 J	0.32 J	0.11 U	0.73 J	0.15 J	0.4 J	0.21 J	0.61 J	0.2 J	--	0.52 J
2,3,4,7,8-PECDF	NA	NA	NA	0.15 J	0.19 J	0.17 U	0.43 J	0.097 J	0.15 J	0.034 U	0.21 J	0.1 J	--	0.26 J
2,3,7,8-TCDD	NA	NA	NA	0.05 U	0.042 U	0.16 U	0.044 U	0.038 U	0.032 U	0.039 U	0.031 U	0.029 U	--	0.035 U
2,3,7,8-TCDF	NA	NA	NA	0.099 U	0.14 U	0.61 U	0.77 U	0.29 U	0.29 U	0.34 U	0.24 U	0.2 U	--	0.19 J
TEQ	NA	NA	NA	1.60778	2.2162	1.97193	3.20078	5.99013	2.6971	2.23832	2.27892	2.72485	--	2.5813
TEQ BIRD	NA	NA	NA	0.77176	0.9633	0.60231	1.74566	1.82051	1.1216	0.86322	1.09404	0.99395	--	1.5018
TEQ BIRD HALFND	NA	NA	NA	0.88954	1.095075	1.24046	2.15458	2.03114	1.3123	1.09137	1.25884	1.150555	--	1.521115
TEQ HALFND	NA	NA	NA	1.68101	2.283505	2.28908	3.2632	6.07026	2.754605	2.30167	2.33572	2.791565	--	2.600615
TOTAL HPCDD	NA	NA	NA	51	55	88	100	270	60	86	81	57	--	73
TOTAL HPCDF	NA	NA	NA	3.7 J	3 J	1.3 J	9.7	1.9 J	2.5 J	0.98 U	11	1 U	--	7.2
TOTAL HXCDD	NA	NA	NA	6.5 J	4.2 J	8.8 J	11 J	22 J	5.3 J	9.5	9.4 J	2.5 J	--	8.4 J
TOTAL HXCDF	NA	NA	NA	2.8 J	4.1 J	1.1 J	9.5	1.9 U	4.5 J	1.5 U	8.4	2.2 U	--	6.2 J
TOTAL PECDD	NA	NA	NA	0.68 J	1.2 J	1.4 J	3 J	2.7 J	1.1 J	1.8 J	1.6 J	1.4 J	--	1.5 J
TOTAL PECDF	NA	NA	NA	1.7 J	3 J	0.34 J	7.6 J	1.4 J	2.9 J	1.8 J	4.1 J	1.7 J	--	3.8 J
TOTAL TCDD	NA	NA	NA	0.4 J	0.36 J	0.95 J	1.1 J	1.2 J	0.86 J	0.69 J	0.4 J	0.46 J	--	0.62 J
TOTAL TCDF	NA	NA	NA	1.5 J	1.6 J	1.8 J	4.2 J	1.6 J	1.9 J	4.1 J	1.2 J	1 J	--	1.9 J
METALS (MG/KG)	NA	NA	NA											
ALUMINUM	NA	NA	NA	11400	14600	13000	14000	13000	14600	14700	11900	16400	21000	13400
ANTIMONY	10	820	NA	0.1 J	0.12 J	0.08 J	0.2 J	0.15 J	0.08 J	0.1 J	0.26 J	0.05 J	0.03 J	0.08 J
ARSENIC	7	7	NA	5.6	6.8	**8.4 [R,I]**	5.8	**7.1 [R,I]**	6.6	**14.3 [R,I]**	4.9	**7.4 [R,I]**	5.6	6.4
BARIUM	5500	10000	NA	19.6	17.7	17.1	22.8	18.5	17.7	27.2	12.6	16.1	7.7	15.5
BERYLLIUM	1.5	1.5	NA	0.35	0.33	0.37	0.34	0.35	0.36	0.47	0.27	0.36	0.32	0.32
CADMIUM	39	1000	NA	0.11	0.12	0.13	0.14	0.13	0.12	0.15	0.07 J	0.11	0.09	0.09
CALCIUM	NA	NA	NA	1230	728	1000	1090	1610	923	1060	1090	752	1660	758
CHROMIUM	NA	NA	NA	13.3	16.7	15.8	16	15.4	17	16.2	15.8	19	25.4	17.3
COBALT	NA	NA	NA	7.6	11.6	7.9	9.6	11.3	13.1	6.5	15.6	18	23.1	12.6
COPPER	3100	10000	NA	12	17.1	13.5	15	13.6	18	13.5	17.6	17.6	20.6	20.4
IRON	NA	NA	NA	17900	24800	20000	22900	21000	27200	17900	27700	29000	45100	26800
LEAD	150	500	NA	13.1 J	14.1 J	14.5 J	26.7 J	13.4 J	12.6 J	19.3 J	12.3 J	16.1 J	11.2 J	13.6
MAGNESIUM	NA	NA	NA	3080	4230	3300	3450	3540	4450	2660	4170	4920	6720	4280
MANGANESE	390	10000	NA	229	314	212	270	276	356	163	**459 [R]**	**409 [R]**	**458 [R]**	336
MERCURY	23	610	NA	0.05	0.04	0.06	0.11	0.06	0.07	0.11	0.016 U	0.04	0.015 U	0.05
NICKEL	1000	10000	NA	13.9	21.8	15.4	18.6	18	24.4	13.2	28.4	25.2	34	24.7
POTASSIUM	NA	NA	NA	664	501	557	463	484	498	607	336	428	222	360
SELENIUM	390	10000	NA	0.22 U	0.26 U	0.23 U	0.24 U	0.23 U	0.26 U	0.37 J	0.23 U	0.23 U	0.25 U	0.31 J
SILVER	200	10000	NA	0.04 J	0.56	0.04 J	0.05 J	0.06 J	0.04 J	0.05 J	0.03 J	0.05 J	0.02 J	0.04 J
SODIUM	NA	NA	NA	49 J	44.2 J	52 J	47.5 J	43.4 J	46.6 J	53.2 J	42.8 J	34.4 J	20.6 J	39.4 U
THALLIUM	5.5	140	NA	0.07	0.06 J	0.08	0.08 J	0.09	0.05 J	0.12	0.03 J	0.05 J	0.02 J	0.04 J
VANADIUM	550	10000	NA	16	19	19.3	19.9	17.5	19.2	21.5	20	19.2	29.2	20
ZINC	6000	10000	NA	38.3	49.9	40.3	53.9	45.4	56	38.8	64.4	54.2	85	57.7

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-001-SB1005	TF2-001-SB1006	TF2-001-SB1006	TF2-001-SB1007	TF2-001-SB1007	TF2-001-SB1008	TF2-001-SB1008	TF2-001-SB1009	TF2-001-SB1009	TF2-001-SB1009	TF2-001-SB101
SAMPLE ID				TF2-001-SB1005-0204-D	TF2-001-SS1006-0001	TF2-001-SB1006-0204	TF2-001-SS1007-0001	TF2-001-SB1007-0204	TF2-001-SS1008-0001	TF2-001-SB1008-0204	TF2-001-SS1009-0001	TF2-001-SB1009-0204	TF2-001-SB1009-0810	TF2-001-SS1010-(
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/27/2013	11/27/2013	11/27/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/25/2013	11/27/2013
SAMPLE CODE	DIRECT	DIRECT	GA	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SS	SB	SS	SB	SS	SB	SS	SB	SB	SS
TOP DEPTH				2	0	2	0	2	0	2	0	2	8	0
BOTTOM DEPTH				4	1	4	1	4	1	4	1	4	10	1
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA											
TOTAL SOLIDS	NA	NA	NA	86	84	87	83	88	88	87	89	90	92	88
PCBS (MG/KG)	NA	NA	NA											
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA											
EPH (C08-C44)	NA	NA	NA	--	--	29	--	--	--	--	--	11 U	--	--
TPH (C05-C12)	NA	NA	NA	--	--	2.3 U	--	--	--	--	--	2.4 U	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA											
2-METHYLNAPHTHALENE	123	10000	NA	0.28 J	0.012 U	0.011 U	0.013 J	0.076	0.011 U	0.011 UJ	0.011 U	0.01 U	0.011 UJ	0.011 U
ACENAPHTHENE	43	10000	NA	0.89 J	0.0068 J	0.011 U	0.17	0.23	0.011 U	0.011 U	0.0026 J	0.01 U	0.011 U	0.011 U
ACENAPHTHYLENE	23	10000	NA	0.088 J	0.012 U	0.011 U	0.012 J	0.022 J	0.011 U	0.011 U	0.011 U	0.01 U	0.011 U	0.011 U
ANTHRACENE	35	10000	NA	1.8 J	0.014 J	0.0056 J	0.34	0.91	0.011 U	0.0027 J	0.0042 J	0.01 U	0.011 U	0.0027 J
BENZO(A)ANTHRACENE	0.9	7.8	NA	**4.1 J [R]**	0.045	0.034	**1.2 [R]**	**2 [R]**	0.011 U	0.012 U	0.024	0.01 U	0.011 U	0.019 J
BENZO(A)PYRENE	0.4	0.8	240	**3.1 J [R,I]**	0.035	0.029	**0.88 [R,I]**	**1.7 [R,I]**	0.0084 J	0.0096 J	0.023 J	0.01 UJ	0.011 UJ	0.016 J
BENZO(B)FLUORANTHENE	0.9	7.8	NA	**4.8 J [R]**	0.053	0.053	**1.5 [R]**	**2.6 [R]**	0.016 J	0.018 J	0.037	0.0048 J	0.011 U	0.032
BENZO(G,H,I)PERYLENE	0.8	10000	NA	**1.5 J [R]**	0.016 J	0.014 J	0.41	**0.86 [R]**	0.011 UJ	0.011 UJ	0.009 J	0.01 UJ	0.011 UJ	0.0089 J
BENZO(K)FLUORANTHENE	0.9	78	NA	**1.5 J [R]**	0.023 J	0.015 J	0.37	0.77	0.0052 J	0.0057 J	0.017 J	0.01 U	0.011 U	0.011 J
CHRYSENE	0.4	780	NA	**3.8 J [R]**	0.045	0.037	**1.1 [R]**	**2 [R]**	0.0079 J	0.0094 J	0.028	0.01 U	0.011 U	0.019 J
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	**0.49 J [R]**	0.0074 J	0.0061 J	0.13	0.22	0.0019 U	0.0025 J	0.0048 J	0.01 U	0.011 U	0.0046 J
FLUORANTHENE	20	10000	NA	10 J	0.097	0.064	2.7 J	5 J	0.018 J	0.022 J	0.055	0.01 U	0.011 U	0.04
FLUORENE	28	10000	NA	1.7 J	0.0076 J	0.011 U	0.18	0.41 J	0.011 U	0.011 U	0.011 U	0.01 U	0.011 U	0.011 U
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	**2.4 J [R]**	0.031 J	0.026 J	0.7 J	**1.3 J [R]**	0.0079 J	0.009 J	0.021 J	0.0021 J	0.011 U	0.017 J
NAPHTHALENE	54	10000	0.8	**1.2 J [L]**	0.012 U	0.011 U	0.066	0.15	0.011 U	0.011 U	0.011 U	0.01 U	0.011 U	0.011 U
PHENANTHRENE	40	10000	NA	11 J	0.082	0.035	2	3.7	0.0099 J	0.015 J	0.033	0.0027 J	0.011 U	0.021 J
PYRENE	13	10000	NA	10 J	0.1	0.067	3.2 J	4.8 J	0.015 J	0.013 J	0.062	0.01 U	0.011 U	0.044
TOTAL PAHS	NA	NA	NA	58.648	0.5628	0.3857	14.971	26.748	0.0883	0.1069	0.3206	0.0096	0 U	0.2352

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				0	TF2-001-SB1010	TF2-003-SB1011	TF2-003-SB1011	TF2-003-SB1011	TF2-003-SB1011	TF2-003-SB1012	TF2-003-SB1012	TF2-003-SB1012	TF2-003-SB1013	TF2-003-SB1013
SAMPLE ID				001	TF2-001-SB1010-0204	TF2-003-SS1011-000.8	TF2-003-SB1011-0204	TF2-003-SB1011-0204-20131115	TF2-003-SB1011-0204-D	TF2-003-SS1012-000.7	TF2-003-SB1012-0204	TF2-003-SB1012-0810	TF2-003-SS1013-000.7	TF2-003-SB1013-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM		11/27/2013	10/22/2013	11/15/2013	AVG	11/15/2013	10/22/2013	11/15/2013	11/15/2013	10/22/2013	11/25/2013
SAMPLE CODE	DIRECT	DIRECT	GA		NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY		SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE					NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX					SB	SS	SB	SB	SB	SS	SB	SB	SS	SB
TOP DEPTH					2	0	2	2	2	0	2	8	0	2
BOTTOM DEPTH					4	0.8	4	4	4	0.7	4	10	0.7	4
DIOXINS/FURANS (NG/KG)														
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA		4900	18000	3100	3000	2900	4000	3200	--	3300	2600
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA		2.4 J	17	2.8 U	4.25 U	5.7 U	12	4.3 U	--	13	0.82 U
1,2,3,4,6,7,8-HPCDD	NA	NA	NA		28	130	20	19	18 J	81	27	--	67	24
1,2,3,4,6,7,8-HPCDF	NA	NA	NA		1.5 J	13	4.2 J	4.95	5.7	12	5.3	--	12	0.44 U
1,2,3,4,7,8,9-HPCDF	NA	NA	NA		0.04 U	0.37 J	0.033 U	0.0435 U	0.054 U	0.74 J	0.44 U	--	0.74 J	0.033 U
1,2,3,4,7,8-HXCDD	NA	NA	NA		0.19 J	0.97 J	0.22 J	0.132	0.088 U	1.8 J	0.73 J	--	1.1 J	0.12 J
1,2,3,4,7,8-HXCDF	NA	NA	NA		0.31 J	1.3 J	0.74 U	0.935	1.5 J	3 J	1.2 J	--	2.6 J	0.11 U
1,2,3,6,7,8-HXCDD	NA	NA	NA		0.38 J	2.5 J	0.38 J	0.2095	0.078 U	4 J	1.6 J	--	3.9 J	0.21 J
1,2,3,6,7,8-HXCDF	NA	NA	NA		0.48 J	1.3 J	0.45 J	0.625	0.8 J	1.3 J	0.76 J	--	1.1 J	0.31 J
1,2,3,7,8,9-HXCDD	NA	NA	NA		0.41 J	5.6	0.53 J	0.46	0.39 J	4.4 J	1.5 J	--	4.2 J	0.46 J
1,2,3,7,8,9-HXCDF	NA	NA	NA		0.032 U	0.1 U	0.022 U	0.031 U	0.04 U	0.085 U	0.037 U	--	0.094 U	0.028 U
1,2,3,7,8-PECDD	NA	NA	NA		0.063 U	0.72 J	0.14 J	0.0945	0.098 U	1.4 J	0.59 J	--	1.1 J	0.048 U
1,2,3,7,8-PECDF	NA	NA	NA		0.15 J	0.4 J	0.029 U	0.14225	0.27 J	0.74 J	0.43 J	--	1.2 J	0.043 U
2,3,4,6,7,8-HXCDF	NA	NA	NA		0.17 J	0.96 J	0.29 J	0.26	0.23 J	1.1 J	0.53 J	--	1.4 J	0.025 U
2,3,4,7,8-PECDF	NA	NA	NA		0.11 J	0.68 J	0.26 J	0.14725	0.069 U	1.2 J	0.39 J	--	1.2 J	0.033 U
2,3,7,8-TCDD	NA	NA	NA		0.038 U	0.23 J	0.029 U	0.0425 U	0.056 U	0.26 J	0.031 U	--	0.22 J	0.027 U
2,3,7,8-TCDF	NA	NA	NA		0.068 U	0.76 J	0.13 U	0.0955 U	0.061 UJ	1 J	0.35 J	--	1.4	0.23 U
TEQ	NA	NA	NA		1.99722	9.3438	1.577	1.49205	1.4071	5.8432	2.6699	--	5.0773	1.13
TEQ BIRD	NA	NA	NA		0.80854	5.4849	0.9138	0.7989	0.684	5.6536	2.2245	--	5.5897	0.3691
TEQ BIRD HALFND	NA	NA	NA		0.89484	5.4899	1.033155	0.93215	0.831145	5.65785	2.244265	--	5.5944	0.550806
TEQ HALFND	NA	NA	NA		2.05292	9.3488	1.63712	1.5730225	1.508925	5.84745	2.690095	--	5.082	1.195233
TOTAL HPCDD	NA	NA	NA		50	240	36	36	36 J	160	50	--	130	42 J
TOTAL HPCDF	NA	NA	NA		2.9 J	25	6.8	7.4	8	22	9	--	25	0.68 U
TOTAL HXCDD	NA	NA	NA		4.2 J	31 J	4.4 J	3.95	3.5 J	42	17	--	37 J	4.9 J
TOTAL HXCDF	NA	NA	NA		3.1 J	20 J	4.6 J	5.2	5.8 J	17 J	6.8 J	--	17 J	0.74 J
TOTAL PECDD	NA	NA	NA		1.5 J	9 J	2.1 J	1.75	1.4 J	31 J	16 J	--	26 J	1 J
TOTAL PECDF	NA	NA	NA		1.9 J	15	2.8 J	3.25	3.7 J	15 J	6.1 J	--	16 J	0.31 J
TOTAL TCDD	NA	NA	NA		0.59 J	5.5 J	1.5 J	0.764	0.056 U	64 J	11 J	--	19 J	1.1 J
TOTAL TCDF	NA	NA	NA		1.4 J	9.6 J	2.4 J	2.65	2.9 J	13	5.4 J	--	14	0.96 J
METALS (MG/KG)	NA	NA	NA											
ALUMINUM	NA	NA	NA		16000	11000 J	14700	14050	13400	9360	11700	12200	9530	10400
ANTIMONY	10	820	NA		0.07 J	0.2 J	0.17 J	0.17	0.17 J	0.2	0.18 J	0.06 U	0.27	0.07 J
ARSENIC	7	7	NA		6.9 J	**8.9 [R,I]**	**7.7 [R,I]**	**7.2 [R,I]**	6.7	5.6	6.5	4.7	6	4.5
BARIUM	5500	10000	NA		16	27.4	17.9	22.95	28	23.5	23.8	11.6	25.6	14.3
BERYLLIUM	1.5	1.5	NA		0.36	0.38	0.4	0.37	0.34	0.4	0.5	0.3	0.36	0.28
CADMIUM	39	1000	NA		0.09	0.2	0.14	0.13	0.12	0.14	0.19	0.09 J	0.17	0.07 J
CALCIUM	NA	NA	NA		874	520 J	853	1066.5	1280	857	1170	939	914	614
CHROMIUM	NA	NA	NA		18.3	14.7	19.2	17.8	16.4	11.6	15	16.4	12.4	12.9
COBALT	NA	NA	NA		13.1	11.4	12.9	12	11.1	7.7	10	10.2	8.6	7.4
COPPER	3100	10000	NA		14.8	16.3	20.8 J	19.15	17.5 J	21.7	34.3 J	15.2 J	18.6	13.2
IRON	NA	NA	NA		31200	25100 J	29400	28900	28400	18300	24100	24700	17700	20400
LEAD	150	500	NA		13.5	79.3 J	25.4	26.4	27.4	33.6	18.4	11	57.6	9.8
MAGNESIUM	NA	NA	NA		4900	2620 J	5130	4755	4380	2430	3570	4370	2730	3490
MANGANESE	390	10000	NA		344	**512 J [R]**	346	322	298	263	314	284	268	221
MERCURY	23	610	NA		0.07	0.14 J	0.04 U	0.04 U	0.04 U	0.07 J	0.07	0.05	0.07 J	0.015 U
NICKEL	1000	10000	NA		23	18.5	24.2	22.15	20.1	17.2	19.1	21.6	16	17.2
POTASSIUM	NA	NA	NA		330 J	335	402 J	450.5	499 J	429	428 J	284 J	328	487
SELENIUM	390	10000	NA		0.22 U	0.26 U	0.29 J	0.305	0.32 J	0.2 J	0.3 J	0.24 J	0.26 J	0.26 J
SILVER	200	10000	NA		0.03 J	0.04 J	0.05 J	0.045	0.04 J	0.05 J	0.05 J	0.03 J	0.06 J	0.03 J
SODIUM	NA	NA	NA		26.5 J	16.8 U	39 U	38.5 U	38 U	37.5 J	42.8 U	36 U	29.2 J	61.9 J
THALLIUM	5.5	140	NA		0.05 J	0.06 J	0.04 J	0.035	0.03 J	0.05 J	0.04 J	0.02 J	0.06 J	0.04 J
VANADIUM	550	10000	NA		20.5	24.9 J	18.2	17.6	17	17.3	15.2	14.6	20	14.5
ZINC	6000	10000	NA		58.8	71.8 J	67.1	68.3	69.5	46.3	56.2	48.6	50	39.5

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				0	TF2-001-SB1010	TF2-003-SB1011	TF2-003-SB1011	TF2-003-SB1011	TF2-003-SB1011	TF2-003-SB1012	TF2-003-SB1012	TF2-003-SB1012	TF2-003-SB1013	TF2-003-SB1013
SAMPLE ID				001	TF2-001-SB1010-0204	TF2-003-SS1011-000.8	TF2-003-SB1011-0204	TF2-003-SB1011-0204-20131115	TF2-003-SB1011-0204-D	TF2-003-SS1012-000.7	TF2-003-SB1012-0204	TF2-003-SB1012-0810	TF2-003-SS1013-000.7	TF2-003-SB1013-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM		11/27/2013	10/22/2013	11/15/2013	AVG	11/15/2013	10/22/2013	11/15/2013	11/15/2013	10/22/2013	11/25/2013
SAMPLE CODE	DIRECT	DIRECT	GA		NORMAL	NORMAL	ORIG		DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY		SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE					NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX					SB	SS	SB	SB	SB	SS	SB	SB	SS	SB
TOP DEPTH					2	0	2	2	2	0	2	8	0	2
BOTTOM DEPTH					4	0.8	4	4	4	0.7	4	10	0.7	4
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA											
TOTAL SOLIDS	NA	NA	NA		90	87	82	86.5	91	89	91	91	93	93
PCBS (MG/KG)	NA	NA	NA											
AROCLOR-1016	NA	NA	NA		--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA		--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA		--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA		--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA		--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA		--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA		--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA		--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA		--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10		--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA											
EPH (C08-C44)	NA	NA	NA		--	--	--	--	--	--	--	--	--	--
TPH (C05-C12)	NA	NA	NA		--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA											
2-METHYLNAPHTHALENE	123	10000	NA		0.011 U	0.018 J	0.012 U	0.0115 U	0.011 U	0.023	0.01 U	0.0077 J	0.012 J	0.01 U
ACENAPHTHENE	43	10000	NA		0.0069 J	0.071	0.051 J	0.028	0.005 J	0.1	0.028	0.19	0.16	0.01 U
ACENAPHTHYLENE	23	10000	NA		0.011 U	0.003 J	0.012 U	0.0115 U	0.011 U	0.005 J	0.0022 J	0.016 J	0.01 U	0.01 U
ANTHRACENE	35	10000	NA		0.019 J	0.11	0.026	0.0178	0.0096 J	0.22	0.05	0.2	0.31	0.0026 J
BENZO(A)ANTHRACENE	0.9	7.8	NA		0.059 J	0.31 J	0.077 J	0.0555	0.034 J	0.67 J	0.3	0.33	0.74	0.009 J
BENZO(A)PYRENE	0.4	0.8	240		0.071 J	0.19 J	0.054 J	0.041	0.028 J	**0.44 J [R]**	0.18 J	0.24 J	**0.58 J [R]**	0.007 J
BENZO(B)FLUORANTHENE	0.9	7.8	NA		0.1 J	0.28 J	0.063	0.051	0.039	0.64 J	0.25	0.34	0.84 J	0.0086 J
BENZO(G,H,I)PERYLENE	0.8	10000	NA		0.049 J	0.077 J	0.025 J	0.0215	0.018 J	0.16 J	0.087 J	0.15 J	0.2 J	0.0038 J
BENZO(K)FLUORANTHENE	0.9	78	NA		0.04 J	0.13	0.022 J	0.0185	0.015 J	0.17	0.079 J	0.093	0.3	0.01 U
CHRYSENE	0.4	780	NA		0.056 J	0.24	0.074 J	0.056	0.038 J	**0.63 [R]**	0.3	0.3	**0.75 [R]**	0.0087 J
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA		0.015 J	0.052	0.015 J	0.0145	0.014 J	0.095	0.036 J	0.059 J	0.11	0.01 UJ
FLUORANTHENE	20	10000	NA		0.14 J	0.62	0.13 J	0.1	0.07 J	1.8	0.48	0.5	1.9	0.02 J
FLUORENE	28	10000	NA		0.0078 J	0.062	0.018 J	0.011	0.004 J	0.12	0.012 J	0.056	0.14	0.01 U
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA		0.076 J	0.26 J	0.052	0.044	0.036	0.63 J	0.16 J	0.24	0.42 J	0.0048 J
NAPHTHALENE	54	10000	0.8		0.006 J	0.06	0.02 J	0.0121	0.0042 J	0.07	0.01 U	0.0067 J	0.043	0.01 U
PHENANTHRENE	40	10000	NA		0.12 J	0.51	0.13 J	0.0915	0.053 J	1.2	0.52	0.6	1.7	0.016 J
PYRENE	13	10000	NA		0.16 J	0.48	0.19 J	0.1365	0.083 J	1.3	0.75	0.77	2	0.016 J
TOTAL PAHS	NA	NA	NA		0.9257	3.473	0.947	0.6989	0.4508	8.273	3.2342	4.0984	10.205	0.0965

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-003-SB1013	TF2-003-SB1014	TF2-003-SB1014	TF2-003-SB1014	TF2-003-SB1015	TF2-003-SB1015	TF2-003-SB1015	TF2-003-SB1015	TF2-003-SB1015	TF2-003-SB1016
SAMPLE ID				TF2-003-SB1013-0405	TF2-003-SS1014-0001	TF2-003-SB1014-0204	TF2-003-SB1014-0810	TF2-003-SS1015-000.8	TF2-003-SS1015-000.8-20131022	TF2-003-SS1015-000.8-D	TF2-003-SB1015-0204	TF2-003-SB1015-0810	TF2-003-SS1016-000.9
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/25/2013	10/22/2013	11/15/2013	11/15/2013	10/22/2013	AVG	10/22/2013	11/15/2013	11/15/2013	10/22/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SS	SB	SB	SS	SS	SS	SB	SB	SS
TOP DEPTH				4	0	2	8	0	0	0	2	8	0
BOTTOM DEPTH				5	1	4	10	0.8	0.8	0.8	4	10	0.9
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	--	3300	2000	--	5400	5750	6100	3100	--	6900
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	--	12	4.2 U	--	8.9 J	9.95	11	4.3 U	--	11
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	--	70	41	--	84	86	88	41	--	110
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	--	12	12	--	7.4	8.25	9.1	9.1	--	7
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	--	0.61 J	0.63 J	--	0.54 J	0.57	0.6 J	0.56 U	--	0.11 U
1,2,3,4,7,8-HXCDD	NA	NA	NA	--	1.9 J	2.6 J	--	1.1 J	1.25	1.4 J	2.2 J	--	1.6 J
1,2,3,4,7,8-HXCDF	NA	NA	NA	--	2.6 J	2.9 J	--	1.7 J	2	2.3 J	1.9 J	--	1.7 J
1,2,3,6,7,8-HXCDD	NA	NA	NA	--	4.4 J	6.9	--	2.8 J	2.95	3.1 J	5.3 J	--	2.6 J
1,2,3,6,7,8-HXCDF	NA	NA	NA	--	1.2 J	2.4 J	--	0.82 J	1.01	1.2 J	1.9 J	--	0.88 J
1,2,3,7,8,9-HXCDD	NA	NA	NA	--	4.8 J	6.3	--	2.9 J	3	3.1 J	4.9 J	--	3.5 J
1,2,3,7,8,9-HXCDF	NA	NA	NA	--	0.083 U	0.029 U	--	0.074 U	0.0815 U	0.089 U	0.023 U	--	0.086 U
1,2,3,7,8-PECDD	NA	NA	NA	--	1.1 J	2.9 J	--	0.73 J	0.835	0.94 J	2.3 J	--	0.67 J
1,2,3,7,8-PECDF	NA	NA	NA	--	0.83 J	1.5 J	--	0.9 J	0.93	0.96 J	1.3 J	--	0.67 J
2,3,4,6,7,8-HXCDF	NA	NA	NA	--	1.3 J	1.9 J	--	0.85 J	0.87	0.89 J	1.4 J	--	0.78 J
2,3,4,7,8-PECDF	NA	NA	NA	--	1.1 J	1.9 J	--	0.85 J	0.905	0.96 J	1.5 J	--	0.8 J
2,3,7,8-TCDD	NA	NA	NA	--	0.43 J	0.043 U	--	0.15 J	0.2	0.25 J	0.039 U	--	0.23 J
2,3,7,8-TCDF	NA	NA	NA	--	1.3	1.1	--	1.5 UJ	0.84 J	0.84 J	0.87 J	--	1.1
TEQ	NA	NA	NA	--	5.4546	7.0613	--	4.72107	5.160585	5.6001	6.067	--	5.6194
TEQ BIRD	NA	NA	NA	--	5.6693	7.9663	--	3.23429	3.983195	4.7321	6.415	--	4.5301
TEQ BIRD HALFND	NA	NA	NA	--	5.67345	7.98946	--	3.98799	4.36227	4.73655	6.438665	--	4.53495
TEQ HALFND	NA	NA	NA	--	5.45875	7.08488	--	4.79977	5.20216	5.60455	6.091095	--	5.62425
TOTAL HPCDD	NA	NA	NA	--	150	81	--	190	195	200	80	--	260
TOTAL HPCDF	NA	NA	NA	--	23	15	--	15	16.5	18	12	--	14
TOTAL HXCDD	NA	NA	NA	--	45 J	79	--	31 J	32	33	60	--	33
TOTAL HXCDF	NA	NA	NA	--	15 J	19	--	13 J	14.5	16 J	14 J	--	15
TOTAL PECDD	NA	NA	NA	--	26 J	87 J	--	12 J	13.5	15 J	70 J	--	6.7 J
TOTAL PECDF	NA	NA	NA	--	14 J	22 J	--	12 J	13	14 J	15	--	15 J
TOTAL TCDD	NA	NA	NA	--	20 J	63 J	--	7.6 J	7.7	7.8 J	55 J	--	3.8 J
TOTAL TCDF	NA	NA	NA	--	25 J	19 J	--	8.9 J	9.45	10 J	17 J	--	12 J
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	11700	10900	10400	11400	9570	9135	8700	12000	12700	9360 J
ANTIMONY	10	820	NA	0.06 J	0.51	0.31 J	0.1 J	0.28	0.26	0.24	0.14 J	0.07 J	0.53 J
ARSENIC	7	7	NA	3.8	6	**7.8 [R,I]**	4.9	5.2	5.05	4.9	6.2	5.2	6
BARIUM	5500	10000	NA	17.6	22.7	19.4	13.7	31	28.5	26	19.2	11.6	41.5
BERYLLIUM	1.5	1.5	NA	0.34	0.38	0.33	0.31	0.42	0.39	0.36	0.34	0.32	0.51
CADMIUM	39	1000	NA	0.07 J	0.16	0.15	0.16	0.16	0.15	0.14	0.16	0.15	0.28
CALCIUM	NA	NA	NA	1110	904	1520	1110	754	793	832	1110	801	719 J
CHROMIUM	NA	NA	NA	15.8	14.8	13.7	17	12.1	11.35	10.6	15.1	14.3	12.3
COBALT	NA	NA	NA	6.1	8.6	10.6	9.6	7.2	6.85	6.5	11	9.3	7.7
COPPER	3100	10000	NA	12.6	17.8	25.4 J	15.6 J	15.2	15.4	15.6	21 J	11.7 J	16.7
IRON	NA	NA	NA	19400	20800	24100	22900	15700	15350	15000	24700	25400	15800 J
LEAD	150	500	NA	9.4	36.7	21.3	14.8	50.8	50	49.2	17.2	11.8	101 J
MAGNESIUM	NA	NA	NA	3300	3260	3560	4200	2140	2060	1980	4360	4520	1500 J
MANGANESE	390	10000	NA	179	311	**403 [R]**	318	371	357	343	339	292	**658 J [R]**
MERCURY	23	610	NA	0.014 U	0.07 J	0.04 U	0.03 U	0.09 J	0.085	0.08	0.04 U	0.04 U	0.13 J
NICKEL	1000	10000	NA	15.4	18.7	18.6	19.9	14.3	13.65	13	20.5	20	13.4
POTASSIUM	NA	NA	NA	628	443	398 J	346 J	414	362.5	311	410 J	264 J	354
SELENIUM	390	10000	NA	0.29 J	0.19 J	0.31 J	0.24 J	0.28 J	0.28	0.28 J	0.26 J	0.25 J	0.41 U
SILVER	200	10000	NA	0.04 J	0.05 J	0.04 J	0.03 J	0.07 J	0.06	0.05 J	0.04 J	0.03 J	0.08
SODIUM	NA	NA	NA	84.4	25.1 U	39 U	37 U	27.6 J	19.35	22.2 U	37 U	38 U	28 J
THALLIUM	5.5	140	NA	0.07 J	0.05 J	0.04 J	0.03 J	0.08	0.07	0.06 J	0.04 J	0.03 J	0.1
VANADIUM	550	10000	NA	17.5	21.6	13.9	14.9	19.2	18.4	17.6	15.2	15	21.8 J
ZINC	6000	10000	NA	37.4	61.4	52.4	50.3	53.6	49.9	46.2	56	47.8	99.1 J

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-003-SB1013	TF2-003-SB1014	TF2-003-SB1014	TF2-003-SB1014	TF2-003-SB1015	TF2-003-SB1015	TF2-003-SB1015	TF2-003-SB1015	TF2-003-SB1015	TF2-003-SB1016
SAMPLE ID				TF2-003-SB1013-0405	TF2-003-SS1014-0001	TF2-003-SB1014-0204	TF2-003-SB1014-0810	TF2-003-SS1015-000.8	TF2-003-SS1015-000.8-	TF2-003-SS1015-000.8-D	TF2-003-SB1015-0204	TF2-003-SB1015-0810	TF2-003-SS1016-000.9
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/25/2013	10/22/2013	11/15/2013	11/15/2013	10/22/2013	20131022	10/22/2013	11/15/2013	11/15/2013	10/22/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SS	SB	SB	SS	SS	SS	SB	SB	SS
TOP DEPTH				4	0	2	8	0	0	0	2	8	0
BOTTOM DEPTH				5	1	4	10	0.8	0.8	0.8	4	10	0.9
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	92	93	93	94	93	93	93	93	89	91
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	--	--	--	--	48 J	48 J	--	--	--	--
TPH (C05-C12)	NA	NA	NA	--	--	--	--	2.3 U	2.3 U	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.011 U	0.01 U	0.01 U	0.032 J	0.0095 U	0.00975 U	0.01 U	0.0067 J	0.0092 J	0.0043 J
ACENAPHTHENE	43	10000	NA	0.011 U	0.015 J	0.02 J	0.32	0.0054 J	0.00505	0.0047 J	0.054	0.009 J	0.014 J
ACENAPHTHYLENE	23	10000	NA	0.011 U	0.0018 J	0.0027 J	0.02 J	0.0023 J	0.00205	0.0018 J	0.0032 J	0.011 U	0.0043 J
ANTHRACENE	35	10000	NA	0.0022 J	0.026	0.034	0.41	0.016 J	0.015	0.014 J	0.092	0.013 J	0.03
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.011 J	0.18 J	0.14	0.51	0.12 J	0.12	0.12	0.42	0.076	0.2 J
BENZO(A)PYRENE	0.4	0.8	240	0.0085 J	0.099 J	0.052 J	0.24 J	0.079 J	0.0895	0.1 J	0.24 J	0.084 J	0.15 J
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.0089 J	0.16 J	0.082	0.26	0.14 J	0.155	0.17 J	0.32	0.089	0.24 J
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.0048 J	0.044 J	0.014 J	0.095 J	0.039 J	0.043	0.047 J	0.1 J	0.069 J	0.066 J
BENZO(K)FLUORANTHENE	0.9	78	NA	0.0087 J	0.052	0.026	0.1	0.042	0.049	0.056	0.11	0.026 J	0.08 J
CHRYSENE	0.4	780	NA	0.012 J	0.17	0.15	**0.48 [R]**	0.11	0.12	0.13	**0.46 [R]**	0.12	0.18
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.0021 J	0.027	0.015 J	0.034	0.024	0.0205	0.017 J	0.048	0.031 J	0.042 J
FLUORANTHENE	20	10000	NA	0.031	0.33	0.32	0.75	0.23	0.215	0.2	0.64	0.076	0.34
FLUORENE	28	10000	NA	0.011 U	0.01 J	0.008 J	0.17	0.0047 J	0.0044	0.0041 J	0.032	0.0051 J	0.014 J
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.0049 J	0.13 J	0.038	0.17	0.13 J	0.107	0.084 J	0.19	0.059	0.23 J
NAPHTHALENE	54	10000	0.8	0.011 U	0.0029 J	0.01 U	0.0099 J	0.0095 U	0.00975 U	0.01 U	0.0072 J	0.0034 J	0.0092 J
PHENANTHRENE	40	10000	NA	0.014 J	0.22	0.28	1.5	0.12	0.115	0.11	0.72	0.1	0.22
PYRENE	13	10000	NA	0.018 J	0.41	0.41	1.1	0.2	0.22	0.24	1	0.33	0.32
TOTAL PAHS	NA	NA	NA	0.1261	1.8777	1.5917	6.2009	1.2624	1.2805	1.2986	4.4431	1.0997	2.1438

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-003-SB1016	TF2-003-SB1016	TF2-003-SB1017	TF2-003-SB1017	TF2-003-SB1017	TF2-003-SB1017	TF2-003-SB1018	TF2-003-SB1018	TF2-003-SB1019	TF2-003-SB1019
SAMPLE ID				TF2-003-SB1016-0204	TF2-003-SB1016-0810	TF2-003-SS1017-000.8	TF2-003-SB1017-011.6	TF2-003-SB1017-0204	TF2-003-SB1017-0810	TF2-003-SS1018-000.8	TF2-003-SB1018-0204	TF2-003-SS1019-000.5	TF2-003-SB1019-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/15/2013	11/15/2013	10/22/2013	11/15/2013	11/15/2013	11/15/2013	10/22/2013	11/15/2013	10/22/2013	11/25/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SB	SS	SB	SB	SB	SS	SB	SS	SB
TOP DEPTH				2	8	0	1	2	8	0	2	0	2
BOTTOM DEPTH				4	10	0.8	1.6	4	10	0.8	4	0.5	4
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	3100	--	3300	2500	3700	--	3300	1500	3000	4200
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	4.4 U	--	8 J	7 U	0.48 U	--	4.5 J	1 U	15	6.4 J
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	35	--	58	56	23	--	41	8.3	72	64
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	8.2	--	5.9	18	0.39 U	--	3.6 J	0.51 U	16	14
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	0.38 U	--	0.093 U	0.97 J	0.054 U	--	0.18 J	0.12 U	0.79 J	0.73 J
1,2,3,4,7,8-HXCDD	NA	NA	NA	1.5 J	--	1.1 J	5 J	0.096 J	--	0.91 J	0.056 U	2.4 J	3.6 J
1,2,3,4,7,8-HXCDF	NA	NA	NA	3.5 J	--	1.3 J	3.8 J	0.095 U	--	1 J	0.23 U	6	3.8 J
1,2,3,6,7,8-HXCDD	NA	NA	NA	3.6 J	--	1.6 J	12	0.092 J	--	1.4 J	0.049 U	5.7	8
1,2,3,6,7,8-HXCDF	NA	NA	NA	1.8 J	--	0.78 J	3.3 J	0.24 J	--	0.68 J	0.29 J	2.4 J	2.6 J
1,2,3,7,8,9-HXCDD	NA	NA	NA	3.5 J	--	2.1 J	11	0.33 J	--	1.6 J	0.045 U	5.4	5.9
1,2,3,7,8,9-HXCDF	NA	NA	NA	0.3 J	--	0.068 U	0.031 U	0.014 U	--	0.047 U	0.033 U	0.098 U	0.08 J
1,2,3,7,8-PECDD	NA	NA	NA	1.3 J	--	0.11 U	5.2 J	0.035 U	--	0.4 J	0.081 U	1.7 J	2.9 J
1,2,3,7,8-PECDF	NA	NA	NA	0.7 J	--	0.38 J	2.4 J	0.02 U	--	0.3 J	0.044 U	1.4 J	1.7 J
2,3,4,6,7,8-HXCDF	NA	NA	NA	1.1 J	--	0.83 J	2.6 J	0.013 U	--	0.39 J	0.031 U	1.9 J	2.3 J
2,3,4,7,8-PECDF	NA	NA	NA	1.3 J	--	0.6 J	3.3 J	0.02 U	--	0.43 J	0.046 U	1.1 J	2.1 J
2,3,7,8-TCDD	NA	NA	NA	0.098 U	--	0.27 J	0.1 U	0.017 U	--	0.11 J	0.048 U	0.4 J	0.47 J
2,3,7,8-TCDF	NA	NA	NA	0.047 UJ	--	0.69 J	2	0.013 U	--	0.46 J	0.039 U	1.5	1.1
TEQ	NA	NA	NA	4.603	--	2.9328	11.7317	1.4158	--	2.73115	0.562	6.7944	8.83822
TEQ BIRD	NA	NA	NA	4.228	--	2.6178	13.6757	0.45572	--	2.26575	0.1873	7.1284	9.09994
TEQ BIRD HALFND	NA	NA	NA	4.30262	--	2.676665	13.7276	0.507564	--	2.2681	0.318295	7.1333	9.09994
TEQ HALFND	NA	NA	NA	4.65691	--	2.991665	11.7843	1.454142	--	2.7335	0.66151	6.7993	8.83822
TOTAL HPCDD	NA	NA	NA	75	--	120	110	42	--	88	14	140	120
TOTAL HPCDF	NA	NA	NA	12 J	--	12	23	0.54 U	--	6.8 J	0.74 U	29 J	19 J
TOTAL HXCDD	NA	NA	NA	41 J	--	20 J	140	1.2 J	--	18	0.57 J	85 J	98
TOTAL HXCDF	NA	NA	NA	13 J	--	9.2 J	29 J	0.47 U	--	5.2 J	0.68 U	23 J	24 J
TOTAL PECDD	NA	NA	NA	44 J	--	7.1 J	180 J	0.4 J	--	7.5 J	0.3 J	45 J	110 J
TOTAL PECDF	NA	NA	NA	13 J	--	7.1 J	25	0.02 U	--	4.5 J	0.046 U	19 J	24 J
TOTAL TCDD	NA	NA	NA	29 J	--	4.8 J	160	0.31 J	--	5.9 J	0.048 U	37 J	86 J
TOTAL TCDF	NA	NA	NA	12 J	--	5.8 J	37	0.13 J	--	4.7 J	0.21 J	17 J	25 J
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	11000	13200	8920	14500	10500	14500	9630	10400	9340	11000
ANTIMONY	10	820	NA	0.18 J	0.11 J	0.41	0.21 J	0.1 J	0.09 J	0.18	0.08 J	0.29	0.11
ARSENIC	7	7	NA	6.4	5.7	5.5	**8.8 [R,I]**	5.3	**8.7 [R,I]**	5.2	5.6	6.2	5.6
BARIUM	5500	10000	NA	20.5	15	23	23	13	16.6	26.6	11.5	24.5	19.6
BERYLLIUM	1.5	1.5	NA	0.38	0.32	0.38	0.44	0.31	0.61	0.38	0.32	0.35	0.31
CADMIUM	39	1000	NA	0.17	0.11	0.23	0.13	0.1	0.07 J	0.1	0.14	0.29	0.09
CALCIUM	NA	NA	NA	1010	1070	549	1270	511	946	576	654	1080	1060
CHROMIUM	NA	NA	NA	14.1	17	44.5	18.1	13	19	13.2	13.1	12.7	13.9
COBALT	NA	NA	NA	10.1	10	7.6	15.2	9.5	13.1	9.2	9.1	8.7	8.7
COPPER	3100	10000	NA	19.6 J	15.7 J	14.6	46 J	17.5 J	20.4 J	11.6	15.3 J	18.3	17.1
IRON	NA	NA	NA	22700	27000	18700	32000	21000	31200	18400	23100	17500	21400
LEAD	150	500	NA	26.4	16.4	62.5	16.4	11	14.1	16.6	12	32.1	13.9
MAGNESIUM	NA	NA	NA	3790	4580	2470	4800	3530	3920	2720	3790	2790	3630
MANGANESE	390	10000	NA	351	309	332	387	276	**464 [R]**	**649 [R]**	273	311	279
MERCURY	23	610	NA	0.04 U	0.02 U	0.06 J	0.09	0.02 U	0.03 U	0.04	0.016 U	0.04	0.02 U
NICKEL	1000	10000	NA	18.4	21.6	24	27.5	17.9	24.3	16.2	17	16.1	17.8
POTASSIUM	NA	NA	NA	418 J	336 J	391	518 J	354 J	349 J	474	359 J	501	598
SELENIUM	390	10000	NA	0.29 J	0.16 J	0.14 J	0.45 J	0.2 J	0.47	0.22 J	0.16 J	0.23 J	0.24 J
SILVER	200	10000	NA	0.04 J	0.03 J	0.06 J	0.04 J	0.04 J	0.05 J	0.04 J	0.02 J	0.06 J	0.04 J
SODIUM	NA	NA	NA	32.9 U	38 U	24.5 U	41 U	39 U	31 U	22.2 U	36 U	29.2 J	52.4 J
THALLIUM	5.5	140	NA	0.05 J	0.03 J	0.06 J	0.05 J	0.04 J	0.04 J	0.07 J	0.03 J	0.06 J	0.06
VANADIUM	550	10000	NA	14.8	15.5	19.8	17.2	12.8	19.6	17.2	14.2	21.6	15.4
ZINC	6000	10000	NA	55.9	60.1	86.7	63.3	38	56.2	39.6	39	55.4	46.4

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-003-SB1016	TF2-003-SB1016	TF2-003-SB1017	TF2-003-SB1017	TF2-003-SB1017	TF2-003-SB1017	TF2-003-SB1018	TF2-003-SB1018	TF2-003-SB1019	TF2-003-SB1019
SAMPLE ID				TF2-003-SB1016-0204	TF2-003-SB1016-0810	TF2-003-SS1017-000.8	TF2-003-SB1017-011.6	TF2-003-SB1017-0204	TF2-003-SB1017-0810	TF2-003-SS1018-000.8	TF2-003-SB1018-0204	TF2-003-SS1019-000.5	TF2-003-SB1019-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/15/2013	11/15/2013	10/22/2013	11/15/2013	11/15/2013	11/15/2013	10/22/2013	11/15/2013	10/22/2013	11/25/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SB	SS	SB	SB	SB	SS	SB	SS	SB
TOP DEPTH				2	8	0	1	2	8	0	2	0	2
BOTTOM DEPTH				4	10	0.8	1.6	4	10	0.8	4	0.5	4
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	92	93	92	80	93	89	95	95	92	93
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	--	--	--	250 J	--	--	--	--	--	--
TPH (C05-C12)	NA	NA	NA	--	--	--	3.4 U	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.011 UJ	0.011 UJ	0.01 U	0.0065 J	0.01 U	0.011 U	0.0095 U	0.0038 J	0.0099 U	0.011 U
ACENAPHTHENE	43	10000	NA	0.022	0.0069 J	0.0095 J	0.066	0.01 U	0.0019 J	0.005 J	0.034	0.015 J	0.023
ACENAPHTHYLENE	23	10000	NA	0.011 U	0.0018 J	0.0014 J	0.0024 J	0.01 U	0.011 U	0.0095 U	0.01 U	0.0021 J	0.0024 J
ANTHRACENE	35	10000	NA	0.067	0.017 J	0.02 J	0.15	0.0017 J	0.011 U	0.009 J	0.031	0.051	0.075
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.48	0.12	0.14 J	**1.1 [R]**	0.0066 J	0.0037 J	0.063 J	0.087	0.4	0.41
BENZO(A)PYRENE	0.4	0.8	240	0.26 J	0.074 J	0.092 J	**0.57 J [R]**	0.0036 J	0.011 UJ	0.038 J	0.044 J	0.22 J	0.25 J
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.45	0.11	0.14 J	**0.98 [R]**	0.012 J	0.01 J	0.058 J	0.058	0.3 J	0.28 J
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.1 J	0.029 J	0.045 J	0.24 J	0.01 UJ	0.011 UJ	0.018 J	0.018 J	0.086 J	0.12 J
BENZO(K)FLUORANTHENE	0.9	78	NA	0.13	0.039	0.046	0.24	0.01 U	0.011 U	0.018 J	0.019 J	0.12	0.35 J
CHRYSENE	0.4	780	NA	**0.5 [R]**	0.11	0.12	**1.1 [R]**	0.0073 J	0.0044 J	0.056	0.082	**0.41 [R]**	**0.44 [R]**
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.049	0.019 J	0.028	0.098	0.0088 J	0.0087 J	0.011 J	0.012 J	0.059	0.066 J
FLUORANTHENE	20	10000	NA	0.68	0.18	0.23	1.6	0.015 J	0.0065 J	0.1	0.16	0.74	1.1
FLUORENE	28	10000	NA	0.0079 J	0.004 J	0.0057 J	0.031	0.01 U	0.011 U	0.0095 U	0.02 J	0.0083 J	0.013 J
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.19	0.064	0.13 J	0.4	0.0072 J	0.0058 J	0.053 J	0.039	0.26 J	0.14 J
NAPHTHALENE	54	10000	0.8	0.0048 J	0.011 U	0.01 U	0.0065 J	0.01 U	0.011 U	0.0095 U	0.01 U	0.0099 U	0.0067 J
PHENANTHRENE	40	10000	NA	0.59	0.14	0.16	1.5	0.0091 J	0.0035 J	0.078	0.29	0.45	0.66
PYRENE	13	10000	NA	0.96	0.25	0.26	2.5	0.014 J	0.0074 J	0.13	0.27	0.84	0.74 J
TOTAL PAHS	NA	NA	NA	4.4907	1.1647	1.4276	10.5904	0.0853	0.0519	0.637	1.1678	3.9614	4.6761

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-003-SB1019	TF2-004/5-SB1020	TF2-004/5-SB1020	TF2-004/5-SB1020	TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1022
SAMPLE ID				TF2-003-SB1019-0810	TF2-004/5-SS1020-0001	TF2-004/5-SS1020-0001-	TF2-004/5-SS1020-0001-	TF2-004/5-SS1021-000.7	TF2-004/5-SB1021-0204	TF2-004/5-SB1021-0204-	TF2-004/5-SB1021-0204-	TF2-004/5-SB1021-0608	TF2-004/5-SS1022-000.9
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/25/2013	10/18/2013	20131018	10/18/2013	10/18/2013	11/13/2013	20131113	11/13/2013	11/13/2013	10/18/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	ORIG	AVG	DUP	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SS	SS	SS	SS	SB	SB	SB	SB	SS
TOP DEPTH				8	0	0	0	0	2	2	2	6	0
BOTTOM DEPTH				10	1	1	1	0.7	4	4	4	8	0.9
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	--	6000	6300	6600	3000	5700	4250	2800	--	6400
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	--	4.9 J	6.1	7.3 J	79	1.5 U	1.65 U	1.8 U	--	5.3 J
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	--	44	46.5	49	140	22	18.5	15	--	46
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	--	3.6 J	3.85	4.1 J	47	0.47 U	0.545 U	0.62 U	--	2.9 J
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	--	0.39 J	0.35	0.31 J	3.2 J	0.034 U	0.036 U	0.038 U	--	0.059 U
1,2,3,4,7,8-HXCDD	NA	NA	NA	--	0.62 J	0.585	0.55 J	3.2 J	0.088 J	0.06375	0.079 U	--	0.51 J
1,2,3,4,7,8-HXCDF	NA	NA	NA	--	0.41 J	0.435	0.46 J	3.6 J	0.15 U	0.155 U	0.16 U	--	0.27 J
1,2,3,6,7,8-HXCDD	NA	NA	NA	--	0.9 J	1.05	1.2 J	7.1	0.087 U	0.0715 U	0.056 U	--	0.98 J
1,2,3,6,7,8-HXCDF	NA	NA	NA	--	0.81 J	1.105	1.4 J	3.7 J	0.36 J	0.35	0.34 J	--	0.52 J
1,2,3,7,8,9-HXCDD	NA	NA	NA	--	1.2 J	1.3	1.4 J	6	0.15 J	0.0895	0.058 U	--	1.2 J
1,2,3,7,8,9-HXCDF	NA	NA	NA	--	0.058 U	0.0635 U	0.069 U	0.12 U	0.031 U	0.031 U	0.031 U	--	0.059 U
1,2,3,7,8-PECDD	NA	NA	NA	--	0.27 J	0.255	0.24 J	1.6 J	0.072 U	0.061 U	0.05 U	--	0.058 U
1,2,3,7,8-PECDF	NA	NA	NA	--	0.054 U	0.063 U	0.072 U	0.64 J	0.028 U	0.03 U	0.032 U	--	0.052 U
2,3,4,6,7,8-HXCDF	NA	NA	NA	--	0.44 J	0.495	0.55 J	3.5 J	0.12 J	0.12	0.12 J	--	0.28 J
2,3,4,7,8-PECDF	NA	NA	NA	--	0.14 J	0.145	0.15 J	1.1 J	0.029 U	0.031 U	0.033 U	--	0.054 U
2,3,7,8-TCDD	NA	NA	NA	--	0.12 J	0.07125	0.045 U	0.18 J	0.032 U	0.0305 U	0.029 U	--	0.071 U
2,3,7,8-TCDF	NA	NA	NA	--	0.19 J	0.18	0.17 J	0.69 J	0.43 U	0.237 U	0.044 UJ	--	0.071 U
TEQ	NA	NA	NA	--	3.17037	3.27233	3.37429	7.7339	2.0018	1.5189	1.036	--	2.78659
TEQ BIRD	NA	NA	NA	--	1.73039	1.73236	1.73433	6.4949	0.6594	0.5002	0.341	--	0.97783
TEQ BIRD HALFND	NA	NA	NA	--	1.73599	1.749935	1.76388	6.5009	0.95438	0.6965325	0.438685	--	1.110675
TEQ HALFND	NA	NA	NA	--	3.17408	3.2877	3.40132	7.7399	2.096215	1.6010525	1.10589	--	2.866765
TOTAL HPCDD	NA	NA	NA	--	75	80.5	86	260	38	31.5	25	--	81
TOTAL HPCDF	NA	NA	NA	--	8.1	9.05	10	140	1 U	1.05	1.6 J	--	6.7
TOTAL HXCDD	NA	NA	NA	--	8.8 J	9.4	10 J	50 J	1.6 J	1.085	0.57 J	--	8.2 J
TOTAL HXCDF	NA	NA	NA	--	9.9 J	9.95	10 J	91 J	1.6 J	1.7	1.8 J	--	3.6 J
TOTAL PECDD	NA	NA	NA	--	2 J	1.9	1.8 J	7.8 J	0.072 U	0.353	0.67 J	--	1.7 J
TOTAL PECDF	NA	NA	NA	--	4.8 J	4.5	4.2 J	30 J	1.1 J	1.05	1 J	--	0.79 J
TOTAL TCDD	NA	NA	NA	--	1.3 J	0.94	0.58 J	1.1 J	0.81 J	0.575	0.34 J	--	0.71 J
TOTAL TCDF	NA	NA	NA	--	4.8 J	3.05	1.3 J	6 J	0.63 J	0.635	0.64 J	--	0.72 J
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	13200	10100	11400	12700	16000	13900	14500	15100	20700	11600
ANTIMONY	10	820	NA	0.07 J	0.14 J	0.14	0.14 J	0.13 J	0.04 J	0.05	0.06 J	0.1 J	0.16 J
ARSENIC	7	7	NA	4.1	**7.6 [R,I]**	**7.1 [R,I]**	6.6	**8.1 [R,I]**	**7.4 J [R,I]**	**8.65 [R,I]**	**9.9 J [R,I]**	**13.4 J [R,I]**	6.8
BARIUM	5500	10000	NA	11.5	14.9 J	15.9	16.9 J	20.2 J	10.2	11.6	13	12.5	17.8 J
BERYLLIUM	1.5	1.5	NA	0.28	0.35	0.33	0.31	0.51	0.26	0.33	0.4	1	0.4
CADMIUM	39	1000	NA	0.04 J	0.06 J	0.06	0.06 J	0.08 J	0.07	0.075	0.08	0.08 J	0.07 J
CALCIUM	NA	NA	NA	908	551 J	609.5	668 J	748 J	655	684	713	382	484 J
CHROMIUM	NA	NA	NA	18	12.6	14.3	16	20.8	18.9 J	18.95	19 J	28.8 J	15.2
COBALT	NA	NA	NA	11.3	13.4 J	11.85	10.3 J	5.2 J	14.6	16.8	19	25.4	12 J
COPPER	3100	10000	NA	15.6	16.3	16	15.7	22.5	22.6 J	23.7	24.8 J	63.9 J	20.4
IRON	NA	NA	NA	27200	21100	21500	21900	28500	29100	30300	31500	45200	23900
LEAD	150	500	NA	10.9	12.4	12.45	12.5	26	8.9	10.7	12.5	19.9	11.4
MAGNESIUM	NA	NA	NA	4610	3150 J	3150	3150 J	1970 J	4690	4750	4810	6870	3440 J
MANGANESE	390	10000	NA	226	345 J	315.5	286 J	156 J	276	308	340	**433 [R]**	**498 J [R]**
MERCURY	23	610	NA	0.016 U	0.02 U	0.017 U	0.014 U	0.04	0.04	0.025	0.01 J	0.02 J	0.01 U
NICKEL	1000	10000	NA	20.4	17.6	17.15	16.7	9.8	27 J	27.05	27.1 J	51.8 J	24.8
POTASSIUM	NA	NA	NA	528	447	406.5	366	439	226	271.5	317	270	476
SELENIUM	390	10000	NA	0.24 J	0.25 U	0.265 U	0.28 U	0.25 U	0.28 U	0.31 U	0.34 U	0.4 U	0.34 U
SILVER	200	10000	NA	0.03 J	0.02 J	0.02	0.02 J	0.04 J	0.02 J	0.02	0.02 J	0.02 J	0.03 J
SODIUM	NA	NA	NA	53.9 J	45.9 U	47.45 U	49 U	54.8 U	19.2 J	20.6	22 J	19.3 J	51.8 U
THALLIUM	5.5	140	NA	0.05 J	0.04 U	0.045 U	0.05 U	0.05 U	0.02 J	0.025	0.03 J	0.02 J	0.05 U
VANADIUM	550	10000	NA	16.5	16.2	17.85	19.5	25.9	15	16.1	17.2	20.5	17.1
ZINC	6000	10000	NA	49.7	39	40.85	42.7	57.2	58.9 J	58.2	57.5 J	129 J	50.5

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-003-SB1019	TF2-004/5-SB1020	TF2-004/5-SB1020	TF2-004/5-SB1020	TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1021	TF2-004/5-SB1022
SAMPLE ID				TF2-003-SB1019-0810	TF2-004/5-SS1020-0001	TF2-004/5-SS1020-0001-	TF2-004/5-SS1020-0001-	TF2-004/5-SS1021-000.7	TF2-004/5-SB1021-0204	TF2-004/5-SB1021-0204-	TF2-004/5-SB1021-0204-	TF2-004/5-SB1021-0608	TF2-004/5-SS1022-000.9
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/25/2013	10/18/2013	20131018	10/18/2013	10/18/2013	11/13/2013	20131113	11/13/2013	11/13/2013	10/18/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	ORIG	AVG	DUP	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SS	SS	SS	SS	SB	SB	SB	SB	SS
TOP DEPTH				8	0	0	0	0	2	2	2	6	0
BOTTOM DEPTH				10	1	1	1	0.7	4	4	4	8	0.9
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	89	98	97.5	97	96	92	92.5	93	95	95
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	11 J	32 J	32	32 J	--	6.1 J	6.1 J	--	--	--
TPH (C05-C12)	NA	NA	NA	2 U	2.4 J	5.9	9.4 J	--	2 U	2 U	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.011 U	0.01 U	0.01 U	0.01 U	0.024	0.0048 J	0.0048 J	0.0098 U	0.01 U	0.01 U
ACENAPHTHENE	43	10000	NA	0.011 U	0.0016 J	0.0016 J	0.01 U	0.3	0.011 U	0.0104 U	0.0098 U	0.01 U	0.01 U
ACENAPHTHYLENE	23	10000	NA	0.011 U	0.01 U	0.01 U	0.01 U	0.0095 J	0.0035 J	0.0035 J	0.0098 U	0.0019 J	0.01 U
ANTHRACENE	35	10000	NA	0.0029 J	0.0058 J	0.00455	0.0033 J	0.65	0.011 U	0.0104 U	0.0098 U	0.01 U	0.01 U
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.046	0.017 J	0.014	0.011 J	**1.5 [R]**	0.022 J	0.0138	0.0056 J	0.017 J	0.0059 J
BENZO(A)PYRENE	0.4	0.8	240	0.029 J	0.016 J	0.013	0.01 J	**1.2 [R,I]**	0.022 J	0.01275	0.0035 J	0.013 J	0.0057 J
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.032 J	0.027	0.022	0.017 J	**2 [R]**	0.027 J	0.019	0.011 J	0.017 J	0.0094 J
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.017 J	0.0082 J	0.00675	0.0053 J	0.54	0.011 J	0.00795	0.0098 U	0.0055 J	0.0028 J
BENZO(K)FLUORANTHENE	0.9	78	NA	0.022 J	0.0097 J	0.00815	0.0066 J	0.66	0.01 J	0.00745	0.0098 U	0.0061 J	0.0043 J
CHRYSENE	0.4	780	NA	0.038	0.02 J	0.017	0.014 J	**1.8 [R]**	0.022 J	0.0142	0.0064 J	0.017 J	0.0075 J
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.0075 J	0.0035 J	0.00275	0.002 J	0.21	0.01 J	0.00745	0.0098 U	0.01 U	0.0024 J
FLUORANTHENE	20	10000	NA	0.064	0.048 J	0.038	0.028 J	3.7	0.03 J	0.022	0.014 J	0.03 J	0.015 J
FLUORENE	28	10000	NA	0.011 U	0.01 U	0.01 U	0.01 U	0.23	0.011 U	0.0104 U	0.0098 U	0.01 U	0.01 U
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.017 J	0.0052 J	0.0052 J	0.01 U	0.83	0.022 J	0.014	0.006 J	0.013 J	0.01 U
NAPHTHALENE	54	10000	0.8	0.011 U	0.01 U	0.01 U	0.01 U	0.058	0.011 U	0.0104 U	0.0098 U	0.01 U	0.01 U
PHENANTHRENE	40	10000	NA	0.031	0.024	0.018	0.012 J	2.8	0.02 U	0.0155 U	0.011 U	0.018 U	0.0057 J
PYRENE	13	10000	NA	0.084	0.036 J	0.0285	0.021 J	3.4	0.021 J	0.01295	0.0098 U	0.032	0.011 J
TOTAL PAHS	NA	NA	NA	0.3904	0.222	0.1761	0.1302	19.9115	0.2053	0.1259	0.0465	0.1525	0.0697

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1023	TF2-004/5-SB1024	TF2-004/5-SB1025	TF2-004/5-SB1025	TF2-004/5-SB1026	TF2-004/5-SB1026	TF2-004/5-SB1026	TF2-004/5-SB1027	TF2-004/5-SB1028	TF2-004/5-SB1029
SAMPLE ID				TF2-004/5-SS1023-000.8	TF2-004/5-SS1024-000.6	TF2-004/5-SS1025-000.8	TF2-004/5-SB1025-	TF2-004/5-SS1026-000.8	TF2-004/5-SB1026-	TF2-004/5-SB1026-0204	TF2-004/5-SS1027-0001	TF2-004/5-SS1028-000.8	TF2-004/5-SS1029-000.6
SAMPLE DATE	RIDEM	RIDEM	RIDEM	10/18/2013	10/18/2013	10/18/2013	11/13/2013	10/18/2013	11/13/2013	11/13/2013	10/18/2013	10/18/2013	10/18/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SB	SS	SB	SB	SS	SS	SS
TOP DEPTH				0	0	0	2.6	0	2	2	0	0	0
BOTTOM DEPTH				0.8	0.6	0.8	4	0.8	2.7	4	1	0.8	0.6
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	2200	4100	3400	2000	1400	--	1700	6100	2200	6300
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	22	29	34	0.69 U	12	--	9.5 J	4.5 J	49	49
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	65	120	99	9.1	40	--	19	39	78	170
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	13	20	27	0.32 U	11	--	5.9	2.1 J	26	30
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	1 J	1.5 J	1.7 J	0.028 U	0.87 J	--	0.085 U	0.08 U	1.5 J	1.8 J
1,2,3,4,7,8-HXCDD	NA	NA	NA	1.2 J	2.1 J	2.2 J	0.08 J	0.84 J	--	0.36 J	0.28 J	1.3 J	3.1 J
1,2,3,4,7,8-HXCDF	NA	NA	NA	2.2 J	2.8 J	4.4 J	0.22 U	1.1 J	--	0.5 J	0.3 J	2.9 J	3.5 J
1,2,3,6,7,8-HXCDD	NA	NA	NA	2.8 J	5.1 J	4.5 J	0.071 U	1.6 J	--	0.71 J	0.47 J	3.3 J	7.3
1,2,3,6,7,8-HXCDF	NA	NA	NA	1.6 J	3.1 J	2.8 J	0.16 J	1.7 J	--	0.7 J	0.92 J	2.1 J	2.2 J
1,2,3,7,8,9-HXCDD	NA	NA	NA	2.5 J	5.2 J	4.3 J	0.13 J	1.5 J	--	0.81 J	0.57 J	2.8 J	4.6 J
1,2,3,7,8,9-HXCDF	NA	NA	NA	0.072 U	0.11 U	0.1 U	0.024 U	0.12 U	--	0.044 U	0.056 U	0.084 U	0.069 U
1,2,3,7,8-PECDD	NA	NA	NA	0.65 J	1.1 J	0.91 J	0.039 U	0.28 J	--	0.18 J	0.095 U	0.55 J	1.3 J
1,2,3,7,8-PECDF	NA	NA	NA	0.55 J	0.6 J	0.81 J	0.051 J	0.31 J	--	0.045 U	0.049 U	0.58 J	1.1 J
2,3,4,6,7,8-HXCDF	NA	NA	NA	1.4 J	2.8 J	3.1 J	0.022 U	2.1 J	--	1 J	0.05 U	1.9 J	1.8 J
2,3,4,7,8-PECDF	NA	NA	NA	0.93 J	1.4 J	1.6 J	0.062 J	0.44 J	--	0.18 J	0.051 U	0.6 J	1.5 J
2,3,7,8-TCDD	NA	NA	NA	0.19 J	0.22 J	0.16 J	0.033 U	0.076 U	--	0.03 U	0.041 U	0.036 U	0.29 J
2,3,7,8-TCDF	NA	NA	NA	1 J	1.2 UJ	1 J	0.28 U	0.21 J	--	0.34 U	0.051 U	0.54 J	1.7
TEQ	NA	NA	NA	3.8621	6.5217	6.1115	0.74813	2.2686	--	1.40385	2.49635	3.9611	8.4157
TEQ BIRD	NA	NA	NA	4.1102	5.0739	6.0954	0.3092	1.9589	--	0.93505	0.86815	3.3939	7.4609
TEQ BIRD HALFND	NA	NA	NA	4.1138	5.6794	6.1004	0.500629	2.0029	--	1.124925	0.9953	3.4161	7.46435
TEQ HALFND	NA	NA	NA	3.8657	6.5872	6.1165	0.816823	2.3126	--	1.43915	2.580985	3.9833	8.41915
TOTAL HPCDD	NA	NA	NA	130	230	190	16	78	--	38	66	140	290
TOTAL HPCDF	NA	NA	NA	33	50	60	0.43 U	26	--	15	4.6 J	66	74
TOTAL HXCDD	NA	NA	NA	22	44 J	38 J	0.93 J	12 J	--	6 J	4.6 J	23 J	50 J
TOTAL HXCDF	NA	NA	NA	30	55	64 J	0.48 J	34	--	19 J	2.6 J	37	40 J
TOTAL PECDD	NA	NA	NA	3.9 J	7 J	7.9 J	0.043 J	1.3 J	--	0.18 J	1.2 J	4 J	9.1 J
TOTAL PECDF	NA	NA	NA	13 J	160 J	30 J	0.31 J	15 J	--	9.6 J	0.38 J	12 J	22 J
TOTAL TCDD	NA	NA	NA	2.4 J	2.7 J	3.4 J	0.49 J	0.076 U	--	0.19 J	0.43 J	0.94 J	4 J
TOTAL TCDF	NA	NA	NA	7.9	11 J	12 J	0.86 J	3.1 J	--	2 J	0.64 J	5.6 J	14 J
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	12600	11200	11600	12800	4950	11800	--	10900	15200	14500
ANTIMONY	10	820	NA	0.17 J	2.5 J	0.17 J	0.06 J	0.05 J	0.15 J	--	0.11 J	0.14 J	0.46 J
ARSENIC	7	7	NA	**7.2 [R,I]**	6.2	6.4	5 J	2.2	**7.1 J [R,I]**	--	6.2	6.6	**8.3 [R,I]**
BARIUM	5500	10000	NA	16.3 J	19.8 J	17.5 J	15.1	11.3 J	13.3	--	15.4 J	11.6 J	21.5 J
BERYLLIUM	1.5	1.5	NA	0.34	0.35	0.33	0.37	0.23	0.62	--	0.37	0.37	0.44
CADMIUM	39	1000	NA	0.06 J	0.08 J	0.09	0.05 J	0.07 J	0.06 J	--	0.06 J	0.06	0.08 J
CALCIUM	NA	NA	NA	810 J	765 J	956 J	524	564 J	592	--	388 J	766 J	624 J
CHROMIUM	NA	NA	NA	17.8	15.3	18.3	14.8 J	7.1	13.6 J	--	13.6	21.1	19.1
COBALT	NA	NA	NA	8.4 J	7.6 J	8.6 J	8.4	3.3 J	11.3	--	8.5 J	11.2 J	9.2 J
COPPER	3100	10000	NA	17.3	18.1	19.4	12.7 J	7.8	34.9 J	--	14.2	20.1	23.7
IRON	NA	NA	NA	25300	19200	22600	21400	9760	27000	--	20300	30600	26500
LEAD	150	500	NA	25.1	66.3	31.9	9.4	7.6	19.2	--	9.2	18.7	37.9
MAGNESIUM	NA	NA	NA	3820 J	2750 J	3570 J	3460	1520 J	3710	--	3080 J	4800 J	3920 J
MANGANESE	390	10000	NA	227 J	216 J	230 J	215	155 J	275	--	271 J	251 J	243 J
MERCURY	23	610	NA	0.03	0.03	0.04	0.03 J	0.015 U	0.02 J	--	0.02 U	0.04	0.04
NICKEL	1000	10000	NA	18.8	14.9	17.9	16.5 J	9.2	18.4 J	--	15.1	22.7	20.6
POTASSIUM	NA	NA	NA	418	470	344	384	390	333	--	445	313	448
SELENIUM	390	10000	NA	0.42 U	0.48 U	0.41 U	0.34 U	0.23 U	0.54 U	--	0.24 U	0.2 U	0.32 U
SILVER	200	10000	NA	0.04 J	0.05 J	0.06 J	0.03 J	0.02 J	0.03 J	--	0.02 J	0.04 J	0.11
SODIUM	NA	NA	NA	56.8 U	70.2 U	59.4 U	28 J	44.5 U	23.7 J	--	42.1 U	37.7 U	53.3 U
THALLIUM	5.5	140	NA	0.04 U	0.06 U	0.05 U	0.05 J	0.04 U	0.03 J	--	0.05 J	0.04 J	0.07 U
VANADIUM	550	10000	NA	28.1	24.8	26.1	16.2	9	13.4	--	16.5	25	34.7
ZINC	6000	10000	NA	45	41.7	44.9	34.3 J	21.7	46.9 J	--	38	53.7	52.9

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1023	TF2-004/5-SB1024	TF2-004/5-SB1025	TF2-004/5-SB1025	TF2-004/5-SB1026	TF2-004/5-SB1026	TF2-004/5-SB1026	TF2-004/5-SB1027	TF2-004/5-SB1028	TF2-004/5-SB1029
SAMPLE ID				TF2-004/5-SS1023-000.8	TF2-004/5-SS1024-000.6	TF2-004/5-SS1025-000.8	TF2-004/5-SB1025-	TF2-004/5-SS1026-000.8	TF2-004/5-SB1026-	TF2-004/5-SB1026-0204	TF2-004/5-SS1027-0001	TF2-004/5-SS1028-000.8	TF2-004/5-SS1029-000.6
SAMPLE DATE	RIDEM	RIDEM	RIDEM	10/18/2013	10/18/2013	10/18/2013	11/13/2013	10/18/2013	11/13/2013	11/13/2013	10/18/2013	10/18/2013	10/18/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SB	SS	SB	SB	SS	SS	SS
TOP DEPTH				0	0	0	2.6	0	2	2	0	0	0
BOTTOM DEPTH				0.8	0.6	0.8	4	0.8	2.7	4	1	0.8	0.6
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	94	95	94	91	97	95	--	94	95	97
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	--	--	--	--	--	--	--	15 J	--	--
TPH (C05-C12)	NA	NA	NA	--	--	--	--	--	--	--	2 U	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.019 J	0.0097 U	0.0059 J	0.0037 J	0.0096 U	0.01 U	--	0.01 U	0.0099 U	0.0099 U
ACENAPHTHENE	43	10000	NA	0.059	0.0031 J	0.056	0.011 U	0.03	0.014 J	--	0.01 U	0.0018 J	0.0047 J
ACENAPHTHYLENE	23	10000	NA	0.01 U	0.0022 J	0.01 U	0.011 U	0.0096 U	0.0033 J	--	0.01 U	0.0026 J	0.0074 J
ANTHRACENE	35	10000	NA	0.15	0.018 J	0.091	0.011 U	0.057	0.024	--	0.01 U	0.0041 J	0.011 J
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.26	0.044	0.27	0.0033 J	0.21	0.11 J	--	0.0029 J	0.036	0.088
BENZO(A)PYRENE	0.4	0.8	240	0.19	0.054	0.2 J	0.011 UJ	0.18	0.09 J	--	0.01 UJ	0.036	0.086
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.33	0.11	0.31 J	0.01 J	0.32	0.14 J	--	0.0052 J	0.058	0.16
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.058	0.032	0.084 J	0.011 U	0.083	0.052	--	0.01 UJ	0.019 J	0.042
BENZO(K)FLUORANTHENE	0.9	78	NA	0.14	0.037	0.13 J	0.011 U	0.09	0.044	--	0.01 U	0.026	0.05
CHRYSENE	0.4	780	NA	0.27 J	0.062	0.3	0.0034 J	0.25	0.11 J	--	0.0044 J	0.043	0.11
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.032	0.014 J	0.039 J	0.011 U	0.041	0.025	--	0.01 UJ	0.0079 J	0.022
FLUORANTHENE	20	10000	NA	0.69	0.12	0.68	0.011 U	0.52	0.23 J	--	0.0082 J	0.086	0.18
FLUORENE	28	10000	NA	0.067	0.0035 J	0.051	0.011 U	0.023	0.011 J	--	0.01 U	0.0099 U	0.005 J
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.12	0.044 J	0.15 J	0.0064 J	0.15 J	0.1 J	--	0.01 U	0.023	0.07
NAPHTHALENE	54	10000	0.8	0.031	0.0097 U	0.014 J	0.011 U	0.0096 U	0.01 U	--	0.01 U	0.0099 U	0.0099 U
PHENANTHRENE	40	10000	NA	0.65	0.054	0.58	0.011 U	0.33	0.13	--	0.0034 J	0.033	0.081
PYRENE	13	10000	NA	0.54	0.089	0.62	0.011 U	0.5	0.17	--	0.0065 J	0.069	0.17
TOTAL PAHS	NA	NA	NA	3.606	0.6868	3.5809	0.0268	2.784	1.2533	--	0.0306	0.4454	1.0871

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1030	TF2-004/5-SB1031	TF2-004/5-SB1031	TF2-004/5-SB1031	TF2-004/5-SB1032	TF2-004/5-SB1032	TF2-004/5-SB1033	TF2-004/5-SB1034	TF2-004/5-SB1035	TF2-004/5-SB1035
SAMPLE ID				TF2-004/5-SS1030-000.6	TF2-004/5-SS1031-000.8	TF2-004/5-SB1031-0204	TF2-004/5-SB1031-0810	TF2-004/5-SS1032-000.9	TF2-004/5-SB1032-0204	TF2-004/5-SS1033-000.8	TF2-004/5-SS1034-000.6	TF2-004/5-SS1035-0001	TF2-004/5-SS1035-0001-20131018
SAMPLE DATE	RIDEM	RIDEM	RIDEM	10/18/2013	10/18/2013	11/14/2013	11/14/2013	10/18/2013	11/13/2013	10/18/2013	10/18/2013	10/18/2013	
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SB	SB	SS	SB	SS	SS	SS	SS
TOP DEPTH				0	0	2	8	0	2	0	0	0	0
BOTTOM DEPTH				0.6	0.8	4	10	0.9	4	0.8	0.6	1	1
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	3100	3800	1900	--	3900	5500	4500	2400	4000	3800
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	15	15	1.1 U	--	18	1.5 U	19	22	280 J	195
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	70	71	7.9	--	96	24	88	59	330	330
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	9.1	9	1.3 U	--	14	0.34 U	9.3	17	110 J	85
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	0.67 J	0.52 J	0.023 U	--	1.1 J	0.086 J	0.16 U	1.3 J	5.7	4.5
1,2,3,4,7,8-HXCDD	NA	NA	NA	1.4 J	1.2 J	0.081 J	--	1.9 J	0.19 J	0.81 J	1.2 J	4.5 J	4.5
1,2,3,4,7,8-HXCDF	NA	NA	NA	1.2 J	1.4 J	0.65 U	--	2.2 J	0.08 U	0.9 J	2.7 J	11	8.15
1,2,3,6,7,8-HXCDD	NA	NA	NA	2.7 J	2.5 J	0.14 J	--	3.6 J	0.099 U	2.3 J	2.7 J	14	15
1,2,3,6,7,8-HXCDF	NA	NA	NA	0.95 J	1.1 J	0.42 J	--	2.2 J	0.6 J	0.83 J	2.4 J	4.6 J	3.95
1,2,3,7,8,9-HXCDD	NA	NA	NA	2.7 J	2.4 J	0.19 J	--	3.8 J	0.18 J	1.7 J	2.7 J	11	9.9
1,2,3,7,8,9-HXCDF	NA	NA	NA	0.08 U	0.07 U	0.094 J	--	0.11 U	0.032 U	0.095 U	0.12 U	0.13 U	0.145 U
1,2,3,7,8-PECDD	NA	NA	NA	0.48 J	0.44 J	0.035 U	--	0.71 J	0.069 U	0.23 J	0.56 J	2.1 J	1.95
1,2,3,7,8-PECDF	NA	NA	NA	0.48 J	0.4 J	0.026 U	--	0.86 J	0.035 U	0.084 U	0.77 J	1.1 J	1.05
2,3,4,6,7,8-HXCDF	NA	NA	NA	0.81 J	0.67 J	0.02 U	--	1.7 J	0.029 U	0.59 J	2.4 J	3.3 J	2.9
2,3,4,7,8-PECDF	NA	NA	NA	0.43 J	0.49 J	0.12 J	--	0.49 J	0.037 U	0.17 J	1.1 J	2 J	1.6
2,3,7,8-TCDD	NA	NA	NA	0.16 J	0.14 J	0.027 U	--	0.053 U	0.033 U	0.039 U	0.24 J	0.41 J	0.355
2,3,7,8-TCDF	NA	NA	NA	0.71 J	0.66 J	0.099 U	--	0.97 U	0.42 U	0.088 U	0.94 J	1.3	1.3
TEQ	NA	NA	NA	3.5626	3.6817	0.7775	--	4.7092	1.98786	3.3227	4.1567	13.854	12.715
TEQ BIRD	NA	NA	NA	2.9702	2.9597	0.39375	--	3.0458	0.66236	1.4984	4.5082	11.19	9.1495
TEQ BIRD HALFND	NA	NA	NA	2.9742	2.9632	0.51572	--	3.5628	0.95293	1.57165	4.5142	11.1965	9.53175
TEQ HALFND	NA	NA	NA	3.5666	3.6852	0.85412	--	4.7897	2.07986	3.35341	4.1627	13.8605	12.75975
TOTAL HPCDD	NA	NA	NA	150	130	13	--	190	40	160	110	580	585
TOTAL HPCDF	NA	NA	NA	22	21	1.5 U	--	34	0.62 U	23	38	210	180
TOTAL HXCDD	NA	NA	NA	23 J	20 J	1.2 J	--	31 J	1 J	15 J	23 J	94	95
TOTAL HXCDF	NA	NA	NA	17	14 J	1.8 J	--	36	0.92 J	9.8 J	48 J	81	75
TOTAL PECDD	NA	NA	NA	3.1 J	2.5 J	1 J	--	4.5 J	0.069 U	1.8 J	4.7 J	13 J	13
TOTAL PECDF	NA	NA	NA	6.6 J	6.6 J	0.88 J	--	27 J	0.1 J	2.2 J	33 J	25 J	23
TOTAL TCDD	NA	NA	NA	0.78 J	1.5 J	0.5 J	--	0.76 J	0.84 J	0.44 J	2.2 J	4.4 J	4.2
TOTAL TCDF	NA	NA	NA	3.4 J	4.2 J	1 J	--	3.2 J	0.67 J	2.2 J	12 J	12 J	11.5
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	14900	8920	12300	17200	8540	12800	11200	14100	18200	17700
ANTIMONY	10	820	NA	0.29 J	0.13 J	0.08 U	0.04 U	0.15 J	0.06 J	0.12 J	0.18 J	0.18 J	0.2
ARSENIC	7	7	NA	**7.7 [R,I]**	**7.2 [R,I]**	4.8	2.8	5.2	**7.1 J [R,I]**	6.4	**8.5 [R,I]**	**9.5 [R,I]**	**9 [R,I]**
BARIUM	5500	10000	NA	17.3 J	17.4 J	16.1	7.7	19.1 J	13.9	15.1	16.2	14.2	14.8
BERYLLIUM	1.5	1.5	NA	0.87	0.32	0.36	0.25	0.34	0.34	0.34	0.42	0.44	0.455
CADMIUM	39	1000	NA	0.09 J	0.08	0.05 J	0.1	0.09 J	0.1	0.09	0.07 J	0.09	0.08
CALCIUM	NA	NA	NA	694 J	400 J	607 J	782 J	739 J	880	600 J	594 J	1140 J	861
CHROMIUM	NA	NA	NA	18.9	11.8	13.9 J	17.5 J	12.2	16.4 J	14.5 J	20.7 J	24.4 J	24.3
COBALT	NA	NA	NA	13.8 J	10.1 J	8.5	11.3	8.8 J	12	11.7	13	13.2	13.95
COPPER	3100	10000	NA	22.2	16.7	15.9	10.9	15.6	16 J	17.6	22.4	31.5	33.8
IRON	NA	NA	NA	30600	19200	19700	37600	15200	25000	23000	29800	37800	36250
LEAD	150	500	NA	25.2	18.1	10	6.3	19.4	9.7	12.3 J	28.9 J	33.5 J	33.85
MAGNESIUM	NA	NA	NA	4410 J	3700 J	3260	5200	3670 J	3940	3560 J	4300 J	5850 J	5560
MANGANESE	390	10000	NA	320 J	247 J	225	244	230 J	312	385 J	282 J	266 J	269.5
MERCURY	23	610	NA	0.05	0.04	0.04	0.02 U	0.07	0.17	0.015 U	0.03 J	0.04	0.045
NICKEL	1000	10000	NA	24	19	15	17.8	18.5	23.2 J	19.1	23.6	32.4	30.7
POTASSIUM	NA	NA	NA	332	323	431	184	504	337	445	482	308	316.5
SELENIUM	390	10000	NA	0.37 U	0.37 U	0.16 J	0.05 J	0.46 U	0.27 U	0.24 U	0.28 U	0.33 J	0.33 J
SILVER	200	10000	NA	0.04 J	0.05 J	0.02 J	0.01 J	0.06 J	0.02 J	0.03 J	0.06 J	0.07 J	0.075
SODIUM	NA	NA	NA	45.5 U	37 U	47.6 U	29 U	59.2 U	23.5 J	35 U	42.2 U	34.6 U	36.5 U
THALLIUM	5.5	140	NA	0.05 J	0.06 U	0.06 U	0.028 U	0.06 U	0.04 J	0.05 J	0.05 J	0.05 J	0.055
VANADIUM	550	10000	NA	22.7	14.2	15.9	29.1	18.9	16.4	17.3	28.8	35.2	33.95
ZINC	6000	10000	NA	59.7	46.5	40	58.1	50.2	46.9 J	43.4 J	58.2 J	71.9 J	69.75

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1030	TF2-004/5-SB1031	TF2-004/5-SB1031	TF2-004/5-SB1031	TF2-004/5-SB1032	TF2-004/5-SB1032	TF2-004/5-SB1033	TF2-004/5-SB1034	TF2-004/5-SB1035	TF2-004/5-SB1035
SAMPLE ID				TF2-004/5-SS1030-000.6	TF2-004/5-SS1031-000.8	TF2-004/5-SB1031-0204	TF2-004/5-SB1031-0810	TF2-004/5-SS1032-000.9	TF2-004/5-SB1032-0204	TF2-004/5-SS1033-000.8	TF2-004/5-SS1034-000.6	TF2-004/5-SS1035-0001	TF2-004/5-SS1035-0001-20131018
SAMPLE DATE	RIDEM	RIDEM	RIDEM	10/18/2013	10/18/2013	11/14/2013	11/14/2013	10/18/2013	11/13/2013	10/18/2013	10/18/2013	10/18/2013	
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SB	SB	SS	SB	SS	SS	SS	SS
TOP DEPTH				0	0	2	8	0	2	0	0	0	0
BOTTOM DEPTH				0.6	0.8	4	10	0.9	4	0.8	0.6	1	1
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	95	93	90	94	92	92	95	95	95	95
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TPH (C05-C12)	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.0094 U	0.0098 U	0.01 U	0.01 U	0.011 U	0.01 U	0.0098 U	0.0097 U	0.01 U	0.01 U
ACENAPHTHENE	43	10000	NA	0.0048 J	0.0019 J	0.01 U	0.0046 J	0.0053 J	0.01 U	0.0098 U	0.002 J	0.003 J	0.0033
ACENAPHTHYLENE	23	10000	NA	0.002 J	0.0014 J	0.01 U	0.01 U	0.011 U	0.01 U	0.0098 U	0.004 J	0.0049 J	0.00505
ANTHRACENE	35	10000	NA	0.018 J	0.0047 J	0.01 U	0.0063 J	0.015 J	0.01 U	0.0019 J	0.0058 J	0.0076 J	0.00775
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.066	0.032	0.01 U	0.0062 J	0.053	0.0027 J	0.014 J	0.047	0.072	0.0775
BENZO(A)PYRENE	0.4	0.8	240	0.057	0.031	0.01 U	0.0043 J	0.051	0.01 UJ	0.011 J	0.048	0.074	0.0775
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.1	0.047	0.0088 J	0.0097 J	0.082	0.0092 J	0.022	0.087	0.14	0.15
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.027	0.016 J	0.01 U	0.01 U	0.018 J	0.01 U	0.0051 J	0.023	0.037	0.0375
BENZO(K)FLUORANTHENE	0.9	78	NA	0.037	0.026	0.01 U	0.01 U	0.04	0.01 U	0.0076 J	0.025	0.041	0.0425
CHRYSENE	0.4	780	NA	0.079	0.036 J	0.01 U	0.0057 J	0.069 J	0.0029 J	0.017 J	0.056	0.087	0.0935
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.012 J	0.0077 J	0.01 U	0.008 J	0.0093 J	0.01 U	0.0031 J	0.012 J	0.018 J	0.0185
FLUORANTHENE	20	10000	NA	0.13	0.075	0.0021 J	0.011 J	0.13	0.01 U	0.033	0.097	0.16	0.17
FLUORENE	28	10000	NA	0.0044 J	0.0098 U	0.01 U	0.01 U	0.0037 J	0.01 U	0.0098 U	0.0097 U	0.01 U	0.01 U
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.048	0.02 J	0.0047 J	0.0058 J	0.031	0.0059 J	0.0024 J	0.034	0.06	0.0625
NAPHTHALENE	54	10000	0.8	0.0094 U	0.0098 U	0.01 U	0.01 U	0.011 U	0.01 U	0.0098 U	0.0097 U	0.01 U	0.01 U
PHENANTHRENE	40	10000	NA	0.066	0.033	0.01 U	0.022	0.066	0.01 U	0.014 J	0.035	0.056	0.06
PYRENE	13	10000	NA	0.13	0.06	0.01 U	0.012 J	0.11	0.01 U	0.023	0.082	0.13	0.15
TOTAL PAHS	NA	NA	NA	0.7812	0.3917	0.0156	0.0956	0.6833	0.0207	0.1541	0.5578	0.8905	0.9556

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1035	TF2-004/5-SB1036	TF2-004/5-SB1037	TF2-004/5-SB1038	TF2-004/5-SB1038	TF2-004/5-SB1038	TF2-004/5-SB1039	TF2-004/5-SB1039	TF2-004/5-SB1040	TF2-004/5-SB1040
SAMPLE ID				TF2-004/5-SS1035-0001-DUP	TF2-004/5-SS1036-000.6	TF2-004/5-SS1037-000.7	TF2-004/5-SS1038-000.7	TF2-004/5-SB1038-0204	TF2-004/5-SB1038-0810	TF2-004/5-SS1039-000.9	TF2-004/5-SB1039-0406	TF2-004/5-SS1040-000.9	TF2-004/5-SB1040-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM	10/18/2013	10/18/2013	10/18/2013	10/18/2013	11/14/2013	11/14/2013	10/18/2013	11/14/2013	10/18/2013	11/14/2013
SAMPLE CODE	DIRECT	DIRECT	GA	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SS	SB	SB	SS	SB	SS	SB
TOP DEPTH				0	0	0	0	2	8	0	4	0	2
BOTTOM DEPTH				1	0.6	0.7	0.7	4	10	0.9	6	0.9	4
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	3600	6800	3400	3500	5000	--	5700	--	6400	3400
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	110 J	63	26	27	1.8 U	--	18	--	37	1 U
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	330	270	57	100	25	--	81	--	140	17
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	60 J	40	16	17	0.82 U	--	11	--	19	0.56 U
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	3.3 J	2.1 J	1.5 J	0.89 J	0.052 U	--	0.1 U	--	1.2 J	0.02 U
1,2,3,4,7,8-HXCDD	NA	NA	NA	4.5 J	3.3 J	0.97 J	1.5 J	0.16 J	--	1.4 J	--	1.7 J	0.03 U
1,2,3,4,7,8-HXCDF	NA	NA	NA	5.3 J	3.5 J	3.9 J	2 J	0.44 J	--	1.7 J	--	2.4 J	0.18 U
1,2,3,6,7,8-HXCDD	NA	NA	NA	16	12	2.1 J	4.2 J	0.19 J	--	2.9 J	--	4.7 J	0.2 J
1,2,3,6,7,8-HXCDF	NA	NA	NA	3.3 J	2.4 J	2.2 J	1.5 J	0.22 U	--	1.2 J	--	1.8 J	0.35 J
1,2,3,7,8,9-HXCDD	NA	NA	NA	8.8	8.2	2.5 J	3.8 J	0.061 U	--	2.7 J	--	4 J	0.13 J
1,2,3,7,8,9-HXCDF	NA	NA	NA	0.16 U	0.096 U	0.11 U	0.12 U	0.04 U	--	0.094 U	--	0.099 U	0.018 U
1,2,3,7,8-PECDD	NA	NA	NA	1.8 J	1.5 J	0.58 J	0.73 J	0.078 U	--	0.63 J	--	0.86 J	0.035 U
1,2,3,7,8-PECDF	NA	NA	NA	1 J	0.97 J	1 J	0.54 J	0.054 J	--	0.59 J	--	0.91 J	0.024 U
2,3,4,6,7,8-HXCDF	NA	NA	NA	2.5 J	2 J	0.66 J	2.1 J	0.12 J	--	0.78 J	--	1.6 J	0.016 U
2,3,4,7,8-PECDF	NA	NA	NA	1.2 J	1.4 J	1 J	0.73 J	0.046 U	--	0.68 J	--	0.74 J	0.062 J
2,3,7,8-TCDD	NA	NA	NA	0.3 J	0.27 J	0.13 J	0.11 J	0.051 U	--	0.3 U	--	0.044 U	0.028 U
2,3,7,8-TCDF	NA	NA	NA	1.5 UJ	1.4 J	0.8 J	0.88 J	0.072 UJ	--	0.64 J	--	0.95 J	0.19 U
TEQ	NA	NA	NA	11.576	10.679	4.1258	4.9102	1.84262	--	4.6191	--	6.3574	1.2766
TEQ BIRD	NA	NA	NA	7.109	7.9393	4.1801	4.1926	0.5963	--	3.5088	--	4.7387	0.469
TEQ BIRD HALFND	NA	NA	NA	7.867	7.9441	4.1856	4.1986	0.7403	--	3.664	--	4.76565	0.6111
TEQ HALFND	NA	NA	NA	11.659	10.6838	4.1313	4.9162	1.9383	--	4.7743	--	6.38435	1.33321
TOTAL HPCDD	NA	NA	NA	590	460	110	190	43	--	150	--	270	25
TOTAL HPCDF	NA	NA	NA	150	100	28	41	1.6 J	--	24	--	51	0.89 U
TOTAL HXCDD	NA	NA	NA	96	67 J	18	29	1.5 J	--	24 J	--	32 J	0.95 J
TOTAL HXCDF	NA	NA	NA	69 J	53 J	23 J	26 J	1.7 J	--	17	--	34	1.1 U
TOTAL PECDD	NA	NA	NA	13 J	10 J	4.3 J	4.4 J	0.83 J	--	5.2 J	--	3.8 J	0.53 J
TOTAL PECDF	NA	NA	NA	21 J	20 J	38 J	11 J	0.85 J	--	10 J	--	14 J	0.45 J
TOTAL TCDD	NA	NA	NA	4 J	4.5 J	1.9 J	1.9 J	0.54 J	--	1.4	--	0.77 J	0.14 J
TOTAL TCDF	NA	NA	NA	11	14 J	7.4 J	5.7 J	0.92 J	--	6.3 J	--	5.5 J	0.47 J
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	17200	15100	13900	14400	15800	16800	13700	12900	13500	13300
ANTIMONY	10	820	NA	0.22 J	0.22 J	0.28 J	0.15 J	0.07 U	0.1 U	0.31 J	0.07 U	0.2 J	0.07 U
ARSENIC	7	7	NA	**8.5 [R,I]**	**10.4 [R,I]**	7	**8 [R,I]**	6.6	5.7	**7.3 [R,I]**	5.4	6.3	5
BARIUM	5500	10000	NA	15.4 J	16.4 J	20 J	18.4 J	16	12.5	169 J	14.2	15.7 J	13.1
BERYLLIUM	1.5	1.5	NA	0.47	0.37	0.46	0.42	0.4	0.34	0.36	0.35	0.34	0.34
CADMIUM	39	1000	NA	0.07 J	0.08 J	0.08 J	0.08 J	0.06 J	0.06 J	0.1	0.06 J	0.07 J	0.06 J
CALCIUM	NA	NA	NA	582 J	549 J	843 J	681 J	863 J	690 J	726 J	716 J	740 J	587 J
CHROMIUM	NA	NA	NA	24.2	20.8	19.2	21	21.9 J	22 J	18.2	16 J	17	15.9 J
COBALT	NA	NA	NA	14.7 J	11.2 J	10.7 J	8.3 J	10.5	12.2	10.9 J	8.3	10.1 J	13.2
COPPER	3100	10000	NA	36.1	23.4	19.2	21.7	19.5	20.2	19.1	15.6	18.7	19.3
IRON	NA	NA	NA	34700	29600	27300	28900	31700	32600	24700	20900	24100	24800
LEAD	150	500	NA	34.2	29.7	28.6	25.4	11.6	14.4	18.4	9	28.5	11.6
MAGNESIUM	NA	NA	NA	5270 J	4240 J	4100 J	3260 J	4900	5330	3680 J	3490	3990 J	4470
MANGANESE	390	10000	NA	273 J	265 J	278 J	206 J	250	265	334 J	219	256 J	300
MERCURY	23	610	NA	0.05	0.05	0.03	0.04	0.03	0.03 J	0.04	0.07	0.06	0.02 U
NICKEL	1000	10000	NA	29	22.3	20.3	15.7	22.3	23.7	53	17.2	20.9	20.6
POTASSIUM	NA	NA	NA	325	392	404	333	403	363	404	328	393	334
SELENIUM	390	10000	NA	0.34 U	0.33 U	0.27 U	0.29 U	0.22 J	0.27 J	0.23 U	0.19 J	0.35 U	0.09 J
SILVER	200	10000	NA	0.08 J	0.06 J	0.04 J	0.04 J	0.03 J	0.02 J	0.05 J	0.02 J	0.04 J	0.02 J
SODIUM	NA	NA	NA	38.4 U	45.2 U	50.4 U	43.6 U	47.7 U	46 U	45.2 U	51.7 U	52.1 U	34.3 U
THALLIUM	5.5	140	NA	0.06 J	0.06 U	0.05 J	0.05 J	0.04 U	0.03 U	0.06 J	0.05 U	0.04 U	0.03 U
VANADIUM	550	10000	NA	32.7	29.9	23.2	26.2	18.5	20.6	25	17.2	23.4	13.6
ZINC	6000	10000	NA	67.6	54.3	52.4	44.5	52.8	54.9	51.8	36.9	52.1	44.9

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1035	TF2-004/5-SB1036	TF2-004/5-SB1037	TF2-004/5-SB1038	TF2-004/5-SB1038	TF2-004/5-SB1038	TF2-004/5-SB1039	TF2-004/5-SB1039	TF2-004/5-SB1040	TF2-004/5-SB1040
SAMPLE ID				TF2-004/5-SS1035-0001-	TF2-004/5-SS1036-000.6	TF2-004/5-SS1037-000.7	TF2-004/5-SS1038-000.7	TF2-004/5-SB1038-0204	TF2-004/5-SB1038-0810	TF2-004/5-SS1039-000.9	TF2-004/5-SB1039-0406	TF2-004/5-SS1040-000.9	TF2-004/5-SB1040-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM	10/18/2013	10/18/2013	10/18/2013	10/18/2013	11/14/2013	11/14/2013	10/18/2013	11/14/2013	10/18/2013	11/14/2013
SAMPLE CODE	DIRECT	DIRECT	GA	DUP	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SS	SB	SB	SS	SB	SS	SB
TOP DEPTH				0	0	0	0	2	8	0	4	0	2
BOTTOM DEPTH				1	0.6	0.7	0.7	4	10	0.9	6	0.9	4
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	95	97	97	94	92	92	93	90	90	93
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	--	--	--	--	--	--	52 J	--	--	--
TPH (C05-C12)	NA	NA	NA	--	--	--	--	--	--	7	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.01 U	0.01 J	0.0098 U	0.0099 U	0.01 U	0.011 U	0.01 U	0.011 U	0.011 U	0.0092 U
ACENAPHTHENE	43	10000	NA	0.0036 J	0.023	0.0019 J	0.0032 J	0.01 U	0.0016 U	0.0028 J	0.011 U	0.0068 J	0.0092 U
ACENAPHTHYLENE	23	10000	NA	0.0052 J	0.0049 J	0.0015 J	0.0035 J	0.01 U	0.011 U	0.0045 J	0.011 U	0.0018 J	0.0092 U
ANTHRACENE	35	10000	NA	0.0079 J	0.052	0.0045 J	0.0076 J	0.01 U	0.0026 J	0.0088 J	0.011 U	0.016 J	0.0092 U
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.083	0.14	0.034	0.052	0.01 U	0.0053 J	0.054	0.0048 J	0.074	0.002 J
BENZO(A)PYRENE	0.4	0.8	240	0.081	0.12	0.032	0.055	0.01 U	0.0044 J	0.053	0.011 U	0.065	0.0092 U
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.16	0.18	0.057	0.086	0.0087 J	0.012 J	0.095	0.012 J	0.13	0.0081 J
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.038	0.048	0.019 J	0.021	0.01 U	0.0024 J	0.025	0.011 U	0.03	0.0092 U
BENZO(K)FLUORANTHENE	0.9	78	NA	0.044	0.082	0.02 J	0.043	0.01 U	0.0042 J	0.028	0.011 U	0.037	0.0092 U
CHRYSENE	0.4	780	NA	0.1	0.15	0.045	0.07 J	0.0022 J	0.0059 J	0.06	0.0057 J	0.084	0.0022 J
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.019 J	0.026	0.0091 J	0.012 J	0.01 U	0.01 J	0.012 J	0.011 U	0.015 J	0.0071 J
FLUORANTHENE	20	10000	NA	0.18	0.32	0.072	0.12	0.004 J	0.0093 J	0.12	0.0094 J	0.18	0.0038 J
FLUORENE	28	10000	NA	0.01 U	0.025	0.0098 U	0.006 J	0.01 U	0.011 U	0.01 U	0.011 U	0.0052 J	0.0092 U
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.065	0.089	0.025	0.038	0.01 U	0.0076 J	0.036	0.0071 J	0.049	0.004 J
NAPHTHALENE	54	10000	0.8	0.01 U	0.013 J	0.0098 U	0.0099 U	0.01 U	0.011 U	0.01 U	0.011 U	0.011 U	0.0092 U
PHENANTHRENE	40	10000	NA	0.064	0.25	0.033	0.05	0.0026 J	0.0058 J	0.048	0.0066 J	0.092	0.0022 J
PYRENE	13	10000	NA	0.17	0.29	0.07	0.11	0.0032 J	0.0083 J	0.094	0.011 J	0.15	0.0035 J
TOTAL PAHS	NA	NA	NA	1.0207	1.8229	0.424	0.6773	0.0207	0.0778	0.6411	0.0566	0.9358	0.0329

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1040	TF2-004/5-SB1040	TF2-004/5-SB1040	TF2-004/5-SB1041	TF2-004/5-SB1041	TF2-004/5-SB1041	TF2-004/5-SB1041	TF2-004/5-SB1042	TF2-004/5-SB1043	TF2-004/5-SB1044
SAMPLE ID				TF2-004/5-SB1040-0810	TF2-004/5-SB1040-0810-	TF2-004/5-SB1040-0810-	TF2-004/5-SS1041-000.7	TF2-004/5-SS1041-000.7-	TF2-004/5-SS1041-000.7-	TF2-004/5-SB1041-	TF2-004/5-SS1042-000.5	TF2-004/5-SS1043-	TF2-004/5-SS1044-000.5
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/14/2013	20131114	11/14/2013	10/21/2013	20131021	10/21/2013	11/13/2013	10/21/2013	11/13/2013	10/21/2013
SAMPLE CODE	DIRECT	DIRECT	GA	ORIG	AVG	DUP	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SB	SB	SS	SS	SS	SB	SS	SS	SS
TOP DEPTH				8	8	8	0	0	0	2	0	0.1	0
BOTTOM DEPTH				10	10	10	0.7	0.7	0.7	2.5	0.5	0.5	0.5
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	--	--	--	5600	5800	6000	8800	3000	1700	3500
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	--	--	--	15	16.5	18	1.3 U	140	10 J	55
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	--	--	--	46	54.5	63	40	170	32	140
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	--	--	--	6.4	6.85	7.3	0.27 U	75	5.9	28
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	--	--	--	0.098 U	0.124 U	0.15 U	0.035 U	2.9 J	0.077 U	1.1 J
1,2,3,4,7,8-HXCDD	NA	NA	NA	--	--	--	0.43 J	0.46	0.49 J	0.13 J	3.3 J	0.44 J	2.4 J
1,2,3,4,7,8-HXCDF	NA	NA	NA	--	--	--	0.54 J	0.72	0.9 J	0.096 U	5.4	0.98 J	2.4 J
1,2,3,6,7,8-HXCDD	NA	NA	NA	--	--	--	0.86 J	0.905	0.95 J	0.11 U	7.1	1.4 J	6.3
1,2,3,6,7,8-HXCDF	NA	NA	NA	--	--	--	0.74 J	0.75	0.76 J	0.17 J	3.7 J	0.64 J	1.6 J
1,2,3,7,8,9-HXCDD	NA	NA	NA	--	--	--	0.76 J	0.93	1.1 J	0.13 J	6.7	1 J	4.8 J
1,2,3,7,8,9-HXCDF	NA	NA	NA	--	--	--	0.089 U	0.0915 U	0.094 U	0.049 J	0.13 U	0.19 J	0.12 U
1,2,3,7,8-PECDD	NA	NA	NA	--	--	--	0.14 J	0.125	0.11 J	0.048 U	1.1 J	0.047 U	0.82 J
1,2,3,7,8-PECDF	NA	NA	NA	--	--	--	0.067 U	0.07 U	0.073 U	0.03 U	0.85 J	0.15 J	0.64 J
2,3,4,6,7,8-HXCDF	NA	NA	NA	--	--	--	0.2 J	0.27	0.34 J	0.022 U	3 J	0.88 J	1.2 J
2,3,4,7,8-PECDF	NA	NA	NA	--	--	--	0.18 J	0.109	0.076 U	0.031 U	1.5 J	0.18 J	0.67 J
2,3,7,8-TCDD	NA	NA	NA	--	--	--	0.035 U	0.0375 U	0.04 U	0.033 U	0.045 U	0.028 U	0.15 J
2,3,7,8-TCDF	NA	NA	NA	--	--	--	0.12 U	0.105	0.15 J	0.02 U	1.2	0.32 U	0.64 J
TEQ	NA	NA	NA	--	--	--	2.7555	2.92145	3.0874	3.0879	8.0365	1.5035	5.8817
TEQ BIRD	NA	NA	NA	--	--	--	1.2456	1.2937	1.3418	0.9614	7.264	0.862	4.3135
TEQ BIRD HALFND	NA	NA	NA	--	--	--	1.33139	1.370145	1.4089	1.03694	7.293	1.059885	4.3195
TEQ HALFND	NA	NA	NA	--	--	--	2.784945	2.955145	3.125345	3.14762	8.0655	1.557385	5.8877
TOTAL HPCDD	NA	NA	NA	--	--	--	82	101	120	69	300	57	240
TOTAL HPCDF	NA	NA	NA	--	--	--	15	16.5	18	0.4 U	180 J	14	70 J
TOTAL HXCDD	NA	NA	NA	--	--	--	6.2 J	6.95	7.7 J	1.3 J	52	9.1 J	40
TOTAL HXCDF	NA	NA	NA	--	--	--	5.3 J	6.05	6.8 J	0.49 J	63	10	28
TOTAL PECDD	NA	NA	NA	--	--	--	1.9 J	1.85	1.8 J	0.048 U	6.9 J	0.047 U	4.4 J
TOTAL PECDF	NA	NA	NA	--	--	--	1.1 J	1.2	1.3 J	0.18 J	20 J	4.4 J	10 J
TOTAL TCDD	NA	NA	NA	--	--	--	0.63 J	0.61	0.59 J	0.4 J	2 J	0.36 J	1.5 J
TOTAL TCDF	NA	NA	NA	--	--	--	1 J	1	1 J	0.55 J	11 J	2.4 J	6 J
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	13800	13800	--	8900	8695	8490	15600	15000	18200	13400
ANTIMONY	10	820	NA	0.1 U	0.1 U	--	0.13 J	0.12	0.11 J	0.06 U	0.17 J	0.07 U	0.22 J
ARSENIC	7	7	NA	4.7	4.7	--	5.8	5.65	5.5	6.1	**8.5 [R,I]**	5.4	**11.4 [R,I]**
BARIUM	5500	10000	NA	15.3	15.3	--	15.9	15.2	14.5	14	14.7	11.5	14.9
BERYLLIUM	1.5	1.5	NA	0.36	0.36	--	0.36	0.335	0.31	0.44	0.46	0.38	0.52
CADMIUM	39	1000	NA	0.05 J	0.05 J	--	0.08 J	0.08	0.08	0.07 J	0.06 J	0.07 J	0.09
CALCIUM	NA	NA	NA	822 J	822 J	--	393 J	350	307 J	534 J	536 J	908 J	789 J
CHROMIUM	NA	NA	NA	17.7 J	17.7 J	--	13.4 J	12.1	10.8 J	19.9 J	21.2 J	24.2 J	19.1 J
COBALT	NA	NA	NA	9	9	--	11	11.5	12	11.2	11.5	14.8	12.7
COPPER	3100	10000	NA	15.7	15.7	--	17.5	17.05	16.6	16.5	28.7	19.5	24.2
IRON	NA	NA	NA	23200	23200	--	19600	19550	19500	27600	33400	34500	28900
LEAD	150	500	NA	11.8	11.8	--	11.5 J	10.9	10.3 J	14.8	30.7 J	14.9	22.5 J
MAGNESIUM	NA	NA	NA	4020	4020	--	2950 J	2985	3020 J	4660	4950 J	6180	4070 J
MANGANESE	390	10000	NA	236	236	--	313 J	331.5	350 J	254	259 J	294	284 J
MERCURY	23	610	NA	0.05	0.05	--	0.005 J	0.005	0.005 J	0.03 J	0.04	0.02 J	0.04
NICKEL	1000	10000	NA	17.5	17.5	--	16.7	16.8	16.9	23.1	25.9	28.8	24.5
POTASSIUM	NA	NA	NA	394	394	--	483	465	447	371	374	282	429
SELENIUM	390	10000	NA	0.22 J	0.22 J	--	0.24 U	0.21	0.3 J	0.28 U	0.31 J	0.25 U	0.35 J
SILVER	200	10000	NA	0.03 J	0.03 J	--	0.02 J	0.02	0.02 J	0.02 J	0.05 J	0.03 J	0.22
SODIUM	NA	NA	NA	37.5 U	37.5 U	--	33 U	32.85 U	32.7 U	34 U	35.1 U	33 U	41.4 U
THALLIUM	5.5	140	NA	0.05 U	0.05 U	--	0.04 J	0.04	0.04 J	0.05 U	0.04 J	0.033 U	0.06 J
VANADIUM	550	10000	NA	16.3	16.3	--	15.4	14.9	14.4	18.8	33.2	19.6	25.8
ZINC	6000	10000	NA	40.4	40.4	--	39.3 J	38.25	37.2 J	47.1	64.4 J	61.2	56.8 J

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1040	TF2-004/5-SB1040	TF2-004/5-SB1040	TF2-004/5-SB1041	TF2-004/5-SB1041	TF2-004/5-SB1041	TF2-004/5-SB1041	TF2-004/5-SB1042	TF2-004/5-SB1043	TF2-004/5-SB1044
SAMPLE ID				TF2-004/5-SB1040-0810	TF2-004/5-SB1040-0810-	TF2-004/5-SB1040-0810-	TF2-004/5-SS1041-000.7	TF2-004/5-SS1041-000.7-	TF2-004/5-SS1041-000.7-	TF2-004/5-SB1041-	TF2-004/5-SS1042-000.5	TF2-004/5-SS1043-	TF2-004/5-SS1044-000.5
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/14/2013	20131114	11/14/2013	10/21/2013	20131021	10/21/2013	11/13/2013	10/21/2013	11/13/2013	10/21/2013
SAMPLE CODE	DIRECT	DIRECT	GA	ORIG	AVG	DUP	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SB	SB	SS	SS	SS	SB	SS	SS	SS
TOP DEPTH				8	8	8	0	0	0	2	0	0.1	0
BOTTOM DEPTH				10	10	10	0.7	0.7	0.7	2.5	0.5	0.5	0.5
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	86	87	88	96	96	96	94	94	94	96
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	7.8 J	7.8 J	11 U	--	--	--	--	--	--	--
TPH (C05-C12)	NA	NA	NA	2.2 U	2.15 U	2.1 U	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.01 U	0.01 U	--	0.01 U	0.00985 U	0.0097 U	0.01 U	0.01 U	0.01 U	0.0098 U
ACENAPHTHENE	43	10000	NA	0.01 U	0.01 U	--	0.01 U	0.00985 U	0.0097 U	0.01 U	0.0021 J	0.01 U	0.0019 J
ACENAPHTHYLENE	23	10000	NA	0.01 U	0.01 U	--	0.01 U	0.00985 U	0.0097 U	0.01 U	0.0041 J	0.01 U	0.0031 J
ANTHRACENE	35	10000	NA	0.01 U	0.01 U	--	0.01 U	0.0017 J	0.0017 J	0.01 U	0.0048 J	0.01 U	0.0041 J
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.0041 J	0.0041 J	--	0.0065 J	0.00705	0.0076 J	0.0039 J	0.04	0.019 J	0.045
BENZO(A)PYRENE	0.4	0.8	240	0.0049 J	0.0049 J	--	0.0067 J	0.007	0.0073 J	0.01 U	0.048	0.014 J	0.046
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.012 J	0.012 J	--	0.011 J	0.012	0.013 J	0.0095 J	0.077	0.03	0.074
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.003 J	0.003 J	--	0.0043 J	0.004	0.0037 J	0.01 U	0.027	0.0069 J	0.023
BENZO(K)FLUORANTHENE	0.9	78	NA	0.0035 J	0.0035 J	--	0.0054 J	0.0052	0.005 J	0.01 U	0.03	0.0098 J	0.03
CHRYSENE	0.4	780	NA	0.0062 J	0.0062 J	--	0.009 J	0.00945	0.0099 J	0.0039 J	0.054	0.023	0.058
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.0083 J	0.0083 J	--	0.0038 J	0.0038 J	0.0097 U	0.0079 J	0.012 J	0.0094 J	0.011 J
FLUORANTHENE	20	10000	NA	0.0075 J	0.0075 J	--	0.014 J	0.0175	0.021	0.012 U	0.092	0.04 J	0.087
FLUORENE	28	10000	NA	0.01 U	0.01 U	--	0.01 U	0.00985 U	0.0097 U	0.01 U	0.01 U	0.01 U	0.0098 U
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.0087 J	0.0087 J	--	0.01 UJ	0.00985 U	0.0097 U	0.0048 J	0.043 J	0.018 J	0.033 J
NAPHTHALENE	54	10000	0.8	0.01 U	0.01 U	--	0.01 U	0.00985 U	0.0097 U	0.01 U	0.01 U	0.01 U	0.0098 U
PHENANTHRENE	40	10000	NA	0.0038 J	0.0038 J	--	0.0066 J	0.0076	0.0086 J	0.01 U	0.039	0.01 U	0.031
PYRENE	13	10000	NA	0.008 J	0.008 J	--	0.014 J	0.0145	0.015 J	0.01 U	0.083	0.03	0.08
TOTAL PAHS	NA	NA	NA	0.07	0.07	--	0.0813	0.08705	0.0928	0.03	0.556	0.2001	0.5271

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1045	TF2-004/5-SB1046	TF2-004/5-SB1047	TF2-004/5-SB1047	TF2-004/5-SB1047	TF2-004/5-SB1048	TF2-004/5-SB1048	TF2-004/5-SB1049	TF2-004/5-SB1049	TF2-004/5-SB1049
SAMPLE ID				TF2-004/5-SS1045-000.5	TF2-004/5-SS1046-000.5	TF2-004/5-SS1047-000.8	TF2-004/5-SB1047-0204	TF2-004/5-SB1047-0608	TF2-004/5-SS1048-000.8	TF2-004/5-SB1048-0204	TF2-004/5-SS1049-000.9	TF2-004/5-SB1049-0204	TF2-004/5-SB1049-0810
SAMPLE DATE	RIDEM	RIDEM	RIDEM	10/21/2013	10/21/2013	10/21/2013	11/14/2013	11/14/2013	10/21/2013	11/13/2013	10/21/2013	11/14/2013	11/14/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SB	SB	SS	SB	SS	SB	SB
TOP DEPTH				0	0	0	2	6	0	2	0	2	8
BOTTOM DEPTH				0.5	0.5	0.8	4	8	0.8	4	0.9	4	10
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	6400	3600	10000	5800	--	5400	1400	4400	1300	--
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	420	18	110	1 U	--	36	0.64 U	38	2.2 U	--
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	360	100	850	27	--	110	9.3	160	6	--
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	130	13	99	0.59 U	--	22	0.65 U	24	1.1 U	--
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	8.9	0.75 J	4.2 J	0.048 U	--	1.3 J	0.12 J	1.2 J	0.038 U	--
1,2,3,4,7,8-HXCDD	NA	NA	NA	5.2	2.6 J	16	0.22 J	--	2.1 J	0.1 J	2.9 J	0.033 U	--
1,2,3,4,7,8-HXCDF	NA	NA	NA	5.5	1.7 J	7.5	0.5 J	--	3.3 J	0.5 J	2.6 J	0.43 U	--
1,2,3,6,7,8-HXCDD	NA	NA	NA	17	5.6	52	0.27 J	--	4.8 J	0.24 J	8.1	0.095 J	--
1,2,3,6,7,8-HXCDF	NA	NA	NA	3.6 J	1.1 J	6	0.4 U	--	2 J	0.45 J	1.6 J	0.4 J	--
1,2,3,7,8,9-HXCDD	NA	NA	NA	11	5.2	34	0.26 J	--	4.1 J	0.25 J	5.8	0.19 J	--
1,2,3,7,8,9-HXCDF	NA	NA	NA	0.18 U	0.085 U	0.17 U	0.17 J	--	0.12 U	0.26 J	0.13 U	0.025 U	--
1,2,3,7,8-PECDD	NA	NA	NA	1.3 J	1.1 J	5.4	0.1 U	--	0.75 J	0.039 U	1 J	0.047 UJ	--
1,2,3,7,8-PECDF	NA	NA	NA	1.2 J	0.25 U	1.1 J	0.092 J	--	0.87 J	0.054 J	0.1 U	0.034 UJ	--
2,3,4,6,7,8-HXCDF	NA	NA	NA	3.2 J	0.94 J	5.5	0.074 J	--	1.7 J	0.66 J	1.3 J	0.1 J	--
2,3,4,7,8-PECDF	NA	NA	NA	1.5 J	0.59 J	1.4 J	0.12 J	--	1.3 J	0.18 J	0.76 J	0.13 J	--
2,3,7,8-TCDD	NA	NA	NA	0.26 J	0.037 U	0.54 J	0.059 U	--	0.23 J	0.031 U	0.13 U	0.03 U	--
2,3,7,8-TCDF	NA	NA	NA	1.2	0.48 J	1.2	0.12 UJ	--	1.8	0.55 U	0.66 J	0.13 UJ	--
TEQ	NA	NA	NA	13.751	5.2619	31.178	2.19816	--	6.3399	0.81582	6.7074	0.5675	--
TEQ BIRD	NA	NA	NA	9.571	3.8493	18.163	0.8503	--	6.3166	0.5553	4.6318	0.33595	--
TEQ BIRD HALFND	NA	NA	NA	9.58	3.88455	18.1715	1.01304	--	6.3226	0.868582	4.7083	0.470525	--
TEQ HALFND	NA	NA	NA	13.76	5.2884	31.1865	2.307	--	6.3459	0.881666	6.7804	0.64343	--
TOTAL HPCDD	NA	NA	NA	580	200	1500	45	--	210	19	280	10	--
TOTAL HPCDF	NA	NA	NA	460	31	240	1.1 U	--	51	1.4 J	61 J	1.6 U	--
TOTAL HXCDD	NA	NA	NA	81 J	43 J	320 J	3.1 J	--	35	3.3 J	53	1 J	--
TOTAL HXCDF	NA	NA	NA	110 J	21 J	150 J	2.6 J	--	32	6 J	30 J	1.4 U	--
TOTAL PECDD	NA	NA	NA	8.4 J	5.6 J	36	1.7 J	--	7.7 J	0.039 U	5.1 J	0.37 J	--
TOTAL PECDF	NA	NA	NA	20 J	8.3 J	34 J	3.7 J	--	22 J	5.2 J	10 J	0.43 J	--
TOTAL TCDD	NA	NA	NA	2.2 J	0.91 J	4.7 J	0.55 J	--	3.2 J	0.26 J	1.2	0.47 J	--
TOTAL TCDF	NA	NA	NA	13 J	5.2 J	11 J	2.2 J	--	15 J	2 J	7.9 J	0.46 J	--
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	16200	14700	12500	13200	15600	13400	16300	12800	12000	14600
ANTIMONY	10	820	NA	0.17 J	0.43 J	0.66 J	0.08 U	0.07 U	0.59 J	0.04 J	0.28 J	0.07 U	0.08 U
ARSENIC	7	7	NA	**8.4 [R,I]**	5.8	**7.1 [R,I]**	6.6	**7.8 [R,I]**	**8.2 [R,I]**	5.9 J	5.6	4.4	**8.3 [R,I]**
BARIUM	5500	10000	NA	15.3	13.9	20.2	18.1	15.8	18.5	13.5	13.8	15.3	18.4
BERYLLIUM	1.5	1.5	NA	0.34	0.36	0.38	0.4	0.35	0.38	0.44	0.33	0.36	0.38
CADMIUM	39	1000	NA	0.1	0.09	0.1	0.06 J	0.07	0.1	0.06 J	0.1	0.05 J	0.07 J
CALCIUM	NA	NA	NA	740 J	790 J	660 J	674 J	770 J	673 J	373	742 J	611 J	827 J
CHROMIUM	NA	NA	NA	22 J	20.8 J	16.6 J	16 J	18.6 J	18.6 J	21.4 J	16.7 J	14.2 J	17.8 J
COBALT	NA	NA	NA	11.8	12.6	8.1	8.7	15.4	8.9	10.4	10.8	7.4	13.7
COPPER	3100	10000	NA	23	19.6	19.1	13	22	19.8	21.1 J	16.7	11.8	15.7
IRON	NA	NA	NA	31000	28600	21500	20300	26600	25800	30600	23800	18900	24300
LEAD	150	500	NA	31.3 J	26.9 J	47.1 J	11.7	11.4	47.1 J	13.6	25.4 J	8.6	11.6
MAGNESIUM	NA	NA	NA	5160 J	4540 J	3280 J	3340	4720	3830 J	5050	4360 J	3160	4220
MANGANESE	390	10000	NA	261 J	270 J	196 J	240	345	206 J	249	223 J	216	326
MERCURY	23	610	NA	0.05	0.02 U	0.04	0.02 J	0.02 J	0.04	0.005 J	0.04	0.02 J	0.07
NICKEL	1000	10000	NA	27.6	25.6	18.2	15.8	22.9	21.1	24.1 J	22.4	13.3	21.1
POTASSIUM	NA	NA	NA	368	372	440	427	397	338	300	309	412	480
SELENIUM	390	10000	NA	0.26 U	0.24 U	0.32 J	0.24 U	0.18 U	0.28 J	0.3 U	0.25 U	0.24 U	0.29 J
SILVER	200	10000	NA	0.05 J	0.04 J	0.07 J	0.032 U	0.024 U	0.07 J	0.02 J	0.04 J	0.031 U	0.04 J
SODIUM	NA	NA	NA	34.2 U	38 U	42.7 U	37.1 U	31.4 U	38.5 U	22.5 J	38.8 U	34.1 U	45.4 U
THALLIUM	5.5	140	NA	0.05 J	0.04 J	0.08	0.2	0.05 J	0.06 J	0.03 J	0.04 J	0.05 J	0.06 U
VANADIUM	550	10000	NA	32.4	21.8	30.4	18.6	17.1	30.6	17.8	22.2	16.2	17.9
ZINC	6000	10000	NA	63.4 J	62.4 J	49.2 J	36.2	50	53.7 J	49 J	52 J	34.8	46.9

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1045	TF2-004/5-SB1046	TF2-004/5-SB1047	TF2-004/5-SB1047	TF2-004/5-SB1047	TF2-004/5-SB1048	TF2-004/5-SB1048	TF2-004/5-SB1049	TF2-004/5-SB1049	TF2-004/5-SB1049
SAMPLE ID				TF2-004/5-SS1045-000.5	TF2-004/5-SS1046-000.5	TF2-004/5-SS1047-000.8	TF2-004/5-SB1047-0204	TF2-004/5-SB1047-0608	TF2-004/5-SS1048-000.8	TF2-004/5-SB1048-0204	TF2-004/5-SS1049-000.9	TF2-004/5-SB1049-0204	TF2-004/5-SB1049-0810
SAMPLE DATE	RIDEM	RIDEM	RIDEM	10/21/2013	10/21/2013	10/21/2013	11/14/2013	11/14/2013	10/21/2013	11/13/2013	10/21/2013	11/14/2013	11/14/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SB	SB	SS	SB	SS	SB	SB
TOP DEPTH				0	0	0	2	6	0	2	0	2	8
BOTTOM DEPTH				0.5	0.5	0.8	4	8	0.8	4	0.9	4	10
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	96	97	93	90	88	94	94	94	91	88
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	--	--	--	--	--	--	--	160 J	--	--
TPH (C05-C12)	NA	NA	NA	--	--	--	--	--	--	--	2.4 U	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.01 U	0.0097 U	0.072	0.011 U	0.011 U	0.0022 J	0.0034 J	0.01 U	0.01 U	0.011 U
ACENAPHTHENE	43	10000	NA	0.0081 J	0.0097 U	0.14	0.011 U	0.011 U	0.0038 J	0.01 U	0.0018 J	0.01 U	0.011 U
ACENAPHTHYLENE	23	10000	NA	0.005 J	0.0013 J	0.01 U	0.011 U	0.011 U	0.011 J	0.01 U	0.0024 J	0.01 U	0.011 U
ANTHRACENE	35	10000	NA	0.021	0.0041 J	0.36	0.011 U	0.011 U	0.016 J	0.01 U	0.0047 J	0.01 U	0.011 U
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.11	0.024	0.53	0.008 J	0.0028 J	0.095	0.0027 J	0.036	0.01 U	0.0022 J
BENZO(A)PYRENE	0.4	0.8	240	0.1	0.028 J	0.39	0.0053 J	0.011 U	0.11	0.01 UJ	0.039	0.01 U	0.011 U
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.17	0.042 J	0.5	0.014 J	0.011 J	0.21	0.0095 J	0.067	0.0085 J	0.0094 J
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.046	0.017 J	0.11	0.0028 J	0.011 U	0.047	0.0022 J	0.02 J	0.01 U	0.011 U
BENZO(K)FLUORANTHENE	0.9	78	NA	0.059	0.021 J	0.18	0.0033 U	0.011 U	0.062	0.01 U	0.027	0.01 U	0.011 U
CHRYSENE	0.4	780	NA	0.13	0.037	**0.48 [R]**	0.0082 J	0.0036 J	0.13	0.0034 J	0.05	0.0018 U	0.0024 J
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.025	0.0073 J	0.058	0.011 UJ	0.011 UJ	0.023	0.01 U	0.01 J	0.01 UJ	0.011 UJ
FLUORANTHENE	20	10000	NA	0.24	0.057	1.1	0.024	0.011 U	0.19	0.01 U	0.08	0.01 U	0.011 U
FLUORENE	28	10000	NA	0.0087 J	0.0097 U	0.13	0.011 U	0.011 U	0.0037 J	0.01 U	0.01 U	0.01 U	0.011 U
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.076 J	0.02 J	0.21	0.0085 J	0.0068 J	0.084	0.0056 J	0.027	0.01 UJ	0.011 UJ
NAPHTHALENE	54	10000	0.8	0.01 U	0.0097 U	0.096	0.011 U	0.011 U	0.0097 U	0.01 U	0.01 U	0.01 U	0.011 U
PHENANTHRENE	40	10000	NA	0.13	0.027	1.1	0.011 U	0.011 U	0.073	0.01 U	0.034	0.01 U	0.011 U
PYRENE	13	10000	NA	0.21	0.057	0.96	0.019 J	0.011 U	0.19	0.01 U	0.078	0.01 U	0.011 U
TOTAL PAHS	NA	NA	NA	1.3388	0.3427	6.416	0.0898	0.0242	0.0012507	0.0268	0.4769	0.0085	0.014

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1050	TF2-004/5-SB1052	TF2-004/5-SB1051	TF2-004/5-SB1053	TF2-004/5-SB1054	TF2-004/5-SB1055	TF2-004/5-SB1056	TF2-004/5-SB1057	TF2-004/5-SB1057	TF2-004/5-SB1057
SAMPLE ID				TF2-004/5-SS1050-000.6	TF2-004/5-SS1052-000.6	TF2-004/5-SS1051-000.8	TF2-004/5-SS1053-000.6	TF2-004/5-SS1054-000.6	TF2-004/5-SS1055-000.8	TF2-004/5-SS1056-000.6	TF2-004/5-SS1057-0001	TF2-004/5-SB1057-0304	TF2-004/5-SB1057-0608
SAMPLE DATE	RIDEM	RIDEM	RIDEM	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	11/14/2013	11/14/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SS	SS	SS	SS	SS	SB	SB
TOP DEPTH				0	0	0	0	0	0	0	0	3	6
BOTTOM DEPTH				0.6	0.6	0.8	0.6	0.6	0.8	0.6	1	4	8
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	2800	4000	5700	7000	3100	1900	3700	6400	1600	--
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	96	200	35	250	53	22	21	43	0.32 U	--
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	62	270	67	510	98 J	55	130	420	7	--
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	34	92	15	120	26	13	16	44	0.19 U	--
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	1.6 J	4.6 J	0.73 J	5.2	1.2 J	0.76 J	0.73 J	1.6 J	0.038 U	--
1,2,3,4,7,8-HXCDD	NA	NA	NA	1 J	4.5 J	0.95 J	6.5 J	1.7 J	0.87 J	3 J	7.2	0.064 U	--
1,2,3,4,7,8-HXCDF	NA	NA	NA	4.1 J	4.9 J	1.1 J	7.1	1.9 J	1.4 J	1.9 J	3.2 J	0.08 U	--
1,2,3,6,7,8-HXCDD	NA	NA	NA	2.3 J	12	2 J	23	4.3 J	2.4 J	6.7	23	0.045 U	--
1,2,3,6,7,8-HXCDF	NA	NA	NA	1.7 J	4.2 J	1.2 J	5.1 J	1.2 J	0.84 J	1.7 J	2.8 J	0.25 U	--
1,2,3,7,8,9-HXCDD	NA	NA	NA	2.3 J	9.7	1.8 J	14	3.2 J	1.7 J	6.4	14	0.047 U	--
1,2,3,7,8,9-HXCDF	NA	NA	NA	0.093 U	0.15 U	0.087 U	0.14 U	0.12 U	0.12 U	0.11 U	0.11 U	0.03 U	--
1,2,3,7,8-PECDD	NA	NA	NA	0.5 J	1.8 J	0.41 J	2.7 J	0.58 J	0.31 J	1.2 J	2.5 J	0.068 U	--
1,2,3,7,8-PECDF	NA	NA	NA	0.43 J	1.1 J	0.3 J	0.81 J	0.23 J	0.14 J	0.45 J	0.5 J	0.035 U	--
2,3,4,6,7,8-HXCDF	NA	NA	NA	0.75 J	4.1 J	0.58 J	4.4 J	0.78 J	0.59 J	0.98 J	2.2 J	0.027 U	--
2,3,4,7,8-PECDF	NA	NA	NA	0.65 J	1.6 J	0.35 J	0.98 J	0.36 J	0.16 J	0.25 J	1 J	0.037 U	--
2,3,7,8-TCDD	NA	NA	NA	0.16 J	0.14 J	0.035 U	0.63 J	0.094 J	0.043 U	0.31 J	0.19 J	0.043 U	--
2,3,7,8-TCDF	NA	NA	NA	0.43 J	1.2	0.33 J	0.77 J	0.17 J	0.18 J	0.19 J	0.56 J	0.021 U	--
TEQ	NA	NA	NA	3.9707	11.439	3.8678	18.2623	4.3118	2.4244	6.2691	14.8899	0.55	--
TEQ BIRD	NA	NA	NA	3.4486	9.141	2.4533	11.263	2.7483	1.5693	3.9794	8.6303	0.167	--
TEQ BIRD HALFND	NA	NA	NA	3.45325	9.1485	2.47515	11.27	2.7543	1.5968	3.9849	8.6358	0.277931	--
TEQ HALFND	NA	NA	NA	3.97535	11.4465	3.88965	18.2693	4.3178	2.4519	6.2746	14.8954	0.640963	--
TOTAL HPCDD	NA	NA	NA	110	470	120	860	170	93	250	730	12	--
TOTAL HPCDF	NA	NA	NA	62	240	39	330	67	31	37	110	0.26 U	--
TOTAL HXCDD	NA	NA	NA	18 J	79	14	130 J	27	15	49	140	0.27 J	--
TOTAL HXCDF	NA	NA	NA	20 J	95	13 J	120	24 J	13 J	23	77	0.33 U	--
TOTAL PECDD	NA	NA	NA	3.4 J	10 J	2.9 J	12 J	3.2 J	2.4 J	8.4 J	14 J	0.82 J	--
TOTAL PECDF	NA	NA	NA	8.8 J	29 J	3.4 J	24 J	5.8 J	6.5 J	8 J	16 J	0.037 U	--
TOTAL TCDD	NA	NA	NA	1.8 J	2.2 J	1.2 J	2.7 J	0.92 J	0.46 J	1.3 J	1.7 J	0.7 J	--
TOTAL TCDF	NA	NA	NA	6.6 J	11 J	2.7 J	9.4 J	1.7 J	2.4 J	3.4 J	6.2 J	0.33 J	--
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	8650 J	15700 J	11600 J	13000 J	12500 J	16200 J	12400 J	6960 J	12200	17400
ANTIMONY	10	820	NA	0.15 J	0.23 J	0.14 J	0.19 J	0.11 J	0.07 J	6.6 J	0.43 J	0.09 J	0.1 J
ARSENIC	7	7	NA	4.8	**8.7 [R,I]**	**8.1 [R,I]**	**8 [R,I]**	6.9 J	6.7	**7.8 J [R,I]**	3.2 J	5.3	**8.9 [R,I]**
BARIUM	5500	10000	NA	12.8	17.2	17.2	12.3	15.8	13.1	17.2	15.8	14.2	12.9
BERYLLIUM	1.5	1.5	NA	0.32	0.56	0.42	0.39	0.39	0.39	0.39	0.33	0.38	1.3 J
CADMIUM	39	1000	NA	0.05 J	0.07 J	0.07 J	0.06 J	0.08 J	0.08	0.08	0.08 J	0.14	0.05 J
CALCIUM	NA	NA	NA	363 J	578 J	419 J	573 J	718 J	1190 J	739 J	588 J	545 J	746 J
CHROMIUM	NA	NA	NA	12.3	22.3	14.4	18.8	17.1	23.6	18.3	9.4	15.1 J	23 J
COBALT	NA	NA	NA	7.4	11.8	13.9	10.8	11.9	16.2	11.7	5	8.3	23.5 J
COPPER	3100	10000	NA	17.3	25.3	29.8	27.2	19.8	24.9	18.1	11.5	13	23.3
IRON	NA	NA	NA	17500 J	31100 J	24100 J	24800 J	23100 J	31800 J	22900 J	11700 J	21600	41200
LEAD	150	500	NA	13.2 J	31.1 J	12.4 J	22.1 J	18	27.4 J	30.3	47	8.4	15.4
MAGNESIUM	NA	NA	NA	2630 J	4760 J	3790 J	3970 J	3640 J	5440 J	3750 J	1810 J	3500	5660
MANGANESE	390	10000	NA	211 J	238 J	**400 J [R]**	231 J	298 J	297 J	266 J	195 J	223	322
MERCURY	23	610	NA	0.02 U	0.03	0.02 U	0.04	0.04	0.014 U	0.03	0.02 U	0.02 J	0.02 J
NICKEL	1000	10000	NA	14.2	26.5	24	23.3	20.3	30.5	20.8	10.7	15.8	31
POTASSIUM	NA	NA	NA	341	332	383	306	363	258	343	318	588	324
SELENIUM	390	10000	NA	0.34 U	0.43 U	0.26 U	0.39 U	0.39 J	0.38 U	0.39 J	0.33 J	0.86	0.2 U
SILVER	200	10000	NA	0.04 J	0.06 J	0.03 J	0.05 J	0.03 J	0.02 J	0.03 J	0.04 J	0.03 U	0.027 U
SODIUM	NA	NA	NA	17 U	28.2 J	21.8 U	23.4 J	38 U	20.7 U	34.4 U	40 U	34.7 U	28.3 U
THALLIUM	5.5	140	NA	0.04 J	0.06 J	0.05 J	0.05 J	0.05 J	0.03 J	0.04 J	0.05 J	0.25	0.04 J
VANADIUM	550	10000	NA	17.4 J	30.7 J	19.2 J	24.2 J	19.8	19 J	18.7	18	14	18.3
ZINC	6000	10000	NA	34.5 J	58.8 J	51.5 J	52.1 J	49.3 J	63.4 J	50.2 J	35.4 J	33.5	60.5

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1050	TF2-004/5-SB1052	TF2-004/5-SB1051	TF2-004/5-SB1053	TF2-004/5-SB1054	TF2-004/5-SB1055	TF2-004/5-SB1056	TF2-004/5-SB1057	TF2-004/5-SB1057	TF2-004/5-SB1057
SAMPLE ID				TF2-004/5-SS1050-000.6	TF2-004/5-SS1052-000.6	TF2-004/5-SS1051-000.8	TF2-004/5-SS1053-000.6	TF2-004/5-SS1054-000.6	TF2-004/5-SS1055-000.8	TF2-004/5-SS1056-000.6	TF2-004/5-SS1057-0001	TF2-004/5-SB1057-0304	TF2-004/5-SB1057-0608
SAMPLE DATE	RIDEM	RIDEM	RIDEM	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	10/21/2013	11/14/2013	11/14/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SS	SS	SS	SS	SS	SB	SB
TOP DEPTH				0	0	0	0	0	0	0	0	3	6
BOTTOM DEPTH				0.6	0.6	0.8	0.6	0.6	0.8	0.6	1	4	8
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	95	94	96	94	97	95	96	96	91	91
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	--	--	27 J	--	--	--	100 J	--	--	--
TPH (C05-C12)	NA	NA	NA	--	--	2.6 J	--	--	--	2.1 U	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.01 U	0.0099 U	0.0096 U	0.01 U	0.0098 U	0.0093 U	0.0098 U	0.01 U	0.01 U	0.01 U
ACENAPHTHENE	43	10000	NA	0.01 U	0.0028 J	0.0096 U	0.0016 J	0.0098 U	0.0093 U	0.0016 J	0.0042 J	0.01 U	0.01 U
ACENAPHTHYLENE	23	10000	NA	0.01 U	0.0036 J	0.0096 U	0.01 U	0.0098 U	0.0093 U	0.0098 U	0.01 U	0.01 U	0.01 U
ANTHRACENE	35	10000	NA	0.0022 J	0.0067 J	0.0016 J	0.003 J	0.0019 J	0.0028 J	0.0032 J	0.0074 J	0.01 U	0.01 U
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.026	0.064	0.018 J	0.033	0.023	0.022	0.023	0.037	0.0022 J	0.0052 J
BENZO(A)PYRENE	0.4	0.8	240	0.021	0.059	0.015 J	0.03	0.019 J	0.016 J	0.022	0.033	0.01 U	0.0048 J
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.039	0.11	0.026	0.05	0.035	0.027	0.04	0.064	0.01 U	0.012 J
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.012 J	0.031 J	0.0086 J	0.017 J	0.011 J	0.0081 J	0.0098 J	0.02 J	0.01 U	0.0028 J
BENZO(K)FLUORANTHENE	0.9	78	NA	0.01 J	0.031	0.0065 J	0.02 J	0.011 J	0.0078 J	0.013 J	0.019 J	0.01 U	0.01 U
CHRYSENE	0.4	780	NA	0.024	0.066	0.015 J	0.034	0.021	0.018 J	0.028	0.047	0.0024 J	0.0062 J
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.0079 J	0.021 J	0.0065 J	0.0097 J	0.0077 J	0.0063 J	0.0039 J	0.01 U	0.01 UJ	0.01 UJ
FLUORANTHENE	20	10000	NA	0.054	0.12	0.033	0.076	0.044	0.04	0.046	0.078	0.01 U	0.01 U
FLUORENE	28	10000	NA	0.01 U	0.0099 U	0.0096 U	0.01 U	0.0098 U	0.0093 U	0.0098 U	0.0037 J	0.01 U	0.01 U
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.037 J	0.1 J	0.024 J	0.056 J	0.033 J	0.022 J	0.022	0.035	0.01 UJ	0.0077 J
NAPHTHALENE	54	10000	0.8	0.01 U	0.0099 U	0.0096 U	0.01 U	0.0098 U	0.0093 U	0.0098 U	0.01 U	0.01 U	0.01 U
PHENANTHRENE	40	10000	NA	0.019 J	0.046	0.012 J	0.027	0.015 J	0.013 J	0.022	0.05	0.01 U	0.01 U
PYRENE	13	10000	NA	0.039	0.098	0.024	0.058	0.032	0.025	0.043	0.074	0.01 U	0.01 U
TOTAL PAHS	NA	NA	NA	0.2911	0.7591	0.1902	0.4153	0.2536	0.208	0.2775	0.4723	0.0046	0.0387

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1057	TF2-004/5-SB1057	TF2-004/5-SB1058	TF2-004/5-SB1058	TF2-004/5-SB1059	TF2-004/5-SB1060	TF2-004/5-SB1061	TF2-004/5-SB1061	TF2-004/5-SB1061	TF2-004/5-SB1062
SAMPLE ID				TF2-004/5-SB1057-0608-20131114	TF2-004/5-SB1057-0608-11/14/2013	TF2-004/5-SS1058-000.5-10/22/2013	TF2-004/5-SB1058-0204-11/13/2013	TF2-004/5-SS1059-000.6-10/22/2013	TF2-004/5-SS1060-000.5-10/22/2013	TF2-004/5-SS1061-000.6-10/21/2013	TF2-004/5-SS1061-000.6-20131021	TF2-004/5-SS1061-000.6-10/21/2013	TF2-004/5-SS1062-000.8-10/21/2013
SAMPLE DATE	RIDEM	RIDEM	RIDEM										
SAMPLE CODE	DIRECT	DIRECT	GA	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SB	SS	SB	SS	SS	SS	SS	SS	SS
TOP DEPTH				6	6	0	2	0	0	0	0	0	0
BOTTOM DEPTH				8	8	0.5	4	0.6	0.5	0.6	0.6	0.6	0.8
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	--	--	1400	2000	6400	5500	3400	3500	3600	4900
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	--	--	42	1.9 U	20	210	40	44.5	49	29
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	--	--	48	8.4	59	300	110	115	120	120
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	--	--	14	0.58 U	6.9 J	95	22	22.5	23	17
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	--	--	0.91 J	0.031 U	0.11 U	4.9 J	1.4 J	1.2	1 J	1.2 J
1,2,3,4,7,8-HXCDD	NA	NA	NA	--	--	0.64 J	0.032 U	0.53 J	4.9 J	2.3 J	2.25	2.2 J	2.2 J
1,2,3,4,7,8-HXCDF	NA	NA	NA	--	--	1.5 J	0.13 U	0.51 J	8.1	1.9 J	2	2.1 J	2 J
1,2,3,6,7,8-HXCDD	NA	NA	NA	--	--	1.6 J	0.022 U	1 J	13	5.7	5.65	5.6	5.7
1,2,3,6,7,8-HXCDF	NA	NA	NA	--	--	1 J	0.29 J	0.64 J	5.6	1.3 J	1.3	1.3 J	1.3 J
1,2,3,7,8,9-HXCDD	NA	NA	NA	--	--	1.5 J	0.11 J	1.1 J	10	4.7 J	4.8	4.9 J	4.9 J
1,2,3,7,8,9-HXCDF	NA	NA	NA	--	--	0.081 U	0.024 U	0.059 U	0.098 U	0.088 U	0.092 U	0.096 U	0.099 U
1,2,3,7,8-PECDD	NA	NA	NA	--	--	0.3 J	0.039 U	0.18 J	1.9 J	0.98 J	0.945	0.91 J	1.2 J
1,2,3,7,8-PECDF	NA	NA	NA	--	--	0.066 U	0.027 U	0.048 U	2 J	0.3 J	0.32	0.34 J	0.58 J
2,3,4,6,7,8-HXCDF	NA	NA	NA	--	--	0.94 J	0.021 U	0.41 J	5.7	1.2 J	1.2	1.2 J	1.1 J
2,3,4,7,8-PECDF	NA	NA	NA	--	--	0.34 J	0.029 U	0.05 U	2.4 J	0.51 J	0.51	0.51 J	0.84 J
2,3,7,8-TCDD	NA	NA	NA	--	--	0.036 U	0.037 J	0.042 U	0.28 J	0.056 U	0.114	0.2 J	0.17 J
2,3,7,8-TCDF	NA	NA	NA	--	--	0.42 J	0.017 U	0.065 U	2	0.43 J	0.425	0.42 J	0.76 J
TEQ	NA	NA	NA	--	--	2.2237	0.761	3.184	13.602	5.261	5.42045	5.5799	6.2961
TEQ BIRD	NA	NA	NA	--	--	1.9433	0.2854	1.2525	11.965	3.72	3.81745	3.9149	4.9199
TEQ BIRD HALFND	NA	NA	NA	--	--	1.96865	0.34206	1.3369	11.9699	3.7524	3.83605	3.9197	4.92485
TEQ HALFND	NA	NA	NA	--	--	2.24674	0.800895	3.21997	13.6069	5.2934	5.43905	5.5847	6.30105
TOTAL HPCDD	NA	NA	NA	--	--	82	14 J	100	510	200	210	220	210
TOTAL HPCDF	NA	NA	NA	--	--	42	1.2 J	17 J	240	56	59	62	39
TOTAL HXCDD	NA	NA	NA	--	--	10 J	0.46 J	7.5 J	87	34 J	35	36	41 J
TOTAL HXCDF	NA	NA	NA	--	--	14	0.62 J	6.6 J	120 J	28	29	30	24
TOTAL PECDD	NA	NA	NA	--	--	1.5 J	0.36 J	1.6 J	14 J	4.7 J	4.75	4.8 J	6.9 J
TOTAL PECDF	NA	NA	NA	--	--	3.7 J	0.11 J	1.4 J	45 J	9.5 J	9.35	9.2 J	13 J
TOTAL TCDD	NA	NA	NA	--	--	0.48 J	0.2 J	1.3	5.1 J	1.3 J	1.25	1.2 J	2.2 J
TOTAL TCDF	NA	NA	NA	--	--	2.8 J	0.11 J	1.2 J	23	5 J	4.55	4.1 J	8.5 J
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	16600	15800	15100 J	20000	10100 J	16200 J	9090 J	10695	12300 J	11400 J
ANTIMONY	10	820	NA	0.1	0.1 J	0.18 J	0.06 U	0.09 J	0.22 J	0.2 J	0.375	0.55 J	0.36 J
ARSENIC	7	7	NA	**7.75 [R,I]**	6.6	**8.3 [R,I]**	**7.4 [R,I]**	5.1	**7.8 [R,I]**	3.8	4.7	5.6	5.3
BARIUM	5500	10000	NA	13	13.1	11.8	10.8	17.9	15.9	12.8	14.55	16.3	17.8
BERYLLIUM	1.5	1.5	NA	0.9	0.5 J	0.84	0.46	0.37	0.42	0.3	0.31	0.32	0.35
CADMIUM	39	1000	NA	0.055	0.06 J	0.07 J	0.05 J	0.07 J	0.07 J	0.07 J	0.085	0.1	0.08 J
CALCIUM	NA	NA	NA	721.5	697 J	653 J	554 J	467 J	731 J	890 J	785	680 J	710 J
CHROMIUM	NA	NA	NA	21.3	19.6 J	21.7	27 J	12.8	22.7	12.2	13.5	14.8	15
COBALT	NA	NA	NA	18.55	13.6 J	16.4	15.2	9.3	13.2	7.3	8.15	9	7.4
COPPER	3100	10000	NA	21.25	19.2	32.6	26.4	16.1	27.1	13.9	15.6	17.3	16.4
IRON	NA	NA	NA	35400	29600	32000 J	43500	19000 J	31600 J	17100 J	19700	22300 J	18500 J
LEAD	150	500	NA	13.9	12.4	20.2 J	15.1	10.3 J	34.5 J	20.7 J	25.35	30 J	51.2 J
MAGNESIUM	NA	NA	NA	5370	5080	4850 J	7150	3170 J	5260 J	2740 J	3230	3720 J	3060 J
MANGANESE	390	10000	NA	310.5	299	353 J	364	297 J	265 J	179 J	216	253 J	188 J
MERCURY	23	610	NA	0.025	0.03	0.02 U	0.016 U	0.013 U	0.08 J	0.04 J	0.04	0.04 J	0.04 J
NICKEL	1000	10000	NA	28.05	25.1	29.6	32.8	17.5	28.6	13.2	15.7	18.2	17
POTASSIUM	NA	NA	NA	336	348	291	310	461	301	260	285	310	310
SELENIUM	390	10000	NA	0.225 U	0.25 U	0.34 U	0.33 U	0.28 U	0.29 U	0.26 U	0.27 U	0.28 U	0.28 U
SILVER	200	10000	NA	0.0305 U	0.034 U	0.05 J	0.01 J	0.02 J	0.08	0.03 J	0.035	0.04 J	0.05 J
SODIUM	NA	NA	NA	31.15 U	34 U	25 U	29 U	21.6 U	25.9 J	19.1 J	19.1 J	23.4 U	30.6 J
THALLIUM	5.5	140	NA	0.03	0.04 U	0.04 J	0.06 U	0.05 J	0.05 J	0.04 J	0.04	0.04 J	0.06 J
VANADIUM	550	10000	NA	18.1	17.9	23.1 J	19.1	16.8 J	33.4 J	14.1 J	16.9	19.7 J	23.6 J
ZINC	6000	10000	NA	55.95	51.4	64.6 J	75.1	40.8 J	62 J	36.7 J	43	49.3 J	45.6 J

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1057	TF2-004/5-SB1057	TF2-004/5-SB1058	TF2-004/5-SB1058	TF2-004/5-SB1059	TF2-004/5-SB1060	TF2-004/5-SB1061	TF2-004/5-SB1061	TF2-004/5-SB1061	TF2-004/5-SB1062
SAMPLE ID				TF2-004/5-SB1057-0608-	TF2-004/5-SB1057-0608-	TF2-004/5-SS1058-000.5	TF2-004/5-SB1058-0204	TF2-004/5-SS1059-000.6	TF2-004/5-SS1060-000.5	TF2-004/5-SS1061-000.6	TF2-004/5-SS1061-000.6	TF2-004/5-SS1061-000.6	TF2-004/5-SS1062-000.8
SAMPLE DATE	RIDEM	RIDEM	RIDEM	20131114	11/14/2013	10/22/2013	11/13/2013	10/22/2013	10/22/2013	10/21/2013	20131021	10/21/2013	10/21/2013
SAMPLE CODE	DIRECT	DIRECT	GA	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SB	SS	SB	SS	SS	SS	SS	SS	SS
TOP DEPTH				6	6	0	2	0	0	0	0	0	0
BOTTOM DEPTH				8	8	0.5	4	0.6	0.5	0.6	0.6	0.6	0.8
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	91	91	95	94	96	94	96	96	96	93
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	--	--	--	10 U	--	--	--	--	--	--
TPH (C05-C12)	NA	NA	NA	--	--	--	4.1 U	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.0105 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0098 U	0.0094 U	0.00955 U	0.0097 U	0.0098 U
ACENAPHTHENE	43	10000	NA	0.0105 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0036 J	0.0028 J	0.0074	0.012 J	0.013 J
ACENAPHTHYLENE	23	10000	NA	0.0105 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0064 J	0.0019 J	0.0019 J	0.0097 U	0.003 J
ANTHRACENE	35	10000	NA	0.0105 U	0.011 U	0.002 J	0.01 U	0.01 U	0.008 J	0.0083 J	0.02215	0.036	0.022
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.00365	0.0021 J	0.02 J	0.01 U	0.013 J	0.091	0.071	0.0755	0.08	0.14
BENZO(A)PYRENE	0.4	0.8	240	0.0048 J	0.011 U	0.017 J	0.01 UJ	0.012 J	0.088	0.061	0.0625	0.064	0.11
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.01075	0.0095 J	0.03	0.0083 J	0.02 J	0.17	0.12	0.11	0.1	0.2
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.0028 J	0.011 U	0.0091 J	0.01 UJ	0.0074 J	0.043 J	0.032 J	0.0295	0.027 J	0.039 J
BENZO(K)FLUORANTHENE	0.9	78	NA	0.0105 U	0.011 U	0.0082 J	0.01 UJ	0.0045 J	0.046	0.039	0.0355	0.032	0.057
CHRYSENE	0.4	780	NA	0.0044	0.0026 J	0.017 J	0.0019 J	0.009 J	0.092	0.082	0.084	0.086	0.14
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.0105 U	0.011 UJ	0.0072 J	0.01 UJ	0.0062 J	0.031 J	0.014 J	0.0135	0.013 J	0.016 J
FLUORANTHENE	20	10000	NA	0.0105 U	0.011 U	0.041	0.01 U	0.021	0.17	0.11	0.125	0.14	0.26
FLUORENE	28	10000	NA	0.0105 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0035 J	0.0094 U	0.00785	0.011 J	0.012 J
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.0077 J	0.011 UJ	0.026 J	0.01 UJ	0.02 J	0.15 J	0.063	0.058	0.053	0.089
NAPHTHALENE	54	10000	0.8	0.0105 U	0.011 U	0.01 U	0.01 U	0.01 U	0.0098 U	0.0094 U	0.003 J	0.003 J	0.004 J
PHENANTHRENE	40	10000	NA	0.0105 U	0.011 U	0.017 J	0.01 U	0.0082 J	0.062	0.049 J	0.0845	0.12 J	0.18
PYRENE	13	10000	NA	0.0105 U	0.011 U	0.03	0.01 U	0.015 J	0.13	0.12	0.13	0.14	0.24
TOTAL PAHS	NA	NA	NA	0.02645	0.0142	0.2245	0.0102	0.1363	1.0945	0.774	0.8455	0.917	1.525

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1063	TF2-004/5-SB1064	TF2-004/5-SB1064	TF2-004/5-SB1064	TF2-004/5-SB1065	TF2-004/5-SB1065	TF2-004/5-SB1065	TF2-004/5-SB1065	TF2-004/5-SB1065	TF2-004/5-SB1066
SAMPLE ID				TF2-004/5-SS1063-000.6	TF2-004/5-SS1064-000.6	TF2-004/5-SB1064-0204	TF2-004/5-SB1064-0406	TF2-004/5-SS1065-000.5	TF2-004/5-SS1065-000.5-	TF2-004/5-SS1065-000.5-	TF2-004/5-SB1065-0204	TF2-004/5-SB1065-	TF2-004/5-SS1066-000.9
SAMPLE DATE	RIDEM	RIDEM	RIDEM	10/22/2013	10/22/2013	11/13/2013	11/13/2013	10/22/2013	20131022	10/22/2013	11/14/2013	11/14/2013	10/21/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SB	SB	SS	SS	SS	SB	SB	SS
TOP DEPTH				0	0	2	4	0	0	0	2	6	0
BOTTOM DEPTH				0.6	0.6	4	6	0.5	0.5	0.5	4	8	0.9
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	1700	1900	2100	--	3000	3050	3100	3000	--	5800
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	34	44	7.6 J	--	100	94.5	89	1.6 U	--	69
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	50	87	20	--	170	170	170	11	--	150
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	15	22	3.5 J	--	51	48.5	46	1 U	--	33
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	1 J	1.3 J	0.067 U	--	2.9 J	2.65	2.4 J	0.2 U	--	1.8 J
1,2,3,4,7,8-HXCDD	NA	NA	NA	0.66 J	1.2 J	0.15 J	--	2.7 J	2.65	2.6 J	0.1 J	--	3.1 J
1,2,3,4,7,8-HXCDF	NA	NA	NA	1.8 J	1.8 J	0.38 J	--	4.1 J	4.05	4 J	0.37 U	--	2.4 J
1,2,3,6,7,8-HXCDD	NA	NA	NA	2 J	3.8 J	0.68 J	--	6.8	6.65	6.5	0.13 J	--	7.2
1,2,3,6,7,8-HXCDF	NA	NA	NA	1.4 J	1.3 J	0.48 J	--	3.1 J	3.1	3.1 J	0.49 J	--	1.8 J
1,2,3,7,8,9-HXCDD	NA	NA	NA	1.7 J	2.6 J	0.42 J	--	5.4	5.65	5.9	0.15 J	--	6.2
1,2,3,7,8,9-HXCDF	NA	NA	NA	0.087 U	0.1 U	0.04 U	--	0.099 U	0.1245 U	0.15 U	0.022 U	--	0.088 U
1,2,3,7,8-PECDD	NA	NA	NA	0.27 J	0.59 J	0.069 U	--	1.1 J	1.1	1.1 J	0.034 U	--	1.4 J
1,2,3,7,8-PECDF	NA	NA	NA	0.4 J	0.53 J	0.034 U	--	0.94 J	0.905	0.87 J	0.021 U	--	0.35 J
2,3,4,6,7,8-HXCDF	NA	NA	NA	1.1 J	2.3 J	0.26 J	--	3.3 J	3.15	3 J	0.16 J	--	1.5 J
2,3,4,7,8-PECDF	NA	NA	NA	0.48 J	0.64 J	0.035 U	--	1.4 J	1.4	1.4 J	0.086 J	--	0.64 J
2,3,7,8-TCDD	NA	NA	NA	0.05 U	0.16 J	0.038 U	--	0.18 J	0.104	0.056 U	0.03 U	--	0.26 J
2,3,7,8-TCDF	NA	NA	NA	0.49 J	0.44 J	0.071 UJ	--	1	1.1	1.2	0.084 U	--	0.51 J
TEQ	NA	NA	NA	2.5212	3.9881	1.10428	--	7.5372	7.427	7.3168	1.1388	--	7.7422
TEQ BIRD	NA	NA	NA	2.3164	3.2954	0.43406	--	6.586	6.57045	6.5549	0.4833	--	5.3469
TEQ BIRD HALFND	NA	NA	NA	2.34575	3.3004	0.544595	--	6.59095	6.590675	6.5904	0.58403	--	5.3513
TEQ HALFND	NA	NA	NA	2.55055	3.9931	1.169425	--	7.54215	7.447225	7.3523	1.201155	--	7.7466
TOTAL HPCDD	NA	NA	NA	90	150	35	--	290	290	290	19	--	270
TOTAL HPCDF	NA	NA	NA	40	56	8.9	--	130	125	120 J	1.7 U	--	88
TOTAL HXCDD	NA	NA	NA	14 J	27 J	3.8 J	--	45	46	47 J	1 J	--	44
TOTAL HXCDF	NA	NA	NA	38 J	28 J	5.5 J	--	68 J	68	68	1.9 J	--	36
TOTAL PECDD	NA	NA	NA	2.8 J	4.6 J	0.069 U	--	7.4 J	7.85	8.3 J	0.18 J	--	5.5 J
TOTAL PECDF	NA	NA	NA	9.9 J	12 J	2.3 J	--	26 J	27.5	29	1 J	--	9.8 J
TOTAL TCDD	NA	NA	NA	0.76 J	2.1 J	0.29 J	--	1.8 J	2.3	2.8 J	0.1 J	--	1.1 J
TOTAL TCDF	NA	NA	NA	4.6 J	5.8 J	1.2 J	--	11 J	10.3	9.6 J	0.69 J	--	4.8 J
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	14600 J	14000 J	16100	16600	13600 J	13550	13500 J	16200	20200	9960 J
ANTIMONY	10	820	NA	0.23 J	0.15 J	0.09 U	0.05 U	0.19 J	0.17	0.15 J	0.06 U	0.08 U	2 J
ARSENIC	7	7	NA	**10.6 [R,I]**	6.4	**7.7 [R,I]**	6.6	6.6	**8.55 [R,I]**	**10.5 [R,I]**	6.9	**7.7 [R,I]**	6
BARIUM	5500	10000	NA	14	15.2	10.2	10.8	18.1	16.35	14.6	11.4	10.1	18.7
BERYLLIUM	1.5	1.5	NA	0.62	0.46	0.51	0.34	0.41 J	0.855	1.3 J	0.58	0.44	0.37
CADMIUM	39	1000	NA	0.06 J	0.08 J	0.07 J	0.06 J	0.07 J	0.07	0.07 J	0.05 J	0.07	0.1
CALCIUM	NA	NA	NA	550 J	428 J	637 J	408 J	561 J	516.5	472 J	520 J	101 J	656 J
CHROMIUM	NA	NA	NA	20.4	19.3	22.1 J	22.1 J	18.6	18.7	18.8	20.8 J	26.5 J	13.5
COBALT	NA	NA	NA	11.7	13.3	12.4	16.3	12.7	12.45	12.2	14.7	26.3	8.5
COPPER	3100	10000	NA	39.9	35.5	26.6	27.7	25.9	29.8	33.7	22	41.5	14.5
IRON	NA	NA	NA	30600 J	27200 J	38600	35400	26300 J	29350	32400 J	35000	42000	17000 J
LEAD	150	500	NA	17.2 J	20.9 J	14.6	20.2	22 J	23.15	24.3 J	13.6	20.4	60 J
MAGNESIUM	NA	NA	NA	4400 J	4150 J	5720	5840	4300 J	4255	4210 J	5500	6880	2390 J
MANGANESE	390	10000	NA	266 J	262 J	293	338	256 J	261.5	267 J	299	**467 [R]**	189 J
MERCURY	23	610	NA	0.02 U	0.03 J	0.004 J	0.016 U	0.03 J	0.035	0.04 J	0.018 U	0.016 U	0.05 J
NICKEL	1000	10000	NA	25	23	29.1	27.4	22.2	24.95	27.7	25.7	35.6	14.4
POTASSIUM	NA	NA	NA	296	267	282	295	371	319.5	268	306	279	328
SELENIUM	390	10000	NA	0.48 U	0.28 U	0.24 U	0.24 U	0.33 U	0.305 U	0.28 U	0.09 J	0.21 U	0.28 U
SILVER	200	10000	NA	0.04 J	0.05 J	0.01 J	0.02 J	0.06 J	0.055	0.05 J	0.02 J	0.02 J	0.04 J
SODIUM	NA	NA	NA	22.6 U	23.5 U	29 U	32 U	27.1 J	19.5	23.8 U	43.6 U	44 U	27.4 J
THALLIUM	5.5	140	NA	0.04 J	0.05 J	0.029 U	0.032 U	0.04 J	0.04	0.04 J	0.03 U	0.028 U	0.06 J
VANADIUM	550	10000	NA	22 J	22.8 J	17.4	16.9	26.4 J	25	23.6 J	15.8	16.8	22.7 J
ZINC	6000	10000	NA	60.6 J	50.4 J	64.5	60.7	52.1 J	58.5	64.9 J	54.8	70.8	43.5 J

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1063	TF2-004/5-SB1064	TF2-004/5-SB1064	TF2-004/5-SB1064	TF2-004/5-SB1065	TF2-004/5-SB1065	TF2-004/5-SB1065	TF2-004/5-SB1065	TF2-004/5-SB1065	TF2-004/5-SB1066
SAMPLE ID				TF2-004/5-SS1063-000.6	TF2-004/5-SS1064-000.6	TF2-004/5-SB1064-0204	TF2-004/5-SB1064-0406	TF2-004/5-SS1065-000.5	TF2-004/5-SS1065-000.5-	TF2-004/5-SS1065-000.5-	TF2-004/5-SB1065-0204	TF2-004/5-SB1065-	TF2-004/5-SS1066-000.9
SAMPLE DATE	RIDEM	RIDEM	RIDEM	10/22/2013	10/22/2013	11/13/2013	11/13/2013	10/22/2013	20131022	10/22/2013	11/14/2013	11/14/2013	10/21/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SB	SB	SS	SS	SS	SB	SB	SS
TOP DEPTH				0	0	2	4	0	0	0	2	6	0
BOTTOM DEPTH				0.6	0.6	4	6	0.5	0.5	0.5	4	8	0.9
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	97	97	93	95	96	96	96	94	96	92
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	--	--	--	--	38 J	38 J	--	--	15 J	--
TPH (C05-C12)	NA	NA	NA	--	--	--	--	3 U	3 U	--	--	2.3 U	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.0097 U	0.0093 U	0.0098 U	0.01 U	0.0092 U	0.0093 U	0.0094 U	0.01 U	0.0096 U	0.01 U
ACENAPHTHENE	43	10000	NA	0.0097 U	0.0093 U	0.0098 U	0.01 U	0.0016 J	0.0016 J	0.0094 U	0.032	0.0096 U	0.0023 J
ACENAPHTHYLENE	23	10000	NA	0.0097 U	0.0093 U	0.0098 U	0.01 U	0.0024 J	0.0022	0.002 J	0.0031 J	0.0096 U	0.01 U
ANTHRACENE	35	10000	NA	0.0028 J	0.0014 J	0.0098 U	0.01 U	0.0034 J	0.00295	0.0025 J	0.032	0.0096 U	0.0066 J
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.025	0.014 J	0.0026 J	0.0047 J	0.039	0.02775	0.033 U	0.044	0.0024 J	0.05
BENZO(A)PYRENE	0.4	0.8	240	0.021	0.013 J	0.0098 U	0.0036 J	0.038	0.034	0.03 J	0.028	0.0096 U	0.04
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.038	0.021	0.0098 U	0.011 J	0.075	0.065	0.055 J	0.028	0.0071 J	0.087
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.01 J	0.0052 J	0.0098 U	0.01 U	0.018 J	0.017	0.016 J	0.0067 J	0.0047 J	0.021 J
BENZO(K)FLUORANTHENE	0.9	78	NA	0.01 J	0.011 J	0.0098 U	0.0031 U	0.021	0.02	0.019 J	0.012 J	0.0096 U	0.022
CHRYSENE	0.4	780	NA	0.021	0.019	0.0032 J	0.0056 J	0.044	0.038	0.032	0.036	0.0096 U	0.054
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.0077 J	0.0018 J	0.0098 UJ	0.01 UJ	0.012 J	0.0115	0.011 J	0.01 J	0.0096 U	0.0092 J
FLUORANTHENE	20	10000	NA	0.052	0.034	0.0098 U	0.01 U	0.09	0.0765	0.063	0.089	0.0096 U	0.091
FLUORENE	28	10000	NA	0.0097 U	0.0093 U	0.0098 U	0.01 U	0.0092 U	0.0093 U	0.0094 U	0.0073 J	0.0096 U	0.01 U
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.033 J	0.011 J	0.0098 UJ	0.0062 J	0.062 J	0.057	0.052	0.02 J	0.0096 U	0.041
NAPHTHALENE	54	10000	0.8	0.0097 U	0.0093 U	0.0098 U	0.01 U	0.0092 U	0.0093 U	0.0094 U	0.01 U	0.0096 U	0.01 U
PHENANTHRENE	40	10000	NA	0.019 J	0.015 J	0.0098 U	0.01 U	0.033	0.0285	0.024	0.053	0.0096 U	0.043
PYRENE	13	10000	NA	0.035	0.029	0.0098 U	0.01 U	0.066	0.058	0.05	0.11	0.0096 U	0.098
TOTAL PAHS	NA	NA	NA	0.2745	0.1754	0.0058	0.0311	0.5054	0.43095	0.3565	0.5111	0.0142	0.5651

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1066	TF2-004/5-SB1067	TF2-004/5-SB1068	TF2-004/5-SB1068	TF2-004/5-SB1068	TF2-004/5-SB1068	TF2-B219-SB1080	TF2-B219-SB1080	TF2-B219-SB1081	TF2-B219-SB1081
SAMPLE ID				TF2-004/5-SB1066-0203	TF2-004/5-SS1067-000.7	TF2-004/5-SS1068-000.5	TF2-004/5-SB1068-0204	TF2-004/5-SB1068-0204-	TF2-004/5-SB1068-0204-	TF2-B219-SS1080-0001	TF2-B219-SB1080-0204	TF2-B219-SS1081-0001	TF2-B219-SB1081-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/14/2013	10/21/2013	10/22/2013	11/14/2013	20131114	11/14/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SS	SS	SB	SB	SB	SS	SB	SS	SB
TOP DEPTH				2	0	0	2	2	2	0	2	0	2
BOTTOM DEPTH				3	0.7	0.5	4	4	4	1	4	1	4
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	7300	3700	2400	1900	2250	2600	--	--	--	--
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	21	40	65	0.91 U	0.84 U	0.77 U	--	--	--	--
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	75	130	160	6.3	6.95	7.6	--	--	--	--
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	11	24	41	0.73 U	0.725 U	0.72 U	--	--	--	--
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	0.12 U	1.4 J	1.7 J	0.11 U	0.067 U	0.024 U	--	--	--	--
1,2,3,4,7,8-HXCDD	NA	NA	NA	1.1 J	2.9 J	2.3 J	0.026 U	0.0265 U	0.027 U	--	--	--	--
1,2,3,4,7,8-HXCDF	NA	NA	NA	1.3 J	2.1 J	2.5 J	0.31 U	0.355 U	0.4 U	--	--	--	--
1,2,3,6,7,8-HXCDD	NA	NA	NA	2.7 J	6.8	7.2	0.023 U	0.03875	0.066 J	--	--	--	--
1,2,3,6,7,8-HXCDF	NA	NA	NA	0.99 J	2.1 J	1.9 J	0.12 J	0.11	0.1 J	--	--	--	--
1,2,3,7,8,9-HXCDD	NA	NA	NA	2.6 J	6.3	5.2 J	0.13 J	0.12	0.11 J	--	--	--	--
1,2,3,7,8,9-HXCDF	NA	NA	NA	0.19 J	0.13 U	0.11 U	0.017 U	0.017 U	0.017 U	--	--	--	--
1,2,3,7,8-PECDD	NA	NA	NA	0.74 J	1.3 J	0.75 J	0.038 U	0.041 U	0.044 U	--	--	--	--
1,2,3,7,8-PECDF	NA	NA	NA	0.2 J	0.1 U	0.48 J	0.022 U	0.0225 U	0.023 U	--	--	--	--
2,3,4,6,7,8-HXCDF	NA	NA	NA	1.7 J	1.9 J	1.8 J	0.07 J	0.0685	0.067 J	--	--	--	--
2,3,4,7,8-PECDF	NA	NA	NA	0.41 J	0.56 J	0.72 J	0.065 J	0.0655	0.066 J	--	--	--	--
2,3,7,8-TCDD	NA	NA	NA	0.051 U	0.14 U	0.098 U	0.023 U	0.0285 U	0.034 U	--	--	--	--
2,3,7,8-TCDF	NA	NA	NA	0.23 J	0.71 J	0.33 U	0.015 U	0.05 U	0.085 U	--	--	--	--
TEQ	NA	NA	NA	5.0063	6.425	5.8369	0.6845	0.7973	0.9101	--	--	--	--
TEQ BIRD	NA	NA	NA	3.0771	4.781	3.6785	0.2933	0.32763	0.36196	--	--	--	--
TEQ BIRD HALFND	NA	NA	NA	3.1032	4.8625	3.898	0.35376	0.4118265	0.469893	--	--	--	--
TEQ HALFND	NA	NA	NA	5.0324	6.503	5.9079	0.739216	0.859473	0.97973	--	--	--	--
TOTAL HPCDD	NA	NA	NA	150	240	270	10	11.5	13	--	--	--	--
TOTAL HPCDF	NA	NA	NA	26	57	100	0.99 U	0.855 U	0.72 U	--	--	--	--
TOTAL HXCDD	NA	NA	NA	21 J	47	44	0.79 J	0.82	0.85 J	--	--	--	--
TOTAL HXCDF	NA	NA	NA	22 J	38	43	0.67 U	0.76 U	0.85 U	--	--	--	--
TOTAL PECDD	NA	NA	NA	6.1 J	7.4 J	6.1 J	1 J	1.05	1.1 J	--	--	--	--
TOTAL PECDF	NA	NA	NA	11 J	11 J	14 J	0.15 J	0.165	0.18 J	--	--	--	--
TOTAL TCDD	NA	NA	NA	2.5 J	0.82 J	2.3 J	1.6 J	1.55	1.5 J	--	--	--	--
TOTAL TCDF	NA	NA	NA	5.4 J	4.3 J	5.9 J	0.35 J	0.43	0.51 J	--	--	--	--
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	12900	9460 J	15600 J	10600	10025	9450	--	--	--	--
ANTIMONY	10	820	NA	0.12 U	0.45 J	0.13 J	0.06 U	0.055 U	0.05 U	--	--	--	--
ARSENIC	7	7	NA	**12.1 [R,I]**	5	**8.1 [R,I]**	4.3	3.8	3.3	--	--	--	--
BARIUM	5500	10000	NA	20.9	20.2	12.8	12.9	12.3	11.7	--	--	--	--
BERYLLIUM	1.5	1.5	NA	0.36	0.36	0.47	0.33	0.305	0.28	--	--	--	--
CADMIUM	39	1000	NA	0.17	0.08 J	0.06	0.06 J	0.055	0.05 J	--	--	--	--
CALCIUM	NA	NA	NA	870 J	651 J	696 J	773 J	712.5	652 J	--	--	--	--
CHROMIUM	NA	NA	NA	15.8 J	13.2	19.3	13.3 J	12.5	11.7 J	--	--	--	--
COBALT	NA	NA	NA	11.2	7.6	11.1	7	6.75	6.5	--	--	--	--
COPPER	3100	10000	NA	18.5	14.9	31.1	10.6	9.7	8.8	--	--	--	--
IRON	NA	NA	NA	25500	17000 J	29900 J	17700	16450	15200	--	--	--	--
LEAD	150	500	NA	39.5	34 J	24.7 J	8	7.4	6.8	--	--	--	--
MAGNESIUM	NA	NA	NA	3740	2590 J	4870 J	3050	2875	2700	--	--	--	--
MANGANESE	390	10000	NA	307	202 J	265 J	200	199.5	199	--	--	--	--
MERCURY	23	610	NA	0.04	0.03 J	0.04 J	0.03 U	0.03 U	0.03 U	--	--	--	--
NICKEL	1000	10000	NA	21	14.1	22.5	13.6	12.55	11.5	--	--	--	--
POTASSIUM	NA	NA	NA	428	384	312	427	408.5	390	--	--	--	--
SELENIUM	390	10000	NA	0.3 U	0.29 U	0.23 U	0.22 U	0.1 J	0.1 J	--	--	--	--
SILVER	200	10000	NA	0.05 J	0.03 J	0.08	0.02 J	0.02	0.02 J	--	--	--	--
SODIUM	NA	NA	NA	34.5 U	28.2 J	24.5 U	45.4 U	41.45 U	37.5 U	--	--	--	--
THALLIUM	5.5	140	NA	0.05 U	0.06 J	0.04 J	0.05 U	0.04 J	0.04 J	--	--	--	--
VANADIUM	550	10000	NA	18.6	18.7 J	25.5 J	15.2	14.6	14	--	--	--	--
ZINC	6000	10000	NA	61.5	41.9 J	50.4 J	29	27.05	25.1	--	--	--	--

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-004/5-SB1066	TF2-004/5-SB1067	TF2-004/5-SB1068	TF2-004/5-SB1068	TF2-004/5-SB1068	TF2-004/5-SB1068	TF2-B219-SB1080	TF2-B219-SB1080	TF2-B219-SB1081	TF2-B219-SB1081
SAMPLE ID				TF2-004/5-SB1066-0203	TF2-004/5-SS1067-000.7	TF2-004/5-SS1068-000.5	TF2-004/5-SB1068-0204	TF2-004/5-SB1068-0204-	TF2-004/5-SB1068-0204-	TF2-B219-SS1080-0001	TF2-B219-SB1080-0204	TF2-B219-SS1081-0001	TF2-B219-SB1081-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/14/2013	10/21/2013	10/22/2013	11/14/2013	20131114	11/14/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	ORIG	AVG	DUP	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SS	SS	SB	SB	SB	SS	SB	SS	SB
TOP DEPTH				2	0	0	2	2	2	0	2	0	2
BOTTOM DEPTH				3	0.7	0.5	4	4	4	1	4	1	4
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	96	94	94	91	90	89	88	93	91	90
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	0.096 U	0.0091 U	0.0092 U	0.0094 U
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	0.096 U	0.0091 U	0.0092 U	0.0094 U
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	0.11 U	0.011 U	0.011 U	0.011 U
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	0.096 U	0.0091 U	0.0092 U	0.0094 U
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	0.096 U	0.0091 U	0.0092 U	0.0094 U
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	0.096 U	0.0091 U	0.0092 U	0.0094 U
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	4.4	0.084	2.4	0.11
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	0.096 U	0.0091 U	0.0092 U	0.0094 U
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	0.096 U	0.0091 U	0.0092 U	0.0094 U
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	4.4	0.084	2.4	0.11
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TPH (C05-C12)	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	0.0000033 J	0.01 U	0.01 U	0.011 U	0.0105 U	0.01 U	--	--	--	--
ACENAPHTHENE	43	10000	NA	0.015 J	0.038	0.01 U	0.011 U	0.0018 J	0.0018 J	--	--	--	--
ACENAPHTHYLENE	23	10000	NA	0.0063 J	0.01 U	0.0014 J	0.011 U	0.0105 U	0.01 U	--	--	--	--
ANTHRACENE	35	10000	NA	0.035	0.094	0.0019 J	0.011 U	0.00615 U	0.0013 U	--	--	--	--
BENZO(A)ANTHRACENE	0.9	7.8	NA	0.17	0.35	0.026 U	0.011 U	0.0027 J	0.0027 J	--	--	--	--
BENZO(A)PYRENE	0.4	0.8	240	0.14	0.19	0.026 J	0.011 U	0.0105 U	0.01 U	--	--	--	--
BENZO(B)FLUORANTHENE	0.9	7.8	NA	0.21	0.38	0.043 J	0.011 U	0.0096 J	0.0096 J	--	--	--	--
BENZO(G,H,I)PERYLENE	0.8	10000	NA	0.066	0.065 J	0.014 J	0.011 U	0.0105 U	0.01 U	--	--	--	--
BENZO(K)FLUORANTHENE	0.9	78	NA	0.062	0.12	0.014 J	0.011 U	0.0105 U	0.01 U	--	--	--	--
CHRYSENE	0.4	780	NA	0.16	0.37	0.024	0.011 U	0.0027 J	0.0027 J	--	--	--	--
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	0.033 J	0.037	0.0089 J	0.011 U	0.0082 J	0.0082 J	--	--	--	--
FLUORANTHENE	20	10000	NA	0.3	0.75	0.046	0.011 U	0.0045 J	0.0045 J	--	--	--	--
FLUORENE	28	10000	NA	0.015 J	0.043	0.01 U	0.011 U	0.0105 U	0.01 U	--	--	--	--
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	0.16 J	0.14	0.04	0.011 U	0.0052 J	0.0052 J	--	--	--	--
NAPHTHALENE	54	10000	0.8	0.0099 U	0.013 J	0.01 U	0.011 U	0.0105 U	0.01 U	--	--	--	--
PHENANTHRENE	40	10000	NA	0.17	0.62	0.018 J	0.011 U	0.0044 J	0.0044 J	--	--	--	--
PYRENE	13	10000	NA	0.24	0.83	0.038	0.011 U	0.0049 J	0.0049 J	--	--	--	--
TOTAL PAHS	NA	NA	NA	1.7856	4.04	0.2752	0 U	0.022	0.044	--	--	--	--

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-B219-SB1081	TF2-B219-SB1082	TF2-B219-SB1082	TF2-B219-SB1082	TF2-B219-SB1083	TF2-B219-SB1083	TF2-B219-SB1084	TF2-B219-SB1084	TF2-B219-SB1085	TF2-B219-SB1085
SAMPLE ID				TF2-B219-SB1082-0204-	TF2-B219-SS1082-0001	TF2-B219-SB1082-0204	TF2-B219-SB1082-0204-	TF2-B219-SS1083-0001	TF2-B219-SB1083-0204	TF2-B219-SS1084-0001	TF2-B219-SB1084-0204	TF2-B219-SS1085-0001	TF2-B219-SB1085-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/12/2013	11/12/2013	11/12/2013	20131112	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013
SAMPLE CODE	DIRECT	DIRECT	GA	DUP	NORMAL	ORIG	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SS	SB	SB	SS	SB	SS	SB	SS	SB
TOP DEPTH				2	0	2	2	0	2	0	2	0	2
BOTTOM DEPTH				4	1	4	4	1	4	1	4	1	4
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HXCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HXCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HXCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PECDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PECDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PECDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TEQ	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TEQ BIRD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TEQ BIRD HALFND	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TEQ HALFND	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL HPCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL HPCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL HXCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL PECDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL PECDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL TCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL TCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
ANTIMONY	10	820	NA	--	--	--	--	--	--	--	--	--	--
ARSENIC	7	7	NA	--	--	--	--	--	--	--	--	--	--
BARIUM	5500	10000	NA	--	--	--	--	--	--	--	--	--	--
BERYLLIUM	1.5	1.5	NA	--	--	--	--	--	--	--	--	--	--
CADMIUM	39	1000	NA	--	--	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
CHROMIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
COBALT	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
COPPER	3100	10000	NA	--	--	--	--	--	--	--	--	--	--
IRON	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
LEAD	150	500	NA	--	--	--	--	--	--	--	--	--	--
MAGNESIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
MANGANESE	390	10000	NA	--	--	--	--	--	--	--	--	--	--
MERCURY	23	610	NA	--	--	--	--	--	--	--	--	--	--
NICKEL	1000	10000	NA	--	--	--	--	--	--	--	--	--	--
POTASSIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
SELENIUM	390	10000	NA	--	--	--	--	--	--	--	--	--	--
SILVER	200	10000	NA	--	--	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
THALLIUM	5.5	140	NA	--	--	--	--	--	--	--	--	--	--
VANADIUM	550	10000	NA	--	--	--	--	--	--	--	--	--	--
ZINC	6000	10000	NA	--	--	--	--	--	--	--	--	--	--

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-B219-SB1081	TF2-B219-SB1082	TF2-B219-SB1082	TF2-B219-SB1082	TF2-B219-SB1083	TF2-B219-SB1083	TF2-B219-SB1084	TF2-B219-SB1084	TF2-B219-SB1085	TF2-B219-SB1085
SAMPLE ID				TF2-B219-SB1082-0204-	TF2-B219-SS1082-0001	TF2-B219-SB1082-0204	TF2-B219-SB1082-0204-	TF2-B219-SS1083-0001	TF2-B219-SB1083-0204	TF2-B219-SS1084-0001	TF2-B219-SB1084-0204	TF2-B219-SS1085-0001	TF2-B219-SB1085-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/12/2013	11/12/2013	11/12/2013	20131112	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013
SAMPLE CODE	DIRECT	DIRECT	GA	DUP	NORMAL	ORIG	AVG	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SS	SB	SB	SS	SB	SS	SB	SS	SB
TOP DEPTH				2	0	2	2	0	2	0	2	0	2
BOTTOM DEPTH				4	1	4	4	1	4	1	4	1	4
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	95	94	95	95	94	95	96	96	94	95
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	0.0088 UJ	0.009 U	0.0088 U	0.0088 U	0.009 U	0.0089 U	0.0089 U	0.0088 U	0.009 U	0.0088 U
AROCLOR-1221	NA	NA	NA	0.0088 UJ	0.009 U	0.0088 U	0.0088 U	0.009 U	0.0089 U	0.0089 U	0.0088 U	0.009 U	0.0088 U
AROCLOR-1232	NA	NA	NA	0.01 UJ	0.011 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
AROCLOR-1242	NA	NA	NA	0.0088 UJ	0.009 U	0.0088 U	0.0088 U	0.009 U	0.0089 U	0.0089 U	0.0088 U	0.009 U	0.0088 U
AROCLOR-1248	NA	NA	NA	0.0088 UJ	0.009 U	0.0088 U	0.0088 U	0.009 U	0.0089 U	0.0089 U	0.0088 U	0.009 U	0.0088 U
AROCLOR-1254	NA	NA	NA	0.0088 UJ	0.009 U	0.0088 U	0.0088 U	0.009 U	0.0089 U	0.0089 U	0.0088 U	0.009 U	0.0088 U
AROCLOR-1260	NA	NA	NA	0.0088 UJ	0.36	0.0088 U	0.0088 U	0.024	0.0089 U	0.042	0.0088 U	1.3	0.0088 U
AROCLOR-1262	NA	NA	NA	0.0088 UJ	0.009 U	0.0088 U	0.0088 U	0.009 U	0.0089 U	0.0089 U	0.0088 U	0.009 U	0.0088 U
AROCLOR-1268	NA	NA	NA	0.0088 UJ	0.009 U	0.0088 U	0.0088 U	0.009 U	0.0089 U	0.0089 U	0.0088 U	0.009 U	0.0088 U
TOTAL AROCLOR	10	10	10	0 U	0.36	0 U	0 U	0.024	0 U	0.042	0 U	1.3	0 U
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TPH (C05-C12)	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	43	10000	NA	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	23	10000	NA	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	35	10000	NA	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	0.9	7.8	NA	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	0.4	0.8	240	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	0.9	7.8	NA	--	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	0.8	10000	NA	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	0.9	78	NA	--	--	--	--	--	--	--	--	--	--
CHRYSENE	0.4	780	NA	--	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	20	10000	NA	--	--	--	--	--	--	--	--	--	--
FLUORENE	28	10000	NA	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE	54	10000	0.8	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	40	10000	NA	--	--	--	--	--	--	--	--	--	--
PYRENE	13	10000	NA	--	--	--	--	--	--	--	--	--	--
TOTAL PAHS	NA	NA	NA	--	--	--	--	--	--	--	--	--	--

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-B219-SB1086	TF2-B219-SB1086	TF2-B219-SB1087	TF2-B219-SB1087	TF2-B219-SB1088	TF2-B219-SB1089	TF2-B219-SB1089	TF2-B219-SB1089	TF2-BSA-SB1090	TF2-BSA-SB1091
SAMPLE ID				TF2-B219-SS1086-0001	TF2-B219-SB1086-0204	TF2-B219-SS1087-0001	TF2-B219-SB1087-0204	TF2-B219-SB1088-0204	TF2-B219-SB1089-0204	TF2-B219-SB1089-0204-20131112	TF2-B219-SB1089-0204-11/12/2013	TF2-BSA-SS1090-0001	TF2-BSA-SS1091-0001
SAMPLE DATE	RIDEM DIRECT RESIDENTIAL	RIDEM DIRECT INDUSTRIAL	RIDEM GA LEACHABILITY	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	AVG	DUP	11/12/2013	11/12/2013
SAMPLE CODE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG			NORMAL	NORMAL
MATRIX				SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SB	SS	SB	SB	SB	SB	SB	SS	SS
TOP DEPTH				0	2	0	2	2	2	2	2	0	0
BOTTOM DEPTH				1	4	1	4	4	4	4	4	1	1
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HXCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HXCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HXCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PECDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PECDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PECDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TEQ	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TEQ BIRD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TEQ BIRD HALFND	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TEQ HALFND	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL HPCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL HPCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL HXCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL PECDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL PECDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL TCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TOTAL TCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
METALS (MG/KG)	NA	NA	NA										
ALUMINUM	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
ANTIMONY	10	820	NA	--	--	--	--	--	--	--	--	--	--
ARSENIC	7	7	NA	--	--	--	--	--	--	--	--	--	--
BARIUM	5500	10000	NA	--	--	--	--	--	--	--	--	--	--
BERYLLIUM	1.5	1.5	NA	--	--	--	--	--	--	--	--	--	--
CADMIUM	39	1000	NA	--	--	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
CHROMIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
COBALT	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
COPPER	3100	10000	NA	--	--	--	--	--	--	--	--	--	--
IRON	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
LEAD	150	500	NA	--	--	--	--	--	--	--	--	23.5 J	19.5 J
MAGNESIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
MANGANESE	390	10000	NA	--	--	--	--	--	--	--	--	--	--
MERCURY	23	610	NA	--	--	--	--	--	--	--	--	--	--
NICKEL	1000	10000	NA	--	--	--	--	--	--	--	--	--	--
POTASSIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
SELENIUM	390	10000	NA	--	--	--	--	--	--	--	--	--	--
SILVER	200	10000	NA	--	--	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
THALLIUM	5.5	140	NA	--	--	--	--	--	--	--	--	--	--
VANADIUM	550	10000	NA	--	--	--	--	--	--	--	--	--	--
ZINC	6000	10000	NA	--	--	--	--	--	--	--	--	--	--

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-B219-SB1086	TF2-B219-SB1086	TF2-B219-SB1087	TF2-B219-SB1087	TF2-B219-SB1088	TF2-B219-SB1089	TF2-B219-SB1089	TF2-B219-SB1089	TF2-BSA-SB1090	TF2-BSA-SB1091
SAMPLE ID				TF2-B219-SS1086-0001	TF2-B219-SB1086-0204	TF2-B219-SS1087-0001	TF2-B219-SB1087-0204	TF2-B219-SB1088-0204	TF2-B219-SB1089-0204	TF2-B219-SB1089-0204-20131112	TF2-B219-SB1089-0204-DUP	TF2-BSA-SS1090-0001	TF2-BSA-SS1091-0001
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	AVG	11/12/2013	11/12/2013	11/12/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	NORMAL	DUP	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SB	SS	SB	SB	SB	SB	SB	SS	SS
TOP DEPTH				0	2	0	2	2	2	2	2	0	0
BOTTOM DEPTH				1	4	1	4	4	4	4	4	1	1
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA										
TOTAL SOLIDS	NA	NA	NA	88	94	94	95	93	92	92	92	90	93
PCBS (MG/KG)	NA	NA	NA										
AROCLOR-1016	NA	NA	NA	0.0096 U	0.0089 U	0.0089 U	0.0086 U	0.0091 U	0.0092 U	0.00915 U	0.0091 U	--	--
AROCLOR-1221	NA	NA	NA	0.0096 U	0.0089 U	0.0089 U	0.0086 U	0.0091 U	0.0092 U	0.00915 U	0.0091 U	--	--
AROCLOR-1232	NA	NA	NA	0.011 U	0.01 U	0.01 U	0.01 U	0.011 U	0.011 U	0.011 U	0.011 U	--	--
AROCLOR-1242	NA	NA	NA	0.0096 U	0.0089 U	0.0089 U	0.0086 U	0.0091 U	0.0092 U	0.00915 U	0.0091 U	--	--
AROCLOR-1248	NA	NA	NA	0.0096 U	0.0089 U	0.0089 U	0.0086 U	0.0091 U	0.0092 U	0.00915 U	0.0091 U	--	--
AROCLOR-1254	NA	NA	NA	0.0096 U	0.0089 U	0.0089 U	0.0086 U	0.0091 U	0.0092 U	0.00915 U	0.0091 U	--	--
AROCLOR-1260	NA	NA	NA	2.8 J	0.0089 U	0.6	0.0086 U	0.0091 U	0.025	0.0265	0.028	--	--
AROCLOR-1262	NA	NA	NA	0.0096 U	0.0089 U	0.0089 U	0.0086 U	0.0091 U	0.0092 U	0.00915 U	0.0091 U	--	--
AROCLOR-1268	NA	NA	NA	0.0096 U	0.0089 U	0.0089 U	0.0086 U	0.0091 U	0.0092 U	0.00915 U	0.0091 U	--	--
TOTAL AROCLOR	10	10	10	2.8	0 U	0.6	0 U	0 U	0.025	0.0265	0.028	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA										
EPH (C08-C44)	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
TPH (C05-C12)	NA	NA	NA	--	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA										
2-METHYLNAPHTHALENE	123	10000	NA	--	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	43	10000	NA	--	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	23	10000	NA	--	--	--	--	--	--	--	--	--	--
ANTHRACENE	35	10000	NA	--	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	0.9	7.8	NA	--	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	0.4	0.8	240	--	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	0.9	7.8	NA	--	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	0.8	10000	NA	--	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	0.9	78	NA	--	--	--	--	--	--	--	--	--	--
CHRYSENE	0.4	780	NA	--	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	--	--	--	--	--	--	--	--	--	--
FLUORANTHENE	20	10000	NA	--	--	--	--	--	--	--	--	--	--
FLUORENE	28	10000	NA	--	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	--	--	--	--	--	--	--	--	--	--
NAPHTHALENE	54	10000	0.8	--	--	--	--	--	--	--	--	--	--
PHENANTHRENE	40	10000	NA	--	--	--	--	--	--	--	--	--	--
PYRENE	13	10000	NA	--	--	--	--	--	--	--	--	--	--
TOTAL PAHS	NA	NA	NA	--	--	--	--	--	--	--	--	--	--

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-BSA-SB1091	TF2-BSA-SB1092	TF2-BSA-SB1092	TF2-BSA-SB1093	TF2-BSA-SB1093	TF2-BSA-SB1094	TF2-BSA-SB1094	TF2-BSA-SB1095	TF2-BSA-SB1095
SAMPLE ID				TF2-BSA-SB1091-0204	TF2-BSA-SS1092-0001	TF2-BSA-SB1092-0204	TF2-BSA-SS1093-0001	TF2-BSA-SB1093-0204	TF2-BSA-SS1094-0001	TF2-BSA-SB1094-0204	TF2-BSA-SS1095-0001	TF2-BSA-SB1095-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SS	SB	SS	SB	SS	SB	SS	SB
TOP DEPTH				2	0	2	0	2	0	2	0	2
BOTTOM DEPTH				4	1	4	1	4	1	4	1	4
DIOXINS/FURANS (NG/KG)												
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HXCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,3,4,7,8-HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HXCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,3,6,7,8-HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HXCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,3,7,8,9-HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PECDD	NA	NA	NA	--	--	--	--	--	--	--	--	--
1,2,3,7,8-PECDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
2,3,4,6,7,8-HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
2,3,4,7,8-PECDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--
2,3,7,8-TCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
TEQ	NA	NA	NA	--	--	--	--	--	--	--	--	--
TEQ BIRD	NA	NA	NA	--	--	--	--	--	--	--	--	--
TEQ BIRD HALFND	NA	NA	NA	--	--	--	--	--	--	--	--	--
TEQ HALFND	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOTAL HPCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOTAL HPCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOTAL HXCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOTAL HXCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOTAL PECDD	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOTAL PECDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOTAL TCDD	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOTAL TCDF	NA	NA	NA	--	--	--	--	--	--	--	--	--
METALS (MG/KG)	NA	NA	NA									
ALUMINUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
ANTIMONY	10	820	NA	--	--	--	--	--	--	--	--	--
ARSENIC	7	7	NA	--	--	--	--	--	--	--	--	--
BARIUM	5500	10000	NA	--	--	--	--	--	--	--	--	--
BERYLLIUM	1.5	1.5	NA	--	--	--	--	--	--	--	--	--
CADMIUM	39	1000	NA	--	--	--	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
CHROMIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
COBALT	NA	NA	NA	--	--	--	--	--	--	--	--	--
COPPER	3100	10000	NA	--	--	--	--	--	--	--	--	--
IRON	NA	NA	NA	--	--	--	--	--	--	--	--	--
LEAD	150	500	NA	10 J	43.4 J	10.7 J	15.5 J	20.1 J	19.1 J	30.3 J	15.5 J	15.4 J
MAGNESIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
MANGANESE	390	10000	NA	--	--	--	--	--	--	--	--	--
MERCURY	23	610	NA	--	--	--	--	--	--	--	--	--
NICKEL	1000	10000	NA	--	--	--	--	--	--	--	--	--
POTASSIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
SELENIUM	390	10000	NA	--	--	--	--	--	--	--	--	--
SILVER	200	10000	NA	--	--	--	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--	--	--	--
THALLIUM	5.5	140	NA	--	--	--	--	--	--	--	--	--
VANADIUM	550	10000	NA	--	--	--	--	--	--	--	--	--
ZINC	6000	10000	NA	--	--	--	--	--	--	--	--	--

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-BSA-SB1091	TF2-BSA-SB1092	TF2-BSA-SB1092	TF2-BSA-SB1093	TF2-BSA-SB1093	TF2-BSA-SB1094	TF2-BSA-SB1094	TF2-BSA-SB1095	TF2-BSA-SB1095
SAMPLE ID				TF2-BSA-SB1091-0204	TF2-BSA-SS1092-0001	TF2-BSA-SB1092-0204	TF2-BSA-SS1093-0001	TF2-BSA-SB1093-0204	TF2-BSA-SS1094-0001	TF2-BSA-SB1094-0204	TF2-BSA-SS1095-0001	TF2-BSA-SB1095-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013	11/12/2013
SAMPLE CODE	DIRECT	DIRECT	GA	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SB	SS	SB	SS	SB	SS	SB	SS	SB
TOP DEPTH				2	0	2	0	2	0	2	0	2
BOTTOM DEPTH				4	1	4	1	4	1	4	1	4
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA									
TOTAL SOLIDS	NA	NA	NA	93	90	93	91	94	97	88	89	92
PCBS (MG/KG)	NA	NA	NA									
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA									
EPH (C08-C44)	NA	NA	NA	--	--	--	--	--	--	--	--	--
TPH (C05-C12)	NA	NA	NA	--	--	--	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA									
2-METHYLNAPHTHALENE	123	10000	NA	--	--	--	--	--	--	--	--	--
ACENAPHTHENE	43	10000	NA	--	--	--	--	--	--	--	--	--
ACENAPHTHYLENE	23	10000	NA	--	--	--	--	--	--	--	--	--
ANTHRACENE	35	10000	NA	--	--	--	--	--	--	--	--	--
BENZO(A)ANTHRACENE	0.9	7.8	NA	--	--	--	--	--	--	--	--	--
BENZO(A)PYRENE	0.4	0.8	240	--	--	--	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	0.9	7.8	NA	--	--	--	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	0.8	10000	NA	--	--	--	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	0.9	78	NA	--	--	--	--	--	--	--	--	--
CHRYSENE	0.4	780	NA	--	--	--	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	--	--	--	--	--	--	--	--	--
FLUORANTHENE	20	10000	NA	--	--	--	--	--	--	--	--	--
FLUORENE	28	10000	NA	--	--	--	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	--	--	--	--	--	--	--	--	--
NAPHTHALENE	54	10000	0.8	--	--	--	--	--	--	--	--	--
PHENANTHRENE	40	10000	NA	--	--	--	--	--	--	--	--	--
PYRENE	13	10000	NA	--	--	--	--	--	--	--	--	--
TOTAL PAHS	NA	NA	NA	--	--	--	--	--	--	--	--	--

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-BSA-SB1096	TF2-BSA-SB1096	TF2-BSA-SB1096	TF2-BSA-SB1096	TF2-BSA-SB1097	TF2-BSA-SB1097
SAMPLE ID				TF2-BSA-SS1096-0001	TF2-BSA-SS1096-0001-20131112	TF2-BSA-SS1096-0001-D	TF2-BSA-SB1096-0204	TF2-BSA-SS1097-0001	TF2-BSA-SB1097-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/12/2013	AVG	11/12/2013	11/12/2013	11/12/2013	11/12/2013
SAMPLE CODE	DIRECT	DIRECT	GA	ORIG	SO	DUP	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	NORMAL	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	SS	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	0	SS	SB	SS	SB
TOP DEPTH				0	1	0	2	0	2
BOTTOM DEPTH				1		1	4	1	4
DIOXINS/FURANS (NG/KG)									
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	--	--	--	--	--	--
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	--	--	--	--	--	--
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	--	--	--	--	--	--
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	--	--	--	--	--	--
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	--	--	--	--	--	--
1,2,3,4,7,8-HXCDD	NA	NA	NA	--	--	--	--	--	--
1,2,3,4,7,8-HXCDF	NA	NA	NA	--	--	--	--	--	--
1,2,3,6,7,8-HXCDD	NA	NA	NA	--	--	--	--	--	--
1,2,3,6,7,8-HXCDF	NA	NA	NA	--	--	--	--	--	--
1,2,3,7,8,9-HXCDD	NA	NA	NA	--	--	--	--	--	--
1,2,3,7,8,9-HXCDF	NA	NA	NA	--	--	--	--	--	--
1,2,3,7,8-PECDD	NA	NA	NA	--	--	--	--	--	--
1,2,3,7,8-PECDF	NA	NA	NA	--	--	--	--	--	--
2,3,4,6,7,8-HXCDF	NA	NA	NA	--	--	--	--	--	--
2,3,4,7,8-PECDF	NA	NA	NA	--	--	--	--	--	--
2,3,7,8-TCDD	NA	NA	NA	--	--	--	--	--	--
2,3,7,8-TCDF	NA	NA	NA	--	--	--	--	--	--
TEQ	NA	NA	NA	--	--	--	--	--	--
TEQ BIRD	NA	NA	NA	--	--	--	--	--	--
TEQ BIRD HALFND	NA	NA	NA	--	--	--	--	--	--
TEQ HALFND	NA	NA	NA	--	--	--	--	--	--
TOTAL HPCDD	NA	NA	NA	--	--	--	--	--	--
TOTAL HPCDF	NA	NA	NA	--	--	--	--	--	--
TOTAL HXCDD	NA	NA	NA	--	--	--	--	--	--
TOTAL HXCDF	NA	NA	NA	--	--	--	--	--	--
TOTAL PECDD	NA	NA	NA	--	--	--	--	--	--
TOTAL PECDF	NA	NA	NA	--	--	--	--	--	--
TOTAL TCDD	NA	NA	NA	--	--	--	--	--	--
TOTAL TCDF	NA	NA	NA	--	--	--	--	--	--
METALS (MG/KG)	NA	NA	NA						
ALUMINUM	NA	NA	NA	--	--	--	--	--	--
ANTIMONY	10	820	NA	--	--	--	--	--	--
ARSENIC	7	7	NA	--	--	--	--	--	--
BARIUM	5500	10000	NA	--	--	--	--	--	--
BERYLLIUM	1.5	1.5	NA	--	--	--	--	--	--
CADMIUM	39	1000	NA	--	--	--	--	--	--
CALCIUM	NA	NA	NA	--	--	--	--	--	--
CHROMIUM	NA	NA	NA	--	--	--	--	--	--
COBALT	NA	NA	NA	--	--	--	--	--	--
COPPER	3100	10000	NA	--	--	--	--	--	--
IRON	NA	NA	NA	--	--	--	--	--	--
LEAD	150	500	NA	46.5 J	42.05	37.6 J	31.1 J	73.8 J	55.9 J
MAGNESIUM	NA	NA	NA	--	--	--	--	--	--
MANGANESE	390	10000	NA	--	--	--	--	--	--
MERCURY	23	610	NA	--	--	--	--	--	--
NICKEL	1000	10000	NA	--	--	--	--	--	--
POTASSIUM	NA	NA	NA	--	--	--	--	--	--
SELENIUM	390	10000	NA	--	--	--	--	--	--
SILVER	200	10000	NA	--	--	--	--	--	--
SODIUM	NA	NA	NA	--	--	--	--	--	--
THALLIUM	5.5	140	NA	--	--	--	--	--	--
VANADIUM	550	10000	NA	--	--	--	--	--	--
ZINC	6000	10000	NA	--	--	--	--	--	--

APPENDIX E-11
SOIL SAMPLE ANALYTICAL DATA COMPARED TO RIDEM CRITERIA
DATA GAPS ASSESSMENT REPORT, TANK FARM 2
NAVAL STATION NEWPORT
PORTSMOUTH RI

LOCATION				TF2-BSA-SB1096	TF2-BSA-SB1096	TF2-BSA-SB1096	TF2-BSA-SB1096	TF2-BSA-SB1097	TF2-BSA-SB1097
SAMPLE ID				TF2-BSA-SS1096-0001	TF2-BSA-SS1096-0001-20131112	TF2-BSA-SS1096-0001-D	TF2-BSA-SB1096-0204	TF2-BSA-SS1097-0001	TF2-BSA-SB1097-0204
SAMPLE DATE	RIDEM	RIDEM	RIDEM	11/12/2013	AVG	11/12/2013	11/12/2013	11/12/2013	11/12/2013
SAMPLE CODE	DIRECT	DIRECT	GA	ORIG	SO	DUP	NORMAL	NORMAL	NORMAL
MATRIX	RESIDENTIAL	INDUSTRIAL	LEACHABILITY	SO	SO	SO	SO	SO	SO
SAMPLE TYPE				NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
SUBMATRIX				SS	SS	SS	SB	SS	SB
TOP DEPTH				0	0	0	2	0	2
BOTTOM DEPTH				1	1	1	4	1	4
MISCELLANEOUS PARAMETERS (%)	NA	NA	NA						
TOTAL SOLIDS	NA	NA	NA	88	88	88	87	90	87
PCBS (MG/KG)	NA	NA	NA						
AROCLOR-1016	NA	NA	NA	--	--	--	--	--	--
AROCLOR-1221	NA	NA	NA	--	--	--	--	--	--
AROCLOR-1232	NA	NA	NA	--	--	--	--	--	--
AROCLOR-1242	NA	NA	NA	--	--	--	--	--	--
AROCLOR-1248	NA	NA	NA	--	--	--	--	--	--
AROCLOR-1254	NA	NA	NA	--	--	--	--	--	--
AROCLOR-1260	NA	NA	NA	--	--	--	--	--	--
AROCLOR-1262	NA	NA	NA	--	--	--	--	--	--
AROCLOR-1268	NA	NA	NA	--	--	--	--	--	--
TOTAL AROCLOR	10	10	10	--	--	--	--	--	--
PETROLEUM HYDROCARBONS (MG/KG)	NA	NA	NA						
EPH (C08-C44)	NA	NA	NA	--	--	--	--	--	--
TPH (C05-C12)	NA	NA	NA	--	--	--	--	--	--
POLYCYCLIC AROMATIC HYDROCARBONS (MG/KG)	NA	NA	NA						
2-METHYLNAPHTHALENE	123	10000	NA	--	--	--	--	--	--
ACENAPHTHENE	43	10000	NA	--	--	--	--	--	--
ACENAPHTHYLENE	23	10000	NA	--	--	--	--	--	--
ANTHRACENE	35	10000	NA	--	--	--	--	--	--
BENZO(A)ANTHRACENE	0.9	7.8	NA	--	--	--	--	--	--
BENZO(A)PYRENE	0.4	0.8	240	--	--	--	--	--	--
BENZO(B)FLUORANTHENE	0.9	7.8	NA	--	--	--	--	--	--
BENZO(G,H,I)PERYLENE	0.8	10000	NA	--	--	--	--	--	--
BENZO(K)FLUORANTHENE	0.9	78	NA	--	--	--	--	--	--
CHRYSENE	0.4	780	NA	--	--	--	--	--	--
DIBENZO(A,H)ANTHRACENE	0.4	0.8	NA	--	--	--	--	--	--
FLUORANTHENE	20	10000	NA	--	--	--	--	--	--
FLUORENE	28	10000	NA	--	--	--	--	--	--
INDENO(1,2,3-CD)PYRENE	0.9	7.8	NA	--	--	--	--	--	--
NAPHTHALENE	54	10000	0.8	--	--	--	--	--	--
PHENANTHRENE	40	10000	NA	--	--	--	--	--	--
PYRENE	13	10000	NA	--	--	--	--	--	--
TOTAL PAHS	NA	NA	NA	--	--	--	--	--	--

APPENDIX F

DATA VALIDATION MEMORANDUM

Tetra Tech INC **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 27, 2014**

FROM: **JOSEPH KALINYAK** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – SELECT VOCS / PAH / GRO / PRO**
NAVSTA NEWPORT, CTO WE30
SAMPLE DELIVERY GROUP (SDG) SG9363

SAMPLES: 1 / Soil / Select VOC / GRO

TF2-W-TB06-1113

3 / Soil / GRO / PRO

TF2-001-SB1000-0810	TF2-001-SB1006-0204	TF2-001-SB1009-0204

20 / Soil / PAH

TF2-001-SB1000-0204	TF2-001-SB1000-0810	TF2-001-SB1004-0204
TF2-001-SB1005-0204	TF2-001-SB1006-0204	TF2-001-SB1007-0204
TF2-001-SB1008-0204	TF2-001-SB1009-0204	TF2-001-SB1009-0810
TF2-001-SB1010-0204	TF2-001-SS1000-0001	TF2-001-SS1004-0001
TF2-001-SS1005-0001	TF2-001-SS1006-0001	TF2-001-SS1007-0001
TF2-001-SS1008-0001	TF2-001-SS1009-0001	TF2-001-SS1010-0001
TF2-SB-DUP10-1113	TF2-SB-DUP11-1113	

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG SG9363 consisted of twenty-one (21) soil samples including one (1) soil trip blank sample. Twenty (20) samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAH) as listed above. The one (1) soil trip blank sample was analyzed for Gasoline Range Organics (GRO) (TPH C05-C12) and select Volatile Organic Compounds (VOC) as listed above. Three (3) soil samples were also analyzed for Gasoline Range Organics (GRO) (TPH C05-C12) and Petroleum Range Organics (PRO) (EPH C08-C44) as listed above. Two (2) field duplicate sample pair was included in this sample delivery group (SDG): TF2-SB-DUP10-1113 / TF2-001-SB1004-0204 and TF2-SB-DUP11-1113 / TF2-001-SB1005-0204.

The samples were collected by Tetra Tech on November 25 and 27, 2013 and analyzed by Katahdin Analytical Services, Inc. All analyses were conducted in accordance with EPA SW-846 Method 8260B for VOCs, 8270D for PAHs, Method 8015B for GRO, and FL-PRO for PRO, analytical and reporting protocols.

The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • GC/MS Instrument Tuning and System Performance
  • Initial and Continuing Calibration Verification Results
  • Laboratory Method Blank Results
  • Blank Spike/Blank Spike Duplicate Results

- Matrix Spike/Matrix Spike Duplicate Recoveries
* • Surrogate Spike Recoveries
* • Internal Standard Recoveries
- Field Duplicate Precision
* • Compound Identification and Quantification
* • Detection Limits

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

HOLD TIME

No issues were identified.

BLANKS

The following PAH analytes were detected in the method blank sample for batch WG135482 at the maximum concentrations as indicated below affecting soil samples TF2-001-SB1004-0204, TF2-001-SB1008-0204, TF2-001-SB1009-0204, TF2-001-SB1009-0810, TF2-001-SS1004-0001, TF2-001-SS1008-0001, and TF2-001-SS1009-0001.

Analytes	Maximum Conc.	Action Level
Fluoranthene	1.8 µg/kg	9.0 µg/kg
Benzo(a)anthracene	2.6 µg/kg	13.0 µg/kg

An action level of 5X for the laboratory contaminants was established to evaluate the samples for laboratory contamination. Dilution factors, percent solids, and sample aliquots were taken into consideration during the application of all action levels. Positive results less than the action level were qualified as non-detected, (U), as a result of blank contamination.

CALIBRATIONS

The VOC continuing calibration verification (CCV) percent differences (%D) were greater than the 20% quality control limit for total-xylenes, o-xylene, styrene, bromoform, isopropylbenzene, tert-butylbenzene, 4-isopropyltoluene, and methyl cyclohexane on 12/09/13 @ 10:23 on instrument GCMS-C.

Affected Sample: TF2-W-TB06-1113

Actions: The sample non-detected total-xylenes, o-xylene, styrene, bromoform, isopropyl-benzene, tert-butylbenzene, 4-isopropyltoluene, and methyl cyclohexane results were qualified estimated, (UJ).

The PAH CCV %D was greater than the 20% quality control limit for 2-methylnaphthalene on 12/16/13 @ 13:46 on instrument GCMS-N.

Affected Samples:

TF2-001-SB1004-0204	TF2-001-SB1008-0204	TF2-001-SB1009-0810
TF2-001-SS1000-0001	TF2-001-SS1004-0001	TF2-SB-DUP10-1113

Actions: The sample non-detected 2-methylnaphthalene results were qualified estimated, (UJ).

The PAH CCV %D was greater than the 20% quality control limit for fluoranthene, pyrene, and indeno(1,2,3-cd)pyrene on 12/18/13 @ 12:26 on instrument GCMS-N.

Affected Samples: dilution analyses for the following samples

TF2-001-SB1005-0204	TF2-001-SB1007-0204	TF2-001-SS1005-0001
TF2-001-SS1007-0001	TF2-SB-DUP11-1113	

Actions: The sample detected fluoranthene, pyrene, and indeno(1,2,3-cd)pyrene results were qualified estimated, (J).

The PAH CCV %D was greater than the 20% quality control limit for benzo(b)fluoranthene and indeno(1,2,3-cd) on 12/19/13 @ 11:44 on instrument GCMS-N.

Affected Sample: TF2-001-SS1005-0001

Actions: No action was necessary as the aforementioned analytes were reported from a sample dilution analysis.

LABORATORY CONTROL SPIKE (LCS) /LABORATORY CONTROL SPIKE DUPLICATE (LCSD)

The PAH LCS and/or LCSD percent recoveries (%Rs) were less than the quality control limit for benzo(a)pyrene and benzo(g,h,i)perylene for batch WG135482. Additionally, the LCS/LCSD analyte benzo(b)fluoranthene %R relative percent difference (RPD) was greater than the quality control limit.

Affected Samples:

TF2-001-SB1004-0204	TF2-001-SB1008-0204	TF2-001-SB1009-0204
TF2-001-SB1009-0810	TF2-001-SS1004-0001	TF2-001-SS1008-0001
TF2-001-SS1009-0001		

Actions: The detected and non-detected benzo(a)pyrene and benzo(g,h,i)perylene sample results were qualified estimated, (J) and (UJ), respectively. The benzo(b)fluoranthene sample results were not qualified for an RPD non-compliance only.

The PAH LCS %R was greater than the quality control limit for indeno(1,2,3-cd)perylene for batch WG135525 (DL=dilution analysis).

Affected Samples:

TF2-001-SB1000-0810	TF2-001-SB1005-0204 (DL)	TF2-001-SB1006-0204
TF2-001-SB1007-0204 (DL)	TF2-001-SB1010-0204	TF2-001-SS1000-0001
TF2-001-SS1005-0001 (DL)	TF2-001-SS1006-0001	TF2-001-SS1007-0001 (DL)
TF2-001-SS1010-0001	TF2-SB-DUP10-1113	TF2-SB-DUP11-1113 (DL)

Actions: The detected indeno(1,2,3-cd)perylene sample results were qualified estimated, (J). The sample non-detected results were not qualified.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

The spiked sample TF2-001-SB1008-0204 had PAH MS and/or MSD %Rs for phenanthrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and benzo(g,h,i)perylene which were non-compliant.

Affected Sample: TF2-001-SB1008-0204

Actions: The detected and non-detected sample results for phenanthrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and benzo(g,h,i)-perylene were qualified estimated, (J) and (UJ), respectively.

The spiked sample TF2-001-SB1010-0204 had PAH MS and/or MSD %Rs for acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene which were non-compliant. The MS %Rs were <10% for phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and benzo(g,h,i)perylene. Additionally, the relative percent differences (RPDs) for the analytes naphthalene, 2-methylnaphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, benzo(k)fluoranthene, and dibenzo(a,h)-anthracene were non-compliant.

Affected Sample: TF2-001-SB1010-0204

Actions: Sample analyte results were not qualified for MS/MSD RPD non-compliances alone. The detected sample results for acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)-fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene were qualified estimated, (J).

SURROGATE SPIKE RECOVERIES

No issues were identified.

INTERNAL STANDARD RECOVERY

No issues were identified.

FIELD DUPLICATE PRECISION

The PAH analyte result RPDs were greater than the quality control limit for the analytes acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)-perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene for field duplicate samples TF2-SB-DUP11-1113 / TF2-001-SB1005-0204.

Affected Samples: TF2-SB-DUP11-1113 / TF2-001-SB1005-0204

Actions: The aforementioned PAH analyte results were qualified estimated, (J).

COMPOUND QUANTIFICATION

No issues were identified.

ADDITIONAL COMMENTS

Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J).

Samples were analyzed at dilutions for PAHs as listed below. Analyte results that exceeded the highest calibration standard in the undiluted sample analyses were reported from the dilution analyses.

Samples	Dilution
TF2-001-SB1005-0204	1X, 15X
TF2-001-SB1007-0204	1X, 20X
TF2-001-SS1005-0001	1X, 40X
TF2-001-SS1007-0001	1X, 12X
TF2-SB-DUP11-1113	1X, 30X

PRO sample results were reported as EPH (C08-C44) in the electronic database (EDD).

GRO sample results were reported as TPH (C05-C12) in the EDD.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: PAH results were qualified for method blank contamination. VOC results were qualified for CCV %D non-compliances. PAH results were qualified for CCV %, D LCS/LCSD %R and MS/MSD %R non-compliances.

Other Factors Affecting Data Quality: Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J). Field duplicate sample PAH results were qualified for field duplicate imprecision.

The data for these analyses were reviewed with reference to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements, National Functional Guidelines for Organic Data Validation (June 2008), Superfund Guidance/Procedures Attachment 2-3b: Example Organic Data Review Worksheets (1/13), and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Joseph Kalinyak
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Value Qualifier Key (Val Qual)

J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The result is an estimated non-detected quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U - Value is a non-detect as reported by the laboratory.

UR – Non-detected result is considered rejected, (UR), as a result of technical non-compliances.

DATA QUALIFICATION CODE (QUAL CODE)

Qualifier Codes:

A	=	Lab Blank Contamination
B	=	Field Blank Contamination
C	=	Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01	=	GC/MS Tuning Noncompliance
D	=	MS/MSD Recovery Noncompliance
E	=	LCS/LCSD Recovery Noncompliance
F	=	Lab Duplicate Imprecision
G	=	Field Duplicate Imprecision
H	=	Holding Time Exceedance
I	=	ICP Serial Dilution Noncompliance
J	=	ICP PDS Recovery Noncompliance; MSA's r < 0.995
K	=	ICP Interference - includes ICS % R Noncompliance
L	=	Instrument Calibration Range Exceedance
M	=	Sample Preservation Noncompliance
N	=	Internal Standard Noncompliance
N01	=	Internal Standard Recovery Noncompliance Dioxins
N02	=	Recovery Standard Noncompliance Dioxins
N03	=	Clean-up Standard Noncompliance Dioxins
O	=	Poor Instrument Performance (i.e., base-time drifting)
P	=	Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q	=	Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R	=	Surrogates Recovery Noncompliance
S	=	Pesticide/PCB Resolution
T	=	% Breakdown Noncompliance for DDT and Endrin
U	=	RPD between columns/detectors >40% for positive results determined via GC/HPLC
V	=	Non-linear calibrations; correlation coefficient r < 0.995
W	=	EMPC result
X	=	Signal to noise response drop
Y	=	Percent solids <30%
Z	=	Uncertainty at 2 sigma deviation is less than sample activity
Z1	=	Tentatively Identified Compound considered presumptively present
Z2	=	Tentatively Identified Compound column bleed

PROJ_NO: 03019	NSAMPLE	TF2-W-TB06-1113
SDG: SG9363	LAB_ID	SG9363-11RA
FRACTION: OV	SAMP_DATE	11/25/2013
MEDIA: SOIL	QC_TYPE	NM
	UNITS	UG/KG
	PCT_SOLIDS	100.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
1,2,4-TRIMETHYLBENZENE	2.5	U	
1,2-DIBROMOETHANE	2.5	U	
1,3,5-TRIMETHYLBENZENE	2.5	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-ISOPROPYLTOLUENE	2.5	UJ	C
4-METHYL-2-PENTANONE	12	U	
ACETONE	58		
BENZENE	2.5	U	
BROMOFORM	2.5	UJ	C
BROMOMETHANE	5	U	
CARBON DISULFIDE	0.91	J	P
CYCLOHEXANE	2.5	U	
ETHYLBENZENE	2.5	U	
ISOPROPYLBENZENE	2.5	UJ	C
M+P-XYLENES	5	U	
METHYL ACETATE	3	U	
METHYL CYCLOHEXANE	2.5	UJ	C
METHYL TERT-BUTYL ETHER	2.5	U	
NAPHTHALENE	2.5	U	
N-BUTYLBENZENE	2.5	U	
N-PROPYLBENZENE	2.5	U	
O-XYLENE	2.5	UJ	C
SEC-BUTYLBENZENE	2.5	U	
STYRENE	2.5	UJ	C
TERT-BUTYLBENZENE	2.5	UJ	C
TOLUENE	2.5	U	
TOTAL XYLENES	7.5	UJ	C

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1000-0204			TF2-001-SB1000-0810			TF2-001-SB1004-0204			TF2-001-SB1005-0204		
SDG: SG9363	LAB_ID	SG9363-13			SG9363-14			SG9363-7			SG9363-18		
FRACTION: PAH	SAMP_DATE	11/27/2013			11/27/2013			11/25/2013			11/27/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.4			86.9			87.9			85.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		11	U		12	U		10	UJ	C	190		
ACENAPHTHENE		11	U		12	U		10	U		240	J	G
ACENAPHTHYLENE		11	U		12	U		10	U		29	J	G
ANTHRACENE		11	U		12	U		4	J	P			
BENZO(A)ANTHRACENE		11	U		3.6	J	P	22					
BENZO(A)PYRENE		11	U		12	U		16	J	EP			
BENZO(B)FLUORANTHENE		3.1	J	P	5.8	J	P	30					
BENZO(G,H,I)PERYLENE		11	U		12	U		3.6	J	EP			
BENZO(K)FLUORANTHENE		11	U		12	U		10	J	P			
CHRYSENE		11	U		12	U		24					
DIBENZO(A,H)ANTHRACENE		11	U		12	U		5.2	J	P	160	J	G
FLUORANTHENE		11	U		5	J	P	45					
FLUORENE		11	U		12	U		10	U				
INDENO(1,2,3-CD)PYRENE		11	U		2.8	J	EP	16	J	P			
NAPHTHALENE		11	U		12	U		10	U		370	J	G
PHENANTHRENE		11	U		2.4	J	P	23					
PYRENE		11	U		12	U		32					

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1005-0204DL			TF2-001-SB1006-0204			TF2-001-SB1007-0204			TF2-001-SB1007-0204DL		
SDG: SG9363	LAB_ID	SG9363-18DL			SG9363-16			SG9363-9			SG9363-9DL		
FRACTION: PAH	SAMP_DATE	11/27/2013			11/27/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	85.0			86.8			88.2			88.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE					11	U		76					
ACENAPHTHENE					11	U		230					
ACENAPHTHYLENE					11	U		22	J	P			
ANTHRACENE		740	J	G	5.6	J	P				910		
BENZO(A)ANTHRACENE		1500	J	G	34						2000		
BENZO(A)PYRENE		1200	J	G	29						1700		
BENZO(B)FLUORANTHENE		1800	J	G	53						2600		
BENZO(G,H,I)PERYLENE		540	J	G	14	J	P				860		
BENZO(K)FLUORANTHENE		560	J	G	15	J	P				770		
CHRYSENE		1400	J	G	37						2000		
DIBENZO(A,H)ANTHRACENE					6.1	J	P	220					
FLUORANTHENE		3800	J	CG	64						5000	J	C
FLUORENE		530	J	G	11	U					410	J	P
INDENO(1,2,3-CD)PYRENE		860	J	CEG	26	J	E				1300	J	CE
NAPHTHALENE					11	U		150					
PHENANTHRENE		3500	J	G	35						3700		
PYRENE		3600	J	CG	67						4800	J	C

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1008-0204			TF2-001-SB1009-0204			TF2-001-SB1009-0810			TF2-001-SB1010-0204		
SDG: SG9363	LAB_ID	SG9363-5			SG9363-2RA			SG9363-3			SG9363-20		
FRACTION: PAH	SAMP_DATE	11/25/2013			11/25/2013			11/25/2013			11/27/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	87.4			89.8			92.1			90.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		11	UJ	C	10	U		11	UJ	C	11	U	
ACENAPHTHENE		11	U		10	U		11	U		6.9	J	DP
ACENAPHTHYLENE		11	U		10	U		11	U		11	U	
ANTHRACENE		2.7	J	P	10	U		11	U		19	J	DP
BENZO(A)ANTHRACENE		12	U	A	2.6	U	A	11	U		59	J	D
BENZO(A)PYRENE		9.6	J	DEP	10	UJ	E	11	UJ	E	71	J	D
BENZO(B)FLUORANTHENE		18	J	DP	4.8	J	P	11	U		100	J	D
BENZO(G,H,I)PERYLENE		11	UJ	DE	10	UJ	E	11	UJ	E	49	J	D
BENZO(K)FLUORANTHENE		5.7	J	DP	10	U		11	U		40	J	D
CHRYSENE		9.4	J	P	10	U		11	U		56	J	D
DIBENZO(A,H)ANTHRACENE		2.5	J	P	10	U		11	U		15	J	DP
FLUORANTHENE		22	J	P	4.1	U	A	11	U		140	J	D
FLUORENE		11	U		10	U		11	U		7.8	J	DP
INDENO(1,2,3-CD)PYRENE		9	J	P	2.1	J	P	11	U		76	J	DE
NAPHTHALENE		11	U		10	U		11	U		6	J	P
PHENANTHRENE		15	J	DP	2.7	J	P	11	U		120	J	D
PYRENE		13	J	P	10	U		11	U		160	J	D

PROJ_NO: 03019	NSAMPLE	TF2-001-SS1000-0001			TF2-001-SS1004-0001			TF2-001-SS1005-0001			TF2-001-SS1005-0001DL		
SDG: SG9363	LAB_ID	SG9363-12			SG9363-6			SG9363-17			SG9363-17DL		
FRACTION: PAH	SAMP_DATE	11/27/2013			11/25/2013			11/27/2013			11/27/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.9			87.2			90.0			90.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		12	UJ	C	11	UJ	C				440	U	
ACENAPHTHENE		2.2	J	P	11	U					1000		
ACENAPHTHYLENE		12	U		11	U		26					
ANTHRACENE		4.4	J	P	2.6	J	P				2200		
BENZO(A)ANTHRACENE		31			15	J	P				4500		
BENZO(A)PYRENE		31			13	J	EP				3700		
BENZO(B)FLUORANTHENE		50			25						5800		
BENZO(G,H,I)PERYLENE		16	J	P	4.3	J	EP				1800		
BENZO(K)FLUORANTHENE		22	J	P	7.4	J	P				1700		
CHRYSENE		39			14	J	P				4900		
DIBENZO(A,H)ANTHRACENE		7.6	J	P	3.9	J	P				590	J	P
FLUORANTHENE		70			34						12000	J	C
FLUORENE		12	U		11	U					1300		
INDENO(1,2,3-CD)PYRENE		32	J	E	13	J	P				2800	J	CE
NAPHTHALENE		12	U		11	U					1800		
PHENANTHRENE		32			18	J	P				11000		
PYRENE		63			26						11000	J	C

PROJ_NO: 03019	NSAMPLE	TF2-001-SS1006-0001			TF2-001-SS1007-0001			TF2-001-SS1007-0001DL			TF2-001-SS1008-0001		
SDG: SG9363	LAB_ID	SG9363-15			SG9363-8			SG9363-8DL			SG9363-4RA		
FRACTION: PAH	SAMP_DATE	11/27/2013			11/25/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.2			83.2			83.2			87.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		12	U		13	J	P				11	U	
ACENAPHTHENE		6.8	J	P	170						11	U	
ACENAPHTHYLENE		12	U		12	J	P				11	U	
ANTHRACENE		14	J	P	340						11	U	
BENZO(A)ANTHRACENE		45						1200			8.8	U	A
BENZO(A)PYRENE		35						880			8.4	J	EP
BENZO(B)FLUORANTHENE		53						1500			16	J	P
BENZO(G,H,I)PERYLENE		16	J	P				410			11	UJ	E
BENZO(K)FLUORANTHENE		23	J	P	370						5.2	J	P
CHRYSENE		45						1100			7.9	J	P
DIBENZO(A,H)ANTHRACENE		7.4	J	P	130						1.9	U	
FLUORANTHENE		97						2700	J	C	18	J	P
FLUORENE		7.6	J	P	180						11	U	
INDENO(1,2,3-CD)PYRENE		31	J	E				700	J	CE	7.9	J	P
NAPHTHALENE		12	U		66						11	U	
PHENANTHRENE		82						2000			9.9	J	P
PYRENE		100						3200	J	C	15	J	P

PROJ_NO: 03019	NSAMPLE	TF2-001-SS1009-0001			TF2-001-SS1010-0001			TF2-SB-DUP10-1113			TF2-SB-DUP11-1113		
SDG: SG9363	LAB_ID	SG9363-1RA			SG9363-19			SG9363-10			SG9363-21		
FRACTION: PAH	SAMP_DATE	11/25/2013			11/27/2013			11/25/2013			11/27/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.8			88.4			88.3			85.5		
	DUP_OF							TF2-001-SB1004-0204			TF2-001-SB1005-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		11	U		11	U		11	UJ	C			
ACENAPHTHENE		2.6	J	P	11	U		11	U				
ACENAPHTHYLENE		11	U		11	U		11	U		88	J	G
ANTHRACENE		4.2	J	P	2.7	J	P	2	J	P			
BENZO(A)ANTHRACENE		24			19	J	P	17	J	P			
BENZO(A)PYRENE		23	J	E	16	J	P	14	J	P			
BENZO(B)FLUORANTHENE		37			32			26					
BENZO(G,H,I)PERYLENE		9	J	EP	8.9	J	P	5.2	J	P			
BENZO(K)FLUORANTHENE		17	J	P	11	J	P	8.6	J	P			
CHRYSENE		28			19	J	P	18	J	P			
DIBENZO(A,H)ANTHRACENE		4.8	J	P	4.6	J	P	4.2	J	P			
FLUORANTHENE		55			40			32					
FLUORENE		11	U		11	U		11	U				
INDENO(1,2,3-CD)PYRENE		21	J	P	17	J	EP	13	J	EP			
NAPHTHALENE		11	U		11	U		11	U				
PHENANTHRENE		33			21	J	P	13	J	P			
PYRENE		62			44			24					

PROJ_NO: 03019	NSAMPLE	TF2-SB-DUP11-1113DL
SDG: SG9363	LAB_ID	SG9363-21DL
FRACTION: PAH	SAMP_DATE	11/27/2013
MEDIA: SOIL	QC_TYPE	NM
	UNITS	UG/KG
	PCT_SOLIDS	85.5
	DUP_OF	TF2-001-SB1005-0204

PARAMETER	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE	280	J	P
ACENAPHTHENE	890	J	G
ACENAPHTHYLENE			
ANTHRACENE	1800	J	G
BENZO(A)ANTHRACENE	4100	J	G
BENZO(A)PYRENE	3100	J	G
BENZO(B)FLUORANTHENE	4800	J	G
BENZO(G,H,I)PERYLENE	1500	J	G
BENZO(K)FLUORANTHENE	1500	J	G
CHRYSENE	3800	J	G
DIBENZO(A,H)ANTHRACENE	490	J	GP
FLUORANTHENE	10000	J	CG
FLUORENE	1700	J	G
INDENO(1,2,3-CD)PYRENE	2400	J	CEG
NAPHTHALENE	1200	J	G
PHENANTHRENE	11000	J	G
PYRENE	10000	J	CG

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1000-0810			TF2-001-SB1006-0204			TF2-001-SB1009-0204			TF2-W-TB06-1113		
SDG: SG9363	LAB_ID	SG9363-14			SG9363-16			SG9363-2			SG9363-11		
FRACTION: PET	SAMP_DATE	11/27/2013			11/27/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	86.9			86.8			89.8			100.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
EPH (C08-C44)		13	J	P	29			11	U				
TPH (C05-C12)		2.4	U		2.3	U		2.4	U		2	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-11RA
Client ID: TF2-W-TB06-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: C4714.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 09-DEC-13
Extracted By: REC
Extraction Method: SW846 5035
Lab Prep Batch: WG135833

Analysis Date: 09-DEC-13
Analyst: REC
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 100
Report Date: 12-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromomethane	U	5.0	ug/Kgdrywt	1	10	10.	1.1	5.0
Carbon Disulfide	J	0.91	ug/Kgdrywt	1	5	5.0	0.78	2.5
Acetone		58	ug/Kgdrywt	1	25	25.	5.1	12.
Methyl tert-butyl Ether	U	2.5	ug/Kgdrywt	1	5	5.0	1.1	2.5
2-Butanone	U	12	ug/Kgdrywt	1	25	25.	5.9	12.
Benzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
Toluene	U	2.5	ug/Kgdrywt	1	5	5.0	1.4	2.5
4-Methyl-2-Pentanone	U	12	ug/Kgdrywt	1	25	25.	5.9	12.
1,2-Dibromoethane	U	2.5	ug/Kgdrywt	1	5	5.0	1.2	2.5
2-Hexanone	U	12	ug/Kgdrywt	1	25	25.	4.8	12.
Ethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.65	2.5
m+p-Xylenes	U	5.0	ug/Kgdrywt	1	10	10.	1.7	5.0
o-Xylene	U	2.5	ug/Kgdrywt	1	5	5.0	1.3	2.5
Xylenes (Total)	UL	7.5	ug/Kgdrywt	1	15	15.	1.3	7.5
Styrene	U	2.5	ug/Kgdrywt	1	5	5.0	0.51	2.5
Bromoform	U	2.5	ug/Kgdrywt	1	5	5.0	0.70	2.5
Isopropylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
N-Propylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.83	2.5
1,3,5-Trimethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.67	2.5
tert-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.90	2.5
1,2,4-Trimethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.87	2.5
P-Isopropyltoluene	U	2.5	ug/Kgdrywt	1	5	5.0	0.76	2.5
N-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
sec-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.91	2.5
Cyclohexane	U	2.5	ug/Kgdrywt	1	5	5.0	1.4	2.5
Methyl Acetate	U	3.0	ug/Kgdrywt	1	5	5.0	2.7	3.0
Methylcyclohexane	U	2.5	ug/Kgdrywt	1	5	5.0	0.96	2.5
Naphthalene	U	2.5	ug/Kgdrywt	1	5	5.0	0.88	2.5
p-Bromofluorobenzene		108.	%					
Toluene-D8		111.	%					
1,2-Dichloroethane-D4		123.	%					
Dibromofluoromethane		121.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-13
Client ID: TF2-001-SB1000-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1245.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 90.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	U	11.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	U	11.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	U	11.	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	J	3.1	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	U	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	UL	11.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	U	11.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		63.8	%					
Fluorene-D10		54.5	%					
Pyrene-D10		69.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-14
Client ID: TF2-001-SB1000-0810
Project: NAVSTA Newport CTO WE.
SDG: SG9363
Lab File ID: N1246.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 87.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12.	ug/Kgdrywt	1	20	23.	3.0	12.
2-Methylnaphthalene	U	12.	ug/Kgdrywt	1	20	23.	2.5	12.
Acenaphthylene	U	12.	ug/Kgdrywt	1	20	23.	1.4	12.
Acenaphthene	U	12.	ug/Kgdrywt	1	20	23.	1.7	12.
Fluorene	U	12.	ug/Kgdrywt	1	20	23.	3.7	12.
Phenanthrene	J	2.4	ug/Kgdrywt	1	20	23.	2.1	12.
Anthracene	U	12.	ug/Kgdrywt	1	20	23.	1.4	12.
Fluoranthene	J	5.0	ug/Kgdrywt	1	20	23.	2.1	12.
Pyrene	U	12.	ug/Kgdrywt	1	20	23.	2.4	12.
Benzo(a)anthracene	J	3.6	ug/Kgdrywt	1	20	23.	2.2	12.
Chrysene	U	12.	ug/Kgdrywt	1	20	23.	2.0	12.
Benzo(b)Fluoranthene	J	5.8	ug/Kgdrywt	1	20	23.	2.8	12.
Benzo(k)fluoranthene	U	12.	ug/Kgdrywt	1	20	23.	3.6	12.
Benzo(a)pyrene	U	12.	ug/Kgdrywt	1	20	23.	3.8	12.
Indeno(1,2,3-cd)pyrene	JL	2.8	ug/Kgdrywt	1	20	23.	2.2	12.
Dibenzo(a,h)anthracene	U	12.	ug/Kgdrywt	1	20	23.	2.1	12.
Benzo(g,h,i)perylene	U	12.	ug/Kgdrywt	1	20	23.	2.3	12.
2-Methylnaphthalene-D10		58.8	%					
Fluorene-D10		51.5	%					
Pyrene-D10		67.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-7
Client ID: TF2-001-SB1004-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1238.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135482

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 88.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		23.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	4.0	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		45.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		32.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		22.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		24.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		30.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	J	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	JL	16.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	J	16.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	5.2	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	3.6	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		59.0	%					
Fluorene-D10		51.3	%					
Pyrene-D10		48.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-18
Client ID: TF2-001-SB1005-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1253.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 85.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		370	ug/Kgdrywt	1	20	23.	3.0	12.
2-Methylnaphthalene		190	ug/Kgdrywt	1	20	23.	2.6	12.
Acenaphthylene		29.	ug/Kgdrywt	1	20	23.	1.4	12.
Acenaphthene		240	ug/Kgdrywt	1	20	23.	1.8	12.
Fluorene	E	500	ug/Kgdrywt	1	20	23.	3.7	12.
Phenanthrene	E	2400	ug/Kgdrywt	1	20	23.	2.1	12.
Anthracene	E	570	ug/Kgdrywt	1	20	23.	1.4	12.
Fluoranthene	E	2400	ug/Kgdrywt	1	20	23.	2.1	12.
Pyrene	E	2900	ug/Kgdrywt	1	20	23.	2.4	12.
Benzo(a)anthracene	E	1400	ug/Kgdrywt	1	20	23.	2.2	12.
Chrysene	E	1200	ug/Kgdrywt	1	20	23.	2.0	12.
Benzo(b)Fluoranthene	E	1600	ug/Kgdrywt	1	20	23.	2.8	12.
Benzo(k)fluoranthene	E	440	ug/Kgdrywt	1	20	23.	3.6	12.
Benzo(a)pyrene	E	980	ug/Kgdrywt	1	20	23.	3.8	12.
Indeno(1,2,3-cd)pyrene	EL	980	ug/Kgdrywt	1	20	23.	2.2	12.
Dibenzo(a,h)anthracene		160	ug/Kgdrywt	1	20	23.	2.1	12.
Benzo(g,h,i)perylene	E	540	ug/Kgdrywt	1	20	23.	2.3	12.
2-Methylnaphthalene-D10		60.7	%					
Fluorene-D10		61.4	%					
Pyrene-D10		77.4	%					

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Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-18DL
Client ID: TF2-001-SB1005-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1262.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 18-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 85.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		410	ug/Kgdrywt	15	20	350	46.	180
2-Methylnaphthalene	U	180	ug/Kgdrywt	15	20	350	38.	180
Acenaphthylene	J	23.	ug/Kgdrywt	15	20	350	21.	180
Acenaphthene	J	250	ug/Kgdrywt	15	20	350	26.	180
Fluorene		530	ug/Kgdrywt	15	20	350	56.	180
Phenanthrene		3500	ug/Kgdrywt	15	20	350	32.	180
Anthracene		740	ug/Kgdrywt	15	20	350	21.	180
Fluoranthene		3800	ug/Kgdrywt	15	20	350	32.	180
Pyrene		3600	ug/Kgdrywt	15	20	350	37.	180
Benzo(a)anthracene		1500	ug/Kgdrywt	15	20	350	33.	180
Chrysene		1400	ug/Kgdrywt	15	20	350	30.	180
Benzo(b)Fluoranthene		1800	ug/Kgdrywt	15	20	350	42.	180
Benzo(k)fluoranthene		560	ug/Kgdrywt	15	20	350	54.	180
Benzo(a)pyrene		1200	ug/Kgdrywt	15	20	350	58.	180
Indeno(1,2,3-cd)pyrene	L	860	ug/Kgdrywt	15	20	350	33.	180
Dibenzo(a,h)anthracene	J	180	ug/Kgdrywt	15	20	350	32.	180
Benzo(g,h,i)perylene		540	ug/Kgdrywt	15	20	350	35.	180
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-16
Client ID: TF2-001-SB1006-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1252.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 87.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.5	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.4	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.7	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Phenanthrene		35.	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	J	5.6	ug/Kgdrywt	1	20	22.	1.4	11.
Fluoranthene		64.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene		67.	ug/Kgdrywt	1	20	22.	2.4	11.
Benzo(a)anthracene		34.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene		37.	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene		53.	ug/Kgdrywt	1	20	22.	2.7	11.
Benzo(k)fluoranthene	J	15.	ug/Kgdrywt	1	20	22.	3.5	11.
Benzo(a)pyrene		29.	ug/Kgdrywt	1	20	22.	3.7	11.
Indeno(1,2,3-cd)pyrene	L	26.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	6.1	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	J	14.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		70.4	%					
Fluorene-D10		64.3	%					
Pyrene-D10		78.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-9
Client ID: TF2-001-SB1007-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1256.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 18-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 88.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		150	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene		76.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	J	22.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene		230	ug/Kgdrywt	1	20	22.	1.7	11.
Fluorene	E	380	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	E	2200	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	E	710	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	E	2500	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	E	3700	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	E	1700	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	E	1600	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	E	1900	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	E	670	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	E	1400	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	EL	1500	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene		220	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	E	760	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		63.5	%					
Fluorene-D10		61.7	%					
Pyrene-D10		79.8	%					

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Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-9DL
Client ID: TF2-001-SB1007-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1260.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 18-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 88.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	160	ug/Kgdrywt	20	20	440	58.	220
2-Methylnaphthalene	U	220	ug/Kgdrywt	20	20	440	49.	220
Acenaphthylene	U	220	ug/Kgdrywt	20	20	440	26.	220
Acenaphthene	J	240	ug/Kgdrywt	20	20	440	33.	220
Fluorene	J	410	ug/Kgdrywt	20	20	440	71.	220
Phenanthrene		3700	ug/Kgdrywt	20	20	440	40.	220
Anthracene		910	ug/Kgdrywt	20	20	440	26.	220
Fluoranthene		5000	ug/Kgdrywt	20	20	440	40.	220
Pyrene		4800	ug/Kgdrywt	20	20	440	46.	220
Benzo(a)anthracene		2000	ug/Kgdrywt	20	20	440	42.	220
Chrysene		2000	ug/Kgdrywt	20	20	440	38.	220
Benzo(b)Fluoranthene		2600	ug/Kgdrywt	20	20	440	53.	220
Benzo(k)fluoranthene		770	ug/Kgdrywt	20	20	440	69.	220
Benzo(a)pyrene		1700	ug/Kgdrywt	20	20	440	73.	220
Indeno(1,2,3-cd)pyrene	L	1300	ug/Kgdrywt	20	20	440	42.	220
Dibenzo(a,h)anthracene	J	270	ug/Kgdrywt	20	20	440	40.	220
Benzo(g,h,i)perylene		860	ug/Kgdrywt	20	20	440	44.	220
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-5
Client ID: TF2-001-SB1008-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1234.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135482

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 87.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	23.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	23.	2.5	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	23.	1.4	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	23.	1.7	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	23.	3.6	11.
Phenanthrene	JM	15.	ug/Kgdrywt	1	20	23.	2.0	11.
Anthracene	J	2.7	ug/Kgdrywt	1	20	23.	1.4	11.
Fluoranthene	J	22.	ug/Kgdrywt	1	20	23.	2.0	11.
Pyrene	J	13.	ug/Kgdrywt	1	20	23.	2.4	11.
Benzo(a)anthracene	J	12.	ug/Kgdrywt	1	20	23.	2.2	11.
Chrysene	J	9.4	ug/Kgdrywt	1	20	23.	1.9	11.
Benzo(b)Fluoranthene	JM	18.	ug/Kgdrywt	1	20	23.	2.7	11.
Benzo(k)fluoranthene	JM	5.7	ug/Kgdrywt	1	20	23.	3.5	11.
Benzo(a)pyrene	JLMM	9.6	ug/Kgdrywt	1	20	23.	3.7	11.
Indeno(1,2,3-cd)pyrene	J	9.0	ug/Kgdrywt	1	20	23.	2.2	11.
Dibenzo(a,h)anthracene	J	2.5	ug/Kgdrywt	1	20	23.	2.0	11.
Benzo(g,h,i)perylene	ULLMM	11.	ug/Kgdrywt	1	20	23.	2.3	11.
2-Methylnaphthalene-D10		66.8	%					
Fluorene-D10		57.7	%					
Pyrene-D10		66.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-2RA
Client ID: TF2-001-SB1009-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1243.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135482

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 90.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	J	2.7	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	J	4.1	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	J	2.6	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	J	4.8	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	UL	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene	J	2.1	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	ULL	10.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		69.8	%					
Fluorene-D10		57.2	%					
Pyrene-D10		72.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-3
Client ID: TF2-001-SB1009-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1232.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135482

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.3	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene	U	11.	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene	U	11.	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene	U	11.	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene	U	11.	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene	U	11.	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene	U	11.	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene	U	11.	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	UL	11.	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene	U	11.	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	ULL	11.	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		65.9	%					
Fluorene-D10		52.3	%					
Pyrene-D10		50.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-20
Client ID: TF2-001-SB1010-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1249.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 90.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	6.0	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	JM	6.9	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	JM	7.8	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	MM	120	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	JM	19.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	MM	140	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	MM	160	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	MM	59.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	M	56.	ug/Kgdrywt	1	20	22.	1.8	11.
Benzo(b)Fluoranthene	MM	100	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	MM	40.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	MM	71.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	LMM	76.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	JM	15.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	MM	49.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		76.2	%					
Fluorene-D10		60.5	%					
Pyrene-D10		79.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-12
Client ID: TF2-001-SS1000-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1240.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 85.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12.	ug/Kgdrywt	1	20	23.	3.0	12.
2-Methylnaphthalene	U	12.	ug/Kgdrywt	1	20	23.	2.6	12.
Acenaphthylene	U	12.	ug/Kgdrywt	1	20	23.	1.4	12.
Acenaphthene	J	2.2	ug/Kgdrywt	1	20	23.	1.7	12.
Fluorene	U	12.	ug/Kgdrywt	1	20	23.	3.7	12.
Phenanthrene		32.	ug/Kgdrywt	1	20	23.	2.1	12.
Anthracene	J	4.4	ug/Kgdrywt	1	20	23.	1.4	12.
Fluoranthene		70.	ug/Kgdrywt	1	20	23.	2.1	12.
Pyrene		63.	ug/Kgdrywt	1	20	23.	2.4	12.
Benzo(a)anthracene		31.	ug/Kgdrywt	1	20	23.	2.2	12.
Chrysene		39.	ug/Kgdrywt	1	20	23.	2.0	12.
Benzo(b)Fluoranthene		50.	ug/Kgdrywt	1	20	23.	2.8	12.
Benzo(k)fluoranthene	J	22.	ug/Kgdrywt	1	20	23.	3.6	12.
Benzo(a)pyrene		31.	ug/Kgdrywt	1	20	23.	3.8	12.
Indeno(1,2,3-cd)pyrene	L	32.	ug/Kgdrywt	1	20	23.	2.2	12.
Dibenzo(a,h)anthracene	J	7.6	ug/Kgdrywt	1	20	23.	2.1	12.
Benzo(g,h,i)perylene	J	16.	ug/Kgdrywt	1	20	23.	2.3	12.
2-Methylnaphthalene-D10		73.6	%					
Fluorene-D10		59.6	%					
Pyrene-D10		63.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-6
Client ID: TF2-001-SS1004-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1237.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135482

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 87.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene	J	18.	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene	J	2.6	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene		34.	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene		26.	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene	J	15.	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene	J	14.	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene		25.	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene	J	7.4	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	JL	13.	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene	J	13.	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	J	3.9	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	JLL	4.3	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		67.8	%					
Fluorene-D10		56.3	%					
Pyrene-D10		61.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-17
Client ID: TF2-001-SS1005-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1280.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 19-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 90.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	E	1500	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	E	450	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene		26.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	E	930	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	E	1100	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	E	6000	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	E	1900	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	E	6100	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	E	6600	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	E	3800	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	E	3700	ug/Kgdrywt	1	20	22.	1.8	11.
Benzo(b)Fluoranthene	E	4300	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	E	1300	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	E	2900	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	EL	5000	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	E	520	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	E	1800	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		78.5	%					
Fluorene-D10		66.7	%					
Pyrene-D10		73.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-17DL
Client ID: TF2-001-SS1005-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1261.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 18-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 90.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		1800	ug/Kgdrywt	40	20	870	110	440
2-Methylnaphthalene	U	440	ug/Kgdrywt	40	20	870	96.	440
Acenaphthylene	U	440	ug/Kgdrywt	40	20	870	52.	440
Acenaphthene		1000	ug/Kgdrywt	40	20	870	66.	440
Fluorene		1300	ug/Kgdrywt	40	20	870	140	440
Phenanthrene		11000	ug/Kgdrywt	40	20	870	79.	440
Anthracene		2200	ug/Kgdrywt	40	20	870	52.	440
Fluoranthene		12000	ug/Kgdrywt	40	20	870	79.	440
Pyrene		11000	ug/Kgdrywt	40	20	870	92.	440
Benzo(a)anthracene		4500	ug/Kgdrywt	40	20	870	83.	440
Chrysene		4900	ug/Kgdrywt	40	20	870	74.	440
Benzo(b)Fluoranthene		5800	ug/Kgdrywt	40	20	870	100	440
Benzo(k)fluoranthene		1700	ug/Kgdrywt	40	20	870	140	440
Benzo(a)pyrene		3700	ug/Kgdrywt	40	20	870	140	440
Indeno(1,2,3-cd)pyrene	L	2800	ug/Kgdrywt	40	20	870	83.	440
Dibenzo(a,h)anthracene	J	590	ug/Kgdrywt	40	20	870	79.	440
Benzo(g,h,i)perylene		1800	ug/Kgdrywt	40	20	870	87.	440
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-15
Client ID: TF2-001-SS1006-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1247.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 84.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	12.	ug/Kgdrywt	1	20	24.	3.1	12.
2-Methylnaphthalene	U	12.	ug/Kgdrywt	1	20	24.	2.6	12.
Acenaphthylene	U	12.	ug/Kgdrywt	1	20	24.	1.4	12.
Acenaphthene	J	6.8	ug/Kgdrywt	1	20	24.	1.8	12.
Fluorene	J	7.6	ug/Kgdrywt	1	20	24.	3.8	12.
Phenanthrene		82.	ug/Kgdrywt	1	20	24.	2.1	12.
Anthracene	J	14.	ug/Kgdrywt	1	20	24.	1.4	12.
Fluoranthene		97.	ug/Kgdrywt	1	20	24.	2.1	12.
Pyrene		100	ug/Kgdrywt	1	20	24.	2.5	12.
Benzo(a)anthracene		45.	ug/Kgdrywt	1	20	24.	2.2	12.
Chrysene		45.	ug/Kgdrywt	1	20	24.	2.0	12.
Benzo(b)Fluoranthene		53.	ug/Kgdrywt	1	20	24.	2.8	12.
Benzo(k)fluoranthene	J	23.	ug/Kgdrywt	1	20	24.	3.6	12.
Benzo(a)pyrene		35.	ug/Kgdrywt	1	20	24.	3.9	12.
Indeno(1,2,3-cd)pyrene	L	31.	ug/Kgdrywt	1	20	24.	2.2	12.
Dibenzo(a,h)anthracene	J	7.4	ug/Kgdrywt	1	20	24.	2.1	12.
Benzo(g,h,i)perylene	J	16.	ug/Kgdrywt	1	20	24.	2.4	12.
2-Methylnaphthalene-D10		70.9	%					
Fluorene-D10		60.5	%					
Pyrene-D10		79.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-8
Client ID: TF2-001-SS1007-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1255.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 83.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		66.	ug/Kgdrywt	1	20	23.	3.0	12.
2-Methylnaphthalene	J	13.	ug/Kgdrywt	1	20	23.	2.6	12.
Acenaphthylene	J	12.	ug/Kgdrywt	1	20	23.	1.4	12.
Acenaphthene		170	ug/Kgdrywt	1	20	23.	1.8	12.
Fluorene		180	ug/Kgdrywt	1	20	23.	3.7	12.
Phenanthrene	E	1500	ug/Kgdrywt	1	20	23.	2.1	12.
Anthracene		340	ug/Kgdrywt	1	20	23.	1.4	12.
Fluoranthene	E	1800	ug/Kgdrywt	1	20	23.	2.1	12.
Pyrene	E	2300	ug/Kgdrywt	1	20	23.	2.4	12.
Benzo(a)anthracene	E	1000	ug/Kgdrywt	1	20	23.	2.2	12.
Chrysene	E	970	ug/Kgdrywt	1	20	23.	2.0	12.
Benzo(b)Fluoranthene	E	1300	ug/Kgdrywt	1	20	23.	2.8	12.
Benzo(k)fluoranthene		370	ug/Kgdrywt	1	20	23.	3.6	12.
Benzo(a)pyrene	E	780	ug/Kgdrywt	1	20	23.	3.9	12.
Indeno(1,2,3-cd)pyrene	EL	760	ug/Kgdrywt	1	20	23.	2.2	12.
Dibenzo(a,h)anthracene		130	ug/Kgdrywt	1	20	23.	2.1	12.
Benzo(g,h,i)perylene	E	400	ug/Kgdrywt	1	20	23.	2.3	12.
2-Methylnaphthalene-D10		69.7	%					
Fluorene-D10		60.9	%					
Pyrene-D10		72.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-8DL
Client ID: TF2-001-SS1007-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1259.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 18-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 83.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	71.	ug/Kgdrywt	12	20	280	36.	140
2-Methylnaphthalene	U	140	ug/Kgdrywt	12	20	280	31.	140
Acenaphthylene	U	140	ug/Kgdrywt	12	20	280	17.	140
Acenaphthene	J	180	ug/Kgdrywt	12	20	280	21.	140
Fluorene	J	180	ug/Kgdrywt	12	20	280	45.	140
Phenanthrene		2000	ug/Kgdrywt	12	20	280	25.	140
Anthracene		410	ug/Kgdrywt	12	20	280	17.	140
Fluoranthene		2700	ug/Kgdrywt	12	20	280	25.	140
Pyrene		3200	ug/Kgdrywt	12	20	280	29.	140
Benzo(a)anthracene		1200	ug/Kgdrywt	12	20	280	27.	140
Chrysene		1100	ug/Kgdrywt	12	20	280	24.	140
Benzo(b)Fluoranthene		1500	ug/Kgdrywt	12	20	280	34.	140
Benzo(k)fluoranthene		420	ug/Kgdrywt	12	20	280	44.	140
Benzo(a)pyrene		880	ug/Kgdrywt	12	20	280	46.	140
Indeno(1,2,3-cd)pyrene	L	700	ug/Kgdrywt	12	20	280	27.	140
Dibenzo(a,h)anthracene	J	150	ug/Kgdrywt	12	20	280	25.	140
Benzo(g,h,i)perylene		410	ug/Kgdrywt	12	20	280	28.	140
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-4RA
Client ID: TF2-001-SS1008-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1244.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135482

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 88.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene	J	9.9	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene	J	18.	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene	J	15.	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene	J	8.8	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene	J	7.9	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene	J	16.	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene	J	5.2	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	JL	8.4	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene	J	7.9	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	U	1.9	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	ULL	11.	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		61.6	%					
Fluorene-D10		51.0	%					
Pyrene-D10		65.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-1RA
Client ID: TF2-001-SS1009-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1242.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135482

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	J	2.6	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene		33.	ug/Kgdrywt	1	20	22.	1.9	11.
Anthracene	J	4.2	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene		55.	ug/Kgdrywt	1	20	22.	1.9	11.
Pyrene		62.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene		24.	ug/Kgdrywt	1	20	22.	2.0	11.
Chrysene		28.	ug/Kgdrywt	1	20	22.	1.8	11.
Benzo(b)Fluoranthene		37.	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	J	17.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	L	23.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	J	21.	ug/Kgdrywt	1	20	22.	2.0	11.
Dibenzo(a,h)anthracene	J	4.8	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(g,h,i)perylene	JLL	9.0	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		72.0	%					
Fluorene-D10		59.4	%					
Pyrene-D10		79.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-19
Client ID: TF2-001-SS1010-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1248.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 88.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.7	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Phenanthrene	J	21.	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	J	2.7	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene		40.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene		44.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	J	19.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	19.	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene		32.	ug/Kgdrywt	1	20	22.	2.7	11.
Benzo(k)fluoranthene	J	11.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	J	16.	ug/Kgdrywt	1	20	22.	3.7	11.
Indeno(1,2,3-cd)pyrene	JL	17.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	4.6	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	J	8.9	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		63.5	%					
Fluorene-D10		56.1	%					
Pyrene-D10		78.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-10
Client ID: TF2-SB-DUP10-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1239.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 88.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.5	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.4	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.7	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Phenanthrene	J	13.	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	J	2.0	ug/Kgdrywt	1	20	22.	1.4	11.
Fluoranthene		32.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene		24.	ug/Kgdrywt	1	20	22.	2.4	11.
Benzo(a)anthracene	J	17.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	18.	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene		26.	ug/Kgdrywt	1	20	22.	2.7	11.
Benzo(k)fluoranthene	J	8.6	ug/Kgdrywt	1	20	22.	3.5	11.
Benzo(a)pyrene	J	14.	ug/Kgdrywt	1	20	22.	3.7	11.
Indeno(1,2,3-cd)pyrene	JL	13.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	4.2	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	J	5.2	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		68.9	%					
Fluorene-D10		59.1	%					
Pyrene-D10		65.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-21
Client ID: TF2-SB-DUP11-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1254.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 86.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	E	980	ug/Kgdrywt	1	20	23.	3.0	12.
2-Methylnaphthalene	E	630	ug/Kgdrywt	1	20	23.	2.6	12.
Acenaphthylene		88.	ug/Kgdrywt	1	20	23.	1.4	12.
Acenaphthene	E	750	ug/Kgdrywt	1	20	23.	1.7	12.
Fluorene	E	1400	ug/Kgdrywt	1	20	23.	3.7	12.
Phenanthrene	E	5400	ug/Kgdrywt	1	20	23.	2.1	12.
Anthracene	E	1400	ug/Kgdrywt	1	20	23.	1.4	12.
Fluoranthene	E	5200	ug/Kgdrywt	1	20	23.	2.1	12.
Pyrene	E	6900	ug/Kgdrywt	1	20	23.	2.4	12.
Benzo(a)anthracene	E	3600	ug/Kgdrywt	1	20	23.	2.2	12.
Chrysene	E	3200	ug/Kgdrywt	1	20	23.	2.0	12.
Benzo(b)Fluoranthene	E	3800	ug/Kgdrywt	1	20	23.	2.8	12.
Benzo(k)fluoranthene	E	1200	ug/Kgdrywt	1	20	23.	3.6	12.
Benzo(a)pyrene	E	2500	ug/Kgdrywt	1	20	23.	3.8	12.
Indeno(1,2,3-cd)pyrene	EL	3800	ug/Kgdrywt	1	20	23.	2.2	12.
Dibenzo(a,h)anthracene	E	450	ug/Kgdrywt	1	20	23.	2.1	12.
Benzo(g,h,i)perylene	E	1400	ug/Kgdrywt	1	20	23.	2.3	12.
2-Methylnaphthalene-D10		72.7	%					
Fluorene-D10		63.7	%					
Pyrene-D10		81.5	%					

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Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-21DL
Client ID: TF2-SB-DUP11-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: N1263.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 18-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 86.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		1200	ug/Kgdrywt	30	20	700	90.	350
2-Methylnaphthalene	J	280	ug/Kgdrywt	30	20	700	77.	350
Acenaphthylene	J	72.	ug/Kgdrywt	30	20	700	42.	350
Acenaphthene		890	ug/Kgdrywt	30	20	700	52.	350
Fluorene		1700	ug/Kgdrywt	30	20	700	110	350
Phenanthrene		11000	ug/Kgdrywt	30	20	700	63.	350
Anthracene		1800	ug/Kgdrywt	30	20	700	42.	350
Fluoranthene		10000	ug/Kgdrywt	30	20	700	63.	350
Pyrene		10000	ug/Kgdrywt	30	20	700	73.	350
Benzo(a)anthracene		4100	ug/Kgdrywt	30	20	700	66.	350
Chrysene		3800	ug/Kgdrywt	30	20	700	59.	350
Benzo(b)Fluoranthene		4800	ug/Kgdrywt	30	20	700	84.	350
Benzo(k)fluoranthene		1500	ug/Kgdrywt	30	20	700	110	350
Benzo(a)pyrene		3100	ug/Kgdrywt	30	20	700	110	350
Indeno(1,2,3-cd)pyrene	L	2400	ug/Kgdrywt	30	20	700	66.	350
Dibenzo(a,h)anthracene	J	490	ug/Kgdrywt	30	20	700	63.	350
Benzo(g,h,i)perylene		1500	ug/Kgdrywt	30	20	700	70.	350
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-14
Client ID: TF2-001-SB1000-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: 9GL2086.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135529

Analysis Date: 06-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 87.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.4	mg/Kgdrywt	1	2.5	3.0	2.2	2.4
p-Bromofluorobenzene		96.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-16
Client ID: TF2-001-SB1006-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: 9GL2087.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135529

Analysis Date: 06-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 87.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.3	mg/Kgdryw	1	2.5	2.8	2.1	2.3
p-Bromofluorobenzene		98.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-2
Client ID: TF2-001-SB1009-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: 9GL2075.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135529

Analysis Date: 06-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 90.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.4	mg/Kgdrywt	1	2.5	3.0	2.2	2.4
p-Bromofluorobenzene		96.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-11
Client ID: TF2-W-TB06-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: 9GL2085.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135529

Analysis Date: 06-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 100
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		92.6	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-16
Client ID: TF2-001-SB1006-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: AGL10098.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135483

Analysis Date: 06-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 87.
Report Date: 14-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		29.	mg/Kgdrywt	1	20	22.	6.2	11.
o-Terphenyl		85.9	%					
n-Triacontane-D62		73.0	%					

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-14
Client ID: TF2-001-SB1000-0810
Project: NAVSTA Newport CTO WE.
SDG: SG9363
Lab File ID: AGL10097.D

Sample Date: 27-NOV-13
Received Date: 27-NOV-13
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135483

Analysis Date: 06-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 87.
Report Date: 14-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	J	13.	mg/Kgdrywt	1	20	22.	6.3	11.
o-Terphenyl		90.6	%					
n-Triacontane-D62		104.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-2
Client ID: TF2-001-SB1009-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: AGL10096.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135483

Analysis Date: 06-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 90.
Report Date: 14-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	11.	mg/Kgdrywt	1	20	22.	6.3	11.
o-Terphenyl		80.1	%					
n-Triacontane-D62		90.9	%					

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APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: _____ See DV Report

Missing Information	Date Lab Contacted	Date Received

Validator: J. Kalinyak Date: 1/13/14

EPA-NE - Data Validation
VOA/SV/Pest/PCB-1

Case: _____ SDG: _____ See DV Report

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: _____ Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator:_____ Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator:_____

Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator:_____

Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: NK

Date: 1/13/14

EPA NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator:_____

Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator:_____

Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator:_____

Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)

Comments:

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: JK

Date: 1/13/14

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator:_____

Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator:_____

Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See IV Report

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. Y N

Validator:_____

Date: 11/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator:_____ Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: _____

Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methyhlphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: _____

Date: 1/13/14

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4.6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____

Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery			% Recovery		
			Fluoranthene			Naphthalene	
			Pyrene			2-Methylnaphthalene	
			Benzo(a)anthracene			Acenaphthylene	
			Chrysene			Acenaphthene	
			Benzo(b)fluoranthene			Fluorene	
			Benzo(k)fluoranthene			Pentachlorophenol	
			Benzo(a)pyrene			Phenanthrene	
			Indeno(1,2,3-cd)pyrene			Anthracene	
			Dibenzo(a,h)anthracene				
			Benzo(g,h,i)perylene				

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____ Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1.2-Dichloroethane-d_4

Validator: _____ Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____ Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator:_____

Date: 1/13/14

Case:_____ SDG:_____

See DV Report

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. Y N

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? Y N

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

_____

_____

_____

Validator:_____ Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: _____ Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator:_____ Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: JK Date: 1/13/12

See DV Report

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: _____ Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

See DV Report

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: _____ Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: _____ Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: _____

Date: 1/13/14

Case:_____ SDG:_____ See DV Report

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: _____ Date: 1/13/14

EPA NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator:_____ Date: 1/13/14

Case:_____ SDG:_____ See DV Report

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator:_____ Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: JK

Date: 1/13/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: JC

Date: 1/13/14

Case:_____ SDG:_____

See DV Report

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator:_____

Date: 4/13/14

APPENDIX D

SUPPORT DOCUMENTATION

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-001-SS1008-0001	SG9363-4	NM	11/25/2013	12/09/2013	12/10/2013	14	1	15
	%	TF2-001-SS1009-0001	SG9363-1	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SS1010-0001	SG9363-19	NM	11/27/2013	12/09/2013	12/10/2013	12	1	13
	%	TF2-SB-DUP10-1113	SG9363-10	NM	11/25/2013	12/09/2013	12/10/2013	14	1	15
	%	TF2-SB-DUP11-1113	SG9363-21	NM	11/27/2013	12/09/2013	12/10/2013	12	1	13
	%	TF2-W-TB06-1113	SG9363-11	NM	11/25/2013	12/09/2013	12/10/2013	14	1	15
	%	TF2-001-SS1000-0001	SG9363-12	NM	11/27/2013	12/09/2013	12/10/2013	12	1	13
OV	%	TF2-W-TB06-1113	SG9363-11RA	NM	11/25/2013	12/09/2013	12/09/2013	14	0	14
OV	UG/KG DRY	TF2-W-TB06-1113	SG9363-11RA	NM	11/25/2013	12/09/2013	12/09/2013	14	0	14
SIM	%	TF2-001-SS1009-0001	SG9363-1RA	NM	11/25/2013	12/03/2013	12/17/2013	8	14	22
SIM	%	TF2-SB-DUP11-1113	SG9363-21	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-SB-DUP11-1113	SG9363-21DL	NM	11/27/2013	12/04/2013	12/18/2013	7	14	21
SIM	%	TF2-001-SB1010-0204	SG9363-20	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-001-SB1000-0204	SG9363-13	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-001-SB1000-0810	SG9363-14	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-001-SB1004-0204	SG9363-7	NM	11/25/2013	12/03/2013	12/16/2013	8	13	21
SIM	%	TF2-001-SB1005-0204	SG9363-18	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-001-SB1005-0204	SG9363-18DL	NM	11/27/2013	12/04/2013	12/18/2013	7	14	21

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	%	TF2-001-SB1006-0204	SG9363-16	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-001-SB1007-0204	SG9363-9	NM	11/25/2013	12/04/2013	12/18/2013	9	14	23
SIM	%	TF2-001-SB1007-0204	SG9363-9DL	NM	11/25/2013	12/04/2013	12/18/2013	9	14	23
SIM	%	TF2-001-SB1008-0204	SG9363-5	NM	11/25/2013	12/03/2013	12/16/2013	8	13	21
SIM	%	TF2-SB-DUP10-1113	SG9363-10	NM	11/25/2013	12/04/2013	12/17/2013	9	13	22
SIM	%	TF2-001-SB1009-0810	SG9363-3	NM	11/25/2013	12/03/2013	12/16/2013	8	13	21
SIM	%	TF2-001-SS1000-0001	SG9363-12	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-001-SS1004-0001	SG9363-6	NM	11/25/2013	12/03/2013	12/16/2013	8	13	21
SIM	%	TF2-001-SS1005-0001	SG9363-17	NM	11/27/2013	12/04/2013	12/19/2013	7	15	22
SIM	%	TF2-001-SS1005-0001	SG9363-17DL	NM	11/27/2013	12/04/2013	12/18/2013	7	14	21
SIM	%	TF2-001-SS1006-0001	SG9363-15	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-001-SS1007-0001	SG9363-8	NM	11/25/2013	12/04/2013	12/17/2013	9	13	22
SIM	%	TF2-001-SS1007-0001	SG9363-8DL	NM	11/25/2013	12/04/2013	12/18/2013	9	14	23
SIM	%	TF2-001-SS1008-0001	SG9363-4RA	NM	11/25/2013	12/03/2013	12/17/2013	8	14	22
SIM	%	TF2-001-SS1010-0001	SG9363-19	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-001-SB1009-0204	SG9363-2RA	NM	11/25/2013	12/03/2013	12/17/2013	8	14	22
SIM	UG/KG DRY	TF2-SB-DUP11-1113	SG9363-21	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	UG/KG DRY	TF2-001-SS1004-0001	SG9363-6	NM	11/25/2013	12/03/2013	12/16/2013	8	13	21

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/KG DRY	TF2-001-SB1010-0204	SG9363-20	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	UG/KG DRY	TF2-SB-DUP11-1113	SG9363-21DL	NM	11/27/2013	12/04/2013	12/18/2013	7	14	21
SIM	UG/KG DRY	TF2-001-SB1000-0204	SG9363-13	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	UG/KG DRY	TF2-001-SB1000-0810	SG9363-14	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	UG/KG DRY	TF2-001-SB1004-0204	SG9363-7	NM	11/25/2013	12/03/2013	12/16/2013	8	13	21
SIM	UG/KG DRY	TF2-001-SB1005-0204	SG9363-18	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	UG/KG DRY	TF2-001-SB1005-0204	SG9363-18DL	NM	11/27/2013	12/04/2013	12/18/2013	7	14	21
SIM	UG/KG DRY	TF2-001-SB1006-0204	SG9363-16	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	UG/KG DRY	TF2-001-SB1007-0204	SG9363-9	NM	11/25/2013	12/04/2013	12/18/2013	9	14	23
SIM	UG/KG DRY	TF2-001-SB1007-0204	SG9363-9DL	NM	11/25/2013	12/04/2013	12/18/2013	9	14	23
SIM	UG/KG DRY	TF2-001-SB1008-0204	SG9363-5	NM	11/25/2013	12/03/2013	12/16/2013	8	13	21
SIM	UG/KG DRY	TF2-001-SS1005-0001	SG9363-17DL	NM	11/27/2013	12/04/2013	12/18/2013	7	14	21
SIM	UG/KG DRY	TF2-001-SB1009-0810	SG9363-3	NM	11/25/2013	12/03/2013	12/16/2013	8	13	21
SIM	UG/KG DRY	TF2-SB-DUP10-1113	SG9363-10	NM	11/25/2013	12/04/2013	12/17/2013	9	13	22
SIM	UG/KG DRY	TF2-001-SS1000-0001	SG9363-12	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	UG/KG DRY	TF2-001-SS1010-0001	SG9363-19	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	UG/KG DRY	TF2-001-SS1006-0001	SG9363-15	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	UG/KG DRY	TF2-001-SS1007-0001	SG9363-8	NM	11/25/2013	12/04/2013	12/17/2013	9	13	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/KG DRY	TF2-001-SS1007-0001	SG9363-8DL	NM	11/25/2013	12/04/2013	12/18/2013	9	14	23
SIM	UG/KG DRY	TF2-001-SS1008-0001	SG9363-4RA	NM	11/25/2013	12/03/2013	12/17/2013	8	14	22
SIM	UG/KG DRY	TF2-001-SS1009-0001	SG9363-1RA	NM	11/25/2013	12/03/2013	12/17/2013	8	14	22
SIM	UG/KG DRY	TF2-001-SB1009-0204	SG9363-2RA	NM	11/25/2013	12/03/2013	12/17/2013	8	14	22
SIM	UG/KG DRY	TF2-001-SS1005-0001	SG9363-17	NM	11/27/2013	12/04/2013	12/19/2013	7	15	22
	%	TF2-001-SB1000-0810	SG9363-14	NM	11/27/2013	12/04/2013	12/06/2013	7	2	9
	%	TF2-001-SB1006-0204	SG9363-16	NM	11/27/2013	12/03/2013	12/06/2013	6	3	9
	%	TF2-001-SB1006-0204	SG9363-16	NM	11/27/2013	12/04/2013	12/06/2013	7	2	9
	%	TF2-001-SB1000-0810	SG9363-14	NM	11/27/2013	12/03/2013	12/06/2013	6	3	9
	%	TF2-001-SB1009-0204	SG9363-2	NM	11/25/2013	12/04/2013	12/06/2013	9	2	11
	%	TF2-W-TB06-1113	SG9363-11	NM	11/25/2013	12/04/2013	12/06/2013	9	2	11
	%	TF2-001-SB1009-0204	SG9363-2	NM	11/25/2013	12/03/2013	12/06/2013	8	3	11
	MG/KG DRY	TF2-W-TB06-1113	SG9363-11	NM	11/25/2013	12/04/2013	12/06/2013	9	2	11
	MG/KG DRY	TF2-001-SB1000-0810	SG9363-14	NM	11/27/2013	12/04/2013	12/06/2013	7	2	9
	MG/KG DRY	TF2-001-SB1009-0204	SG9363-2	NM	11/25/2013	12/04/2013	12/06/2013	9	2	11
	MG/KG DRY	TF2-001-SB1009-0204	SG9363-2	NM	11/25/2013	12/03/2013	12/06/2013	8	3	11
	MG/KG DRY	TF2-001-SB1006-0204	SG9363-16	NM	11/27/2013	12/03/2013	12/06/2013	6	3	9
	MG/KG DRY	TF2-001-SB1000-0810	SG9363-14	NM	11/27/2013	12/03/2013	12/06/2013	6	3	9

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	MG/KG DRY	TF2-001-SB1006-0204	SG9363-16	NM	11/27/2013	12/04/2013	12/06/2013	7	2	9

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1919 | PAGE 1 OF 2

PROJECT NO: 112G03019 CTO #30	FACILITY: Carlmington MA	PROJECT MANAGER D. Seiken	PHONE NUMBER 978 474 8445
SAMPLERS (SIGNATURE) KJalkut		FIELD OPERATIONS LEADER K. Jalkut	PHONE NUMBER 781 801 0457
		CARRIER/WAYBILL NUMBER Courier plus in RI - hand delivery	

LABORATORY NAME AND CONTACT: Katahdin Analytical Service - JJ Obrin
ADDRESS: 600 Technology Way
CITY, STATE: Scarborough ME

STANDARD TAT [X]
RUSH TAT [ ] 24 hr. [ ] 48 hr. [ ] 72 hr. [ ] 7 day [ ] 14 day

SG9383

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	G	G	G	G	G	G	G	G	COMMENTS
									PRESERVATIVE USED	≤6°C	10 ml MeOH ≤6°C	≤6°C	NaHSO4 ≤6°C	5 ml MeOH ≤6°C				
									TYPE OF ANALYSIS	Part, metals, total solids 4oz	40 ml GRO	EXTPH 4oz	VOC (low) 40 ml	VOC (med) 4oz	40 ml	40 ml		
11/25	1200	TF2-001-SS1009-0001	1009	0	1	SO	G	1		1	—	—						
11/25	1205	TF2-001-SB1009-0204	1009	2	4	SO	G	4		1	1	1						
11/25	1230	TF2-001-SB1009-0810	1009	8	10	SO	G	1		1	—	—						
11/25	1240	TF2-001-SS1008-0001	1008	0	1	SO	G	1		1	—	—						
11/25	1245	TF2-001-SB1008-0204	1008	2	4	SO	G	2		2	—	—						Lab QC
11/25	1300	TF2-001-SS1004-0001	1004	0	1	SO	G	1		1	—	—						
11/25	1310	TF2-001-SB1004-0204	1004	2	4	SO	G	1		1	—	—						
11/25	1330	TF2-001-SS1007-0001	1007	0	1	SO	G	1		1	—	—						
11/25	1340	TF2-001-SB1007-0204	1007	2	4	SO	G	1		1	—	—						
11/25	0000	TF2-SB-DUP10-1113	—	—	—	SO	G	1		1	—	—						
11/25	1000	~~TF3~~ TF2-W-TB06-1113	—	—	—	QC	G	5		—	2	—	3	2	1			
* 11/25	1515	TF3-001-SB105-0204	105	2	4	SO	G	5		—	2	—	2	1				Recollected
* 11/25	1520	TF3-001-SB104-0204	104	2	4	SO	G	5		—	2	—	2	1				Recollected

KJalkut 11/27/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY KJalkut	11/27/13	1225	1. RECEIVED BY	11/27/13	1225
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

SG9354

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1920 | PAGE 1 OF 2

PROJECT NO: 112G03019 CTO 30	FACILITY: Wilmington, MA	PROJECT MANAGER: D. Seiken	PHONE NUMBER: 978 474 8945
SAMPLERS (SIGNATURE): K Jalkut		FIELD OPERATIONS LEADER: K. Jalkut	PHONE NUMBER: 781 801 0457
		CARRIER/WAYBILL NUMBER: Courier pkup RI - hand delivery	
LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J. Olmn		ADDRESS: 600 Technology Way	
		CITY, STATE: Scarborough, ME	

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE / YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: GRO	40ml	EXTPH	40ml	Pcb, metals, total solids	40z	COMMENTS
		SG 9363							G	10ml MeOH ≤6°C	G		G		G		
										≤6°C							
										≤6°C					40z		
2013																	
*11/25	1140	TF2-001-SS1003-0001	1003	0	1	SO	G	6			4	1	1				Rest of Lab QC vol.
11/27	0800	TF2-001-SS1000-0001	1000	0	1	SO	G	1			—	—	1				
11/27	0805	TF2-001-SB1000-0204	1000	2	4	SO	G	1			—	—	1				
11/27	0820	TF2-001-SB1000-0810	1000	8	10	SO	G	4			2	1	1				
11/27	0900	TF2-001-SS1006-0001	1006	0	1	SO	G	1			—	—	1				
11/27	0905	TF2-001-SB1006-0204	1006	2	4	SO	G	4			2	1	1				
11/27	0915	TF2-001-SS1005-0001	1005	0	1	SO	G	1			—	—	1				
11/27	0920	TF2-001-SB1005-0204	1005	2	4	SO	G	1			—	—	1				
11/27	0940	TF2-001-SS1010-0001	1010	0	1	SO	G	1			—	—	1				
11/27	0945	TF2-001-SB1010-0204	1010	2	4	SO	G	2			—	—	2				Lab QC
11/27	0000	TF2-SB-DUP 11-1113	—	—	—	SO	G	1			—	—	1				

K Jalkut 11/27/13

K Jalkut 11/22/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: K Jalkut	11/27/13	1225	1. RECEIVED BY		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME
COMMENTS					

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

000001

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client:	TETRA TECH NUS	KAS PM:	JD	Sampled By:	Client
Project:	NS NEWPORT - TASK FORCE 2	KIMS Entry By:	✓	Delivered By:	KAS
KAS Work Order#:	SG 9363	KIMS Review By:	✓	Received By:	✓
SDG #:		Cooler: 1 of 1		Date/Time Rec.:	11/27/13 1515

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?		✓			
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.2
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:				✓	
Aqueous: No bubble larger than a pea?					
Soil/Sediment:					
Received in airtight container?	✓				
Received in methanol?	✓				
Methanol covering soil?	✓				
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

0000009

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT CTO WE30 & WE59
SG9363

Sample Receipt

The following sample was received on November 27, 2013 and was logged in under Katahdin Analytical Services work order number SG9363 for a hardcopy due date of December 16, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG9363-1	TF2-001-SS1009-0001
SG9363-2	TF2-001-SB1009-0204
SG9363-3	TF2-001-SB1009-0810
SG9363-4	TF2-001-SS1008-0001
SG9363-5	TF2-001-SB1008-0204
SG9363-6	TF2-001-SS1004-0001
SG9363-7	TF2-001-SB1004-0204
SG9363-8	TF2-001-SS1007-0001
SG9363-9	TF2-001-SB1007-0204
SG9363-10	TF2-SB-DUP10-1113
SG9363-11	TF2-W-TB06-1113
SG9363-12	TF2-001-SS1000-0001
SG9363-13	TF2-001-SB1000-0204
SG9363-14	TF2-001-SB1000-0810
SG9363-15	TF2-001-SS1006-0001
SG9363-16	TF2-001-SB1006-0204
SG9363-17	TF2-001-SS1005-0001
SG9363-18	TF2-001-SB1005-0204
SG9363-19	TF2-001-SS1010-0001
SG9363-20	TF2-001-SB1010-0204
SG9363-21	TF2-SB-DUP11-1113

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG9363 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8260B Analysis

The method blank WG135833-2 had a high recovery for the surrogate toluene-d8 that was outside of the DoD QSM acceptance limits. Since a high recovery would indicate a high bias and no target analytes were detected above the MDL, no further action was taken.

The calibration verification standard (file C4708) had high responses for the target analytes o-xylene, styrene, bromoform, p-isopropyltoluene, and methylcyclohexane that resulted in %D's that exceeded the DoD QSM acceptance limits of 20%.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are based on DoD QSM acceptance limits for the full list of spiked compounds and laboratory established acceptance limits for all other analytes. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

FL-PRO Analysis

Sample SG9363-16 was manually integrated for the petroleum range organics and n-triacontane-d62. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

8015 GRO Analysis

There were no protocol deviations or observations noted by the organics laboratory staff for this analysis.

8270D SIM Analysis

The target analytes fluoranthene and benzo(a)anthracene were detected below ½ the reporting limit in the method blank WG135482-1. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since the method blank was acceptable, no further action was taken.

Samples SG9363-1, 2, 4, 5, 6, 7, 8, 8DL, 9, 9DL, 10, 12, 14, 15, 16, 17, 17DL, 18, 19, 20, 21, 21DL were manually integrated for the benzo(k)fluoranthene, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, acenaphthylene and/or dibenzo(a,h)anthracene. The specific reasons for the manual

integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The independent check standard (file N1208), associated with the initial calibration analyzed on the N instrument on 12/14/13, had low concentrations for the target analytes indeno(1,2,3-cd)pyrene and 2-methylnaphthalene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The calibration verification standard (file N1224) had a high response for the target analyte 2-methylnaphthalene. The CV (file N1258) had high responses for the target analytes fluoranthene, pyrene and indeno(1,2,3-cd)pyrene. The CV (file N1279) had a high response for the target analytes indeno(1,2,3-cd)pyrene and a low response for benzo(b)fluoranthene. These responses resulted in %D's that exceeded the DoD QSM acceptance limits of 20%.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are based on laboratory established acceptance limits. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable

The LCSD WG135482-3 had low recoveries for two spiked analytes that were outside of the laboratory established acceptance limits. The DoD QSM number of allowable exceedances for 17 analytes is one. Since the LCS was acceptable, after factoring in the allowable number of exceedances, no further action was taken.

The MS WG135525-4 had five spiked target analytes with recoveries that were non-calculable and reported as 0% recovery due to the concentration in the native sample being higher than in the MS and MSD. This is likely due to a non-homogeneous sample.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG9363 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SG9363- (1-10, 12-18, 21) were digested for ICP-MS analysis on 12/11/13 (QC Batch GL11IMS1) in accordance with USEPA Method 3010A. Katahdin Sample SG9363-5 was digested in duplicate and with a matrix spike aliquot.

Solid-matrix Katahdin Sample Number SG9363-20 was digested for ICP-MS analysis on 12/11/13 (QC Batch GL11IMS2) in accordance with USEPA Method 3010A. Katahdin Sample

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

VOLATILES DATA

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : CB717.D
Instrument ID : GCMS-C

SDG : SG9363
Date Analyzed : 06-DEC-13
Time Analyzed : 08:42
Heated Purge : Yes

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	22.4		
75	30.0 - 60.0% of mass 95	48.4		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.2		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	67.3		
175	5.0 - 9.0% of mass 174	5.7	8.47	1
176	95.0 - 101.0% of mass 174	65.7	97.69	1
177	5.0 - 9.0% of mass 176	5.1	7.77	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG135686-6	C4686.D	12/06/13	09:27
Initial Calibration	WG135686-5	C4687.D	12/06/13	10:02
Initial Calibration	WG135686-4	C4688.D	12/06/13	10:37
Initial Calibration	WG135686-3	C4689.D	12/06/13	11:12
Initial Calibration	WG135686-2	C4690.D	12/06/13	11:48
Initial Calibration	WG135686-1	C4691.D	12/06/13	12:23
Independent Source	WG135686-7	C4692.D	12/06/13	13:15

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG9363
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GCMS-C
Lab File IDs : C4691.D C4690.D C4689.D **Column ID:**
C4688.D C4687.D C4686.D **Calibration Date(s):** 06-DEC-13 09:27
06-DEC-13 12:23

	Level 1 5.0000	Level 2 10.0000	Level 3 20.0000	Level 4 50.0000	Level 5 100.0000	Level 6 200.0000	Crv New	b	m1	m2	%RSD	Max %RSD	
Bromomethane	0.45587	0.45866	0.45095	0.42771	0.44135	0.41948	AVG		0.44234		3.59091	15.00000	O
Carbon Disulfide	1.99705	1.99355	1.96544	1.87905	1.84807	1.70785	AVG		1.89850		5.88892	15.00000	O
Acetone	0.17749	0.16297	0.15811	0.16649	0.15977	0.18769	AVG		0.16875		6.84637	15.00000	O
Methyl tert-butyl ether	1.59796	1.65116	1.67350	1.66871	1.65438	1.51156	AVG		1.62621		3.83058	15.00000	O
2-Butanone	0.26763	0.28821	0.29539	0.31288	0.29964	0.31995	AVG		0.29728		6.25284	15.00000	O
Benzene	1.39821	1.37962	1.40830	1.34999	1.28177	1.21702	AVG		1.33915		5.61153	15.00000	O
Cyclohexane	0.88483	0.95783	1.02222	0.95259	0.96705	0.87972	AVG		0.94404		5.71384	15.00000	O
Toluene	0.81344	0.82922	0.84089	0.79902	0.77668	0.76164	AVG		0.80348		3.79549	15.00000	O
4-methyl-2-pentanone	0.38152	0.39986	0.39748	0.39848	0.34868	0.33050	AVG		0.37609		7.87260	15.00000	O
1,2-Dibromoethane	0.28898	0.30138	0.31776	0.31352	0.30693	0.33717	AVG		0.31096		5.24638	15.00000	O
2-Hexanone	0.25384	0.29355	0.29575	0.30051	0.26665	0.25177	AVG		0.27701		8.00427	15.00000	O
Ethylbenzene	0.43165	0.45391	0.47829	0.45811	0.44614	0.43488	AVG		0.45050		3.79287	15.00000	O
Xylenes (total)	+++++	+++++	+++++	+++++	+++++	+++++	AVG		0.000e+00		0.000e+(	15.00000	M (
m+p-Xylenes	0.54804	0.58931	0.57945	0.57275	0.55661	0.51550	AVG		0.56028		4.74526	15.00000	O
o-Xylene	0.49627	0.54356	0.58713	0.58484	0.57325	0.55604	AVG		0.55685		6.12479	15.00000	O
Styrene	0.85522	0.93591	0.95554	0.97899	0.94402	0.87724	AVG		0.92449		5.18243	15.00000	O
Bromoform	0.18569	0.20109	0.21293	0.22642	0.23018	0.24595	AVG		0.21704		9.99038	15.00000	O
Isopropylbenzene	2.59682	2.80619	3.01512	2.91192	2.70027	2.52977	AVG		2.76002		6.74916	15.00000	O
N-Propylbenzene	3.72599	3.99163	3.96021	3.81338	3.40627	3.00608	AVG		3.65059		10.39081	15.00000	O
1,3,5-Trimethylbenzene	2.35484	2.54730	2.55511	2.55414	2.33284	2.16506	AVG		2.41821		6.64914	15.00000	O
tert-Butylbenzene	2.21702	2.40786	2.52594	2.52992	2.39152	2.29316	AVG		2.39423		5.20233	15.00000	O
1,2,4-Trimethylbenzene	2.29873	2.48968	2.55210	2.55283	2.33907	2.15314	AVG		2.39759		6.71003	15.00000	O
P-Isopropyltoluene	2.27052	2.51145	2.66445	2.62943	2.40268	2.24444	AVG		2.45383		7.25763	15.00000	O
N-Butylbenzene	2.65164	2.86800	2.98778	2.86789	2.56783	2.28864	AVG		2.70530		9.46879	15.00000	O
sec-Butylbenzene	3.07651	3.32767	3.43745	3.33768	3.01701	2.72897	AVG		3.15421		8.38392	15.00000	O
Naphthalene	1.74304	1.91872	2.02686	2.10475	1.92107	1.86410	AVG		1.92975		6.53104	15.00000	O
Methyl Acetate	0.38077	0.38440	0.39347	0.41413	0.41240	0.45106	AVG		0.40604		6.41999	15.00000	O
Methylcyclohexane	0.79594	0.89312	0.95222	0.90713	0.93141	0.87415	AVG		0.89233		6.12875	15.00000	O
Dibromofluoromethane	0.48631	0.53122	0.51927	0.51629	0.51946	0.49995	AVG		0.51209		3.15042	15.00000	
1,2-Dichloroethane-D4	0.61443	0.60635	0.61540	0.58232	0.59915	0.58844	AVG		0.60102		2.26526	15.00000	
Toluene-D8	0.99001	1.03611	1.04229	1.00848	0.98948	0.92082	AVG		0.99787		4.39513	15.00000	
P-Bromofluorobenzene	0.46505	0.47470	0.47732	0.47482	0.48054	0.46833	AVG		0.47346		1.21474	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : CB718.D
Instrument ID : GCMS-C

SDG : SG9363
Date Analyzed : 09-DEC-13
Time Analyzed : 08:54
Heated Purge : Yes

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	17.9		
75	30.0 - 60.0% of mass 95	47.1		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.9		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	62.8		
175	5.0 - 9.0% of mass 174	4.4	6.96	1
176	95.0 - 101.0% of mass 174	62.2	99.04	1
177	5.0 - 9.0% of mass 176	4.7	7.54	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG135833-4	C4708.D	12/09/13	10:23
Laboratory Control S	WG135833-1	C4709.D	12/09/13	11:10
Method Blank Sample	WG135833-2	C4712.D	12/09/13	13:17
TF2-W-TB06-1113	SG9363-11RA	C4714.D	12/09/13	15:04

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG9363
Lab ID : WG135833-4 **Analytical Date:** 12/09/13 10:23
Lab File ID : C4708.D **Instrument ID:** GCMS-C
Initial Calibration Date(s): 12/06/13 09:27 12/06/13 12:23 **Column ID:**

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
4 Bromomethane	0.44234	0.48842	0.48842	0.010	10.41734	20.00000	Averaged	
10 Carbon Disulfide	1.89850	2.12161	2.12161	0.010	11.75192	20.00000	Averaged	
15 Acetone	0.16875	0.16643	0.16643	0.010	-1.38008	20.00000	Averaged	
19 Methyl tert-butyl ether	1.62621	1.88559	1.88559	0.010	15.94991	20.00000	Averaged	
40 2-Butanone	0.29728	0.30241	0.30241	0.010	1.72290	20.00000	Averaged	
41 Benzene	1.33915	1.55469	1.55469	0.010	16.09492	20.00000	Averaged	
43 Cyclohexane	0.94404	1.09644	1.09644	0.010	16.14413	20.00000	Averaged	
57 Toluene	0.80348	0.90659	0.90659	0.010	12.83291	20.00000	Averaged	
58 4-methyl-2-pentanone	0.37609	0.40434	0.40434	0.010	7.51189	20.00000	Averaged	
64 1,2-Dibromoethane	0.31096	0.35775	0.35775	0.010	15.04833	20.00000	Averaged	
65 2-Hexanone	0.27701	0.29863	0.29863	0.010	7.80316	20.00000	Averaged	
68 Ethylbenzene	0.45050	0.52908	0.52908	0.010	17.44360	20.00000	Averaged	
70 Xylenes (total)	++++	0.67235	0.67235	0.010	++++ AVG 20%	20.00000	Averaged	*
71 m+p-Xylenes	0.56028	0.67229	0.67229	0.010	19.99230	20.00000	Averaged	
72 o-Xylene	0.55685	0.67247	0.67247	0.010	20.76265	20.00000	Averaged	*
73 Styrene	0.92449	1.12481	1.12481	0.010	21.66838	20.00000	Averaged	*
74 Bromoform	0.21704	0.26390	0.26390	0.100	21.58630	20.00000	Averaged	*
75 Isopropylbenzene	2.76002	3.32225	3.32225	0.010	20.37078	20.00000	Averaged	*
80 N-Propylbenzene	3.65059	4.22141	4.22141	0.010	15.63620	20.00000	Averaged	
82 1,3,5-Trimethylbenzene	2.41821	2.85189	2.85189	0.010	17.93385	20.00000	Averaged	
86 tert-Butylbenzene	2.39423	2.88004	2.88004	0.010	20.29059	20.00000	Averaged	*
88 1,2,4-Trimethylbenzene	2.39759	2.84633	2.84633	0.010	18.71620	20.00000	Averaged	
89 P-Isopropyltoluene	2.45383	3.00514	3.00514	0.010	22.46747	20.00000	Averaged	*
93 N-Butylbenzene	2.70530	3.17839	3.17839	0.010	17.48756	20.00000	Averaged	
94 sec-Butylbenzene	3.15421	3.75875	3.75875	0.010	19.16612	20.00000	Averaged	
101 Naphthalene	1.92975	2.26457	2.26457	0.010	17.35014	20.00000	Averaged	
103 Methyl Acetate	0.40604	0.45674	0.45674	0.010	12.48599	20.00000	Averaged	
104 Methylcyclohexane	0.89233	1.07604	1.07604	0.010	20.58805	20.00000	Averaged	*
37 Dibromofluoromethane	0.51209	0.55731	0.55731	0.010	8.83123	20.00000	Averaged	
45 1,2-Dichloroethane-D4	0.60102	0.64569	0.64569	0.010	7.43290	20.00000	Averaged	
55 Toluene-D8	0.99787	1.11720	1.11720	0.010	11.95921	20.00000	Averaged	
76 P-Bromofluorobenzene	0.47346	0.52360	0.52360	0.010	10.58971	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab ID : WG135833-4
Lab File ID : C4708.D
Initial Calibration Date(s): 12/06/13 09:27 12/06/13 12:23

SDG: SG9363
Analytical Date: 12/09/13 10:23
Instrument ID: GCMS-C
Column ID:

*** = Compound out of QC criteria**

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http://katahdinlab.com
sales@katahdinlab.com

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : C4712.D
Instrument ID : GCMS-C
Heated Purge : Yes

SDG : SG9363
Lab Sample ID : WG135833-2
Date Analyzed : 09-DEC-13
Time Analyzed : 13:17

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135833-1	C4709.D	12/09/13	11:10
TF2-W-TB06-1113	SG9363-11RA	C4714.D	12/09/13	15:04

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG135833-2
Client ID: Method Blank Sample
Project:
SDG: SG9363
Lab File ID: C4712.D

Sample Date:
Received Date:
Extract Date: 09-DEC-13
Extracted By: REC
Extraction Method: SW846 5035
Lab Prep Batch: WG135833

Analysis Date: 09-DEC-13
Analyst: REC
Analysis Method: SW846 8260B
Matrix: SL
% Solids: NA
Report Date: 12-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromomethane	U	5.0	ug/Kgdrywt	1	10	10.	1.1	5.0
Carbon Disulfide	U	2.5	ug/Kgdrywt	1	5	5.0	0.78	2.5
Acetone	U	12	ug/Kgdrywt	1	25	25.	5.1	12.
Methyl tert-butyl Ether	U	2.5	ug/Kgdrywt	1	5	5.0	1.1	2.5
2-Butanone	U	12	ug/Kgdrywt	1	25	25.	5.9	12.
Benzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
Toluene	U	2.5	ug/Kgdrywt	1	5	5.0	1.4	2.5
4-Methyl-2-Pentanone	U	12	ug/Kgdrywt	1	25	25.	5.9	12.
1,2-Dibromoethane	U	2.5	ug/Kgdrywt	1	5	5.0	1.2	2.5
2-Hexanone	U	12	ug/Kgdrywt	1	25	25.	4.8	12.
Ethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.65	2.5
m+p-Xylenes	U	5.0	ug/Kgdrywt	1	10	10.	1.7	5.0
o-Xylene	U	2.5	ug/Kgdrywt	1	5	5.0	1.3	2.5
Xylenes (Total)	U	7.5	ug/Kgdrywt	1	15	15.	1.3	7.5
Styrene	U	2.5	ug/Kgdrywt	1	5	5.0	0.51	2.5
Bromoform	U	2.5	ug/Kgdrywt	1	5	5.0	0.70	2.5
Isopropylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
N-Propylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.83	2.5
1,3,5-Trimethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.67	2.5
tert-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.90	2.5
1,2,4-Trimethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.87	2.5
P-Isopropyltoluene	U	2.5	ug/Kgdrywt	1	5	5.0	0.76	2.5
N-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
sec-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.91	2.5
Cyclohexane	U	2.5	ug/Kgdrywt	1	5	5.0	1.4	2.5
Methyl Acetate	U	3.0	ug/Kgdrywt	1	5	5.0	2.7	3.0
Methylcyclohexane	U	2.5	ug/Kgdrywt	1	5	5.0	0.96	2.5
Naphthalene	U	2.5	ug/Kgdrywt	1	5	5.0	0.88	2.5
p-Bromofluorobenzene		112.	%					
Toluene-D8	*	116.	%					
1,2-Dichloroethane-D4		130.	%					
Dibromofluoromethane		127.	%					

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG9363

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
TF2-W-TB06-1113	SG9363-11RA		108.		121.		123.		111.	
Laboratory Control S	WG135833-1		107.		113.		108.		107.	
Method Blank Sample	WG135833-2		112.		127.		130.		116.	*

		QC Limits
DBF	DIBROMOFLUOROMETHANE	64-130
TOL	TOLUENE-D8	85-115
BFB	P-BROMOFLUOROBENZENE	85-120
DCA	1,2-DICHLOROETHANE-D4	58-134

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

LCS Recovery Report

Client:
Lab ID: WG135833-1
Client ID: LCS
Project:
SDG: SG9363
LCS File ID: C4709.D

Sample Date:
Received Date:
Extract Date: 09-DEC-13
Extracted By: REC
Extraction Method: SW846 5035
Lab Prep Batch: WG135833

Analysis Date: 09-DEC-13
Analyst: REC
Analysis Method: SW846 8260B
Matrix: SL
% Solids: NA
Report Date: 12-DEC-13

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromomethane	121.	50.0	60.4	ug/Kg	30-160
Carbon Disulfide	125.	50.0	62.6	ug/Kg	45-160
Acetone	96.2	50.0	48.1	ug/Kg	20-160
Methyl tert-butyl Ether	121.	100.	121.	ug/Kg	81-125
2-Butanone	104.	50.0	52.0	ug/Kg	30-160
Benzene	118.	50.0	58.8	ug/Kg	75-125
Toluene	119.	50.0	59.3	ug/Kg	70-125
4-Methyl-2-Pentanone	113.	50.0	56.7	ug/Kg	45-145
1,2-Dibromoethane	119.	50.0	59.3	ug/Kg	70-125
2-Hexanone	114.	50.0	57.0	ug/Kg	45-145
Ethylbenzene	121.	50.0	60.6	ug/Kg	75-125
m+p-Xylenes	120.	100.	120.	ug/Kg	80-125
o-Xylene	121.	50.0	60.6	ug/Kg	75-125
Xylenes (Total)	* 120.	150.	180.	ug/Kg	81-114
Styrene	124.	50.0	61.8	ug/Kg	75-125
Bromoform	125.	50.0	62.5	ug/Kg	55-135
Isopropylbenzene	119.	50.0	59.6	ug/Kg	75-130
N-Propylbenzene	116.	50.0	58.2	ug/Kg	65-135
1,3,5-Trimethylbenzene	118.	50.0	59.1	ug/Kg	65-135
tert-Butylbenzene	119.	50.0	59.5	ug/Kg	65-130
1,2,4-Trimethylbenzene	125.	50.0	62.5	ug/Kg	65-135
P-Isopropyltoluene	123.	50.0	61.7	ug/Kg	75-135
N-Butylbenzene	121.	50.0	60.5	ug/Kg	65-140
sec-Butylbenzene	118.	50.0	59.0	ug/Kg	65-130
Cyclohexane	125.	50.0	62.6	ug/Kg	75-128
Methyl Acetate	89.8	50.0	44.9	ug/Kg	72-133
Methylcyclohexane	116.	50.0	57.9	ug/Kg	71-127
Naphthalene	125.	50.0	62.4	ug/Kg	40-125
p-Bromofluorobenzene	107.				85-120
Toluene-D8	107.				85-115
1,2-Dichloroethane-D4	108.				58-134
Dibromofluoromethane	113.				64-130

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG135686-4
Lab File ID : C4688.D

SDG: SG9363
Analytical Date: 12/06/13 10:37
Instrument ID: GCMS-C

		PENTAFLUOROBENZENE		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	484915	8.18	839903	8.84	851385	12.34
	Upper Limit	969830	8.68	1679806	9.34	1702770	12.84
	Lower Limit	242457.5	7.68	419951.5	8.34	425692.5	11.84
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG135833-4	420252	8.18	725304	8.84	734965	12.33
Laboratory Control S	WG135833-1	418643	8.17	745568	8.84	754015	12.33
Method Blank Sample	WG135833-2	339627	8.18	618282	8.84	635638	12.34
TF2-W-TB06-1113	SG9363-11RA	328693	8.18	580474	8.84	626404	12.34

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG135686-4
Lab File ID : C4688.D

SDG: SG9363
Analytical Date: 12/06/13 10:37
Instrument ID: GCMS-C

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	460211		15.69	
	Upper Limit	920422		16.19	
	Lower Limit	230105.5		15.19	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG135833-4	411525		15.69	
Laboratory Control S	WG135833-1	415171		15.69	
Method Blank Sample	WG135833-2	338773		15.69	
TF2-W-TB06-1113	SG9363-11RA	334524		15.69	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

SIM DATA

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : ND662.D
Instrument ID : GCMS-N

SDG : SG9363
Date Analyzed : 14-DEC-13
Time Analyzed : 09:35

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	38.5		
68	Less than 2.0% of mass 69	0.5	1.00	1
69	Less than 100.0% of mass 198	45.2		
70	Less than 2.0% of mass 69	0.4	0.78	1
127	40.0 - 60.0% of mass 198	55.2		
197	Less than 1.0% of mass 198	0.6		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.6		
275	10.0 - 30.0% of mass 198	20.0		
365	1.0 - 100.0% of mass 198	1.8		
441	0.0 - 100.0% of mass 443	8.5	70.37	2
442	40.0 - 100.0% of mass 198	58.1		
443	17.0 - 23.0% of mass 442	12.0	20.69	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG136159-4	N1202.D	12/14/13	09:56
Initial Calibration	WG136159-2	N1203.D	12/14/13	10:38
Initial Calibration	WG136159-3	N1204.D	12/14/13	11:21
Initial Calibration	WG136159-5	N1205.D	12/14/13	12:03
Initial Calibration	WG136159-6	N1206.D	12/14/13	12:46
Initial Calibration	WG136159-7	N1207.D	12/14/13	13:28
Independent Source	WG136159-8	N1208.D	12/14/13	14:10
Method Blank Sample	WG135482-1	N1209.D	12/14/13	14:52
Laboratory Control S	WG135482-2	N1210.D	12/14/13	15:35
Laboratory Control S	WG135482-3	N1211.D	12/14/13	16:17

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG9363
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GCMS-N
Lab File IDs : N1203.D N1204.D N1202.D **Column ID:**
N1205.D N1206.D N1207.D **Calibration Date(s):** 14-DEC-13 09:56
14-DEC-13 13:28

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.200000(	0.500000(	1.0000	3.0000	7.0000	10.0000	New	b	m1	m2	%RSD	%RSD	
Naphthalene	1.00042	1.00394	1.00599	0.96219	0.88808	0.82938	AVG		0.94833		7.76350	15.00000	O
2-Methylnaphthalene	29187	69410	105371	388765	787989	1196621	LNR	-0.37350	0.59252		0.99634	0.99000	O
Acenaphthylene	2.18947	2.31239	2.35286	2.08646	2.07787	1.97293	AVG		2.16533		6.79576	15.00000	O
Acenaphthene	1.33300	1.37858	1.41690	1.24753	1.24696	1.18087	AVG		1.30064		6.93552	15.00000	O
Fluorene	1.62119	1.59911	1.64918	1.44264	1.43633	1.38946	AVG		1.52298		7.37954	15.00000	O
Phenanthrene	1.32352	1.28552	1.36571	1.22114	1.23772	1.17473	AVG		1.26806		5.54817	15.00000	O
Anthracene	1.40263	1.42399	1.43398	1.30898	1.32622	1.24809	AVG		1.35732		5.47474	15.00000	O
Fluoranthene	1.34772	1.28550	1.34641	1.22246	1.22642	1.18047	AVG		1.26816		5.49433	15.00000	O
Pyrene	21527	57607	106801	439414	1018696	1613683	LNR	-0.24527	1.66346		0.99543	0.99000	O
Benzo(a)anthracene	1.34811	1.24233	1.32319	1.19141	1.18568	1.13197	AVG		1.23711		6.81543	15.00000	O
Chrysene	15502	39603	73548	301641	718270	1173162	LNR	-0.18862	1.19829		0.99775	0.99000	O
Benzo(b)fluoranthene	1.38209	1.10650	1.38743	1.13227	1.24505	1.19944	AVG		1.24213		9.72738	15.00000	O
Benzo(k)fluoranthene	2.08578	1.95730	1.73610	1.69990	1.55196	1.43904	AVG		1.74501		13.9005‹	15.00000	O
Benzo(a)pyrene	1.40224	1.29422	1.30534	1.15571	1.19331	1.14687	AVG		1.24962		8.07690	15.00000	O
Indeno(1,2,3-cd)pyrene	8697	20908	29576	108195	313834	488772	QUA	-0.02474	1.28770	0.02202	0.99238	0.99000	O
Dibenzo(a,h)anthracene	0.87921	0.78421	0.73558	0.67729	0.72056	0.70439	AVG		0.75021		9.66852	15.00000	O
Benzo(g,h,i)perylene	9119	21702	39952	157624	379499	633468	LNR	-0.17316	0.86264		0.99853	0.99000	O
2-Methylnaphthalene-D10	1.05873	1.09973	1.08345	0.98736	0.96070	0.91076	AVG		1.01679		7.40394	15.00000	
Fluorene-D10	0.94383	1.02573	1.00934	0.88114	0.86502	0.83846	AVG		0.92725		8.43594	15.00000	
Pyrene-D10	1.34655	1.17871	1.13961	0.99007	0.99831	0.89819	AVG		1.09191		14.8417‹	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : ND664.D
Instrument ID : GCMS-N

SDG : SG9363
Date Analyzed : 16-DEC-13
Time Analyzed : 13:22

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	38.6		
68	Less than 2.0% of mass 69	0.6	1.27	1
69	Less than 100.0% of mass 198	45.8		
70	Less than 2.0% of mass 69	0.3	0.65	1
127	40.0 - 60.0% of mass 198	54.5		
197	Less than 1.0% of mass 198	0.4		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.7		
275	10.0 - 30.0% of mass 198	22.3		
365	1.0 - 100.0% of mass 198	2.6		
441	0.0 - 100.0% of mass 443	9.9	72.35	2
442	40.0 - 100.0% of mass 198	71.4		
443	17.0 - 23.0% of mass 442	13.7	19.24	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG136261-2	N1224.D	12/16/13	13:46
Method Blank Sample	WG135525-1	N1225.D	12/16/13	14:30
Laboratory Control S	WG135525-2	N1226.D	12/16/13	15:14
Laboratory Control S	WG135525-3	N1227.D	12/16/13	15:58
TF2-001-SB1009-0810	SG9363-3	N1232.D	12/16/13	19:36
TF2-001-SB1008-0204	SG9363-5	N1234.D	12/16/13	21:02
Matrix Spike	WG135482-4	N1235.D	12/16/13	21:45
Matrix Spike Duplica	WG135482-5	N1236.D	12/16/13	22:28
TF2-001-SS1004-0001	SG9363-6	N1237.D	12/16/13	23:11
TF2-001-SB1004-0204	SG9363-7	N1238.D	12/16/13	23:54
TF2-SB-DUP10-1113	SG9363-10	N1239.D	12/17/13	00:36
TF2-001-SS1000-0001	SG9363-12	N1240.D	12/17/13	01:19

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG9363
Lab ID : WG136261-2 **Analytical Date:** 12/16/13 13:46
Lab File ID : N1224.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 12/14/13 09:56 12/14/13 13:28 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.94833	1.01746	1.01746	0.010	7.28946	20.00000	Averaged	
31 2-Methylnaphthalene	1.00000	1.27404	0.93194	0.010	27.40409	20.00000	Linear	*
42 Acenaphthylene	2.16533	2.27197	2.27197	0.010	4.92496	20.00000	Averaged	
46 Acenaphthene	1.30064	1.37788	1.37788	0.010	5.93897	20.01000	Averaged	
54 Fluorene	1.52298	1.57718	1.57718	0.010	3.55882	20.00000	Averaged	
64 Phenanthrene	1.26806	1.28755	1.28755	0.010	1.53709	20.00000	Averaged	
65 Anthracene	1.35732	1.40171	1.40171	0.010	3.27057	20.00000	Averaged	
68 Fluoranthene	1.26816	1.23860	1.23860	0.010	-2.33149	20.01000	Averaged	
70 Pyrene	1.00000	0.95588	1.91646	0.010	-4.41199	20.00000	Linear	
72 Benzo(a)anthracene	1.23711	1.23257	1.23257	0.010	-0.36740	20.00000	Averaged	
74 Chrysene	1.00000	1.11349	1.51510	0.010	11.34854	20.00000	Linear	
78 Benzo(b)fluoranthene	1.24213	1.02895	1.02895	0.010	-17.16233	20.00000	Averaged	
79 Benzo(k)fluoranthene	1.74501	1.89340	1.89340	0.010	8.50343	20.00000	Averaged	
80 Benzo(a)pyrene	1.24962	1.21450	1.21450	0.010	-2.80977	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	1.00000	0.88398	0.69163	0.010	-11.60198	20.00000	Quadratic	
83 Dibenzo(a,h)anthracene	0.75021	0.85623	0.85623	0.010	14.13240	20.00000	Averaged	
84 Benzo(g,h,i)perylene	1.00000	1.14226	1.10485	0.010	14.22565	20.00000	Linear	
30 2-Methylnaphthalene-D10	1.01679	1.07071	1.07071	0.010	5.30365	20.00000	Averaged	
52 Fluorene-D10	0.92725	0.96021	0.96021	0.010	3.55463	20.00000	Averaged	
69 Pyrene-D10	1.09191	1.05339	1.05339	0.010	-3.52716	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : ND665.D
Instrument ID : GCMS-N

SDG : SG9363
Date Analyzed : 17-DEC-13
Time Analyzed : 13:17

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	39.8		
68	Less than 2.0% of mass 69	0.9	1.95	1
69	Less than 100.0% of mass 198	45.4		
70	Less than 2.0% of mass 69	0.4	0.87	1
127	40.0 - 60.0% of mass 198	56.8		
197	Less than 1.0% of mass 198	0.2		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.3		
275	10.0 - 30.0% of mass 198	21.1		
365	1.0 - 100.0% of mass 198	2.3		
441	0.0 - 100.0% of mass 443	9.5	73.96	2
442	40.0 - 100.0% of mass 198	68.8		
443	17.0 - 23.0% of mass 442	12.8	18.68	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG136249-2	N1241.D	12/17/13	13:41
TF2-001-SS1009-0001	SG9363-1RA	N1242.D	12/17/13	14:25
TF2-001-SB1009-0204	SG9363-2RA	N1243.D	12/17/13	15:08
TF2-001-SS1008-0001	SG9363-4RA	N1244.D	12/17/13	15:53
TF2-001-SB1000-0204	SG9363-13	N1245.D	12/17/13	16:39
TF2-001-SB1000-0810	SG9363-14	N1246.D	12/17/13	17:25
TF2-001-SS1006-0001	SG9363-15	N1247.D	12/17/13	18:09
TF2-001-SS1010-0001	SG9363-19	N1248.D	12/17/13	18:52
TF2-001-SB1010-0204	SG9363-20	N1249.D	12/17/13	19:35
Matrix Spike	WG135525-4	N1250.D	12/17/13	20:18
Matrix Spike Duplica	WG135525-5	N1251.D	12/17/13	21:00
TF2-001-SB1006-0204	SG9363-16	N1252.D	12/17/13	21:44
TF2-001-SB1005-0204	SG9363-18	N1253.D	12/17/13	22:27
TF2-SB-DUP11-1113	SG9363-21	N1254.D	12/17/13	23:10
TF2-001-SS1007-0001	SG9363-8	N1255.D	12/17/13	23:53
TF2-001-SB1007-0204	SG9363-9	N1256.D	12/18/13	00:36

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG9363
Lab ID : WG136249-2 **Analytical Date:** 12/17/13 13:41
Lab File ID : N1241.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 12/14/13 09:56 12/14/13 13:28 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
25 Naphthalene	0.94833	1.05224	1.05224	0.010	10.95709	20.00000	Averaged
31 2-Methylnaphthalene	1.00000	1.18982	0.88203	0.010	18.98183	20.00000	Linear
42 Acenaphthylene	2.16533	2.23495	2.23495	0.010	3.21539	20.00000	Averaged
46 Acenaphthene	1.30064	1.32865	1.32865	0.010	2.15375	20.01000	Averaged
54 Fluorene	1.52298	1.54014	1.54014	0.010	1.12655	20.00000	Averaged
64 Phenanthrene	1.26806	1.31084	1.31084	0.010	3.37375	20.00000	Averaged
65 Anthracene	1.35732	1.33456	1.33456	0.010	-1.67679	20.00000	Averaged
68 Fluoranthene	1.26816	1.27896	1.27896	0.010	0.85154	20.01000	Averaged
70 Pyrene	1.00000	1.18423	2.29631	0.010	18.42277	20.00000	Linear
72 Benzo(a)anthracene	1.23711	1.28603	1.28603	0.010	3.95391	20.00000	Averaged
74 Chrysene	1.00000	1.07787	1.47242	0.010	7.78733	20.00000	Linear
78 Benzo(b)fluoranthene	1.24213	1.23890	1.23890	0.010	-0.26004	20.00000	Averaged
79 Benzo(k)fluoranthene	1.74501	1.81237	1.81237	0.010	3.85989	20.00000	Averaged
80 Benzo(a)pyrene	1.24962	1.23161	1.23161	0.010	-1.44123	20.01000	Averaged
82 Indeno(1,2,3-cd)pyrene	1.00000	1.04089	0.80969	0.010	4.08901	20.00000	Quadratic
83 Dibenzo(a,h)anthracene	0.75021	0.72509	0.72509	0.010	-3.34763	20.00000	Averaged
84 Benzo(g,h,i)perylene	1.00000	0.97049	0.95668	0.010	-2.95083	20.00000	Linear
30 2-Methylnaphthalene-D10	1.01679	1.06628	1.06628	0.010	4.86772	20.00000	Averaged
52 Fluorene-D10	0.92725	0.94780	0.94780	0.010	2.21590	20.00000	Averaged
69 Pyrene-D10	1.09191	1.25448	1.25448	0.010	14.88851	20.00000	Averaged

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : ND667.D
Instrument ID : GCMS-N

SDG : SG9363
Date Analyzed : 18-DEC-13
Time Analyzed : 11:57

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	43.4		
68	Less than 2.0% of mass 69	0.8	1.70	1
69	Less than 100.0% of mass 198	48.9		
70	Less than 2.0% of mass 69	0.2	0.49	1
127	40.0 - 60.0% of mass 198	58.3		
197	Less than 1.0% of mass 198	0.4		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.5		
275	10.0 - 30.0% of mass 198	21.0		
365	1.0 - 100.0% of mass 198	2.4		
441	0.0 - 100.0% of mass 443	8.9	68.09	2
442	40.0 - 100.0% of mass 198	66.4		
443	17.0 - 23.0% of mass 442	13.0	19.62	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG136358-2	N1258.D	12/18/13	12:26
TF2-001-SS1007-0001	SG9363-8DL	N1259.D	12/18/13	13:11
TF2-001-SB1007-0204	SG9363-9DL	N1260.D	12/18/13	13:54
TF2-001-SS1005-0001	SG9363-17DL	N1261.D	12/18/13	14:38
TF2-001-SB1005-0204	SG9363-18DL	N1262.D	12/18/13	15:22
TF2-SB-DUP11-1113	SG9363-21DL	N1263.D	12/18/13	16:06

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG9363
Lab ID : WG136358-2 **Analytical Date:** 12/18/13 12:26
Lab File ID : N1258.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 12/14/13 09:56 12/14/13 13:28 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.94833	1.03975	1.03975	0.010	9.63975	20.00000	Averaged	
31 2-Methylnaphthalene	1.00000	1.15772	0.86301	0.010	15.77154	20.00000	Linear	
42 Acenaphthylene	2.16533	2.17258	2.17258	0.010	0.33495	20.00000	Averaged	
46 Acenaphthene	1.30064	1.30265	1.30265	0.010	0.15434	20.01000	Averaged	
54 Fluorene	1.52298	1.48321	1.48321	0.010	-2.61150	20.00000	Averaged	
64 Phenanthrene	1.26806	1.29701	1.29701	0.010	2.28320	20.00000	Averaged	
65 Anthracene	1.35732	1.38060	1.38060	0.010	1.71544	20.00000	Averaged	
68 Fluoranthene	1.26816	1.57436	1.57436	0.010	24.14445	20.01000	Averaged	*
70 Pyrene	1.00000	1.26950	2.43815	0.010	26.94957	20.00000	Linear	*
72 Benzo(a)anthracene	1.23711	1.35898	1.35898	0.010	9.85100	20.00000	Averaged	
74 Chrysene	1.00000	1.12094	1.52403	0.010	12.09372	20.00000	Linear	
78 Benzo(b)fluoranthene	1.24213	1.31839	1.31839	0.010	6.13932	20.00000	Averaged	
79 Benzo(k)fluoranthene	1.74501	1.68240	1.68240	0.010	-3.58830	20.00000	Averaged	
80 Benzo(a)pyrene	1.24962	1.19835	1.19835	0.010	-4.10260	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	1.00000	1.20865	0.93529	0.010	20.86538	20.00000	Quadratic	*
83 Dibenzo(a,h)anthracene	0.75021	0.69223	0.69223	0.010	-7.72797	20.00000	Averaged	
84 Benzo(g,h,i)perylene	1.00000	0.88245	0.88073	0.010	-11.75508	20.00000	Linear	
30 2-Methylnaphthalene-D10	1.01679	1.04821	1.04821	0.010	3.09009	20.00000	Averaged	
52 Fluorene-D10	0.92725	0.90893	0.90893	0.010	-1.97652	20.00000	Averaged	
69 Pyrene-D10	1.09191	1.11587	1.11587	0.010	2.19508	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : ND668.D
Instrument ID : GCMS-N

SDG : SG9363
Date Analyzed : 19-DEC-13
Time Analyzed : 11:23

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	39.4		
68	Less than 2.0% of mass 69	0.7	1.56	1
69	Less than 100.0% of mass 198	45.0		
70	Less than 2.0% of mass 69	0.3	0.58	1
127	40.0 - 60.0% of mass 198	56.8		
197	Less than 1.0% of mass 198	0.5		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.9		
275	10.0 - 30.0% of mass 198	22.2		
365	1.0 - 100.0% of mass 198	2.3		
441	0.0 - 100.0% of mass 443	10.7	74.42	2
442	40.0 - 100.0% of mass 198	72.2		
443	17.0 - 23.0% of mass 442	14.4	19.94	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG136448-2	N1279.D	12/19/13	11:44
TF2-001-SS1005-0001	SG9363-17	N1280.D	12/19/13	12:28

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG9363
Lab ID : WG136448-2 **Analytical Date:** 12/19/13 11:44
Lab File ID : N1279.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 12/14/13 09:56 12/14/13 13:28 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.94833	1.00085	1.00085	0.010	5.53803	20.00000	Averaged	
31 2-Methylnaphthalene	1.00000	1.17329	0.87224	0.010	17.32858	20.00000	Linear	
42 Acenaphthylene	2.16533	2.07003	2.07003	0.010	-4.40115	20.00000	Averaged	
46 Acenaphthene	1.30064	1.25223	1.25223	0.010	-3.72167	20.01000	Averaged	
54 Fluorene	1.52298	1.43848	1.43848	0.010	-5.54843	20.00000	Averaged	
64 Phenanthrene	1.26806	1.18896	1.18896	0.010	-6.23809	20.00000	Averaged	
65 Anthracene	1.35732	1.26434	1.26434	0.010	-6.84973	20.00000	Averaged	
68 Fluoranthene	1.26816	1.12152	1.12152	0.010	-11.56387	20.01000	Averaged	
70 Pyrene	1.00000	1.03375	2.04599	0.010	3.37497	20.00000	Linear	
72 Benzo(a)anthracene	1.23711	1.10200	1.10200	0.010	-10.92195	20.00000	Averaged	
74 Chrysene	1.00000	1.16031	1.57121	0.010	16.03085	20.00000	Linear	
78 Benzo(b)fluoranthene	1.24213	0.97841	0.97841	0.010	-21.23130	20.00000	Averaged	*
79 Benzo(k)fluoranthene	1.74501	1.99883	1.99883	0.010	14.54515	20.00000	Averaged	
80 Benzo(a)pyrene	1.24962	1.20175	1.20175	0.010	-3.83065	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	1.00000	1.21492	0.93997	0.010	21.49238	20.00000	Quadratic	*
83 Dibenzo(a,h)anthracene	0.75021	0.69743	0.69743	0.010	-7.03467	20.00000	Averaged	
84 Benzo(g,h,i)perylene	1.00000	0.88711	0.88475	0.010	-11.28940	20.00000	Linear	
30 2-Methylnaphthalene-D10	1.01679	1.00719	1.00719	0.010	-0.94417	20.00000	Averaged	
52 Fluorene-D10	0.92725	0.90914	0.90914	0.010	-1.95389	20.00000	Averaged	
69 Pyrene-D10	1.09191	1.04779	1.04779	0.010	-4.04032	20.00000	Averaged	

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : N1209.D
Instrument ID : GCMS-N
Matrix : SL

SDG : SG9363
Lab Sample ID : WG135482-1
Date Extracted : 03-DEC-13
Date Analyzed : 14-DEC-13
Time Analyzed : 14:52

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135482-2	N1210.D	12/14/13	15:35
Laboratory Control S	WG135482-3	N1211.D	12/14/13	16:17
TF2-001-SB1009-0810	SG9363-3	N1232.D	12/16/13	19:36
TF2-001-SB1008-0204	SG9363-5	N1234.D	12/16/13	21:02
Matrix Spike	WG135482-4	N1235.D	12/16/13	21:45
Matrix Spike Duplica	WG135482-5	N1236.D	12/16/13	22:28
TF2-001-SS1004-0001	SG9363-6	N1237.D	12/16/13	23:11
TF2-001-SB1004-0204	SG9363-7	N1238.D	12/16/13	23:54
TF2-001-SS1009-0001	SG9363-1RA	N1242.D	12/17/13	14:25
TF2-001-SB1009-0204	SG9363-2RA	N1243.D	12/17/13	15:08
TF2-001-SS1008-0001	SG9363-4RA	N1244.D	12/17/13	15:53

Report of Analytical Results

Client:
Lab ID: WG135482-1
Client ID: Method Blank Sample
Project:
SDG: SG9363
Lab File ID: N1209.D

Sample Date:
Received Date:
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135482

Analysis Date: 14-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	J	1.8	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	2.6	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		45.0	%					
Fluorene-D10		35.5	%					
Pyrene-D10		54.0	%					

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LCS/LCSD Recovery Report

LCS ID: WG135482-2
LCSD ID: WG135482-3
Project:
SDG: SG9363
Report Date: 19-DEC-13
LCS File ID: N1210.D

Received Date:
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135482
LCSD File ID: N1211.D

Analysis Date: 14-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	37.2	55.8	35.9	53.8	ug/Kgdrywt	4	30	10-129
2-Methylnaphthalene	66.7	38.4	57.6	37.6	56.4	ug/Kgdrywt	2	30	10-152
Acenaphthylene	66.7	33.4	50.1	31.0	46.5	ug/Kgdrywt	7	30	25-94
Acenaphthene	66.7	36.1	54.1	33.6	50.4	ug/Kgdrywt	7	30	33-98
Fluorene	66.7	38.8	58.2	34.1	51.1	ug/Kgdrywt	13	30	40-92
Phenanthrene	66.7	49.5	74.2	39.6	59.4	ug/Kgdrywt	22	30	46-96
Anthracene	66.7	47.7	71.5	39.2	58.8	ug/Kgdrywt	20	30	34-96
Fluoranthene	66.7	51.2	76.8	40.9	61.3	ug/Kgdrywt	22	30	38-116
Pyrene	66.7	51.9	77.8	45.3	67.9	ug/Kgdrywt	14	30	35-111
Benzo(a)anthracene	66.7	48.5	72.7	39.2	58.8	ug/Kgdrywt	21	30	48-100
Chrysene	66.7	56.8	85.2	50.0	75.0	ug/Kgdrywt	13	30	46-101
Benzo(b)Fluoranthene	66.7	53.2	79.8	36.8	55.2	ug/Kgdrywt	36*	30	53-100
Benzo(k)fluoranthene	66.7	47.6	71.4	47.6	71.4	ug/Kgdrywt	0	30	49-96
Benzo(a)pyrene	66.7	44.8	67.2	38.7	58.0*	ug/Kgdrywt	15	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	67.8	102.	57.0	85.4	ug/Kgdrywt	17	30	50-105
Dibenzo(a,h)anthracene	66.7	47.5	71.2	43.8	65.7	ug/Kgdrywt	8	30	55-105
Benzo(g,h,i)perylene	66.7	34.7	52.0*	28.3	42.4*	ug/Kgdrywt	20	30	53-103
2-Methylnaphthalene-D10			61.0		63.2				19-94
Fluorene-D10			55.9		53.9				20-96
Pyrene-D10			69.4		69.3				31-128

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : N1225.D
Instrument ID : GCMS-N
Matrix : SL

SDG : SG9363
Lab Sample ID : WG135525-1
Date Extracted : 04-DEC-13
Date Analyzed : 16-DEC-13
Time Analyzed : 14:30

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135525-2	N1226.D	12/16/13	15:14
Laboratory Control S	WG135525-3	N1227.D	12/16/13	15:58
TF2-SB-DUP10-1113	SG9363-10	N1239.D	12/17/13	00:36
TF2-001-SS1000-0001	SG9363-12	N1240.D	12/17/13	01:19
TF2-001-SB1000-0204	SG9363-13	N1245.D	12/17/13	16:39
TF2-001-SB1000-0810	SG9363-14	N1246.D	12/17/13	17:25
TF2-001-SS1006-0001	SG9363-15	N1247.D	12/17/13	18:09
TF2-001-SS1010-0001	SG9363-19	N1248.D	12/17/13	18:52
TF2-001-SB1010-0204	SG9363-20	N1249.D	12/17/13	19:35
Matrix Spike	WG135525-4	N1250.D	12/17/13	20:18
Matrix Spike Duplica	WG135525-5	N1251.D	12/17/13	21:00
TF2-001-SB1006-0204	SG9363-16	N1252.D	12/17/13	21:44
TF2-001-SB1005-0204	SG9363-18	N1253.D	12/17/13	22:27
TF2-SB-DUP11-1113	SG9363-21	N1254.D	12/17/13	23:10
TF2-001-SS1007-0001	SG9363-8	N1255.D	12/17/13	23:53
TF2-001-SB1007-0204	SG9363-9	N1256.D	12/18/13	00:36
TF2-001-SS1007-0001	SG9363-8DL	N1259.D	12/18/13	13:11
TF2-001-SB1007-0204	SG9363-9DL	N1260.D	12/18/13	13:54
TF2-001-SS1005-0001	SG9363-17DL	N1261.D	12/18/13	14:38
TF2-001-SB1005-0204	SG9363-18DL	N1262.D	12/18/13	15:22
TF2-SB-DUP11-1113	SG9363-21DL	N1263.D	12/18/13	16:06
TF2-001-SS1005-0001	SG9363-17	N1280.D	12/19/13	12:28

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Report of Analytical Results

Client:
Lab ID: WG135525-1
Client ID: Method Blank Sample
Project:
SDG: SG9363
Lab File ID: N1225.D

Sample Date:
Received Date:
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		63.3	%					
Fluorene-D10		49.5	%					
Pyrene-D10		60.5	%					

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Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG135525-2
LCSD ID: WG135525-3
Project:
SDG: SG9363
Report Date: 19-DEC-13
LCS File ID: N1226.D

Received Date:
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525
LCSD File ID: N1227.D

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	41.5	62.2	37.2	55.8	ug/Kgdrywt	11	30	10-129
2-Methylnaphthalene	66.7	45.1	67.6	41.1	61.6	ug/Kgdrywt	9	30	10-152
Acenaphthylene	66.7	37.4	56.1	32.1	48.1	ug/Kgdrywt	15	30	25-94
Acenaphthene	66.7	39.5	59.2	34.9	52.3	ug/Kgdrywt	12	30	33-98
Fluorene	66.7	41.7	62.5	37.6	56.4	ug/Kgdrywt	10	30	40-92
Phenanthrene	66.7	48.6	72.9	45.2	67.8	ug/Kgdrywt	7	30	46-96
Anthracene	66.7	47.4	71.1	43.6	65.4	ug/Kgdrywt	8	30	34-96
Fluoranthene	66.7	50.2	75.3	45.5	68.2	ug/Kgdrywt	10	30	38-116
Pyrene	66.7	48.1	72.1	42.9	64.3	ug/Kgdrywt	11	30	35-111
Benzo(a)anthracene	66.7	48.4	72.6	42.7	64.0	ug/Kgdrywt	12	30	48-100
Chrysene	66.7	56.3	84.4	51.3	76.9	ug/Kgdrywt	9	30	46-101
Benzo(b)Fluoranthene	66.7	52.9	79.3	46.3	69.4	ug/Kgdrywt	13	30	53-100
Benzo(k)fluoranthene	66.7	46.5	69.7	43.1	64.6	ug/Kgdrywt	8	30	49-96
Benzo(a)pyrene	66.7	47.3	70.9	42.7	64.0	ug/Kgdrywt	10	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	71.4	107.*	67.6	101.	ug/Kgdrywt	5	30	50-105
Dibenzo(a,h)anthracene	66.7	55.1	82.6	51.5	77.2	ug/Kgdrywt	7	30	55-105
Benzo(g,h,i)perylene	66.7	44.2	66.3	40.3	60.4	ug/Kgdrywt	9	30	53-103
2-Methylnaphthalene-D10			72.0		59.9				19-94
Fluorene-D10			62.6		54.6				20-96
Pyrene-D10			73.2		64.2				31-128

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MS/MSD Recovery Report

MS ID: WG135482-4
MSD ID: WG135482-5
Sample ID: SG9363-5
Client ID: TF2-001-SB1008-0204
Project:
SDG: SG9363
MS File ID: N1235.D

Received Date:
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135482
Report Date: 19-DEC-13
MSD File ID: N1236.D

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 87.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	74.0	73.8	ug/Kgdrywt	U11.	38.	42.	51.4	57.2	10	30	10-129
2-Methylnaphthalene	74.0	73.8	ug/Kgdrywt	U11.	41.	46.	55.8	61.9	10	30	10-152
Acenaphthylene	74.0	73.8	ug/Kgdrywt	U11.	34.	38.	46.3	52.2	12	30	25-94
Acenaphthene	74.0	73.8	ug/Kgdrywt	U11.	36.	41.	49.3	55.1	11	30	33-98
Fluorene	74.0	73.8	ug/Kgdrywt	U11.	39.	43.	52.2	58.8	11	30	40-92
Phenanthrene	74.0	73.8	ug/Kgdrywt	JM15.	49.	53.	46.0*	52.2	8	30	46-96
Anthracene	74.0	73.8	ug/Kgdrywt	J2.7	40.	42.	50.0	53.5	6	30	34-96
Fluoranthene	74.0	73.8	ug/Kgdrywt	J22.	55.	61.	45.4	52.6	9	30	38-116
Pyrene	74.0	73.8	ug/Kgdrywt	J13.	54.	57.	55.0	59.2	5	30	35-111
Benzo(a)anthracene	74.0	73.8	ug/Kgdrywt	J12.	48.	53.	49.7	55.5	8	30	48-100
Chrysene	74.0	73.8	ug/Kgdrywt	J9.4	53.	56.	59.1	62.5	4	30	46-101
Benzo(b)Fluoranthene	74.0	73.8	ug/Kgdrywt	JM18.	53.	58.	47.0*	55.1	11	30	53-100
Benzo(k)fluoranthene	74.0	73.8	ug/Kgdrywt	JM5.7	42.	45.	49.0*	53.5	7	30	49-96
Benzo(a)pyrene	74.0	73.8	ug/Kgdrywt	JLMM9.6	42.	44.	44.2*	47.3*	5	30	61-101
Indeno(1,2,3-cd)pyrene	74.0	73.8	ug/Kgdrywt	J9.0	66.	70.	77.1	83.2	6	30	50-105
Dibenzo(a,h)anthracene	74.0	73.8	ug/Kgdrywt	J2.5	46.	48.	58.4	61.8	5	30	55-105
Benzo(g,h,i)perylene	74.0	73.8	ug/Kgdrywt	JLLMM1	27.	32.	36.7*	42.9*	15	30	53-103
2-Methylnaphthalene-D10							51.1	65.2			19-94
Fluorene-D10							48.1	58.7			20-96
Pyrene-D10							55.0	62.5			31-128

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MS/MSD Recovery Report

MS ID: WG135525-4
MSD ID: WG135525-5
Sample ID: SG9363-20
Client ID: TF2-001-SB1010-0204
Project:
SDG: SG9363
MS File ID: N1250.D

Received Date:
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525
Report Date: 19-DEC-13
MSD File ID: N1251.D

Analysis Date: 17-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 90.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	73.6	73.8	ug/Kgdrywt	J6.0	31.	50.	33.8	60.3	48*	30	10-129
2-Methylnaphthalene	73.6	73.8	ug/Kgdrywt	U11.	29.	44.	39.9	60.3	41*	30	10-152
Acenaphthylene	73.6	73.8	ug/Kgdrywt	U11.	26.	38.	35.6	51.9	38*	30	25-94
Acenaphthene	73.6	73.8	ug/Kgdrywt	JM6.9	31.	46.	32.2*	53.6	41*	30	33-98
Fluorene	73.6	73.8	ug/Kgdrywt	JM7.8	33.	49.	34.4*	55.8	39*	30	40-92
Phenanthrene	73.6	73.8	ug/Kgdrywt	MM120	79.	150	0*	42.0*	61*	30	46-96
Anthracene	73.6	73.8	ug/Kgdrywt	JM19.	41.	55.	29.8*	47.9	28	30	34-96
Fluoranthene	73.6	73.8	ug/Kgdrywt	MM140	91.	150	0*	23.0*	51*	30	38-116
Pyrene	73.6	73.8	ug/Kgdrywt	MM160	100	180	0*	29.8*	56*	30	35-111
Benzo(a)anthracene	73.6	73.8	ug/Kgdrywt	MM59.	59.	93.	0.815*	47.0*	45*	30	48-100
Chrysene	73.6	73.8	ug/Kgdrywt	M56.	71.	93.	20.6*	49.8	26	30	46-101
Benzo(b)Fluoranthene	73.6	73.8	ug/Kgdrywt	MM100	90.	120	0*	19.0*	24	30	53-100
Benzo(k)fluoranthene	73.6	73.8	ug/Kgdrywt	MM40.	50.	71.	14.4*	42.7*	34*	30	49-96
Benzo(a)pyrene	73.6	73.8	ug/Kgdrywt	MM71.	66.	79.	0*	11.8*	18	30	61-101
Indeno(1,2,3-cd)pyrene	73.6	73.8	ug/Kgdrywt	LMM76.	87.	110	15.8*	43.9*	21	30	50-105
Dibenzo(a,h)anthracene	73.6	73.8	ug/Kgdrywt	JM15.	43.	60.	38.9*	61.1	32*	30	55-105
Benzo(g,h,i)perylene	73.6	73.8	ug/Kgdrywt	MM49.	51.	63.	2.99*	18.8*	20	30	53-103
2-Methylnaphthalene-D10							47.0	66.0			19-94
Fluorene-D10							41.6	58.3			20-96
Pyrene-D10							52.8	75.3			31-128

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG9363

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
TF2-SB-DUP10-1113	SG9363-10		68.9		59.1		65.9	
TF2-001-SS1000-0001	SG9363-12		73.6		59.6		63.4	
TF2-001-SB1000-0204	SG9363-13		63.8		54.5		69.5	
TF2-001-SB1000-0810	SG9363-14		58.8		51.5		67.5	
TF2-001-SS1006-0001	SG9363-15		70.9		60.5		79.5	
TF2-001-SB1006-0204	SG9363-16		70.4		64.3		78.7	
TF2-001-SS1005-0001	SG9363-17		78.5		66.7		73.1	
TF2-001-SS1005-0001	SG9363-17DL		0.00	D	0.00	D	0.00	D
TF2-001-SB1005-0204	SG9363-18		60.7		61.4		77.4	
TF2-001-SB1005-0204	SG9363-18DL		0.00	D	0.00	D	0.00	D
TF2-001-SS1010-0001	SG9363-19		63.5		56.1		78.4	
TF2-001-SS1009-0001	SG9363-1RA		72.0		59.4		79.6	
TF2-001-SB1010-0204	SG9363-20		76.2		60.5		79.6	
TF2-SB-DUP11-1113	SG9363-21		72.7		63.7		81.5	
TF2-SB-DUP11-1113	SG9363-21DL		0.00	D	0.00	D	0.00	D
TF2-001-SB1009-0204	SG9363-2RA		69.8		57.2		72.1	
TF2-001-SB1009-0810	SG9363-3		65.9		52.3		50.5	
TF2-001-SS1008-0001	SG9363-4RA		61.6		51.0		65.6	
TF2-001-SB1008-0204	SG9363-5		66.8		57.7		66.2	
TF2-001-SS1004-0001	SG9363-6		67.8		56.3		61.8	
TF2-001-SB1004-0204	SG9363-7		59.0		51.3		48.3	
TF2-001-SS1007-0001	SG9363-8		69.7		60.9		72.6	
TF2-001-SS1007-0001	SG9363-8DL		0.00	D	0.00	D	0.00	D
TF2-001-SB1007-0204	SG9363-9		63.5		61.7		79.8	
TF2-001-SB1007-0204	SG9363-9DL		0.00	D	0.00	D	0.00	D
Method Blank Sample	WG135482-1		45.0		35.5		54.0	
Laboratory Control S	WG135482-2		61.0		55.9		69.4	
Laboratory Control S	WG135482-3		63.2		53.9		69.3	
Matrix Spike	WG135482-4		51.1		48.1		55.0	
Matrix Spike Duplica	WG135482-5		65.2		58.7		62.5	
Method Blank Sample	WG135525-1		63.3		49.5		60.5	
Laboratory Control S	WG135525-2		72.0		62.6		73.2	
Laboratory Control S	WG135525-3		59.9		54.6		64.2	
Matrix Spike	WG135525-4		47.0		41.6		52.8	
Matrix Spike Duplica	WG135525-5		66.0		58.3		75.3	

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG9363

		QC Limits
PYR	PYRENE-D10	31-128
FLO	FLUORENE-D10	20-96
2MN	2-METHYLNAPHTHALENE-D10	19-94

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG136159-4
Lab File ID : N1202.D

SDG: SG9363
Analytical Date: 12/14/13 09:56
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4		NAPHTHALENE-D8		ACENAPHTHENE-D10	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	24740	8.91	97966	11.69	40275	15.78
	Upper Limit	49480	9.41	195932	12.19	80550	16.28
	Lower Limit	12370	8.41	48983	11.19	20137.5	15.28
Client Sample ID	Lab Sample ID						
Method Blank Sample	WG135482-1	33038	8.90	110898	11.71	50213	15.79
Laboratory Control S	WG135482-2	35183	8.90	121380	11.69	53678	15.78
Laboratory Control S	WG135482-3	37410	8.90	129226	11.69	58522	15.78
Continuing Calibrati	WG136261-2	32539	8.91	131098	11.69	56594	15.79
Method Blank Sample	WG135525-1	35934	8.90	131450	11.71	62034	15.79
Laboratory Control S	WG135525-2	37844	8.89	137695	11.69	63763	15.78
Laboratory Control S	WG135525-3	37068	8.89	133928	11.69	63742	15.78
TF2-001-SB1009-0810	SG9363-3	38382	8.90	142708	11.71	66374	15.79
TF2-001-SB1008-0204	SG9363-5	35083	8.90	126350	11.73	60794	15.79
Matrix Spike	WG135482-4	38933	8.90	136959	11.69	66168	15.78
Matrix Spike Duplica	WG135482-5	35879	8.89	133482	11.69	63284	15.78
TF2-001-SS1004-0001	SG9363-6	42351	8.90	153108	11.69	73446	15.78
TF2-001-SB1004-0204	SG9363-7	40905	8.90	146447	11.71	69148	15.79
TF2-SB-DUP10-1113	SG9363-10	39492	8.90	140898	11.71	64470	15.79
TF2-001-SS1000-0001	SG9363-12	39875	8.90	144875	11.69	68106	15.78
Continuing Calibrati	WG136249-2	24484	8.89	87690	11.68	39480	15.76
TF2-001-SS1009-0001	SG9363-1RA	23281	8.89	86442	11.69	42151	15.76
TF2-001-SB1009-0204	SG9363-2RA	24995	8.89	91728	11.69	44826	15.76
TF2-001-SS1008-0001	SG9363-4RA	22473	8.89	83166	11.69	39920	15.76
TF2-001-SB1000-0204	SG9363-13	20785	8.90	76711	11.69	35862	15.77
TF2-001-SB1000-0810	SG9363-14	24322	8.90	89466	11.69	43162	15.77
TF2-001-SS1006-0001	SG9363-15	24406	8.89	91062	11.69	44013	15.76
TF2-001-SS1010-0001	SG9363-19	22774	8.89	84015	11.69	40670	15.78
TF2-001-SB1010-0204	SG9363-20	24901	8.89	92087	11.69	44685	15.76
Matrix Spike	WG135525-4	23734	8.89	86581	11.68	41063	15.76
Matrix Spike Duplica	WG135525-5	23717	8.89	86401	11.68	41584	15.76
TF2-001-SB1006-0204	SG9363-16	23281	8.89	85814	11.69	40703	15.76
TF2-001-SB1005-0204	SG9363-18	22218	8.89	81539	11.68	41283	15.75
TF2-SB-DUP11-1113	SG9363-21	21874	8.88	82178	11.66	42525	15.75
TF2-001-SS1007-0001	SG9363-8	20690	8.89	77413	11.68	38308	15.76
TF2-001-SB1007-0204	SG9363-9	20903	8.89	77965	11.68	40275	15.76
Continuing Calibrati	WG136358-2	27336	8.89	96120	11.68	43251	15.76
TF2-001-SS1007-0001	SG9363-8DL	26963	8.91	97058	11.77	46493	15.79
TF2-001-SB1007-0204	SG9363-9DL	28826	8.91	99498	11.78	45228	15.79
TF2-001-SS1005-0001	SG9363-17DL	29611	8.93	104299	11.74	47370	15.79

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 .
Lab ID : WG136159-4
Lab File ID : N1202.D

SDG: SG9363
Analytical Date: 12/14/13 09:56
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	58031	19.26	38218	25.54	30337	28.68
	Upper Limit	116062	19.76	76436	26.04	60674	29.18
	Lower Limit	29015.5	18.76	19109	25.04	15168.5	28.18
Client Sample ID	Lab Sample ID						
Method Blank Sample	WG135482-1	70920	19.28	41688	25.55	30003	28.69
Laboratory Control S	WG135482-2	77449	19.26	55083	25.54	40755	28.68
Laboratory Control S	WG135482-3	87091	19.26	55222	25.54	39129	28.69
Continuing Calibrati	WG136261-2	80338	19.29	54887	25.55	48758	28.70
Method Blank Sample	WG135525-1	93615	19.28	62359	25.56	52075	28.70
Laboratory Control S	WG135525-2	98342	19.26	74067	25.54	59985	28.68
Laboratory Control S	WG135525-3	93719	19.28	69877	25.55	57969	28.68
TF2-001-SB1009-0810	SG9363-3	100027	19.28	70211	25.54	53396	28.68
TF2-001-SB1008-0204	SG9363-5	93977	19.26	66584	25.54	50365	28.67
Matrix Spike	WG135482-4	99978	19.26	69549	25.54	54516	28.67
Matrix Spike Duplica	WG135482-5	96754	19.26	72406	25.54	55812	28.67
TF2-001-SS1004-0001	SG9363-6	110514	19.26	74453	25.54	57531	28.67
TF2-001-SB1004-0204	SG9363-7	104900	19.27	72376	25.53	57430	28.68
TF2-SB-DUP10-1113	SG9363-10	97907	19.28	65868	25.54	50698	28.67
TF2-001-SS1000-0001	SG9363-12	104578	19.26	67732	25.54	52220	28.67
Continuing Calibrati	WG136249-2	56467	19.26	32859	25.54	24350	28.69
TF2-001-SS1009-0001	SG9363-1RA	63142	19.25	31649	25.52	21305	28.65
TF2-001-SB1009-0204	SG9363-2RA	65913	19.25	36712	25.52	23953	28.65
TF2-001-SS1008-0001	SG9363-4RA	56761	19.25	31723	25.51	24226	28.65
TF2-001-SB1000-0204	SG9363-13	53179	19.26	29947	25.53	20940	28.66
TF2-001-SB1000-0810	SG9363-14	64365	19.26	36717	25.52	24766	28.66
TF2-001-SS1006-0001	SG9363-15	65799	19.25	36309	25.52	26007	28.65
TF2-001-SS1010-0001	SG9363-19	61535	19.25	31066	25.52	20365	28.65
TF2-001-SB1010-0204	SG9363-20	67632	19.25	36341	25.52	22880	28.65
Matrix Spike	WG135525-4	62616	19.25	35897	25.52	24612	28.65
Matrix Spike Duplica	WG135525-5	64012	19.25	34633	25.52	23536	28.65
TF2-001-SB1006-0204	SG9363-16	60679	19.25	33151	25.51	23726	28.65
TF2-001-SB1005-0204	SG9363-18	64141	19.23	34194	25.52	24374	28.65
TF2-SB-DUP11-1113	SG9363-21	61908	19.24	29101	25.53	22366	28.66
TF2-001-SS1007-0001	SG9363-8	55881	19.23	26340	25.52	19175	28.65
TF2-001-SB1007-0204	SG9363-9	60300	19.23	27655	25.52	19851	28.65
Continuing Calibrati	WG136358-2	59989	19.26	39446	25.52	29797	28.69
TF2-001-SS1007-0001	SG9363-8DL	67793	19.24	36369	25.52	22639	28.64
TF2-001-SB1007-0204	SG9363-9DL	63419	19.25	41225	25.52	26959	28.67
TF2-001-SS1005-0001	SG9363-17DL	69725	19.25	45786	25.51	30766	28.65

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG136159-4
Lab File ID : N1202.D

SDG: SG9363
Analytical Date: 12/14/13 09:56
Instrument ID: GCMS-N

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG136159-4
Lab File ID : N1202.D

SDG: SG9363
Analytical Date: 12/14/13 09:56
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4		NAPHTHALENE-D8		ACENAPHTHENE-D10	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	24740	8.91	97966	11.69	40275	15.78
	Upper Limit	49480	9.41	195932	12.19	80550	16.28
	Lower Limit	12370	8.41	48983	11.19	20137.5	15.28
Client Sample ID	Lab Sample ID						
TF2-001-SB1005-0204	SG9363-18DL	30070	8.93	106096	11.74	49273	15.78
TF2-SB-DUP11-1113	SG9363-21DL	28077	8.93	97270	11.74	45786	15.78
Continuing Calibrati	WG136448-2	22156	8.89	79780	11.68	35647	15.76
TF2-001-SS1005-0001	SG9363-17	20155	8.89	73239	11.66	34573	15.74

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG136159-4
Lab File ID : N1202.D

SDG: SG9363
Analytical Date: 12/14/13 09:56
Instrument ID: GCMS-N

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	58031		19.26		38218		25.54		30337		28.68	
	Upper Limit	116062		19.76		76436		26.04		60674		29.18	
	Lower Limit	29015.5		18.76		19109		25.04		15168.5		28.18	
Client Sample ID	Lab Sample ID												
TF2-001-SB1005-0204	SG9363-18DL	72018		19.25		47058		25.52		33599		28.67	
TF2-SB-DUP11-1113	SG9363-21DL	66034		19.25		43133		25.52		29695		28.67	
Continuing Calibrati	WG136448-2	47520		19.26		28395		25.54		20833		28.68	
TF2-001-SS1005-0001	SG9363-17	45910		19.23		27145		25.52		20143		28.63	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

GASOLINE RANGE ORGANICS DATA

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG9363
Project : NAVSTA Newport CTO WE30 &WE59 **Column ID :** A
Instrument ID : GC09

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	BFB	
Initial Calibration	WG127983-2	07/26/13	10:52	31.92	
Initial Calibration	WG127983-3	07/26/13	11:46	31.84	
Initial Calibration	WG127983-4	07/26/13	12:39	31.82	
Initial Calibration	WG127983-5	07/26/13	13:32	31.84	
Initial Calibration	WG127983-6	07/26/13	14:25	31.85	
Initial Calibration	WG127983-1	07/26/13	17:56	31.89	
INDEPENDENT SOURCE	WG127983-7	07/26/13	18:50	31.91	
Continuing Calibrati	WG135529-8	12/05/13	08:01	31.64	
Method Blank Sample	WG135529-1	12/05/13	10:04	31.64	
Laboratory Control S	WG135529-2	12/05/13	10:58	31.65	
Laboratory Control S	WG135529-3	12/05/13	11:52	31.65	
Continuing Calibrati	WG135529-9	12/05/13	20:01	31.68	
TF2-001-SB1009-0204	SG9363-2	12/06/13	02:24	31.69	
Continuing Calibrati	WG135529-10	12/06/13	05:08	31.69	
Continuing Calibrati	WG135529-11	12/06/13	08:07	31.68	
Method Blank Sample	WG135529-1RA	12/06/13	09:54	31.68	
TF2-W-TB06-1113	SG9363-11	12/06/13	14:41	31.69	
TF2-001-SB1000-0810	SG9363-14	12/06/13	15:35	31.69	
TF2-001-SB1006-0204	SG9363-16	12/06/13	16:29	31.69	
Continuing Calibrati	WG135529-12	12/06/13	20:07	31.70	

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG9363
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GC09
Lab File IDs : 9GG2130.d 9GG2123.d 9GG2124.d **Column ID:** A
9GG2125.d 9GG2126.d 9GG2127.d **Calibration Date(s):** 26-JUL-13 09:58
26-JUL-13 17:56

	10.0000 Level 1	100.0000 Level 2	250.0000 Level 3	500.0000 Level 4	1000.0000 Level 5	2000.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Gasoline Range Organic	12176	12675	12913	12768	12910	13282	AVG		12787		2.84495	20.00000	M (
Methyl tert-butyl ether	6010	8181	8380	7569	7477	8149	AVG		7628		11.40841	20.00000	O
Benzene	15826	15860	16448	16739	17015	17326	AVG		16536		3.69285	20.00000	O
Toluene	15470	16041	16286	16166	16555	16718	AVG		16206		2.70556	20.00000	O
Ethylbenzene	14185	14823	15058	15019	15114	15298	AVG		14916		2.61143	20.00000	O
m+p-Xylenes	14785	15435	15552	15559	15638	15874	AVG		15474		2.37846	20.00000	O
o-Xylene	16358	14889	14896	15443	15410	15788	AVG		15464		3.61301	20.00000	O
1,2,4-trimethylbenzene	11095	12102	12347	12071	12262	12757	AVG		12106		4.56871	20.00000	O
1,3,5-trimethylbenzene	9784	10620	10743	10552	10765	11352	AVG		10636		4.74665	20.00000	O
Naphthalene	3461	3359	3870	3000	3223	3680	AVG		3432		9.12376	20.00000	O
p-Bromofluorobenzene	6432	6935	7300	7023	6937	7145	AVG		6962		4.23260	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG9363
Lab ID : WG135529-8 **Analytical Date:** 12/05/13 08:01
Lab File ID : 9GL2056.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11940	11940	0.100	-6.62735	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7353	7353	0.100	-3.60300	20.00000	Averaged
4 Benzene	16536	15342	15342	0.100	-7.22207	20.00000	Averaged
5 Toluene	16206	14830	14830	0.100	-8.48985	20.00000	Averaged
7 Ethylbenzene	14916	13916	13916	0.100	-6.70667	20.00000	Averaged
8 m+p-Xylenes	15474	14438	14438	0.100	-6.69529	20.00000	Averaged
9 o-Xylene	15464	14770	14770	0.100	-4.49156	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11517	11517	0.100	-4.86067	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	9928	9928	0.100	-6.65522	20.00000	Averaged
13 Naphthalene	3432	2866	2866	0.100	-16.48764	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6466	6466	0.100	-7.12608	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG9363
Lab ID : WG135529-9 **Analytical Date:** 12/05/13 20:01
Lab File ID : 9GL2068.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11163	11163	0.100	-12.70537	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7650	7650	0.100	0.29231	20.00000	Averaged
4 Benzene	16536	14268	14268	0.100	-13.71431	20.00000	Averaged
5 Toluene	16206	13734	13734	0.100	-15.25611	20.00000	Averaged
7 Ethylbenzene	14916	12912	12912	0.100	-13.43332	20.00000	Averaged
8 m+p-Xylenes	15474	13243	13243	0.100	-14.41952	20.00000	Averaged
9 o-Xylene	15464	13170	13170	0.100	-14.83567	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	10682	10682	0.100	-11.75962	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	9241	9241	0.100	-13.11325	20.00000	Averaged
13 Naphthalene	3432	3483	3483	0.100	1.47822	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6173	6173	0.100	-11.33469	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab ID : WG135529-10
Lab File ID : 9GL2078.d
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56

SDG: SG9363
Analytical Date: 12/06/13 05:08
Instrument ID: GC09
Column ID: A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	13111	13111	0.100	2.52901	20.00000	Averaged
3 Methyl tert-butyl ether	7628	8698	8698	0.100	14.03814	20.00000	Averaged
4 Benzene	16536	16917	16917	0.100	2.30277	20.00000	Averaged
5 Toluene	16206	16026	16026	0.100	-1.11309	20.00000	Averaged
7 Ethylbenzene	14916	15265	15265	0.100	2.33855	20.00000	Averaged
8 m+p-Xylenes	15474	15829	15829	0.100	2.29768	20.00000	Averaged
9 o-Xylene	15464	15168	15168	0.100	-1.91204	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	12736	12736	0.100	5.20986	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10752	10752	0.100	1.08732	20.00000	Averaged
13 Naphthalene	3432	3885	3885	0.100	13.18836	20.00000	Averaged
10 p-Bromofluorobenzene	6962	7182	7182	0.100	3.16276	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project :NAVSTA Newport CTO WE30 &WE59 **SDG:** SG9363
Lab ID :WG135529-11 **Analytical Date:** 12/06/13 08:07
Lab File ID :9GL2079.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11855	11855	0.100	-7.28908	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7605	7605	0.100	-0.30315	20.00000	Averaged
4 Benzene	16536	14898	14898	0.100	-9.90656	20.00000	Averaged
5 Toluene	16206	14453	14453	0.100	-10.82166	20.00000	Averaged
7 Ethylbenzene	14916	13608	13608	0.100	-8.77288	20.00000	Averaged
8 m+p-Xylenes	15474	14552	14552	0.100	-5.95888	20.00000	Averaged
9 o-Xylene	15464	13888	13888	0.100	-10.18993	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11477	11477	0.100	-5.19110	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10027	10027	0.100	-5.73100	20.00000	Averaged
13 Naphthalene	3432	3493	3493	0.100	1.78707	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6324	6324	0.100	-9.17006	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG9363
Lab ID : WG135529-12 **Analytical Date:** 12/06/13 20:07
Lab File ID : 9GL2091.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11737	11737	0.100	-8.21612	20.00000	Averaged
3 Methyl tert-butyl ether	7628	8794	8794	0.100	15.29410	20.00000	Averaged
4 Benzene	16536	14963	14963	0.100	-9.51129	20.00000	Averaged
5 Toluene	16206	14464	14464	0.100	-10.75046	20.00000	Averaged
7 Ethylbenzene	14916	13536	13536	0.100	-9.25209	20.00000	Averaged
8 m+p-Xylenes	15474	13886	13886	0.100	-10.26359	20.00000	Averaged
9 o-Xylene	15464	13842	13842	0.100	-10.48701	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	10996	10996	0.100	-9.16413	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	9557	9557	0.100	-10.14900	20.00000	Averaged
13 Naphthalene	3432	3442	3442	0.100	0.29292	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6355	6355	0.100	-8.71558	20.00000	Averaged

*** = Compound out of QC criteria**

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : 9GL2058.D
Instrument ID : GC09
Heated Purge : No

SDG : SG9363
Lab Sample ID : WG135529-1
Date Analyzed : 05-DEC-13
Time Analyzed : 10:04

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135529-2	9GL2059.D	12/05/13	10:58
Laboratory Control S	WG135529-3	9GL2060.D	12/05/13	11:52
TF2-001-SB1009-0204	SG9363-2	9GL2075.D	12/06/13	02:24

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG135529-1
Client ID: Method Blank Sample
Project:
SDG: SG9363
Lab File ID: 9GL2058.D

Sample Date:
Received Date:
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135529

Analysis Date: 05-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		90.4	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG135529-2
LCSD ID: WG135529-3
Project:
SDG: SG9363
Report Date: 19-DEC-13
LCS File ID: 9GL2059.D

Received Date:
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135529
LCSD File ID: 9GL2060.d

Analysis Date: 05-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	25.0	23.7	94.8	23.5	94.0	mg/Kgdrywt	1	30	67-137
-Bromofluorobenzene			99.2		100.				81-119

600 Technology Way
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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : 9GL2081.D
Instrument ID : GC09
Heated Purge : No

SDG : SG9363
Lab Sample ID : WG135529-1RA
Date Analyzed : 06-DEC-13
Time Analyzed : 09:54

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
TF2-W-TB06-1113	SG9363-11	9GL2085.D	12/06/13	14:41
TF2-001-SB1000-0810	SG9363-14	9GL2086.D	12/06/13	15:35
TF2-001-SB1006-0204	SG9363-16	9GL2087.D	12/06/13	16:29

Report of Analytical Results

Client:
Lab ID: WG135529-1RA
Client ID: Method Blank Sample
Project:
SDG: SG9363
Lab File ID: 9GL2081.D

Sample Date:
Received Date:
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135529

Analysis Date: 06-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		89.8	%					

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG9363

Client Sample ID	Lab Sample ID	Col. ID	BFB #
TF2-W-TB06-1113	SG9363-11	A	92.6
TF2-001-SB1000-0810	SG9363-14	A	96.2
TF2-001-SB1006-0204	SG9363-16	A	98.1
TF2-001-SB1009-0204	SG9363-2	A	96.5
Method Blank Sample	WG135529-1	A	90.4
Method Blank Sample	WG135529-1RA	A	89.8
Laboratory Control S	WG135529-2	A	99.2
Laboratory Control S	WG135529-3	A	100.

		QC Limits
BFB	P-BROMOFLUOROBENZENE	81-119

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

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sales@katahdinlab.com

FL-PRO DATA

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG9363
Project : NAVSTA Newport CTO WE30 &WE59 **Column ID :** A
Instrument ID : GC10

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	OTP	NTD	
Initial Calibration	WG135417-3	11/27/13	18:47	9.82	14.72	
Initial Calibration	WG135417-5	11/27/13	19:26	9.819	14.72	
Initial Calibration	WG135417-4	11/27/13	20:05	9.82	14.72	
Initial Calibration	WG135417-2	11/27/13	20:44	9.821	14.72	
Initial Calibration	WG135417-1	11/27/13	21:23	9.822	14.72	
Independent Source	WG135417-6	11/27/13	22:02	9.819	14.72	
Continuing Calibrati	WG135417-12	12/05/13	14:28	9.814	14.71	
Method Blank Sample	WG135483-1	12/05/13	16:27	9.802	14.72	
Laboratory Control S	WG135483-2	12/05/13	17:07	9.794	14.71	
Laboratory Control S	WG135483-3	12/05/13	17:46	9.793	14.71	
Continuing Calibrati	WG135417-13	12/05/13	22:59	9.814	14.71	
TF2-001-SB1009-0204	SG9363-2	12/06/13	04:12	9.793	14.71	
TF2-001-SB1000-0810	SG9363-14	12/06/13	04:51	9.793	14.71	
TF2-001-SB1006-0204	SG9363-16	12/06/13	05:30	9.793	14.71	
Continuing Calibrati	WG135417-14	12/06/13	06:48	9.814	14.71	

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File IDs : AGK10409.DAGK10408.DAGK10405.D AGK10407.DAGK10406.D

SDG: SG9363
Instrument ID: GC10
Column ID: A
Calibration Date(s): 27-NOV-13 18:47 27-NOV-13 21:23

	5.0000 Level 1	20.0000 Level 2	50.0000 Level 3	100.0000 Level 4	200.0000 Level 5		New Crv	b	m1	m2	%RSD	Max %RSD	
Petroleum Range Organic	3207401	11948369	27679023	57859927	111741030		LNR	-13.04539	32919		0.99964	0.99000	M
C-8	121120	558480	1472757	3322274	6528682		LNR	1.93175	33030		0.99918	0.99000	O
C-10	160678	683433	1634466	3407465	6722680		LNR	0.13169	33694		0.99987	0.99000	O
C-12	162526	706230	1651958	3437478	6748957		LNR	-0.13544	33812		0.99983	0.99000	O
C-14	166896	693775	1638710	3428968	6710379		LNR	-0.12142	33638		0.99980	0.99000	O
C-16	172145	697117	1644337	3433083	6683547		LNR	-0.33321	33502		0.99976	0.99000	O
C-18	195302	718285	1686904	3509892	6811160		LNR	-0.65127	34102		0.99973	0.99000	O
C-20	195203	730680	1695812	3514886	6760313		LNR	-0.99214	33854		0.99960	0.99000	O
C-22	203588	720719	1703069	3537520	6793044		LNR	-0.96059	34031		0.99957	0.99000	O
C-24	209421	709959	1579161	3570011	6734469		LNR	-0.46183	33891		0.99855	0.99000	O
C-26	210392	712774	1577799	3275178	6197846		LNR	-1.90914	30984		0.99919	0.99000	O
C-28	220739	741653	1627095	3348042	6342775		LNR	-2.12681	31670		0.99922	0.99000	O
C-30	204421	711161	1590346	3361671	6370018		LNR	-1.42418	31907		0.99919	0.99000	O
C-32	177802	705436	1616693	3364549	6473168		LNR	-0.91008	32428		0.99957	0.99000	O
C-34	191630	711417	1644515	3384457	6565358		LNR	-0.94350	32831		0.99974	0.99000	O
C-36	212813	744703	1719951	3434607	6645531		LNR	-1.64403	33148		0.99970	0.99000	O
C-38	183763	691910	1617310	3318770	6418918		LNR	-0.96332	32120		0.99971	0.99000	O
C-40	218956	710628	1578140	3211069	6234178		LNR	-1.67468	31043		0.99970	0.99000	O
O-Terphenyl	9478875	9480027	9159104	9354207	8933467		LNR	0.63587	37238		0.99695	0.99000	
n-Triacontane-D62	8469343	8548927	7964650	8243019	7927193		LNR	1.41469	27592		0.99434	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab ID : WG135417-12
Lab File ID : AGL10076.D
Initial Calibration Date(s): 11/27/13 18:47 11/27/13 21:23

SDG: SG9363
Analytical Date: 12/05/13 14:28
Instrument ID: GC10
Column ID: A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	342	34386	0.010	0.61974	25.00000	Linear
2 C-8	20.00000	23.86751	36227	0.010	19.33756	25.00000	Linear
3 C-10	20.00000	20.46976	34264	0.010	2.34880	25.00000	Linear
4 C-12	20.00000	20.75437	35317	0.010	3.77187	25.00000	Linear
5 C-14	20.00000	20.45072	34600	0.010	2.25358	25.00000	Linear
6 C-16	20.00000	20.49636	34892	0.010	2.48178	25.00000	Linear
8 C-18	20.00000	20.29187	35710	0.010	1.45937	25.00000	Linear
10 C-20	20.00000	19.72856	35074	0.010	-1.35718	25.00000	Linear
11 C-22	20.00000	19.38908	34626	0.010	-3.05460	25.00000	Linear
12 C-24	20.00000	19.45071	33743	0.010	-2.74646	25.00000	Linear
13 C-26	20.00000	19.76970	33585	0.010	-1.15152	25.00000	Linear
14 C-28	20.00000	20.43014	35719	0.010	2.15072	25.00000	Linear
16 C-30	20.00000	19.82230	33895	0.010	-0.88848	25.00000	Linear
17 C-32	20.00000	20.09747	34062	0.010	0.48734	25.00000	Linear
18 C-34	20.00000	19.76859	34000	0.010	-1.15706	25.00000	Linear
19 C-36	20.00000	18.60447	33560	0.010	-6.97764	25.00000	Linear
20 C-38	20.00000	19.45436	32791	0.010	-2.72820	25.00000	Linear
21 C-40	20.00000	19.26115	32495	0.010	-3.69423	25.00000	Linear
9 O-Terphenyl	250	257	38112	0.010	2.60107	25.00000	Linear
15 n-Triacontane-D62	300	305	27950	0.010	1.77064	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab ID : WG135417-13
Lab File ID : AGL10088.D
Initial Calibration Date(s): 11/27/13 18:47 11/27/13 21:23

SDG: SG9363
Analytical Date: 12/05/13 22:59
Instrument ID: GC10
Column ID: A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	860	33833	0.010	1.22863	25.00000	Linear
2 C-8	50.00000	52.37929	33325	0.010	4.75858	25.00000	Linear
3 C-10	50.00000	50.26887	33787	0.010	0.53775	25.00000	Linear
4 C-12	50.00000	50.59719	34308	0.010	1.19438	25.00000	Linear
5 C-14	50.00000	50.60674	34128	0.010	1.21348	25.00000	Linear
6 C-16	50.00000	50.62366	34143	0.010	1.24732	25.00000	Linear
8 C-18	50.00000	50.87176	35141	0.010	1.74351	25.00000	Linear
10 C-20	50.00000	50.74447	35030	0.010	1.48894	25.00000	Linear
11 C-22	50.00000	50.62174	35108	0.010	1.24347	25.00000	Linear
12 C-24	50.00000	51.81648	35435	0.010	3.63295	25.00000	Linear
13 C-26	50.00000	50.06153	32205	0.010	0.12306	25.00000	Linear
14 C-28	50.00000	50.31942	33219	0.010	0.63884	25.00000	Linear
16 C-30	50.00000	51.21058	33588	0.010	2.42117	25.00000	Linear
17 C-32	50.00000	51.08898	33725	0.010	2.17797	25.00000	Linear
18 C-34	50.00000	50.49919	33778	0.010	0.99839	25.00000	Linear
19 C-36	50.00000	49.54398	33936	0.010	-0.91204	25.00000	Linear
20 C-38	50.00000	49.65833	32519	0.010	-0.68334	25.00000	Linear
21 C-40	50.00000	49.53114	31791	0.010	-0.93773	25.00000	Linear
9 O-Terphenyl	250	257	38182	0.010	2.78774	25.00000	Linear
15 n-Triacontane-D62	300	296	27070	0.010	-1.42018	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG9363
Lab ID : WG135417-14 **Analytical Date:** 12/06/13 06:48
Lab File ID : AGL10100.D **Instrument ID:** GC10
Initial Calibration Date(s): 11/27/13 18:47 11/27/13 21:23 **Column ID:** A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	343	34496	0.010	0.94975	25.00000	Linear
2 C-8	20.00000	23.18939	35107	0.010	15.94697	25.00000	Linear
3 C-10	20.00000	20.05844	33571	0.010	0.29222	25.00000	Linear
4 C-12	20.00000	20.47380	34842	0.010	2.36898	25.00000	Linear
5 C-14	20.00000	20.28204	34317	0.010	1.41019	25.00000	Linear
6 C-16	20.00000	20.11733	34257	0.010	0.58667	25.00000	Linear
8 C-18	20.00000	20.04350	35287	0.010	0.21752	25.00000	Linear
10 C-20	20.00000	19.85809	35294	0.010	-0.70955	25.00000	Linear
11 C-22	20.00000	21.06388	37476	0.010	5.31942	25.00000	Linear
12 C-24	20.00000	19.84937	34418	0.010	-0.75316	25.00000	Linear
13 C-26	20.00000	20.16325	34195	0.010	0.81626	25.00000	Linear
14 C-28	20.00000	20.53112	35879	0.010	2.65562	25.00000	Linear
16 C-30	20.00000	20.26174	34596	0.010	1.30872	25.00000	Linear
17 C-32	20.00000	20.81934	35232	0.010	4.09670	25.00000	Linear
18 C-34	20.00000	19.76880	34000	0.010	-1.15599	25.00000	Linear
19 C-36	20.00000	18.53530	33446	0.010	-7.32351	25.00000	Linear
20 C-38	20.00000	19.73291	33238	0.010	-1.33546	25.00000	Linear
21 C-40	20.00000	18.48084	31284	0.010	-7.59578	25.00000	Linear
9 O-Terphenyl	250	253	37569	0.010	1.14318	25.00000	Linear
15 n-Triacontane-D62	300	306	27998	0.010	1.94381	25.00000	Linear

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : AGL10078.D
Instrument ID : GC10
Matrix : SL

SDG : SG9363
Lab Sample ID : WG135483-1
Date Extracted : 03-DEC-13
Date Analyzed : 05-DEC-13
Time Analyzed : 16:27

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135483-2	AGL10079	12/05/13	17:07
Laboratory Control S	WG135483-3	AGL10080	12/05/13	17:46
TF2-001-SB1009-0204	SG9363-2	AGL10096	12/06/13	04:12
TF2-001-SB1000-0810	SG9363-14	AGL10097	12/06/13	04:51
TF2-001-SB1006-0204	SG9363-16	AGL10098	12/06/13	05:30

Katahdin
ANALYTICAL SERVICES

Accredited in accordance with nelac
Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG135483-1
Client ID: Method Blank Sample
Project:
SDG: SG9363
Lab File ID: AGL10078.D

Sample Date:
Received Date:
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135483

Analysis Date: 05-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA
Report Date: 14-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		84.8	%					
n-Triacontane-D62		80.0	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

LCS/LCSD Recovery Report

LCS ID: WG135483-2
LCSD ID: WG135483-3
Project:
SDG: SG9363
Report Date: 14-DEC-13
LCS File ID: AGL10079.D

Received Date:
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135483
LCSD File ID: AGL10080.D

Analysis Date: 05-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	60.0	48.0	80.0	48.0	80.0	mg/Kgdrywt	0	30	63-153
o-Terphenyl			87.9		84.8				62-109
n-Triacontane-D62			80.0		75.0				60-130

600 Technology Way
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http://www.katahdinlab.com

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG9363

Client Sample ID	Lab Sample ID	Col. ID	NTD	#	OTP	#
TF2-001-SB1000-0810	SG9363-14	A	104.		90.6	
TF2-001-SB1006-0204	SG9363-16	A	73.0		85.9	
TF2-001-SB1009-0204	SG9363-2	A	90.9		80.1	
Method Blank Sample	WG135483-1	A	80.0		84.8	
Laboratory Control S	WG135483-2	A	80.0		87.9	
Laboratory Control S	WG135483-3	A	75.0		84.8	

		QC Limits
OTP	O-TERPHENYL	62-109
NTD	N-TRIACONTANE-D62	60-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

NAVSTA NEWPORT
SOIL DATA
SG9363

FRACTION	CHEMICAL	TF2-SB-DUP10-1113	UNITS	TF2-001-SB1004-0204	RPD	D	
PAH	ANTHRACENE	2 J /P	UG/KG	4 J /P	66.67	2.00	N/A < 2x R.L.
PAH	BENZO(A)ANTHRACENE	17 J	UG/KG	22	25.64	5.00	
PAH	BENZO(A)PYRENE	14 J	UG/KG	16 J	13.33	2.00	
PAH	BENZO(B)FLUORANTHENE	26	UG/KG	30	14.29	4.00	
PAH	BENZO(G,H,I)PERYLENE	5.2 J	UG/KG	3.6 J	36.36	1.60	
PAH	BENZO(K)FLUORANTHENE	8.6 J	UG/KG	10 J	15.05	1.40	
PAH	CHRYSENE	18 J	UG/KG	24	28.57	6.00	
PAH	DIBENZO(A,H)ANTHRACENE	4.2 J	UG/KG	5.2 J	21.28	1.00	
PAH	FLUORANTHENE	32	UG/KG	45	33.77	13.00	
PAH	INDENO(1,2,3-CD)PYRENE	13 J	UG/KG	16 J	20.69	3.00	
PAH	PHENANTHRENE	13 J	UG/KG	23	55.56	10.00	N/A < 2x R.L.
PAH	PYRENE	24	UG/KG	32	28.57	8.00	

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG9363

FRACTION	CHEMICAL	TF2-SB-DUP11-1113	UNITS	TF2-001-SB1005-0204	RPD	D
PAH	2-METHYLNAPHTHALENE	ND	UG/KG	190	200.00	190.00
PAH	ACENAPHTHENE	ND	UG/KG	240	200.00	240.00
PAH	ACENAPHTHYLENE	88	UG/KG	29	101.85	59.00
PAH	DIBENZO(A,H)ANTHRACENE	ND	UG/KG	160	200.00	160.00
PAH	NAPHTHALENE	ND	UG/KG	370	200.00	370.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG9363

FRACTION	CHEMICAL	TF2-SB-DUP11-1113DL	UNITS	TF2-001-SB1005-0204	RPD	D
PAH	2-METHYLNAPHTHALENE	280 J	UG/KG	190	38.30	90.00
PAH	ACENAPHTHENE	890	UG/KG	240	115.04	650.00
PAH	ACENAPHTHYLENE	ND	UG/KG	29	200.00	29.00
PAH	ANTHRACENE	1800	UG/KG	ND	200.00	1800.00
PAH	BENZO(A)ANTHRACENE	4100	UG/KG	ND	200.00	4100.00
PAH	BENZO(A)PYRENE	3100	UG/KG	ND	200.00	3100.00
PAH	BENZO(B)FLUORANTHENE	4800	UG/KG	ND	200.00	4800.00
PAH	BENZO(G,H,I)PERYLENE	1500	UG/KG	ND	200.00	1500.00
PAH	BENZO(K)FLUORANTHENE	1500	UG/KG	ND	200.00	1500.00
PAH	CHRYSENE	3800	UG/KG	ND	200.00	3800.00
PAH	DIBENZO(A,H)ANTHRACENE	490 J	UG/KG	160	101.54	330.00
PAH	FLUORANTHENE	10000 J	UG/KG	ND	200.00	10000.00
PAH	FLUORENE	1700	UG/KG	ND	200.00	1700.00
PAH	INDENO(1,2,3-CD)PYRENE	2400 J	UG/KG	ND	200.00	2400.00
PAH	NAPHTHALENE	1200	UG/KG	370	105.73	830.00
PAH	PHENANTHRENE	11000	UG/KG	ND	200.00	11000.00
PAH	PYRENE	10000 J	UG/KG	ND	200.00	10000.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG9363

FRACTION	CHEMICAL	TF2-SB-DUP11-1113DL	UNITS	TF2-001-SB1005-0204DL	RPD	D
PAH	2-METHYLNAPHTHALENE	280 J	UG/KG	ND	20.00	280.00
PAH	ACENAPHTHENE	890	UG/KG	ND	20.00	890.00
PAH	ANTHRACENE	1800	UG/KG	740	83.46	1060.00
PAH	BENZO(A)ANTHRACENE	4100	UG/KG	1500	92.86	2600.00
PAH	BENZO(A)PYRENE	3100	UG/KG	1200	88.37	1900.00
PAH	BENZO(B)FLUORANTHENE	4800	UG/KG	1800	90.91	3000.00
PAH	BENZO(G,H,I)PERYLENE	1500	UG/KG	540	94.12	960.00
PAH	BENZO(K)FLUORANTHENE	1500	UG/KG	560	91.26	940.00
PAH	CHRYSENE	3800	UG/KG	1400	92.31	2400.00
PAH	DIBENZO(A,H)ANTHRACENE	490 J	UG/KG	ND	20.00	490.00
PAH	FLUORANTHENE	10000 J	UG/KG	3800 J	89.86	6200.00
PAH	FLUORENE	1700	UG/KG	530	105.93	1170.00
PAH	INDENO(1,2,3-CD)PYRENE	2400 J	UG/KG	860 J	94.48	1540.00
PAH	NAPHTHALENE	1200	UG/KG	ND	20.00	1200.00
PAH	PHENANTHRENE	11000	UG/KG	3500	103.45	7500.00
PAH	PYRENE	10000 J	UG/KG	3600 J	94.12	6400.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

VOC CALCULATION	SAMPLE	
	TF2-W-TB06-1113	
TARGET ANALYTE	carbon disulfide	
ANALYTE RESPONSE	11377	
INTERNAL STANDARD	pentafluorobenzene	
I.S. RESPONSE	328693	
I.S. CONCENTRATION	50	ug/kg
ANALYTE CAL. RF	1.8985	
DILUTION FACTOR (DF)	1	
WEIGHT SAMPLE	5	grams
% MOISTURE	0	%
SOLIDS (percent /100)	1	
FINAL VOLUME	5	ml

$$\frac{\text{(ANALYTE RESPONSE) X (I.S. CONCENTRATION) X DF X FINAL VOL.}}{\text{(I.S. RESPONSE) X (CAL. R.F.) X WEIGHT (gms) X SOLIDS}}$$

0.91158 ug/kg

0.000911584 mg/kg

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-11RA
Client ID: TF2-W-TB06-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9363
Lab File ID: C4714.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 09-DEC-13
Extracted By: REC
Extraction Method: SW846 5035
Lab Prep Batch: WG135833

Analysis Date: 09-DEC-13
Analyst: REC
Analysis Method: SW846 8260B
Matrix: SL
% Solids: 100
Report Date: 12-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromomethane	U	5.0	ug/Kgdrywt	1	10	10.	1.1	5.0
Carbon Disulfide	J	0.91	ug/Kgdrywt	1	5	5.0	0.78	2.5
Acetone		58	ug/Kgdrywt	1	25	25.	5.1	12.
Methyl tert-butyl Ether	U	2.5	ug/Kgdrywt	1	5	5.0	1.1	2.5
2-Butanone	U	12	ug/Kgdrywt	1	25	25.	5.9	12.
Benzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
Toluene	U	2.5	ug/Kgdrywt	1	5	5.0	1.4	2.5
4-Methyl-2-Pentanone	U	12	ug/Kgdrywt	1	25	25.	5.9	12.
1,2-Dibromoethane	U	2.5	ug/Kgdrywt	1	5	5.0	1.2	2.5
2-Hexanone	U	12	ug/Kgdrywt	1	25	25.	4.8	12.
Ethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.65	2.5
m+p-Xylenes	U	5.0	ug/Kgdrywt	1	10	10.	1.7	5.0
o-Xylene	U	2.5	ug/Kgdrywt	1	5	5.0	1.3	2.5
Xylenes (Total)	UL	7.5	ug/Kgdrywt	1	15	15.	1.3	7.5
Styrene	U	2.5	ug/Kgdrywt	1	5	5.0	0.51	2.5
Bromoform	U	2.5	ug/Kgdrywt	1	5	5.0	0.70	2.5
Isopropylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
N-Propylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.83	2.5
1,3,5-Trimethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.67	2.5
tert-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.90	2.5
1,2,4-Trimethylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.87	2.5
P-Isopropyltoluene	U	2.5	ug/Kgdrywt	1	5	5.0	0.76	2.5
N-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.92	2.5
sec-Butylbenzene	U	2.5	ug/Kgdrywt	1	5	5.0	0.91	2.5
Cyclohexane	U	2.5	ug/Kgdrywt	1	5	5.0	1.4	2.5
Methyl Acetate	U	3.0	ug/Kgdrywt	1	5	5.0	2.7	3.0
Methylcyclohexane	U	2.5	ug/Kgdrywt	1	5	5.0	0.96	2.5
Naphthalene	U	2.5	ug/Kgdrywt	1	5	5.0	0.88	2.5
p-Bromofluorobenzene		108.	%					
Toluene-D8		111.	%					
1,2-Dichloroethane-D4		123.	%					
Dibromofluoromethane		121.	%					

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Data File: \\target_server\gg\chem\gcms-c.i\C120913.b\C4714.D
Report Date: 12-Dec-2013 00:33

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-c.i\C120913.b\C4714.D
Lab Smp Id: SG9363-11RA Client Smp ID: TF2-W-TB06-1113
Inj Date : 09-DEC-2013 15:04 MS Autotune Date: 13-JUN-2013 11:48
Operator : REC Inst ID: gcms-c.i
Smp Info : SG9363-11RA
Misc Info : WG135833,WG135686-4
Comment : SW846 5035
Method : \\target_server\GG\chem\gcms-c.i\C120913.b\C826SB31.m
Meth Date : 09-Dec-2013 11:09 rcrocker Quant Type: ISTD
Cal Date : 06-DEC-2013 12:23 Cal File: C4691.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: SW8260-S.sub
Target Version: 4.12

Concentration Formula: Amt * DF * (100/(100-M))*(Vt/Ws) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
M	0.00000	% Moisture
Vt	5.000	Volume of DI Water (mL)
Ws	5.000	Weight of Sample (g)
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/kg)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW COD
10 Carbon Disulfide	76	3.902	3.910	(0.477)	11377	0.91158	0.91(a)	
15 Acetone	43	4.910	4.903	(0.600)	64271	57.9347	57.9	
$ 37 Dibromofluoromethane	113	7.541	7.542	(0.922)	203222	60.3682	60.4	
* 42 Pentafluorobenzene	168	8.178	8.178	(1.000)	328693	50.0000		
$ 45 1,2-Dichloroethane-D4	65	8.228	8.228	(1.006)	242907	61.4800	61.5	
* 49 1,4-Difluorobenzene	114	8.836	8.836	(1.000)	580474	50.0000		
$ 55 Toluene-D8	98	10.451	10.452	(1.183)	645053	55.6814	55.7	
* 66 Chlorobenzene-D5	117	12.339	12.340	(1.000)	626404	50.0000		
$ 76 P-Bromofluorobenzene	95	13.991	13.998	(1.583)	296031	53.8568	53.8	
* 91 1,4-Dichlorobenzene-D4	152	15.685	15.686	(1.000)	334524	50.0000		

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG9363
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GCMS-C
Lab File IDs : C4691.D C4690.D C4689.D **Column ID:**
C4688.D C4687.D C4686.D **Calibration Date(s):** 06-DEC-13 09:27
06-DEC-13 12:23

	Level 1 5.0000	Level 2 10.0000	Level 3 20.0000	Level 4 50.0000	Level 5 100.0000	Level 6 200.0000	Crv New	b	m1	m2	%RSD	Max %RSD	
Bromomethane	0.45587	0.45866	0.45095	0.42771	0.44135	0.41948	AVG		0.44234		3.59091	15.00000	O
Carbon Disulfide	1.99705	1.99355	1.96544	1.87905	1.84807	1.70785	AVG		1.89850		5.88892	15.00000	O
Acetone	0.17749	0.16297	0.15811	0.16649	0.15977	0.18769	AVG		0.16875		6.84637	15.00000	O
Methyl tert-butyl ether	1.59796	1.65116	1.67350	1.66871	1.65438	1.51156	AVG		1.62621		3.83058	15.00000	O
2-Butanone	0.26763	0.28821	0.29539	0.31288	0.29964	0.31995	AVG		0.29728		6.25284	15.00000	O
Benzene	1.39821	1.37962	1.40830	1.34999	1.28177	1.21702	AVG		1.33915		5.61153	15.00000	O
Cyclohexane	0.88483	0.95783	1.02222	0.95259	0.96705	0.87972	AVG		0.94404		5.71384	15.00000	O
Toluene	0.81344	0.82922	0.84089	0.79902	0.77668	0.76164	AVG		0.80348		3.79549	15.00000	O
4-methyl-2-pentanone	0.38152	0.39986	0.39748	0.39848	0.34868	0.33050	AVG		0.37609		7.87260	15.00000	O
1,2-Dibromoethane	0.28898	0.30138	0.31776	0.31352	0.30693	0.33717	AVG		0.31096		5.24638	15.00000	O
2-Hexanone	0.25384	0.29355	0.29575	0.30051	0.26665	0.25177	AVG		0.27701		8.00427	15.00000	O
Ethylbenzene	0.43165	0.45391	0.47829	0.45811	0.44614	0.43488	AVG		0.45050		3.79287	15.00000	O
Xylenes (total)	+++++	+++++	+++++	+++++	+++++	+++++	AVG		0.000e+00		0.000e+(	15.00000	M (
m+p-Xylenes	0.54804	0.58931	0.57945	0.57275	0.55661	0.51550	AVG		0.56028		4.74526	15.00000	O
o-Xylene	0.49627	0.54356	0.58713	0.58484	0.57325	0.55604	AVG		0.55685		6.12479	15.00000	O
Styrene	0.85522	0.93591	0.95554	0.97899	0.94402	0.87724	AVG		0.92449		5.18243	15.00000	O
Bromoform	0.18569	0.20109	0.21293	0.22642	0.23018	0.24595	AVG		0.21704		9.99038	15.00000	O
Isopropylbenzene	2.59682	2.80619	3.01512	2.91192	2.70027	2.52977	AVG		2.76002		6.74916	15.00000	O
N-Propylbenzene	3.72599	3.99163	3.96021	3.81338	3.40627	3.00608	AVG		3.65059		10.39081	15.00000	O
1,3,5-Trimethylbenzene	2.35484	2.54730	2.55511	2.55414	2.33284	2.16506	AVG		2.41821		6.64914	15.00000	O
tert-Butylbenzene	2.21702	2.40786	2.52594	2.52992	2.39152	2.29316	AVG		2.39423		5.20233	15.00000	O
1,2,4-Trimethylbenzene	2.29873	2.48968	2.55210	2.55283	2.33907	2.15314	AVG		2.39759		6.71003	15.00000	O
P-Isopropyltoluene	2.27052	2.51145	2.66445	2.62943	2.40268	2.24444	AVG		2.45383		7.25763	15.00000	O
N-Butylbenzene	2.65164	2.86800	2.98778	2.86789	2.56783	2.28864	AVG		2.70530		9.46879	15.00000	O
sec-Butylbenzene	3.07651	3.32767	3.43745	3.33768	3.01701	2.72897	AVG		3.15421		8.38392	15.00000	O
Naphthalene	1.74304	1.91872	2.02686	2.10475	1.92107	1.86410	AVG		1.92975		6.53104	15.00000	O
Methyl Acetate	0.38077	0.38440	0.39347	0.41413	0.41240	0.45106	AVG		0.40604		6.41999	15.00000	O
Methylcyclohexane	0.79594	0.89312	0.95222	0.90713	0.93141	0.87415	AVG		0.89233		6.12875	15.00000	O
Dibromofluoromethane	0.48631	0.53122	0.51927	0.51629	0.51946	0.49995	AVG		0.51209		3.15042	15.00000	
1,2-Dichloroethane-D4	0.61443	0.60635	0.61540	0.58232	0.59915	0.58844	AVG		0.60102		2.26526	15.00000	
Toluene-D8	0.99001	1.03611	1.04229	1.00848	0.98948	0.92082	AVG		0.99787		4.39513	15.00000	
P-Bromofluorobenzene	0.46505	0.47470	0.47732	0.47482	0.48054	0.46833	AVG		0.47346		1.21474	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

SVOC/PAH CALCULATION

	SAMPLE **TF2-001-SS1007-0001**	
TARGET ANALYTE	benzo(a)anthracene	
ANALYTE RESPONSE	138700	
INTERNAL STANDARD	chrysene-d12	
I.S. RESPONSE	36369	
I.S. CONCENTRATION	0.8	ug/ml
ANALYTE CAL. RF	1.23711	
DILUTION FACTOR (DF)	12	
WEIGHT SAMPLE	30.8	grams
% MOISTURE	16.76	
SOLIDS (percent /100)	0.8324	
FINAL VOLUME	1000	µL
INJECTION VOLUME	1	µL
	on column 2.466191353	

$$\frac{\text{(ANALYTE RESPONSE) X (I.S. CONCENTRATION) X DF X FINAL VOL.}}{\text{(I.S. RESPONSE) X (CAL. R.F.) X WEIGHT (gms) X SOLIDS x INJ. VOL.}} = 1154.3174 \text{ µg/kg}$$

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9363-8DL
Client ID: TF2-001-SS1007-0001
Project: NAVSTA Newport CTO WE
SDG: SG9363
Lab File ID: N1259.D

Sample Date: 25-NOV-13
Received Date: 27-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135525

Analysis Date: 18-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 83.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	71.	ug/Kgdrywt	12	20	280	36.	140
2-Methylnaphthalene	U	140	ug/Kgdrywt	12	20	280	31.	140
Acenaphthylene	U	140	ug/Kgdrywt	12	20	280	17.	140
Acenaphthene	J	180	ug/Kgdrywt	12	20	280	21.	140
Fluorene	J	180	ug/Kgdrywt	12	20	280	45.	140
Phenanthrene		2000	ug/Kgdrywt	12	20	280	25.	140
Anthracene		410	ug/Kgdrywt	12	20	280	17.	140
Fluoranthene		2700	ug/Kgdrywt	12	20	280	25.	140
Pyrene		3200	ug/Kgdrywt	12	20	280	29.	140
Benzo(a)anthracene		1200	ug/Kgdrywt	12	20	280	27.	140
Chrysene		1100	ug/Kgdrywt	12	20	280	24.	140
Benzo(b)Fluoranthene		1500	ug/Kgdrywt	12	20	280	34.	140
Benzo(k)fluoranthene		420	ug/Kgdrywt	12	20	280	44.	140
Benzo(a)pyrene		880	ug/Kgdrywt	12	20	280	46.	140
Indeno(1,2,3-cd)pyrene	L	700	ug/Kgdrywt	12	20	280	27.	140
Dibenzo(a,h)anthracene	J	150	ug/Kgdrywt	12	20	280	25.	140
Benzo(g,h,i)perylene		410	ug/Kgdrywt	12	20	280	28.	140
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Tel:(207) 874-2400 Fax:(207) 775-4029

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Data File: \\target_server\GG\chem\gcms-n.i\N121819.b\N1259.D
Report Date: 19-Dec-2013 12:31

Katahdin Analytical Services

Data file : \\target_server\GG\chem\gcms-n.i\N121819.b\N1259.D
Lab Smp Id: SG9363-8DL Client Smp ID: TF2-001-SS1007-0001
Inj Date : 18-DEC-2013 13:11 MS Autotune Date: 12-NOV-2013 08:32
Operator : JCG Inst ID: gcms-n.i
Smp Info : SG9363-8DL
Misc Info : WG136358,WG135525,WG136159-4
Comment :
Method : \\target_server\GG\chem\gcms-n.i\N121819.b\NSPSIM83.m
Meth Date : 18-Dec-2013 13:02 gcms-n.i Quant Type: ISTD
Cal Date : 14-DEC-2013 12:46 Cal File: N1206.D
Als bottle: 3
Dil Factor: 12.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	12.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03080	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	16.760	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW COD
*	8 1,4-Dichlorobenzene-D4	152	8.909	8.885	(1.000)	26963	0.80000		
*	24 Naphthalene-D8	136	11.774	11.675	(1.000)	97058	0.80000		
	25 Naphthalene	128	11.825	11.727	(1.004)	17363	0.15091	70.6(a)	
*	44 Acenaphthene-D10	164	15.787	15.764	(1.000)	46493	0.80000		
	46 Acenaphthene	153	15.853	15.830	(1.004)	28456	0.37646	176(a)	
	54 Fluorene	166	17.079	17.070	(1.082)	34741	0.39251	184(a)	
*	63 Phenanthrene-D10	188	19.242	19.262	(1.000)	67793	0.80000		
	64 Phenanthrene	178	19.302	19.307	(1.003)	459262	4.27392	2000	
	65 Anthracene	178	19.422	19.427	(1.009)	100833	0.87665	410	
	68 Fluoranthene	202	22.106	22.110	(1.149)	622222	5.78995	2710	
	70 Pyrene	202	22.612	22.616	(0.886)	528431	6.79149	3180	
	72 Benzo(a)anthracene	228	25.492	25.510	(0.999)	138700	2.46618	1150	
*	73 Chrysene-D12	240	25.520	25.523	(1.000)	36369	0.80000		
	74 Chrysene	228	25.574	25.577	(1.002)	133422	2.29830	1080	
	78 Benzo(b)fluoranthene	252	27.890	27.897	(0.974)	109779	3.12309	1460	
	79 Benzo(k)fluoranthene	252	27.941	27.948	(0.975)	44417	0.89946	421(M)	M6
	80 Benzo(a)pyrene	252	28.524	28.548	(0.996)	66879	1.89124	885	
*	81 Perylene-D12	264	28.644	28.686	(1.000)	22639	0.80000		
	82 Indeno(1,2,3-cd)pyrene	276	30.743	30.774	(1.073)	32366	1.48899	697(H)	
	83 Dibenzo(a,h)anthracene	278	30.811	30.856	(1.076)	6900	0.32501	152(a)	
	84 Benzo(g,h,i)perylene	276	31.305	31.350	(1.093)	24888	0.88099	412	

JLP
2:11 pm, Dec 19, 2013

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG9363
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GCMS-N
Lab File IDs : N1203.D N1204.D N1202.D **Column ID:**
N1205.D N1206.D N1207.D **Calibration Date(s):** 14-DEC-13 09:56
14-DEC-13 13:28

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.200000(	0.500000(	1.0000	3.0000	7.0000	10.0000	New	b	m1	m2	%RSD	%RSD	
Naphthalene	1.00042	1.00394	1.00599	0.96219	0.88808	0.82938	AVG		0.94833		7.76350	15.00000	O
2-Methylnaphthalene	29187	69410	105371	388765	787989	1196621	LNR	-0.37350	0.59252		0.99634	0.99000	O
Acenaphthylene	2.18947	2.31239	2.35286	2.08646	2.07787	1.97293	AVG		2.16533		6.79576	15.00000	O
Acenaphthene	1.33300	1.37858	1.41690	1.24753	1.24696	1.18087	AVG		1.30064		6.93552	15.00000	O
Fluorene	1.62119	1.59911	1.64918	1.44264	1.43633	1.38946	AVG		1.52298		7.37954	15.00000	O
Phenanthrene	1.32352	1.28552	1.36571	1.22114	1.23772	1.17473	AVG		1.26806		5.54817	15.00000	O
Anthracene	1.40263	1.42399	1.43398	1.30898	1.32622	1.24809	AVG		1.35732		5.47474	15.00000	O
Fluoranthene	1.34772	1.28550	1.34641	1.22246	1.22642	1.18047	AVG		1.26816		5.49433	15.00000	O
Pyrene	21527	57607	106801	439414	1018696	1613683	LNR	-0.24527	1.66346		0.99543	0.99000	O
Benzo(a)anthracene	1.34811	1.24233	1.32319	1.19141	1.18568	1.13197	AVG		1.23711		6.81543	15.00000	O
Chrysene	15502	39603	73548	301641	718270	1173162	LNR	-0.18862	1.19829		0.99775	0.99000	O
Benzo(b)fluoranthene	1.38209	1.10650	1.38743	1.13227	1.24505	1.19944	AVG		1.24213		9.72738	15.00000	O
Benzo(k)fluoranthene	2.08578	1.95730	1.73610	1.69990	1.55196	1.43904	AVG		1.74501		13.9005	15.00000	O
Benzo(a)pyrene	1.40224	1.29422	1.30534	1.15571	1.19331	1.14687	AVG		1.24962		8.07690	15.00000	O
Indeno(1,2,3-cd)pyrene	8697	20908	29576	108195	313834	488772	QUA	-0.02474	1.28770	0.02202	0.99238	0.99000	O
Dibenzo(a,h)anthracene	0.87921	0.78421	0.73558	0.67729	0.72056	0.70439	AVG		0.75021		9.66852	15.00000	O
Benzo(g,h,i)perylene	9119	21702	39952	157624	379499	633468	LNR	-0.17316	0.86264		0.99853	0.99000	O
2-Methylnaphthalene-D10	1.05873	1.09973	1.08345	0.98736	0.96070	0.91076	AVG		1.01679		7.40394	15.00000	
Fluorene-D10	0.94383	1.02573	1.00934	0.88114	0.86502	0.83846	AVG		0.92725		8.43594	15.00000	
Pyrene-D10	1.34655	1.17871	1.13961	0.99007	0.99831	0.89819	AVG		1.09191		14.84172	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Tetra Tech **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 24, 2014**

FROM: **TERRI L. SOLOMON** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS, TOTAL SOLIDS**
CTO WE30 NAVSTA NEWPORT
SAMPLE DELIVERY GROUP (SDG) – SG9363

SAMPLES: 20/Soil/

TF2-001-SB1000-0204	TF2-001-SB1000-0810
TF2-001-SB1004-0204	TF2-001-SB1005-0204
TF2-001-SB1006-0204	TF2-001-SB1007-0204
TF2-001-SB1008-0204	TF2-001-SB1009-0204
TF2-001-SB1009-0810	TF2-001-SB1010-0204
TF2-001-SS1000-0001	TF2-001-SS1004-0001
TF2-001-SS1005-0001	TF2-001-SS1006-0001
TF2-001-SS1007-0001	TF2-001-SS1008-0001
TF2-001-SS1009-0001	TF2-001-SS1010-0001
TF2-SB-DUP10-1113	TF2-SB-DUP11-1113

1/Aqueous/

TF2-W-TB06-1113

Overview

The sample set for NAVSTA Newport, CTO WE30, SDG SG9363, consists of twenty (20) soil environmental samples and one (1) trip blank. Two (2) field duplicate pairs (TF2-001-SB1004-0204 / TF2-SB-DUP10-1113 and TF2-001-SB1005-0204 / TF2-SB-DUP11-1113) were included within this SDG.

All soil samples were analyzed for target analyte list (TAL) metals. Sample TF2-W-TB06-1113 was analyzed for total solids. The samples were collected by Tetra Tech on November 25 and 27, 2013 and analyzed by Katahdin Analytical Services. Metals analyses were conducted using SW-846 method 6020A. Mercury analyses were conducted using SW-846 method 7471B. Total solids analyses were conducted using Standard Method 2540G.

These data were evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • ICP/MS Tune
• Initial and Continuing Calibrations
• Laboratory Method / Preparation Blanks
* • ICP Interference Analysis
* • Laboratory Control Sample Results
• Matrix Spike Recoveries
* • Laboratory Duplicate Precision

* • Serial Dilution Results
* • Internal Standard Recoveries
* • Field Duplicate Results
* • Detection Limits

* - All quality control criteria were met for this parameter.

Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets. Appendix D contains the documentation to support the findings as discussed in this validation report.

Laboratory Method / Preparation Blanks

The following contaminants were detected in laboratory method / preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum[(1)]	2.305 ug/L	1.1525 mg/kg
Antimony[(1)]	0.013 ug/L	0.0065 mg/kg
Iron[(2)]	6.672 ug/L	3.336 mg/kg
Thallium[(1)]	0.003 ug/L	0.0015 mg/kg

(1) Maximum concentration present in a method blank (12/12/2013) affecting samples TF2-001-SS1009-0001, TF2-001-SB1009-0204, TF2-001-SB1009-0810, TF2-001-SS1008-0001, TF2-001-SB1008-0204, TF2-001-SS1004-0001, TF2-001-SB1004-0204, TF2-001-SS1007-0001 and TF2-001-SB1007-0204.

(2) Maximum concentration present in a method blank (12/12/2013) affecting samples TF2-001-SS1009-0001, TF2-001-SB1009-0204, TF2-001-SS1008-0001, TF2-001-SB1008-02-4, TF2-001-SS1004-0001, TF2-001-SB1004-0204, TF2-001-SS1007-0001 and TF2-001-SB1007-0204.

Analyte	Maximum Concentration	Action Level
Antimony[(3)]	0.016 ug/L	0.008 mg/kg
Thallium[(3)]	0.005 ug/L	0.0025 mg/kg

(3) Maximum concentration present in a method blank (12/14/2013) affecting sample TF2-001-SS1010-0001.

Analyte	Maximum Concentration	Action Level
Antimony[(4)]	0.025 ug/L	0.0125 mg/kg
Cobalt[(4)]	0.008 ug/L	0.004 mg/kg
Iron[(5)]	8.933 ug/L	4.4665 mg/kg
Manganese[(6)]	0.098 ug/L	0.049 mg/kg
Potassium[(4)]	15.34 ug/L	7.67 mg/kg
Thallium[(4)]	0.007 ug/L	0.0035 mg/kg

(4) Maximum concentration present in a method blank (12/17/2013) affecting samples TF2-SB-DUP10-1113, TF2-001-SS1000-0001, TF2-001-SB1000-0204, TF2-001-SB1000-0810, TF2-001-SS1006-0001, TF2-001-SB1006-0204, TF2-001-SS1005-0001, TF2-001-SB1005-0204, TF2-001-SB1010-0204 and TF2-SB-DUP11-1113.

(5) Maximum concentration present in a method blank (12/17/2013) affecting samples TF2-001-SB1009-0810, TF2-SB-DUP10-1113, TF2-001-SS1000-0001, TF2-001-SB1000-0204, TF2-001-SB1000-0810, TF2-001-SS1006-0001, TF2-001-SB1006-0204, TF2-001-SS1005-0001, TF2-001-SB1005-0204 and TF2-SB-DUP11-1113.

(6) Maximum concentration present in a method blank (12/17/2013) affecting samples TF2-001-SS1009-0001, TF2-001-SB1009-0204, TF2-001-SB1009-0810, TF2-SB-DUP10-1113, TF2-001-SS1000-0001, TF2-001-SB1000-0810, TF2-001-SS1006-0001, TF2-001-SB1006-0204, TF2-001-SS1005-0001, TF2-001-SB1005-0204 and TF2-SB-DUP11-1113.

Analyte	Concentration	Level
Copper(7)	0.036 ug/L	0.018 mg/kg
Manganese(7)	0.034 ug/L	0.017 mg/kg
Zinc(7)	0.245 ug/L	0.1225 mg/kg

(7) Maximum concentration present in a method blank (12/18/2013) affecting sample TF2-001-SS1010-0001.

Analyte	Maximum Concentration	Action Level
Aluminum(8)	1.067 mg/kg	5.335 mg/kg
Arsenic(8)	0.150 mg/kg	0.75 mg/kg
Barium(8)	0.043 mg/kg	0.215 mg/kg
Calcium(8)	6.035 mg/kg	30.175 mg/kg
Chromium(8)	0.062 mg/kg	0.31 mg/kg
Copper(8)	0.273 mg/kg	1.365 mg/kg
Iron(8)	5.985 mg/kg	29.925 mg/kg
Lead(8)	0.074 mg/kg	0.37 mg/kg
Magnesium(8)	1.964 mg/kg	9.82 mg/kg
Manganese(8)	0.067 mg/kg	0.335 mg/kg
Nickel(8)	0.064 mg/kg	0.32 mg/kg
Selenium(8)	0.040 mg/kg	0.20 mg/kg
Sodium(8)	3.101 mg/kg	15.505 mg/kg
Zinc(8)	0.766 mg/kg	3.83 mg/kg

(8) Maximum concentration present in a preparation blank (batch GL11IMS1) affecting samples TF2-001-SS1009-0001, TF2-001-SB1009-0204, TF2-001-SB1009-0810, TF2-001-SS1008-0001, TF2-001-SB1008-0204, TF2-001-SS1004-0001, TF2-001-SB1004-0204, TF2-001-SS1007-0001, TF2-001-SB1007-0204, TF2-SB-DUP10-1113, TF2-001-SS1000-0001, TF2-001-SB1000-0204, TF2-001-SB1000-0810, TF2-001-SS1006-0001, TF2-001-SB1006-0204, TF2-001-SS1005-0001, TF2-001-SB1005-0204 and TF2-SB-DUP11-1113.

Analyte	Maximum Concentration	Action Level
Aluminum(9)	1.285 mg/kg	6.425 mg/kg
Barium(9)	0.044 mg/kg	0.22 mg/kg
Chromium(9)	0.064 mg/kg	0.32 mg/kg
Cobalt(9)	0.005 mg/kg	0.025 mg/kg
Copper(9)	0.223 mg/kg	1.115 mg/kg
Iron(9)	4.331 mg/kg	21.655 mg/kg
Lead(9)	0.054 mg/kg	0.27 mg/kg
Magnesium(9)	1.975 mg/kg	9.875 mg/kg
Manganese(9)	0.154 mg/kg	0.77 mg/kg
Nickel(9)	0.070 mg/kg	0.35 mg/kg

Potassium[9]	9.400 mg/kg	47 mg/kg
Selenium[9]	0.040 mg/kg	0.20 mg/kg
Sodium[9]	3.145 mg/kg	15.725 mg/kg
Zinc[9]	0.720 mg/kg	3.6 mg/kg

[9] Maximum concentration present in a preparation blank (batch GL11IMS2) affecting sample TF2-001-SB1010-0204.

Analyte	Maximum Concentration	Action Level
Mercury[10]	0.005 mg/kg	0.025 mg/kg

[10] Maximum concentration present in a preparation blank (batch GL12HGS1) affecting sample TF2-001-SS1009-0001.

Analyte	Maximum Concentration	Action Level
Aluminum[11]	1.057 mg/kg	5.285 mg/kg
Barium[11]	0.043 mg/kg	0.215 mg/kg
Calcium[11]	5.375 mg/kg	26.875 mg/kg
Chromium[11]	0.294 mg/kg	1.47 mg/kg
Magnesium[11]	2.208 mg/kg	11.04 mg/kg
Nickel[11]	0.744 mg/kg	3.72 mg/kg
Potassium[11]	4.560 mg/kg	22.8 mg/kg
Sodium[11]	3.927 mg/kg	19.635 mg/kg
Vanadium[11]	0.210 mg/kg	1.05 mg/kg

[11] Maximum concentration present in a preparation blank (batch GL12IMS1) affecting sample TF2-001-SS1010-0001.

Analyte	Maximum Concentration	Action Level
Mercury[12]	0.005 mg/kg	0.025 mg/kg

[12] Maximum concentration present in a preparation blank (batch GL13HGS1) affecting samples TF2-001-SB1009-0204, TF2-001-SB1009-0810, TF2-001-SS1008-0001, TF2-001-SB1008-0204, TF2-001-SS1004-0001, TF2-001-SB1004-0204, TF2-001-SS1007-0001, TF2-001-SB1007-0204, TF2-SB-DUP10-1113, TF2-001-SS1000-0001, TF2-001-SB1000-0204, TF2-001-SB1000-0810, TF2-001-SS1006-0001, TF2-001-SB1006-0204, TF2-001-SS1005-0001 and TF2-001-SB1005-0204.

Analyte	Maximum Concentration	Action Level
Copper[13]	0.279 mg/kg	1.395 mg/kg
Lead[13]	0.051 mg/kg	0.255 mg/kg
Manganese[13]	0.135 mg/kg	0.675 mg/kg
Zinc[13]	1.033 mg/kg	5.165 mg/kg

[13] Maximum concentration present in a preparation blank (batch GL17IMS1) affecting sample TF2-001-SS1010-0001.

An action level of 5X the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the blank action level and less than the limit of detection (LOD)

were qualified "U" as a result of laboratory blank contamination and raised to the LOD. Positive results less than the blank action level and greater than the LOD were qualified "U" as a result of laboratory blank contamination.

For the ICP/MS analyses all samples were analyzed at either a 1X, 5X or 10X dilution, all method blanks were analyzed at a 1X dilution and all preparation blanks were analyzed at a 5X dilution.

Matrix Spike Recoveries

The matrix spike percent recovery for antimony was < 80% quality control limit for sample TF2-001-SB1008-0204. The matrix spike percent recovery for lead was > 120% quality control limit for sample TF2-001-SB1008-0204. All samples were affected with the exception of TF2-001-SB1010-0204. The positive results reported for antimony and lead were qualified as estimated, "J".

The matrix spike percent recoveries for antimony and arsenic were < 80% quality control limit for sample TF2-001-SB1010-0204. The matrix spike percent recovery for potassium was > 120% quality control limit for sample TF2-001-SB1010-0204. Sample TF2-001-SB1010-0204 was affected. The positive results reported for antimony, arsenic and potassium were qualified as estimated, "J".

Notes

Positive results reported below the limit of quantitation (LOQ) but above the method detection limit (MDL) were qualified as estimated, "J".

Nondetected results are reported to the limit of detection (LOD).

Internal standard recoveries were not summarized from the laboratory. The raw data was used for validation. All internal standard recoveries were within quality control limits.

The Contract Required Detection Limit (CRDL) percent recovery for zinc on 12/17/2013 was > 130% quality control limit affecting samples TF2-SB-DUP10-1113, TF2-001-SS1000-0001, TF2-001-SB1000-0204, TF2-001-SB1000-0810, TF2-001-SS1006-0001, TF2-001-SB1006-0204, TF2-001-SS1005-0001, TF2-001-SB1005-0204 and TF2-SB-DUP11-1113. No validation actions were warranted as all sample results were > 2X CRDL.

Executive Summary

Laboratory Performance: Several contaminants were present in the laboratory method / preparation blanks.

Other Factors Affecting Data Quality: Positive results reported below the LOQ but above the MDL were qualified as estimated. The matrix spike percent recoveries for antimony, arsenic, lead and/or potassium were outside the quality control limits.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", January 2010, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", July 2013.

The text of this report has been formulated to address only those problem areas affecting data quality.

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Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C – Region I Worksheets
4. Appendix D – Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1000-0204			TF2-001-SB1000-0810			TF2-001-SB1004-0204			TF2-001-SB1005-0204		
SDG: SG9363	LAB_ID	SG9363-013			SG9363-014			SG9363-007			SG9363-018		
FRACTION: M	SAMP_DATE	11/27/2013			11/27/2013			11/25/2013			11/27/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	90.4			86.9			87.9			85.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		16600			15300			13800			9880		
ANTIMONY		0.06	J	DP	0.06	J	DP	0.09	J	D	0.08	J	D
ARSENIC		8.4			7.3			8			5		
BARIUM		15.2			12.6			25			20.3		
BERYLLIUM		0.37			0.42			0.43			0.38		
CADMIUM		0.08			0.08			0.06	J	P	0.11		
CALCIUM		874			719			608			1250		
CHROMIUM		19.6			19.2			15.2			12.9		
COBALT		30.3			8.9			7.3			5.2		
COPPER		19.1			16.9			15.6			10.2		
IRON		29800			28200			23700			16200		
LEAD		14.5	J	D	13.6	J	D	12.4	J	D	13	J	D
MAGNESIUM		5040			4440			3710			2860		
MANGANESE		383			228			188			179		
MERCURY		0.04			0.06			0.05			0.04		
NICKEL		25.5			20.8			17.3			11.4		
POTASSIUM		407			380			608			655		
SELENIUM		0.22	U	A	0.21	U	A	0.19	U	A	0.21	U	A
SILVER		0.04	J	P	0.04	J	P	0.02	J	P	0.04	J	P
SODIUM		37.7	J	P	31.3	J	P	43	J	P	48.1	J	P
THALLIUM		0.05	J	P	0.06	J	P	0.06	J	P	0.08		
VANADIUM		18.8			19.2			17.2			15.4		
ZINC		53.1			47.4			44.2			33.6		

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1006-0204			TF2-001-SB1007-0204			TF2-001-SB1008-0204			TF2-001-SB1009-0204		
SDG: SG9363	LAB_ID	SG9363-016			SG9363-009			SG9363-005			SG9363-002		
FRACTION: M	SAMP_DATE	11/27/2013			11/25/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	86.8			88.2			87.4			89.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		13000			13000			14700			16400		
ANTIMONY		0.08	J	D	0.15	J	D	0.1	J	D	0.05	J	DP
ARSENIC		8.4			7.1			14.3			7.4		
BARIUM		17.1			18.5			27.2			16.1		
BERYLLIUM		0.37			0.35			0.47			0.36		
CADMIUM		0.13			0.13			0.15			0.11		
CALCIUM		1000			1610			1060			752		
CHROMIUM		15.8			15.4			16.2			19		
COBALT		7.9			11.3			6.5			18		
COPPER		13.5			13.6			13.5			17.6		
IRON		20000			21000			17900			29000		
LEAD		14.5	J	D	13.4	J	D	19.3	J	D	16.1	J	D
MAGNESIUM		3300			3540			2660			4920		
MANGANESE		212			276			163			409		
MERCURY		0.06			0.06			0.11			0.04		
NICKEL		15.4			18			13.2			25.2		
POTASSIUM		557			484			607			428		
SELENIUM		0.23	U	A	0.23	U	A	0.37	J	P	0.23	U	A
SILVER		0.04	J	P	0.06	J	P	0.05	J	P	0.05	J	P
SODIUM		52	J	P	43.4	J	P	53.2	J	P	34.4	J	P
THALLIUM		0.08			0.09			0.12			0.05	J	P
VANADIUM		19.3			17.5			21.5			19.2		
ZINC		40.3			45.4			38.8			54.2		

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1009-0810			TF2-001-SB1010-0204			TF2-001-SS1000-0001			TF2-001-SS1004-0001		
SDG: SG9363	LAB_ID	SG9363-003			SG9363-020			SG9363-012			SG9363-006		
FRACTION: M	SAMP_DATE	11/25/2013			11/27/2013			11/27/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	92.1			90.3			84.9			87.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		21000			16000			12200			12700		
ANTIMONY		0.03	J	DP	0.07	J	DP	0.18	J	D	0.08	J	DP
ARSENIC		5.6			6.9	J	D	4.1			5.4		
BARIUM		7.7			16			17.1			15.8		
BERYLLIUM		0.32			0.36			0.26			0.3		
CADMIUM		0.09			0.09			0.08	J	P	0.11		
CALCIUM		1660			874			794			604		
CHROMIUM		25.4			18.3			15.1			14.9		
COBALT		23.1			13.1			10.9			10.4		
COPPER		20.6			14.8			14.2			16.2		
IRON		45100			31200			23800			22600		
LEAD		11.2	J	D	13.5			18.3	J	D	12.1	J	D
MAGNESIUM		6720			4900			3740			3750		
MANGANESE		458			344			311			294		
MERCURY		0.015	U		0.07			0.02	U	A	0.17		
NICKEL		34			23			21.5			21.1		
POTASSIUM		222			330	J	D	405			379		
SELENIUM		0.25	U	A	0.22	U	A	0.26	U	A	0.29	U	A
SILVER		0.02	J	P	0.03	J	P	0.04	J	P	0.05	J	P
SODIUM		20.6	J	P	26.5	J	P	51.2	J	P	39.7	J	P
THALLIUM		0.02	J	P	0.05	J	P	0.05	J	P	0.05	J	P
VANADIUM		29.2			20.5			20.9			17.4		
ZINC		85			58.8			52.1			46.8		

PROJ_NO: 03019	NSAMPLE	TF2-001-SS1005-0001			TF2-001-SS1006-0001			TF2-001-SS1007-0001			TF2-001-SS1008-0001		
SDG: SG9363	LAB_ID	SG9363-017			SG9363-015			SG9363-008			SG9363-004		
FRACTION: M	SAMP_DATE	11/27/2013			11/27/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	90.0			84.2			83.2			87.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		14000			14600			14000			14600		
ANTIMONY		0.17	J	D	0.12	J	D	0.2	J	D	0.08	J	DP
ARSENIC		7.7			6.8			5.8			6.6		
BARIUM		18.5			17.7			22.8			17.7		
BERYLLIUM		0.34			0.33			0.34			0.36		
CADMIUM		0.11			0.12			0.14			0.12		
CALCIUM		2630			728			1090			923		
CHROMIUM		16.6			16.7			16			17		
COBALT		10.4			11.6			9.6			13.1		
COPPER		18.5			17.1			15			18		
IRON		24100			24800			22900			27200		
LEAD		18.6	J	D	14.1	J	D	26.7	J	D	12.6	J	D
MAGNESIUM		4220			4230			3450			4450		
MANGANESE		267			314			270			356		
MERCURY		0.07			0.04			0.11			0.07		
NICKEL		20.7			21.8			18.6			24.4		
POTASSIUM		453			501			463			498		
SELENIUM		0.25	U	A	0.26	U	A	0.24	U	A	0.26	U	A
SILVER		0.04	J	P	0.56			0.05	J	P	0.04	J	P
SODIUM		48.8	J	P	44.2	J	P	47.5	J	P	46.6	J	P
THALLIUM		0.06	J	P	0.06	J	P	0.08	J	P	0.05	J	P
VANADIUM		17.8			19			19.9			19.2		
ZINC		53			49.9			53.9			56		

PROJ_NO: 03019	NSAMPLE	TF2-001-SS1009-0001			TF2-001-SS1010-0001			TF2-SB-DUP10-1113			TF2-SB-DUP11-1113		
SDG: SG9363	LAB_ID	SG9363-001			SG9363-019			SG9363-010			SG9363-021		
FRACTION: M	SAMP_DATE	11/25/2013			11/27/2013			11/25/2013			11/27/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	88.8			88.4			88.3			85.5		
	DUP_OF							TF2-001-SB1004-0204			TF2-001-SB1005-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		11900			13400			13900			11400		
ANTIMONY		0.26	J	D	0.08	J	D	0.09	J	D	0.1	J	D
ARSENIC		4.9			6.4			8.8			5.6		
BARIUM		12.6			15.5			23.7			19.6		
BERYLLIUM		0.27			0.32			0.43			0.35		
CADMIUM		0.07	J	P	0.09			0.08	J	P	0.11		
CALCIUM		1090			758			830			1230		
CHROMIUM		15.8			17.3			15.4			13.3		
COBALT		15.6			12.6			7.3			7.6		
COPPER		17.6			20.4			13.3			12		
IRON		27700			26800			20700			17900		
LEAD		12.3	J	D	13.6			13.1	J	D	13.1	J	D
MAGNESIUM		4170			4280			3400			3080		
MANGANESE		459			336			205			229		
MERCURY		0.016	U	A	0.05			0.05			0.05		
NICKEL		28.4			24.7			15.3			13.9		
POTASSIUM		336			360			603			664		
SELENIUM		0.23	U	A	0.31	J	P	0.26	U	A	0.22	U	A
SILVER		0.03	J	P	0.04	J	P	0.03	J	P	0.04	J	P
SODIUM		42.8	J	P	39.4	U	A	49.3	J	P	49	J	P
THALLIUM		0.03	J	P	0.04	J	P	0.08	J	P	0.07		
VANADIUM		20			20			19.4			16		
ZINC		64.4			57.7			40.9			38.3		

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1000-0204			TF2-001-SB1000-0810			TF2-001-SB1004-0204			TF2-001-SB1005-0204		
SDG: SG9363	LAB_ID	SG9363-13			SG9363-14			SG9363-7			SG9363-18		
FRACTION: MISC	SAMP_DATE	11/27/2013			11/27/2013			11/25/2013			11/27/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	%			%			%			%		
	PCT_SOLIDS	90.4			86.9			87.9			85.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL SOLIDS		90			87			88			85		

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1006-0204			TF2-001-SB1007-0204			TF2-001-SB1008-0204			TF2-001-SB1009-0204		
SDG: SG9363	LAB_ID	SG9363-16			SG9363-9			SG9363-5			SG9363-2		
FRACTION: MISC	SAMP_DATE	11/27/2013			11/25/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	%			%			%			%		
	PCT_SOLIDS	86.8			88.2			87.4			89.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL SOLIDS		87			88			87			90		

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1009-0810			TF2-001-SB1010-0204			TF2-001-SS1000-0001			TF2-001-SS1004-0001		
SDG: SG9363	LAB_ID	SG9363-3			SG9363-20			SG9363-12			SG9363-6		
FRACTION: MISC	SAMP_DATE	11/25/2013			11/27/2013			11/27/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	%			%			%			%		
	PCT_SOLIDS	92.1			90.3			84.9			87.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL SOLIDS		92			90			85			87		

PROJ_NO: 03019	NSAMPLE	TF2-001-SS1005-0001			TF2-001-SS1006-0001			TF2-001-SS1007-0001			TF2-001-SS1008-0001		
SDG: SG9363	LAB_ID	SG9363-17			SG9363-15			SG9363-8			SG9363-4		
FRACTION: MISC	SAMP_DATE	11/27/2013			11/27/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	%			%			%			%		
	PCT_SOLIDS	90.0			84.2			83.2			87.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL SOLIDS		90			84			83			88		

PROJ_NO: 03019	NSAMPLE	TF2-001-SS1009-0001			TF2-001-SS1010-0001			TF2-SB-DUP10-1113			TF2-SB-DUP11-1113		
SDG: SG9363	LAB_ID	SG9363-1			SG9363-19			SG9363-10			SG9363-21		
FRACTION: MISC	SAMP_DATE	11/25/2013			11/27/2013			11/25/2013			11/27/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	%			%			%			%		
	PCT_SOLIDS	88.8			88.4			88.3			85.5		
	DUP_OF							TF2-001-SB1004-0204			TF2-001-SB1005-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL SOLIDS		89			88			88			86		

PROJ_NO: 03019	NSAMPLE	TF2-W-TB06-1113		
SDG: SG9363	LAB_ID	SG9363-11		
FRACTION: MISC	SAMP_DATE	11/25/2013		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	%		
	PCT_SOLIDS	100.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
TOTAL SOLIDS		100		

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1000-0204

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 90.4 **Lab Sample ID:** SG9363-013

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16600			MS	5	22	0.37	2.9
7440-36-0	ANTIMONY, TOTAL	0.06	J	N	MS	5	0.072	0.01	0.036
7440-38-2	ARSENIC, TOTAL	8.4		N*	MS	5	0.36	0.11	0.29
7440-39-3	BARIUM, TOTAL	15.2			MS	5	0.14	0.03	0.072
7440-41-7	BERYLLIUM, TOTAL	0.37			MS	5	0.072	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.08			MS	5	0.072	0.007	0.014
7440-70-2	CALCIUM, TOTAL	874			MS	5	7.2	2.77	5.8
7440-47-3	CHROMIUM, TOTAL	19.6			MS	5	0.36	0.04	0.29
7440-48-4	COBALT, TOTAL	30.3			MS	5	0.072	0.004	0.022
7440-50-8	COPPER, TOTAL	19.1			MS	5	0.22	0.05	0.14
7439-89-6	IRON, TOTAL	29800			MS	5	7.2	1.73	4.3
7439-92-1	LEAD, TOTAL	14.5		N	MS	5	0.072	0.004	0.036
7439-95-4	MAGNESIUM, TOTAL	5040			MS	5	7.2	0.99	5.8
7439-96-5	MANGANESE, TOTAL	383		*	MS	10	0.29	0.06	0.14
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	25.5			MS	5	0.14	0.02	0.087
7440-09-7	POTASSIUM, TOTAL	407		N	MS	5	72	3.30	29
7782-49-2	SELENIUM, TOTAL	0.09	J		MS	5	0.36	0.03	0.22
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.072	0.004	0.029
7440-23-5	SODIUM, TOTAL	37.7	J		MS	5	72	1.85	29
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.072	0.007	0.029
7440-62-2	VANADIUM, TOTAL	18.8			MS	5	0.36	0.08	0.29
7440-66-6	ZINC, TOTAL	53.1			MS	5	0.72	0.09	0.58

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1000-0810

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 86.9 **Lab Sample ID:** SG9363-014

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15300			MS	5	21	0.35	2.8
7440-36-0	ANTIMONY, TOTAL	0.06	J	N	MS	5	0.069	0.01	0.035
7440-38-2	ARSENIC, TOTAL	7.3		N*	MS	5	0.35	0.10	0.28
7440-39-3	BARIUM, TOTAL	12.6			MS	5	0.14	0.02	0.069
7440-41-7	BERYLLIUM, TOTAL	0.42			MS	5	0.069	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.08			MS	5	0.069	0.007	0.014
7440-70-2	CALCIUM, TOTAL	719			MS	5	6.9	2.65	5.5
7440-47-3	CHROMIUM, TOTAL	19.2			MS	5	0.35	0.03	0.28
7440-48-4	COBALT, TOTAL	8.9			MS	5	0.069	0.003	0.021
7440-50-8	COPPER, TOTAL	16.9			MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	28200			MS	5	6.9	1.66	4.2
7439-92-1	LEAD, TOTAL	13.6		N	MS	5	0.069	0.003	0.035
7439-95-4	MAGNESIUM, TOTAL	4440			MS	5	6.9	0.95	5.5
7439-96-5	MANGANESE, TOTAL	228		*	MS	5	0.14	0.03	0.069
7439-97-6	MERCURY, TOTAL	0.06			CV	1	0.023	0.003	0.012
7440-02-0	NICKEL, TOTAL	20.8			MS	5	0.14	0.02	0.083
7440-09-7	POTASSIUM, TOTAL	380		N	MS	5	69	3.16	28
7782-49-2	SELENIUM, TOTAL	0.13	J		MS	5	0.35	0.03	0.21
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.069	0.003	0.028
7440-23-5	SODIUM, TOTAL	31.3	J		MS	5	69	1.78	28
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.069	0.007	0.028
7440-62-2	VANADIUM, TOTAL	19.2			MS	5	0.35	0.08	0.28
7440-66-6	ZINC, TOTAL	47.4			MS	5	0.69	0.09	0.55

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1004-0204

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 87.9 **Lab Sample ID:** SG9363-007

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13800			MS	5	19	0.33	2.6
7440-36-0	ANTIMONY, TOTAL	0.09		N	MS	5	0.064	0.01	0.032
7440-38-2	ARSENIC, TOTAL	8.0		N*	MS	5	0.32	0.10	0.26
7440-39-3	BARIUM, TOTAL	25.0			MS	5	0.13	0.02	0.064
7440-41-7	BERYLLIUM, TOTAL	0.43			MS	5	0.064	0.003	0.013
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.064	0.006	0.013
7440-70-2	CALCIUM, TOTAL	608			MS	5	6.4	2.46	5.1
7440-47-3	CHROMIUM, TOTAL	15.2			MS	5	0.32	0.03	0.26
7440-48-4	COBALT, TOTAL	7.3			MS	5	0.064	0.003	0.019
7440-50-8	COPPER, TOTAL	15.6			MS	5	0.19	0.04	0.13
7439-89-6	IRON, TOTAL	23700			MS	5	6.4	1.54	3.8
7439-92-1	LEAD, TOTAL	12.4		N	MS	5	0.064	0.003	0.032
7439-95-4	MAGNESIUM, TOTAL	3710			MS	5	6.4	0.88	5.1
7439-96-5	MANGANESE, TOTAL	188		*	MS	5	0.13	0.03	0.064
7439-97-6	MERCURY, TOTAL	0.05			CV	1	0.028	0.004	0.014
7440-02-0	NICKEL, TOTAL	17.3			MS	5	0.13	0.02	0.077
7440-09-7	POTASSIUM, TOTAL	608		N	MS	5	64	2.93	26
7782-49-2	SELENIUM, TOTAL	0.18	J		MS	5	0.32	0.03	0.19
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.064	0.003	0.026
7440-23-5	SODIUM, TOTAL	43.0	J		MS	5	64	1.65	26
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.064	0.006	0.026
7440-62-2	VANADIUM, TOTAL	17.2			MS	5	0.32	0.07	0.26
7440-66-6	ZINC, TOTAL	44.2			MS	5	0.64	0.08	0.51

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1005-0204

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 85.0 **Lab Sample ID:** SG9363-018

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9880			MS	5	21	0.36	2.8
7440-36-0	ANTIMONY, TOTAL	0.08		N	MS	5	0.070	0.01	0.035
7440-38-2	ARSENIC, TOTAL	5.0		N*	MS	5	0.35	0.10	0.28
7440-39-3	BARIUM, TOTAL	20.3			MS	5	0.14	0.02	0.070
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.070	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.11			MS	5	0.070	0.007	0.014
7440-70-2	CALCIUM, TOTAL	1250			MS	5	7.0	2.66	5.6
7440-47-3	CHROMIUM, TOTAL	12.9			MS	5	0.35	0.03	0.28
7440-48-4	COBALT, TOTAL	5.2			MS	5	0.070	0.003	0.021
7440-50-8	COPPER, TOTAL	10.2			MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	16200			MS	5	7.0	1.67	4.2
7439-92-1	LEAD, TOTAL	13.0		N	MS	5	0.070	0.003	0.035
7439-95-4	MAGNESIUM, TOTAL	2860			MS	5	7.0	0.95	5.6
7439-96-5	MANGANESE, TOTAL	179		*	MS	5	0.14	0.03	0.070
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.026	0.004	0.013
7440-02-0	NICKEL, TOTAL	11.4			MS	5	0.14	0.02	0.084
7440-09-7	POTASSIUM, TOTAL	655		N	MS	5	70	3.17	28
7782-49-2	SELENIUM, TOTAL	0.14	J		MS	5	0.35	0.03	0.21
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.070	0.003	0.028
7440-23-5	SODIUM, TOTAL	48.1	J		MS	5	70	1.79	28
7440-28-0	THALLIUM, TOTAL	0.08			MS	5	0.070	0.007	0.028
7440-62-2	VANADIUM, TOTAL	15.4			MS	5	0.35	0.08	0.28
7440-66-6	ZINC, TOTAL	33.6			MS	5	0.70	0.09	0.56

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1006-0204

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 86.8 **Lab Sample ID:** SG9363-016

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13000			MS	5	23	0.38	3.0
7440-36-0	ANTIMONY, TOTAL	0.08		N	MS	5	0.075	0.02	0.038
7440-38-2	ARSENIC, TOTAL	8.4		N*	MS	5	0.38	0.11	0.30
7440-39-3	BARIUM, TOTAL	17.1			MS	5	0.15	0.03	0.075
7440-41-7	BERYLLIUM, TOTAL	0.37			MS	5	0.075	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.13			MS	5	0.075	0.008	0.015
7440-70-2	CALCIUM, TOTAL	1000			MS	5	7.5	2.88	6.0
7440-47-3	CHROMIUM, TOTAL	15.8			MS	5	0.38	0.04	0.30
7440-48-4	COBALT, TOTAL	7.9			MS	5	0.075	0.004	0.023
7440-50-8	COPPER, TOTAL	13.5			MS	5	0.23	0.05	0.15
7439-89-6	IRON, TOTAL	20000			MS	5	7.5	1.81	4.5
7439-92-1	LEAD, TOTAL	14.5		N	MS	5	0.075	0.004	0.038
7439-95-4	MAGNESIUM, TOTAL	3300			MS	5	7.5	1.03	6.0
7439-96-5	MANGANESE, TOTAL	212		*	MS	5	0.15	0.03	0.075
7439-97-6	MERCURY, TOTAL	0.06			CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	15.4			MS	5	0.15	0.02	0.090
7440-09-7	POTASSIUM, TOTAL	557		N	MS	5	75	3.44	30
7782-49-2	SELENIUM, TOTAL	0.23	J		MS	5	0.38	0.03	0.23
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.075	0.004	0.030
7440-23-5	SODIUM, TOTAL	52.0	J		MS	5	75	1.93	30
7440-28-0	THALLIUM, TOTAL	0.08			MS	5	0.075	0.008	0.030
7440-62-2	VANADIUM, TOTAL	19.3			MS	5	0.38	0.08	0.30
7440-66-6	ZINC, TOTAL	40.3			MS	5	0.75	0.10	0.60

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1007-0204

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 88.2 **Lab Sample ID:** SG9363-009

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13000			MS	5	23	0.40	3.1
7440-36-0	ANTIMONY, TOTAL	0.15		N	MS	5	0.078	0.02	0.039
7440-38-2	ARSENIC, TOTAL	7.1		N*	MS	5	0.39	0.12	0.31
7440-39-3	BARIUM, TOTAL	18.5			MS	5	0.16	0.03	0.078
7440-41-7	BERYLLIUM, TOTAL	0.35			MS	5	0.078	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.13			MS	5	0.078	0.008	0.016
7440-70-2	CALCIUM, TOTAL	1610			MS	5	7.8	2.97	6.2
7440-47-3	CHROMIUM, TOTAL	15.4			MS	5	0.39	0.04	0.31
7440-48-4	COBALT, TOTAL	11.3			MS	5	0.078	0.004	0.023
7440-50-8	COPPER, TOTAL	13.6			MS	5	0.23	0.05	0.16
7439-89-6	IRON, TOTAL	21000			MS	5	7.8	1.86	4.7
7439-92-1	LEAD, TOTAL	13.4		N	MS	5	0.078	0.004	0.039
7439-95-4	MAGNESIUM, TOTAL	3540			MS	5	7.8	1.06	6.2
7439-96-5	MANGANESE, TOTAL	276		*	MS	5	0.16	0.03	0.078
7439-97-6	MERCURY, TOTAL	0.06			CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	18.0			MS	5	0.16	0.02	0.093
7440-09-7	POTASSIUM, TOTAL	484		N	MS	5	78	3.54	31
7782-49-2	SELENIUM, TOTAL	0.20	J		MS	5	0.39	0.03	0.23
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.078	0.004	0.031
7440-23-5	SODIUM, TOTAL	43.4	J		MS	5	78	1.99	31
7440-28-0	THALLIUM, TOTAL	0.09			MS	5	0.078	0.008	0.031
7440-62-2	VANADIUM, TOTAL	17.5			MS	5	0.39	0.09	0.31
7440-66-6	ZINC, TOTAL	45.4			MS	5	0.78	0.10	0.62

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1008-0204

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 87.4 **Lab Sample ID:** SG9363-005

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14700			MS	5	24	0.40	3.2
7440-36-0	ANTIMONY, TOTAL	0.10		N	MS	5	0.079	0.02	0.039
7440-38-2	ARSENIC, TOTAL	14.3		N*	MS	5	0.39	0.12	0.32
7440-39-3	BARIUM, TOTAL	27.2			MS	5	0.16	0.03	0.079
7440-41-7	BERYLLIUM, TOTAL	0.47			MS	5	0.079	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.15			MS	5	0.079	0.008	0.016
7440-70-2	CALCIUM, TOTAL	1060			MS	5	7.9	3.02	6.3
7440-47-3	CHROMIUM, TOTAL	16.2			MS	5	0.39	0.04	0.32
7440-48-4	COBALT, TOTAL	6.5			MS	5	0.079	0.004	0.024
7440-50-8	COPPER, TOTAL	13.5			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	17900			MS	5	7.9	1.89	4.7
7439-92-1	LEAD, TOTAL	19.3		N	MS	5	0.079	0.004	0.039
7439-95-4	MAGNESIUM, TOTAL	2660			MS	5	7.9	1.08	6.3
7439-96-5	MANGANESE, TOTAL	163		*	MS	5	0.16	0.03	0.079
7439-97-6	MERCURY, TOTAL	0.11			CV	1	0.029	0.004	0.015
7440-02-0	NICKEL, TOTAL	13.2			MS	5	0.16	0.02	0.095
7440-09-7	POTASSIUM, TOTAL	607		N	MS	5	79	3.60	32
7782-49-2	SELENIUM, TOTAL	0.37	J		MS	5	0.39	0.03	0.24
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.079	0.004	0.032
7440-23-5	SODIUM, TOTAL	53.2	J		MS	5	79	2.02	32
7440-28-0	THALLIUM, TOTAL	0.12			MS	5	0.079	0.008	0.032
7440-62-2	VANADIUM, TOTAL	21.5			MS	5	0.39	0.09	0.32
7440-66-6	ZINC, TOTAL	38.8			MS	5	0.79	0.10	0.63

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1009-0204

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 89.8 **Lab Sample ID:** SG9363-002

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16400			MS	5	22	0.38	3.0
7440-36-0	ANTIMONY, TOTAL	0.05	J	N	MS	5	0.075	0.02	0.038
7440-38-2	ARSENIC, TOTAL	7.4		N*	MS	5	0.38	0.11	0.30
7440-39-3	BARIUM, TOTAL	16.1			MS	5	0.15	0.03	0.075
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.075	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.11			MS	5	0.075	0.008	0.015
7440-70-2	CALCIUM, TOTAL	752			MS	10	15	5.75	12
7440-47-3	CHROMIUM, TOTAL	19.0			MS	5	0.38	0.04	0.30
7440-48-4	COBALT, TOTAL	18.0			MS	5	0.075	0.004	0.022
7440-50-8	COPPER, TOTAL	17.6			MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	29000			MS	5	7.5	1.81	4.5
7439-92-1	LEAD, TOTAL	16.1		N	MS	5	0.075	0.004	0.038
7439-95-4	MAGNESIUM, TOTAL	4920			MS	5	7.5	1.03	6.0
7439-96-5	MANGANESE, TOTAL	409		*	MS	10	0.30	0.06	0.15
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	25.2			MS	5	0.15	0.02	0.090
7440-09-7	POTASSIUM, TOTAL	428		N	MS	5	75	3.43	30
7782-49-2	SELENIUM, TOTAL	0.23	J		MS	5	0.38	0.03	0.22
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.075	0.004	0.030
7440-23-5	SODIUM, TOTAL	34.4	J		MS	5	75	1.93	30
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.075	0.008	0.030
7440-62-2	VANADIUM, TOTAL	19.2			MS	5	0.38	0.08	0.30
7440-66-6	ZINC, TOTAL	54.2			MS	5	0.75	0.10	0.60

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1009-0810

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 92.1 **Lab Sample ID:** SG9363-003

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	21000			MS	5	25	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	0.03	J	N	MS	5	0.084	0.02	0.042
7440-38-2	ARSENIC, TOTAL	5.6		N*	MS	5	0.42	0.13	0.34
7440-39-3	BARIUM, TOTAL	7.7			MS	5	0.17	0.03	0.084
7440-41-7	BERYLLIUM, TOTAL	0.32			MS	5	0.084	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.09			MS	5	0.084	0.008	0.017
7440-70-2	CALCIUM, TOTAL	1660			MS	10	17	6.44	13
7440-47-3	CHROMIUM, TOTAL	25.4			MS	5	0.42	0.04	0.34
7440-48-4	COBALT, TOTAL	23.1			MS	5	0.084	0.004	0.025
7440-50-8	COPPER, TOTAL	20.6			MS	5	0.25	0.06	0.17
7439-89-6	IRON, TOTAL	45100			MS	10	17	4.04	10
7439-92-1	LEAD, TOTAL	11.2		N	MS	5	0.084	0.004	0.042
7439-95-4	MAGNESIUM, TOTAL	6720			MS	5	8.4	1.15	6.7
7439-96-5	MANGANESE, TOTAL	458		*	MS	10	0.34	0.07	0.17
7439-97-6	MERCURY, TOTAL	0.015	U		CV	1	0.029	0.004	0.015
7440-02-0	NICKEL, TOTAL	34.0			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	222		N	MS	5	84	3.84	34
7782-49-2	SELENIUM, TOTAL	0.05	J		MS	5	0.42	0.03	0.25
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.084	0.004	0.034
7440-23-5	SODIUM, TOTAL	20.6	J		MS	5	84	2.16	34
7440-28-0	THALLIUM, TOTAL	0.02	J		MS	5	0.084	0.008	0.034
7440-62-2	VANADIUM, TOTAL	29.2			MS	5	0.42	0.09	0.34
7440-66-6	ZINC, TOTAL	85.0			MS	5	0.84	0.11	0.67

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1010-0204

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 90.3 **Lab Sample ID:** SG9363-020

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16000			MS	5	22	0.38	3.0
7440-36-0	ANTIMONY, TOTAL	0.07	J	N	MS	5	0.075	0.01	0.037
7440-38-2	ARSENIC, TOTAL	6.9		N*	MS	5	0.37	0.11	0.30
7440-39-3	BARIUM, TOTAL	16.0			MS	5	0.15	0.03	0.075
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	10	0.15	0.006	0.030
7440-43-9	CADMIUM, TOTAL	0.09			MS	5	0.075	0.007	0.015
7440-70-2	CALCIUM, TOTAL	874			MS	5	7.5	2.86	6.0
7440-47-3	CHROMIUM, TOTAL	18.3			MS	5	0.37	0.04	0.30
7440-48-4	COBALT, TOTAL	13.1			MS	5	0.075	0.004	0.022
7440-50-8	COPPER, TOTAL	14.8			MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	31200			MS	10	15	3.59	9.0
7439-92-1	LEAD, TOTAL	13.5		N	MS	5	0.075	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	4900			MS	10	15	2.04	12
7439-96-5	MANGANESE, TOTAL	344		*	MS	10	0.30	0.06	0.15
7439-97-6	MERCURY, TOTAL	0.07			CV	1	0.027	0.004	0.014
7440-02-0	NICKEL, TOTAL	23.0			MS	5	0.15	0.02	0.090
7440-09-7	POTASSIUM, TOTAL	330		N	MS	5	75	3.41	30
7782-49-2	SELENIUM, TOTAL	0.08	J		MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.075	0.004	0.030
7440-23-5	SODIUM, TOTAL	26.5	J		MS	5	75	1.92	30
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.075	0.007	0.030
7440-62-2	VANADIUM, TOTAL	20.5			MS	5	0.37	0.08	0.30
7440-66-6	ZINC, TOTAL	58.8			MS	10	1.5	0.19	1.2

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1000-0001

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 84.9 **Lab Sample ID:** SG9363-012

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12200			MS	5	26	0.44	3.5
7440-36-0	ANTIMONY, TOTAL	0.18		N	MS	5	0.087	0.02	0.043
7440-38-2	ARSENIC, TOTAL	4.1		N*	MS	5	0.43	0.13	0.35
7440-39-3	BARIUM, TOTAL	17.1			MS	5	0.17	0.03	0.087
7440-41-7	BERYLLIUM, TOTAL	0.26			MS	5	0.087	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.087	0.009	0.017
7440-70-2	CALCIUM, TOTAL	794			MS	5	8.7	3.31	6.9
7440-47-3	CHROMIUM, TOTAL	15.1			MS	5	0.43	0.04	0.35
7440-48-4	COBALT, TOTAL	10.9			MS	5	0.087	0.004	0.026
7440-50-8	COPPER, TOTAL	14.2			MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	23800			MS	5	8.7	2.08	5.2
7439-92-1	LEAD, TOTAL	18.3		N	MS	5	0.087	0.004	0.043
7439-95-4	MAGNESIUM, TOTAL	3740			MS	5	8.7	1.18	6.9
7439-96-5	MANGANESE, TOTAL	311		*	MS	5	0.17	0.03	0.087
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	21.5			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	405		N	MS	5	87	3.95	35
7782-49-2	SELENIUM, TOTAL	0.09	J		MS	5	0.43	0.03	0.26
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.087	0.004	0.035
7440-23-5	SODIUM, TOTAL	51.2	J		MS	5	87	2.22	35
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.087	0.009	0.035
7440-62-2	VANADIUM, TOTAL	20.9			MS	5	0.43	0.10	0.35
7440-66-6	ZINC, TOTAL	52.1			MS	5	0.87	0.11	0.69

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1004-0001

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 87.2 **Lab Sample ID:** SG9363-006

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12700			MS	5	29	0.49	3.8
7440-36-0	ANTIMONY, TOTAL	0.08	J	N	MS	5	0.096	0.02	0.048
7440-38-2	ARSENIC, TOTAL	5.4		N*	MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	15.8			MS	5	0.19	0.03	0.096
7440-41-7	BERYLLIUM, TOTAL	0.30			MS	5	0.096	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.11			MS	5	0.096	0.010	0.019
7440-70-2	CALCIUM, TOTAL	604			MS	5	9.6	3.65	7.6
7440-47-3	CHROMIUM, TOTAL	14.9			MS	5	0.48	0.05	0.38
7440-48-4	COBALT, TOTAL	10.4			MS	5	0.096	0.005	0.029
7440-50-8	COPPER, TOTAL	16.2			MS	5	0.29	0.07	0.19
7439-89-6	IRON, TOTAL	22600			MS	5	9.6	2.29	5.7
7439-92-1	LEAD, TOTAL	12.1		N	MS	5	0.096	0.005	0.048
7439-95-4	MAGNESIUM, TOTAL	3750			MS	5	9.6	1.30	7.6
7439-96-5	MANGANESE, TOTAL	294		*	MS	5	0.19	0.04	0.096
7439-97-6	MERCURY, TOTAL	0.17			CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	21.1			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	379		N	MS	5	96	4.36	38
7782-49-2	SELENIUM, TOTAL	0.09	J		MS	5	0.48	0.04	0.29
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.096	0.005	0.038
7440-23-5	SODIUM, TOTAL	39.7	J		MS	5	96	2.45	38
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.096	0.010	0.038
7440-62-2	VANADIUM, TOTAL	17.4			MS	5	0.48	0.11	0.38
7440-66-6	ZINC, TOTAL	46.8			MS	5	0.96	0.12	0.76

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1005-0001

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 90.0 **Lab Sample ID:** SG9363-017

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14000			MS	5	25	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	0.17		N	MS	5	0.085	0.02	0.042
7440-38-2	ARSENIC, TOTAL	7.7		N*	MS	5	0.42	0.13	0.34
7440-39-3	BARIUM, TOTAL	18.5			MS	5	0.17	0.03	0.085
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.085	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.11			MS	5	0.085	0.008	0.017
7440-70-2	CALCIUM, TOTAL	2630			MS	5	8.5	3.25	6.8
7440-47-3	CHROMIUM, TOTAL	16.6			MS	5	0.42	0.04	0.34
7440-48-4	COBALT, TOTAL	10.4			MS	5	0.085	0.004	0.025
7440-50-8	COPPER, TOTAL	18.5			MS	5	0.25	0.06	0.17
7439-89-6	IRON, TOTAL	24100			MS	5	8.5	2.04	5.1
7439-92-1	LEAD, TOTAL	18.6		N	MS	5	0.085	0.004	0.042
7439-95-4	MAGNESIUM, TOTAL	4220			MS	5	8.5	1.16	6.8
7439-96-5	MANGANESE, TOTAL	267		*	MS	5	0.17	0.03	0.085
7439-97-6	MERCURY, TOTAL	0.07			CV	1	0.024	0.004	0.012
7440-02-0	NICKEL, TOTAL	20.7			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	453		N	MS	5	85	3.87	34
7782-49-2	SELENIUM, TOTAL	0.19	J		MS	5	0.42	0.03	0.25
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.085	0.004	0.034
7440-23-5	SODIUM, TOTAL	48.8	J		MS	5	85	2.18	34
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.085	0.008	0.034
7440-62-2	VANADIUM, TOTAL	17.8			MS	5	0.42	0.09	0.34
7440-66-6	ZINC, TOTAL	53.0			MS	5	0.85	0.11	0.68

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1006-0001

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 84.2 **Lab Sample ID:** SG9363-015

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14600			MS	5	26	0.45	3.5
7440-36-0	ANTIMONY, TOTAL	0.12		N	MS	5	0.087	0.02	0.044
7440-38-2	ARSENIC, TOTAL	6.8		N*	MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	17.7			MS	5	0.17	0.03	0.087
7440-41-7	BERYLLIUM, TOTAL	0.33			MS	5	0.087	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.12			MS	5	0.087	0.009	0.017
7440-70-2	CALCIUM, TOTAL	728			MS	5	8.7	3.34	7.0
7440-47-3	CHROMIUM, TOTAL	16.7			MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	11.6			MS	5	0.087	0.004	0.026
7440-50-8	COPPER, TOTAL	17.1			MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	24800			MS	5	8.7	2.10	5.2
7439-92-1	LEAD, TOTAL	14.1		N	MS	5	0.087	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	4230			MS	5	8.7	1.19	7.0
7439-96-5	MANGANESE, TOTAL	314		*	MS	5	0.17	0.03	0.087
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.032	0.005	0.017
7440-02-0	NICKEL, TOTAL	21.8			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	501		N	MS	5	87	3.98	35
7782-49-2	SELENIUM, TOTAL	0.22	J		MS	5	0.44	0.03	0.26
7440-22-4	SILVER, TOTAL	0.56			MS	5	0.087	0.004	0.035
7440-23-5	SODIUM, TOTAL	44.2	J		MS	5	87	2.24	35
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.087	0.009	0.035
7440-62-2	VANADIUM, TOTAL	19.0			MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	49.9			MS	5	0.87	0.11	0.70

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1007-0001

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 83.2 **Lab Sample ID:** SG9363-008

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14000			MS	5	24	0.41	3.2
7440-36-0	ANTIMONY, TOTAL	0.20		N	MS	5	0.081	0.02	0.040
7440-38-2	ARSENIC, TOTAL	5.8		N*	MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	22.8			MS	5	0.16	0.03	0.081
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.081	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.14			MS	5	0.081	0.008	0.016
7440-70-2	CALCIUM, TOTAL	1090			MS	5	8.1	3.08	6.4
7440-47-3	CHROMIUM, TOTAL	16.0			MS	5	0.40	0.04	0.32
7440-48-4	COBALT, TOTAL	9.6			MS	5	0.081	0.004	0.024
7440-50-8	COPPER, TOTAL	15.0			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	22900			MS	5	8.1	1.94	4.8
7439-92-1	LEAD, TOTAL	26.7		N	MS	5	0.081	0.004	0.040
7439-95-4	MAGNESIUM, TOTAL	3450			MS	5	8.1	1.10	6.4
7439-96-5	MANGANESE, TOTAL	270		*	MS	5	0.16	0.03	0.081
7439-97-6	MERCURY, TOTAL	0.11			CV	1	0.029	0.004	0.015
7440-02-0	NICKEL, TOTAL	18.6			MS	5	0.16	0.02	0.097
7440-09-7	POTASSIUM, TOTAL	463		N	MS	5	81	3.68	32
7782-49-2	SELENIUM, TOTAL	0.17	J		MS	5	0.40	0.03	0.24
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.081	0.004	0.032
7440-23-5	SODIUM, TOTAL	47.5	J		MS	5	81	2.07	32
7440-28-0	THALLIUM, TOTAL	0.08	J		MS	5	0.081	0.008	0.032
7440-62-2	VANADIUM, TOTAL	19.9			MS	5	0.40	0.09	0.32
7440-66-6	ZINC, TOTAL	53.9			MS	5	0.81	0.10	0.64

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1008-0001

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 87.7 **Lab Sample ID:** SG9363-004

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14600			MS	5	26	0.45	3.5
7440-36-0	ANTIMONY, TOTAL	0.08	J	N	MS	5	0.088	0.02	0.044
7440-38-2	ARSENIC, TOTAL	6.6		N*	MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	17.7			MS	5	0.18	0.03	0.088
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.088	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.12			MS	5	0.088	0.009	0.018
7440-70-2	CALCIUM, TOTAL	923			MS	5	8.8	3.35	7.0
7440-47-3	CHROMIUM, TOTAL	17.0			MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	13.1			MS	5	0.088	0.004	0.026
7440-50-8	COPPER, TOTAL	18.0			MS	5	0.26	0.06	0.18
7439-89-6	IRON, TOTAL	27200			MS	5	8.8	2.10	5.3
7439-92-1	LEAD, TOTAL	12.6		N	MS	5	0.088	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	4450			MS	5	8.8	1.20	7.0
7439-96-5	MANGANESE, TOTAL	356		*	MS	5	0.18	0.04	0.088
7439-97-6	MERCURY, TOTAL	0.07			CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	24.4			MS	5	0.18	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	498		N	MS	5	88	4.00	35
7782-49-2	SELENIUM, TOTAL	0.13	J		MS	5	0.44	0.04	0.26
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.088	0.004	0.035
7440-23-5	SODIUM, TOTAL	46.6	J		MS	5	88	2.25	35
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.088	0.009	0.035
7440-62-2	VANADIUM, TOTAL	19.2			MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	56.0			MS	5	0.88	0.11	0.70

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1009-0001

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 88.8 **Lab Sample ID:** SG9363-001

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11900			MS	5	22	0.38	3.0
7440-36-0	ANTIMONY, TOTAL	0.26		N	MS	5	0.074	0.01	0.037
7440-38-2	ARSENIC, TOTAL	4.9		N*	MS	5	0.37	0.11	0.30
7440-39-3	BARIUM, TOTAL	12.6			MS	5	0.15	0.03	0.074
7440-41-7	BERYLLIUM, TOTAL	0.27			MS	5	0.074	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.074	0.007	0.015
7440-70-2	CALCIUM, TOTAL	1090			MS	10	15	5.67	12
7440-47-3	CHROMIUM, TOTAL	15.8			MS	5	0.37	0.04	0.30
7440-48-4	COBALT, TOTAL	15.6			MS	5	0.074	0.004	0.022
7440-50-8	COPPER, TOTAL	17.6			MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	27700			MS	5	7.4	1.78	4.4
7439-92-1	LEAD, TOTAL	12.3		N	MS	5	0.074	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	4170			MS	5	7.4	1.01	5.9
7439-96-5	MANGANESE, TOTAL	459		*	MS	10	0.30	0.06	0.15
7439-97-6	MERCURY, TOTAL	0.01	J		CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	28.4			MS	5	0.15	0.02	0.089
7440-09-7	POTASSIUM, TOTAL	336		N	MS	5	74	3.38	30
7782-49-2	SELENIUM, TOTAL	0.23	J		MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.074	0.004	0.030
7440-23-5	SODIUM, TOTAL	42.8	J		MS	5	74	1.90	30
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.074	0.007	0.030
7440-62-2	VANADIUM, TOTAL	20.0			MS	5	0.37	0.08	0.30
7440-66-6	ZINC, TOTAL	64.4			MS	5	0.74	0.10	0.59

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1010-0001

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 88.4 **Lab Sample ID:** SG9363-019

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13400			MS	5	19	0.33	2.6
7440-36-0	ANTIMONY, TOTAL	0.08		N	MS	5	0.064	0.01	0.032
7440-38-2	ARSENIC, TOTAL	6.4		N*	MS	5	0.32	0.10	0.26
7440-39-3	BARIUM, TOTAL	15.5			MS	5	0.13	0.02	0.064
7440-41-7	BERYLLIUM, TOTAL	0.32			MS	5	0.064	0.003	0.013
7440-43-9	CADMIUM, TOTAL	0.09			MS	5	0.064	0.006	0.013
7440-70-2	CALCIUM, TOTAL	758			MS	5	6.4	2.46	5.1
7440-47-3	CHROMIUM, TOTAL	17.3			MS	5	0.32	0.03	0.26
7440-48-4	COBALT, TOTAL	12.6			MS	5	0.064	0.003	0.019
7440-50-8	COPPER, TOTAL	20.4			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	26800			MS	5	6.4	1.54	3.8
7439-92-1	LEAD, TOTAL	13.6		N	MS	5	0.080	0.004	0.040
7439-95-4	MAGNESIUM, TOTAL	4280			MS	5	6.4	0.88	5.1
7439-96-5	MANGANESE, TOTAL	336		*	MS	5	0.16	0.03	0.080
7439-97-6	MERCURY, TOTAL	0.05			CV	1	0.034	0.005	0.017
7440-02-0	NICKEL, TOTAL	24.7			MS	5	0.13	0.02	0.077
7440-09-7	POTASSIUM, TOTAL	360		N	MS	5	64	2.93	26
7782-49-2	SELENIUM, TOTAL	0.31	J		MS	5	0.32	0.03	0.19
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.064	0.003	0.026
7440-23-5	SODIUM, TOTAL	39.4	J		MS	5	64	1.65	26
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.064	0.006	0.026
7440-62-2	VANADIUM, TOTAL	20.0			MS	5	0.32	0.07	0.26
7440-66-6	ZINC, TOTAL	57.7			MS	5	0.80	0.10	0.64

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SB-DUP10-1113

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 88.3 **Lab Sample ID:** SG9363-010

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13900			MS	5	26	0.44	3.4
7440-36-0	ANTIMONY, TOTAL	0.09		N	MS	5	0.086	0.02	0.043
7440-38-2	ARSENIC, TOTAL	8.8		N*	MS	5	0.43	0.13	0.34
7440-39-3	BARIUM, TOTAL	23.7			MS	5	0.17	0.03	0.086
7440-41-7	BERYLLIUM, TOTAL	0.43			MS	5	0.086	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.086	0.009	0.017
7440-70-2	CALCIUM, TOTAL	830			MS	5	8.6	3.28	6.9
7440-47-3	CHROMIUM, TOTAL	15.4			MS	5	0.43	0.04	0.34
7440-48-4	COBALT, TOTAL	7.3			MS	5	0.086	0.004	0.026
7440-50-8	COPPER, TOTAL	13.3			MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	20700			MS	5	8.6	2.06	5.1
7439-92-1	LEAD, TOTAL	13.1		N	MS	5	0.086	0.004	0.043
7439-95-4	MAGNESIUM, TOTAL	3400			MS	5	8.6	1.17	6.9
7439-96-5	MANGANESE, TOTAL	205		*	MS	5	0.17	0.03	0.086
7439-97-6	MERCURY, TOTAL	0.05			CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	15.3			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	603		N	MS	5	86	3.91	34
7782-49-2	SELENIUM, TOTAL	0.14	J		MS	5	0.43	0.03	0.26
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.086	0.004	0.034
7440-23-5	SODIUM, TOTAL	49.3	J		MS	5	86	2.20	34
7440-28-0	THALLIUM, TOTAL	0.08	J		MS	5	0.086	0.009	0.034
7440-62-2	VANADIUM, TOTAL	19.4			MS	5	0.43	0.09	0.34
7440-66-6	ZINC, TOTAL	40.9			MS	5	0.86	0.11	0.69

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SB-DUP11-1113

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 85.5 **Lab Sample ID:** SG9363-021

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11400			MS	5	22	0.37	2.9
7440-36-0	ANTIMONY, TOTAL	0.10		N	MS	5	0.073	0.01	0.036
7440-38-2	ARSENIC, TOTAL	5.6		N*	MS	5	0.36	0.11	0.29
7440-39-3	BARIUM, TOTAL	19.6			MS	5	0.14	0.03	0.073
7440-41-7	BERYLLIUM, TOTAL	0.35			MS	5	0.073	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.11			MS	5	0.073	0.007	0.014
7440-70-2	CALCIUM, TOTAL	1230			MS	5	7.3	2.78	5.8
7440-47-3	CHROMIUM, TOTAL	13.3			MS	5	0.36	0.04	0.29
7440-48-4	COBALT, TOTAL	7.6			MS	5	0.073	0.004	0.022
7440-50-8	COPPER, TOTAL	12.0			MS	5	0.22	0.05	0.14
7439-89-6	IRON, TOTAL	17900			MS	5	7.3	1.74	4.4
7439-92-1	LEAD, TOTAL	13.1		N	MS	5	0.073	0.004	0.036
7439-95-4	MAGNESIUM, TOTAL	3080			MS	5	7.3	0.99	5.8
7439-96-5	MANGANESE, TOTAL	229		*	MS	5	0.14	0.03	0.073
7439-97-6	MERCURY, TOTAL	0.05			CV	1	0.035	0.005	0.018
7440-02-0	NICKEL, TOTAL	13.9			MS	5	0.14	0.02	0.087
7440-09-7	POTASSIUM, TOTAL	664		N	MS	5	73	3.31	29
7782-49-2	SELENIUM, TOTAL	0.13	J		MS	5	0.36	0.03	0.22
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.073	0.004	0.029
7440-23-5	SODIUM, TOTAL	49.0	J		MS	5	73	1.86	29
7440-28-0	THALLIUM, TOTAL	0.07			MS	5	0.073	0.007	0.029
7440-62-2	VANADIUM, TOTAL	16.0			MS	5	0.36	0.08	0.29
7440-66-6	ZINC, TOTAL	38.3			MS	5	0.73	0.09	0.58

Comments:

Katahdin
ANALYTICAL SERVICES

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-13
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1000-0204	SL	27-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	90. %	1		N/A	SM2540G	WG135773	10-DEC-13 07:44:24	SM2540G	09-DEC-13	

Katahdin Analytical Services 5000020

Katahdin
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Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-14
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1000-0810	SL	27-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	87. %	1		N/A	SM2540G	WG135773	10-DEC-13 07:44:33	SM2540G	09-DEC-13	

Katahdin Analytical Services 500021

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-7
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1004-0204	SL	25-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	88. %	1		N/A	SM2540G	WG135773	10-DEC-13 07:43:35	SM2540G	09-DEC-13	

Katahdin Analytical Services 500014

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-18
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1005-0204	SL	27-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	85. %	1		N/A	SM2540G	WG135805	10-DEC-13 07:52:06	SM2540G	09-DEC-13	

Katahdin Analytical Services 5000025

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-16
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1006-0204	SL	27-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	87. %	1		N/A	SM2540G	WG135773	10-DEC-13 07:44:50	SM2540G	09-DEC-13	

Katahdin Analytical Services 500023

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-9
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1007-0204	SL	25-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	88. %	1		N/A	SM2540G	WG135773	10-DEC-13 07:43:54	SM2540G	09-DEC-13	

Katahdin Analytical Services 5000016

Katahdin
ANALYTICAL SERVICES

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-5
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1008-0204	SL	25-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	87. %	1		N/A	SM2540G	WG135773	10-DEC-13 07:43:16	SM2540G	09-DEC-13	

Katahdin Analytical Services 5000012

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-2
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1009-0204	SL	25-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	90. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:12:35	SM2540G	06-DEC-13	

Katahdin Analytical Services 5000009

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-3
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1009-0810	SL	25-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	92. %	1		N/A	SM2540G	WG135773	10-DEC-13 07:42:56	SM2540G	09-DEC-13	

Katahdin Analytical Services 5000010

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-20
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1010-0204	SL	27-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	90. %	1		N/A	SM2540G	WG135805	10-DEC-13 07:52:27	SM2540G	09-DEC-13	

Katahdin Analytical Services 5000027

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-12
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SS1000-0001	SL	27-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	85. %	1		N/A	SM2540G	WG135773	10-DEC-13 07:44:15	SM2540G	09-DEC-13	

Katahdin Analytical Services 500019

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-6
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SS1004-0001	SL	25-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	87. %	1		N/A	SM2540G	WG135773	10-DEC-13 07:43:25	SM2540G	09-DEC-13	

Katahdin Analytical Services 500013

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-17
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SS1005-0001	SL	27-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	90. %	1		N/A	SM2540G	WG135805	10-DEC-13 07:51:57	SM2540G	09-DEC-13	

Katahdin Analytical Services 5000024

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-15
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SS1006-0001	SL	27-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	84. %	1		N/A	SM2540G	WG135773	10-DEC-13 07:44:41	SM2540G	09-DEC-13	

Katahdin Analytical Services 5000022

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-8
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SS1007-0001	SL	25-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	83. %	1		N/A	SM2540G	WG135773	10-DEC-13 07:43:45	SM2540G	09-DEC-13	

Katahdin Analytical Services 5000015

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-4
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SS1008-0001	SL	25-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	88. %	1		N/A	SM2540G	WG135773	10-DEC-13 07:43:06	SM2540G	09-DEC-13	

Katahdin Analytical Services 500071

Katahdin
ANALYTICAL SERVICES

Accredited in accordance with nelac
Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-1
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SS1009-0001	SL	25-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	89. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:12:26	SM2540G	06-DEC-13	

Katahdin Analytical Services 5000008

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-19
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SS1010-0001	SL	27-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	88. %	1		N/A	SM2540G	WG135805	10-DEC-13 07:52:15	SM2540G	09-DEC-13	

Katahdin Analytical Services 5000026

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-10
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-SB-DUP10-1113	SL	25-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	88. %	1		N/A	SM2540G	WG135773	10-DEC-13 07:44:03	SM2540G	09-DEC-13	

Katahdin Analytical Services 500017

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-21
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-SB-DUP11-1113	SL	27-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	86. %	1		N/A	SM2540G	WG135805	10-DEC-13 07:52:39	SM2540G	09-DEC-13	

Katahdin Analytical Services 500028

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9363-11
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9363

Sample Description	Matrix	Date Sampled	Date Received
TF2-W-TB06-1113	SL	25-NOV-13	27-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	100 %	1		N/A	SM2540G	WG135773	10-DEC-13 07:44:07	SM2540G	09-DEC-13	

Katahdin Analytical Services 5000018

APPENDIX C
REGION I WORKSHEETS

N/A

EPA-NE - Data Validation Worksheet
INORG
Case: _____ SDG: _____

COMPLETE SDG FILE (CSF) AUDIT

Inorganic Parameters: _____

Missing Information	Date Lab Contacted	Date Received

Validator: Adam Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-I
Case: _____ SDG: _____

See Validation letter

I. PRESERVATION AND HOLDING TIMES

Circle sample numbers with exceeded technical holding times or omitted preservation.
Circle all exceeded technical holding times.

Sample No.	Matrix	Pres. Code		Date Sampled	Metals		Hg		CN		Action
		Metals	CN		Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	

Preservation Code:
1. Cool (≤ 6°C)
2. pH < 2 with HNO_3
3. pH > 12 with NaOH
4. Room Temperature
5. Freeze
6. Reducing agent (for oxidants)
7. Treated for sulfides
8. Other - _____

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Sampler: _____ Company: _____ Contacted: Y N Date: _____

Validator: Helen Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-II
Case: _____ SDG: _____

See validation letter

II. ICP-MS TUNE

List all Tunes that are outside method QC acceptance criteria. Use a separate sheet if more than one instrument was used for sample analysis.

Method:_____Instrument ID: _____

Method QC acceptance criteria for mass calibration:_____

Method QC acceptance criteria for resolution check/peak width:_____ at_____% peak height.

Method QC acceptance criteria for % RSD:_____

Analysis Date and Time	Analyte	Mass Calibration			Mass Resolution		% RSD of Absolute Signals	Analyte/Samples Affected	Action
		True Mass (amu)	Measured Mass (amu)	Absolute Difference of Masses (amu)	Peak Width (amu)	% Peak Height			

Comments:

Validator: Lisa Salomon

Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-III-C/D
Case: _____ SDG: _____

See validation letter

III. CALIBRATIONS

C. Initial and Continuing Calibration Verifications - List all ICV and CCV analyte recoveries that are outside the method QC acceptance criteria.

ICV method QC acceptance criteria: _____ CCV method QC acceptance criteria: _____

Date/Time	Instrument ID	Analyte	ICV/CCV #	% R	Samples Affected	Action

D. Quantitation Limit Check Standard - List all QL Check Standard analytes that are outside method QC acceptance criteria (for non-CLP methods).

QL Check Standard method QC acceptance criteria: _____

Date	Instr.	Analyte	QL Check Std. #	% R	Affected Range	Samples Affected	Action

Comments: _____

EPA-NE - Data Validation Worksheet
INORG-III-A/B
Case: _____ SDG: _____

See validation letter

III. CALIBRATIONS

A. Initial Calibration - List all calibration correlation coefficients that are outside the method QC acceptance criteria and/or the y-intercept of the calibration curve that is >CRQL.

Calibration correlation QC acceptance criteria: _____ Calibration Type: _____

Date/Time	Instrument ID	Analyte	Correlation Coefficient.	y-Intercept	CRQL	Samples Affected	Action

B. Initial Calibration Standard Concentration Verifications – Review CLP Form 16-IN and list all calculated %Ds that are >30 of the true value of any non-zero standard.

Date/time	Instrument ID	Analyte	True Conc.	Found Conc.	%D	Samples Affected	Action

Comments: _____

Validator: Dawn Solomon Date: 4/13/2014

EPA-NE - Data Validation Worksheet
INORG-IV-C.2
Case: _____ SDG: _____

SDG validation letter

IV. BLANKS

C.2 Blank Actions - List the maximum concentrations of each analyte among all blanks associated with each sample.

Analyte	Type of Blank	Date Blank Originated	Max. Conc. (units)	MDL or (-MDL) (units)	CRQL or (-CRQL) (units)	10xCRQL	Samples Affected	Action

Comments:

Refer to EPA New England Data Review Program Supplemental guidance for blank contamination actions (Section 2.6).

Validator: Kenn Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-IV-A/B
Case: _____ SDG: _____

See Validation letter

IV. BLANKS - List the blank contamination and negative blank results below.

Sampler: _____ Company: _____ Contacted: Y N Date: _____

A. Laboratory: Preparation (Method) and Calibration (Instrument) Blanks

Date Prepared	Date Analyzed	Blank Type (ICB/CCB#/Prep Blank)	Matrix	Instrument	Analyte	Concentration	Units

B. Field: Equipment (Rinsate) and Bottle Blanks

Date Sampled	Date Analyzed	Sample No. (Blank Type)	Matrix	Instrument	Analyte	Concentration	Units

Were the proper number of blanks analyzed at the proper frequency? Y N

For ICP MS - Are internal standard responses in all blanks within method QC acceptance criteria? Y N

Comments: _____

Validator: Diane Salomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-IV-C.1
Case: _____ SDG: _____

IV. BLANKS **C.1 Blank Contamination Worksheet**

See validation letter

Circle or list the highest concentration of each contaminant.

Analyte	Date Analyzed	ICB	CCB							PBW	PBS	EB	BB	Max. Conc.	CRQL
			1	2	3	4	5	6	7						
Aluminum															
Antimony															
Arsenic															
Barium															
Beryllium															
Cadmium															
Calcium															
Chromium															
Cobalt															
Copper															
Iron															
Lead															
Magnesium															
Manganese															
Mercury															
Nickel															
Potassium															
Selenium															
Silver															
Sodium															
Thallium															
Vanadium															
Zinc															
Cyanide															

Validator: Helen Solomon Date: 1/13/2014

EPA NE - Data Validation Worksheet
INORG-V-A
Case: _____ SDG: _____

NA

V. A. ICP-AES INTERFERENCE CHECK SAMPLE - ICSAB

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: Nina Solomon

Date: 1/13/2014

2/13

EPA NE - Data Validation Worksheet
INORG-V-B
Case: _____ SDG: _____ NA

V. B. ICP-AES INTERFERENCE CHECK SAMPLE - ICSA

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: Lisa Solomon

Date: 1/13/2014

EPA NE - Data Validation Worksheet
INORG-VI-A
Case: _____ SDG: _____

See validation letter

VI. A. ICP-MS INTERFERENCE CHECK SAMPLE - ICSAB

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: Mary Solomon

Date: 11/13/2014

EPA NE - Data Validation Worksheet
INORG-VI-B
Case: _____ SDG: _____

See validation letter

VI. B. ICP-MS INTERFERENCE CHECK SAMPLE - ICSA

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: Mary Salaman

Date: 4/13/2014

EPA-NE - Data Validation Worksheet
INORG-VII
Case: _____ SDG: _____

See validation letter

VII. ICP-MS INTERNAL STANDARDS

List all internal standards that are outside method QC acceptance criteria.

Method: _____ Method QC acceptance criteria: _____

Sample Number	Date and Time Analyzed	IS, amu	% RI	Analytes Affected (amu)	Action
Comments:					

Validator: Helen Suleman Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-VIII
Case: _____ SDG: _____

See validation letter

VIII. MATRIX SPIKES - List all matrix spike analytes that are outside method QC acceptance criteria.

Use a separate worksheet for each matrix spike sample.

Sample No.: _____ Matrix: _____

Method	Analyte	Spiked Sample Result	Sample Result	Amount of Spike Added	MS % Recovery	Method QC Limits % Recovery	Post-Digest Spike % Recovery	Action
Comments:								

Refer to EPA New England Data Review Program Supplemental guidance for additional matrix spike actions (Section 2.12).

Validator: Nina Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-IX
Case: _____ SDG: _____

See validation letter

IX. LABORATORY DUPLICATE SAMPLES - List all analytes that are outside method QC acceptance criteria for the specific matrix.

Use a separate worksheet for each laboratory duplicate sample.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Laboratory duplicate sample method QC acceptance criteria:_____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the field duplicate sample data indicate acceptable field precision? Y N

Comments:_____

Validator: Laura Solomon

Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-X
Case: _____ SDG: _____

See validation letter

X. FIELD DUPLICATES - List all field duplicate analytes that are outside criteria.

Use a separate worksheet for each field duplicate pair.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the laboratory duplicate sample data indicate acceptable laboratory precision? Y N
Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.9).

Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for contact and resolution obtained: _____

Validator: Helen Sulaman Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-XI
Case: _____ SDG: _____

See validation letter

XI. ICP SERIAL DILUTIONS

Use a separate worksheet for each serial dilution sample.

Sample No.:_____ Matrix:_____ Method:_____

List all serial dilution analytes that are outside method QC acceptance criteria.

% Difference method QC acceptance criteria: _____
Minimum concentration required to apply the % D criteria (e.g., 50x MDL): _____

Analyte	MDL	Min. Conc. Required	Sample Result	Serial Dilution Sample Result (corrected for dilution)	% D	Action

Comments:

Validator: Steve Salaman

Date: 1/13/2014

EPA-NE - Data Validation Worksheet

INORG-XII

Case: _____ SDG: _____

See validation letter

XII. LABORATORY CONTROL SAMPLES

List all analytes that are outside criteria.

SDG No.:_____ Case:_____

Are more than one-half of the LCS analytes within criteria for each parameter and method? **Y** **N**

Date Prepared	Date Analyzed	Parameter/ Method	Matrix	Analyte	% Recovery (or Observed Conc.)	Method QC Acceptance Criteria	Samples Affected	Action

Comments:

Validator: Nora Salamon

Date: 1/13/2014

EPA-NE - Data Validation Worksheet

INORG-XIII

Case: _____ SDG: _____

NA

XIII. PERFORMANCE EVALUATION SAMPLES

List all analytes that are outside criteria.

Indicate the source of the PES: Region 1 EPA PES Non-EPA PES

Are more than one-half of the PES analytes within criteria for each parameter and method? **Y** **N**

PE Sample Number	Ampule Number	Parameter/ Method	Type of PES	Matrix	Analyte	Conc.	PES Score*	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High, Action Low, Analyte Missed, Contaminant.
For Non-EPA PESs indicate the Non-EPA PES Score: PES Analyte Missed; PES Analyte Contaminant; PES Analyte Hit (% Recovery Limits).
Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Comments: _____

Validator: Kim Solomon

Date: 1/13/2014

EPA-NE - Data Validation Worksheet

INORG-XIV

Case: _____ SDG: _____

See validation report

XIV. ANALYTE QUANTITATION, REPORTED QUANTITATION LIMITS AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per analytical method

Do all soil/sediment samples have % solids greater than 30%? **Y** **N**

- If no, were any steps employed to address the high moisture content? _____
- Indicate the action and list the affected sample nos.: _____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Method		Calculation
ICP-AES		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
ICP-MS		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
Mercury		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		
Cyanide		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		

Validator: Helen Solomon Date: 1/13/2014

APPENDIX D
SUPPORT DOCUMENTATION

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT CTO WE30 & WE59
SG9363

Sample Receipt

The following sample was received on November 27, 2013 and was logged in under Katahdin Analytical Services work order number SG9363 for a hardcopy due date of December 16, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG9363-1	TF2-001-SS1009-0001
SG9363-2	TF2-001-SB1009-0204
SG9363-3	TF2-001-SB1009-0810
SG9363-4	TF2-001-SS1008-0001
SG9363-5	TF2-001-SB1008-0204
SG9363-6	TF2-001-SS1004-0001
SG9363-7	TF2-001-SB1004-0204
SG9363-8	TF2-001-SS1007-0001
SG9363-9	TF2-001-SB1007-0204
SG9363-10	TF2-SB-DUP10-1113
SG9363-11	TF2-W-TB06-1113
SG9363-12	TF2-001-SS1000-0001
SG9363-13	TF2-001-SB1000-0204
SG9363-14	TF2-001-SB1000-0810
SG9363-15	TF2-001-SS1006-0001
SG9363-16	TF2-001-SB1006-0204
SG9363-17	TF2-001-SS1005-0001
SG9363-18	TF2-001-SB1005-0204
SG9363-19	TF2-001-SS1010-0001
SG9363-20	TF2-001-SB1010-0204
SG9363-21	TF2-SB-DUP11-1113

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG9363 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8260B Analysis

The method blank WG135833-2 had a high recovery for the surrogate toluene-d8 that was outside of the DoD QSM acceptance limits. Since a high recovery would indicate a high bias and no target analytes were detected above the MDL, no further action was taken.

The calibration verification standard (file C4708) had high responses for the target analytes o-xylene, styrene, bromoform, p-isopropyltoluene, and methylcyclohexane that resulted in %D's that exceeded the DoD QSM acceptance limits of 20%.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are based on DoD QSM acceptance limits for the full list of spiked compounds and laboratory established acceptance limits for all other analytes. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

FL-PRO Analysis

Sample SG9363-16 was manually integrated for the petroleum range organics and n-triacontane-d62. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

8015 GRO Analysis

There were no protocol deviations or observations noted by the organics laboratory staff for this analysis.

8270D SIM Analysis

The target analytes fluoranthene and benzo(a)anthracene were detected below ½ the reporting limit in the method blank WG135482-1. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since the method blank was acceptable, no further action was taken.

Samples SG9363-1, 2, 4, 5, 6, 7, 8, 8DL, 9, 9DL, 10, 12, 14, 15, 16, 17, 17DL, 18, 19, 20, 21, 21DL were manually integrated for the benzo(k)fluoranthene, benzo(b)fluoranthene, indeno(1,2,3-cd)pyrene, acenaphthylene and/or dibenzo(a,h)anthracene. The specific reasons for the manual

integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The independent check standard (file N1208), associated with the initial calibration analyzed on the N instrument on 12/14/13, had low concentrations for the target analytes indeno(1,2,3-cd)pyrene and 2-methylnaphthalene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The calibration verification standard (file N1224) had a high response for the target analyte 2-methylnaphthalene. The CV (file N1258) had high responses for the target analytes fluoranthene, pyrene and indeno(1,2,3-cd)pyrene. The CV (file N1279) had a high response for the target analytes indeno(1,2,3-cd)pyrene and a low response for benzo(b)fluoranthene. These responses resulted in %D's that exceeded the DoD QSM acceptance limits of 20%.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are based on laboratory established acceptance limits. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable

The LCSD WG135482-3 had low recoveries for two spiked analytes that were outside of the laboratory established acceptance limits. The DoD QSM number of allowable exceedances for 17 analytes is one. Since the LCS was acceptable, after factoring in the allowable number of exceedances, no further action was taken.

The MS WG135525-4 had five spiked target analytes with recoveries that were non-calculable and reported as 0% recovery due to the concentration in the native sample being higher than in the MS and MSD. This is likely due to a non-homogeneous sample.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG9363 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SG9363- (1-10, 12-18, 21) were digested for ICP-MS analysis on 12/11/13 (QC Batch GL11IMS1) in accordance with USEPA Method 3010A. Katahdin Sample SG9363-5 was digested in duplicate and with a matrix spike aliquot.

Solid-matrix Katahdin Sample Number SG9363-20 was digested for ICP-MS analysis on 12/11/13 (QC Batch GL11IMS2) in accordance with USEPA Method 3010A. Katahdin Sample

SG9363-20 was digested in duplicate and with a matrix spike aliquot.

Solid-matrix Katahdin Sample No. SG9363-19 was originally digested for ICP-MS analysis on 12/12/13 (QC Batch GL12IMS1) in accordance with USEPA Method 3010A. The measured copper concentration (15.7 mg/Kg), lead concentration (1.58 mg/Kg) and zinc (14.7 mg/Kg) of the preparation blank that was digested in this batch is greater than the laboratory's reporting limit. For this reason, Katahdin Sample No. SG9363-19 was subsequently redigested for copper, lead, and zinc analysis.

Katahdin Sample No. SG9363-19 was redigested for copper, lead, and zinc analysis on 12/17/13 (QC Batch GL17IMS1) in accordance with USEPA Method 3010A, and this redigestate was successfully reanalyzed for copper, lead, zinc and other analytes. Redigestates are identified throughout the raw data and on sample preparation and analysis run logs by the suffix "R" appended to the Katahdin Sample Number, e.g. "SG9363-019R".

ICP-MS analyses of Work Order SG9363 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	**Associated Analytes**
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Solid-matrix Katahdin Sample Number SG9363-1 was digested for mercury analysis on 12/12/13 (QC Batch GL12HGS1) in accordance with USEPA Method 7471B.

Solid-matrix Katahdin Sample Numbers SG9363- (2-10, 12-18) were digested for mercury analysis on 12/13/13 (QC Batch GL13HGS1) in accordance with USEPA Method 7471B. Katahdin Sample No. SG9363-5 was prepared in duplicate and with a matrix spike aliquot.

Solid-matrix Katahdin Sample Numbers SG9363- (19-21) were digested for mercury analysis on 12/16/13 (QC Batch GL16HGS1) in accordance with USEPA Method 7471B. Katahdin Sample No. SG9363-20 was prepared in duplicate and with a matrix spike aliquot.

Mercury analysis of the Katahdin Work Order SG9363 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All-analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The measured recoveries of antimony and lead in the matrix-spiked aliquot of Katahdin Sample Number SG9363-5 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The measured recoveries of antimony, arsenic, and potassium in the matrix-spiked aliquot of Katahdin Sample Number SG9363-20 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The laboratory duplicate analysis of Katahdin Sample No. SG9363-5 is within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for all analytes.

The laboratory duplicate analysis of Katahdin Sample No. SG9363-20 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for arsenic and manganese.

The serial dilution analyses of Katahdin Sample Numbers SG9363- (5, 20) are within the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for all analytes.

The measured recoveries of all analytes in a post-digestion matrix spike aliquot of Katahdin Sample Numbers SG9363- (5, 20) are within the laboratory's acceptance limits (75% - 125% recovery of the added element, if the native concentration is less than four times the amount added).

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the laboratory's limits of quantitation (LOQ) are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQ's, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG9363 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond 12.20.13

Leslie Dimond
Quality Assurance Officer

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1919 | PAGE 1 OF 2

PROJECT NO: 112603019 CTO 30	FACILITY: Wilmington MA	PROJECT MANAGER D. Selken	PHONE NUMBER 978 474 8445
SAMPLERS (SIGNATURE) K Jalkut		FIELD OPERATIONS LEADER K. Jalkut	PHONE NUMBER 781 801 0457
		CARRIER/WAYBILL NUMBER Courier plus in RI - hand delivery	CITY, STATE Scarborough ME
			LABORATORY NAME AND CONTACT: Katahdin Analytical Service - J Obrin
			ADDRESS 600 Technology Way

STANDARD TAT ☒ RUSH TAT ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

SG-9383

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: PAH, metals, total solids	GRO	EXTPH	VOC (low)	VOC (med)				COMMENTS
									G		4oz ≤6°C	40ml ≤6°C	40ml ≤6°C	4oz ≤6°C	40ml ≤6°C	NaHSO4 5ml ≤6°C	MeOH 5ml ≤6°C		
11/25	1200	TF2-001-SS1009-0001	1009	0	1	SO	G	1			1	—	—						
11/25	1205	TF2-001-SB1009-0204	1009	2	4	SO	G	4			1	2	1						
11/25	1230	TF2-001-SB1009-0810	1009	8	10	SO	G	1			1	—	—						
11/25	1240	TF2-001-SS1008-0001	1008	0	1	SO	G	1			1	—	—						
11/25	1245	TF2-001-SB1008-0204	1008	2	4	SO	G	2			2	—	—						Lab QC
11/25	1300	TF2-001-SB1004-0001	1004	0	1	SO	G	1			1	—	—						
11/25	1310	TF2-001-SB1004-0204	1004	2	4	SO	G	1			1	—	—						
11/25	1330	TF2-001-SS1007-0001	1007	0	1	SO	G	1			1	—	—						
11/25	1340	TF2-001-SB1007-0204	1007	2	4	SO	G	1			1	—	—						
11/25	0000	TF2-SB-DUP10-1113	—	—	—	SO	G	1			1	—	—						
11/25	1000	~~TF3~~ TF2-W-TB06-1113	—	—	—	QC	G	5			—	2	—	3	2	1			
*11/25	1515	TF3-001-SB105-0204	105	2	4	SO	G	5			—	2	—	2		1			Recollected
*11/25	1520	TF3-001-SB104-0204	104	2	4	SO	G	5			—	2	—	2		1			Recollected

K Jalkut 11/27/13

1. RELINQUISHED BY K Jalkut	DATE 11/27/13	TIME 1225	1. RECEIVED BY	DATE 11/27/13	TIME 1225
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1920 | PAGE 1 OF 2

PROJECT NO: 112G03019 CTO 30	FACILITY: Wilmington, MA	PROJECT MANAGER D. Seiken	PHONE NUMBER 9785479445
SAMPLERS (SIGNATURE) K Jalkut		FIELD OPERATIONS LEADER K. Jalkut	PHONE NUMBER 781 801 0457
		CARRIER/WAYBILL NUMBER Courier pkup RI - hand delivery	

LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J. Obrin
ADDRESS: 600 Technology Way
CITY, STATE: Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

SG9363

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: GRO 40ml	EXTPH 40ml	Pah, metals, total solids 4oz	10AT Pack ≤6°C	≤6°C	≤6°C	COMMENTS
*11/25	1140	TF2-001-SS1003-0001	1003	0	1	SO	G	6	G		4	1	1				Rest of Lab QC vol.
11/27	0800	TF2-001-SS1000-0001	1000	0	1	SO	G	1	G		—	—	(1)				
11/27	0805	TF2-001-SB1000-0204	1000	2	4	SO	G	1	G		—	—	(1)				
11/27	0820	TF2-001-SB1000-0810	1000	8	10	SO	G	4	G		2	1	(1)				
11/27	0900	TF2-001-SS1006-0001	1006	0	1	SO	G	1	G		—	—	(1)				
11/27	0905	TF2-001-SB1006-0204	1006	2	4	SO	G	4	G		2	1	(1)				
11/27	0915	TF2-001-SS1005-0001	1005	0	1	SO	G	1	G		—	—	(1)				
11/27	0920	TF2-001-SB1005-0204	1005	2	4	SO	G	1	G		—	—	(1)				
11/27	0940	TF2-001-SS1010-0001	1010	0	1	SO	G	1	G		—	—	(1)				
11/27	0945	TF2-001-SB1010-0204	1010	2	4	SO	G	2	G		—	—	(2)				Lab QC
11/27	0000	TF2-SB-DUP11-1113	—	—	—	SO	G	1	G		—	—	(1)				

K Jalkut 11/27/13

K Jalkut 11/27/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: K Jalkut	11/27/13	1225	1. RECEIVED BY	11/27/13	1225
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

100001

HOLDTIME

SDG SG9363

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-001-SS1009-0001	SG9363-001	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-SB-DUP11-1113	SG9363-021	NM	11/27/2013	12/16/2013	12/17/2013	19	1	20
HG	MG/KG	TF2-001-SS1010-0001	SG9363-019	NM	11/27/2013	12/16/2013	12/17/2013	19	1	20
HG	MG/KG	TF2-001-SS1008-0001	SG9363-004	NM	11/25/2013	12/13/2013	12/14/2013	18	1	19
HG	MG/KG	TF2-001-SS1007-0001	SG9363-008	NM	11/25/2013	12/13/2013	12/14/2013	18	1	19
HG	MG/KG	TF2-001-SS1006-0001	SG9363-015	NM	11/27/2013	12/13/2013	12/14/2013	16	1	17
HG	MG/KG	TF2-001-SS1005-0001	SG9363-017	NM	11/27/2013	12/13/2013	12/14/2013	16	1	17
HG	MG/KG	TF2-001-SS1004-0001	SG9363-006	NM	11/25/2013	12/13/2013	12/14/2013	18	1	19
HG	MG/KG	TF2-001-SS1000-0001	SG9363-012	NM	11/27/2013	12/13/2013	12/14/2013	16	1	17
HG	MG/KG	TF2-001-SB1010-0204	SG9363-020	NM	11/27/2013	12/16/2013	12/17/2013	19	1	20
HG	MG/KG	TF2-001-SB1000-0810	SG9363-014	NM	11/27/2013	12/13/2013	12/14/2013	16	1	17
HG	MG/KG	TF2-SB-DUP10-1113	SG9363-010	NM	11/25/2013	12/13/2013	12/14/2013	18	1	19
HG	MG/KG	TF2-001-SB1009-0810	SG9363-003	NM	11/25/2013	12/13/2013	12/14/2013	18	1	19
HG	MG/KG	TF2-001-SB1000-0204	SG9363-013	NM	11/27/2013	12/13/2013	12/14/2013	16	1	17
HG	MG/KG	TF2-001-SB1004-0204	SG9363-007	NM	11/25/2013	12/13/2013	12/14/2013	18	1	19

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-001-SB1005-0204	SG9363-018	NM	11/27/2013	12/13/2013	12/14/2013	16	1	17
HG	MG/KG	TF2-001-SB1006-0204	SG9363-016	NM	11/27/2013	12/13/2013	12/14/2013	16	1	17
HG	MG/KG	TF2-001-SB1007-0204	SG9363-009	NM	11/25/2013	12/13/2013	12/14/2013	18	1	19
HG	MG/KG	TF2-001-SB1008-0204	SG9363-005	NM	11/25/2013	12/13/2013	12/14/2013	18	1	19
HG	MG/KG	TF2-001-SB1009-0204	SG9363-002	NM	11/25/2013	12/13/2013	12/14/2013	18	1	19
M	MG/KG	TF2-001-SS1004-0001	SG9363-006	NM	11/25/2013	12/11/2013	12/12/2013	16	1	17
M	MG/KG	TF2-001-SS1010-0001	SG9363-019	NM	11/27/2013	12/17/2013	12/18/2013	20	1	21
M	MG/KG	TF2-001-SS1007-0001	SG9363-008	NM	11/25/2013	12/11/2013	12/17/2013	16	6	22
M	MG/KG	TF2-001-SS1005-0001	SG9363-017	NM	11/27/2013	12/11/2013	12/17/2013	14	6	20
M	MG/KG	TF2-001-SS1005-0001	SG9363-017	NM	11/27/2013	12/11/2013	12/18/2013	14	7	21
M	MG/KG	TF2-001-SS1006-0001	SG9363-015	NM	11/27/2013	12/11/2013	12/17/2013	14	6	20
M	MG/KG	TF2-001-SS1007-0001	SG9363-008	NM	11/25/2013	12/11/2013	12/12/2013	16	1	17
M	MG/KG	TF2-001-SS1004-0001	SG9363-006	NM	11/25/2013	12/11/2013	12/17/2013	16	6	22
M	MG/KG	TF2-001-SS1008-0001	SG9363-004	NM	11/25/2013	12/11/2013	12/12/2013	16	1	17
M	MG/KG	TF2-001-SS1008-0001	SG9363-004	NM	11/25/2013	12/11/2013	12/17/2013	16	6	22
M	MG/KG	TF2-001-SS1009-0001	SG9363-001	NM	11/25/2013	12/11/2013	12/12/2013	16	1	17
M	MG/KG	TF2-001-SS1010-0001	SG9363-019	NM	11/27/2013	12/12/2013	12/14/2013	15	2	17
M	MG/KG	TF2-SB-DUP10-1113	SG9363-010	NM	11/25/2013	12/11/2013	12/17/2013	16	6	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-001-SS1000-0001	SG9363-012	NM	11/27/2013	12/11/2013	12/17/2013	14	6	20
M	MG/KG	TF2-001-SB1004-0204	SG9363-007	NM	11/25/2013	12/11/2013	12/17/2013	16	6	22
M	MG/KG	TF2-001-SS1009-0001	SG9363-001	NM	11/25/2013	12/11/2013	12/17/2013	16	6	22
M	MG/KG	TF2-001-SB1007-0204	SG9363-009	NM	11/25/2013	12/11/2013	12/12/2013	16	1	17
M	MG/KG	TF2-001-SB1000-0204	SG9363-013	NM	11/27/2013	12/11/2013	12/17/2013	14	6	20
M	MG/KG	TF2-001-SB1000-0204	SG9363-013	NM	11/27/2013	12/11/2013	12/18/2013	14	7	21
M	MG/KG	TF2-001-SB1000-0810	SG9363-014	NM	11/27/2013	12/11/2013	12/17/2013	14	6	20
M	MG/KG	TF2-001-SB1004-0204	SG9363-007	NM	11/25/2013	12/11/2013	12/12/2013	16	1	17
M	MG/KG	TF2-001-SB1010-0204	SG9363-020	NM	11/27/2013	12/11/2013	12/17/2013	14	6	20
M	MG/KG	TF2-001-SB1005-0204	SG9363-018	NM	11/27/2013	12/11/2013	12/17/2013	14	6	20
M	MG/KG	TF2-001-SB1005-0204	SG9363-018	NM	11/27/2013	12/11/2013	12/18/2013	14	7	21
M	MG/KG	TF2-001-SB1006-0204	SG9363-016	NM	11/27/2013	12/11/2013	12/17/2013	14	6	20
M	MG/KG	TF2-001-SB1010-0204	SG9363-020	NM	11/27/2013	12/11/2013	12/18/2013	14	7	21
M	MG/KG	TF2-001-SB1007-0204	SG9363-009	NM	11/25/2013	12/11/2013	12/17/2013	16	6	22
M	MG/KG	TF2-001-SB1008-0204	SG9363-005	NM	11/25/2013	12/11/2013	12/12/2013	16	1	17
M	MG/KG	TF2-001-SB1008-0204	SG9363-005	NM	11/25/2013	12/11/2013	12/17/2013	16	6	22
M	MG/KG	TF2-001-SB1009-0204	SG9363-002	NM	11/25/2013	12/11/2013	12/12/2013	16	1	17
M	MG/KG	TF2-001-SB1009-0204	SG9363-002	NM	11/25/2013	12/11/2013	12/17/2013	16	6	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-001-SB1009-0810	SG9363-003	NM	11/25/2013	12/11/2013	12/17/2013	16	6	22
M	MG/KG	TF2-SB-DUP11-1113	SG9363-021	NM	11/27/2013	12/11/2013	12/17/2013	14	6	20
M	MG/KG	TF2-001-SB1009-0810	SG9363-003	NM	11/25/2013	12/11/2013	12/12/2013	16	1	17
M	MG/KG	TF2-SB-DUP11-1113	SG9363-021	NM	11/27/2013	12/11/2013	12/18/2013	14	7	21
	%	TF2-001-SS1005-0001	SG9363-17	NM	11/27/2013	12/09/2013	12/10/2013	12	1	13
	%	TF2-001-SB1004-0204	SG9363-7	NM	11/25/2013	12/09/2013	12/10/2013	14	1	15
	%	TF2-001-SB1005-0204	SG9363-18	NM	11/27/2013	12/09/2013	12/10/2013	12	1	13
	%	TF2-001-SB1006-0204	SG9363-16	NM	11/27/2013	12/09/2013	12/10/2013	12	1	13
	%	TF2-001-SB1007-0204	SG9363-9	NM	11/25/2013	12/09/2013	12/10/2013	14	1	15
	%	TF2-001-SB1008-0204	SG9363-5	NM	11/25/2013	12/09/2013	12/10/2013	14	1	15
	%	TF2-001-SB1009-0204	SG9363-2	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SB1000-0204	SG9363-13	NM	11/27/2013	12/09/2013	12/10/2013	12	1	13
	%	TF2-001-SB1009-0810	SG9363-3	NM	11/25/2013	12/09/2013	12/10/2013	14	1	15
	%	TF2-001-SB1000-0810	SG9363-14	NM	11/27/2013	12/09/2013	12/10/2013	12	1	13
	%	TF2-001-SB1010-0204	SG9363-20	NM	11/27/2013	12/09/2013	12/10/2013	12	1	13
	%	TF2-001-SS1004-0001	SG9363-6	NM	11/25/2013	12/09/2013	12/10/2013	14	1	15
	%	TF2-001-SS1006-0001	SG9363-15	NM	11/27/2013	12/09/2013	12/10/2013	12	1	13
	%	TF2-001-SS1007-0001	SG9363-8	NM	11/25/2013	12/09/2013	12/10/2013	14	1	15

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-001-SS1008-0001	SG9363-4	NM	11/25/2013	12/09/2013	12/10/2013	14	1	15
	%	TF2-001-SS1009-0001	SG9363-1	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SS1010-0001	SG9363-19	NM	11/27/2013	12/09/2013	12/10/2013	12	1	13
	%	TF2-SB-DUP10-1113	SG9363-10	NM	11/25/2013	12/09/2013	12/10/2013	14	1	15
	%	TF2-SB-DUP11-1113	SG9363-21	NM	11/27/2013	12/09/2013	12/10/2013	12	1	13
	%	TF2-W-TB06-1113	SG9363-11	NM	11/25/2013	12/09/2013	12/10/2013	14	1	15
	%	TF2-001-SS1000-0001	SG9363-12	NM	11/27/2013	12/09/2013	12/10/2013	12	1	13
OV	%	TF2-W-TB06-1113	SG9363-11RA	NM	11/25/2013	12/09/2013	12/09/2013	14	0	14
OV	UG/KG DRY	TF2-W-TB06-1113	SG9363-11RA	NM	11/25/2013	12/09/2013	12/09/2013	14	0	14
SIM	%	TF2-001-SS1009-0001	SG9363-1RA	NM	11/25/2013	12/03/2013	12/17/2013	8	14	22
SIM	%	TF2-SB-DUP11-1113	SG9363-21	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-SB-DUP11-1113	SG9363-21DL	NM	11/27/2013	12/04/2013	12/18/2013	7	14	21
SIM	%	TF2-001-SB1010-0204	SG9363-20	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-001-SB1000-0204	SG9363-13	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-001-SB1000-0810	SG9363-14	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-001-SB1004-0204	SG9363-7	NM	11/25/2013	12/03/2013	12/16/2013	8	13	21
SIM	%	TF2-001-SB1005-0204	SG9363-18	NM	11/27/2013	12/04/2013	12/17/2013	7	13	20
SIM	%	TF2-001-SB1005-0204	SG9363-18DL	NM	11/27/2013	12/04/2013	12/18/2013	7	14	21

NAVSTA NEWPORT
SOIL DATA
SG9363

FRACTION	CHEMICAL	TF2-001-SB1004-0204	UNITS	TF2-SB-DUP10-1113	RPD	D
M	ALUMINUM	13800	MG/KG	13900	0.72	100.00
M	ANTIMONY	0.09	MG/KG	0.09	0.00	0.00
M	ARSENIC	8	MG/KG	8.8	9.52	0.80
M	BARIUM	25	MG/KG	23.7	5.34	1.30
M	BERYLLIUM	0.43	MG/KG	0.43	0.00	0.00
M	CADMIUM	0.06 J	MG/KG	0.08 J	28.57	0.02
M	CALCIUM	608	MG/KG	830	30.88	222.00
M	CHROMIUM	15.2	MG/KG	15.4	1.31	0.20
M	COBALT	7.3	MG/KG	7.3	0.00	0.00
M	COPPER	15.6	MG/KG	13.3	15.92	2.30
M	IRON	23700	MG/KG	20700	13.51	3000.00
M	LEAD	12.4	MG/KG	13.1	5.49	0.70
M	MAGNESIUM	3710	MG/KG	3400	8.72	310.00
M	MANGANESE	188	MG/KG	205	8.65	17.00
M	MERCURY	0.05	MG/KG	0.05	0.00	0.00
M	NICKEL	17.3	MG/KG	15.3	12.27	2.00
M	POTASSIUM	608	MG/KG	603	0.83	5.00
M	SELENIUM	0.18 J	MG/KG	0.14 J	25.00	0.04
M	SILVER	0.02 J	MG/KG	0.03 J	40.00	0.01
M	SODIUM	43 J	MG/KG	49.3 J	13.65	6.30
M	THALLIUM	0.06 J	MG/KG	0.08 J	28.57	0.02
M	VANADIUM	17.2	MG/KG	19.4	12.02	2.20
M	ZINC	44.2	MG/KG	40.9	7.76	3.30
MISC	TOTAL SOLIDS	88	%	88	0.00	0.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG9363

FRACTION	CHEMICAL	TF2-001-SB1005-0204	UNITS	TF2-SB-DUP11-1113	RPD	D
M	ALUMINUM	9880	MG/KG	11400	14.29	1520.00
M	ANTIMONY	0.08	MG/KG	0.1	22.22	0.02
M	ARSENIC	5	MG/KG	5.6	11.32	0.60
M	BARIUM	20.3	MG/KG	19.6	3.51	0.70
M	BERYLLIUM	0.38	MG/KG	0.35	8.22	0.03
M	CADMIUM	0.11	MG/KG	0.11	0.00	0.00
M	CALCIUM	1250	MG/KG	1230	1.61	20.00
M	CHROMIUM	12.9	MG/KG	13.3	3.05	0.40
M	COBALT	5.2	MG/KG	7.6	37.50	2.40
M	COPPER	10.2	MG/KG	12	16.22	1.80
M	IRON	16200	MG/KG	17900	9.97	1700.00
M	LEAD	13	MG/KG	13.1	0.77	0.10
M	MAGNESIUM	2860	MG/KG	3080	7.41	220.00
M	MANGANESE	179	MG/KG	229	24.51	50.00
M	MERCURY	0.04	MG/KG	0.05	22.22	0.01
M	NICKEL	11.4	MG/KG	13.9	19.76	2.50
M	POTASSIUM	655	MG/KG	664	1.36	9.00
M	SELENIUM	0.14 J	MG/KG	0.13 J	7.41	0.01
M	SILVER	0.04 J	MG/KG	0.04 J	0.00	0.00
M	SODIUM	48.1 J	MG/KG	49 J	1.85	0.90
M	THALLIUM	0.08	MG/KG	0.07	13.33	0.01
M	VANADIUM	15.4	MG/KG	16	3.82	0.60
M	ZINC	33.6	MG/KG	38.3	13.07	4.70
MISC	TOTAL SOLIDS	85	%	86	1.17	1.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Katahdin Analytical Services

SDG Name: SG9363 **SOW No.** SW846

Client Field ID	Lab Sample ID
TF2-001-SB1000-0204	SG9363-013
TF2-001-SB1000-0810	SG9363-014
TF2-001-SB1004-0204	SG9363-007
TF2-001-SB1005-0204	SG9363-018
TF2-001-SB1006-0204	SG9363-016
TF2-001-SB1007-0204	SG9363-009
TF2-001-SB1008-0204	SG9363-005
TF2-001-SB1008-0204	SG9363-005D
TF2-001-SB1008-0204	SG9363-005S
TF2-001-SB1009-0204	SG9363-002
TF2-001-SB1009-0810	SG9363-003
TF2-001-SB1010-0204	SG9363-020
TF2-001-SB1010-0204	SG9363-020D
TF2-001-SB1010-0204	SG9363-020S
TF2-001-SS1000-0001	SG9363-012
TF2-001-SS1004-0001	SG9363-006
TF2-001-SS1005-0001	SG9363-017
TF2-001-SS1006-0001	SG9363-015
TF2-001-SS1007-0001	SG9363-008
TF2-001-SS1008-0001	SG9363-004
TF2-001-SS1009-0001	SG9363-001
TF2-001-SS1010-0001	SG9363-019
TF2-SB-DUP10-1113	SG9363-010
TF2-SB-DUP11-1113	SG9363-021

Were ICP interelement corrections applied ?	Yes
Were ICP background corrections applied ?	Yes
If yes - were raw data generated before application of background corrections ?	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Nicholas Tillotson

Date: 12/19/13 Title: Chemist

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Instrument ID: CETAC M6100 **File Name:** HGL14A

Date: 12/14/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	9:34	Hg
Standard #1 (0.2 p		1	9:36	Hg
Standard #2 (0.5 p		1	9:38	Hg
Standard #3 (1.0 p		1	9:40	Hg
Standard #4 (5.0 p		1	9:42	Hg
Standard #5 (10.0		1	9:44	Hg
ICV		1	9:46	HG
ICB		1	9:48	HG
PQL		1	9:50	HG
LCSOGL12HGS1		1	9:53	HG
PBSGL12HGS1		1	9:55	HG
ZZZZZZ		1	9:57	
ZZZZZZ		1	9:59	
ZZZZZZ		1	10:01	
ZZZZZZ		1	10:03	
ZZZZZZ		1	10:05	
ZZZZZZ		1	10:07	
ZZZZZZ		1	10:09	
CCV		1	10:12	HG
CCB		1	10:14	HG
ZZZZZZ		1	10:16	
ZZZZZZ		1	10:18	
ZZZZZZ		5	10:20	
ZZZZZZ		1	10:22	
ZZZZZZ		1	10:24	
ZZZZZZ		1	10:26	
ZZZZZZ		1	10:29	
ZZZZZZ		1	10:31	
ZZZZZZ		1	10:33	
ZZZZZZ		1	10:35	
CCV		1	10:37	HG
CCB		1	10:39	HG
ZZZZZZ		1	10:41	
ZZZZZZ		1	10:43	
ZZZZZZ		5	10:46	
ZZZZZZ		1	10:48	
ZZZZZZ		1	10:50	
ZZZZZZ		1	10:52	
ZZZZZZ		1	10:54	
ZZZZZZ		1	10:59	
SG9363-001	TF2-001-SS1009-0001	1	11:03	HG
ZZZZZZ		1	11:05	
CCV		1	11:07	HG
CCB		1	11:09	HG
LCSOGL13HGS1		1	11:11	HG
PBSGL13HGS1		1	11:14	HG
ZZZZZZ		1	11:16	
ZZZZZZ		1	11:18	
SG9363-002	TF2-001-SB1009-0204	1	11:20	HG
SG9363-003	TF2-001-SB1009-0810	1	11:22	HG

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ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Instrument ID: CETAC M6100 **File Name:** HGL14A

Date: 12/14/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
SG9363-004	TF2-001-SS1008-0001	1	11:24	HG
SG9363-005	TF2-001-SB1008-0204	1	11:27	HG
SG9363-005L	TF2-001-SB1008-0204L	5	11:29	HG
SG9363-005A	TF2-001-SB1008-0204A	1	11:31	HG
CCV		1	11:33	HG
CCB		1	11:35	HG
SG9363-005D	TF2-001-SB1008-0204D	1	11:37	HG
SG9363-005S	TF2-001-SB1008-0204S	1	11:39	HG
SG9363-006	TF2-001-SS1004-0001	1	11:42	HG
SG9363-007	TF2-001-SB1004-0204	1	11:44	HG
SG9363-008	TF2-001-SS1007-0001	1	11:46	HG
SG9363-009	TF2-001-SB1007-0204	1	11:48	HG
SG9363-010	TF2-SB-DUP10-1113	1	11:50	HG
SG9363-012	TF2-001-SS1000-0001	1	11:52	HG
SG9363-013	TF2-001-SB1000-0204	1	11:54	HG
CCV		1	11:57	HG
CCB		1	11:59	HG
ZZZZZZ		1	12:01	
SG9363-014	TF2-001-SB1000-0810	1	12:03	HG
SG9363-015	TF2-001-SS1006-0001	1	12:05	HG
SG9363-016	TF2-001-SB1006-0204	1	12:07	HG
SG9363-017	TF2-001-SS1005-0001	1	12:10	HG
SG9363-018	TF2-001-SB1005-0204	1	12:12	HG
ZZZZZZ		1	12:14	
ZZZZZZ		1	12:16	
CCV		1	12:18	HG
CCB		1	12:20	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Instrument ID: CETAC M6100 **File Name:** HGL17A

Date: 12/17/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	13:39	Hg
Standard #1 (0.2 p		1	13:42	Hg
Standard #2 (0.5 p		1	13:44	Hg
Standard #3 (1.0 p		1	13:46	Hg
Standard #4 (5.0 p		1	13:48	Hg
Standard #5 (10.0		1	13:50	Hg
ICV		1	13:52	HG
ICB		1	13:54	HG
PQL		1	13:56	HG
LCSOGL16HGS1		1	13:58	HG
PBSGL16HGS1		1	14:01	HG
LC2OGL16HGS1		1	14:03	HG
ZZZZZZ		1	14:09	
ZZZZZZ		1	14:15	
ZZZZZZ		1	14:17	
ZZZZZZ		1	14:19	
SG9363-020L	TF2-001-SB1010-0204L	5	14:40	HG
SG9363-020A	TF2-001-SB1010-0204A	1	14:42	HG
SG9363-020D	TF2-001-SB1010-0204D	1	14:44	HG
CCV		1	14:46	HG
CCB		1	14:48	HG
SG9363-020	TF2-001-SB1010-0204	1	14:51	HG
SG9363-020S	TF2-001-SB1010-0204S	1	14:53	HG
SG9363-021	TF2-SB-DUP11-1113	1	14:55	HG
ZZZZZZ		1	14:57	
ZZZZZZ		1	14:59	
ZZZZZZ		1	15:01	
ZZZZZZ		1	15:03	
ZZZZZZ		1	15:05	
ZZZZZZ		1	15:08	
ZZZZZZ		1	15:10	
CCV		1	15:13	HG
CCB		1	15:15	HG
ZZZZZZ		1	15:17	
ZZZZZZ		1	15:21	
ZZZZZZ		1	15:24	
ZZZZZZ		1	15:28	
ZZZZZZ		1	15:32	
ZZZZZZ		1	15:34	
ZZZZZZ		1	15:36	
ZZZZZZ		1	15:38	
ZZZZZZ		1	15:40	
ZZZZZZ		1	15:43	
CCV		1	15:45	HG
CCB		1	15:47	HG
ZZZZZZ		1	15:55	
ZZZZZZ		1	15:57	
ZZZZZZ		1	16:00	
ZZZZZZ		1	16:02	
ZZZZZZ		1	16:04	

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Instrument ID: CETAC M6100 **File Name:** HGL17A

Date: 12/17/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	16:12	HG
CCB		1	16:14	HG
ZZZZZZ		1	16:17	
ZZZZZZ		1	16:19	
ZZZZZZ		1	16:21	
ZZZZZZ		1	16:23	
ZZZZZZ		1	16:25	
SG9363-019	TF2-001-SS1010-0001	1	16:27	HG
CCV		1	16:29	HG
CCB		1	16:31	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL12A

Date: 12/12/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
Cal Blank		1	14:41	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 1		1	14:44	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 2		1	14:47	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 3		1	14:51	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 4		1	14:54	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	14:57	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	15:00	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	15:04	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSA		1	15:07	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	15:10	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCV		1	15:14	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	15:17	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		10	15:20	
ZZZZZZ		10	15:23	
ZZZZZZ		10	15:27	
ZZZZZZ		10	15:30	
ZZZZZZ		10	15:33	
ZZZZZZ		10	15:37	
ZZZZZZ		1	15:40	
ZZZZZZ		1	15:43	
ZZZZZZ		5	15:47	
ZZZZZZ		5	15:50	
CCV		1	15:53	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	15:56	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	16:00	
ZZZZZZ		5	16:03	
ZZZZZZ		5	16:06	
ZZZZZZ		5	16:10	
ZZZZZZ		5	16:13	
ZZZZZZ		5	16:16	
ZZZZZZ		5	16:20	
ZZZZZZ		5	16:23	
ZZZZZZ		25	16:26	
ZZZZZZ		5	16:30	
CCV		1	16:33	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	16:36	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	16:40	
ZZZZZZ		5	16:43	
ZZZZZZ		5	16:46	
ZZZZZZ		25	16:50	
ZZZZZZ		5	16:53	
ZZZZZZ		5	16:56	
ZZZZZZ		5	17:00	
ZZZZZZ		5	17:03	
ZZZZZZ		5	17:07	
ZZZZZZ		5	17:10	
CCV		1	17:14	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	17:17	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		10	17:20	
ZZZZZZ		5	17:24	

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL12A

Date: 12/12/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		5	17:27	
ZZZZZZ		5	17:30	
ZZZZZZ		5	17:34	
ZZZZZZ		5	17:37	
ZZZZZZ		5	17:41	
ZZZZZZ		5	17:44	
ZZZZZZ		5	17:47	
ZZZZZZ		5	17:51	
CCV		1	17:54	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	17:58	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	18:01	
ZZZZZZ		5	18:05	
ZZZZZZ		5	18:08	
ZZZZZZ		5	18:11	
ZZZZZZ		5	18:15	
ZZZZZZ		5	18:18	
ZZZZZZ		25	18:22	
ZZZZZZ		5	18:25	
ZZZZZZ		5	18:29	
ZZZZZZ		5	18:32	
CCV		1	18:36	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:39	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	18:43	
ZZZZZZ		5	18:46	
ZZZZZZ		5	18:50	
ZZZZZZ		5	18:53	
ZZZZZZ		5	18:57	
ZZZZZZ		5	19:00	
ZZZZZZ		25	19:04	
ZZZZZZ		5	19:07	
ZZZZZZ		5	19:11	
ZZZZZZ		5	19:14	
CCV		1	19:18	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:21	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	19:25	
ZZZZZZ		5	19:28	
PBSGL11IMS1		5	19:32	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
LCSOGL11IMS1		5	19:35	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-001	TF2-001-SS1009-0001	5	19:38	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
SG9363-002	TF2-001-SB1009-0204	5	19:42	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
SG9363-003	TF2-001-SB1009-0810	5	19:45	Al Sb As Ba Cd Cr Co Cu Pb Mg Ni K Se Ag Na Tl V Zn
SG9363-004	TF2-001-SS1008-0001	5	19:49	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-005	TF2-001-SB1008-0204	5	19:53	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-005L	TF2-001-SB1008-0204L	25	19:56	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
CCV		1	20:00	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:03	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG9363-005A	TF2-001-SB1008-0204A	5	20:06	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-005D	TF2-001-SB1008-0204D	5	20:10	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-005S	TF2-001-SB1008-0204S	5	20:14	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-006	TF2-001-SS1004-0001	5	20:17	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-007	TF2-001-SB1004-0204	5	20:21	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL12A

Date: 12/12/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
SG9363-008	TF2-001-SS1007-0001	5	20:24	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-009	TF2-001-SB1007-0204	5	20:28	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
CCV		1	20:31	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:35	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL14A

Date: 12/14/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
Cal Blank		1	17:02	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
Cal Std 1		1	17:05	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
Cal Std 2		1	17:08	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
Cal Std 3		1	17:11	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
Cal Std 4		1	17:14	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
ICV		1	17:17	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
ICB		1	17:21	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
PQL		1	17:24	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
ICSA		1	17:27	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
ICSAB		1	17:31	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
CCV		1	17:34	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
CCB		1	17:37	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
ZZZZZZ		5	17:40	
ZZZZZZ		5	17:44	
ZZZZZZ		5	17:47	
ZZZZZZ		5	17:50	
ZZZZZZ		5	17:53	
ZZZZZZ		25	17:56	
ZZZZZZ		5	18:00	
ZZZZZZ		5	18:03	
ZZZZZZ		5	18:06	
ZZZZZZ		5	18:09	
CCV		1	18:12	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
CCB		1	18:16	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
ZZZZZZ		5	18:19	
ZZZZZZ		5	18:22	
ZZZZZZ		5	18:25	
ZZZZZZ		5	18:29	
ZZZZZZ		5	18:32	
ZZZZZZ		5	18:35	
ZZZZZZ		5	18:38	
ZZZZZZ		5	18:42	
ZZZZZZ		25	18:45	
ZZZZZZ		5	18:48	
CCV		1	18:51	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
CCB		1	18:55	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
ZZZZZZ		5	18:58	
ZZZZZZ		5	19:01	
ZZZZZZ		5	19:05	
ZZZZZZ		25	19:08	
ZZZZZZ		5	19:11	
ZZZZZZ		5	19:15	
ZZZZZZ		5	19:18	
ZZZZZZ		5	19:22	
ZZZZZZ		5	19:25	
ZZZZZZ		5	19:28	
CCV		1	19:32	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
CCB		1	19:35	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
ZZZZZZ		10	19:39	
ZZZZZZ		5	19:42	

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL14A

Date: 12/14/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		5	19:45	
ZZZZZZ		5	19:49	
PBSGL12IMS1		5	19:52	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Ni K Se Ag Na Tl V
LCSOGL12IMS1		5	19:56	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Ni K Se Ag Na Tl V
SG9363-019	TF2-001-SS1010-0001	5	19:59	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Ni K Se Ag Na Tl V
ZZZZZZ		5	20:03	
ZZZZZZ		5	20:06	
CCV		1	20:09	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V
CCB		1	20:13	Al Sb As Ba Be Cd Ca Cr Co Fe Mg Mo Ni K Se Ag Na Tl V

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL17A

Date: 12/17/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
Cal Blank		1	13:27	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 1		1	13:30	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 2		1	13:33	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 3		1	13:36	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 4		1	13:39	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	13:42	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	13:45	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	13:49	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSA		1	13:52	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	13:55	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCV		1	13:59	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	14:02	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	14:05	
CCV		1	14:08	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	14:12	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	14:15	
ZZZZZZ		5	14:18	
ZZZZZZ		5	14:21	
ZZZZZZ		10	14:25	
ZZZZZZ		10	14:28	
ZZZZZZ		5	14:32	
ZZZZZZ		5	14:35	
ZZZZZZ		5	14:38	
ZZZZZZ		5	14:42	
ZZZZZZ		10	14:45	
CCV		1	14:48	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	14:52	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		50	14:55	
ZZZZZZ		10	14:58	
ZZZZZZ		10	15:02	
ZZZZZZ		10	15:05	
ZZZZZZ		10	15:09	
ZZZZZZ		10	15:12	
ZZZZZZ		5	15:16	
ZZZZZZ		5	15:19	
ZZZZZZ		5	15:23	
ZZZZZZ		10	15:26	
CCV		1	15:30	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	15:33	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		50	15:36	
ZZZZZZ		10	15:40	
ZZZZZZ		10	15:43	
ZZZZZZ		10	15:47	
ZZZZZZ		5	15:50	
ZZZZZZ		5	15:54	
PBSGL11IMS1		5	15:57	Be Ca
LCSOGL11IMS1		5	16:01	Be Ca
SG9363-001	TF2-001-SS1009-0001	5	16:04	Be
SG9363-001	TF2-001-SS1009-0001	10	16:08	Ca Mn
CCV		1	16:11	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL17A

Date: 12/17/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCB		1	16:14	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG9363-002	TF2-001-SB1009-0204	5	16:18	Be
SG9363-002	TF2-001-SB1009-0204	10	16:22	Ca Mn
SG9363-003	TF2-001-SB1009-0810	5	16:25	Be
SG9363-003	TF2-001-SB1009-0810	10	16:29	Ca Fe Mn
SG9363-004	TF2-001-SS1008-0001	5	16:33	Be Ca
SG9363-005	TF2-001-SB1008-0204	5	16:36	Be Ca
SG9363-005L	TF2-001-SB1008-0204L	25	16:39	Be Ca
SG9363-005A	TF2-001-SB1008-0204A	5	16:43	Be Ca
SG9363-005D	TF2-001-SB1008-0204D	5	16:47	Be Ca
SG9363-005S	TF2-001-SB1008-0204S	5	16:50	Be Ca
CCV		1	16:54	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	16:57	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG9363-006	TF2-001-SS1004-0001	5	17:01	Be Ca
SG9363-007	TF2-001-SB1004-0204	5	17:04	Be Ca
SG9363-008	TF2-001-SS1007-0001	5	17:08	Be Ca
SG9363-009	TF2-001-SB1007-0204	5	17:11	Be Ca
SG9363-010	TF2-SB-DUP10-1113	5	17:15	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-012	TF2-001-SS1000-0001	5	17:18	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-013	TF2-001-SB1000-0204	5	17:22	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
SG9363-014	TF2-001-SB1000-0810	5	17:26	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-015	TF2-001-SS1006-0001	5	17:29	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-016	TF2-001-SB1006-0204	5	17:33	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
CCV		1	17:36	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	17:40	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG9363-017	TF2-001-SS1005-0001	5	17:43	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-018	TF2-001-SB1005-0204	5	17:47	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-021	TF2-SB-DUP11-1113	5	17:50	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	17:54	
PBSGL11IMS2		5	17:57	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V
LCSOGL11IMS2		5	18:01	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9363-020	TF2-001-SB1010-0204	5	18:04	Al Sb As Ba Cd Ca Cr Co Cu Pb Ni K Se Ag Na Tl V
SG9363-020L	TF2-001-SB1010-0204L	25	18:08	Al Sb As Ba Cd Ca Cr Co Cu Pb Ni K Se Ag Na Tl V
SG9363-020A	TF2-001-SB1010-0204A	5	18:11	Al Sb As Ba Cd Ca Cr Co Cu Pb Ni K Se Ag Na Tl V
SG9363-020D	TF2-001-SB1010-0204D	5	18:14	Al Sb As Ba Cd Ca Cr Co Cu Pb Ni K Se Ag Na Tl V
CCV		1	18:18	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:21	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG9363-020S	TF2-001-SB1010-0204S	5	18:25	Al Sb As Ba Cd Ca Cr Co Cu Pb Ni K Se Ag Na Tl V
ZZZZZZ		10	18:29	
ZZZZZZ		5	18:32	
ZZZZZZ		5	18:36	
ZZZZZZ		5	18:39	
ZZZZZZ		1	18:43	
ZZZZZZ		5	18:46	
ZZZZZZ		1	18:50	
ZZZZZZ		1	18:53	
ZZZZZZ		5	18:57	
CCV		1	19:00	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:04	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL18A

Date: 12/18/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
Cal Blank		1	17:53	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
Cal Std 1		1	17:56	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
Cal Std 2		1	17:59	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
Cal Std 3		1	18:02	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
Cal Std 4		1	18:05	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
ICV		1	18:09	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
ICB		1	18:12	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
PQL		1	18:15	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
ICSA		1	18:18	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
ICSAB		1	18:22	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
CCV		1	18:25	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
CCB		1	18:28	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
ZZZZZZ		1	18:31	
ZZZZZZ		1	18:35	
ZZZZZZ		1	18:38	
ZZZZZZ		1	18:41	
ZZZZZZ		1	18:45	
ZZZZZZ		1	18:48	
ZZZZZZ		5	18:51	
ZZZZZZ		1	18:54	
CCV		1	18:58	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
CCB		1	19:01	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
ZZZZZZ		25	19:04	
ZZZZZZ		125	19:07	
CCV		1	19:11	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
CCB		1	19:14	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
ZZZZZZ		25	19:17	
ZZZZZZ		25	19:21	
ZZZZZZ		25	19:24	
SG9363-013	TF2-001-SB1000-0204	10	19:27	Mn
SG9363-017	TF2-001-SS1005-0001	5	19:31	Be
SG9363-018	TF2-001-SB1005-0204	5	19:34	Be
SG9363-021	TF2-SB-DUP11-1113	5	19:37	Be
PBSGL11IMS2		5	19:41	Be Zn
LCSOGL11IMS2		5	19:44	Be
SG9363-020	TF2-001-SB1010-0204	10	19:48	Be Fe Mg Mn Zn
CCV		1	19:51	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
CCB		1	19:54	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
SG9363-020L	TF2-001-SB1010-0204L	50	19:58	Be Fe Mg Mn Zn
SG9363-020A	TF2-001-SB1010-0204A	10	20:01	Be Fe Mg Mn Zn
SG9363-020D	TF2-001-SB1010-0204D	10	20:05	Be Fe Mg Mn Zn
SG9363-020S	TF2-001-SB1010-0204S	10	20:08	Be Fe Mg Mn Zn
ZZZZZZ		5	20:12	
ZZZZZZ		5	20:15	
CCV		1	20:18	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
CCB		1	20:22	Al Be Ca Cu Fe Pb Mg Mn Mo K Na Zn
ZZZZZZ		5	20:25	
ZZZZZZ		5	20:29	
ZZZZZZ		1	20:32	
ZZZZZZ		5	20:36	

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL18A

Date: 12/18/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements												
ZZZZZZ		1	20:39													
PBSGL17IMS1		5	20:43				Cu		Pb		Mn					Zn
LCSOGL17IMS1		5	20:46				Cu		Pb		Mn					Zn
SG9363-019R	TF2-001-SS1010-0001R	5	20:49				Cu		Pb		Mn					Zn
CCV		1	20:53	Al	Be	Ca	Cu	Fe	Pb	Mg	Mn	Mo	K	Na		Zn
CCB		1	20:56	Al	Be	Ca	Cu	Fe	Pb	Mg	Mn	Mo	K	Na		Zn

FORM XIV - IN

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL11IMS1

Matrix: SOIL **SDG Name:** SG9363

Method: MS **Prep Date:** 12/11/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGL11IMS1	LCSOGL11IMS1	1	0.1	
PBSGL11IMS1	PBSGL11IMS1	1	0.1	
TF2-001-SS1009-0001	SG9363-001	1.52	0.1	G
TF2-001-SB1009-0204	SG9363-002	1.48	0.1	F
TF2-001-SB1009-0810	SG9363-003	1.29	0.1	G
TF2-001-SS1008-0001	SG9363-004	1.3	0.1	G
TF2-001-SB1008-0204	SG9363-005	1.45	0.1	F
TF2-001-SB1008-0204D	SG9363-005D	1.47	0.1	F
TF2-001-SB1008-0204S	SG9363-005S	1.43	0.1	F
TF2-001-SS1004-0001	SG9363-006	1.2	0.1	G
TF2-001-SB1004-0204	SG9363-007	1.77	0.1	G
TF2-001-SS1007-0001	SG9363-008	1.49	0.1	G
TF2-001-SB1007-0204	SG9363-009	1.46	0.1	G
TF2-SB-DUP10-1113	SG9363-010	1.32	0.1	G
TF2-001-SS1000-0001	SG9363-012	1.36	0.1	G
TF2-001-SB1000-0204	SG9363-013	1.53	0.1	G
TF2-001-SB1000-0810	SG9363-014	1.66	0.1	G
TF2-001-SS1006-0001	SG9363-015	1.36	0.1	G
TF2-001-SB1006-0204	SG9363-016	1.53	0.1	F
TF2-001-SS1005-0001	SG9363-017	1.31	0.1	G
TF2-001-SB1005-0204	SG9363-018	1.69	0.1	G
TF2-SB-DUP11-1113	SG9363-021	1.61	0.1	G

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL11IMS2

Matrix: SOIL **SDG Name:** SG9363

Method: MS **Prep Date:** 12/11/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGL11IMS2	LCSOGL11IMS2	1	0.1	
PBSGL11IMS2	PBSGL11IMS2	1	0.1	
TF2-001-SB1010-0204	SG9363-020	1.48	0.1	F
TF2-001-SB1010-0204D	SG9363-020D	1.42	0.1	F
TF2-001-SB1010-0204S	SG9363-020S	1.37	0.1	F

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL12HGS1

Matrix: SOIL **SDG Name:** SG9363

Method: CV **Prep Date:** 12/12/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGL12HGS1	LCSOGL12HGS1	0.6	0.1	
PBSGL12HGS1	PBSGL12HGS1	0.6	0.1	
TF2-001-SS1009-0001	SG9363-001	0.72	0.1	G

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL12IMS1

Matrix: SOIL **SDG Name:** SG9363

Method: MS **Prep Date:** 12/12/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGL12IMS1	LCSOGL12IMS1	1	0.1	
PBSGL12IMS1	PBSGL12IMS1	1	0.1	
TF2-001-SS1010-0001	SG9363-019	1.76	0.1	G

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL13HGS1

Matrix: SOIL **SDG Name:** SG9363

Method: CV **Prep Date:** 12/13/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGL13HGS1	LCSOGL13HGS1	0.6	0.1	
PBSGL13HGS1	PBSGL13HGS1	0.6	0.1	
TF2-001-SB1009-0204	SG9363-002	0.71	0.1	F
TF2-001-SB1009-0810	SG9363-003	0.75	0.1	G
TF2-001-SS1008-0001	SG9363-004	0.72	0.1	G
TF2-001-SB1008-0204	SG9363-005	0.78	0.1	F
TF2-001-SB1008-0204D	SG9363-005D	0.77	0.1	F
TF2-001-SB1008-0204S	SG9363-005S	0.74	0.1	F
TF2-001-SS1004-0001	SG9363-006	0.73	0.1	G
TF2-001-SB1004-0204	SG9363-007	0.81	0.1	G
TF2-001-SS1007-0001	SG9363-008	0.83	0.1	G
TF2-001-SB1007-0204	SG9363-009	0.7	0.1	G
TF2-SB-DUP10-1113	SG9363-010	0.71	0.1	G
TF2-001-SS1000-0001	SG9363-012	0.76	0.1	G
TF2-001-SB1000-0204	SG9363-013	0.72	0.1	G
TF2-001-SB1000-0810	SG9363-014	0.99	0.1	F
TF2-001-SS1006-0001	SG9363-015	0.73	0.1	G
TF2-001-SB1006-0204	SG9363-016	0.71	0.1	F
TF2-001-SS1005-0001	SG9363-017	0.92	0.1	G
TF2-001-SB1005-0204	SG9363-018	0.89	0.1	G

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL16HGS1

Matrix: SOIL **SDG Name:** SG9363

Method: CV **Prep Date:** 12/16/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LC2OGL16HGS1	LC2OGL16HGS1	0.6	0.1	
LCSOGL16HGS1	LCSOGL16HGS1	0.6	0.1	
PBSGL16HGS1	PBSGL16HGS1	0.6	0.1	
TF2-001-SS1010-0001	SG9363-019	0.67	0.1	G
TF2-001-SB1010-0204	SG9363-020	0.81	0.1	F
TF2-001-SB1010-0204D	SG9363-020D	0.78	0.1	F
TF2-001-SB1010-0204S	SG9363-020S	0.83	0.1	F
TF2-SB-DUP11-1113	SG9363-021	0.67	0.1	G

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL17IMS1

Matrix: SOIL **SDG Name:** SG9363

Method: MS **Prep Date:** 12/17/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGL17IMS1	LCSOGL17IMS1	1	0.1	
PBSGL17IMS1	PBSGL17IMS1	1	0.1	
TF2-001-SS1010-0001	SG9363-019R	1.42	0.1	G

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/30/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
MERCURY	0.20	0.03	CV

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 6/11/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
ALUMINUM	60	0.34	MS
ANTIMONY	0.20	0.006	MS
ARSENIC	1.0	0.41	MS
BARIUM	0.40	0.02	MS
BERYLLIUM	0.20	0.003	MS
CADMIUM	0.20	0.004	MS
CALCIUM	20	4.10	MS
CHROMIUM	1.0	0.03	MS
COBALT	0.20	0.006	MS
COPPER	0.60	0.03	MS
IRON	20	4.70	MS
LEAD	0.20	0.009	MS
MAGNESIUM	20	0.69	MS
MANGANESE	0.40	0.02	MS
MOLYBDENUM	1.0	0.12	MS
NICKEL	0.40	0.02	MS
POTASSIUM	200	8.20	MS
SELENIUM	1.0	0.64	MS
SILVER	0.20	0.004	MS
SODIUM	200	3.90	MS
THALLIUM	0.20	0.003	MS
VANADIUM	1.0	0.15	MS
ZINC	2.0	0.13	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/7/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.02	mg/Kg	CV	SW846 7471B / SW846 7471B

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.80	mg/kg	MS	SW846 3050B / SW846 6020A
ANTIMONY	0.01	mg/kg	MS	SW846 3050B / SW846 6020A
ARSENIC	0.08	mg/kg	MS	SW846 3050B / SW846 6020A
BARIUM	0.02	mg/kg	MS	SW846 3050B / SW846 6020A
BERYLLIUM	0.004	mg/Kg	MS	SW846 3050B / SW846 6020A
CADMIUM	0.004	mg/kg	MS	SW846 3050B / SW846 6020A
CALCIUM	1.60	mg/kg	MS	SW846 3050B / SW846 6020A
CHROMIUM	0.08	mg/kg	MS	SW846 3050B / SW846 6020A
COBALT	0.006	mg/kg	MS	SW846 3050B / SW846 6020A
COPPER	0.04	mg/kg	MS	SW846 3050B / SW846 6020A
IRON	1.20	mg/kg	MS	SW846 3050B / SW846 6020A
LEAD	0.01	mg/Kg	MS	SW846 3050B / SW846 6020A
MAGNESIUM	1.60	mg/kg	MS	SW846 3050B / SW846 6020A
MANGANESE	0.02	mg/kg	MS	SW846 3050B / SW846 6020A
NICKEL	0.02	mg/kg	MS	SW846 3050B / SW846 6020A
POTASSIUM	8.00	mg/Kg	MS	SW846 3050B / SW846 6020A
SELENIUM	0.06	mg/kg	MS	SW846 3050B / SW846 6020A
SILVER	0.008	mg/kg	MS	SW846 3050B / SW846 6020A
SODIUM	8.00	mg/kg	MS	SW846 3050B / SW846 6020A
THALLIUM	0.008	mg/kg	MS	SW846 3050B / SW846 6020A
VANADIUM	0.08	mg/Kg	MS	SW846 3050B / SW846 6020A
ZINC	0.16	mg/kg	MS	SW846 3050B / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/7/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.005	mg/Kg	CV	SW846 7471B / SW846 7471B

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.10	mg/kg	MS	SW846 3050B / SW846 6020A
ANTIMONY	0.004	mg/kg	MS	SW846 3050B / SW846 6020A
ARSENIC	0.03	mg/kg	MS	SW846 3050B / SW846 6020A
BARIUM	0.007	mg/kg	MS	SW846 3050B / SW846 6020A
BERYLLIUM	0.0008	mg/kg	MS	SW846 3050B / SW846 6020A
CADMIUM	0.002	mg/kg	MS	SW846 3050B / SW846 6020A
CALCIUM	0.77	mg/kg	MS	SW846 3050B / SW846 6020A
CHROMIUM	0.010	mg/kg	MS	SW846 3050B / SW846 6020A
COBALT	0.001	mg/kg	MS	SW846 3050B / SW846 6020A
COPPER	0.01	mg/kg	MS	SW846 3050B / SW846 6020A
IRON	0.48	mg/kg	MS	SW846 3050B / SW846 6020A
LEAD	0.001	mg/kg	MS	SW846 3050B / SW846 6020A
MAGNESIUM	0.27	mg/kg	MS	SW846 3050B / SW846 6020A
MANGANESE	0.008	mg/kg	MS	SW846 3050B / SW846 6020A
NICKEL	0.005	mg/kg	MS	SW846 3050B / SW846 6020A
POTASSIUM	0.91	mg/kg	MS	SW846 3050B / SW846 6020A
SELENIUM	0.008	mg/kg	MS	SW846 3050B / SW846 6020A
SILVER	0.001	mg/kg	MS	SW846 3050B / SW846 6020A
SODIUM	0.51	mg/kg	MS	SW846 3050B / SW846 6020A
THALLIUM	0.002	mg/kg	MS	SW846 3050B / SW846 6020A
VANADIUM	0.02	mg/kg	MS	SW846 3050B / SW846 6020A
ZINC	0.03	mg/kg	MS	SW846 3050B / SW846 6020A

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICV

File: HGL14A Dec 14, 2013 9:46

Analyte	True	Found	%R (1)
MERCURY	6.0	5.76	96.0

SAMPLE: CCV

File: HGL14A Dec 14, 2013 10:12

Analyte	True	Found	%R (1)
MERCURY	5.0	5.47	109.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: HGL14A Dec 14, 2013 10:37

Analyte	True	Found	%R (1)
MERCURY	5.0	5.21	104.2

SAMPLE: CCV

File: HGL14A Dec 14, 2013 11:07

Analyte	True	Found	%R (1)
MERCURY	5.0	5.34	106.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: HGL14A Dec 14, 2013 11:33

Analyte	True	Found	%R (1)
MERCURY	5.0	5.31	106.2

SAMPLE: CCV

File: HGL14A Dec 14, 2013 11:57

Analyte	True	Found	%R (1)
MERCURY	5.0	5.17	103.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: HGL14A Dec 14, 2013 12:18

Analyte	True	Found	%R (1)
MERCURY	5.0	5.14	102.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICV

File: HGL17A Dec 17, 2013 13:52

Analyte	True	Found	%R (1)
MERCURY	6.0	5.54	92.3

SAMPLE: CCV

File: HGL17A Dec 17, 2013 14:46

Analyte	True	Found	%R (1)
MERCURY	5.0	5.14	102.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: HGL17A Dec 17, 2013 15:13

Analyte	True	Found	%R (1)
MERCURY	5.0	5.10	102.0

SAMPLE: CCV

File: HGL17A Dec 17, 2013 15:45

Analyte	True	Found	%R (1)
MERCURY	5.0	5.04	100.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: HGL17A Dec 17, 2013 16:12

Analyte	True	Found	%R (1)
MERCURY	5.0	5.51	110.2

SAMPLE: CCV

File: HGL17A Dec 17, 2013 16:29

Analyte	True	Found	%R (1)
MERCURY	5.0	5.64	112.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICV

File: JGL12A Dec 12, 2013 14:57

Analyte	True	Found	%R (1)
ALUMINUM	400.0	423.70	105.9
ANTIMONY	20.0	19.68	98.4
ARSENIC	20.0	19.69	98.5
BARIUM	20.0	20.01	100.1
CADMIUM	20.0	19.74	98.7
CALCIUM	4000.0	3950.00	98.8
CHROMIUM	20.0	19.85	99.3
COBALT	20.0	20.31	101.5
COPPER	20.0	20.05	100.3
IRON	4000.0	3911.00	97.8
LEAD	20.0	19.65	98.3
MAGNESIUM	4000.0	4094.00	102.4
MANGANESE	20.0	18.62	93.1
MOLYBDENUM	40.0	40.32	100.8
NICKEL	20.0	20.16	100.8
POTASSIUM	4000.0	4008.00	100.2
SELENIUM	20.0	20.05	100.3
SILVER	20.0	20.89	104.5
SODIUM	4000.0	4066.00	101.6
THALLIUM	20.0	20.57	102.8
VANADIUM	20.0	19.66	98.3
ZINC	20.0	20.29	101.4

SAMPLE: CCV

File: JGL12A Dec 12, 2013 15:14

Analyte	True	Found	%R (1)
ALUMINUM	500.0	499.60	99.9
ANTIMONY	25.0	24.44	97.8
ARSENIC	25.0	24.26	97.0
BARIUM	25.0	24.87	99.5
CADMIUM	10.0	9.76	97.6
CALCIUM	5000.0	4940.00	98.8
CHROMIUM	25.0	24.24	97.0
COBALT	10.0	9.71	97.1
COPPER	25.0	24.77	99.1
IRON	5000.0	4860.00	97.2
LEAD	25.0	24.53	98.1
MAGNESIUM	5000.0	4960.00	99.2
MANGANESE	25.0	24.43	97.7
MOLYBDENUM	25.0	25.60	102.4
NICKEL	25.0	26.10	104.4
POTASSIUM	5000.0	4878.00	97.6
SELENIUM	25.0	24.06	96.2
SILVER	10.0	10.02	100.2
SODIUM	5000.0	4949.00	99.0
THALLIUM	10.0	9.60	96.0
VANADIUM	25.0	24.20	96.8
ZINC	25.0	24.92	99.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: JGL12A Dec 12, 2013 15:53

Analyte	True	Found	%R (1)
ALUMINUM	500.0	504.50	100.9
ANTIMONY	25.0	23.77	95.1
ARSENIC	25.0	24.61	98.4
BARIUM	25.0	24.16	96.6
CADMIUM	10.0	9.89	98.9
CALCIUM	5000.0	4930.00	98.6
CHROMIUM	25.0	24.60	98.4
COBALT	10.0	9.89	98.9
COPPER	25.0	24.67	98.7
IRON	5000.0	4897.00	97.9
LEAD	25.0	24.52	98.1
MAGNESIUM	5000.0	4936.00	98.7
MANGANESE	25.0	24.75	99.0
MOLYBDENUM	25.0	24.70	98.8
NICKEL	25.0	26.40	105.6
POTASSIUM	5000.0	4873.00	97.5
SELENIUM	25.0	24.67	98.7
SILVER	10.0	10.12	101.2
SODIUM	5000.0	4912.00	98.2
THALLIUM	10.0	9.67	96.7
VANADIUM	25.0	24.36	97.4
ZINC	25.0	24.53	98.1

SAMPLE: CCV

File: JGL12A Dec 12, 2013 16:33

Analyte	True	Found	%R (1)
ALUMINUM	500.0	499.30	99.9
ANTIMONY	25.0	24.23	96.9
ARSENIC	25.0	24.50	98.0
BARIUM	25.0	24.39	97.6
CADMIUM	10.0	9.85	98.5
CALCIUM	5000.0	4907.00	98.1
CHROMIUM	25.0	24.29	97.2
COBALT	10.0	9.84	98.4
COPPER	25.0	24.71	98.8
IRON	5000.0	4871.00	97.4
LEAD	25.0	24.32	97.3
MAGNESIUM	5000.0	4946.00	98.9
MANGANESE	25.0	24.70	98.8
MOLYBDENUM	25.0	24.40	97.6
NICKEL	25.0	26.44	105.8
POTASSIUM	5000.0	4863.00	97.3
SELENIUM	25.0	24.53	98.1
SILVER	10.0	10.11	101.1
SODIUM	5000.0	4957.00	99.1
THALLIUM	10.0	9.71	97.1
VANADIUM	25.0	24.11	96.4
ZINC	25.0	24.44	97.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: JGL12A Dec 12, 2013 17:14

Analyte	True	Found	%R (1)
ALUMINUM	500.0	496.30	99.3
ANTIMONY	25.0	24.41	97.6
ARSENIC	25.0	24.35	97.4
BARIUM	25.0	24.48	97.9
CADMIUM	10.0	9.73	97.3
CALCIUM	5000.0	4913.00	98.3
CHROMIUM	25.0	24.50	98.0
COBALT	10.0	9.73	97.3
COPPER	25.0	24.49	98.0
IRON	5000.0	4864.00	97.3
LEAD	25.0	24.56	98.2
MAGNESIUM	5000.0	4945.00	98.9
MANGANESE	25.0	24.47	97.9
MOLYBDENUM	25.0	24.47	97.9
NICKEL	25.0	26.21	104.8
POTASSIUM	5000.0	4844.00	96.9
SELENIUM	25.0	24.60	98.4
SILVER	10.0	9.97	99.7
SODIUM	5000.0	4935.00	98.7
THALLIUM	10.0	9.69	96.9
VANADIUM	25.0	24.32	97.3
ZINC	25.0	24.77	99.1

SAMPLE: CCV

File: JGL12A Dec 12, 2013 17:54

Analyte	True	Found	%R (1)
ALUMINUM	500.0	501.40	100.3
ANTIMONY	25.0	24.27	97.1
ARSENIC	25.0	24.42	97.7
BARIUM	25.0	24.36	97.4
CADMIUM	10.0	9.90	99.0
CALCIUM	5000.0	4939.00	98.8
CHROMIUM	25.0	24.43	97.7
COBALT	10.0	9.87	98.7
COPPER	25.0	24.85	99.4
IRON	5000.0	4894.00	97.9
LEAD	25.0	24.66	98.6
MAGNESIUM	5000.0	4923.00	98.5
MANGANESE	25.0	24.64	98.6
MOLYBDENUM	25.0	24.64	98.6
NICKEL	25.0	26.18	104.7
POTASSIUM	5000.0	4835.00	96.7
SELENIUM	25.0	24.67	98.7
SILVER	10.0	10.09	100.9
SODIUM	5000.0	4876.00	97.5
THALLIUM	10.0	9.67	96.7
VANADIUM	25.0	24.27	97.1
ZINC	25.0	24.43	97.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: JGL12A Dec 12, 2013 18:36

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.20	101.2
ANTIMONY	25.0	23.55	94.2
ARSENIC	25.0	24.13	96.5
BARIUM	25.0	24.34	97.4
CADMIUM	10.0	10.04	100.4
CALCIUM	5000.0	4932.00	98.6
CHROMIUM	25.0	24.47	97.9
COBALT	10.0	9.78	97.8
COPPER	25.0	24.33	97.3
IRON	5000.0	4921.00	98.4
LEAD	25.0	24.69	98.8
MAGNESIUM	5000.0	4977.00	99.5
MANGANESE	25.0	24.65	98.6
MOLYBDENUM	25.0	24.60	98.4
NICKEL	25.0	26.09	104.4
POTASSIUM	5000.0	4833.00	96.7
SELENIUM	25.0	24.45	97.8
SILVER	10.0	10.06	100.6
SODIUM	5000.0	4884.00	97.7
THALLIUM	10.0	9.67	96.7
VANADIUM	25.0	24.23	96.9
ZINC	25.0	24.56	98.2

SAMPLE: CCV

File: JGL12A Dec 12, 2013 19:18

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.30	101.1
ANTIMONY	25.0	23.73	94.9
ARSENIC	25.0	24.28	97.1
BARIUM	25.0	24.00	96.0
CADMIUM	10.0	9.92	99.2
CALCIUM	5000.0	4958.00	99.2
CHROMIUM	25.0	24.29	97.2
COBALT	10.0	9.74	97.4
COPPER	25.0	24.36	97.4
IRON	5000.0	4816.00	96.3
LEAD	25.0	24.31	97.2
MAGNESIUM	5000.0	5001.00	100.0
MANGANESE	25.0	24.54	98.2
MOLYBDENUM	25.0	24.49	98.0
NICKEL	25.0	24.22	96.9
POTASSIUM	5000.0	4899.00	98.0
SELENIUM	25.0	24.48	97.9
SILVER	10.0	10.06	100.6
SODIUM	5000.0	4969.00	99.4
THALLIUM	10.0	9.64	96.4
VANADIUM	25.0	24.25	97.0
ZINC	25.0	24.55	98.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: JGL12A Dec 12, 2013 20:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	508.70	101.7
ANTIMONY	25.0	23.41	93.6
ARSENIC	25.0	23.69	94.8
BARIUM	25.0	23.73	94.9
CADMIUM	10.0	9.60	96.0
CALCIUM	5000.0	4852.00	97.0
CHROMIUM	25.0	23.99	96.0
COBALT	10.0	9.53	95.3
COPPER	25.0	23.98	95.9
IRON	5000.0	4653.00	93.1
LEAD	25.0	24.34	97.4
MAGNESIUM	5000.0	5040.00	100.8
MANGANESE	25.0	24.21	96.8
MOLYBDENUM	25.0	23.94	95.8
NICKEL	25.0	23.74	95.0
POTASSIUM	5000.0	4984.00	99.7
SELENIUM	25.0	23.97	95.9
SILVER	10.0	9.85	98.5
SODIUM	5000.0	5009.00	100.2
THALLIUM	10.0	9.60	96.0
VANADIUM	25.0	23.80	95.2
ZINC	25.0	23.90	95.6

SAMPLE: CCV

File: JGL12A Dec 12, 2013 20:31

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.00	101.4
ANTIMONY	25.0	23.56	94.2
ARSENIC	25.0	23.60	94.4
BARIUM	25.0	23.93	95.7
CADMIUM	10.0	9.56	95.6
CALCIUM	5000.0	4822.00	96.4
CHROMIUM	25.0	23.62	94.5
COBALT	10.0	9.47	94.7
COPPER	25.0	23.89	95.6
IRON	5000.0	4577.00	91.5
LEAD	25.0	24.45	97.8
MAGNESIUM	5000.0	5049.00	101.0
MANGANESE	25.0	24.18	96.7
MOLYBDENUM	25.0	24.04	96.2
NICKEL	25.0	23.48	93.9
POTASSIUM	5000.0	4921.00	98.4
SELENIUM	25.0	24.15	96.6
SILVER	10.0	9.80	98.0
SODIUM	5000.0	5017.00	100.3
THALLIUM	10.0	9.75	97.5
VANADIUM	25.0	23.53	94.1
ZINC	25.0	24.01	96.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICV

File: JGL14A Dec 14, 2013 17:17

Analyte	True	Found	%R (1)
ALUMINUM	400.0	420.70	105.2
ANTIMONY	20.0	19.64	98.2
ARSENIC	20.0	19.99	99.9
BARIUM	20.0	19.73	98.7
BERYLLIUM	20.0	19.67	98.4
CADMIUM	20.0	19.87	99.4
CALCIUM	4000.0	3849.00	96.2
CHROMIUM	20.0	19.92	99.6
COBALT	20.0	20.17	100.9
IRON	4000.0	3882.00	97.0
MAGNESIUM	4000.0	4048.00	101.2
MOLYBDENUM	40.0	40.10	100.3
NICKEL	20.0	19.97	99.8
POTASSIUM	4000.0	4032.00	100.8
SELENIUM	20.0	20.38	101.9
SILVER	20.0	20.94	104.7
SODIUM	4000.0	3964.00	99.1
THALLIUM	20.0	20.80	104.0
VANADIUM	20.0	19.78	98.9

SAMPLE: CCV

File: JGL14A Dec 14, 2013 17:34

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.20	98.8
ANTIMONY	25.0	24.97	99.9
ARSENIC	25.0	24.71	98.8
BARIUM	25.0	24.12	96.5
BERYLLIUM	10.0	9.86	98.6
CADMIUM	10.0	9.64	96.4
CALCIUM	5000.0	4842.00	96.8
CHROMIUM	25.0	24.25	97.0
COBALT	10.0	9.78	97.8
IRON	5000.0	4694.00	93.9
MAGNESIUM	5000.0	4931.00	98.6
MOLYBDENUM	25.0	25.88	103.5
NICKEL	25.0	24.23	96.9
POTASSIUM	5000.0	4968.00	99.4
SELENIUM	25.0	24.94	99.8
SILVER	10.0	9.91	99.1
SODIUM	5000.0	4838.00	96.8
THALLIUM	10.0	9.80	98.0
VANADIUM	25.0	24.25	97.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: JGL14A Dec 14, 2013 18:12

Analyte	True	Found	%R (1)
ALUMINUM	500.0	489.10	97.8
ANTIMONY	25.0	24.23	96.9
ARSENIC	25.0	25.11	100.4
BARIUM	25.0	24.06	96.2
BERYLLIUM	10.0	9.50	95.0
CADMIUM	10.0	9.97	99.7
CALCIUM	5000.0	4932.00	98.6
CHROMIUM	25.0	25.15	100.6
COBALT	10.0	9.85	98.5
IRON	5000.0	4784.00	95.7
MAGNESIUM	5000.0	4869.00	97.4
MOLYBDENUM	25.0	25.00	100.0
NICKEL	25.0	24.64	98.6
POTASSIUM	5000.0	4889.00	97.8
SELENIUM	25.0	25.42	101.7
SILVER	10.0	10.15	101.5
SODIUM	5000.0	4801.00	96.0
THALLIUM	10.0	9.65	96.5
VANADIUM	25.0	24.72	98.9

SAMPLE: CCV

File: JGL14A Dec 14, 2013 18:51

Analyte	True	Found	%R (1)
ALUMINUM	500.0	491.80	98.4
ANTIMONY	25.0	24.33	97.3
ARSENIC	25.0	25.04	100.2
BARIUM	25.0	24.51	98.0
BERYLLIUM	10.0	9.69	96.9
CADMIUM	10.0	9.99	99.9
CALCIUM	5000.0	4892.00	97.8
CHROMIUM	25.0	24.67	98.7
COBALT	10.0	9.94	99.4
IRON	5000.0	4843.00	96.9
MAGNESIUM	5000.0	4947.00	98.9
MOLYBDENUM	25.0	24.60	98.4
NICKEL	25.0	24.76	99.0
POTASSIUM	5000.0	4906.00	98.1
SELENIUM	25.0	25.16	100.6
SILVER	10.0	10.17	101.7
SODIUM	5000.0	4815.00	96.3
THALLIUM	10.0	9.86	98.6
VANADIUM	25.0	24.64	98.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: JGL14A Dec 14, 2013 19:32

Analyte	True	Found	%R (1)
ALUMINUM	500.0	496.50	99.3
ANTIMONY	25.0	24.25	97.0
ARSENIC	25.0	24.95	99.8
BARIUM	25.0	24.17	96.7
BERYLLIUM	10.0	9.58	95.8
CADMIUM	10.0	9.98	99.8
CALCIUM	5000.0	4900.00	98.0
CHROMIUM	25.0	24.85	99.4
COBALT	10.0	9.91	99.1
IRON	5000.0	4894.00	97.9
MAGNESIUM	5000.0	4927.00	98.5
MOLYBDENUM	25.0	24.67	98.7
NICKEL	25.0	24.84	99.4
POTASSIUM	5000.0	4882.00	97.6
SELENIUM	25.0	25.35	101.4
SILVER	10.0	10.16	101.6
SODIUM	5000.0	4812.00	96.2
THALLIUM	10.0	9.80	98.0
VANADIUM	25.0	24.33	97.3

SAMPLE: CCV

File: JGL14A Dec 14, 2013 20:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	499.10	99.8
ANTIMONY	25.0	24.97	99.9
ARSENIC	25.0	25.00	100.0
BARIUM	25.0	24.68	98.7
BERYLLIUM	10.0	9.66	96.6
CADMIUM	10.0	9.93	99.3
CALCIUM	5000.0	4986.00	99.7
CHROMIUM	25.0	24.99	100.0
COBALT	10.0	10.02	100.2
IRON	5000.0	4925.00	98.5
MAGNESIUM	5000.0	5011.00	100.2
MOLYBDENUM	25.0	24.64	98.6
NICKEL	25.0	25.29	101.2
POTASSIUM	5000.0	5050.00	101.0
SELENIUM	25.0	24.95	99.8
SILVER	10.0	10.17	101.7
SODIUM	5000.0	4969.00	99.4
THALLIUM	10.0	9.97	99.7
VANADIUM	25.0	24.79	99.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICV

File: JGL17A Dec 17, 2013 13:42

Analyte	True	Found	%R (1)
ALUMINUM	400.0	421.10	105.3
ANTIMONY	20.0	19.87	99.4
ARSENIC	20.0	20.03	100.2
BARIUM	20.0	20.37	101.8
BERYLLIUM	20.0	20.06	100.3
CADMIUM	20.0	20.19	101.0
CALCIUM	4000.0	3949.00	98.7
CHROMIUM	20.0	19.82	99.1
COBALT	20.0	20.07	100.4
COPPER	20.0	19.94	99.7
IRON	4000.0	3953.00	98.8
LEAD	20.0	19.97	99.8
MAGNESIUM	4000.0	4110.00	102.8
MANGANESE	20.0	18.70	93.5
MOLYBDENUM	40.0	40.76	101.9
NICKEL	20.0	20.44	102.2
POTASSIUM	4000.0	4024.00	100.6
SELENIUM	20.0	20.58	102.9
SILVER	20.0	21.11	105.5
SODIUM	4000.0	3981.00	99.5
THALLIUM	20.0	21.09	105.5
VANADIUM	20.0	19.87	99.4
ZINC	20.0	20.24	101.2

SAMPLE: CCV

File: JGL17A Dec 17, 2013 13:59

Analyte	True	Found	%R (1)
ALUMINUM	500.0	498.50	99.7
ANTIMONY	25.0	24.78	99.1
ARSENIC	25.0	24.55	98.2
BARIUM	25.0	24.92	99.7
BERYLLIUM	10.0	9.97	99.7
CADMIUM	10.0	9.74	97.4
CALCIUM	5000.0	5004.00	100.1
CHROMIUM	25.0	23.97	95.9
COBALT	10.0	9.76	97.6
COPPER	25.0	24.48	97.9
IRON	5000.0	4773.00	95.5
LEAD	25.0	24.47	97.9
MAGNESIUM	5000.0	5034.00	100.7
MANGANESE	25.0	24.18	96.7
MOLYBDENUM	25.0	25.65	102.6
NICKEL	25.0	24.47	97.9
POTASSIUM	5000.0	4887.00	97.7
SELENIUM	25.0	24.67	98.7
SILVER	10.0	9.76	97.6
SODIUM	5000.0	4931.00	98.6
THALLIUM	10.0	9.76	97.6
VANADIUM	25.0	24.14	96.6
ZINC	25.0	24.56	98.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: JGL17A Dec 17, 2013 14:08

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.70	98.9
ANTIMONY	25.0	24.20	96.8
ARSENIC	25.0	24.37	97.5
BARIUM	25.0	24.45	97.8
BERYLLIUM	10.0	9.84	98.4
CADMIUM	10.0	9.91	99.1
CALCIUM	5000.0	4843.00	96.9
CHROMIUM	25.0	24.43	97.7
COBALT	10.0	9.77	97.7
COPPER	25.0	24.78	99.1
IRON	5000.0	4851.00	97.0
LEAD	25.0	24.68	98.7
MAGNESIUM	5000.0	4975.00	99.5
MANGANESE	25.0	24.59	98.4
MOLYBDENUM	25.0	24.61	98.4
NICKEL	25.0	24.59	98.4
POTASSIUM	5000.0	4877.00	97.5
SELENIUM	25.0	24.67	98.7
SILVER	10.0	9.95	99.5
SODIUM	5000.0	4774.00	95.5
THALLIUM	10.0	9.81	98.1
VANADIUM	25.0	24.26	97.0
ZINC	25.0	24.85	99.4

SAMPLE: CCV

File: JGL17A Dec 17, 2013 14:48

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.10	101.4
ANTIMONY	25.0	24.14	96.6
ARSENIC	25.0	24.76	99.0
BARIUM	25.0	24.16	96.6
BERYLLIUM	10.0	9.55	95.5
CADMIUM	10.0	9.90	99.0
CALCIUM	5000.0	4880.00	97.6
CHROMIUM	25.0	24.40	97.6
COBALT	10.0	9.81	98.1
COPPER	25.0	24.57	98.3
IRON	5000.0	4851.00	97.0
LEAD	25.0	24.70	98.8
MAGNESIUM	5000.0	5052.00	101.0
MANGANESE	25.0	24.48	97.9
MOLYBDENUM	25.0	24.49	98.0
NICKEL	25.0	24.62	98.5
POTASSIUM	5000.0	4908.00	98.2
SELENIUM	25.0	24.81	99.2
SILVER	10.0	9.93	99.3
SODIUM	5000.0	4899.00	98.0
THALLIUM	10.0	9.81	98.1
VANADIUM	25.0	24.51	98.0
ZINC	25.0	24.74	99.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: JGL17A Dec 17, 2013 15:30

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.80	101.4
ANTIMONY	25.0	23.81	95.2
ARSENIC	25.0	24.44	97.8
BARIUM	25.0	24.05	96.2
BERYLLIUM	10.0	9.49	94.9
CADMIUM	10.0	9.84	98.4
CALCIUM	5000.0	4787.00	95.7
CHROMIUM	25.0	24.21	96.8
COBALT	10.0	9.66	96.6
COPPER	25.0	24.18	96.7
IRON	5000.0	4780.00	95.6
LEAD	25.0	24.37	97.5
MAGNESIUM	5000.0	5074.00	101.5
MANGANESE	25.0	24.28	97.1
MOLYBDENUM	25.0	23.93	95.7
NICKEL	25.0	24.17	96.7
POTASSIUM	5000.0	4906.00	98.1
SELENIUM	25.0	24.07	96.3
SILVER	10.0	9.71	97.1
SODIUM	5000.0	4947.00	98.9
THALLIUM	10.0	9.80	98.0
VANADIUM	25.0	24.03	96.1
ZINC	25.0	24.59	98.4

SAMPLE: CCV

File: JGL17A Dec 17, 2013 16:11

Analyte	True	Found	%R (1)
ALUMINUM	500.0	514.90	103.0
ANTIMONY	25.0	23.91	95.6
ARSENIC	25.0	24.37	97.5
BARIUM	25.0	23.93	95.7
BERYLLIUM	10.0	9.39	93.9
CADMIUM	10.0	9.87	98.7
CALCIUM	5000.0	4838.00	96.8
CHROMIUM	25.0	24.13	96.5
COBALT	10.0	9.69	96.9
COPPER	25.0	24.35	97.4
IRON	5000.0	4829.00	96.6
LEAD	25.0	24.65	98.6
MAGNESIUM	5000.0	5168.00	103.4
MANGANESE	25.0	24.75	99.0
MOLYBDENUM	25.0	24.10	96.4
NICKEL	25.0	24.18	96.7
POTASSIUM	5000.0	4999.00	100.0
SELENIUM	25.0	24.45	97.8
SILVER	10.0	9.79	97.9
SODIUM	5000.0	5087.00	101.7
THALLIUM	10.0	9.81	98.1
VANADIUM	25.0	24.26	97.0
ZINC	25.0	24.65	98.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: JGL17A Dec 17, 2013 16:54

Analyte	True	Found	%R (1)
ALUMINUM	500.0	518.10	103.6
ANTIMONY	25.0	23.49	94.0
ARSENIC	25.0	23.53	94.1
BARIUM	25.0	24.10	96.4
BERYLLIUM	10.0	9.31	93.1
CADMIUM	10.0	9.66	96.6
CALCIUM	5000.0	4814.00	96.3
CHROMIUM	25.0	23.97	95.9
COBALT	10.0	9.45	94.5
COPPER	25.0	24.00	96.0
IRON	5000.0	4767.00	95.3
LEAD	25.0	24.54	98.2
MAGNESIUM	5000.0	5199.00	104.0
MANGANESE	25.0	24.27	97.1
MOLYBDENUM	25.0	23.76	95.0
NICKEL	25.0	23.96	95.8
POTASSIUM	5000.0	5006.00	100.1
SELENIUM	25.0	23.69	94.8
SILVER	10.0	9.55	95.5
SODIUM	5000.0	5060.00	101.2
THALLIUM	10.0	9.74	97.4
VANADIUM	25.0	24.08	96.3
ZINC	25.0	24.26	97.0

SAMPLE: CCV

File: JGL17A Dec 17, 2013 17:36

Analyte	True	Found	%R (1)
ALUMINUM	500.0	519.90	104.0
ANTIMONY	25.0	24.01	96.0
ARSENIC	25.0	23.36	93.4
BARIUM	25.0	24.91	99.6
BERYLLIUM	10.0	9.38	93.8
CADMIUM	10.0	9.43	94.3
CALCIUM	5000.0	4884.00	97.7
CHROMIUM	25.0	23.45	93.8
COBALT	10.0	9.41	94.1
COPPER	25.0	23.20	92.8
IRON	5000.0	4686.00	93.7
LEAD	25.0	24.49	98.0
MAGNESIUM	5000.0	5219.00	104.4
MANGANESE	25.0	23.81	95.2
MOLYBDENUM	25.0	23.30	93.2
NICKEL	25.0	23.74	95.0
POTASSIUM	5000.0	4996.00	99.9
SELENIUM	25.0	23.36	93.4
SILVER	10.0	9.27	92.7
SODIUM	5000.0	5065.00	101.3
THALLIUM	10.0	9.71	97.1
VANADIUM	25.0	23.37	93.5
ZINC	25.0	24.17	96.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: JGL17A Dec 17, 2013 18:18

Analyte	True	Found	%R (1)
ALUMINUM	500.0	532.20	106.4
ANTIMONY	25.0	23.96	95.8
ARSENIC	25.0	23.28	93.1
BARIUM	25.0	24.45	97.8
BERYLLIUM	10.0	8.92	89.2•
CADMIUM	10.0	9.45	94.5
CALCIUM	5000.0	4895.00	97.9
CHROMIUM	25.0	23.40	93.6
COBALT	10.0	9.35	93.5
COPPER	25.0	23.09	92.4
IRON	5000.0	4657.00	93.1
LEAD	25.0	24.70	98.8
MAGNESIUM	5000.0	5285.00	105.7
MANGANESE	25.0	24.08	96.3
MOLYBDENUM	25.0	23.12	92.5
NICKEL	25.0	23.58	94.3
POTASSIUM	5000.0	5071.00	101.4
SELENIUM	25.0	23.11	92.4
SILVER	10.0	9.37	93.7
SODIUM	5000.0	5116.00	102.3
THALLIUM	10.0	9.83	98.3
VANADIUM	25.0	23.85	95.4
ZINC	25.0	23.52	94.1

No Samples Affected

SAMPLE: CCV

File: JGL17A Dec 17, 2013 19:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	522.20	104.4
ANTIMONY	25.0	24.03	96.1
ARSENIC	25.0	24.54	98.2
BARIUM	25.0	24.71	98.8
BERYLLIUM	10.0	8.89	88.9•
CADMIUM	10.0	9.89	98.9
CALCIUM	5000.0	4889.00	97.8
CHROMIUM	25.0	24.68	98.7
COBALT	10.0	9.84	98.4
COPPER	25.0	24.92	99.7
IRON	5000.0	4917.00	98.3
LEAD	25.0	24.66	98.6
MAGNESIUM	5000.0	5271.00	105.4
MANGANESE	25.0	25.07	100.3
MOLYBDENUM	25.0	24.18	96.7
NICKEL	25.0	24.67	98.7
POTASSIUM	5000.0	5063.00	101.3
SELENIUM	25.0	24.79	99.2
SILVER	10.0	9.82	98.2
SODIUM	5000.0	5180.00	103.6
THALLIUM	10.0	9.80	98.0
VANADIUM	25.0	24.77	99.1
ZINC	25.0	25.48	101.9

No Samples Affected

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICV

File: JGL18A Dec 18, 2013 18:09

Analyte	True	Found	%R (1)
ALUMINUM	400.0	422.70	105.7
BERYLLIUM	20.0	19.40	97.0
CALCIUM	4000.0	3930.00	98.3
COPPER	20.0	20.24	101.2
IRON	4000.0	3986.00	99.7
LEAD	20.0	19.90	99.5
MAGNESIUM	4000.0	4048.00	101.2
MANGANESE	20.0	18.54	92.7
MOLYBDENUM	40.0	40.73	101.8
POTASSIUM	4000.0	4077.00	101.9
SODIUM	4000.0	4034.00	100.8
ZINC	20.0	20.20	101.0

SAMPLE: CCV

File: JGL18A Dec 18, 2013 18:25

Analyte	True	Found	%R (1)
ALUMINUM	500.0	502.80	100.6
BERYLLIUM	10.0	10.28	102.8
CALCIUM	5000.0	4862.00	97.2
COPPER	25.0	24.96	99.8
IRON	5000.0	4835.00	96.7
LEAD	25.0	24.52	98.1
MAGNESIUM	5000.0	5071.00	101.4
MANGANESE	25.0	24.58	98.3
MOLYBDENUM	25.0	25.91	103.6
POTASSIUM	5000.0	4965.00	99.3
SODIUM	5000.0	5045.00	100.9
ZINC	25.0	24.42	97.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: JGL18A Dec 18, 2013 18:58

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.30	101.3
BERYLLIUM	10.0	10.22	102.2
CALCIUM	5000.0	4874.00	97.5
COPPER	25.0	25.01	100.0
IRON	5000.0	4864.00	97.3
LEAD	25.0	24.76	99.0
MAGNESIUM	5000.0	5045.00	100.9
MANGANESE	25.0	24.91	99.6
MOLYBDENUM	25.0	25.06	100.2
POTASSIUM	5000.0	4935.00	98.7
SODIUM	5000.0	4931.00	98.6
ZINC	25.0	24.81	99.2

SAMPLE: CCV

File: JGL18A Dec 18, 2013 19:11

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.60	101.1
BERYLLIUM	10.0	10.14	101.4
CALCIUM	5000.0	4848.00	97.0
COPPER	25.0	24.84	99.4
IRON	5000.0	4912.00	98.2
LEAD	25.0	24.74	99.0
MAGNESIUM	5000.0	5041.00	100.8
MANGANESE	25.0	25.09	100.4
MOLYBDENUM	25.0	25.01	100.0
POTASSIUM	5000.0	4885.00	97.7
SODIUM	5000.0	4956.00	99.1
ZINC	25.0	24.54	98.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: JGL18A Dec 18, 2013 19:51

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.60	101.5
BERYLLIUM	10.0	9.85	98.5
CALCIUM	5000.0	4813.00	96.3
COPPER	25.0	25.10	100.4
IRON	5000.0	4920.00	98.4
LEAD	25.0	24.68	98.7
MAGNESIUM	5000.0	4995.00	99.9
MANGANESE	25.0	25.27	101.1
MOLYBDENUM	25.0	25.10	100.4
POTASSIUM	5000.0	4924.00	98.5
SODIUM	5000.0	4855.00	97.1
ZINC	25.0	24.91	99.6

SAMPLE: CCV

File: JGL18A Dec 18, 2013 20:18

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.40	101.1
BERYLLIUM	10.0	9.60	96.0
CALCIUM	5000.0	4887.00	97.7
COPPER	25.0	24.99	100.0
IRON	5000.0	4949.00	99.0
LEAD	25.0	24.48	97.9
MAGNESIUM	5000.0	5039.00	100.8
MANGANESE	25.0	25.44	101.8
MOLYBDENUM	25.0	25.53	102.1
POTASSIUM	5000.0	4942.00	98.8
SODIUM	5000.0	4921.00	98.4
ZINC	25.0	25.01	100.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCV

File: JGL18A Dec 18, 2013 20:53

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.70	101.3
BERYLLIUM	10.0	9.82	98.2
CALCIUM	5000.0	4915.00	98.3
COPPER	25.0	25.15	100.6
IRON	5000.0	4961.00	99.2
LEAD	25.0	24.93	99.7
MAGNESIUM	5000.0	5052.00	101.0
MANGANESE	25.0	25.54	102.2
MOLYBDENUM	25.0	25.42	101.7
POTASSIUM	5000.0	4973.00	99.5
SODIUM	5000.0	4908.00	98.2
ZINC	25.0	25.11	100.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: PQL

File: HGL14A Dec 14, 2013 09:50

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.16	80.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: PQL

File: HGL17A Dec 17, 2013 13:56

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.20	100.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: PQL

File: JGL12A Dec 12, 2013 15:04

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	59.44	99.1
ANTIMONY	0.2	0.17	85.0
ARSENIC	1.0	0.82	82.0
BARIUM	0.4	0.44	110.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	11.79	58.9•
CHROMIUM	1.0	0.91	91.0
COBALT	0.2	0.18	90.0
COPPER	0.6	0.63	105.0
IRON	20.0	19.03	95.2
LEAD	0.2	0.19	95.0
MAGNESIUM	20.0	20.10	100.5
MANGANESE	0.4	0.33	82.5
MOLYBDENUM	1.0	0.98	98.0
NICKEL	0.4	0.39	97.5
POTASSIUM	200.0	192.70	96.3
SELENIUM	1.0	0.85	85.0
SILVER	0.2	0.19	95.0
SODIUM	200.0	205.90	103.0
THALLIUM	0.2	0.17	85.0
VANADIUM	1.0	0.87	87.0
ZINC	2.0	2.10	105.0

No Samples Affected

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: PQL

File: JGL14A Dec 14, 2013 17:24

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	59.83	99.7
ANTIMONY	0.2	0.18	90.0
ARSENIC	1.0	0.91	91.0
BARIUM	0.4	0.36	90.0
BERYLLIUM	0.2	0.18	90.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	20.15	100.7
CHROMIUM	1.0	0.98	98.0
COBALT	0.2	0.20	100.0
IRON	20.0	21.40	107.0
MAGNESIUM	20.0	19.96	99.8
MOLYBDENUM	1.0	0.99	99.0
NICKEL	0.4	0.38	95.0
POTASSIUM	200.0	202.50	101.3
SELENIUM	1.0	1.01	101.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	205.40	102.7
THALLIUM	0.2	0.18	90.0
VANADIUM	1.0	0.95	95.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: PQL

File: JGL17A Dec 17, 2013 13:49

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	59.97	99.9
ANTIMONY	0.2	0.18	90.0
ARSENIC	1.0	1.03	103.0
BARIUM	0.4	0.40	100.0
BERYLLIUM	0.2	0.17	85.0
CADMIUM	0.2	0.18	90.0
CALCIUM	20.0	22.15	110.8
CHROMIUM	1.0	0.87	87.0
COBALT	0.2	0.20	100.0
COPPER	0.6	0.68	113.3
IRON	20.0	17.10	85.5
LEAD	0.2	0.19	95.0
MAGNESIUM	20.0	20.51	102.6
MANGANESE	0.4	0.43	107.5
MOLYBDENUM	1.0	1.01	101.0
NICKEL	0.4	0.37	92.5
POTASSIUM	200.0	198.90	99.5
SELENIUM	1.0	1.02	102.0
SILVER	0.2	0.19	95.0
SODIUM	200.0	204.10	102.1
THALLIUM	0.2	0.17	85.0
VANADIUM	1.0	0.81	81.0
ZINC	2.0	3.19	159.5*

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: PQL

File: JGL18A Dec 18, 2013 18:15

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	59.83	99.7
BERYLLIUM	0.2	0.18	90.0
CALCIUM	20.0	17.57	87.9
COPPER	0.6	0.62	103.3
IRON	20.0	19.13	95.6
LEAD	0.2	0.18	90.0
MAGNESIUM	20.0	20.37	101.8
MANGANESE	0.4	0.33	82.5
MOLYBDENUM	1.0	1.05	105.0
POTASSIUM	200.0	198.30	99.2
SODIUM	200.0	209.20	104.6
ZINC	2.0	2.10	105.0

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICB

File: HGL14A Dec 14, 2013 9:48

Analyte	Result	C
MERCURY	-0.089	U

SAMPLE: CCB

File: HGL14A Dec 14, 2013 10:14

Analyte	Result	C
MERCURY	-0.073	U

SAMPLE: CCB

File: HGL14A Dec 14, 2013 10:39

Analyte	Result	C
MERCURY	-0.067	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCB

File: HGL14A Dec 14, 2013 11:09

Analyte	Result	C
MERCURY	-0.082	U

SAMPLE: CCB

File: HGL14A Dec 14, 2013 11:35

Analyte	Result	C
MERCURY	-0.076	U

SAMPLE: CCB

File: HGL14A Dec 14, 2013 11:59

Analyte	Result	C
MERCURY	-0.086	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCB

File: HGL14A Dec 14, 2013 12:20

Analyte	Result	C
MERCURY	-0.090	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICB

File: HGL17A Dec 17, 2013 13:54

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL17A Dec 17, 2013 14:48

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL17A Dec 17, 2013 15:15

Analyte	Result	C
MERCURY	-0.030	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCB

File: HGL17A Dec 17, 2013 15:47

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL17A Dec 17, 2013 16:14

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL17A Dec 17, 2013 16:31

Analyte	Result	C
MERCURY	0.030	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICB
File: JGL12A Dec 12, 2013 15:00

Analyte	Result	C
ALUMINUM	-0.669	U
ANTIMONY	0.007	J
ARSENIC	0.410	U
BARIUM	0.020	U
CADMIUM	0.004	U
CALCIUM	-6.315	U
CHROMIUM	-0.153	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.005	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL12A Dec 12, 2013 15:17

Analyte	Result	C
ALUMINUM	-0.516	U
ANTIMONY	0.011	J
ARSENIC	0.410	U
BARIUM	0.020	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.056	U
COBALT	0.006	U
COPPER	0.091	J
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	-0.023	U
MOLYBDENUM	0.458	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	6.756	J
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL12A Dec 12, 2013 15:56

Analyte	Result	C
ALUMINUM	-0.508	U
ANTIMONY	0.010	J
ARSENIC	0.410	U
BARIUM	0.020	U
CADMIUM	0.004	U
CALCIUM	-5.647	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCB
File: JGL12A Dec 12, 2013 16:36

Analyte	Result	C
ALUMINUM	-0.623	U
ANTIMONY	0.017	J
ARSENIC	0.410	U
BARIUM	0.020	U
CADMIUM	0.004	U
CALCIUM	-8.459	U
CHROMIUM	-0.036	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-7.130	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL12A Dec 12, 2013 17:17

Analyte	Result	C
ALUMINUM	-0.605	U
ANTIMONY	0.013	J
ARSENIC	0.410	U
BARIUM	0.020	U
CADMIUM	-0.005	U
CALCIUM	-6.888	U
CHROMIUM	-0.089	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-6.055	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL12A Dec 12, 2013 17:58

Analyte	Result	C
ALUMINUM	-0.558	U
ANTIMONY	0.007	J
ARSENIC	0.410	U
BARIUM	0.020	U
CADMIUM	0.004	U
CALCIUM	-8.506	U
CHROMIUM	-0.130	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCB
File: JGL12A Dec 12, 2013 18:39

Analyte	Result	C
ALUMINUM	2.876	J
ANTIMONY	0.009	J
ARSENIC	0.410	U
BARIUM	0.020	J
CADMIUM	0.004	U
CALCIUM	-8.074	U
CHROMIUM	-0.168	U
COBALT	0.009	J
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	1.176	J
MANGANESE	0.096	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL12A Dec 12, 2013 19:21

Analyte	Result	C
ALUMINUM	-0.448	U
ANTIMONY	0.013	J
ARSENIC	0.410	U
BARIUM	0.020	U
CADMIUM	0.004	U
CALCIUM	-12.480	U
CHROMIUM	-0.161	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.011	J
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL12A Dec 12, 2013 20:03

Analyte	Result	C
ALUMINUM	2.305	J
ANTIMONY	0.011	J
ARSENIC	0.410	U
BARIUM	0.020	U
CADMIUM	0.004	U
CALCIUM	-10.740	U
CHROMIUM	-0.160	U
COBALT	0.006	U
COPPER	0.030	U
IRON	6.672	J
LEAD	0.009	U
MAGNESIUM	1.460	J
MANGANESE	0.089	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCB

File: JGL12A Dec 12 2013 20:35

Analyte	Result	C
ALUMINUM	0.946	J
ANTIMONY	0.013	J
ARSENIC	0.410	U
BARIUM	0.020	U
CADMIUM	0.004	U
CALCIUM	-9.550	U
CHROMIUM	-0.161	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.047	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	J
VANADIUM	0.150	U
ZINC	0.130	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICB
File: JGL14A Dec 14, 2013 17:21

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.009	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.005	J
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.048	U
COBALT	0.006	U
IRON	4.700	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.137	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.006	J
VANADIUM	0.150	U

SAMPLE: CCB
File: JGL14A Dec 14, 2013 17:37

Analyte	Result	C
ALUMINUM	0.595	J
ANTIMONY	0.012	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	6.281	J
CHROMIUM	0.071	J
COBALT	0.006	U
IRON	4.700	U
MAGNESIUM	1.236	J
MOLYBDENUM	0.560	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	4.115	J
THALLIUM	0.006	J
VANADIUM	0.150	U

SAMPLE: CCB
File: JGL14A Dec 14, 2013 18:16

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.011	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.004	J
CADMIUM	0.004	U
CALCIUM	4.890	J
CHROMIUM	0.392	J
COBALT	0.028	J
IRON	-5.194	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
NICKEL	0.242	J
POTASSIUM	-9.994	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
VANADIUM	0.150	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCB
File: JGL14A Dec 14, 2013 18:55

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.012	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	J
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	0.059	J
COBALT	0.006	U
IRON	4.700	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	-8.914	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.005	J
VANADIUM	0.150	U

SAMPLE: CCB
File: JGL14A Dec 14, 2013 19:35

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.016	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	0.069	J
COBALT	0.006	U
IRON	4.700	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	-11.010	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U

SAMPLE: CCB
File: JGL14A Dec 14, 2013 20:13

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.010	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	0.067	J
COBALT	0.006	U
IRON	4.700	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	-9.173	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.005	J
VANADIUM	0.150	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICB
File: JGL17A Dec 17, 2013 13:45

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.015	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.160	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.124	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.008	J
VANADIUM	-0.244	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL17A Dec 17, 2013 14:02

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.016	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.453	J
CHROMIUM	-0.092	U
COBALT	0.006	U
COPPER	0.106	J
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.505	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	6.036	J
THALLIUM	0.003	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL17A Dec 17, 2013 14:12

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.021	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.005	J
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.070	U
COBALT	0.006	U
COPPER	0.139	J
IRON	-6.183	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.179	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.135	J

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCB
File: JGL17A Dec 17, 2013 14:52

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.006	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.181	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.011	J
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	9.031	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	J
VANADIUM	0.150	U
ZINC	0.163	J

SAMPLE: CCB
File: JGL17A Dec 17, 2013 15:33

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.012	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.189	U
COBALT	0.006	U
COPPER	0.030	U
IRON	6.552	J
LEAD	0.010	J
MAGNESIUM	0.690	U
MANGANESE	0.029	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	13.470	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	-0.180	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL17A Dec 17, 2013 16:14

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.012	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.193	U
COBALT	0.006	U
COPPER	0.032	J
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.033	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	12.310	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCB
File: JGL17A Dec 17, 2013 16:57

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.014	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.203	U
COBALT	0.008	J
COPPER	0.030	U
IRON	7.838	J
LEAD	0.013	J
MAGNESIUM	0.690	U
MANGANESE	0.076	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	15.340	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
VANADIUM	-0.299	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL17A Dec 17, 2013 17:40

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.012	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-5.321	U
CHROMIUM	-0.240	U
COBALT	0.006	U
COPPER	0.030	U
IRON	6.637	J
LEAD	0.010	J
MAGNESIUM	0.690	U
MANGANESE	0.081	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	13.650	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.007	J
VANADIUM	-0.237	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL17A Dec 17, 2013 18:21

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.008	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-5.793	U
CHROMIUM	-0.239	U
COBALT	0.006	U
COPPER	0.030	U
IRON	8.933	J
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.098	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	14.950	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	-0.218	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCB

File: JGL17A Dec 17, 2013 19:04

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.025	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-9.544	U
CHROMIUM	-0.237	U
COBALT	-0.006	U
COPPER	0.111	J
IRON	4.700	U
LEAD	0.026	J
MAGNESIUM	0.690	U
MANGANESE	0.042	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.007	J
VANADIUM	-0.252	U
ZINC	0.213	J

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICB

File: JGL18A Dec 18, 2013 18:12

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.123	J
POTASSIUM	8.200	U
SODIUM	3.900	U
ZINC	0.130	U

SAMPLE: CCB

File: JGL18A Dec 18, 2013 18:28

Analyte	Result	C
ALUMINUM	0.539	J
BERYLLIUM	0.003	U
CALCIUM	4.100	U
COPPER	0.094	J
IRON	-8.959	U
LEAD	0.009	U
MAGNESIUM	1.134	J
MANGANESE	0.020	U
MOLYBDENUM	0.544	J
POTASSIUM	8.200	U
SODIUM	6.768	J
ZINC	0.238	J

SAMPLE: CCB

File: JGL18A Dec 18, 2013 19:01

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
COPPER	0.080	J
IRON	-6.301	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.021	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	5.711	J
ZINC	0.180	J

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCB
File: JGL18A Dec 18, 2013 19:14

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
COPPER	0.036	J
IRON	-6.602	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
POTASSIUM	-9.258	U
SODIUM	3.900	U
ZINC	0.188	J

SAMPLE: CCB
File: JGL18A Dec 18, 2013 19:54

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	-4.175	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.028	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U
ZINC	0.225	J

SAMPLE: CCB
File: JGL18A Dec 18, 2013 20:22

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.034	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U
ZINC	0.245	J

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: CCB

File: JGL18A Dec 18, 2013 20:56

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
COPPER	0.030	U
IRON	-5.271	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U
ZINC	0.214	J

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL11IMS1

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL11IMS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	1.067	J
ANTIMONY	0.050	U
ARSENIC	0.150	J
BARIUM	0.043	J
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	6.035	J
CHROMIUM	0.062	J
COBALT	0.030	U
COPPER	0.273	J
IRON	5.985	J
LEAD	0.074	J
MAGNESIUM	1.964	J
MANGANESE	0.067	J
NICKEL	0.064	J
POTASSIUM	40	U
SELENIUM	0.040	J
SILVER	0.040	U
SODIUM	3.101	J
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.766	J

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL11IMS2

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL11IMS2

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	1.285	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.044	J
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	8.0	U
CHROMIUM	0.064	J
COBALT	0.005	J
COPPER	0.223	J
IRON	4.331	J
LEAD	0.054	J
MAGNESIUM	1.975	J
MANGANESE	0.154	J
NICKEL	0.070	J
POTASSIUM	9.400	J
SELENIUM	0.040	J
SILVER	0.040	U
SODIUM	3.145	J
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.720	J

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL12HGS1

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL12HGS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.005	J

FORM III (Part 2) - IN

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL12IMS1

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL12IMS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	1.057	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.043	J
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	5.375	J
CHROMIUM	0.294	J
COBALT	0.030	U
IRON	6.0	U
MAGNESIUM	2.208	J
NICKEL	0.744	J
POTASSIUM	4.560	J
SELENIUM	0.30	U
SILVER	0.040	U
SODIUM	3.927	J
THALLIUM	0.040	U
VANADIUM	0.210	J

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL13HGS1

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL13HGS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.005	J

FORM III (Part 2) - IN

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL16HGS1

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL16HGS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.017	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL17IMS1

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL17IMS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
COPPER	0.279	J
LEAD	0.051	J
MANGANESE	0.135	J
ZINC	1.033	J

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL12A Dec 12, 2013 15:07

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	94320	94.3
ANTIMONY	0	0	
ARSENIC	0	0	
BARIUM	0	0	
CADMIUM	0	0	
CALCIUM	100000	93090	93.1
CHROMIUM	0	1	
COBALT	0	0	
COPPER	0	1	
IRON	100000	86430	86.4
LEAD	0	0	
MAGNESIUM	100000	92870	92.9
MANGANESE	0	0	
MOLYBDENUM	2000	1821	91.0
NICKEL	0	0	
POTASSIUM	100000	95180	95.2
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	95580	95.6
THALLIUM	0	0	
VANADIUM	0	0	
ZINC	0	3	

SAMPLE: ICSAB

File: JGL12A Dec 12, 2013 15:10

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	94980	95.0
ANTIMONY	20	20	100.0
ARSENIC	20	20	100.0
BARIUM	21	20	95.2
CADMIUM	20	18	90.0
CALCIUM	100000	93660	93.7
CHROMIUM	20	20	100.0
COBALT	20	19	95.0
COPPER	20	19	95.0
IRON	100000	88590	88.6
LEAD	20	20	100.0
MAGNESIUM	100000	94190	94.2
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1891	94.5
NICKEL	20	18	90.0
POTASSIUM	100000	96220	96.2
SELENIUM	20	19	95.0
SILVER	20	18	90.0
SODIUM	100000	96640	96.6
THALLIUM	20	20	100.0
VANADIUM	20	19	95.0
ZINC	20	21	105.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL14A Dec 14, 2013 17:27

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	92870	92.9
ANTIMONY	0	0	
ARSENIC	0	0	
BARIUM	0	0	
BERYLLIUM	0	0	
CADMIUM	0	0	
CALCIUM	100000	90320	90.3
CHROMIUM	0	1	
COBALT	0	0	
IRON	100000	86050	86.1
MAGNESIUM	100000	90710	90.7
MOLYBDENUM	2000	1839	92.0
NICKEL	0	0	
POTASSIUM	100000	94260	94.3
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	93000	93.0
THALLIUM	0	0	
VANADIUM	0	0	

SAMPLE: ICSAB

File: JGL14A Dec 14, 2013 17:31

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	96720	96.7
ANTIMONY	20	21	105.0
ARSENIC	20	20	100.0
BARIUM	21	20	95.2
BERYLLIUM	20	21	105.0
CADMIUM	20	18	90.0
CALCIUM	100000	94930	94.9
CHROMIUM	20	21	105.0
COBALT	20	19	95.0
IRON	100000	90960	91.0
MAGNESIUM	100000	96090	96.1
MOLYBDENUM	2000	1960	98.0
NICKEL	20	19	95.0
POTASSIUM	100000	99540	99.5
SELENIUM	20	20	100.0
SILVER	20	18	90.0
SODIUM	100000	99160	99.2
THALLIUM	20	21	105.0
VANADIUM	20	20	100.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL17A Dec 17, 2013 13:52

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	91940	91.9
ANTIMONY	0	0	
ARSENIC	0	0	
BARIUM	0	0	
BERYLLIUM	0	0	
CADMIUM	0	0	
CALCIUM	100000	91100	91.1
CHROMIUM	0	1	
COBALT	0	0	
COPPER	0	1	
IRON	100000	88250	88.3
LEAD	0	0	
MAGNESIUM	100000	92860	92.9
MANGANESE	0	0	
MOLYBDENUM	2000	1837	91.8
NICKEL	0	0	
POTASSIUM	100000	93310	93.3
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	93570	93.6
THALLIUM	0	0	
VANADIUM	0	0	
ZINC	0	3	

SAMPLE: ICSAB

File: JGL17A Dec 17, 2013 13:55

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	92390	92.4
ANTIMONY	20	20	100.0
ARSENIC	20	20	100.0
BARIUM	21	20	95.2
BERYLLIUM	20	20	100.0
CADMIUM	20	18	90.0
CALCIUM	100000	92730	92.7
CHROMIUM	20	20	100.0
COBALT	20	19	95.0
COPPER	20	19	95.0
IRON	100000	88290	88.3
LEAD	20	20	100.0
MAGNESIUM	100000	93770	93.8
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1875	93.8
NICKEL	20	19	95.0
POTASSIUM	100000	94050	94.0
SELENIUM	20	19	95.0
SILVER	20	18	90.0
SODIUM	100000	94180	94.2
THALLIUM	20	21	105.0
VANADIUM	20	20	100.0
ZINC	20	23	115.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG9363

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL18A Dec 18, 2013 18:18

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	94180	94.2
BERYLLIUM	0	0	
CALCIUM	100000	93030	93.0
COPPER	0	1	
IRON	100000	89460	89.5
LEAD	0	0	
MAGNESIUM	100000	93560	93.6
MANGANESE	0	0	
MOLYBDENUM	2000	1898	94.9
POTASSIUM	100000	96510	96.5
SODIUM	100000	96370	96.4
ZINC	0	3	

SAMPLE: ICSAB

File: JGL18A Dec 18, 2013 18:22

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	92130	92.1
BERYLLIUM	20	21	105.0
CALCIUM	100000	92590	92.6
COPPER	20	19	95.0
IRON	100000	88650	88.6
LEAD	20	20	100.0
MAGNESIUM	100000	92000	92.0
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1908	95.4
POTASSIUM	100000	96330	96.3
SODIUM	100000	94430	94.4
ZINC	20	24	120.0

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1008-0204S

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 87.4 **Lab Sample ID:** SG9363-005S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	15730.4456		14712.5484		160.02	636.1		80	120	MS
ANTIMONY, TOTAL	2.6640		0.1052		8	32.0	N	80	120	MS
ARSENIC, TOTAL	21.9474		14.3180		8	95.4		80	120	MS
BARIUM, TOTAL	177.3476		27.1723		160.02	93.8		80	120	MS
BERYLLIUM, TOTAL	4.0326		0.4699		4	89.1		80	120	MS
CADMIUM, TOTAL	18.9750		0.1471		20	94.1		80	120	MS
CALCIUM, TOTAL	1387.8158		1058.5617		200.03	164.6		80	120	MS
CHROMIUM, TOTAL	32.8651		16.2118		16	104.1		80	120	MS
COBALT, TOTAL	46.0872		6.4705		40.01	99.0		80	120	MS
COPPER, TOTAL	32.2170		13.4934		20	93.6		80	120	MS
IRON, TOTAL	18486.8741		17912.3008		80.01	718.1		80	120	MS
LEAD, TOTAL	30.8688		19.3327		8	144.2	N	80	120	MS
MAGNESIUM, TOTAL	3292.5119		2663.9616		400.06	157.1		80	120	MS
MANGANESE, TOTAL	227.2753		163.4991		40.01	159.4		80	120	MS
MERCURY, TOTAL	0.2630		0.1069		0.15	104.1		80	120	CV
NICKEL, TOTAL	50.8879		13.2291		40.01	94.1		80	120	MS
POTASSIUM, TOTAL	1451.0256		607.2033		800.12	105.5		80	120	MS
SELENIUM, TOTAL	7.2811		0.3692	J	8	86.4		80	120	MS
SILVER, TOTAL	3.9362		0.0471	J	4	97.2		80	120	MS
SODIUM, TOTAL	633.2985		53.2240	J	600.09	96.7		80	120	MS
THALLIUM, TOTAL	7.7492		0.1156		8	95.4		80	120	MS
VANADIUM, TOTAL	60.1694		21.4671		40.01	96.7		80	120	MS
ZINC, TOTAL	74.2915		38.8389		40.01	88.6		80	120	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1010-0204S

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 90.3 **Lab Sample ID:** SG9363-020S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	16718.7859		16007.5120		161.69	439.9		80	120	MS
ANTIMONY, TOTAL	2.2370		0.0726	J	8.08	26.8	N	80	120	MS
ARSENIC, TOTAL	13.3475		6.9448		8.08	79.2	N	80	120	MS
BARIUM, TOTAL	177.6169		15.9551		161.69	100.0		80	120	MS
BERYLLIUM, TOTAL	4.2646		0.3604		4.04	96.6		80	120	MS
CADMIUM, TOTAL	18.7682		0.0862		20.21	92.4		80	120	MS
CALCIUM, TOTAL	1310.0964		873.7153		202.11	215.9		80	120	MS
CHROMIUM, TOTAL	33.3810		18.3087		16.17	93.2		80	120	MS
COBALT, TOTAL	51.1346		13.0889		40.42	94.1		80	120	MS
COPPER, TOTAL	33.4659		14.8401		20.21	92.2		80	120	MS
IRON, TOTAL	27988.6059		31251.6923		80.85	-4036.0		80	120	MS
LEAD, TOTAL	21.8646		13.5192		8.08	103.3		80	120	MS
MAGNESIUM, TOTAL	4807.0552		4900.2893		404.23	-23.1		80	120	MS
MANGANESE, TOTAL	387.1676		344.3973		40.42	105.8		80	120	MS
MERCURY, TOTAL	0.1836		0.0671		0.13	89.6		80	120	CV
NICKEL, TOTAL	60.7147		23.0309		40.42	93.2		80	120	MS
POTASSIUM, TOTAL	1425.3008		329.7667		808.45	135.5	N	80	120	MS
SELENIUM, TOTAL	7.2963		0.0799	J	8.08	89.3		80	120	MS
SILVER, TOTAL	3.9541		0.0311	J	4.04	97.1		80	120	MS
SODIUM, TOTAL	680.3123		26.5145	J	606.34	107.8		80	120	MS
THALLIUM, TOTAL	8.2139		0.0474	J	8.08	101.1		80	120	MS
VANADIUM, TOTAL	60.5126		20.4902		40.42	99.0		80	120	MS
ZINC, TOTAL	93.6996		58.7690		40.42	86.4		80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1008-0204S

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 87.4 **Lab Sample ID:** SG9363-005A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	37700.0000		37290.0000		600	68.3		75	125	MS
ANTIMONY, TOTAL	1.8890		0.2667		2	81.1		75	125	MS
ARSENIC, TOTAL	44.3400		36.2900		10	80.5		75	125	MS
BARIUM, TOTAL	72.0200		68.8700		4	78.7		75	125	MS
BERYLLIUM, TOTAL	2.9530		1.1910		2	88.1		75	125	MS
CADMIUM, TOTAL	2.0470		0.3728		2	83.7		75	125	MS
CALCIUM, TOTAL	2854.0000		2683.0000		200	85.5		75	125	MS
CHROMIUM, TOTAL	50.0300		41.0900		10	89.4		75	125	MS
COBALT, TOTAL	17.7600		16.4000		2	68.0		75	125	MS
COPPER, TOTAL	39.2900		34.2000		6	84.8		75	125	MS
IRON, TOTAL	44940.0000		45400.0000		200	-230.0		75	125	MS
LEAD, TOTAL	50.6500		49.0000		2	82.5		75	125	MS
MAGNESIUM, TOTAL	6939.0000		6752.0000		200	93.5		75	125	MS
MANGANESE, TOTAL	415.4000		414.4000		4	25.0		75	125	MS
MERCURY, TOTAL	1.5390		0.7290		1	81.0		75	125	CV
NICKEL, TOTAL	36.3100		33.5300		4	69.5		75	125	MS
POTASSIUM, TOTAL	3388.0000		1539.0000		2000	92.5		75	125	MS
SELENIUM, TOTAL	9.6670		0.9358	J	10	87.3		75	125	MS
SILVER, TOTAL	1.8830		0.1193	J	2	88.2		75	125	MS
SODIUM, TOTAL	2031.0000		134.9000	J	2000	94.8		75	125	MS
THALLIUM, TOTAL	2.0290		0.2929		2	86.8		75	125	MS
VANADIUM, TOTAL	62.7800		54.4100		10	83.7		75	125	MS
ZINC, TOTAL	113.3000		98.4400		20	74.3		75	125	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1010-0204S

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 90.3 **Lab Sample ID:** SG9363-020A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	43370.0000		42780.0000		600	98.3		75	125	MS
ANTIMONY, TOTAL	1.8610		0.1939	J	2	83.4		75	125	MS
ARSENIC, TOTAL	27.2800		18.5600		10	87.2		75	125	MS
BARIUM, TOTAL	46.0400		42.6400		4	85.0		75	125	MS
BERYLLIUM, TOTAL	2.2130		0.4816		2	86.6		75	125	MS
CADMIUM, TOTAL	1.8660		0.2303		2	81.8		75	125	MS
CALCIUM, TOTAL	2493.0000		2335.0000		200	79.0		75	125	MS
CHROMIUM, TOTAL	58.0500		48.9300		10	91.2		75	125	MS
COBALT, TOTAL	36.4400		34.9800		2	73.0		75	125	MS
COPPER, TOTAL	45.0200		39.6600		6	89.3		75	125	MS
IRON, TOTAL	40800.0000		41760.0000		200	-480.0		75	125	MS
LEAD, TOTAL	37.6200		36.1300		2	74.5		75	125	MS
MAGNESIUM, TOTAL	6400.0000		6548.0000		200	-74.0		75	125	MS
MANGANESE, TOTAL	453.2000		460.2000		4	-175.0		75	125	MS
MERCURY, TOTAL	1.2130		0.4910		1	72.2		75	125	CV
NICKEL, TOTAL	64.8400		61.5500		4	82.3		75	125	MS
POTASSIUM, TOTAL	2847.0000		881.3000		2000	98.3		75	125	MS
SELENIUM, TOTAL	9.2220		0.2134	J	10	90.1		75	125	MS
SILVER, TOTAL	1.8260		0.0831	J	2	87.1		75	125	MS
SODIUM, TOTAL	2109.0000		70.8600	J	2000	101.9		75	125	MS
THALLIUM, TOTAL	1.9110		0.1266	J	2	89.2		75	125	MS
VANADIUM, TOTAL	63.0700		54.7600		10	83.1		75	125	MS
ZINC, TOTAL	94.6400		78.5300		20	80.5		75	125	MS

Comments:

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1008-0204D

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 87.4 **Lab Sample ID:** SG9363-005D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M
ALUMINUM, TOTAL		14712.5484		14648.5895		0.4		MS
ANTIMONY, TOTAL	0.078	0.1052		0.1095		4.0		MS
ARSENIC, TOTAL		14.3180		14.2438		0.5		MS
BARIUM, TOTAL		27.1723		27.5731		1.5		MS
BERYLLIUM, TOTAL		0.4699		0.4499		4.3		MS
CADMIUM, TOTAL	0.078	0.1471		0.1350		8.6		MS
CALCIUM, TOTAL		1058.5617		1126.2757		6.2		MS
CHROMIUM, TOTAL		16.2118		16.2870		0.5		MS
COBALT, TOTAL		6.4705		6.7911		4.8		MS
COPPER, TOTAL		13.4934		12.5003		7.6		MS
IRON, TOTAL		17912.3008		17567.4105		1.9		MS
LEAD, TOTAL		19.3327		21.6382		11.3		MS
MAGNESIUM, TOTAL		2663.9616		2622.6579		1.6		MS
MANGANESE, TOTAL		163.4991		185.7538		12.7		MS
MERCURY, TOTAL	0.03	0.1069		0.1349		23.2		CV
NICKEL, TOTAL		13.2291		12.5198		5.5		MS
POTASSIUM, TOTAL		607.2033		593.4936		2.3		MS
SELENIUM, TOTAL		0.3692	J	0.2711	J	30.6		MS
SILVER, TOTAL		0.0471	J	0.0514	J	8.7		MS
SODIUM, TOTAL		53.2240	J	54.5236	J	2.4		MS
THALLIUM, TOTAL	0.078	0.1156		0.1168		1.0		MS
VANADIUM, TOTAL		21.4671		21.1362		1.6		MS
ZINC, TOTAL		38.8389		36.0766		7.4		MS

Comments:

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1010-0204D

Matrix: SOIL **SDG Name:** SG9363

Percent Solids: 90.3 **Lab Sample ID:** SG9363-020D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M
ALUMINUM, TOTAL		16007.5120		15014.7178		6.4		MS
ANTIMONY, TOTAL		0.0726	J	0.0575	J	23.2		MS
ARSENIC, TOTAL		6.9448		9.5197		31.3	OL*	MS
BARIUM, TOTAL		15.9551		14.3868		10.3		MS
BERYLLIUM, TOTAL	0.16	0.3604		0.3452		4.3		MS
CADMIUM, TOTAL	0.078	0.0862		0.0900		4.3		MS
CALCIUM, TOTAL		873.7153		779.5953		11.4		MS
CHROMIUM, TOTAL		18.3087		17.1948		6.3		MS
COBALT, TOTAL		13.0889		14.6910		11.5		MS
COPPER, TOTAL		14.8401		17.0856		14.1		MS
IRON, TOTAL		31251.6923		29655.0426		5.2		MS
LEAD, TOTAL		13.5192		14.9445		10.0		MS
MAGNESIUM, TOTAL		4900.2893		4441.2365		9.8		MS
MANGANESE, TOTAL		344.3973		441.2377		24.7	OL*	MS
MERCURY, TOTAL	0.028	0.0671		0.0446		40.3		CV
NICKEL, TOTAL		23.0309		22.9862		0.2		MS
POTASSIUM, TOTAL	78	329.7667		338.8646		2.7		MS
SELENIUM, TOTAL		0.0799	J	0.1010	J	23.3		MS
SILVER, TOTAL		0.0311	J	0.0343	J	9.8		MS
SODIUM, TOTAL		26.5145	J	27.9001	J	5.1		MS
THALLIUM, TOTAL		0.0474	J	0.0433	J	9.0		MS
VANADIUM, TOTAL		20.4902		18.2439		11.6		MS
ZINC, TOTAL		58.7690		56.5567		3.8		MS

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LC2OGL16HGS1

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL16HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.79	95.2	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL11IMS1

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL11IMS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	211.55	105.8	80	120
ANTIMONY	10.00	9.50	95.0	80	120
ARSENIC	10.00	9.90	99.0	80	120
BARIUM	200.00	192.50	96.3	80	120
BERYLLIUM	5.00	4.72	94.4	80	120
CADMIUM	25.00	25.42	101.7	80	120
CALCIUM	250.00	232.05	92.8	80	120
CHROMIUM	20.00	20.14	100.7	80	120
COBALT	50.00	50.25	100.5	80	120
COPPER	25.00	24.89	99.6	80	120
IRON	100.00	101.75	101.8	80	120
LEAD	10.00	10.11	101.1	80	120
MAGNESIUM	500.00	511.00	102.2	80	120
MANGANESE	50.00	46.55	93.1	80	120
NICKEL	50.00	49.85	99.7	80	120
POTASSIUM	1000.00	1009.50	101.0	80	120
SELENIUM	10.00	9.46	94.6	80	120
SILVER	5.00	5.26	105.2	80	120
SODIUM	750.00	767.50	102.3	80	120
THALLIUM	10.00	9.93	99.3	80	120
VANADIUM	50.00	47.70	95.4	80	120
ZINC	50.00	48.94	97.9	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL11IMS2

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL11IMS2

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	220.50	110.3	80	120
ANTIMONY	10.00	9.67	96.7	80	120
ARSENIC	10.00	9.88	98.8	80	120
BARIUM	200.00	199.05	99.5	80	120
BERYLLIUM	5.00	4.87	97.4	80	120
CADMIUM	25.00	25.10	100.4	80	120
CALCIUM	250.00	228.70	91.5	80	120
CHROMIUM	20.00	20.19	101.0	80	120
COBALT	50.00	50.10	100.2	80	120
COPPER	25.00	24.77	99.1	80	120
IRON	100.00	104.00	104.0	80	120
LEAD	10.00	10.39	103.9	80	120
MAGNESIUM	500.00	549.00	109.8	80	120
MANGANESE	50.00	46.73	93.5	80	120
NICKEL	50.00	49.97	99.9	80	120
POTASSIUM	1000.00	1053.50	105.4	80	120
SELENIUM	10.00	9.27	92.7	80	120
SILVER	5.00	5.16	103.2	80	120
SODIUM	750.00	803.50	107.1	80	120
THALLIUM	10.00	10.36	103.6	80	120
VANADIUM	50.00	48.69	97.4	80	120
ZINC	50.00	49.40	98.8	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL12HGS1

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL12HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.75	90.4	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL12IMS1

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL12IMS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	211.90	106.0	80	120
ANTIMONY	10.00	9.67	96.7	80	120
ARSENIC	10.00	10.29	102.9	80	120
BARIUM	200.00	197.05	98.5	80	120
BERYLLIUM	5.00	4.90	98.0	80	120
CADMIUM	25.00	26.14	104.6	80	120
CALCIUM	250.00	211.95	84.8	80	120
CHROMIUM	20.00	20.84	104.2	80	120
COBALT	50.00	52.55	105.1	80	120
IRON	100.00	100.10	100.1	80	120
MAGNESIUM	500.00	511.50	102.3	80	120
NICKEL	50.00	52.40	104.8	80	120
POTASSIUM	1000.00	954.50	95.5	80	120
SELENIUM	10.00	10.27	102.7	80	120
SILVER	5.00	5.43	108.6	80	120
SODIUM	750.00	760.00	101.3	80	120
THALLIUM	10.00	10.20	102.0	80	120
VANADIUM	50.00	52.80	105.6	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL13HGS1

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL13HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.74	89.2	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL16HGS1

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL16HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.78	94.0	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL17IMS1

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL17IMS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
COPPER	25.00	25.88	103.5	80	120
LEAD	10.00	10.30	103.0	80	120
MANGANESE	50.00	48.54	97.1	80	120
ZINC	50.00	51.40	102.8	80	120

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LABORATORY CONTROL SAMPLE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: SOIL **SDG Name:** SG9363

QC Batch ID: GL16HGS1 **Lab Sample ID:** LCSOGL16HGS1

Concentration Units: mg/Kgdrywt

Analyte	Control Limit (%)	LCS Result	LCS Dup. Result	RPD(%)	Q
MERCURY	20.0	0.78	0.79	1.1	

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ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1008-0204L

Matrix: SOIL **SDG Name:** SG9363

Lab Sample ID: SG9363-005L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	37290.00		38900.00		4.3		MS
ANTIMONY, TOTAL	0.27		0.24	J	11.1	ok	MS
ARSENIC, TOTAL	36.29		36.48		0.5		MS
BARIUM, TOTAL	68.87		69.05		0.3		MS
BERYLLIUM, TOTAL	1.19		1.18		0.8		MS
CADMIUM, TOTAL	0.37		0.39	J	5.4		MS
CALCIUM, TOTAL	2683.00		2820.00		5.1		MS
CHROMIUM, TOTAL	41.09		41.47		0.9		MS
COBALT, TOTAL	16.40		16.76		2.2		MS
COPPER, TOTAL	34.20		35.69		4.4		MS
IRON, TOTAL	45400.00		48885.00		7.7		MS
LEAD, TOTAL	49.00		49.21		0.4		MS
MAGNESIUM, TOTAL	6752.00		7325.00		8.5		MS
MANGANESE, TOTAL	414.40		433.15		4.5		MS
MERCURY, TOTAL	0.73		0.51	J	30.1	ok	CV
NICKEL, TOTAL	33.53		34.62		3.3		MS
POTASSIUM, TOTAL	1539.00		1600.50		4.0		MS
SELENIUM, TOTAL	0.94	J	-0.54	U	100.0		MS
SILVER, TOTAL	0.12	J	0.12	J	0.0		MS
SODIUM, TOTAL	134.90	J	131.25	J	2.7		MS
THALLIUM, TOTAL	0.29		0.32	J	10.3	ok	MS
VANADIUM, TOTAL	54.41		55.40		1.8		MS
ZINC, TOTAL	98.44		105.20		6.9		MS

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1010-0204L

Matrix: SOIL **SDG Name:** SG9363

Lab Sample ID: SG9363-020L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	42780.00		45460.00		6.3		MS
ANTIMONY, TOTAL	0.19	J	0.23	J	21.1	OL	MS
ARSENIC, TOTAL	18.56		18.19		2.0		MS
BARIUM, TOTAL	42.64		44.57		4.5		MS
BERYLLIUM, TOTAL	0.48		0.49	J	2.1		MS
CADMIUM, TOTAL	0.23		0.26	J	13.0	OL	MS
CALCIUM, TOTAL	2335.00		2453.00		5.1		MS
CHROMIUM, TOTAL	48.93		51.25		4.7		MS
COBALT, TOTAL	34.98		38.04		8.7		MS
COPPER, TOTAL	39.66		43.47		9.6		MS
IRON, TOTAL	41760.00		43985.00		5.3		MS
LEAD, TOTAL	36.13		36.93		2.2		MS
MAGNESIUM, TOTAL	6548.00		6595.00		0.7		MS
MANGANESE, TOTAL	460.20		471.75		2.5		MS
MERCURY, TOTAL	0.49		0.42	J	14.3		CV
NICKEL, TOTAL	61.55		66.50		8.0		MS
POTASSIUM, TOTAL	881.30		993.50	J	12.7	OL	MS
SELENIUM, TOTAL	0.21	J	-1.28	U	100.0		MS
SILVER, TOTAL	0.08	J	0.09	J	12.5	OL	MS
SODIUM, TOTAL	70.86	J	75.00	J	5.8		MS
THALLIUM, TOTAL	0.13	J	0.13	J	0.0		MS
VANADIUM, TOTAL	54.76		57.05		4.2		MS
ZINC, TOTAL	78.53		81.15		3.3		MS

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL14A.B\066SMPL.D\066SMPL.D#
Date Acquired: Dec 14 2013 07:59 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9363-019
Misc Info: DILUTION 1.6/8
Vial Number: 2401
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 14 2013 05:16 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Sample TF2-001-SS1010-0001

Arsenic rep result
6.4 mg/kg

$$5\left(\frac{19.81\ ug}{L}\right)\left(\frac{0.1L}{1.76g}\right)\left(\frac{1mg}{1000ug}\right)\left(\frac{1000g}{1kg}\right)\left(\frac{1}{.884}\right)$$

$= 6.366\ mg/kg$

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.998	0.9996	ppb	1.21	100.	
11 B	15.665	3.133	ppb	9.19	1000.	
23 Na	613.5	122.7	ppb	1.52	200000.	
25 Mg	66,600.	13,320.	ppb	0.94	200000.	
27 Al	209,300.	41,860.	ppb	1.05	200000.	
28 Si	1,933.	386.6	ppb	7.49	#VALUE!	
29 Si	2,287.5	457.5	ppb	1.49	10000.	
39 K	5,605.	1,121.	ppb	1.19	200000.	
43 Ca	12,455.	2,491.	ppb	1.96	200000.	
44 Ca	11,795.	2,359.	ppb	0.79	200000.	
51 V	310.25	62.05	ppb	0.31	1000.	
52 Cr	269.45	53.89	ppb	0.65	1000.	
53 Cr	337.6	67.52	ppb	4.03	1000.	
55 Mn	5,210.	1,042.	ppb	0.74	1000.	>LDR
56 Fe	435,500.	87,100.	ppb	0.79	200000.	
57 Fe	417,500.	83,500.	ppb	0.12	100000.	
59 Co	196.1	39.22	ppb	0.46	1000.	
60 Ni	384.2	76.84	ppb	0.97	500.	
63 Cu	378.55	75.71	ppb	0.64	1000.	
65 Cu	379.9	75.98	ppb	0.62	500.	
66 Zn	988.5	197.7	ppb	1.00	500.	
68 ~~Zn~~	974.5	194.9	ppb	0.58	1000.	
75 As	99.05	19.81	ppb	1.78	1000.	
82 ~~Se~~	~~4.876~~	~~0.9752~~	ppb	~~20.17~~	~~500.~~	
88 Sr	116.7	23.34	ppb	1.39	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.26	1.852	ppb	2.52	1000.	
107 Ag	0.686	0.1372	ppb	3.77	250.	
109 Ag	0.6635	0.1327	ppb	4.00	100.	
111 Cd	1.9645	0.3929	ppb	7.02	500.	
114 Cd	1.341	0.2682	ppb	8.42	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	34.53	6.906	ppb	1.33	500.	
120 Sn	34.71	6.942	ppb	2.40	1000.	
121 Sb	1.2315	0.2463	ppb	6.64	1000.	
123 Sb	1.208	0.2416	ppb	6.34	1000.	
135 Ba	240.85	48.17	ppb	1.14	1000.	
137 Ba	242.6	48.52	ppb	1.15	#VALUE!	
182 W	1.088	0.2176	ppb ---		#VALUE!	
203 Tl	0.693	0.1386	ppb	2.14	1000.	
205 Tl	0.7535	0.1507	ppb	2.50	#VALUE!	
208 Pb	233.5	46.7	ppb	0.20	1000.	
232 Th	80.55	16.11	ppb	0.93	1000.	
238 U	12.88	2.576	ppb	1.26	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3287471.80	1.76	3009321.50	109.2	69.5 - 130	
45 Sc	2114080.30	0.77	2029643.50	104.2	69.5 - 130	
72 Ge	441282.28	0.97	430286.44	102.6	69.5 - 130	
159 Tb	5086948.50	1.68	5087054.50	100.0	69.5 - 130	
209 Bi	3227825.30	0.87	3364242.50	95.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL14A.B\012CALB.D\012CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
SG9363-005D				UNK	12/14/13 11:37:41 am	0.908	3796	3.16		1.00
Replicates	3713.1	3678.0	3863.0	3929.5						
SG9363-005S				UNK	12/14/13 11:39:51 am	1.701	6857	0.51		1.00
Replicates	6845.2	6814.3	6873.5	6894.0						
SG9363-006				UNK	12/14/13 11:42:00 am	1.060	4383	0.85		1.00
Replicates	4328.0	4391.0	4406.7	4405.5						
SG9363-007				UNK	12/14/13 11:44:09 am	0.385	1772	0.49		1.00
Replicates	1779.8	1762.3	1778.1	1765.9						
SG9363-008				UNK	12/14/13 11:46:19 am	0.788	3330	1.34		1.00
Replicates	3288.6	3321.2	3317.7	3393.7						
SG9363-009				UNK	12/14/13 11:48:29 am	0.344	1613	1.29		1.00
Replicates	1622.2	1605.4	1588.9	1636.9						
SG9363-010				UNK	12/14/13 11:50:39 am	0.343	1611	1.34		1.00
Replicates	1601.1	1602.4	1596.7	1643.1						
SG9363-012				UNK	12/14/13 11:52:49 am	0.127	776	4.37		1.00
Replicates	734.8	762.6	809.6	797.3						
SG9363-013				UNK	12/14/13 11:54:58 am	0.291	1412	1.34		1.00
Replicates	1421.3	1389.7	1403.7	1432.4						
CCV				CCV	12/14/13 11:57:06 am	5.172	20271	3.50		1.00
Replicates	19424.1	19970.9	20687.5	21001.2						
% Recovery	103.45									
CCB				CCB	12/14/13 11:59:11 am	-0.086	-46	60.57		1.00
Replicates	-26.7	-77.1	-60.8	-18.6						
SG9314-011A				UNK	12/14/13 12:01:20 pm	2.189	8742	0.28		1.00
Replicates	8716.8	8775.9	8738.5	8738.0						

Sample TF2-SB-DUP10-1113 Hg rep result 0.05 mg/kg

$\left(0.343 \frac{ug}{L}\right)\left(\frac{0.1L}{0.71g}\right)\left(\frac{1mg}{1000ug}\right)\left(\frac{1000g}{1kg}\right)\left(\frac{1}{.883}\right) = 0.054 \frac{mg}{kg}$

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Blank Sample Summary Report

Total Solids

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG135684	SM2540	09-DEC-13	06-DEC-13	U 1 %	1 %	N/A
MBLANK	WG135773	SM2540	10-DEC-13	09-DEC-13	U 1 %	1 %	N/A
MBLANK	WG135805	SM2540	10-DEC-13	09-DEC-13	U 1 %	1 %	N/A

Katahdin Analytical Services 5000003

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Laboratory Control Sample Summary Report

Total Solids

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG135684-2	LCS	WG135684	09-DEC-13	06-DEC-13	%	90	91.	101	80-120	
WG135773-2	LCS	WG135773	10-DEC-13	09-DEC-13	%	90	91.	101	80-120	
WG135805-2	LCS	WG135805	10-DEC-13	09-DEC-13	%	90	86.	96	80-120	

Katahdin Analytical Services 5000004

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Duplicate Sample Summary Report

Total Solids

Duplicate Sample ID	Original Sample ID	QC Batch	Analysis Date	Result Units	Sample Result	Duplicate Result	RPD(%)	RPD Limit
WG135805-3	SG9363-17	WG135805	10-DEC-13	%	90.	91.	1	20
WG135773-3	SG9363-3	WG135773	10-DEC-13	%	92.	92.	0	20

Katahdin Analytical Services 5000005

Tetra Tech **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **FEBRUARY 17, 2014**

FROM: **EDWARD SEDLMYER** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PCDD/PCDF**
NAVSTA NEWPORT, CTO WE30
SAMPLE DELIVERY GROUP (SDG) 320-5187-1

SAMPLES: 10 / Soil / PCDD/PCDF

TF2-001-SB1000-0204	TF2-001-SB1000-0810	TF2-001-SB1005-0204
TF2-001-SB1006-0204	TF2-001-SB1010-0204	TF2-001-SS1000-0001
TF2-001-SS1005-0001	TF2-001-SS1006-0001	TF2-001-SS1010-0001
TF2-SB-DUP11-1113		

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG 320-5187-1 consisted of ten (10) soil samples. All samples were analyzed for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDF), as indicated above. One (1) field duplicate sample pair was included in this sample delivery group (SDG): TF2-001-SB1005-0204 / TF2-SB-DUP11-1113.

The samples were collected by Tetra Tech on November 27, 2013 and analyzed by TestAmerica Laboratories Inc. All analyses were conducted in accordance with EPA SW-846 Method 8290A for PCDDs and PCDFs, analytical and reporting protocols.

The data contained in this SDG were fully validated Tier II with regard to the following parameters:

*	• Data completeness
*	• Hold times
*	• Mass Calibration
*	• HRGC/HRMS Tuning and System Performance
*	• Chromatographic Resolution /Window Defining Mixtures
*	• Initial and continuing calibration
	• Method Blank results
*	• Blank Spike/Blank Spike Duplicate Results
*	• Matrix Spike/Matrix Spike Duplicate Results
*	• Clean-up Standard Recoveries
*	• Internal Standard Recoveries
*	• Field Duplicate Precision
*	• Estimated Detection Limits
	• Compound Quantitation
*	• Compound Identification

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

BLANKS

The following compounds were detected in the method blank (MB 320-31183) at the maximum concentrations indicated below.

Compound	Maximum Conc. ng/kg	Action Level ng/kg
1,2,3,4,6,7,8-HpCDD	0.0571	0.2855
1,2,3,4,6,7,8-HpCDF	0.195	0.975
OCDD	0.437	4.37
OCDF	0.189	1.89
Total HpCDD	0.0571	0.2855
Total HpCDF	0.195	0.975

An action level of 10X for the maximum level for OCDD and OCDF, 5X for the other PCDD/PCDFs has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination for each individual sample. Detected results less than the blank action level were qualified (U) as a result of laboratory blank contamination.

COMPOUND QUANTIFICATION

Positive sample analyte results with ion ratios outside of the limits were reported as EMPC (estimated maximum possible concentration) results and were qualified estimated, (J).

ADDITIONAL COMMENTS

Positive sample analyte results below the reporting limit (RL) but above the estimated detection limit (EDL) were qualified estimated, (J).

Samples were analyzed both undiluted and at a 5X dilution for OCDD as listed below due to the undiluted OCDD analysis results exceeding the highest calibration standard. Only the 5X diluted OCDD results were reported for the samples.

Affected Samples:

TF2-001-SB1000-0810	TF2-001-SB1006-0204	TF2-001-SB1010-0204
TF2-001-SS1006-0001	TF2-001-SS1010-0001	03

Non-detected sample analyte results were reported at the EDL.

EXECUTIVE SUMMARY

Laboratory Performance: Blank contamination resulted in the qualification of results.

Other Factors Affecting Data Quality: Positive results reported below the RL but above the EDL were qualified as estimated, (J). Positive sample analyte results reported as EMPC (estimated maximum possible concentration) results were qualified estimated, (J).

The data for these analyses were reviewed with reference to the EPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans (Sept. 2011), to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Guidance/Procedures Attachment 2-3b: Example Organic Data Review Worksheets (1/13) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Edward Sedlmyer
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1000-0204			TF2-001-SB1000-0810			TF2-001-SB1005-0204			TF2-001-SB1006-0204		
SDG: 320-5187-1	LAB_ID	320-5187-2			320-5187-3			320-5187-7			320-5187-5		
FRACTION: DIOX	SAMP_DATE	11/27/2013			11/27/2013			11/27/2013			11/27/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	88.8			86.9			83.9			85.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		3900			5200			4400			5000		
1,2,3,4,6,7,8,9-OCDF		2.9	J	P	3.5	J	P	1.3	U	A	3.1	J	P
1,2,3,4,6,7,8-HPCDD		19			25			31			41		
1,2,3,4,6,7,8-HPCDF		0.86	U	A	1.1	U	A	0.89	U	A	1.3	J	P
1,2,3,4,7,8,9-HPCDF		0.035	U		0.087	U		0.04	U		0.15	U	
1,2,3,4,7,8-HXCDD		0.15	J	P	0.11	U		0.099	U		0.33	U	
1,2,3,4,7,8-HXCDF		0.65	J	P	0.39	J	P	0.23	J	PW	0.13	U	
1,2,3,6,7,8-HXCDD		0.15	J	PW	0.079	U		0.31	J	P	0.23	U	
1,2,3,6,7,8-HXCDF		0.023	U		0.22	J	PW	0.26	J	P	0.48	J	PW
1,2,3,7,8,9-HXCDD		0.23	J	P	0.17	J	P	0.59	J	P	0.24	U	
1,2,3,7,8,9-HXCDF		0.03	U		0.067	U		0.031	U		0.12	U	
1,2,3,7,8-PECDD		0.07	U		0.13	U		0.11	J	PW	0.24	U	
1,2,3,7,8-PECDF		0.045	U		0.07	U		0.035	U		0.16	U	
2,3,4,6,7,8-HXCDF		0.15	U		0.06	U		0.14	J	P	0.11	U	
2,3,4,7,8-PECDF		0.033	U		0.073	U		0.13	J	P	0.17	U	
2,3,7,8-TCDD		0.035	U		0.086	U		0.042	U		0.16	U	
2,3,7,8-TCDF		0.22	U		0.52	U		0.055	U		0.61	U	
TOTAL HPCDD		34			44			63			88		
TOTAL HPCDF		1.6	J	P	1.7	J	PW	1.6	J	PW	1.3	J	P
TOTAL HXCDD		2.1	J	PW	1.3	J	PW	7.3			8.8	J	W
TOTAL HXCDF		1.7	J	PW	0.86	J	PW	1.8	J	PW	1.1	J	PW
TOTAL PECDD		0.39	J	PW	0.72	J	PW	1.7	J	PW	1.4	J	PW
TOTAL PECDF		1.1	J	PW	0.27	J	P	1.6	J	PW	0.34	J	P
TOTAL TCDD		0.09	J	PW	0.086	U		0.87	J	PW	0.95	J	PW
TOTAL TCDF		0.54	J	PW	0.25	J	PW	1.6	J	W	1.8	J	W

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1010-0204			TF2-001-SS1000-0001			TF2-001-SS1005-0001			TF2-001-SS1006-0001		
SDG: 320-5187-1	LAB_ID	320-5187-9			320-5187-1			320-5187-6			320-5187-4		
FRACTION: DIOX	SAMP_DATE	11/27/2013			11/27/2013			11/27/2013			11/27/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	88.6			80.9			83.5			83.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		4900			2900			4400			5300		
1,2,3,4,6,7,8,9-OCDF		2.4	J	P	31			6	J	P	4	J	P
1,2,3,4,6,7,8-HPCDD		28			54			36			31		
1,2,3,4,6,7,8-HPCDF		1.5	J	P	11			3.8	J	P	1.8	J	P
1,2,3,4,7,8,9-HPCDF		0.04	U		0.1	U		0.065	U		0.045	U	
1,2,3,4,7,8-HXCDD		0.19	J	PW	0.78	J	P	0.27	J	PW	0.22	J	PW
1,2,3,4,7,8-HXCDF		0.31	J	PW	0.96	J	PW	0.67	J	PW	0.6	J	PW
1,2,3,6,7,8-HXCDD		0.38	J	P	1.7	J	P	0.86	J	P	0.39	J	P
1,2,3,6,7,8-HXCDF		0.48	J	P	0.8	J	PW	0.61	J	PW	0.42	J	P
1,2,3,7,8,9-HXCDD		0.41	J	PW	1.6	J	P	0.92	J	PW	0.45	J	P
1,2,3,7,8,9-HXCDF		0.032	U		0.05	U		0.037	U		0.039	U	
1,2,3,7,8-PECDD		0.063	U		0.19	J	PW	0.26	J	P	0.073	U	
1,2,3,7,8-PECDF		0.15	J	P	0.2	J	PW	0.28	J	P	0.042	U	
2,3,4,6,7,8-HXCDF		0.17	J	PW	1.2	J	P	0.53	J	P	0.32	J	P
2,3,4,7,8-PECDF		0.11	J	PW	0.32	J	P	0.32	J	P	0.19	J	P
2,3,7,8-TCDD		0.038	U		0.037	U		0.041	U		0.042	U	
2,3,7,8-TCDF		0.068	U		0.63	U		0.33	J	P	0.14	U	
TOTAL HPCDD		50			100			71			55		
TOTAL HPCDF		2.9	J	P	31			7.4			3	J	P
TOTAL HXCDD		4.2	J	PW	14			8.2	J	W	4.2	J	PW
TOTAL HXCDF		3.1	J	PW	15	J	W	6.6	J	W	4.1	J	PW
TOTAL PECDD		1.5	J	P	2.1	J	PW	2.1	J	PW	1.2	J	PW
TOTAL PECDF		1.9	J	PW	7.7	J	W	6.4	J	W	3	J	PW
TOTAL TCDD		0.59	J	PW	0.42	J	PW	0.74	J	PW	0.36	J	PW
TOTAL TCDF		1.4	J	W	3.5	J	W	3.9	J	W	1.6	J	W

PROJ_NO: 03019	NSAMPLE	TF2-001-SS1010-0001			TF2-SB-DUP11-1113		
SDG: 320-5187-1	LAB_ID	320-5187-8			320-5187-10		
FRACTION: DIOX	SAMP_DATE	11/27/2013			11/27/2013		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	NG/KG			NG/KG		
	PCT_SOLIDS	84.8			79.8		
	DUP_OF				TF2-001-SB1005-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		5000			3500		
1,2,3,4,6,7,8,9-OCDF		6	J	P	4.6	J	P
1,2,3,4,6,7,8-HPCDD		39			24		
1,2,3,4,6,7,8-HPCDF		3.8	J	P	2.6	J	P
1,2,3,4,7,8,9-HPCDF		0.053	U		0.056	U	
1,2,3,4,7,8-HXCDD		0.34	J	PW	0.23	J	PW
1,2,3,4,7,8-HXCDF		0.68	J	PW	0.91	J	P
1,2,3,6,7,8-HXCDD		0.82	J	P	0.28	J	P
1,2,3,6,7,8-HXCDF		0.57	J	P	0.41	J	PW
1,2,3,7,8,9-HXCDD		0.77	J	PW	0.42	J	PW
1,2,3,7,8,9-HXCDF		0.031	U		0.04	U	
1,2,3,7,8-PECDD		0.18	J	P	0.082	U	
1,2,3,7,8-PECDF		0.15	J	P	0.18	J	P
2,3,4,6,7,8-HXCDF		0.52	J	P	0.15	J	PW
2,3,4,7,8-PECDF		0.26	J	P	0.15	J	P
2,3,7,8-TCDD		0.035	U		0.05	U	
2,3,7,8-TCDF		0.19	J	P	0.099	U	
TOTAL HPCDD		73			51		
TOTAL HPCDF		7.2			3.7	J	P
TOTAL HXCDD		8.4	J	W	6.5	J	W
TOTAL HXCDF		6.2	J	W	2.8	J	PW
TOTAL PECDD		1.5	J	PW	0.68	J	P
TOTAL PECDF		3.8	J	P	1.7	J	PW
TOTAL TCDD		0.62	J	PW	0.4	J	PW
TOTAL TCDF		1.9	J	W	1.5	J	W

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1000-0204 Lab Sample ID: 320-5187-2

Matrix: Solid Lab File ID: 03JA143D5_34.d

Analysis Method: 8290A Date Collected: 11/27/2013 08:05

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.35(g) Date Analyzed: 01/04/2014 12:21

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.035
40321-76-4	1,2,3,7,8-PeCDD	ND		5.4	0.070
57117-41-6	1,2,3,7,8-PeCDF	ND		5.4	0.045
57117-31-4	2,3,4,7,8-PeCDF	ND		5.4	0.033
39227-28-6	1,2,3,4,7,8-HxCDD	0.15	J	5.4	0.042
57653-85-7	1,2,3,6,7,8-HxCDD	0.15	J q	5.4	0.029
19408-74-3	1,2,3,7,8,9-HxCDD	0.23	J	5.4	0.030
70648-26-9	1,2,3,4,7,8-HxCDF	0.65	J	5.4	0.031
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.4	0.023
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.030
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.4	0.15
35822-46-9	1,2,3,4,6,7,8-HpCDD	19	B	5.4	0.13
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.86	J B	5.4	0.030
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.4	0.035
3268-87-9	OCDD	3900	B	11	0.77
39001-02-0	OCDF	2.9	J B	11	0.050
41903-57-5	Total TCDD	0.090	J q	1.1	0.035
30402-14-3	Total TCDF	0.54	J q	1.1	0.020
36088-22-9	Total PeCDD	0.39	J q	5.4	0.070
30402-15-4	Total PeCDF	1.1	J q	5.4	0.039
34465-46-8	Total HxCDD	2.1	J q	5.4	0.034
55684-94-1	Total HxCDF	1.7	J q	5.4	0.058
37871-00-4	Total HpCDD	34	B	5.4	0.13
38998-75-3	Total HpCDF	1.6	J B	5.4	0.032

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1000-0204 | Lab Sample ID: 320-5187-2

Matrix: Solid | Lab File ID: 03JA143D5_34.d

Analysis Method: 8290A | Date Collected: 11/27/2013 08:05

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.35(g) | Date Analyzed: 01/04/2014 12:21

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 11.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		40-135
89059-46-1	13C-2,3,7,8-TCDF	54		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	62		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	56		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	78		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		40-135
114423-97-1	13C-OCDD	78		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1000-0204 RA Lab Sample ID: 320-5187-2 RA

Matrix: Solid Lab File ID: 14ja14a11d2_004.d

Analysis Method: 8290A Date Collected: 11/27/2013 08:05

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.35(g) Date Analyzed: 01/14/2014 23:51

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33933 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.22

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	64		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1000-0810 Lab Sample ID: 320-5187-3

Matrix: Solid Lab File ID: 03JA143D5_35.d

Analysis Method: 8290A Date Collected: 11/27/2013 08:20

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.16(g) Date Analyzed: 01/04/2014 13:03

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 13.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.086
40321-76-4	1,2,3,7,8-PeCDD	ND		5.7	0.13
57117-41-6	1,2,3,7,8-PeCDF	ND		5.7	0.070
57117-31-4	2,3,4,7,8-PeCDF	ND		5.7	0.073
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.7	0.11
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.7	0.079
19408-74-3	1,2,3,7,8,9-HxCDD	0.17	J	5.7	0.082
70648-26-9	1,2,3,4,7,8-HxCDF	0.39	J	5.7	0.070
57117-44-9	1,2,3,6,7,8-HxCDF	0.22	J q	5.7	0.052
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.7	0.067
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.7	0.060
35822-46-9	1,2,3,4,6,7,8-HpCDD	25	B	5.7	0.23
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.1	J B	5.7	0.074
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.7	0.087
39001-02-0	OCDF	3.5	J B	11	0.14
41903-57-5	Total TCDD	ND		1.1	0.086
30402-14-3	Total TCDF	0.25	J q	1.1	0.052
36088-22-9	Total PeCDD	0.72	J q	5.7	0.13
30402-15-4	Total PeCDF	0.27	J	5.7	0.072
34465-46-8	Total HxCDD	1.3	J q	5.7	0.091
55684-94-1	Total HxCDF	0.86	J q	5.7	0.062
37871-00-4	Total HpCDD	44	B	5.7	0.23
38998-75-3	Total HpCDF	1.7	J q B	5.7	0.081

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1000-0810 | Lab Sample ID: 320-5187-3

Matrix: Solid | Lab File ID: 03JA143D5_35.d

Analysis Method: 8290A | Date Collected: 11/27/2013 08:20

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.16(g) | Date Analyzed: 01/04/2014 13:03

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 13.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	55		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	58		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	55		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	59		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	75		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	70		40-135
114423-97-1	13C-OCDD	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1000-0810 RA Lab Sample ID: 320-5187-3 RA

Matrix: Solid Lab File ID: 14ja14a11d2_005.d

Analysis Method: 8290A Date Collected: 11/27/2013 08:20

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.16(g) Date Analyzed: 01/15/2014 00:30

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 13.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33933 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.52

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	65		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1000-0810 DL Lab Sample ID: 320-5187-3 DL

Matrix: Solid Lab File ID: 07JA143D5_53.d

Analysis Method: 8290A Date Collected: 11/27/2013 08:20

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.16(g) Date Analyzed: 01/09/2014 04:07

Con. Extract Vol.: 20(uL) Dilution Factor: 5

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 13.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33514 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	5200	B	57	2.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1005-0204 Lab Sample ID: 320-5187-7

Matrix: Solid Lab File ID: 30DE133D5_58.d

Analysis Method: 8290A Date Collected: 11/27/2013 09:20

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.09(g) Date Analyzed: 01/01/2014 03:47

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 16.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33076 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.2	0.042
40321-76-4	1,2,3,7,8-PeCDD	0.11	J q	5.9	0.059
57117-41-6	1,2,3,7,8-PeCDF	ND		5.9	0.035
57117-31-4	2,3,4,7,8-PeCDF	0.13	J	5.9	0.036
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.9	0.099
57653-85-7	1,2,3,6,7,8-HxCDD	0.31	J	5.9	0.070
19408-74-3	1,2,3,7,8,9-HxCDD	0.59	J	5.9	0.072
70648-26-9	1,2,3,4,7,8-HxCDF	0.23	J q	5.9	0.032
57117-44-9	1,2,3,6,7,8-HxCDF	0.26	J	5.9	0.024
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.9	0.031
60851-34-5	2,3,4,6,7,8-HxCDF	0.14	J	5.9	0.028
35822-46-9	1,2,3,4,6,7,8-HpCDD	31	B	5.9	0.15
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.89	J B	5.9	0.034
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.9	0.040
3268-87-9	OCDD	4400	B	12	0.92
39001-02-0	OCDF	1.3	J q B	12	0.052
41903-57-5	Total TCDD	0.87	J q	1.2	0.042
30402-14-3	Total TCDF	1.6	q	1.2	0.021
36088-22-9	Total PeCDD	1.7	J q	5.9	0.059
30402-15-4	Total PeCDF	1.6	J q	5.9	0.036
34465-46-8	Total HxCDD	7.3		5.9	0.080
55684-94-1	Total HxCDF	1.8	J q	5.9	0.029
37871-00-4	Total HpCDD	63	B	5.9	0.15
38998-75-3	Total HpCDF	1.6	J q B	5.9	0.037

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1005-0204 | Lab Sample ID: 320-5187-7

Matrix: Solid | Lab File ID: 30DE133D5_58.d

Analysis Method: 8290A | Date Collected: 11/27/2013 09:20

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.09(g) | Date Analyzed: 01/01/2014 03:47

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 16.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33076 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	60		40-135
89059-46-1	13C-2,3,7,8-TCDF	58		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	59		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	62		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	67		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	72		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	69		40-135
114423-97-1	13C-OCDD	75		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1005-0204 RA Lab Sample ID: 320-5187-7 RA

Matrix: Solid Lab File ID: 14ja1411d2_011.d

Analysis Method: 8290A Date Collected: 11/27/2013 09:20

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.09(g) Date Analyzed: 01/14/2014 18:09

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 16.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33916 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.2	0.055

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1006-0204 Lab Sample ID: 320-5187-5

Matrix: Solid Lab File ID: 03JA143D5_37.d

Analysis Method: 8290A Date Collected: 11/27/2013 09:05

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.12(g) Date Analyzed: 01/04/2014 14:26

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 14.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.2	0.16
40321-76-4	1,2,3,7,8-PeCDD	ND		5.8	0.24
57117-41-6	1,2,3,7,8-PeCDF	ND		5.8	0.16
57117-31-4	2,3,4,7,8-PeCDF	ND		5.8	0.17
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.8	0.33
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.8	0.23
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.8	0.24
70648-26-9	1,2,3,4,7,8-HxCDF	ND		5.8	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	0.48	J q	5.8	0.095
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.8	0.12
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.8	0.11
35822-46-9	1,2,3,4,6,7,8-HpCDD	41	B	5.8	0.59
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.3	J B	5.8	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.8	0.15
39001-02-0	OCDF	3.1	J B	12	0.24
41903-57-5	Total TCDD	0.95	J q	1.2	0.16
30402-14-3	Total TCDF	1.8	q	1.2	0.10
36088-22-9	Total PeCDD	1.4	J q	5.8	0.24
30402-15-4	Total PeCDF	0.34	J	5.8	0.16
34465-46-8	Total HxCDD	8.8	q	5.8	0.27
55684-94-1	Total HxCDF	1.1	J q	5.8	0.11
37871-00-4	Total HpCDD	88	B	5.8	0.59
38998-75-3	Total HpCDF	1.3	J B	5.8	0.14

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1006-0204 | Lab Sample ID: 320-5187-5

Matrix: Solid | Lab File ID: 03JA143D5_37.d

Analysis Method: 8290A | Date Collected: 11/27/2013 09:05

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.12(g) | Date Analyzed: 01/04/2014 14:26

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 14.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	57		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	60		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	59		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	76		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	62		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	80		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	76		40-135
114423-97-1	13C-OCDD	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1006-0204 RA Lab Sample ID: 320-5187-5 RA

Matrix: Solid Lab File ID: 14ja1411d2_009.d

Analysis Method: 8290A Date Collected: 11/27/2013 09:05

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.12(g) Date Analyzed: 01/14/2014 16:51

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 14.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33916 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.2	0.61

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1006-0204 DL Lab Sample ID: 320-5187-5 DL

Matrix: Solid Lab File ID: 07JA143D5_55.d

Analysis Method: 8290A Date Collected: 11/27/2013 09:05

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.12(g) Date Analyzed: 01/09/2014 05:30

Con. Extract Vol.: 20(uL) Dilution Factor: 5

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 14.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33514 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	5000	B	58	2.3

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1010-0204 | Lab Sample ID: 320-5187-9

Matrix: Solid | Lab File ID: 30DE133D5_60.d

Analysis Method: 8290A | Date Collected: 11/27/2013 09:45

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.29(g) | Date Analyzed: 01/01/2014 05:10

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 11.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33076 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.038
40321-76-4	1,2,3,7,8-PeCDD	ND		5.5	0.063
57117-41-6	1,2,3,7,8-PeCDF	0.15	J	5.5	0.031
57117-31-4	2,3,4,7,8-PeCDF	0.11	J q	5.5	0.032
39227-28-6	1,2,3,4,7,8-HxCDD	0.19	J q	5.5	0.062
57653-85-7	1,2,3,6,7,8-HxCDD	0.38	J	5.5	0.044
19408-74-3	1,2,3,7,8,9-HxCDD	0.41	J q	5.5	0.045
70648-26-9	1,2,3,4,7,8-HxCDF	0.31	J q	5.5	0.034
57117-44-9	1,2,3,6,7,8-HxCDF	0.48	J	5.5	0.025
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.5	0.032
60851-34-5	2,3,4,6,7,8-HxCDF	0.17	J q	5.5	0.029
35822-46-9	1,2,3,4,6,7,8-HpCDD	28	B	5.5	0.14
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.5	J B	5.5	0.034
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.5	0.040
39001-02-0	OCDF	2.4	J B	11	0.046
41903-57-5	Total TCDD	0.59	J q	1.1	0.038
30402-14-3	Total TCDF	1.4	q	1.1	0.024
36088-22-9	Total PeCDD	1.5	J	5.5	0.063
30402-15-4	Total PeCDF	1.9	J q	5.5	0.031
34465-46-8	Total HxCDD	4.2	J q	5.5	0.050
55684-94-1	Total HxCDF	3.1	J q	5.5	0.030
37871-00-4	Total HpCDD	50	B	5.5	0.14
38998-75-3	Total HpCDF	2.9	J B	5.5	0.037

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1010-0204 Lab Sample ID: 320-5187-9

Matrix: Solid Lab File ID: 30DE133D5_60.d

Analysis Method: 8290A Date Collected: 11/27/2013 09:45

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.29(g) Date Analyzed: 01/01/2014 05:10

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33076 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		40-135
89059-46-1	13C-2,3,7,8-TCDF	55		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	58		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	59		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	60		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	71		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	78		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1010-0204 RA | Lab Sample ID: 320-5187-9 RA

Matrix: Solid | Lab File ID: 14ja1411d2_013.d

Analysis Method: 8290A | Date Collected: 11/27/2013 09:45

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.29(g) | Date Analyzed: 01/14/2014 19:26

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 11.4 | GPC Cleanup: (Y/N) N

Analysis Batch No.: 33916 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.068

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	60		40-135

FORM I

DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SB1010-0204 DL Lab Sample ID: 320-5187-9 DL

Matrix: Solid Lab File ID: 07JA143D5_57.d

Analysis Method: 8290A Date Collected: 11/27/2013 09:45

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.29(g) Date Analyzed: 01/09/2014 06:54

Con. Extract Vol.: 20(uL) Dilution Factor: 5

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33514 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	4900	B	55	2.5

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	65		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1000-0001 | Lab Sample ID: 320-5187-1

Matrix: Solid | Lab File ID: 03JA143D5_33.d

Analysis Method: 8290A | Date Collected: 11/27/2013 08:00

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.17(g) | Date Analyzed: 01/04/2014 11:39

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 19.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.2	0.037
40321-76-4	1,2,3,7,8-PeCDD	0.19	J q	6.1	0.066
57117-41-6	1,2,3,7,8-PeCDF	0.20	J q	6.1	0.041
57117-31-4	2,3,4,7,8-PeCDF	0.32	J	6.1	0.043
39227-28-6	1,2,3,4,7,8-HxCDD	0.78	J	6.1	0.085
57653-85-7	1,2,3,6,7,8-HxCDD	1.7	J	6.1	0.060
19408-74-3	1,2,3,7,8,9-HxCDD	1.6	J	6.1	0.062
70648-26-9	1,2,3,4,7,8-HxCDF	0.96	J q	6.1	0.052
57117-44-9	1,2,3,6,7,8-HxCDF	0.80	J q	6.1	0.038
72918-21-9	1,2,3,7,8,9-HxCDF	ND		6.1	0.050
60851-34-5	2,3,4,6,7,8-HxCDF	1.2	J	6.1	0.045
35822-46-9	1,2,3,4,6,7,8-HpCDD	54	B	6.1	0.15
67562-39-4	1,2,3,4,6,7,8-HpCDF	11	B	6.1	0.088
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		6.1	0.10
3268-87-9	OCDD	2900	B	12	0.58
39001-02-0	OCDF	31	B	12	0.086
41903-57-5	Total TCDD	0.42	J q	1.2	0.037
30402-14-3	Total TCDF	3.5	q	1.2	0.024
36088-22-9	Total PeCDD	2.1	J q	6.1	0.066
30402-15-4	Total PeCDF	7.7	q	6.1	0.042
34465-46-8	Total HxCDD	14		6.1	0.069
55684-94-1	Total HxCDF	15	q	6.1	0.046
37871-00-4	Total HpCDD	100	B	6.1	0.15
38998-75-3	Total HpCDF	31	B	6.1	0.096

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1000-0001 | Lab Sample ID: 320-5187-1

Matrix: Solid | Lab File ID: 03JA143D5_33.d

Analysis Method: 8290A | Date Collected: 11/27/2013 08:00

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.17(g) | Date Analyzed: 01/04/2014 11:39

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 19.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		40-135
89059-46-1	13C-2,3,7,8-TCDF	58		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	67		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	64		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	67		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	60		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	84		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	77		40-135
114423-97-1	13C-OCDD	82		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1000-0001 RA Lab Sample ID: 320-5187-1 RA

Matrix: Solid Lab File ID: 14ja1411d2_005.d

Analysis Method: 8290A Date Collected: 11/27/2013 08:00

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.17(g) Date Analyzed: 01/14/2014 14:15

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 19.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33916 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.2	0.63

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1005-0001 Lab Sample ID: 320-5187-6

Matrix: Solid Lab File ID: 03JA143D5_38.d

Analysis Method: 8290A Date Collected: 11/27/2013 09:15

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.22(g) Date Analyzed: 01/04/2014 15:08

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 16.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.2	0.041
40321-76-4	1,2,3,7,8-PeCDD	0.26	J	5.9	0.059
57117-41-6	1,2,3,7,8-PeCDF	0.28	J	5.9	0.040
57117-31-4	2,3,4,7,8-PeCDF	0.32	J	5.9	0.042
39227-28-6	1,2,3,4,7,8-HxCDD	0.27	J q	5.9	0.068
57653-85-7	1,2,3,6,7,8-HxCDD	0.86	J	5.9	0.048
19408-74-3	1,2,3,7,8,9-HxCDD	0.92	J q	5.9	0.050
70648-26-9	1,2,3,4,7,8-HxCDF	0.67	J q	5.9	0.039
57117-44-9	1,2,3,6,7,8-HxCDF	0.61	J q	5.9	0.029
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.9	0.037
60851-34-5	2,3,4,6,7,8-HxCDF	0.53	J	5.9	0.034
35822-46-9	1,2,3,4,6,7,8-HpCDD	36	B	5.9	0.19
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.8	J B	5.9	0.055
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.9	0.065
3268-87-9	OCDD	4400	B	12	0.99
39001-02-0	OCDF	6.0	J B	12	0.062
41903-57-5	Total TCDD	0.74	J q	1.2	0.041
30402-14-3	Total TCDF	3.9	q	1.2	0.024
36088-22-9	Total PeCDD	2.1	J q	5.9	0.059
30402-15-4	Total PeCDF	6.4	q	5.9	0.041
34465-46-8	Total HxCDD	8.2	q	5.9	0.055
55684-94-1	Total HxCDF	6.6	q	5.9	0.035
37871-00-4	Total HpCDD	71	B	5.9	0.19
38998-75-3	Total HpCDF	7.4	B	5.9	0.060

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1005-0001 Lab Sample ID: 320-5187-6

Matrix: Solid Lab File ID: 03JA143D5_38.d

Analysis Method: 8290A Date Collected: 11/27/2013 09:15

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.22(g) Date Analyzed: 01/04/2014 15:08

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 16.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		40-135
89059-46-1	13C-2,3,7,8-TCDF	62		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	72		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	65		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	74		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	64		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	82		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	77		40-135
114423-97-1	13C-OCDD	84		40-135

FORM I

DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1005-0001 RA Lab Sample ID: 320-5187-6 RA

Matrix: Solid Lab File ID: 14ja1411d2_010.d

Analysis Method: 8290A Date Collected: 11/27/2013 09:15

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.22(g) Date Analyzed: 01/14/2014 17:30

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 16.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33916 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.33	J	1.2	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	74		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1006-0001 | Lab Sample ID: 320-5187-4

Matrix: Solid | Lab File ID: 03JA143D5_36.d

Analysis Method: 8290A | Date Collected: 11/27/2013 09:00

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.01(g) | Date Analyzed: 01/04/2014 13:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 16.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.2	0.042
40321-76-4	1,2,3,7,8-PeCDD	ND		6.0	0.073
57117-41-6	1,2,3,7,8-PeCDF	ND		6.0	0.042
57117-31-4	2,3,4,7,8-PeCDF	0.19	J	6.0	0.043
39227-28-6	1,2,3,4,7,8-HxCDD	0.22	J q	6.0	0.077
57653-85-7	1,2,3,6,7,8-HxCDD	0.39	J	6.0	0.055
19408-74-3	1,2,3,7,8,9-HxCDD	0.45	J	6.0	0.057
70648-26-9	1,2,3,4,7,8-HxCDF	0.60	J q	6.0	0.041
57117-44-9	1,2,3,6,7,8-HxCDF	0.42	J	6.0	0.030
72918-21-9	1,2,3,7,8,9-HxCDF	ND		6.0	0.039
60851-34-5	2,3,4,6,7,8-HxCDF	0.32	J	6.0	0.035
35822-46-9	1,2,3,4,6,7,8-HpCDD	31	B	6.0	0.18
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.8	J B	6.0	0.038
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		6.0	0.045
39001-02-0	OCDF	4.0	J B	12	0.065
41903-57-5	Total TCDD	0.36	J q	1.2	0.042
30402-14-3	Total TCDF	1.6	q	1.2	0.025
36088-22-9	Total PeCDD	1.2	J q	6.0	0.073
30402-15-4	Total PeCDF	3.0	J q	6.0	0.043
34465-46-8	Total HxCDD	4.2	J q	6.0	0.063
55684-94-1	Total HxCDF	4.1	J q	6.0	0.036
37871-00-4	Total HpCDD	55	B	6.0	0.18
38998-75-3	Total HpCDF	3.0	J B	6.0	0.042

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1006-0001 | Lab Sample ID: 320-5187-4

Matrix: Solid | Lab File ID: 03JA143D5_36.d

Analysis Method: 8290A | Date Collected: 11/27/2013 09:00

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.01(g) | Date Analyzed: 01/04/2014 13:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 16.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	66		40-135
89059-46-1	13C-2,3,7,8-TCDF	58		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	66		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	62		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	60		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	76		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	71		40-135
114423-97-1	13C-OCDD	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1006-0001 RA | Lab Sample ID: 320-5187-4 RA

Matrix: Solid | Lab File ID: 14ja14a11d2_006.d

Analysis Method: 8290A | Date Collected: 11/27/2013 09:00

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.01(g) | Date Analyzed: 01/15/2014 01:09

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 16.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33933 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.2	0.14

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	66		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1006-0001 DL | Lab Sample ID: 320-5187-4 DL

Matrix: Solid | Lab File ID: 07JA143D5_54.d

Analysis Method: 8290A | Date Collected: 11/27/2013 09:00

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.01(g) | Date Analyzed: 01/09/2014 04:48

Con. Extract Vol.: 20(uL) | Dilution Factor: 5

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 16.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33514 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	5300	B	60	2.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1010-0001 | Lab Sample ID: 320-5187-8

Matrix: Solid | Lab File ID: 30DE133D5_59.d

Analysis Method: 8290A | Date Collected: 11/27/2013 09:40

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.14(g) | Date Analyzed: 01/01/2014 04:28

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 15.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33076 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.2	0.035
40321-76-4	1,2,3,7,8-PeCDD	0.18	J	5.8	0.063
57117-41-6	1,2,3,7,8-PeCDF	0.15	J	5.8	0.034
57117-31-4	2,3,4,7,8-PeCDF	0.26	J	5.8	0.036
39227-28-6	1,2,3,4,7,8-HxCDD	0.34	J q	5.8	0.092
57653-85-7	1,2,3,6,7,8-HxCDD	0.82	J	5.8	0.065
19408-74-3	1,2,3,7,8,9-HxCDD	0.77	J q	5.8	0.067
70648-26-9	1,2,3,4,7,8-HxCDF	0.68	J q	5.8	0.033
57117-44-9	1,2,3,6,7,8-HxCDF	0.57	J	5.8	0.024
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.8	0.031
60851-34-5	2,3,4,6,7,8-HxCDF	0.52	J	5.8	0.028
35822-46-9	1,2,3,4,6,7,8-HpCDD	39	B	5.8	0.19
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.8	J B	5.8	0.045
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.8	0.053
39001-02-0	OCDF	6.0	J B	12	0.060
41903-57-5	Total TCDD	0.62	J q	1.2	0.035
30402-14-3	Total TCDF	1.9	q	1.2	0.024
36088-22-9	Total PeCDD	1.5	J q	5.8	0.063
30402-15-4	Total PeCDF	3.8	J	5.8	0.035
34465-46-8	Total HxCDD	8.4	q	5.8	0.074
55684-94-1	Total HxCDF	6.2	q	5.8	0.029
37871-00-4	Total HpCDD	73	B	5.8	0.19
38998-75-3	Total HpCDF	7.2	B	5.8	0.049

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1010-0001 | Lab Sample ID: 320-5187-8

Matrix: Solid | Lab File ID: 30DE133D5_59.d

Analysis Method: 8290A | Date Collected: 11/27/2013 09:40

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.14(g) | Date Analyzed: 01/01/2014 04:28

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 15.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33076 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	61		40-135
89059-46-1	13C-2,3,7,8-TCDF	55		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	58		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	58		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	62		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	65		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	74		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	81		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1010-0001 DL Lab Sample ID: 320-5187-8 DL

Matrix: Solid Lab File ID: 07JA143D5_56.d

Analysis Method: 8290A Date Collected: 11/27/2013 09:40

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.14(g) Date Analyzed: 01/09/2014 06:12

Con. Extract Vol.: 20(uL) Dilution Factor: 5

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 15.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33514 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	5000	B	58	2.4

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1010-0001 RA Lab Sample ID: 320-5187-8 RA

Matrix: Solid Lab File ID: 14ja1411d2_012.d

Analysis Method: 8290A Date Collected: 11/27/2013 09:40

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.14(g) Date Analyzed: 01/14/2014 18:47

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 15.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33916 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.19	J	1.2	0.079

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	63		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-SB-DUP11-1113 Lab Sample ID: 320-5187-10

Matrix: Solid Lab File ID: 30DE133D5_63.d

Analysis Method: 8290A Date Collected: 11/27/2013 00:00

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 9.99(g) Date Analyzed: 01/01/2014 07:16

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 20.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33076 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.3	0.050
40321-76-4	1,2,3,7,8-PeCDD	ND		6.3	0.082
57117-41-6	1,2,3,7,8-PeCDF	0.18	J	6.3	0.043
57117-31-4	2,3,4,7,8-PeCDF	0.15	J	6.3	0.044
39227-28-6	1,2,3,4,7,8-HxCDD	0.23	J q	6.3	0.079
57653-85-7	1,2,3,6,7,8-HxCDD	0.28	J	6.3	0.055
19408-74-3	1,2,3,7,8,9-HxCDD	0.42	J q	6.3	0.057
70648-26-9	1,2,3,4,7,8-HxCDF	0.91	J	6.3	0.042
57117-44-9	1,2,3,6,7,8-HxCDF	0.41	J q	6.3	0.031
72918-21-9	1,2,3,7,8,9-HxCDF	ND		6.3	0.040
60851-34-5	2,3,4,6,7,8-HxCDF	0.15	J q	6.3	0.036
35822-46-9	1,2,3,4,6,7,8-HpCDD	24	B	6.3	0.17
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.6	J B	6.3	0.047
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		6.3	0.056
3268-87-9	OCDD	3500	B	13	0.81
39001-02-0	OCDF	4.6	J B	13	0.063
41903-57-5	Total TCDD	0.40	J q	1.3	0.050
30402-14-3	Total TCDF	1.5	q	1.3	0.025
36088-22-9	Total PeCDD	0.68	J	6.3	0.082
30402-15-4	Total PeCDF	1.7	J q	6.3	0.043
34465-46-8	Total HxCDD	6.5	q	6.3	0.064
55684-94-1	Total HxCDF	2.8	J q	6.3	0.037
37871-00-4	Total HpCDD	51	B	6.3	0.17
38998-75-3	Total HpCDF	3.7	J B	6.3	0.052

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-SB-DUP11-1113 | Lab Sample ID: 320-5187-10

Matrix: Solid | Lab File ID: 30DE133D5_63.d

Analysis Method: 8290A | Date Collected: 11/27/2013 00:00

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 9.99(g) | Date Analyzed: 01/01/2014 07:16

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 20.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33076 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	60		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	62		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	62		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	69		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	71		40-135
114423-97-1	13C-OCDD	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-SB-DUP11-1113 RA Lab Sample ID: 320-5187-10 RA

Matrix: Solid Lab File ID: 14ja14a11d2_007.d

Analysis Method: 8290A Date Collected: 11/27/2013 00:00

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 9.99(g) Date Analyzed: 01/15/2014 01:48

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 20.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33933 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.3	0.099

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	63		40-135

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: _____

Missing Information	Date Lab Contacted	Date Received

Validator: Edward Sullivan Date: 2/7/14

See DV Report

EPA-NE - Data Validation
VOA/SV/Pest/PCB-I

Case: NAUSTA Newport SDG: 320-5157-1

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: Edward Hedges Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 320-5187-1

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action

Comments:

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action

Comments:

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: Edward Sedlmyer Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: Edward Sedlacz Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: Edward Sullivan Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Edward Sedlazeck Date: 2/7/14

NA

EPA NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Edward Sadlaga Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Edward Sedlazo Date: 2/7/14

EPA-NE - Data Validation Worksheet NA

Case: NAVSTA Newport SDG: 320-5157-1

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator: Edward Scollon Date: 2/7/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)

Comments:

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: Edward Sedlazo Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 320-5187-1

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: Edward Sedlmyer Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: Edward Sedlmyer Date: 2/7/14

EPA-NE - Data Validation Worksheet See DV Report

Case: NAUSTA Newport SDG: 320-5187-1

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Validator: Edward Sedlmyer Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: Edward Hollyer Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

VOA/SV/Pest/PCB-V-B

V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: Edward Sullivan Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methyhlphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: Edward Sedlmyer Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sadlowski Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5189-1

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery				% Recovery			
				Fluoranthene				Naphthalene	
				Pyrene				2-Methylnaphthalene	
				Benzo(a)anthracene				Acenaphthylene	
				Chrysene				Acenaphthene	
				Benzo(b)fluoranthene				Fluorene	
				Benzo(k)fluoranthene				Pentachlorophenol	
				Benzo(a)pyrene				Phenanthrene	
				Indeno(1,2,3-cd)pyrene				Anthracene	
				Dibenzo(a,h)anthracene					
				Benzo(g,h,i)perylene					

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Hedlund Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1.2-Dichloroethane-d_4

Validator: Edward Sadlon Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-51871-1

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedlmyer Date: 2/7/14

See QV Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 320-5187-1

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Edward Sedlmyer Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: Edward Sedlazo Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-51871-1

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Redlinger Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-51871-1

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: Edward Sullivan Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Nadolny Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix _____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: Edward Ledlow Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: Edward Hadley Date: 2/7/14

See DU Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 320-5187-1

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: Edward Sedlyn Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 320-5187-1

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: Edward Ledlow Date: 2/7/14

EPA-NE - Data Validation Worksheet See DV Report

Case: NAUSTA Newport SDG: 320-5187-1

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: Edward Sedlmyer Date: 2/7/14

See DV Report

EPA NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: Edward Sadlon Date: 2/7/14

EPA-NE - Data Validation Worksheet See DU Report

Case: NAVSTA Newport SDG: 320-5187-1

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: Edward Sedlazo Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Sieckmye Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5187-1

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? Y N

If no, list sample numbers _____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Sedlmyer Date: 2/7/14

N/A

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 320-5187-1

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: Edward Ludlow

Date: 2/7/14

APPENDIX D

SUPPORT DOCUMENTATION

NAVSTA NEWPORT
SOIL DATA
320-5187-1

FRACTION	CHEMICAL	TF2-001-SB1005-0204	UNITS	TF2-SB-DUP11-1113	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	4400	NG/KG	3500	22.78	900.00
DIOX	1,2,3,4,6,7,8,9-OCDF	ND	NG/KG	4.6 J	200.00	4.60
DIOX	1,2,3,4,6,7,8-HPCDD	31	NG/KG	24	25.45	7.00
DIOX	1,2,3,4,6,7,8-HPCDF	ND	NG/KG	2.6 J	200.00	2.60
DIOX	1,2,3,4,7,8-HXCDD	ND	NG/KG	0.23 J	200.00	0.23
DIOX	1,2,3,4,7,8-HXCDF	0.23 J	NG/KG	0.91 J	119.30	0.68
DIOX	1,2,3,6,7,8-HXCDD	0.31 J	NG/KG	0.28 J	10.17	0.03
DIOX	1,2,3,6,7,8-HXCDF	0.26 J	NG/KG	0.41 J	44.78	0.15
DIOX	1,2,3,7,8,9-HXCDD	0.59 J	NG/KG	0.42 J	33.66	0.17
DIOX	1,2,3,7,8-PECDD	0.11 J	NG/KG	ND	200.00	0.11
DIOX	1,2,3,7,8-PECDF	ND	NG/KG	0.18 J	200.00	0.18
DIOX	2,3,4,6,7,8-HXCDF	0.14 J	NG/KG	0.15 J	6.90	0.01
DIOX	2,3,4,7,8-PECDF	0.13 J	NG/KG	0.15 J	14.29	0.02
DIOX	TOTAL HPCDD	63	NG/KG	51	21.05	12.00
DIOX	TOTAL HPCDF	1.6 J	NG/KG	3.7 J	79.25	2.10
DIOX	TOTAL HXCDD	7.3	NG/KG	6.5 J	11.59	0.80
DIOX	TOTAL HXCDF	1.8 J	NG/KG	2.8 J	43.48	1.00
DIOX	TOTAL PECDD	1.7 J	NG/KG	0.68 J	85.71	1.02
DIOX	TOTAL PECDF	1.6 J	NG/KG	1.7 J	6.06	0.10
DIOX	TOTAL TCDD	0.87 J	NG/KG	0.4 J	74.02	0.47
DIOX	TOTAL TCDF	1.6 J	NG/KG	1.5 J	6.45	0.10

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 320-5187-1

Job Description: TF2 Portsmouth RI, CTO WE 30

For:
Tetra Tech, Inc.
250 Andover Street
Suite 200
Wilmington, MA 01887

Attention: Lucy Guzman

Approved for release.
Jill Kellmann
Senior Project Manager
1/22/2014 4:37 PM

Jill Kellmann, Senior Project Manager
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374-4402
jill.kellmann@testamericainc.com
01/22/2014

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The isomer is qualified as positively identified, but at an estimated quantity because the quantitation is based on the theoretical ratio for these samples.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
*	Isotope Dilution analyte exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Tetra Tech, Inc.

Project: TF2 Portsmouth RI, CTO WE 30

Report Number: 320-5187-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica West Sacramento attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

All parameters for which TestAmerica West Sacramento has certification were evaluated to the QSM specified reporting convention or to the client specified format if different from QSM. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Receipt
The samples were received on 12/4/2013 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was -0.3° C.

Dioxin - Method 8290A
Ion abundance ratios are outside criteria for the following samples: TF2-001-SB1000-0204 (320-5187-2), TF2-001-SB1000-0810 (320-5187-3), TF2-001-SB1006-0204 (320-5187-5), TF2-001-SS1000-0001 (320-5187-1), TF2-001-SS1005-0001 (320-5187-6), TF2-001-SS1006-0001 (320-5187-4), TF2-001-SB1005-0204 (320-5187-7), TF2-001-SB1010-0204 (320-5187-9), TF2-001-SS1010-0001 (320-5187-8), TF2-SB-DUP11-1113 (320-5187-10). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC). The affected analytes have been flagged.

The following samples were diluted to bring the concentration of target analytes within the calibration range: TF2-001-SB1000-0810 (320-5187-3), TF2-001-SB1006-0204 (320-5187-5), TF2-001-SB1010-0204 (320-5187-9), TF2-001-SB1010-0204 (320-5187-9 MS), TF2-001-SB1010-0204 (320-5187-9 MSD), TF2-001-SS1006-0001 (320-5187-4), TF2-001-SS1010-0001 (320-5187-8). Elevated reporting limits (RLs) are provided.

The matrix spike (MS) recovery for batch 31183 was outside control limits for OCDD. The high MS recovery is likely due to the concentration of native OCDD present in the parent sample at a value greater than 4 times trhe spike amount. The associated laboratory control sample (LCS) recovery was within acceptance limits.

No other analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

Dioxin Prep
No analytical or quality issues were noted.

Method Summary

Client: Tetra Tech, Inc.
Project/Site: TF2 Portsmouth RI, CTO WE 30

TestAmerica Job ID: 320-5187-1

Method	Method Description	Protocol	Laboratory
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: TF2 Portsmouth RI, CTO WE 30

TestAmerica Job ID: 320-5187-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-5187-1	TF2-001-SS1000-0001	Solid	11/27/13 08:00	12/04/13 09:30
320-5187-2	TF2-001-SB1000-0204	Solid	11/27/13 08:05	12/04/13 09:30
320-5187-3	TF2-001-SB1000-0810	Solid	11/27/13 08:20	12/04/13 09:30
320-5187-4	TF2-001-SS1006-0001	Solid	11/27/13 09:00	12/04/13 09:30
320-5187-5	TF2-001-SB1006-0204	Solid	11/27/13 09:05	12/04/13 09:30
320-5187-6	TF2-001-SS1005-0001	Solid	11/27/13 09:15	12/04/13 09:30
320-5187-7	TF2-001-SB1005-0204	Solid	11/27/13 09:20	12/04/13 09:30
320-5187-8	TF2-001-SS1010-0001	Solid	11/27/13 09:40	12/04/13 09:30
320-5187-9	TF2-001-SB1010-0204	Solid	11/27/13 09:45	12/04/13 09:30
320-5187-10	TF2-SB-DUP11-1113	Solid	11/27/13 00:00	12/04/13 09:30

D10X

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1937 | PAGE 1 OF 1

PROJECT NO: 112603019 CTO 30	FACILITY: Wilmington, MA	PROJECT MANAGER Debra Seiken	PHONE NUMBER 978 474 8445	LABORATORY NAME AND CONTACT: Test America Inc / J. Kellmann
SAMPLERS (SIGNATURE) K Jalkut		FIELD OPERATIONS LEADER Kayleen Jalkut	PHONE NUMBER 781 801 0457	ADDRESS 880 Riverside Parkway
		CARRIER/WAYBILL NUMBER FedEx AB # 8759 3797 5314		CITY, STATE West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G
PRESERVATIVE USED: 4deg C
TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS 8oz

320-5187 Chain of Custody

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS		COMMENTS
11/27	0800	TF2-001-SS1000-0001	1000	0	1	SO	G	1	1	
11/27	0805	TF2-001-SB1000-0204	1000	2	4	SO	G	1	1	
11/27	0820	TF2-001-SB1000-0810	1000	8	10	SO	G	1	1	
11/27	0900	TF2-001-SS1006-0001	1006	0	1	SO	G	1	1	
11/27	0905	TF2-001-SB1006-0204	1006	2	4	SO	G	1	1	
11/27	0915	TF2-001-SS1005-0001	1005	0	1	SO	G	1	1	
11/27	0920	TF2-001-SB1005-0204	1005	2	4	SO	G	1	1	
11/27	0940	TF2-001-SS1010-0001	1010	0	1	SO	G	1	1	
11/27	0945	TF2-001-SB1010-0204	1010	2	4	SO	G	2	2	Lab QC
11/27	0000	TF2-SB-DUP11-1113	—	—	—	SO	G	1	1	

K Jalkut 12/2/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY K Jalkut	12/3/13	0915	1. RECEIVED BY FedEx	12/3/13	0915
2. RELINQUISHED BY	DATE	TIME	2 RECEIVED BY Kim Nelson	12/4/13	930
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

-0.3°C

4/02R FORM NO. TtNUS-001

Page 1 of 1

01/22/2014

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 320-5187-1

Login Number: 5187

List Source: TestAmerica Sacramento

List Number: 1

Creator: Hytrek, Cheryl

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Method 8290A

Dioxins and Furans (HRGC/HRMS) by Method 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-001-SB1000-0810 DL	320-5187-3 DL	76
TF2-001-SS1006-0001 DL	320-5187-4 DL	77
TF2-001-SB1006-0204 DL	320-5187-5 DL	77
TF2-001-SS1010-0001 DL	320-5187-8 DL	76
TF2-001-SB1010-0204 DL	320-5187-9 DL	65
TF2-001-SB1010-0204 MS DL	320-5187-9 MS DL	69
TF2-001-SB1010-0204 MSD DL	320-5187-9 MSD DL	75

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-225 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #
TF2-001-SS1000-0001 RA	320-5187-1 RA	70
TF2-001-SB1000-0204 RA	320-5187-2 RA	64
TF2-001-SB1000-0810 RA	320-5187-3 RA	65
TF2-001-SS1006-0001 RA	320-5187-4 RA	66
TF2-001-SB1006-0204 RA	320-5187-5 RA	71
TF2-001-SS1005-0001 RA	320-5187-6 RA	74
TF2-001-SB1005-0204 RA	320-5187-7 RA	61
TF2-001-SS1010-0001 RA	320-5187-8 RA	63
TF2-001-SB1010-0204 RA	320-5187-9 RA	60
TF2-SB-DUP11-1113 RA	320-5187-10 RA	63

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-001-SS1000-0001	320-5187-1	58	67	64	67	60	67	77	84
TF2-001-SB1000-0204	320-5187-2	54	64	57	62	56	70	68	78
TF2-001-SB1000-0810	320-5187-3	55	65	55	58	59	70	70	75
TF2-001-SS1006-0001	320-5187-4	58	66	62	66	60	70	71	76
TF2-001-SB1006-0204	320-5187-5	57	65	59	60	62	76	76	80
TF2-001-SS1005-0001	320-5187-6	62	70	65	72	64	74	77	82
TF2-001-SB1005-0204	320-5187-7	58	60	57	59	67	62	69	72
TF2-001-SS1010-0001	320-5187-8	55	61	58	58	65	62	72	74
TF2-001-SB1010-0204	320-5187-9	55	58	57	58	60	59	67	71
TF2-SB-DUP11-1113	320-5187-10	60	63	62	62	69	66	71	73
	MB 320-31183/1-A	62	68	65	66	69	64	77	80
	LCS 320-31183/2-A	59	63	59	60	67	64	72	77
TF2-001-SB1010-0204 MS	320-5187-9 MS	58	60	60	62	63	62	70	73
TF2-001-SB1010-0204 MSD	320-5187-9 MSD	63	66	66	68	73	69	77	83

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-001-SS1000-0001	320-5187-1	82
TF2-001-SB1000-0204	320-5187-2	78
TF2-001-SB1000-0810	320-5187-3	73
TF2-001-SS1006-0001	320-5187-4	79
TF2-001-SB1006-0204	320-5187-5	73
TF2-001-SS1005-0001	320-5187-6	84
TF2-001-SB1005-0204	320-5187-7	75
TF2-001-SS1010-0001	320-5187-8	81
TF2-001-SB1010-0204	320-5187-9	78
TF2-SB-DUP11-1113	320-5187-10	76
	MB 320-31183/1-A	73
	LCS 320-31183/2-A	69
TF2-001-SB1010-0204 MS	320-5187-9 MS	78
TF2-001-SB1010-0204 MSD	320-5187-9 MSD	87

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/23/2013 14:57

Analysis Batch Number: 32536 End Date: 12/23/2013 20:50

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32536/1		12/23/2013 14:57	1	23DE13A3D5_1.d	DB-5 0.32(mm)
ZZZZZ		12/23/2013 15:49	1		DB-5 0.32(mm)
IC 320-32536/3		12/23/2013 16:39	1	23DE13A3D5_3.d	DB-5 0.32(mm)
IC 320-32536/4		12/23/2013 17:21	1	23DE13A3D5_4.d	DB-5 0.32(mm)
IC 320-32536/5		12/23/2013 18:02	1	23DE13A3D5_5.d	DB-5 0.32(mm)
IC 320-32536/6		12/23/2013 18:44	1	23DE13A3D5_6.d	DB-5 0.32(mm)
IC 320-32536/7		12/23/2013 19:26	1	23DE13A3D5_7.d	DB-5 0.32(mm)
ZZZZZ		12/23/2013 20:08	1		DB-5 0.32(mm)
ICV 320-32536/9		12/23/2013 20:50	1	23DE13A3D5_9.d	DB-5 0.32(mm)

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID (1): CPS 320-32536/1 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/23/2013 14:57

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.11	23

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID (1): CPS 320-33076/28 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 01/01/2014 01:00

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.15	18

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID (1): CPS 320-33076/40 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 01/01/2014 09:41

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.12	18

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID (1): CPS 320-33211/28 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 01/04/2014 08:11

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.18	21

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID (1): CPS 320-33514/26 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 01/09/2014 02:02

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.14	18

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1 Analy Batch No.: 32536

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/23/2013 16:39 Calibration End Date: 12/23/2013 19:26 Calibration ID: 5694

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32536/3	23DE13A3D5_3.d
Level 2	IC 320-32536/4	23DE13A3D5_4.d
Level 3	IC 320-32536/5	23DE13A3D5_5.d
Level 4	IC 320-32536/6	23DE13A3D5_6.d
Level 5	IC 320-32536/7	23DE13A3D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9066	0.9848	1.0052	0.9868	1.0235	AveID		0.9814				4.6		20.0			
2,3,7,8-TCDD	1.2929	1.2631	1.2665	1.2825	1.2631	AveID		1.2736				1.1		20.0			
1,2,3,7,8-PeCDF	1.0319	1.1150	1.1719	1.1085	1.1773	AveID		1.1209				5.3		20.0			
2,3,4,7,8-PeCDF	1.0397	1.0564	1.1065	1.0522	1.1178	AveID		1.0745				3.3		20.0			
1,2,3,7,8-PeCDD	1.0076	1.1357	1.1508	1.0982	1.1482	AveID		1.1081				5.4		20.0			
1,2,3,4,7,8-HxCDF	1.0336	0.8601	1.0947	1.0240	1.0711	AveID		1.0167				9.1		20.0			
1,2,3,6,7,8-HxCDF	1.3754	1.1338	1.5017	1.4567	1.3657	AveID		1.3667				10.0		20.0			
2,3,4,6,7,8-HxCDF	1.1387	0.9758	1.2869	1.2395	1.2033	AveID		1.1689				10.0		20.0			
1,2,3,4,7,8-HxCDD	0.7237	0.6962	0.7910	0.7398	0.8674	AveID		0.7636				8.8		20.0			
1,2,3,6,7,8-HxCDD	1.0405	0.9829	1.1547	1.1068	1.1212	AveID		1.0812				6.4		20.0			
1,2,3,7,8,9-HxCDD	0.9476	0.9872	1.1371	1.0623	1.0939	AveID		1.0456				7.4		20.0			
1,2,3,7,8,9-HxCDF	1.0144	0.9379	1.1576	1.0839	1.0786	AveID		1.0545				7.8		20.0			
1,2,3,4,6,7,8-HpCDF	1.3777	1.4703	1.4554	1.4520	1.4503	AveID		1.4411				2.5		20.0			
1,2,3,4,6,7,8-HpCDD	1.0951	1.1090	1.1547	1.1146	1.1761	AveID		1.1299				3.0		20.0			
1,2,3,4,7,8,9-HpCDF	1.1037	1.2392	1.2566	1.2603	1.2699	AveID		1.2259				5.6		20.0			
OCDD	1.0941	1.1666	1.2545	1.2161	1.2701	AveID		1.2002				6.0		20.0			
OCDF	1.6686	1.6878	1.7166	1.8003	1.8499	AveID		1.7446				4.4		20.0			
13C-2,3,7,8-TCDF	2.0661	2.0256	2.0822	1.9611	1.9511	Ave		2.0172				3.0		20.0			
13C-2,3,7,8-TCDD	1.1139	1.0810	1.1103	1.0539	1.1051	Ave		1.0929				2.3		20.0			
13C-1,2,3,7,8-PeCDF	1.5781	1.5189	1.5232	1.4758	1.5160	Ave		1.5224				2.4		20.0			
13C-1,2,3,7,8-PeCDD	0.9337	0.8721	0.9016	0.8490	0.9057	Ave		0.8924				3.7		20.0			
13C-1,2,3,4,7,8-HxCDF	1.0547	1.2696	1.1009	1.0889	1.1844	Ave		1.1397				7.6		20.0			
13C-1,2,3,6,7,8-HxCDD	1.0082	1.0596	1.0336	1.0286	1.0492	Ave		1.0358				1.9		20.0			
13C-1,2,3,4,6,7,8-HpCDF	0.8164	0.7910	0.8468	0.8149	0.9081	Ave		0.8354				5.4		20.0			
13C-1,2,3,4,6,7,8-HpCDD	0.6057	0.6108	0.6648	0.6460	0.6852	Ave		0.6425				5.3		20.0			
13C-OCDD	0.3729	0.3762	0.4234	0.4004	0.4804	Ave		0.4107				11.0		20.0			
37Cl4-2,3,7,8-TCDD	1.6215	1.6288	1.6486	1.6816	1.7028	Ave		1.6567				2.1		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1 Analy Batch No.: 32536

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/23/2013 16:39 Calibration End Date: 12/23/2013 19:26 Calibration ID: 5694

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32536/3	23DE13A3D5_3.d
Level 2	IC 320-32536/4	23DE13A3D5_4.d
Level 3	IC 320-32536/5	23DE13A3D5_5.d
Level 4	IC 320-32536/6	23DE13A3D5_6.d
Level 5	IC 320-32536/7	23DE13A3D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	674374	3202466	17028736	61961087	295637038	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	580367	2393189	11673173	44979267	219349389	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	4267022	19931624	100290356	370960489	1903732254	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	4345494	18898503	94415176	352734332	1811208368	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	2489827	11414720	58157907	210681471	1101514449	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	2832410	11545413	60192871	226073468	1256566401	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	3739732	15821917	82794100	317761083	1614625519	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	3004187	13737275	71217467	276927616	1427455263	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1897118	7950489	42422505	154168006	902528175	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	2753145	11488543	60984135	232682440	1166054353	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	2373003	11214765	61121953	221215738	1124414202	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	2584345	13057023	62967266	238005702	1238608708	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	2825972	11728532	57815058	222142163	1184929725	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	1547081	6864662	36326958	134991383	737707699	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	2207049	10151016	49324510	191887150	1051552635	2.50	10.0	50.0	200	1000
OCDD		AveID	1782885	8094640	44536491	168724499	1025266991	5.00	20.0	100	400	2000
OCDF		AveID	2750500	11923655	64144843	251705071	1507682132	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	155505655	170112365	165658711	155850585	147915669	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	82477679	88248158	86364050	81386612	85673221	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	165479079	174344247	168678400	168481048	161150010	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	101157998	101983025	98855535	96813399	96098492	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	67309477	85604449	70085298	68063552	71731520	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	104558392	118369173	106828074	104869894	104576250	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	47019097	48883537	48685688	46877933	51042755	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	58469473	61684905	63714500	61909817	62590650	100	100	100	100	100
13C-OCDD	13CHx(	Ave	65090062	74014921	75134241	69920441	82262634	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	700247	3078337	14937712	61844566	293733956	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID: ICV 320-32536/9 Calibration Date: 12/23/2013 20:50

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 23DE13A3D5_9.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	1.004		10.2	10.0	2.3	30.0
2,3,7,8-TCDD	AveID	1.274	1.272		9.98	10.0	-0.2	30.0
1,2,3,7,8-PeCDF	AveID	1.121	1.208		26.9	25.0	7.7	30.0
2,3,4,7,8-PeCDF	AveID	1.075	1.108		25.8	25.0	3.1	30.0
1,2,3,7,8-PeCDD	AveID	1.108	1.134		25.6	25.0	2.3	30.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.129		27.8	25.0	11.1	30.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.585		29.0	25.0	15.9	30.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.366		29.2	25.0	16.9	30.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.7622		25.0	25.0	-0.2	30.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.155		26.7	25.0	6.8	30.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.175		28.1	25.0	12.3	30.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.211		28.7	25.0	14.9	30.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.543		26.8	25.0	7.1	30.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.196		26.5	25.0	5.9	30.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.220		24.9	25.0	-0.5	30.0
OCDD	AveID	1.200	1.274		53.1	50.0	6.1	30.0
OCDF	AveID	1.745	1.885		54.0	50.0	8.1	30.0
13C-2,3,7,8-TCDF	Ave	2.017	1.933		95.8	100	-4.2	
13C-2,3,7,8-TCDD	Ave	1.093	1.051		96.2	100	-3.8	
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.408		92.5	100	-7.5	
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8239		83.5	100	-7.7	
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.021		89.6	100	-10.4	
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.016		98.1	100	-1.9	
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8562		102	100	2.5	
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.6164		95.9	100	-4.1	
13C-OCDD	Ave	0.4107	0.3938		192	200	-4.1	
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.525		9.21	10.0	-7.9	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/31/2013 05:21

Analysis Batch Number: 33076 End Date: 01/02/2014 03:34

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-33076/1		12/31/2013 05:21	1		DB-5 0.32(mm)
CPS 320-33076/2		12/31/2013 06:13	1		DB-5 0.32(mm)
ZZZZZ		12/31/2013 06:54	1		DB-5 0.32(mm)
ZZZZZ		12/31/2013 07:35	1		DB-5 0.32(mm)
ZZZZZ		12/31/2013 08:17	1		DB-5 0.32(mm)
ZZZZZ		12/31/2013 08:59	1		DB-5 0.32(mm)
ZZZZZ		12/31/2013 09:41	1		DB-5 0.32(mm)
ZZZZZ		12/31/2013 10:23	1		DB-5 0.32(mm)
ZZZZZ		12/31/2013 11:05	1		DB-5 0.32(mm)
ZZZZZ		12/31/2013 11:46	1		DB-5 0.32(mm)
ZZZZZ		12/31/2013 12:28	1		DB-5 0.32(mm)
ZZZZZ		12/31/2013 13:10	1		DB-5 0.32(mm)
ZZZZZ		12/31/2013 13:52	1		DB-5 0.32(mm)
CCV 320-33076/14		12/31/2013 14:47	1		DB-5 0.32(mm)
CCV 320-33076/27		01/01/2014 00:09	1	30DE133D5_53.d	DB-5 0.32(mm)
CPS 320-33076/28		01/01/2014 01:00	1	30DE133D5_54.d	DB-5 0.32(mm)
ZZZZZ		01/01/2014 01:41	1		DB-5 0.32(mm)
MB 320-31183/1-A		01/01/2014 02:23	1	30DE133D5_56.d	DB-5 0.32(mm)
LCS 320-31183/2-A		01/01/2014 03:05	1	30DE133D5_57.d	DB-5 0.32(mm)
320-5187-7	TF2-001-SB1005-0204	01/01/2014 03:47	1	30DE133D5_58.d	DB-5 0.32(mm)
320-5187-8	TF2-001-SS1010-0001	01/01/2014 04:28	1	30DE133D5_59.d	DB-5 0.32(mm)
320-5187-9	TF2-001-SB1010-0204	01/01/2014 05:10	1	30DE133D5_60.d	DB-5 0.32(mm)
320-5187-9 MS	TF2-001-SB1010-0204 MS	01/01/2014 05:52	1	30DE133D5_61.d	DB-5 0.32(mm)
320-5187-9 MSD	TF2-001-SB1010-0204 MSD	01/01/2014 06:34	1	30DE133D5_62.d	DB-5 0.32(mm)
320-5187-10	TF2-SB-DUP11-1113	01/01/2014 07:16	1	30DE133D5_63.d	DB-5 0.32(mm)
ZZZZZ		01/01/2014 07:58	1		DB-5 0.32(mm)
CCV 320-33076/39		01/01/2014 08:49	1	30DE133D5_65.d	DB-5 0.32(mm)
CPS 320-33076/40		01/01/2014 09:41	1	30DE133D5_66.d	DB-5 0.32(mm)
ZZZZZ		01/01/2014 10:22	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 11:03	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 11:45	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 12:27	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 13:09	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 13:51	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 14:32	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 15:14	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 15:56	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 16:38	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 17:20	1		DB-5 0.32(mm)
CCV 320-33076/52		01/01/2014 18:11	1		DB-5 0.32(mm)
CPS 320-33076/53		01/01/2014 19:03	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 19:44	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 20:25	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 21:07	1		DB-5 0.32(mm)

8290A

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/31/2013 05:21

Analysis Batch Number: 33076 End Date: 01/02/2014 03:34

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ZZZZZ		01/01/2014 21:49	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 22:31	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 23:13	1		DB-5 0.32(mm)
ZZZZZ		01/01/2014 23:55	1		DB-5 0.32(mm)
ZZZZZ		01/02/2014 00:36	1		DB-5 0.32(mm)
ZZZZZ		01/02/2014 01:18	1		DB-5 0.32(mm)
ZZZZZ		01/02/2014 02:00	1		DB-5 0.32(mm)
ZZZZZ		01/02/2014 02:42	1		DB-5 0.32(mm)
CCV 320-33076/65		01/02/2014 03:34	1		DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID: CCV 320-33076/27 Calibration Date: 01/01/2014 00:09

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 30DE133D5_53.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	1.043		10.6	10.0	6.3	20.0
2,3,7,8-TCDD	AveID	1.274	1.234		9.69	10.0	-3.1	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.176		52.5	50.0	4.9	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.109		51.6	50.0	3.3	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.103		49.8	50.0	-0.5	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.118		55.0	50.0	10.0	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.346		49.3	50.0	-1.5	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.204		51.5	50.0	3.0	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.9111		59.7	50.0	19.3	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.125		52.0	50.0	4.0	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.143		54.7	50.0	9.3	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.074		50.9	50.0	1.9	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.480		51.3	50.0	2.7	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.179		52.2	50.0	4.3	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.292		52.7	50.0	5.4	20.0
OCDD	AveID	1.200	1.264		105	100	5.3	20.0
OCDF	AveID	1.745	1.728		99.0	100	-1.0	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.864		92.4	100	-7.6	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.083		99.1	100	-0.9	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.454		95.5	100	-4.5	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8847		99.1	100	-0.9	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.186		104	100	4.1	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.008		97.3	100	-2.7	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.9333		112	100	11.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.7789		121	100	21.2	30.0
13C-OCDD	Ave	0.4107	0.4546		221	200	10.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.610		4.86	5.00	-2.8	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID: CCV 320-33076/39 Calibration Date: 01/01/2014 08:49

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 30DE133D5_65.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.996		10.1	10.0	1.4	20.0
2,3,7,8-TCDD	AveID	1.274	1.283		10.1	10.0	0.7	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.156		51.6	50.0	3.1	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.050		48.9	50.0	-2.3	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.122		50.6	50.0	1.2	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.090		53.6	50.0	7.2	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.366		50.0	50.0	-0.0	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.184		50.7	50.0	1.3	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.8375		54.8	50.0	9.7	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.093		50.6	50.0	1.1	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.081		51.7	50.0	3.4	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.051		49.8	50.0	-0.3	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.482		51.4	50.0	2.8	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.153		51.0	50.0	2.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.214		49.5	50.0	-1.0	20.0
OCDD	AveID	1.200	1.166		97.1	100	-2.9	20.0
OCDF	AveID	1.745	1.648		94.5	100	-5.5	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.910		94.7	100	-5.3	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.058		96.8	100	-3.2	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.470		96.5	100	-3.5	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8421		94.4	100	-5.6	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.169		103	100	2.6	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.051		101	100	1.5	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.9352		112	100	11.9	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.7620		119	100	18.6	30.0
13C-OCDD	Ave	0.4107	0.4313		210	200	5.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.647		4.97	5.00	-0.6	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Instrument ID: 3D5 Start Date: 01/04/2014 07:20

Analysis Batch Number: 33211 End Date: 01/04/2014 16:42

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-33211/27		01/04/2014 07:20	1	03JA143D5_27.d	DB-5 0.32(mm)
CPS 320-33211/28		01/04/2014 08:11	1	03JA143D5_28.d	DB-5 0.32(mm)
ZZZZZ		01/04/2014 08:52	1		DB-5 0.32(mm)
ZZZZZ		01/04/2014 09:34	1		DB-5 0.32(mm)
ZZZZZ		01/04/2014 10:15	1		DB-5 0.32(mm)
ZZZZZ		01/04/2014 10:57	1		DB-5 0.32(mm)
320-5187-1	TF2-001-SS1000-0001	01/04/2014 11:39	1	03JA143D5_33.d	DB-5 0.32(mm)
320-5187-2	TF2-001-SB1000-0204	01/04/2014 12:21	1	03JA143D5_34.d	DB-5 0.32(mm)
320-5187-3	TF2-001-SB1000-0810	01/04/2014 13:03	1	03JA143D5_35.d	DB-5 0.32(mm)
320-5187-4	TF2-001-SS1006-0001	01/04/2014 13:45	1	03JA143D5_36.d	DB-5 0.32(mm)
320-5187-5	TF2-001-SB1006-0204	01/04/2014 14:26	1	03JA143D5_37.d	DB-5 0.32(mm)
320-5187-6	TF2-001-SS1005-0001	01/04/2014 15:08	1	03JA143D5_38.d	DB-5 0.32(mm)
ZZZZZ		01/04/2014 15:50	1		DB-5 0.32(mm)
CCV 320-33211/40		01/04/2014 16:42	1	03JA143D5_40.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID: CCV 320-33211/27 Calibration Date: 01/04/2014 07:20

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 03JA143D5_27.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9322		9.50	10.0	-5.0	20.0
2,3,7,8-TCDD	AveID	1.274	1.168		9.17	10.0	-8.3	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.094		48.8	50.0	-2.4	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.034		48.1	50.0	-3.7	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.079		48.7	50.0	-2.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.043		51.3	50.0	2.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.516		55.4	50.0	10.9	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.284		54.9	50.0	9.9	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.7036		46.1	50.0	-7.9	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.147		53.0	50.0	6.1	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.096		52.4	50.0	4.8	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.171		55.5	50.0	11.0	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.428		49.5	50.0	-0.9	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.141		50.5	50.0	1.0	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.173		47.8	50.0	-4.3	20.0
OCDD	AveID	1.200	1.284		107	100	6.9	20.0
OCDF	AveID	1.745	1.692		97.0	100	-3.0	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.738		86.2	100	-13.8	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.106		101	100	1.2	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.380		90.6	100	-9.4	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8608		96.5	100	-3.5	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	0.9246		81.1	100	-18.9	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	0.9847		95.1	100	-4.9	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8002		95.8	100	-4.2	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.6593		103	100	2.6	30.0
13C-OCDD	Ave	0.4107	0.3618		176	200	-11.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.590		4.80	5.00	-4.0	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID: CCV 320-33211/40 Calibration Date: 01/04/2014 16:42

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 03JA143D5_40.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9222		9.40	10.0	-6.0	20.0
2,3,7,8-TCDD	AveID	1.274	1.191		9.35	10.0	-6.5	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.067		47.6	50.0	-4.9	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.018		47.3	50.0	-5.3	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.088		49.1	50.0	-1.9	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.036		51.0	50.0	1.9	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.449		53.0	50.0	6.0	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.243		53.2	50.0	6.3	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.6911		45.3	50.0	-9.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.046		48.4	50.0	-3.3	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	0.9911		47.4	50.0	-5.2	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.126		53.4	50.0	6.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.424		49.4	50.0	-1.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.155		51.1	50.0	2.2	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.180		48.1	50.0	-3.8	20.0
OCDD	AveID	1.200	1.213		101	100	1.1	20.0
OCDF	AveID	1.745	1.696		97.2	100	-2.8	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.778		88.2	100	-11.8	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.099		101	100	0.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.433		94.1	100	-5.9	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8705		97.5	100	-2.5	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	0.9563		83.9	100	-16.1	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.085		105	100	4.7	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8524		102	100	2.0	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.7048		110	100	9.7	30.0
13C-OCDD	Ave	0.4107	0.3959		193	200	-3.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.606		4.85	5.00	-3.0	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Instrument ID: 3D5 Start Date: 01/08/2014 07:50

Analysis Batch Number: 33514 End Date: 01/09/2014 09:53

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-33514/1		01/08/2014 07:50	1		DB-5 0.32(mm)
CPS 320-33514/2		01/08/2014 08:42	1		DB-5 0.32(mm)
ZZZZZ		01/08/2014 09:23	1		DB-5 0.32(mm)
ZZZZZ		01/08/2014 11:28	1		DB-5 0.32(mm)
ZZZZZ		01/08/2014 15:39	1		DB-5 0.32(mm)
CCV 320-33514/13		01/08/2014 16:31	1	07JA143D5_37.d	DB-5 0.32(mm)
CCV 320-33514/25		01/09/2014 01:11	1	07JA143D5_49.d	DB-5 0.32(mm)
CPS 320-33514/26		01/09/2014 02:02	1	07JA143D5_50.d	DB-5 0.32(mm)
ZZZZZ		01/09/2014 02:43	1		DB-5 0.32(mm)
320-5187-3 DL	TF2-001-SB1000-0810 DL	01/09/2014 04:07	5	07JA143D5_53.d	DB-5 0.32(mm)
320-5187-4 DL	TF2-001-SS1006-0001 DL	01/09/2014 04:48	5	07JA143D5_54.d	DB-5 0.32(mm)
320-5187-5 DL	TF2-001-SB1006-0204 DL	01/09/2014 05:30	5	07JA143D5_55.d	DB-5 0.32(mm)
320-5187-8 DL	TF2-001-SS1010-0001 DL	01/09/2014 06:12	5	07JA143D5_56.d	DB-5 0.32(mm)
320-5187-9 DL	TF2-001-SB1010-0204 DL	01/09/2014 06:54	5	07JA143D5_57.d	DB-5 0.32(mm)
320-5187-9 MS DL	TF2-001-SB1010-0204 MS DL	01/09/2014 07:36	5	07JA143D5_58.d	DB-5 0.32(mm)
320-5187-9 MSD DL	TF2-001-SB1010-0204 MSD DL	01/09/2014 08:17	5	07JA143D5_59.d	DB-5 0.32(mm)
ZZZZZ		01/09/2014 08:59	1		DB-5 0.32(mm)
CCV 320-33514/37		01/09/2014 09:53	1	07JA143D5_61.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID: CCV 320-33514/13 Calibration Date: 01/08/2014 16:31

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 07JA143D5_37.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9296		9.47	10.0	-5.3	20.0
2,3,7,8-TCDD	AveID	1.274	1.214		9.53	10.0	-4.7	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.112		49.6	50.0	-0.8	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.035		48.2	50.0	-3.7	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.131		51.0	50.0	2.0	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.058		52.0	50.0	4.1	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.469		53.8	50.0	7.5	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.270		54.3	50.0	8.7	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.6801		44.5	50.0	-10.9	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.050		48.5	50.0	-2.9	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.032		49.4	50.0	-1.3	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.114		52.8	50.0	5.7	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.448		50.2	50.0	0.5	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.133		50.1	50.0	0.3	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.198		48.9	50.0	-2.2	20.0
OCDD	AveID	1.200	1.234		103	100	2.8	20.0
OCDF	AveID	1.745	1.822		104	100	4.4	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.845		91.5	100	-8.5	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.096		100	100	0.3	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.467		96.4	100	-3.6	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8516		95.4	100	-4.6	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.006		88.3	100	-11.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.062		102	100	2.5	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8119		97.2	100	-2.8	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.6716		105	100	4.5	30.0
13C-OCDD	Ave	0.4107	0.3935		192	200	-4.2	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.555		4.69	5.00	-6.1	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID: CCV 320-33514/25 Calibration Date: 01/09/2014 01:11

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 07JA143D5_49.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9236		9.41	10.0	-5.9	20.0
2,3,7,8-TCDD	AveID	1.274	1.227		9.64	10.0	-3.6	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.070		47.7	50.0	-4.5	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.022		47.6	50.0	-4.9	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.158		52.2	50.0	4.5	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.061		52.2	50.0	4.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.342		49.1	50.0	-1.8	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.189		50.9	50.0	1.7	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.8028		52.6	50.0	5.1	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.101		50.9	50.0	1.8	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.078		51.6	50.0	3.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.086		51.5	50.0	3.0	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.457		50.6	50.0	1.1	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.150		50.9	50.0	1.8	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.262		51.5	50.0	2.9	20.0
OCDD	AveID	1.200	1.235		103	100	2.9	20.0
OCDF	AveID	1.745	1.779		102	100	2.0	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.796		89.1	100	-10.9	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.077		98.5	100	-1.5	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.456		95.6	100	-4.4	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8512		95.4	100	-4.6	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.108		97.2	100	-2.8	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.043		101	100	0.7	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8925		107	100	6.8	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.7393		115	100	15.1	30.0
13C-OCDD	Ave	0.4107	0.4882		238	200	18.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.557		4.70	5.00	-6.0	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID: CCV 320-33514/37 Calibration Date: 01/09/2014 09:53

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 07JA143D5_61.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9343		9.52	10.0	-4.8	20.0
2,3,7,8-TCDD	AveID	1.274	1.210		9.50	10.0	-5.0	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.074		47.9	50.0	-4.1	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.020		47.5	50.0	-5.0	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.138		51.4	50.0	2.7	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.045		51.4	50.0	2.8	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.394		51.0	50.0	2.0	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.218		52.1	50.0	4.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.7197		47.1	50.0	-5.8	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.110		51.3	50.0	2.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.075		51.4	50.0	2.8	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.081		51.3	50.0	2.5	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.473		51.1	50.0	2.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.136		50.3	50.0	0.5	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.222		49.9	50.0	-0.3	20.0
OCDD	AveID	1.200	1.251		104	100	4.2	20.0
OCDF	AveID	1.745	1.771		102	100	1.5	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.810		89.7	100	-10.3	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.109		101	100	1.5	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.475		96.9	100	-3.1	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8658		97.0	100	-3.0	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.009		88.5	100	-11.5	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.012		97.7	100	-2.3	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.7871		94.2	100	-5.8	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.6589		103	100	2.5	30.0
13C-OCDD	Ave	0.4107	0.4037		197	200	-1.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.604		4.84	5.00	-3.2	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Instrument ID: 11D5 Start Date: 12/19/2013 17:26

Analysis Batch Number: 32502 End Date: 12/19/2013 23:17

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32502/1		12/19/2013 17:26	1	19DE1311D2_001.d	DB-225 0.32(mm)
IC 320-32502/3		12/19/2013 18:45	1	19DE1311D2_003.d	DB-225 0.32(mm)
IC 320-32502/4		12/19/2013 19:24	1	19DE1311D2_004.d	DB-225 0.32(mm)
IC 320-32502/5		12/19/2013 20:02	1	19DE1311D2_005.d	DB-225 0.32(mm)
IC 320-32502/6		12/19/2013 20:41	1	19DE1311D2_006.d	DB-225 0.32(mm)
IC 320-32502/7		12/19/2013 21:20	1	19DE1311D2_007.d	DB-225 0.32(mm)
ICV 320-32502/9		12/19/2013 22:38	1	19DE1311D2_009.d	DB-225 0.32(mm)
CPS 320-32502/10		12/19/2013 23:17	1		DB-225 0.32(mm)

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID (1): CPS 320-32502/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 12/19/2013 17:26

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.03	25

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID (1): CPS 320-33916/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 01/14/2014 11:40

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.73	24

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID (1): CPS 320-33933/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 01/14/2014 21:55

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.72	23

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1 Analy Batch No.: 32502

SDG No.:

Instrument ID: 11D5 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/19/2013 18:45 Calibration End Date: 12/19/2013 21:20 Calibration ID: 5676

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32502/3	19DE1311D2_003.d
Level 2	IC 320-32502/4	19DE1311D2_004.d
Level 3	IC 320-32502/5	19DE1311D2_005.d
Level 4	IC 320-32502/6	19DE1311D2_006.d
Level 5	IC 320-32502/7	19DE1311D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.2293	1.2266	1.2712	1.2371	1.2670	AveID		1.2462				1.7		20.0			
2,3,7,8-TCDF	1.1343	1.1494	1.1412	1.1011	1.1432	AveID		1.1338				1.7		20.0			
13C-2,3,7,8-TCDD	0.9802	0.9601	0.9969	0.9394	0.9777	Ave		0.9709				2.3		20.0			
13C-2,3,7,8-TCDF	1.6591	1.7043	1.7154	1.6515	1.6854	Ave		1.6831				1.6		20.0			
37Cl4-2,3,7,8-TCDD	1.5736	1.4648	1.6241	1.6014	1.6364	Ave		1.5800				4.3		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1 Analy Batch No.: 32502

SDG No.:

Instrument ID: 11D5 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/19/2013 18:45 Calibration End Date: 12/19/2013 21:20 Calibration ID: 5676

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32502/3	19DE1311D2_003.d
Level 2	IC 320-32502/4	19DE1311D2_004.d
Level 3	IC 320-32502/5	19DE1311D2_005.d
Level 4	IC 320-32502/6	19DE1311D2_006.d
Level 5	IC 320-32502/7	19DE1311D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	288615	1110124	5924122	22362477	116845811	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	442816	1925656	9121618	35182839	181121900	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCl	Ave	46859665	47032082	47298421	46061130	46483387	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCl	Ave	78328887	83186601	81238564	80393098	79536331	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	416085	1607175	8593900	34885147	172747010	0.250	1.00	5.00	20.0	100

Curve Type Legend:
Ave = Average ISTD
AveID = Average isotope dilution

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID: ICV 320-32502/9 Calibration Date: 12/19/2013 22:38

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 19DE1311D2_009.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.262		10.1	10.0	1.3	30.0
2,3,7,8-TCDF	AveID	1.134	1.146		10.1	10.0	1.1	30.0
13C-2,3,7,8-TCDD	Ave	0.9709	1.006		104	100	3.6	
13C-2,3,7,8-TCDF	Ave	1.683	1.718		102	100	2.1	
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.573		9.96	10.0	-0.4	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Instrument ID: 11D5 Start Date: 01/14/2014 11:40

Analysis Batch Number: 33916 End Date: 01/14/2014 20:44

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-33916/1		01/14/2014 11:40	1	14ja1411d2_001.d	DB-225 0.32(mm)
CCV 320-33916/2		01/14/2014 12:19	1	14ja1411d2_002.d	DB-225 0.32(mm)
ZZZZZ		01/14/2014 12:58	1		DB-225 0.32(mm)
ZZZZZ		01/14/2014 13:36	1		DB-225 0.32(mm)
320-5187-1 RA	TF2-001-SS1000-0001 RA	01/14/2014 14:15	1	14ja1411d2_005.d	DB-225 0.32(mm)
320-5187-5 RA	TF2-001-SB1006-0204 RA	01/14/2014 16:51	1	14ja1411d2_009.d	DB-225 0.32(mm)
320-5187-6 RA	TF2-001-SS1005-0001 RA	01/14/2014 17:30	1	14ja1411d2_010.d	DB-225 0.32(mm)
320-5187-7 RA	TF2-001-SB1005-0204 RA	01/14/2014 18:09	1	14ja1411d2_011.d	DB-225 0.32(mm)
320-5187-8 RA	TF2-001-SS1010-0001 RA	01/14/2014 18:47	1	14ja1411d2_012.d	DB-225 0.32(mm)
320-5187-9 RA	TF2-001-SB1010-0204 RA	01/14/2014 19:26	1	14ja1411d2_013.d	DB-225 0.32(mm)
ZZZZZ		01/14/2014 20:05	1		DB-225 0.32(mm)
CCV 320-33916/15		01/14/2014 20:44	1	14ja1411d2_015.d	DB-225 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID: CCV 320-33916/2 Calibration Date: 01/14/2014 12:19

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 14ja1411d2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.242		9.97	10.0	-0.3	20.0
2,3,7,8-TCDF	AveID	1.134	1.132		9.99	10.0	-0.1	20.0
13C-2,3,7,8-TCDD	Ave	0.9709	1.077		111	100	10.9	30.0
13C-2,3,7,8-TCDF	Ave	1.683	1.801		107	100	7.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.745		5.52	5.00	10.5	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID: CCV 320-33916/15 Calibration Date: 01/14/2014 20:44

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 14ja1411d2_015.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.248		10.0	10.0	0.1	20.0
2,3,7,8-TCDF	AveID	1.134	1.085		9.57	10.0	-4.3	20.0
13C-2,3,7,8-TCDD	Ave	0.9709	1.074		111	100	10.6	30.0
13C-2,3,7,8-TCDF	Ave	1.683	1.766		105	100	4.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.641		5.19	5.00	3.9	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Instrument ID: 11D5 Start Date: 01/14/2014 21:55

Analysis Batch Number: 33933 End Date: 01/15/2014 04:24

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-33933/1		01/14/2014 21:55	1	14ja14a11d2_001.d	DB-225 0.32(mm)
CCV 320-33933/2		01/14/2014 22:34	1	14ja14a11d2_002.d	DB-225 0.32(mm)
ZZZZZ		01/14/2014 23:12	1		DB-225 0.32(mm)
320-5187-2 RA	TF2-001-SB1000-0204 RA	01/14/2014 23:51	1	14ja14a11d2_004.d	DB-225 0.32(mm)
320-5187-3 RA	TF2-001-SB1000-0810 RA	01/15/2014 00:30	1	14ja14a11d2_005.d	DB-225 0.32(mm)
320-5187-4 RA	TF2-001-SS1006-0001 RA	01/15/2014 01:09	1	14ja14a11d2_006.d	DB-225 0.32(mm)
320-5187-10 RA	TF2-SB-DUP11-1113 RA	01/15/2014 01:48	1	14ja14a11d2_007.d	DB-225 0.32(mm)
320-5187-9 MS RA	TF2-001-SB1010-0204 MS RA	01/15/2014 02:27	1	14ja14a11d2_008.d	DB-225 0.32(mm)
320-5187-9 MSD RA	TF2-001-SB1010-0204 MSD RA	01/15/2014 03:06	1	14ja14a11d2_009.d	DB-225 0.32(mm)
ZZZZZ		01/15/2014 03:45	1		DB-225 0.32(mm)
CCV 320-33933/11		01/15/2014 04:24	1	14ja14a11d2_011.d	DB-225 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID: CCV 320-33933/2 Calibration Date: 01/14/2014 22:34

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 14ja14a11d2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.207		9.68	10.0	-3.2	20.0
2,3,7,8-TCDF	AveID	1.134	1.192		10.5	10.0	5.2	20.0
13C-2,3,7,8-TCDD	Ave	0.9709	1.073		111	100	10.5	30.0
13C-2,3,7,8-TCDF	Ave	1.683	1.708		101	100	1.5	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.678		5.31	5.00	6.2	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab Sample ID: CCV 320-33933/11 Calibration Date: 01/15/2014 04:24

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 14ja14a11d2_011.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.210		9.71	10.0	-2.9	20.0
2,3,7,8-TCDF	AveID	1.134	1.211		10.7	10.0	6.8	20.0
13C-2,3,7,8-TCDD	Ave	0.9709	1.043		107	100	7.5	30.0
13C-2,3,7,8-TCDF	Ave	1.683	1.780		106	100	5.8	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.681		5.32	5.00	6.4	

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab File ID: 30DE133D5_56.d Lab Sample ID: MB 320-31183/1-A

Matrix: Solid Date Extracted: 12/05/2013 11:25

Instrument ID: 3D5 Date Analyzed: 01/01/2014 02:23

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-31183/2-A	30DE133D5_57.d	01/01/2014 03:05
TF2-001-SB1005-0204	320-5187-7	30DE133D5_58.d	01/01/2014 03:47
TF2-001-SS1010-0001	320-5187-8	30DE133D5_59.d	01/01/2014 04:28
TF2-001-SB1010-0204	320-5187-9	30DE133D5_60.d	01/01/2014 05:10
TF2-001-SB1010-0204 MS	320-5187-9 MS	30DE133D5_61.d	01/01/2014 05:52
TF2-001-SB1010-0204 MSD	320-5187-9 MSD	30DE133D5_62.d	01/01/2014 06:34
TF2-SB-DUP11-1113	320-5187-10	30DE133D5_63.d	01/01/2014 07:16
TF2-001-SS1000-0001	320-5187-1	03JA143D5_33.d	01/04/2014 11:39
TF2-001-SB1000-0204	320-5187-2	03JA143D5_34.d	01/04/2014 12:21
TF2-001-SB1000-0810	320-5187-3	03JA143D5_35.d	01/04/2014 13:03
TF2-001-SS1006-0001	320-5187-4	03JA143D5_36.d	01/04/2014 13:45
TF2-001-SB1006-0204	320-5187-5	03JA143D5_37.d	01/04/2014 14:26
TF2-001-SS1005-0001	320-5187-6	03JA143D5_38.d	01/04/2014 15:08
TF2-001-SB1000-0810 DL	320-5187-3 DL	07JA143D5_53.d	01/09/2014 04:07
TF2-001-SS1006-0001 DL	320-5187-4 DL	07JA143D5_54.d	01/09/2014 04:48
TF2-001-SB1006-0204 DL	320-5187-5 DL	07JA143D5_55.d	01/09/2014 05:30
TF2-001-SS1010-0001 DL	320-5187-8 DL	07JA143D5_56.d	01/09/2014 06:12
TF2-001-SB1010-0204 DL	320-5187-9 DL	07JA143D5_57.d	01/09/2014 06:54
TF2-001-SB1010-0204 MS DL	320-5187-9 MS DL	07JA143D5_58.d	01/09/2014 07:36
TF2-001-SB1010-0204 MSD DL	320-5187-9 MSD DL	07JA143D5_59.d	01/09/2014 08:17
TF2-001-SS1000-0001 RA	320-5187-1 RA	14ja1411d2_005.d	01/14/2014 14:15
TF2-001-SB1006-0204 RA	320-5187-5 RA	14ja1411d2_009.d	01/14/2014 16:51

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Lab File ID: 30DE133D5_56.d Lab Sample ID: MB 320-31183/1-A

Matrix: Solid Date Extracted: 12/05/2013 11:25

Instrument ID: 3D5 Date Analyzed: 01/01/2014 02:23

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-001-SS1005-0001 RA	320-5187-6 RA	14ja1411d2_010.d	01/14/2014 17:30
TF2-001-SB1005-0204 RA	320-5187-7 RA	14ja1411d2_011.d	01/14/2014 18:09
TF2-001-SS1010-0001 RA	320-5187-8 RA	14ja1411d2_012.d	01/14/2014 18:47
TF2-001-SB1010-0204 RA	320-5187-9 RA	14ja1411d2_013.d	01/14/2014 19:26
TF2-001-SB1000-0204 RA	320-5187-2 RA	14ja14a11d2_004.d	01/14/2014 23:51
TF2-001-SB1000-0810 RA	320-5187-3 RA	14ja14a11d2_005.d	01/15/2014 00:30
TF2-001-SS1006-0001 RA	320-5187-4 RA	14ja14a11d2_006.d	01/15/2014 01:09
TF2-SB-DUP11-1113 RA	320-5187-10 RA	14ja14a11d2_007.d	01/15/2014 01:48
TF2-001-SB1010-0204 MS RA	320-5187-9 MS RA	14ja14a11d2_008.d	01/15/2014 02:27
TF2-001-SB1010-0204 MSD RA	320-5187-9 MSD RA	14ja14a11d2_009.d	01/15/2014 03:06

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5187-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-31183/1-A

Matrix: Solid | Lab File ID: 30DE133D5_56.d

Analysis Method: 8290A | Date Collected:

Extract. Method: 8290 | Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10(g) | Date Analyzed: 01/01/2014 02:23

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33076 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.018
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.014
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.024
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.020
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.021
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.022
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.016
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.016
70648-26-9	1,2,3,4,7,8-HxCDF	ND		5.0	0.019
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.014
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.018
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.016
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.0571	J	5.0	0.023
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.195	J	5.0	0.019
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.022
3268-87-9	OCDD	0.437	J	10	0.036
39001-02-0	OCDF	0.189	J	10	0.041
41903-57-5	Total TCDD	ND		1.0	0.018
30402-14-3	Total TCDF	ND		1.0	0.014
36088-22-9	Total PeCDD	ND		5.0	0.024
30402-15-4	Total PeCDF	ND		5.0	0.021
34465-46-8	Total HxCDD	ND		5.0	0.022
55684-94-1	Total HxCDF	ND		5.0	0.019
37871-00-4	Total HpCDD	0.0571	J	5.0	0.023
38998-75-3	Total HpCDF	0.195	J	5.0	0.020

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-31183/1-A

Matrix: Solid Lab File ID: 30DE133D5_56.d

Analysis Method: 8290A Date Collected:

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10(g) Date Analyzed: 01/01/2014 02:23

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 33076 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	68		40-135
89059-46-1	13C-2,3,7,8-TCDF	62		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	66		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	65		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	69		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	80		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	77		40-135
114423-97-1	13C-OCDD	73		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 30DE133D5_57.d

Lab ID: LCS 320-31183/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	19.8	99	77-130	
2,3,7,8-TCDF	20.0	20.3	101	79-137	
1,2,3,7,8-PeCDD	100	102	102	79-134	
1,2,3,7,8-PeCDF	100	104	104	81-134	
2,3,4,7,8-PeCDF	100	103	103	76-132	
1,2,3,4,7,8-HxCDD	100	118	118	65-144	
1,2,3,6,7,8-HxCDD	100	104	104	73-147	
1,2,3,7,8,9-HxCDD	100	110	110	80-143	
1,2,3,4,7,8-HxCDF	100	113	113	72-140	
1,2,3,6,7,8-HxCDF	100	102	102	63-152	
1,2,3,7,8,9-HxCDF	100	106	106	72-152	
2,3,4,6,7,8-HxCDF	100	107	107	72-151	
1,2,3,4,6,7,8-HpCDD	100	102	102	86-134	
1,2,3,4,6,7,8-HpCDF	100	104	104	81-137	
1,2,3,4,7,8,9-HpCDF	100	103	103	79-139	
OCDD	200	214	107	80-137	
OCDF	200	202	101	75-141	
13C-2,3,7,8-TCDD	200	125	63	40-135	
13C-2,3,7,8-TCDF	200	118	59	40-135	
13C-1,2,3,7,8-PeCDD	200	121	60	40-135	
13C-1,2,3,7,8-PeCDF	200	119	59	40-135	
13C-1,2,3,6,7,8-HxCDD	200	128	64	40-135	
13C-1,2,3,4,7,8-HxCDF	200	134	67	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	154	77	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	143	72	40-135	
13C-OCDD	400	274	69	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 30DE133D5_61.d

Lab ID: 320-5187-9 MS Client ID: TF2-001-SB1010-0204 MS

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	22.5	ND	23.9	106	77-130	
1,2,3,7,8-PeCDD	113	ND	117	104	79-134	
1,2,3,7,8-PeCDF	113	0.15 J	119	106	81-134	
2,3,4,7,8-PeCDF	113	0.11 J	122	108	76-132	
1,2,3,4,7,8-HxCDD	113	0.19 J	141	125	65-144	
1,2,3,6,7,8-HxCDD	113	0.38 J	121	107	73-147	
1,2,3,7,8,9-HxCDD	113	0.41 J	128	113	80-143	
1,2,3,4,7,8-HxCDF	113	0.31 J	128	113	72-140	
1,2,3,6,7,8-HxCDF	113	0.48 J	125	111	63-152	
1,2,3,7,8,9-HxCDF	113	ND	120	107	72-152	
2,3,4,6,7,8-HxCDF	113	0.17 J	123	109	72-151	
1,2,3,4,6,7,8-HpCDD	113	28	160	117	86-134	
1,2,3,4,6,7,8-HpCDF	113	1.5 J	123	107	81-137	
1,2,3,4,7,8,9-HpCDF	113	ND	120	107	79-139	
OCDF	225	2.4 J	235	103	75-141	
13C-2,3,7,8-TCDD	225	140	135	60	40-135	
13C-2,3,7,8-TCDF	225	130	130	58	40-135	
13C-1,2,3,7,8-PeCDD	225	127	139	62	40-135	
13C-1,2,3,7,8-PeCDF	225	126	136	60	40-135	
13C-1,2,3,6,7,8-HxCDD	225	130	139	62	40-135	
13C-1,2,3,4,7,8-HxCDF	225	132	142	63	40-135	
13C-1,2,3,4,6,7,8-HpCDD	225	155	164	73	40-135	
13C-1,2,3,4,6,7,8-HpCDF	225	147	157	70	40-135	
13C-OCDD	451	343	352	78	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 30DE133D5_62.d

Lab ID: 320-5187-9 MSD Client ID: TF2-001-SB1010-0204 MSD

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	22.5	23.7	105	1	20	77-130	
1,2,3,7,8-PeCDD	113	116	103	1	20	79-134	
1,2,3,7,8-PeCDF	113	120	107	1	20	81-134	
2,3,4,7,8-PeCDF	113	120	106	2	20	76-132	
1,2,3,4,7,8-HxCDD	113	133	118	5	20	65-144	
1,2,3,6,7,8-HxCDD	113	124	110	2	20	73-147	
1,2,3,7,8,9-HxCDD	113	126	112	1	20	80-143	
1,2,3,4,7,8-HxCDF	113	126	112	1	20	72-140	
1,2,3,6,7,8-HxCDF	113	116	102	8	20	63-152	
1,2,3,7,8,9-HxCDF	113	118	105	2	20	72-152	
2,3,4,6,7,8-HxCDF	113	120	106	2	20	72-151	
1,2,3,4,6,7,8-HpCDD	113	155	113	4	20	86-134	
1,2,3,4,6,7,8-HpCDF	113	124	108	1	20	81-137	
1,2,3,4,7,8,9-HpCDF	113	118	105	2	20	79-139	
OCDF	225	224	98	5	20	75-141	
13C-2,3,7,8-TCDD	225	148	66			40-135	
13C-2,3,7,8-TCDF	225	142	63			40-135	
13C-1,2,3,7,8-PeCDD	225	153	68			40-135	
13C-1,2,3,7,8-PeCDF	225	149	66			40-135	
13C-1,2,3,6,7,8-HxCDD	225	156	69			40-135	
13C-1,2,3,4,7,8-HxCDF	225	164	73			40-135	
13C-1,2,3,4,6,7,8-HpCDD	225	187	83			40-135	
13C-1,2,3,4,6,7,8-HpCDF	225	173	77			40-135	
13C-OCDD	450	393	87			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 14ja14a11d2_008.d

Lab ID: 320-5187-9 MS RA Client ID: TF2-001-SB1010-0204 MS RA

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDF	22.5		24.7			
13C-2,3,7,8-TCDF	225		143			

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 14ja14a11d2_009.d

Lab ID: 320-5187-9 MSD RA Client ID: TF2-001-SB1010-0204 MSD RA

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDF	22.5	24.6					
13C-2,3,7,8-TCDF	225	153					

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 07JA143D5_58.d

Lab ID: 320-5187-9 MS DL Client ID: TF2-001-SB1010-0204 MS DL

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
OCDD	225	4900	5530	284	80-137	4
13C-OCDD	451	280	310	69	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 07JA143D5_59.d

Lab ID: 320-5187-9 MSD DL Client ID: TF2-001-SB1010-0204 MSD DL

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
OCDD	225	5140	110	7	20	80-137	4
13C-OCDD	450	336	75			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Batch Number: 31183 Batch Start Date: 12/05/13 11:25 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/06/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ExtractionID	RotoVapID	HRDXNIDA 00105	HRDXNIS 00040
MB 320-31183/1		8290, 8290A		10 g	20 uL	B1	9	1 mL	20 uL
LCS 320-31183/2		8290, 8290A		10 g	20 uL	B2-56	2	1 mL	20 uL
320-5187-A-1	TF2-001-SS1000-0001	8290, 8290A	T	10.17 g	20 uL	B3	9	1 mL	20 uL
320-5187-A-2	TF2-001-SB1000-0204	8290, 8290A	T	10.35 g	20 uL	B441	2	1 mL	20 uL
320-5187-A-3	TF2-001-SB1000-0810	8290, 8290A	T	10.16 g	20 uL	B5-35	9	1 mL	20 uL
320-5187-A-4	TF2-001-SS1006-0001	8290, 8290A	T	10.01 g	20 uL	B6-70	2	1 mL	20 uL
320-5187-A-5	TF2-001-SB1006-0204	8290, 8290A	T	10.12 g	20 uL	C1-71	9	1 mL	20 uL
320-5187-A-6	TF2-001-SS1005-0001	8290, 8290A	T	10.22 g	20 uL	C2-5	2	1 mL	20 uL
320-5187-A-7	TF2-001-SB1005-0204	8290, 8290A	T	10.09 g	20 uL	C3	9	1 mL	20 uL
320-5187-A-8	TF2-001-SS1010-0001	8290, 8290A	T	10.14 g	20 uL	C4	2	1 mL	20 uL
320-5187-A-9	TF2-001-SB1010-0204	8290, 8290A	T	10.29 g	20 uL	C5-18	9	1 mL	20 uL
320-5187-A-9 MS	TF2-001-SB1010-0204	8290, 8290A	T	10.01 g	20 uL	C6-97	2	1 mL	20 uL
320-5187-A-9 MSD	TF2-001-SB1010-0204	8290, 8290A	T	10.02 g	20 uL	D1	9	1 mL	20 uL
320-5187-A-10	TF2-SB-DUP11-1113	8290, 8290A	T	9.99 g	20 uL	D2	2	1 mL	20 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNSU 00061	HRDXNTA 00027				
MB 320-31183/1		8290, 8290A		1 mL					
LCS 320-31183/2		8290, 8290A		1 mL	50 uL				
320-5187-A-1	TF2-001-SS1000-0001	8290, 8290A	T	1 mL					
320-5187-A-2	TF2-001-SB1000-0204	8290, 8290A	T	1 mL					
320-5187-A-3	TF2-001-SB1000-0810	8290, 8290A	T	1 mL					
320-5187-A-4	TF2-001-SS1006-0001	8290, 8290A	T	1 mL					
320-5187-A-5	TF2-001-SB1006-0204	8290, 8290A	T	1 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Batch Number: 31183 Batch Start Date: 12/05/13 11:25 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/06/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNSU 00061	HRDXNTA 00027				
320-5187-A-6	TF2-001-SS1005-0001	8290, 8290A	T	1 mL					
320-5187-A-7	TF2-001-SB1005-0204	8290, 8290A	T	1 mL					
320-5187-A-8	TF2-001-SS1010-0001	8290, 8290A	T	1 mL					
320-5187-A-9	TF2-001-SB1010-0204	8290, 8290A	T	1 mL					
320-5187-A-9 MS	TF2-001-SB1010-0204	8290, 8290A	T	1 mL	50 uL				
320-5187-A-9 MSD	TF2-001-SB1010-0204	8290, 8290A	T	1 mL	50 uL				
320-5187-A-10	TF2-SB-DUP11-1113	8290, 8290A	T	1 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Batch Number: 31183 Batch Start Date: 12/05/13 11:25 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/06/13 15:00

Batch Notes	
20% DCM:Hexane	4022-119C mL
65% DCM:Hexane	4022-120C mL
Acid Alumina	32
Balance ID	QA-074
C14	MEL 12/06/13
Hexane Lot#	0000056763 mL
IPB Clean Up	MEL 12/06/13
Na2SO4 Lot Number	0000055053
IDA Reagent Drop	GDB 12/05/13
IDA Reagent Drop Witness	DXD 12/05/13
IS Reagent Drop	TGL 12/06/13
IS Reagent Drop Witness	GDB 12/06/13
SU Reagent Drop	MEL 12/06/13
SU Reagent Drop Witness	TGL 12/06/13
TA Reagent Drop	GDB 12/05/13
TA Reagent Drop Witness	DXD 12/05/13
Silica Gel Lot Number	4022-120F
Soxhlet/Soxtherm End	17:15
Soxhlet/Soxtherm Start	14:15
Storage Box	EPA-38
Toluene Lot #	0000054726 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT		JOB NUMBER	
Navsta Newport			
SUBJECT	PCDD/PCDF		
BASED ON	8290A	DRAWING NUMBER	
BY	CHECKED BY	APPROVED BY	DATE
EWS			

TF2-001-551005-0001

2,3,7,8-TCDF = 0.33 ng/kg

$$\frac{88867 \times 100 \times 1 \times 20}{554\,56592 \times 1.1338 \times 10.22 \times 0.835} = 0.33 \text{ ng/kg}$$

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5187-1

SDG No.:

Client Sample ID: TF2-001-SS1005-0001 RA Lab Sample ID: 320-5187-6 RA

Matrix: Solid Lab File ID: 14ja1411d2_010.d

Analysis Method: 8290A Date Collected: 11/27/2013 09:15

Extract. Method: 8290 Date Extracted: 12/05/2013 11:25

Sample wt/vol: 10.22(g) Date Analyzed: 01/14/2014 17:30

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 16.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33916 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.33	J	1.2	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	74		40-135

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\Sacchrom\ChromData\11D5\20140114-9893.b\14ja1411d2_010.d
Lims ID: 320-5187-A-6-A Lab Sample ID: 320-5187-6
Client ID: TF2-001-SS1005-0001
Sample Type: Client
Inject. Date: 14-Jan-2014 17:30:13 ALS Bottle#: 0 Worklist Smp#: 10
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-31183
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D5

Method: \\Sacchrom\ChromData\11D5\20140114-9893.b\DXN_DB225_11D2.m
Limit Group: HR - 8290A - ICAL
Last Update: 15-Jan-2014 09:07:45 Calib Date: 19-Dec-2013 21:20:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\Sacchrom\ChromData\11D5\20131223-9430.b\19DE1311D2_007.d

Column 1 : DB-225 (0.32 mm) Detector F1:HRSIR
Process Host: XAWRK010

First Level Reviewer: barnettj Date: 15-Jan-2014 09:06:30

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.524	44757557	0.81	1.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.705	55456592	0.85	1.6831	73.6	73.6	0.2122	0.2122	73.62	
2,3,7,8-TCDF	16.732	88867	0.87	1.1338	0.1413	0.1413	0.0472	0.0472		
D 13C-2,3,7,8-TCDD	15.319	33130502	0.82	0.9709	76.2	76.2	0.2284	0.2284	76.24	
$ 37Cl4-2,3,7,8-TCDD	15.319	12573853		1.5800	17.8	17.8	0.0366	0.0366	44.45	
2,3,7,8-TCDD	15.588						0.0715	0.0715		

Tetra Tech INC **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 13, 2014**

FROM: **A. COGNETTI** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – SELECT VOC / PAH / GRO / PRO**
NAVSTA NEWPORT, CTO WE30
SAMPLE DELIVERY GROUP (SDG) – SG9314

SAMPLES: 2 / Aqueous/VOC/TPH

TF2-SB-RB05-1113	TF2-W-TB05-1113	

13 / Soil/PAH

TF2-001-SB1001-0204	TF2-001-SB1001-0810	TF2-001-SB1002-0204
TF2-001-SB1002-0405	TF2-001-SB1003-0204	TF2-001-SS1001-0001
TF2-001-SS1002-0001	TF2-001-SS1003-0001	TF2-003-SB1013-0204
TF2-003-SB1013-0405	TF2-003-SB1019-0204	TF2-003-SB1019-0810
TF2-SB-DUP09-1113		

1/Aqueous/PAH

TF2-SB-RB05-1113

3/Soil/EPH/TPH

TF2-001-SS1003-0001	TF2-003-SB1019-0810	TF2-SB-DUP09-1113

1/Aqueous/EPH

TF2-SB-RB05-1113

OVERVIEW

The sample set for Naval Station Newport, CTO WE30, SDG SG9314 consisted of one (1) rinse blank sample and one (1) trip blank sample analyzed for volatile organic compounds (VOCs). Thirteen (13) soil environmental samples and the rinsate blank were analyzed for polynuclear aromatic hydrocarbons (PAH). Three (3) soil environmental samples were analyzed for Gasoline Range Organics (GRO) (TPH C05-C12) and Petroleum Range Organics (PRO) (EPH C08-C44). The rinsate blank was analyzed for PRO and GRO. The trip blank was analyzed for GRO. There is one (1) field duplicate sample pair included in this SDG); TF2-SB-DUP09-1113/TF2-001-SS1003-0001.

The samples were collected by Tetra Tech on November 22 and 25, 2013 and analyzed by Katahdin Analytical Services, Inc. All analyses were conducted in accordance with EPA SW-846 Methods 8260B for VOCs, 8270C Selective Ion-Monitoring (SIM) for PAHs, 8011 for 1,2-dibromoethane for the aqueous samples, 8015C for GRO (TPH C05-C12), and FL-PRO for PRO (EPH C08-C44), analytical and reporting protocols.

The data was evaluated based on the following parameters:

* • Data Completeness
• Holding Times
* • GC/MS Instrument Tuning and System Performance
• Initial and Continuing Calibration
• Blank Results
• Blank Spike/Blank Spike Duplicate Results
• Matrix Spike/Matrix Spike Duplicate Recoveries
• Surrogate Spike Recoveries
• Internal Standard Recoveries
• Field Duplicate Precision
* • Compound Identification and Quantification
* • Detection Limits

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report. The text of this report has been formulated to address only those problem areas affecting data quality.

HOLD TIME

Samples analyzed for 1,2-dibromoethane were extracted and analyzed one day outside of hold time. The nondetected 1,2-dibromoethane results were qualified as estimated (UJ).

BLANKS

The following VOC analytes were detected in the trip blank and rinse blank samples at the maximum concentration as indicated below.

Analyte	Maximum Concentration (ug/L)	Action Level (ug/L)
Acetone [1]	21	210
2-Butanone [1]	7.7	77

[1] Rinse blank sample TF2-SB-RB05-1113.

No environmental samples were included in this SDG for VOC analysis. No action was taken.

The rinsate blank contained 860 ug/L EPH (C8-C44). No action was taken on the environmental samples.

CALIBRATIONS – INITIAL AND CONTINUING

The VOC initial calibration percent relative standard deviation (%RSD) was greater than the 15% quality control limit for acetone for instrument GCMS-S on 11/21/13. The detected acetone results were qualified as estimated (J) in the affected samples.

The VOC continuing calibration verification (CCV) percent differences (%D) were greater than the 20% quality control limit for carbon disulfide, cyclohexane, and methyl acetate on 12/03/13 @ 08:52 on

instrument GCMS-S. The nondetected carbon disulfide, cyclohexane, and methyl acetate results were qualified as estimated (UJ) in the affected samples.

The PAH CCV %D for pyrene was greater than the 20% quality control limit on December 16, 2013 @ 11:10 on instrument GCMS-G. The detected pyrene results were qualified as estimated (J) in the affected samples TF2-001-SB1001-0204, TF2-001-SS1003-0001, TF2-003-SB1013-0405, TF2-003-SB1019-0204 and TF2-003-SB1019-0810.

LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE (LCS/LCSD)

The VOC LCS percent recovery (%R) of methyl acetate was less than the quality control limit in batch WG135476. The nondetected methyl acetate results were qualified as estimated (UJ) in the affected samples.

The PAH LCS/LCSD %Rs of pyrene were less than the lower quality control limit in batch WG135250 affecting the sample TF2-SB-RB05-1113. The nondetected pyrene result was qualified as estimated (UJ). In addition, The LCSD %R of anthracene was less than the lower quality control limit and the relative percent difference (RPD) was greater than the quality control limit. The nondetected anthracene result was qualified as estimated (UJ).

Several LCSD %Rs and RPDs were outside quality control limits in batch WG135526 affecting the soil samples.

Analyte	LCS %R	LCSD %R	RPD	Validation Action
Benzo(b)fluoranthene	Ok	Ok	>UL	No action
Benzo(k)fluoranthene	Ok	Ok	>UL	No action
Benzo(a)pyrene	Ok	<LL	>UL	J, UJ
Indeno(1,2,3-cd)pyrene	Ok	<LL	Ok	No action
Dibenzo(a,h)anthracene	Ok	<LL	>UL	J, UJ
Benzo(g,h,i)perylene	Ok	<LL	>UL	J, UJ

MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

The MS/MSD %Rs of benzo(a)pyrene and benzo(g,h,i)perylene were less than the lower quality control limit in samples TF2-001-SS1001-0001 and TF2-001-SS1003-0001. The detected benzo(a)pyrene and benzo(g,h,i)perylene results were qualified as estimated (J) in samples TF2-001-SS1001-0001 and TF2-001-SS1003-0001.

SURROGATE SPIKE RECOVERIES

Sample TF2-003-SB1019-0204 in the original analysis had a surrogate recovery of pyrene-d10 greater than the upper quality control limit. No action was taken on the single surrogate recovery noncompliance.

INTERNAL STANDARDS

Several sample had internal standard areas outside quality control limits in the PAH fraction.

Sample	Internal Standard Noncompliant	Validation Action
TF2-003-SB1019-0204 (original)	Phenanthrene-d10, chrysene-d12, perylene-d12 >UL	J

TF2-003-SB1019-0810	Perylene-d12 >UL	J
TF2-001-SS1001-0001	Perylene-d12 >UL	J, UJ
TF2-001-SB1001-0204	Perylene-d12 >UL	J, UJ
TF2-001-SS1003-0001	Perylene-d12 >UL	J
TF2-003-SB1019-0204 (diluted)	Perylene-d12 >UL	No action
TF2-003-SB1013-0405-RA	Chrysene-d12 and perylene-d12 >UL	J
TF2-003-SB1019-0810-RA	Perylene-d12 >UL	Use original results for reporting and validation purposes
TF2-001-SB1001-0204-RA	Perylene-d12 >UL	Use original results for reporting and validation purposes
TF2-001-SS1003-0001-RA	Chrysene-d12 and perylene-d12 >UL	Use original results for reporting and validation purposes

FIELD DUPLICATE PRECISION

Field duplicate imprecision was noted in several analytes in the PAH fraction for the field duplicate pair TF2-SB-DUP09-1113/TF2-001-SS1003-0001. The RPDs were greater than the 50% quality control limit for benzo(a)anthracene, benzo(b)fluoranthene, chrysene, fluoranthene,phenanthrene and pyrene. The detected benzo(a)anthracene, benzo(b)fluoranthene, chrysene, fluoranthene,phenanthrene and pyrene results were qualified as estimated (J) in the field duplicate pair.

ADDITIONAL COMMENTS

Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J).

Sample TF2-003-SB1019-0204 was analyzed for PAHs both undiluted and diluted 4X. Only the PAH analytes that exceeded the highest standard in the undiluted sample analysis were reported from the dilution analysis.

PRO sample results were reported as EPH (C08-C44) in the electronic database (EDD).

GRO sample results were reported as TPH (C05-C12) in the EDD.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: 1,2-Dibromoethane results were qualified for hold time non-compliances. VOC results were qualified for initial calibration RSD non-compliances. VOC and PAH sample results were qualified for CCV %D quality control limit non-compliances. VOC and PAH analyte results were qualified for LCS/LCSD %R quality control limit non-compliances. Sample PAH results were qualified for MS/MSD %R non-compliances. Sample PAH results were qualified for internal standard recovery non-compliances.

Other Factors Affecting Data Quality: Positive results reported below the limit of quantitation (LOQ) but above the method detection limit were qualified as estimated, (J). Field duplicate imprecision was noted in the PAH fraction. Rinsate blank and trip blank contained contaminants.

The data for these analyses were reviewed with reference to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Guidance/Procedures Attachment 2-3b: Example Organic Data Review Worksheets (1/13), and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Ann Cognetti

Tetra Tech
Ann Cognetti
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-SB-RB05-1113			TF2-W-TB05-1113		
SDG: SG9314	LAB_ID	SG9314-14			SG9314-15		
FRACTION: OV	SAMP_DATE	11/25/2013			11/25/2013		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,4-TRIMETHYLBENZENE		0.5	U		0.5	U	
1,2-DIBROMOETHANE		0.024	UJ	H	0.025	UJ	H
1,3,5-TRIMETHYLBENZENE		0.5	U		0.5	U	
2-BUTANONE		7.7			2.5	U	
2-HEXANONE		2.5	U		2.5	U	
4-ISOPROPYLTOLUENE		0.5	U		0.5	U	
4-METHYL-2-PENTANONE		2.5	U		2.5	U	
ACETONE		21	J	C	6.7	J	C
BENZENE		0.5	U		0.5	U	
BROMOFORM		0.5	U		0.5	U	
BROMOMETHANE		1	U		1	U	
CARBON DISULFIDE		0.5	UJ	C	0.5	UJ	C
CYCLOHEXANE		0.5	UJ	C	0.5	UJ	C
ETHYLBENZENE		0.5	U		0.5	U	
ISOPROPYLBENZENE		0.5	U		0.5	U	
M+P-XYLENES		1	U		1	U	
METHYL ACETATE		0.75	UJ	CE	0.75	UJ	CE
METHYL CYCLOHEXANE		0.5	U		0.5	U	
METHYL TERT-BUTYL ETHER		0.5	U		0.5	U	
NAPHTHALENE		0.5	U		0.5	U	
N-BUTYLBENZENE		0.5	U		0.5	U	
N-PROPYLBENZENE		0.5	U		0.5	U	
O-XYLENE		0.5	U		0.5	U	
SEC-BUTYLBENZENE		0.5	U		0.5	U	
STYRENE		0.5	U		0.5	U	
TERT-BUTYLBENZENE		0.5	U		0.5	U	
TOLUENE		0.5	U		0.5	U	
TOTAL XYLENES		1.5	U		1.5	U	

PROJ_NO: 03019	NSAMPLE	TF2-SB-RB05-1113
SDG: SG9314	LAB_ID	SG9314-14RA
FRACTION: PAH	SAMP_DATE	11/25/2013
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE	0.094	U	
ACENAPHTHENE	0.094	U	
ACENAPHTHYLENE	0.094	U	
ANTHRACENE	0.094	UJ	E
BENZO(A)ANTHRACENE	0.094	U	
BENZO(A)PYRENE	0.094	U	
BENZO(B)FLUORANTHENE	0.094	U	
BENZO(G,H,I)PERYLENE	0.094	U	
BENZO(K)FLUORANTHENE	0.094	U	
CHRYSENE	0.073	J	P
DIBENZO(A,H)ANTHRACENE	0.094	U	
FLUORANTHENE	0.094	U	
FLUORENE	0.094	U	
INDENO(1,2,3-CD)PYRENE	0.094	U	
NAPHTHALENE	0.094	U	
PHENANTHRENE	0.094	U	
PYRENE	0.094	UJ	D

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1001-0204	TF2-001-SB1001-0810	TF2-001-SB1002-0204	TF2-001-SB1002-0405
SDG: SG9314	LAB_ID	SG9314-6	SG9314-7	SG9314-9	SG9314-10
FRACTION: PAH	SAMP_DATE	11/25/2013	11/25/2013	11/25/2013	11/25/2013
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM
	UNITS	UG/KG	UG/KG	UG/KG	UG/KG
	PCT_SOLIDS	89.5	92.2	88.3	86.1
	DUP_OF				

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE	11	U		11	U		11	U		11	U	
ACENAPHTHENE	11	U		11	U		11	U		11	U	
ACENAPHTHYLENE	11	U		11	U		11	U		11	U	
ANTHRACENE	11	U		11	U		11	U		11	U	
BENZO(A)ANTHRACENE	5.5	J	P	11	U		3.6	J	P	5.5	J	P
BENZO(A)PYRENE	4.2	J	ENP	11	UJ	E	11	UJ	E	5.2	J	EP
BENZO(B)FLUORANTHENE	6.5	J	NP	11	U		5.1	J	P	7.5	J	P
BENZO(G,H,I)PERYLENE	2.2	UJ	EN	11	UJ	E	2.3	J	EP	3.6	J	EP
BENZO(K)FLUORANTHENE	11	UJ	N	11	U		4.3	J	P	5.6	J	P
CHRYSENE	6.2	J	P	2.7	J	P	6.1	J	P	8.4	J	P
DIBENZO(A,H)ANTHRACENE	11	UJ	EN	11	UJ	E	11	UJ	E	11	UJ	E
FLUORANTHENE	9.4	J	P	11	U		8	J	P	10	J	P
FLUORENE	11	U		11	U		11	U		11	U	
INDENO(1,2,3-CD)PYRENE	3	J	P	11	U		2.5	J	P	4.1	J	P
NAPHTHALENE	11	U		11	U		11	U		11	U	
PHENANTHRENE	4.6	J	P	11	U		2.7	J	P	4.6	J	P
PYRENE	8	J	P	11	U		5.3	J	P	8.2	J	P

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1003-0204			TF2-001-SS1001-0001			TF2-001-SS1002-0001			TF2-001-SS1003-0001		
SDG: SG9314	LAB_ID	SG9314-12			SG9314-5			SG9314-8			SG9314-11		
FRACTION: PAH	SAMP_DATE	11/25/2013			11/25/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.7			90.1			89.8			89.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		11	U		11	U		11	U		11	U	
ACENAPHTHENE		11	U		11	U		11	U		11	U	
ACENAPHTHYLENE		11	U		11	U		11	U		11	U	
ANTHRACENE		2.3	J	P	11	U		2.8	J	P	11	U	
BENZO(A)ANTHRACENE		16	J	P	5.2	J	P	15	J	P	24	J	G
BENZO(A)PYRENE		13	J	EP	4.2	J	DENP	12	J	EP	20	J	DENP
BENZO(B)FLUORANTHENE		16	J	P	6.5	J	NP	18	J	P	28	J	GN
BENZO(G,H,I)PERYLENE		8	J	EP	2.7	J	ENP	7	J	EP	10	J	ENP
BENZO(K)FLUORANTHENE		12	J	P	11	UJ	N	12	J	P	19	J	NP
CHRYSENE		16	J	P	6.4	J	P	16	J	P	22	J	GP
DIBENZO(A,H)ANTHRACENE		2.5	J	EP	11	UJ	EN	3.5	J	EP	3.7	J	ENP
FLUORANTHENE		32			8.4	J	P	35			28	J	G
FLUORENE		11	U		11	U		11	U		11	U	
INDENO(1,2,3-CD)PYRENE		8.7	J	P	3.2	J	P	7.5	J	P	13	J	P
NAPHTHALENE		11	U		11	U		11	U		11	U	
PHENANTHRENE		11	J	P	3.1	J	P	17	J	P	3.9	J	GP
PYRENE		21	J	P	6.9	J	P	22	J	P	20	J	P

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1013-0204			TF2-003-SB1013-0405			TF2-003-SB1019-0204			TF2-003-SB1019-0204DL		
SDG: SG9314	LAB_ID	SG9314-1			SG9314-2RA			SG9314-3			SG9314-3DL		
FRACTION: PAH	SAMP_DATE	11/25/2013			11/25/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.3			91.6			92.7			92.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	U		11	U		11	U				
ACENAPHTHENE		10	U		11	U		23					
ACENAPHTHYLENE		10	U		11	U		2.4	J	P			
ANTHRACENE		2.6	J	P	2.2	J	P	75					
BENZO(A)ANTHRACENE		9	J	P	11	J	NP				410		
BENZO(A)PYRENE		7	J	EP	8.5	J	ENP	250	J	EN			
BENZO(B)FLUORANTHENE		8.6	J	P	8.9	J	NP	280	J	N			
BENZO(G,H,I)PERYLENE		3.8	J	EP	4.8	J	ENP	120	J	EN			
BENZO(K)FLUORANTHENE		10	U		8.7	J	NP	350	J	N			
CHRYSENE		8.7	J	P	12	J	NP				440		
DIBENZO(A,H)ANTHRACENE		10	UJ	E	2.1	J	ENP	66	J	EN			
FLUORANTHENE		20	J	P	31						1100		
FLUORENE		10	U		11	U		13	J	P			
INDENO(1,2,3-CD)PYRENE		4.8	J	P	4.9	J	NP	140	J	N			
NAPHTHALENE		10	U		11	U		6.7	J	P			
PHENANTHRENE		16	J	P	14	J	P				660		
PYRENE		16	J	P	18	J	CNP				740	J	C

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1019-0810			TF2-SB-DUP09-1113		
SDG: SG9314	LAB_ID	SG9314-4			SG9314-13		
FRACTION: PAH	SAMP_DATE	11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	89.3			89.3		
	DUP_OF				TF2-001-SS1003-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		11	U		11	U	
ACENAPHTHENE		11	U		7.8	J	P
ACENAPHTHYLENE		11	U		11	U	
ANTHRACENE		2.9	J	P	15	J	P
BENZO(A)ANTHRACENE		46			50	J	G
BENZO(A)PYRENE		29	J	EN	37	J	E
BENZO(B)FLUORANTHENE		32	J	N	50	J	G
BENZO(G,H,I)PERYLENE		17	J	ENP	22	J	EP
BENZO(K)FLUORANTHENE		22	J	NP	32		
CHRYSENE		38			43	J	G
DIBENZO(A,H)ANTHRACENE		7.5	J	ENP	7.6	J	EP
FLUORANTHENE		64			130	J	G
FLUORENE		11	U		6.6	J	P
INDENO(1,2,3-CD)PYRENE		17	J	P	26		
NAPHTHALENE		11	U		11	U	
PHENANTHRENE		31			86	J	G
PYRENE		84			80		

PROJ_NO: 03019	NSAMPLE	TF2-SB-RB05-1113
SDG: SG9314	LAB_ID	SG9314-14RA
FRACTION: PAH	SAMP_DATE	11/25/2013
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE	0.094	U	
ACENAPHTHENE	0.094	U	
ACENAPHTHYLENE	0.094	U	
ANTHRACENE	0.094	UJ	E
BENZO(A)ANTHRACENE	0.094	U	
BENZO(A)PYRENE	0.094	U	
BENZO(B)FLUORANTHENE	0.094	U	
BENZO(G,H,I)PERYLENE	0.094	U	
BENZO(K)FLUORANTHENE	0.094	U	
CHRYSENE	0.073	J	P
DIBENZO(A,H)ANTHRACENE	0.094	U	
FLUORANTHENE	0.094	U	
FLUORENE	0.094	U	
INDENO(1,2,3-CD)PYRENE	0.094	U	
NAPHTHALENE	0.094	U	
PHENANTHRENE	0.094	U	
PYRENE	0.094	UJ	D

PROJ_NO: 03019	NSAMPLE	TF2-001-SS1003-0001			TF2-003-SB1019-0810			TF2-SB-DUP09-1113		
SDG: SG9314	LAB_ID	SG9314-11			SG9314-4			SG9314-13		
FRACTION: PET	SAMP_DATE	11/25/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	89.2			89.3			89.3		
	DUP_OF							TF2-003-SS-1003-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
EPH (C08-C44)		18	J	P	11	J	P	23		
TPH (C05-C12)		2	U		2	U		2.5	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-14
Client ID: TF2-SB-RB05-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: S9485.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 03-DEC-13
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG135476

Analysis Date: 03-DEC-13
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 06-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Acetone		21	ug/L	1	5	5.0	2.2	2.5
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
2-Butanone		7.7	ug/L	1	5	5.0	1.3	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methyl Acetate	UL	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
Xylenes (Total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
P-Bromofluorobenzene		93.6	%					
Toluene-d8		93.7	%					
1,2-Dichloroethane-d4		89.0	%					
Dibromofluoromethane		92.4	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-15
Client ID: TF2-W-TB05-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: S9486.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 03-DEC-13
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG135476

Analysis Date: 03-DEC-13
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 06-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Acetone		6.7	ug/L	1	5	5.0	2.2	2.5
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methyl Acetate	UL	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
Xylenes (Total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
P-Bromofluorobenzene		94.4	%					
Toluene-d8		95.0	%					
1,2-Dichloroethane-d4		89.2	%					
Dibromofluoromethane		94.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-14RA
Client ID: TF2-SB-RB05-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0717.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 27-NOV-13
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG135250

Analysis Date: 14-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
2-Methylnaphthalene	U	0.094	ug/L	1	.2	0.19	0.073	0.094
Acenaphthylene	U	0.094	ug/L	1	.2	0.19	0.051	0.094
Acenaphthene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Fluorene	U	0.094	ug/L	1	.2	0.19	0.058	0.094
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Anthracene	UL	0.094	ug/L	1	.2	0.19	0.042	0.094
Fluoranthene	U	0.094	ug/L	1	.2	0.19	0.069	0.094
Pyrene	ULL	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	J	0.073	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)Fluoranthene	U	0.094	ug/L	1	.2	0.19	0.084	0.094
Benzo(k)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.046	0.094
Benzo(a)pyrene	U	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
Benzo(g,h,i)perylene	U	0.094	ug/L	1	.2	0.19	0.061	0.094
2-Methylnaphthalene-D10		77.1	%					
Fluorene-D10		67.6	%					
pyrene-d10		82.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-6
Client ID: TF2-001-SB1001-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0709.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 13-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	J	4.6	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	J	9.4	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	J	8.0	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	J	5.5	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	6.2	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	J	6.5	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	J	4.2	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	J	3.0	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	U	2.2	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		87.5	%					
Fluorene-D10		57.3	%					
Pyrene-D10		67.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-6RA
Client ID: TF2-001-SB1001-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0735.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	J	4.8	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	J	12.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	J	6.5	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	J	5.1	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	6.4	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	J	3.9	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	J	4.3	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	U	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	J	2.5	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	U	11.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		66.1	%					
Fluorene-D10		54.6	%					
Pyrene-D10		53.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-7
Client ID: TF2-001-SB1001-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0718.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 14-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	U	11.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	U	11.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	2.7	ug/Kgdrywt	1	20	22.	1.8	11.
Benzo(b)Fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	U	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	U	11.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	U	11.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		66.4	%					
Fluorene-D10		53.9	%					
Pyrene-D10		52.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-9
Client ID: TF2-001-SB1002-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0720.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 14-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 88.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	J	2.7	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	J	8.0	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	J	5.3	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	J	3.6	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	6.1	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	J	5.1	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	J	4.3	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	U	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	J	2.5	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	J	2.3	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		67.8	%					
Fluorene-D10		54.8	%					
Pyrene-D10		57.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-10
Client ID: TF2-001-SB1002-0405
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0721.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 14-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 86.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	23.	3.0	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	23.	2.5	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	23.	1.4	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	23.	1.7	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	23.	3.7	11.
Phenanthrene	J	4.6	ug/Kgdrywt	1	20	23.	2.1	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	23.	1.4	11.
Fluoranthene	J	10.	ug/Kgdrywt	1	20	23.	2.1	11.
Pyrene	J	8.2	ug/Kgdrywt	1	20	23.	2.4	11.
Benzo(a)anthracene	J	5.5	ug/Kgdrywt	1	20	23.	2.2	11.
Chrysene	J	8.4	ug/Kgdrywt	1	20	23.	2.0	11.
Benzo(b)Fluoranthene	J	7.5	ug/Kgdrywt	1	20	23.	2.8	11.
Benzo(k)fluoranthene	J	5.6	ug/Kgdrywt	1	20	23.	3.6	11.
Benzo(a)pyrene	J	5.2	ug/Kgdrywt	1	20	23.	3.8	11.
Indeno(1,2,3-cd)pyrene	J	4.1	ug/Kgdrywt	1	20	23.	2.2	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	23.	2.1	11.
Benzo(g,h,i)perylene	J	3.6	ug/Kgdrywt	1	20	23.	2.3	11.
2-Methylnaphthalene-D10		71.0	%					
Fluorene-D10		60.4	%					
Pyrene-D10		70.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-12
Client ID: TF2-001-SB1003-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0725.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 14-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 87.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.5	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.7	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Phenanthrene	J	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	J	2.3	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene		32.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	J	21.	ug/Kgdrywt	1	20	22.	2.4	11.
Benzo(a)anthracene	J	16.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	16.	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	J	16.	ug/Kgdrywt	1	20	22.	2.7	11.
Benzo(k)fluoranthene	J	12.	ug/Kgdrywt	1	20	22.	3.5	11.
Benzo(a)pyrene	J	13.	ug/Kgdrywt	1	20	22.	3.7	11.
Indeno(1,2,3-cd)pyrene	J	8.7	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	2.5	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	J	8.0	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		66.3	%					
Fluorene-D10		55.4	%					
Pyrene-D10		57.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-5
Client ID: TF2-001-SS1001-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0706.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 13-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 90.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	J	3.1	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	J	8.4	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	J	6.9	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	J	5.2	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	6.4	ug/Kgdrywt	1	20	22.	1.8	11.
Benzo(b)Fluoranthene	J	6.5	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	JM	4.2	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	J	3.2	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	JM	2.7	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		92.8	%					
Fluorene-D10		60.4	%					
Pyrene-D10		70.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-8
Client ID: TF2-001-SS1002-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0719.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 14-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 90.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	J	17.	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	J	2.8	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene		35.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	J	22.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	J	15.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	16.	ug/Kgdrywt	1	20	22.	1.8	11.
Benzo(b)Fluoranthene	J	18.	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	J	12.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	J	12.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	J	7.5	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	3.5	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	J	7.0	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		81.6	%					
Fluorene-D10		65.2	%					
Pyrene-D10		69.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-11
Client ID: TF2-001-SS1003-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0722.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 14-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.7	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Phenanthrene	J	3.9	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene		28.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	J	20.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene		24.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	22.	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	M	28.	ug/Kgdrywt	1	20	22.	2.7	11.
Benzo(k)fluoranthene	J	19.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	JM	20.	ug/Kgdrywt	1	20	22.	3.7	11.
Indeno(1,2,3-cd)pyrene	J	13.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	3.7	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	JM	10.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		74.7	%					
Fluorene-D10		62.4	%					
Pyrene-D10		67.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-11RA
Client ID: TF2-001-SS1003-0001
Project: NAVSTA Newport CTO WE
SDG: SG9314
Lab File ID: G0736.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.7	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Phenanthrene	J	3.9	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene		32.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	J	17.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene		23.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	20.	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	J	21.	ug/Kgdrywt	1	20	22.	2.7	11.
Benzo(k)fluoranthene	J	21.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	JMM	18.	ug/Kgdrywt	1	20	22.	3.7	11.
Indeno(1,2,3-cd)pyrene	J	11.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	4.8	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	JMM	8.9	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		71.2	%					
Fluorene-D10		59.6	%					
Pyrene-D10		56.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-1
Client ID: TF2-003-SB1013-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0702.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 13-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Phenanthrene	J	16.	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	J	2.6	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	J	20.	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	J	16.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	J	9.0	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	J	8.7	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	J	8.6	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	J	7.0	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene	J	4.8	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	J	3.8	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		85.0	%					
Fluorene-D10		56.4	%					
Pyrene-D10		66.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-2RA
Client ID: TF2-003-SB1013-0405
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0733.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	J	14.	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	J	2.2	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene		31.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	J	18.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	J	11.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	12.	ug/Kgdrywt	1	20	22.	1.8	11.
Benzo(b)Fluoranthene	J	8.9	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	J	8.7	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	J	8.5	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	J	4.9	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	2.1	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	J	4.8	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		79.0	%					
Fluorene-D10		66.1	%					
Pyrene-D10		57.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-3
Client ID: TF2-003-SB1019-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0704.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 13-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	6.7	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.4	11.
Acenaphthylene	J	2.4	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene		23.	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	J	13.	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene	E	670	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene		75.	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene	E	850	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene	E	960	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene	E	450	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene	E	550	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene		280	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene		350	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene		250	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene		140	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene		66.	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene		120	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10	*	102.	%					
Fluorene-D10		65.6	%					
Pyrene-D10		62.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-3DL
Client ID: TF2-003-SB1019-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0732.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	43.	ug/Kgdrywt	4	20	86.	11.	43.
2-Methylnaphthalene	U	43.	ug/Kgdrywt	4	20	86.	9.4	43.
Acenaphthylene	U	43.	ug/Kgdrywt	4	20	86.	5.1	43.
Acenaphthene	J	27.	ug/Kgdrywt	4	20	86.	6.4	43.
Fluorene	U	43.	ug/Kgdrywt	4	20	86.	14.	43.
Phenanthrene		660	ug/Kgdrywt	4	20	86.	7.7	43.
Anthracene	J	77.	ug/Kgdrywt	4	20	86.	5.1	43.
Fluoranthene		1100	ug/Kgdrywt	4	20	86.	7.7	43.
Pyrene		740	ug/Kgdrywt	4	20	86.	9.0	43.
Benzo(a)anthracene		410	ug/Kgdrywt	4	20	86.	8.1	43.
Chrysene		440	ug/Kgdrywt	4	20	86.	7.3	43.
Benzo(b)Fluoranthene		250	ug/Kgdrywt	4	20	86.	10.	43.
Benzo(k)fluoranthene		230	ug/Kgdrywt	4	20	86.	13.	43.
Benzo(a)pyrene		220	ug/Kgdrywt	4	20	86.	14.	43.
Indeno(1,2,3-cd)pyrene		110	ug/Kgdrywt	4	20	86.	8.1	43.
Dibenzo(a,h)anthracene	J	54.	ug/Kgdrywt	4	20	86.	7.7	43.
Benzo(g,h,i)perylene		110	ug/Kgdrywt	4	20	86.	8.6	43.
2-Methylnaphthalene-D10		85.6	%					
Fluorene-D10		68.2	%					
Pyrene-D10		55.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-4
Client ID: TF2-003-SB1019-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0705.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 13-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene		31.	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	J	2.9	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene		64.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene		84.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene		46.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene		38.	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene		32.	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	J	22.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene		29.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	J	17.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	7.5	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	J	17.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		84.2	%					
Fluorene-D10		56.2	%					
Pyrene-D10		61.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-4RA
Client ID: TF2-003-SB1019-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0734.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene		33.	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	J	4.2	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene		80.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene		66.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene		42.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene		42.	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene		24.	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene		25.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene		26.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	J	14.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	6.5	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	J	15.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		67.3	%					
Fluorene-D10		55.8	%					
Pyrene-D10		50.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-13
Client ID: TF2-SB-DUP09-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0726.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 14-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	J	7.8	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	J	6.6	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene		86.	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	J	15.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene		130	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene		80.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene		50.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene		43.	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene		50.	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene		32.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene		37.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene		26.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	7.6	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	J	22.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		62.3	%					
Fluorene-D10		57.9	%					
Pyrene-D10		65.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-14
Client ID: TF2-SB-RB05-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: 9GL2049.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135522

Analysis Date: 04-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA
Report Date: 18-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	J	7.8	ug/l	1	10	10.	6.7	8.0
p-Bromofluorobenzene		102.	%					

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Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-11
Client ID: TF2-001-SS1003-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: 9GL2073.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135529

Analysis Date: 06-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 89.
Report Date: 18-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.9	2.0
p-Bromofluorobenzene		92.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-4
Client ID: TF2-003-SB1019-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: 9GL2072.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135529

Analysis Date: 05-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 89.
Report Date: 18-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		102.	%					

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Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-13
Client ID: TF2-SB-DUP09-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: 9GL2074.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135529

Analysis Date: 06-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 89.
Report Date: 18-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.5	mg/Kgdrywt	1	2.5	3.2	2.3	2.5
p-Bromofluorobenzene		97.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-14
Client ID: TF2-SB-RB05-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: 1GL00070.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 10-DEC-13
Extracted By: JLP
Extraction Method: SW846 8011
Lab Prep Batch: WG135854

Analysis Date: 10-DEC-13
Analyst: JLP
Analysis Method: SW846 8011
Matrix: AQ
% Solids: NA
Report Date: 18-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,2-Dibromoethane	U	0.024	ug/L	1	.05	0.048	0.0071	0.024
Tetrachloro-M-Xylene		71.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-15
Client ID: TF2-W-TB05-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: 1GL00071.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 10-DEC-13
Extracted By: JLP
Extraction Method: SW846 8011
Lab Prep Batch: WG135854

Analysis Date: 10-DEC-13
Analyst: JLP
Analysis Method: SW846 8011
Matrix: AQ
% Solids: NA
Report Date: 18-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,2-Dibromoethane	U	0.025	ug/L	1	.05	0.049	0.0072	0.025
Tetrachloro-M-Xylene		76.1	%					

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Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-11
Client ID: TF2-001-SS1003-0001
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: AGL10094.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135483

Analysis Date: 06-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 89.
Report Date: 14-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	J	18.	mg/Kgdrywt	1	20	22.	6.3	11.
o-Terphenyl		90.2	%					
n-Triacontane-D62		81.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-4
Client ID: TF2-003-SB1019-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: AGL10093.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135483

Analysis Date: 06-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 89.
Report Date: 14-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	J	11.	mg/Kgdrywt	1	20	22.	6.3	11.
o-Terphenyl		95.4	%					
n-Triacontane-D62		108.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-13
Client ID: TF2-SB-DUP09-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: AGL10095.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135483

Analysis Date: 06-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 89.
Report Date: 14-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		23.	mg/Kgdrywt	1	20	21.	5.9	10.
o-Terphenyl		96.5	%					
n-Triacontane-D62		91.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-14
Client ID: TF2-SB-RB05-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: AGL10092.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 02-DEC-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG135406

Analysis Date: 06-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: AQ
% Solids: NA
Report Date: 18-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		860	ug/L	1	500	500	150	250
o-Terphenyl		82.0	%					
n-Triacontane-D62		76.7	%					

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APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: VOC, PAH, PET

Missing Information	Date Lab Contacted	Date Received

Validator: Ann Cognetti Date: 1/14/2014

EPA-NE - Data Validation
VOA/SV/Pest/PCB-1

Case: NAVSTA Newport SDG: SG9314

Sampler: K Jalkut Company: TetraTech Contacted: Yes (No) Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: Newport SDG: SG9314

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action

Comments: See data validation report

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action

Comments: See data validation report

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: Ann Cognetti Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport. SDG: 569314

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action
				See data validation report	

Validator: Ann Cognetta

Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SC 9314

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: Ann Coquette Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 569314

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Ann Coppetta Date: 1/14/14

EPA NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Ann Cognetti Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 9314

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
	See data validation report							
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator: Ann Cognetta Date: 1/17/17

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)

Comments:

See data validation report

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: Ann Cognetti Date: 1/14/15

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 9314

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: Ann Cognetta

Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

See data validation report

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Validator: Lynn Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: K. Jalkut Company: TetraTech Contacted: Yes (No) Date:____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)
	See data validation report					

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

VOA/SV/Pest/PCB-V-B

V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: See data validation report

Validator: (Ann Cagnetta) Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 569314

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	
		See data validation report															

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4
2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4
4MP= 4-Methyhlphenol-d_8
DCP= 2.4-Dichlorophenol-d_3

Validator: Ann Cognetta

Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
SOM01.2		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	
		See data validation report															

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4.6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 56 9314

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10}		Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10}		Affected Analytes	Action (Detection/ND)
		Water 50-150	Soil 50-150			Water 50-150	Soil 50-150		
Sample ID	Matrix	% Recovery				% Recovery			
				Fluoranthene				Naphthalene	
				Pyrene				2-Methylnaphthalene	
				Benzo(a)anthracene				Acenaphthylene	
				Chrysene				Acenaphthene	
				Benzo(b)fluoranthene				Fluorene	
				Benzo(k)fluoranthene				Pentachlorophenol	
				Benzo(a)pyrene				Phenanthrene	
				Indeno(1.2.2-cd)pyrene				Anthracene	
				Dibenzo(a,h)anthracene					
				Benzo(g.h.i)perylene					
				See data validation report					

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 569314

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	
		See data validation report													

DCE= 1,1-Dichloroethene –d_2 DCA= 1,2-Dichloroethane-d_4

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 569314

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	
		See data validation report													

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Ann Coppetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 369314

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: Ann Cognitti Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 50 9314

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 9314

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	
	See data validation report									

* For Pest/PCB only.

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			
	See data validation report									

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).

Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 56314

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: John Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 9314

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action
	See data validation report							

Validator: Ann Cognetti Date: 1/17/14

EPA NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 569314

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		See data validation report
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Ann Cognetta

Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 9314

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Ann Cognetta Date: 1/14/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG9314

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: (Ann Cognetta)

Date: 1/14/14

APPENDIX D

SUPPORT DOCUMENTATION

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT CTO WE30
SG9314

Sample Receipt

The following sample was received on November 25, 2013 and was logged in under Katahdin Analytical Services work order number SG9314 for a hardcopy due date of December 16, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG9314-1	TF2-003-SB1013-0204
SG9314-2	TF2-003-SB1013-0405
SG9314-3	TF2-003-SB1019-0204
SG9314-4	TF2-003-SB1019-0810
SG9314-5	TF2-001-SS1001-0001
SG9314-6	TF2-001-SB1001-0204
SG9314-7	TF2-001-SB1001-0810
SG9314-8	TF2-001-SS1002-0001
SG9314-9	TF2-001-SB1002-0204
SG9314-10	TF2-001-SB1002-0405
SG9314-11	TF2-001-SS1003-0001
SG9314-12	TF2-001-SB1003-0204
SG9314-13	TF2-SB-DUP09-1113
SG9314-14	TF2-SB-RB05-1113
SG9314-15	TF2-W-TB05-1113

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG9314were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8260B Analysis

The initial calibration analyzed on the S instrument on 11/21/13 had a %RSD value for acetone that exceeded the method acceptance limit of 15%. Although the %RSD is greater than 15%, acetone was calibrated with the average model since this calibration model is more accurate for this analyte at concentrations near the LOQ than either the linear or quadratic calibration models.

The calibration verification standard (file S9476) had low responses for the target analytes carbon disulfide, cyclohexane, and methyl acetate that resulted in %D's that exceeded the DoD QSM acceptance limits of 20%.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are based on DoD QSM acceptance limits for the full list of spiked compounds and laboratory established acceptance limits for all other analytes. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

FL-PRO Analysis

Sample SG9314-11 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

Sample SG9314-13 and 14 were manually integrated for the petroleum range organics, surrogates o-terphenyl and/or n-triacontane-d62. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The LCS WG135406-2 had a recovery for the surrogate o-terphenyl that was low and outside of the method acceptance limits. Since the spike recovery was acceptable and the LCSD had acceptable surrogate and spike recoveries, no further action was taken.

8015 GRO Analysis

Sample SG9314-11 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

Sample SG9314-14 was manually integrated for the GRO range. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

8011 Analysis

Due to laboratory error, the samples were extracted and analyzed one day out of hold time. The client was contacted and informed the laboratory to proceed since the samples were within two times the hold time.

8270D SIM Analysis

All soil samples and associated QC were subjected to the GPC sample clean-up process.

Samples SG9314-5 and 11 were used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

Samples SG9314-1, 2RA, 3DL, 4, 6RA, 8, 9, 10, 11, 12 and 13 were manually integrated for the analytes acenaphthylene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene and/or the internal standard perylene-d12,. The specific reason for the manual integration is indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Sample SG9314-3 had a high recovery for the surrogate 2-methylnaphthalene, which was outside of the laboratory established acceptance limits. Since the diluted analysis had acceptable surrogate recoveries, no further action was taken.

Samples SG9314-2RA, 3, 3DL, 4, 4RA, 5, 6, 6RA, 11, and 11RA had high responses for the internal standards phenanthrene-d10, chrysene-d12 and/or perylene-d12, that resulted in %D's which were outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the midpoint standard of the initial calibration. This was confirmed on reanalysis.

Sample SG9314-5 and the MS/MSD WG135526-4 and 5 had high responses for the internal standards phenanthrene-d10 and perylene-d12, that resulted in %D's which were outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the midpoint standard of the initial calibration. Since sample SG9314-5 is the native sample for the MS/MSD and the internal standard deviations confirm a matrix effect, the samples were not reanalyzed.

The independent check standard (file G0569) associated with the initial calibration on the G instrument on 12/05/2013 had high concentrations for the target analytes chrysene and benzo(k)fluoranthene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The independent check standard (file G0665) associated with the initial calibration on the G instrument on 12/11/2013 had a low concentration for the target analyte benzo(b)fluoranthene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The independent check standard (file G0716) associated with the initial calibration on the G instrument on 12/14/2013 had low concentrations for the target analytes acenaphthylene and pyrene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The CV's (files G0624 and G0727) had high responses for the target analytes fluoranthene and/or benzo(k)fluoranthene which resulted in %D's that were greater than the acceptance limit of 20% from DoD QSM Version 4.1.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are statistically derived limits for the full list of spiked compounds and are statistically derived limits

for the surrogates. Although DoD QSM acceptance limits were requested for this project, laboratory established acceptance limits were used because the DoD QSM does not list acceptance limits for 8270SIM. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these statistical acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

The LCSD WG135526-3RA had four spiked target analytes with recoveries that were low and outside of the laboratory established acceptance limits. The DoD QSM allowable number of exceedances for 17 target analytes is one analyte. Since the LCS WG135526-2 was acceptable, no further action was taken. The LCS had a high response for the internal standard perylene-d12 that resulted in a %D which was outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the midpoint standard of the initial calibration.

The LCSD WG135250-3RA had two spiked target analytes with recoveries that were low and outside of the laboratory established acceptance limits. The DoD QSM allowable number of exceedances for 17 target analytes is one analyte. Since the LCS WG135250-2RA was acceptable, after factoring in the allowed number of exceedances, no further action was taken.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG9314 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Aqueous-matrix Katahdin Sample No. SG9314-14 was originally digested for ICP-MS analysis on 12/06/13 (QC Batch GL06IMW2) in accordance with USEPA Method 3010A. The measured copper (2.365 ug/L), lead (0.505 ug/L), and zinc (10.135 ug/L) concentrations of the preparation blank that was digested in this batch is greater than ½ the laboratory's reporting limits. However, because the measured concentrations of these elements in Katahdin Sample No. SG9314-14 are less than the Limits of Detection, no corrective action was required for these metals.

Soil-matrix Katahdin Sample Nos. SG9314-(1-13) were digested for ICP-MS analysis on 12/06/13 (QC Batch GL06IMS1) in accordance with USEPA Method 3050B Katahdin Sample Nos. SG9314-(5, 11) were prepared in duplicate and with matrix spike aliquots in this digestion batch. The measured nickel concentration (0.109 mg/kg) of the preparation blank that was digested in this batch is greater than ½ the laboratory's reporting limit. However, because the measured nickel concentrations of all associated samples are more than ten times that of the preparation blank, no corrective action was required.

ICP-MS analyses of Work Order SG9314 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	**Associated Analytes**
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Aqueous-matrix Katahdin Sample Number SG9314-14 was digested for mercury analysis on 12/06/13 (QC Batch GL06HGW2) in accordance with USEPA Method 7470A..

Solid-matrix Katahdin Sample Numbers SG9314-(1-13) were digested for mercury analysis on 12/12/13 (QC Batch GL12HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Nos. SG9314-(5, 11) were prepared in duplicate and with matrix spike aliquots in this digestion batch.

Mercury analysis of the Katahdin Work Order SG9314 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG9314-5 is within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for all analytes.

The laboratory duplicate analysis of Katahdin Sample No. SG9314-11 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for arsenic and mercury.

The measured recoveries of antimony and potassium the matrix-spiked aliquot of Katahdin Sample No. SG9314-5 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The measured recoveries of antimony, calcium, and mercury the matrix-spiked aliquot of Katahdin Sample No. SG9314-11 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The serial dilution analyses of Katahdin Sample Nos. SG9314-(5, 11) are within the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for all analytes.

The measured recoveries of all analytes in a post-digestion matrix spike aliquot of Katahdin Sample Nos. SG9314-(5, 11) are within the laboratory's acceptance limits (75% - 125% recovery of the added element, if the native concentration is less than four times the amount added).

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the laboratory's limits of quantitation (LOQ) are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQ's, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG9314 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
12.20.13

Leslie Dimond
Quality Assurance Officer

SDG 364947 SDG 364914
QP 11-26-13

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER Nº 1923 | PAGE 2 OF 2

PROJECT NO: 112603019 CTO 30	FACILITY: Wilmington MA	PROJECT MANAGER D Seiken	PHONE NUMBER 978 474 8445	LABORATORY NAME AND CONTACT: Katahdin Anal. Services / J Obin
SAMPLERS (SIGNATURE) K Jaikut		FIELD OPERATIONS LEADER K Jaikut	PHONE NUMBER 781 801 0457	ADDRESS 600 Technology Way
		CARRIER/WAYBILL NUMBER Courier plus in RI		CITY, STATE Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: PAH Metals total solids	EXTPH	GRO	PAH	EXTPH	Metals	VOC	GRO	COMMENTS
									G	≤6°C	Yes	≤6°C	≤6°C	10ml MeOH ≤6°C	≤6°C	HCL ≤6°C	MeOH ≤6°C	HCL ≤6°C	HCL ≤6°C
											4oz	40ml		1L amber		250ml poly			
11/25	0850	TF2-003-SB1019-0810	1019	8	10	SO	G	4			1	1	2						
11/25	1005	TF2-001-SS1001-0001	1001	0	1	SO	G	1			1	—	—						
11/25	1010	TF2-001-SB1001-0204	1001	2	4	SO	G	1			1	—	—						
11/25	1025	TF2-001-SB1001-0810	1001	8	10	SO	G	1			1	—	—						
11/25	1035	TF2-001-SS1002-0001	1002	0	1	SO	G	1			1	—	—					PB	11/25/13
11/25	1040	TF2-001-SB1002-0204	1002	2	4	SO	G	1			1	—	—						
11/25	1045	TF2-001-SB1002-0405	1002	4	5	SO	G	1			1	—	—						
11/25	1140	TF2-001-SS1003-0001	1003	0	1	SO	G	4			1	1	2						
11/25	1145	TF2-001-SB1003-0204	1003	2	4	SO	G	1			1	—	—						
11/25	0000	TF2-SB-DUP09-1113	—	—	—	SO	G	4			1	1	2	2	2	X	3	2	11/25/13
11/25	1100	TF2-SB-RB05-1113	—	—	—	QC	G	10			—	—	—	2	2	1	3	2	
11/25	1105	TF2-W-TB05-1113	—	—	—	QC	G	4			—	—	—	—	—	—	2	2	

1. RELINQUISHED BY K Jaikut	DATE 11/25/13	TIME 1405	1. RECEIVED BY	DATE 11/25/13	TIME 1405
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

SDG 364914

SG 1670 1051514

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** N2 1922 | **PAGE** 1 **OF** 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112602710 CO59	Wilmington MA	D Senken	978 474 8945	Katahdin Analytical Services / Jo Ann
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jaikat 112603019 CO30		K Jaikat	781 201 0457	1000 Technology Drive
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier via RI - hand delivered		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS: VOC (low)	VOC (med)	GRO	TPH, modified (silica gel cleanup)	EX (TPH 4h2					COMMENTS
									CONTAINER TYPE PLASTIC (P) or GLASS (G)					G	G	G	G	G
									PRESERVATIVE USED					MeOH 5.6mL	5mL MeOH 5.6mL	10mL MeOH 5.6mL	5.6mL	5.6mL
11/22	1200	TF3-00-TB09-1113	—	—	—	QC	G	5	2	1	2	—	—					
11/22	1245	TF3-001-SB101-0102	101	1	2	SO	G	7	2	1	2	1	1					
11/22	1250	TF3-001-SB101-0204	101	2	4	SO	G	7	2	1	2	1	1					
11/22	1320	TF3-001-SS106-0001	106	0	1	SO	G	7	2	1	2	1	1					
11/22	1323	TF3-001-SB106-0204	106	2	4	SO	G	7	2	1	2	1	1					
11/22	1330	TF3-001-SS107-0001	107	0	1	SO	G	7	2	1	2	1	1					
11/22	1335	TF3-001-SB107-0204	107	2	4	SO	G	7	2	1	2	1	1					
11/22	1415	TF3-001-SS108-0001	108	0	1	SO	G	7	2	1	2	1	1					
11/22	1418	TF3-001-SB108-0204	108	2	4	SO	G	7	2	1	2	1	1					
11/22	0000	TF3-SB-DUP06-1113	—	—	—	SO	G	7	2	1	2	1	1					
11/25	0815	TF2-003-SB1013-0204	1013	2	4	SO	G	1	—	—	—	1	—					
11/25	0820	TF2-003-SB1013-0405	1013	4	5	SO	G	1	—	—	—	1	—					
11/25	0835	TF2-003-SB1019-0204	1019	2	4	SO	G	1	—	—	—	1	—					

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY K Jaikat	11/25/13	1405	1. RECEIVED BY		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Katahdin Analytical Services, Inc. **Sample Receipt Condition Report**

Client:	Tetra Tech	KAS PM:	SO	Sampled By:	Client
Project:		KIMS Entry By:	CS	Delivered By:	KAS
KAS Work Order#:	SG9298/SG9314	KIMS Review By:		Received By:	DM
SDG #:		Cooler: 1 of 2		Date/Time Rec.:	11-2513 1700

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?		✓			
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 2.2
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?	✓				
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?	✓				Aa
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

Katahdin Analytical Services, Inc. **Sample Receipt Condition Report**

Client: Tetra Tech	KAS PM: DO	Sampled By: Client
Project:	KIMS Entry By:	Delivered By: KAS
KAS Work Order#: 569298/569314	KIMS Review By: DO	Received By: DM
SDG #:	Cooler: 2 of 2	Date/Time Rec.: 11-25-13 1700

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?		✓			
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.0
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?	✓				
Received in methanol?	✓				
Methanol covering soil?	✓				
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?	✓				SC
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

0000013

HOLDTIME

SDG SG9314

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-003-SB1019-0810	SG9314-004	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-SB-DUP09-1113	SG9314-013	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-003-SB1019-0204	SG9314-003	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-003-SB1013-0405	SG9314-002	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-003-SB1013-0204	SG9314-001	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SS1003-0001	SG9314-011	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SS1002-0001	SG9314-008	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SB1003-0204	SG9314-012	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SB1002-0405	SG9314-010	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SB1002-0204	SG9314-009	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SB1001-0810	SG9314-007	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SB1001-0204	SG9314-006	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SS1001-0001	SG9314-005	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	UG/L	TF2-SB-RB05-1113	SG9314-014	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
M	MG/KG	TF2-003-SB1019-0810	SG9314-004	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-001-SS1003-0001	SG9314-011	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SS1003-0001	SG9314-011	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-003-SB1013-0204	SG9314-001	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-003-SB1013-0204	SG9314-001	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-003-SB1013-0405	SG9314-002	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-003-SB1013-0405	SG9314-002	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-003-SB1019-0204	SG9314-003	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-003-SB1019-0810	SG9314-004	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-SB-DUP09-1113	SG9314-013	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SS1002-0001	SG9314-008	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SB1002-0204	SG9314-009	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-003-SB1019-0204	SG9314-003	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SS1001-0001	SG9314-005	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SS1001-0001	SG9314-005	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SB1003-0204	SG9314-012	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SB1003-0204	SG9314-012	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SB1002-0405	SG9314-010	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-SB-DUP09-1113	SG9314-013	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-001-SB1002-0204	SG9314-009	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SS1002-0001	SG9314-008	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SB1001-0810	SG9314-007	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SB1001-0810	SG9314-007	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SB1001-0204	SG9314-006	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SB1001-0204	SG9314-006	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SB1002-0405	SG9314-010	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SS1001-0001	SG9314-005	NM	11/25/2013	12/10/2013	12/18/2013	15	8	23
M	UG/L	TF2-SB-RB05-1113	SG9314-014	NM	11/25/2013	12/06/2013	12/11/2013	11	5	16
	%	TF2-003-SB1019-0204	SG9314-3	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SB1002-0204	SG9314-9	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SB1002-0405	SG9314-10	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SB1003-0204	SG9314-12	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SS1001-0001	SG9314-5	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SB1001-0204	SG9314-6	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SS1002-0001	SG9314-8	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SB1001-0810	SG9314-7	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SS1003-0001	SG9314-11	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-003-SB1013-0204	SG9314-1	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-003-SB1013-0405	SG9314-2	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-003-SB1019-0810	SG9314-4	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-SB-DUP09-1113	SG9314-13	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
OV	%	TF2-SB-RB05-1113	SG9314-14	NM	11/25/2013	12/03/2013	12/03/2013	8	0	8
OV	%	TF2-SB-RB05-1113	SG9314-14	NM	11/25/2013	12/10/2013	12/10/2013	15	0	15
OV	%	TF2-W-TB05-1113	SG9314-15	NM	11/25/2013	12/03/2013	12/03/2013	8	0	8
OV	%	TF2-W-TB05-1113	SG9314-15	NM	11/25/2013	12/10/2013	12/10/2013	15	0	15
OV	UG/L	TF2-W-TB05-1113	SG9314-15	NM	11/25/2013	12/10/2013	12/10/2013	15	0	15
OV	UG/L	TF2-W-TB05-1113	SG9314-15	NM	11/25/2013	12/03/2013	12/03/2013	8	0	8
OV	UG/L	TF2-SB-RB05-1113	SG9314-14	NM	11/25/2013	12/10/2013	12/10/2013	15	0	15
OV	UG/L	TF2-SB-RB05-1113	SG9314-14	NM	11/25/2013	12/03/2013	12/03/2013	8	0	8
SIM	%	TF2-003-SB1013-0204	SG9314-1	NM	11/25/2013	12/04/2013	12/13/2013	9	9	18
SIM	%	TF2-SB-DUP09-1113	SG9314-13	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	%	TF2-SB-RB05-1113	SG9314-14RA	NM	11/25/2013	11/27/2013	12/14/2013	2	17	19
SIM	%	TF2-001-SS1002-0001	SG9314-8	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	%	TF2-001-SB1001-0204	SG9314-6	NM	11/25/2013	12/04/2013	12/13/2013	9	9	18
SIM	%	TF2-001-SB1001-0204	SG9314-6RA	NM	11/25/2013	12/04/2013	12/16/2013	9	12	21

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	%	TF2-001-SB1001-0810	SG9314-7	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	%	TF2-001-SB1002-0204	SG9314-9	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	%	TF2-001-SB1002-0405	SG9314-10	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	%	TF2-003-SB1019-0204	SG9314-3	NM	11/25/2013	12/04/2013	12/13/2013	9	9	18
SIM	%	TF2-001-SS1001-0001	SG9314-5	NM	11/25/2013	12/04/2013	12/13/2013	9	9	18
SIM	%	TF2-003-SB1019-0810	SG9314-4RA	NM	11/25/2013	12/04/2013	12/16/2013	9	12	21
SIM	%	TF2-001-SS1003-0001	SG9314-11	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	%	TF2-001-SS1003-0001	SG9314-11RA	NM	11/25/2013	12/04/2013	12/16/2013	9	12	21
SIM	%	TF2-003-SB1013-0405	SG9314-2RA	NM	11/25/2013	12/04/2013	12/16/2013	9	12	21
SIM	%	TF2-003-SB1019-0204	SG9314-3DL	NM	11/25/2013	12/04/2013	12/16/2013	9	12	21
SIM	%	TF2-003-SB1019-0810	SG9314-4	NM	11/25/2013	12/04/2013	12/13/2013	9	9	18
SIM	%	TF2-001-SB1003-0204	SG9314-12	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	UG/KG DRY	TF2-001-SS1003-0001	SG9314-11	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	UG/KG DRY	TF2-003-SB1019-0810	SG9314-4RA	NM	11/25/2013	12/04/2013	12/16/2013	9	12	21
SIM	UG/KG DRY	TF2-SB-DUP09-1113	SG9314-13	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	UG/KG DRY	TF2-001-SB1002-0405	SG9314-10	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	UG/KG DRY	TF2-003-SB1013-0405	SG9314-2RA	NM	11/25/2013	12/04/2013	12/16/2013	9	12	21
SIM	UG/KG DRY	TF2-001-SS1003-0001	SG9314-11RA	NM	11/25/2013	12/04/2013	12/16/2013	9	12	21

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/KG DRY	TF2-001-SS1002-0001	SG9314-8	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	UG/KG DRY	TF2-001-SS1001-0001	SG9314-5	NM	11/25/2013	12/04/2013	12/13/2013	9	9	18
SIM	UG/KG DRY	TF2-003-SB1013-0204	SG9314-1	NM	11/25/2013	12/04/2013	12/13/2013	9	9	18
SIM	UG/KG DRY	TF2-003-SB1019-0810	SG9314-4	NM	11/25/2013	12/04/2013	12/13/2013	9	9	18
SIM	UG/KG DRY	TF2-003-SB1019-0204	SG9314-3	NM	11/25/2013	12/04/2013	12/13/2013	9	9	18
SIM	UG/KG DRY	TF2-001-SB1003-0204	SG9314-12	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	UG/KG DRY	TF2-001-SB1002-0204	SG9314-9	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	UG/KG DRY	TF2-001-SB1001-0810	SG9314-7	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	UG/KG DRY	TF2-001-SB1001-0204	SG9314-6RA	NM	11/25/2013	12/04/2013	12/16/2013	9	12	21
SIM	UG/KG DRY	TF2-001-SB1001-0204	SG9314-6	NM	11/25/2013	12/04/2013	12/13/2013	9	9	18
SIM	UG/KG DRY	TF2-003-SB1019-0204	SG9314-3DL	NM	11/25/2013	12/04/2013	12/16/2013	9	12	21
SIM	UG/L	TF2-SB-RB05-1113	SG9314-14RA	NM	11/25/2013	11/27/2013	12/14/2013	2	17	19
	%	TF2-003-SB1019-0810	SG9314-4	NM	11/25/2013	12/03/2013	12/06/2013	8	3	11
	%	TF2-001-SS1003-0001	SG9314-11	NM	11/25/2013	12/03/2013	12/06/2013	8	3	11
	%	TF2-001-SS1003-0001	SG9314-11	NM	11/25/2013	12/04/2013	12/06/2013	9	2	11
	%	TF2-SB-DUP09-1113	SG9314-13	NM	11/25/2013	12/03/2013	12/06/2013	8	3	11
	%	TF2-SB-DUP09-1113	SG9314-13	NM	11/25/2013	12/04/2013	12/06/2013	9	2	11
	%	TF2-SB-RB05-1113	SG9314-14	NM	11/25/2013	12/02/2013	12/06/2013	7	4	11

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-SB-RB05-1113	SG9314-14	NM	11/25/2013	12/04/2013	12/04/2013	9	0	9
	%	TF2-W-TB05-1113	SG9314-15	NM	11/25/2013	12/04/2013	12/04/2013	9	0	9
	%	TF2-003-SB1019-0810	SG9314-4	NM	11/25/2013	12/04/2013	12/05/2013	9	1	10
	MG/KG DRY	TF2-001-SS1003-0001	SG9314-11	NM	11/25/2013	12/03/2013	12/06/2013	8	3	11
	MG/KG DRY	TF2-001-SS1003-0001	SG9314-11	NM	11/25/2013	12/04/2013	12/06/2013	9	2	11
	MG/KG DRY	TF2-003-SB1019-0810	SG9314-4	NM	11/25/2013	12/03/2013	12/06/2013	8	3	11
	MG/KG DRY	TF2-003-SB1019-0810	SG9314-4	NM	11/25/2013	12/04/2013	12/05/2013	9	1	10
	MG/KG DRY	TF2-SB-DUP09-1113	SG9314-13	NM	11/25/2013	12/03/2013	12/06/2013	8	3	11
	MG/KG DRY	TF2-SB-DUP09-1113	SG9314-13	NM	11/25/2013	12/04/2013	12/06/2013	9	2	11
	UG/L	TF2-SB-RB05-1113	SG9314-14	NM	11/25/2013	12/02/2013	12/06/2013	7	4	11
	UG/L	TF2-SB-RB05-1113	SG9314-14	NM	11/25/2013	12/04/2013	12/04/2013	9	0	9
	UG/L	TF2-W-TB05-1113	SG9314-15	NM	11/25/2013	12/04/2013	12/04/2013	9	0	9

NAVSTA NEWPORT
SOIL DATA
SG9314

FRACTION	CHEMICAL	TF2-SB-DUP09-1113	UNITS	TF2-001-SS1003-0001	RPD	D
PAH	ACENAPHTHENE	7.8 J	UG/KG	ND	200.00	7.80
PAH	ANTHRACENE	15 J	UG/KG	ND	200.00	15.00
PAH	BENZO(A)ANTHRACENE	50	UG/KG	24	70.27	26.00
PAH	BENZO(A)PYRENE	37 J	UG/KG	20 J	59.65	17.00
PAH	BENZO(B)FLUORANTHENE	50	UG/KG	28 J	56.41	22.00
PAH	BENZO(G,H,I)PERYLENE	22 J	UG/KG	10 J	75.00	12.00
PAH	BENZO(K)FLUORANTHENE	32	UG/KG	19 J	50.98	13.00
PAH	CHRYSENE	43	UG/KG	22 J	64.62	21.00
PAH	DIBENZO(A,H)ANTHRACENE	7.6 J	UG/KG	3.7 J	69.03	3.90
PAH	FLUORANTHENE	130	UG/KG	28	129.11	102.00
PAH	FLUORENE	6.6 J	UG/KG	ND	200.00	6.60
PAH	INDENO(1,2,3-CD)PYRENE	26	UG/KG	13 J	66.67	13.00
PAH	PHENANTHRENE	86	UG/KG	3.9 J	182.65	82.10
PAH	PYRENE	80	UG/KG	20 J	120.00	60.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG9314

FRACTION	CHEMICAL	TF2-SB-DUP09-1113	UNITS	TF2-001-SS1003-0001	RPD	D
PET	EPH (C08-C44)	23	MG/KG	18 J	24.39	5.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : SB387.D
Instrument ID : GCMS-S

SDG : SG9314
Date Analyzed : 21-NOV-13
Time Analyzed : 10:52
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	20.5		
75	30.0 - 60.0% of mass 95	52.5		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.1		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	71.5		
175	5.0 - 9.0% of mass 174	6.1	8.46	1
176	95.0 - 101.0% of mass 174	70.7	98.87	1
177	5.0 - 9.0% of mass 176	4.9	6.88	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG135281-1	S9247.D	11/21/13	11:20
Initial Calibration	WG135281-2	S9248.D	11/21/13	11:56
Initial Calibration	WG135281-3	S9249.D	11/21/13	12:33
Initial Calibration	WG135281-4	S9250.D	11/21/13	13:09
Initial Calibration	WG135281-5	S9251.D	11/21/13	13:46
Initial Calibration	WG135281-6	S9252.D	11/21/13	14:22
Independent Source	WG135281-7	S9257.D	11/21/13	17:25

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG9314
Project : NAVSTA Newport CTO WE30 **Instrument ID:** GCMS-S
Lab File IDs : S9247.D S9248.D S9249.D S9250.D S9251.D S9252.D **Column ID:**
Calibration Date(s): 21-NOV-13 11:20, 21-NOV-13 14:22

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	1.0000	5.0000	20.0000	50.0000	100.0000	200.0000	New	b	m1	m2	%RSD	%RSD	
Bromomethane	7983	19964	63671	171945	365670	737794	LNR	2.600e-00	0.27656		0.99970	0.99000	O
Carbon Disulfide	1.63290	1.61163	1.48741	1.48850	1.43661	1.27347	AVG		1.48842		8.75681	15.00000	O
Acetone	0.23820	0.17870	0.15623	0.14369	0.14192	0.13994	AVG		0.16645		22.8380	15.00000	W
Methyl tert-butyl ether	1.69001	1.61917	1.61895	1.56153	1.49322	1.30045	AVG		1.54722		8.89615	15.00000	O
2-Butanone	0.27102	0.24311	0.23879	0.22973	0.22918	0.21922	AVG		0.23851		7.53419	15.00000	O
Benzene	1.43648	1.34928	1.30543	1.28468	1.24223	1.07762	AVG		1.28262		9.37522	15.00000	O
Cyclohexane	0.92725	0.99911	0.96997	0.94440	0.93283	0.89307	AVG		0.94444		3.87870	15.00000	O
Toluene	0.88924	0.85469	0.82508	0.81453	0.79777	0.72561	AVG		0.81782		6.79244	15.00000	O
4-methyl-2-pentanone	0.37864	0.36068	0.35820	0.33981	0.31267	0.24369	AVG		0.33228		14.6923	15.00000	O
2-Hexanone	0.28461	0.26975	0.26847	0.25724	0.24758	0.21509	AVG		0.25712		9.36864	15.00000	O
Ethylbenzene	0.56704	0.56565	0.54154	0.54141	0.53806	0.51801	AVG		0.54529		3.39466	15.00000	O
Xylenes (total)	+++++	+++++	+++++	+++++	+++++	+++++	AVG		0.000e+00		0.000e+(	15.00000	M
m+p-Xylenes	0.70108	0.65597	0.64662	0.63114	0.60303	0.52035	AVG		0.62637		9.75743	15.00000	O
o-Xylene	0.62311	0.61777	0.59848	0.59522	0.58385	0.56090	AVG		0.59655		3.81766	15.00000	O
Styrene	1.11070	1.08880	1.09788	1.08025	1.04717	0.94572	AVG		1.06175		5.72147	15.00000	O
Bromoform	0.15074	0.15865	0.18781	0.19850	0.20935	0.21785	AVG		0.18715		14.54031	15.00000	O
Isopropylbenzene	3.14543	3.12760	2.96614	2.90113	2.78592	2.32481	AVG		2.87517		10.5101	15.00000	O
N-Propylbenzene	3.73180	3.78125	3.52513	3.43714	3.24569	2.57935	AVG		3.38339		13.0053	15.00000	O
1,3,5-Trimethylbenzene	3.09510	2.91250	2.78859	2.74835	2.68209	2.24823	AVG		2.74581		10.3429	15.00000	O
tert-Butylbenzene	2.65878	2.58836	2.48277	2.47965	2.47960	2.26580	AVG		2.49249		5.34241	15.00000	O
1,2,4-Trimethylbenzene	3.13024	2.91389	2.79393	2.75089	2.68249	2.25953	AVG		2.75516		10.4984	15.00000	O
P-Isopropyltoluene	3.04645	2.93585	2.78063	2.74361	2.65637	2.24962	AVG		2.73542		10.0951	15.00000	O
N-Butylbenzene	3.20832	2.90299	2.77250	2.73743	2.64610	2.23565	AVG		2.75050		11.6055	15.00000	O
sec-Butylbenzene	3.42231	3.40509	3.20535	3.16101	3.02580	2.49264	AVG		3.11870		10.9591	15.00000	O
Naphthalene	2.65118	1.95103	2.07384	2.14377	2.17946	1.97771	AVG		2.16283		11.8091	15.00000	O
Methyl Acetate	0.60668	0.51166	0.49302	0.48603	0.48670	0.50282	AVG		0.51448		8.98560	15.00000	O
Methylcyclohexane	0.90836	0.95777	0.97384	0.96353	0.93167	0.89718	AVG		0.93872		3.33785	15.00000	O
Dibromofluoromethane	0.41842	0.41501	0.43669	0.43495	0.44385	0.42918	AVG		0.42968		2.59157	15.00000	
1,2-Dichloroethane-D4	0.66101	0.64350	0.65251	0.64247	0.64275	0.61270	AVG		0.64249		2.54012	15.00000	
Toluene-D8	1.32424	1.18888	1.19446	1.15728	1.12962	0.94413	AVG		1.15643		10.6927	15.00000	
P-Bromofluorobenzene	0.60253	0.47113	0.47348	0.46130	0.46377	0.43836	AVG		0.48509		12.1346	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG9314
Project : NAVSTA Newport CTO WE30 **Instrument ID:** GCMS-S
Lab File IDs : S9247.D S9248.D S9249.D **Column ID:**
S9250.D S9251.D S9252.D **Calibration Date(s):** 21-NOV-13 11:20
21-NOV-13 14:22

	1.0000 Level 1	5.0000 Level 2	20.0000 Level 3	50.0000 Level 4	100.0000 Level 5	200.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Bromomethane	7983	19964	63671	171945	365670	737794	LNR	2.609e-00	0.27656		0.99970	0.99000	O
Carbon Disulfide	1.63290	1.61163	1.48741	1.48850	1.43661	1.27347	AVG		1.48842		8.75681	15.00000	O
Acetone	0.23820	0.17870	0.15623	0.14369	0.14192	0.13994	AVG		0.16645		22.8380	15.00000	W
Methyl tert-butyl ether	1.69001	1.61917	1.61895	1.56153	1.49322	1.30045	AVG		1.54722		8.89615	15.00000	O
2-Butanone	0.27102	0.24311	0.23879	0.22973	0.22918	0.21922	AVG		0.23851		7.53419	15.00000	O
Benzene	1.43648	1.34928	1.30543	1.28468	1.24223	1.07762	AVG		1.28262		9.37522	15.00000	O
Cyclohexane	0.92725	0.99911	0.96997	0.94440	0.93283	0.89307	AVG		0.94444		3.87870	15.00000	O
Toluene	0.88924	0.85469	0.82508	0.81453	0.79777	0.72561	AVG		0.81782		6.79244	15.00000	O
4-methyl-2-pentanone	0.37864	0.36068	0.35820	0.33981	0.31267	0.24369	AVG		0.33228		14.6923	15.00000	O
2-Hexanone	0.28461	0.26975	0.26847	0.25724	0.24758	0.21509	AVG		0.25712		9.36864	15.00000	O
Ethylbenzene	0.56704	0.56565	0.54154	0.54141	0.53806	0.51801	AVG		0.54529		3.39466	15.00000	O
Xylenes (total)	+++++	+++++	+++++	+++++	+++++	+++++	AVG		0.000e+00		0.000e+	15.00000	M
m+p-Xylenes	0.70108	0.65597	0.64662	0.63114	0.60303	0.52035	AVG		0.62637		9.75743	15.00000	O
o-Xylene	0.62311	0.61777	0.59848	0.59522	0.58385	0.56090	AVG		0.59655		3.81766	15.00000	O
Styrene	1.11070	1.08880	1.09788	1.08025	1.04717	0.94572	AVG		1.06175		5.72147	15.00000	O
Bromoform	0.15074	0.15865	0.18781	0.19850	0.20935	0.21785	AVG		0.18715		14.5403	15.00000	O
Isopropylbenzene	3.14543	3.12760	2.96614	2.90113	2.78592	2.32481	AVG		2.87517		10.5101	15.00000	O
N-Propylbenzene	3.73180	3.78125	3.52513	3.43714	3.24569	2.57935	AVG		3.38339		13.0053	15.00000	O
1,3,5-Trimethylbenzene	3.09510	2.91250	2.78859	2.74835	2.68209	2.24823	AVG		2.74581		10.3429	15.00000	O
tert-Butylbenzene	2.65878	2.58836	2.48277	2.47965	2.47960	2.26580	AVG		2.49249		5.34241	15.00000	O
1,2,4-Trimethylbenzene	3.13024	2.91389	2.79393	2.75089	2.68249	2.25953	AVG		2.75516		10.4984	15.00000	O
P-Isopropyltoluene	3.04645	2.93585	2.78063	2.74361	2.65637	2.24962	AVG		2.73542		10.0951	15.00000	O
N-Butylbenzene	3.20832	2.90299	2.77250	2.73743	2.64610	2.23565	AVG		2.75050		11.6055	15.00000	O
sec-Butylbenzene	3.42231	3.40509	3.20535	3.16101	3.02580	2.49264	AVG		3.11870		10.9591	15.00000	O
Naphthalene	2.65118	1.95103	2.07384	2.14377	2.17946	1.97771	AVG		2.16283		11.8091	15.00000	O
Methyl Acetate	0.60668	0.51166	0.49302	0.48603	0.48670	0.50282	AVG		0.51448		8.98560	15.00000	O
Methylcyclohexane	0.90836	0.95777	0.97384	0.96353	0.93167	0.89718	AVG		0.93872		3.33785	15.00000	O
Dibromofluoromethane	0.41842	0.41501	0.43669	0.43495	0.44385	0.42918	AVG		0.42968		2.59157	15.00000	
1,2-Dichloroethane-D4	0.66101	0.64350	0.65251	0.64247	0.64275	0.61270	AVG		0.64249		2.54012	15.00000	
Toluene-D8	1.32424	1.18888	1.19446	1.15728	1.12962	0.94413	AVG		1.15643		10.6927	15.00000	
P-Bromofluorobenzene	0.60253	0.47113	0.47348	0.46130	0.46377	0.43836	AVG		0.48509		12.1346	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : SB395.D
Instrument ID : GCMS-S

SDG : SG9314
Date Analyzed : 03-DEC-13
Time Analyzed : 08:24
Heated Purge : No

m/e	Ion Abundance Criteria	% Relative Abundance		
50	15.0 - 40.0% of mass 95	19.3		
75	30.0 - 60.0% of mass 95	50.9		
95	Base Peak, 100% relative abundance	100		
96	5.0 - 9.0% of mass 95	7.0		
173	Less than 2.0% of mass 174	0.0	0.0	1
174	Greater than 50.0% of mass 95	77.7		
175	5.0 - 9.0% of mass 174	6.0	7.78	1
176	95.0 - 101.0% of mass 174	76.9	99.04	1
177	5.0 - 9.0% of mass 176	5.1	6.66	2

1-Value is % mass 174 2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG135476-4	S9476.D	12/03/13	08:52
Laboratory Control S	WG135476-1	S9477.D	12/03/13	09:32
Method Blank Sample	WG135476-2	S9480.D	12/03/13	11:27
TF2-SB-RB05-1113	SG9314-14	S9485.D	12/03/13	14:30
TF2-W-TB05-1113	SG9314-15	S9486.D	12/03/13	15:07

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG135476-4 **Analytical Date:** 12/03/13 08:52
Lab File ID : S9476.D **Instrument ID:** GCMS-S
Initial Calibration Date(s): 11/21/13 11:20 11/21/13 14:22 **Column ID:**

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
4 Bromomethane	50.00000	42.23070	0.23359	0.010	-15.53860	20.00000	Linear	
10 Carbon Disulfide	1.48842	1.05178	1.05178	0.010	-29.33552	20.00000	Averaged	*
15 Acetone	0.16645	0.14748	0.14748	0.010	-11.39562	20.00000	Averaged	
19 Methyl tert-butyl ether	1.54722	1.34120	1.34120	0.010	-13.31594	20.00000	Averaged	
40 2-Butanone	0.23851	0.20853	0.20853	0.010	-12.57102	20.00000	Averaged	
41 Benzene	1.28262	1.13007	1.13007	0.010	-11.89374	20.00000	Averaged	
43 Cyclohexane	0.94444	0.66757	0.66757	0.010	-29.31552	20.00000	Averaged	*
57 Toluene	0.81782	0.73550	0.73550	0.010	-10.06610	20.00000	Averaged	
58 4-methyl-2-pentanone	0.33228	0.30578	0.30578	0.010	-7.97528	20.00000	Averaged	
65 2-Hexanone	0.25712	0.22856	0.22856	0.010	-11.10858	20.00000	Averaged	
68 Ethylbenzene	0.54529	0.47917	0.47917	0.010	-12.12428	20.00000	Averaged	
70 Xylenes (total)	++++	0.59252	0.59252	0.010	++++	20.00000	Averaged	*
71 m+p-Xylenes	0.62637	0.59290	0.59290	0.010	-5.34301	20.00000	Averaged	
72 o-Xylene	0.59655	0.59176	0.59176	0.010	-0.80319	20.00000	Averaged	
73 Styrene	1.06175	0.96942	0.96942	0.010	-8.69580	20.00000	Averaged	
74 Bromoform	0.18715	0.20593	0.20593	0.100	10.03708	20.00000	Averaged	
75 Isopropylbenzene	2.87517	2.73690	2.73690	0.010	-4.80911	20.00000	Averaged	
80 N-Propylbenzene	3.38339	3.19122	3.19122	0.010	-5.67979	20.00000	Averaged	
82 1,3,5-Trimethylbenzene	2.74581	2.37157	2.37157	0.010	-13.62961	20.00000	Averaged	
86 tert-Butylbenzene	2.49249	2.37754	2.37754	0.010	-4.61201	20.00000	Averaged	
88 1,2,4-Trimethylbenzene	2.75516	2.37576	2.37576	0.010	-13.77039	20.00000	Averaged	
89 P-Isopropyltoluene	2.73542	2.58169	2.58169	0.010	-5.62011	20.00000	Averaged	
93 N-Butylbenzene	2.75050	2.27410	2.27410	0.010	-17.32053	20.00000	Averaged	
94 sec-Butylbenzene	3.11870	2.99713	2.99713	0.010	-3.89814	20.00000	Averaged	
101 Naphthalene	2.16283	1.92855	1.92855	0.010	-10.83226	20.00000	Averaged	
103 Methyl Acetate	0.51448	0.39435	0.39435	0.010	-23.34977	20.00000	Averaged	*
104 Methylcyclohexane	0.93872	0.75349	0.75349	0.010	-19.73302	20.00000	Averaged	
37 Dibromofluoromethane	0.42968	0.41835	0.41835	0.010	-2.63724	20.00000	Averaged	
45 1,2-Dichloroethane-D4	0.64249	0.57171	0.57171	0.010	-11.01615	20.00000	Averaged	
55 Toluene-D8	1.15643	1.11468	1.11468	0.010	-3.61099	20.00000	Averaged	
76 P-Bromofluorobenzene	0.48509	0.45845	0.45845	0.010	-5.49251	20.00000	Averaged	

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG135476-4
Lab File ID : S9476.D
Initial Calibration Date(s): 11/21/13 11:20 11/21/13 14:22

SDG: SG9314
Analytical Date: 12/03/13 08:52
Instrument ID: GCMS-S
Column ID:

*** = Compound out of QC criteria**

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Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : S9480.D
Instrument ID : GCMS-S
Heated Purge : No

SDG : SG9314
Lab Sample ID : WG135476-2
Date Analyzed : 03-DEC-13
Time Analyzed : 11:27

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135476-1	S9477.D	12/03/13	09:32
TF2-SB-RB05-1113	SG9314-14	S9485.D	12/03/13	14:30
TF2-W-TB05-1113	SG9314-15	S9486.D	12/03/13	15:07

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Report of Analytical Results

Client:
Lab ID: WG135476-2
Client ID: Method Blank Sample
Project:
SDG: SG9314
Lab File ID: S9480.D

Sample Date:
Received Date:
Extract Date: 03-DEC-13
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG135476

Analysis Date: 03-DEC-13
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 06-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Acetone	U	2.5	ug/L	1	5	5.0	2.2	2.5
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
2-Butanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methyl Acetate	U	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
Xylenes (Total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
P-Bromofluorobenzene		96.9	%					
Toluene-d8		97.3	%					
1,2-Dichloroethane-d4		89.0	%					
Dibromofluoromethane		93.7	%					

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG9314

Client Sample ID	Lab Sample ID	Col. ID	BFB	#	DBF	#	DCA	#	TOL	#
TF2-SB-RB05-1113	SG9314-14		93.6		92.4		89.0		93.7	
TF2-W-TB05-1113	SG9314-15		94.4		94.1		89.2		95.0	
Laboratory Control S	WG135476-1		95.1		96.0		87.2		96.1	
Method Blank Sample	WG135476-2		96.9		93.7		89.0		97.3	

		QC Limits
DCA	1,2-DICHLOROETHANE-D4	70-120
BFB	P-BROMOFLUOROBENZENE	75-120
DBF	DIBROMOFLUOROMETHANE	85-115
TOL	TOLUENE-D8	85-120

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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LCS Recovery Report

Client:
Lab ID: WG135476-1
Client ID: LCS
Project:
SDG: SG9314
LCS File ID: S9477.D

Sample Date:
Received Date:
Extract Date: 03-DEC-13
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG135476

Analysis Date: 03-DEC-13
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 06-DEC-13

Compound	Recovery (%)	Conc Added	Conc Recovered	Conc Units	Limits
Bromomethane	93.4	50.0	46.7	ug/L	30-145
Carbon Disulfide	84.8	50.0	42.4	ug/L	35-160
Acetone	121.	50.0	60.3	ug/L	40-140
Methyl tert-butyl Ether	86.7	100.	86.7	ug/L	65-125
2-Butanone	94.6	50.0	47.3	ug/L	30-150
Benzene	86.2	50.0	43.1	ug/L	80-120
Toluene	87.6	50.0	43.8	ug/L	75-120
4-Methyl-2-Pentanone	92.2	50.0	46.1	ug/L	60-135
2-Hexanone	91.6	50.0	45.8	ug/L	55-130
Ethylbenzene	88.4	50.0	44.2	ug/L	75-125
m+p-Xylenes	92.9	100.	92.9	ug/L	75-130
o-Xylene	95.6	50.0	47.8	ug/L	80-120
Styrene	91.6	50.0	45.8	ug/L	65-135
Bromoform	109.	50.0	54.4	ug/L	70-130
Isopropylbenzene	93.6	50.0	46.8	ug/L	75-125
N-Propylbenzene	92.4	50.0	46.2	ug/L	70-130
1,3,5-Trimethylbenzene	83.8	50.0	41.9	ug/L	75-130
tert-Butylbenzene	93.4	50.0	46.7	ug/L	70-130
1,2,4-Trimethylbenzene	87.6	50.0	43.8	ug/L	75-130
P-Isopropyltoluene	95.2	50.0	47.6	ug/L	75-130
N-Butylbenzene	84.6	50.0	42.3	ug/L	70-135
sec-Butylbenzene	94.0	50.0	47.0	ug/L	70-125
Cyclohexane	77.2	50.0	38.6	ug/L	71-133
Methyl Acetate	* 66.4	50.0	33.2	ug/L	70-132
Methylcyclohexane	82.4	50.0	41.2	ug/L	73-125
Naphthalene	89.6	50.0	44.8	ug/L	55-140
Xylenes (Total)	94.0	150.	141.	ug/L	89-116
P-Bromofluorobenzene	95.1				75-120
Toluene-d8	96.1				85-120
1,2-Dichloroethane-d4	87.2				70-120
Dibromofluoromethane	96.0				85-115

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG135281-4
Lab File ID : S9250.D

SDG: SG9314
Analytical Date: 11/21/13 13:09
Instrument ID: GCMS-S

		PENTAFLUOROBENZENE		1,4-DIFLUOROBENZENE		CHLOROBENZENE-D5	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	642087	8.31	1015185	8.96	916008	12.45
	Upper Limit	1284174	8.81	2030370	9.46	1832016	12.95
	Lower Limit	321043.5	7.81	507592.5	8.46	458004	11.95
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG135476-4	637169	8.31	955213	8.96	907100	12.45
Laboratory Control S	WG135476-1	639557	8.31	953103	8.96	898769	12.45
Method Blank Sample	WG135476-2	617469	8.31	913858	8.96	876176	12.45
TF2-SB-RB05-1113	SG9314-14	607407	8.30	903698	8.96	865826	12.44
TF2-W-TB05-1113	SG9314-15	599592	8.31	894320	8.97	862946	12.45

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG135281-4
Lab File ID : S9250.D

SDG: SG9314
Analytical Date: 11/21/13 13:09
Instrument ID: GCMS-S

		1,4-DICHLOROBENZENE-D4			
		Area	#	RT	#
	Std .	487824		15.81	
	Upper Limit	975648		16.31	
	Lower Limit	243912		15.31	
Client Sample ID	Lab Sample ID				
Continuing Calibrati	WG135476-4	509191		15.81	
Laboratory Control S	WG135476-1	509827		15.81	
Method Blank Sample	WG135476-2	491005		15.81	
TF2-SB-RB05-1113	SG9314-14	480710		15.80	
TF2-W-TB05-1113	SG9314-15	484404		15.81	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : GD337.D
Instrument ID : GCMS-G

SDG : SG9314
Date Analyzed : 05-DEC-13
Time Analyzed : 09:25

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	45.1		
68	Less than 2.0% of mass 69	0.7	1.60	1
69	Less than 100.0% of mass 198	42.1		
70	Less than 2.0% of mass 69	0.3	0.70	1
127	40.0 - 60.0% of mass 198	54.5		
197	Less than 1.0% of mass 198	0.2		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.6		
275	10.0 - 30.0% of mass 198	20.9		
365	1.0 - 100.0% of mass 198	2.5		
441	0.0 - 100.0% of mass 443	8.7	73.86	2
442	40.0 - 100.0% of mass 198	61.1		
443	17.0 - 23.0% of mass 442	11.7	19.22	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG135571-4	G0563.D	12/05/13	10:40
Initial Calibration	WG135571-2	G0564.D	12/05/13	11:30
Initial Calibration	WG135571-3	G0565.D	12/05/13	12:13
Initial Calibration	WG135571-5	G0566.D	12/05/13	12:56
Initial Calibration	WG135571-6	G0567.D	12/05/13	13:38
Initial Calibration	WG135571-7	G0568.D	12/05/13	14:21
Independent Source	WG135571-8	G0569.D	12/05/13	15:04

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG9314
Project : NAVSTA Newport CTO WE30 **Instrument ID:** GCMS-G
Lab File IDs : G0564.D G0565.D G0563.D **Column ID:**
G0566.D G0567.D G0568.D **Calibration Date(s):** 05-DEC-13 10:40
05-DEC-13 14:21

	0.200000(Level 1	0.500000(Level 2	1.0000 Level 3	3.0000 Level 4	7.0000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	1.09549	1.41395	1.25495	1.11503	0.99735	0.94622	AVG		1.13716		15.16602	15.00000	W(
2-Methylnaphthalene	18510	40565	79134	223104	475003	610076	QUA	-0.14049	1.36242	0.08365	0.99895	0.99000	O
Acenaphthylene	2.10965	2.08444	2.34186	2.22209	2.14846	2.14561	AVG		2.17535		4.31724	15.00000	O
Acenaphthene	1.38171	1.40328	1.73750	1.46641	1.41804	1.39626	AVG		1.46720		9.24071	15.00000	O
Fluorene	1.55916	1.49400	1.62957	1.49862	1.49050	1.51969	AVG		1.53192		3.53802	15.00000	O
Phenanthrene	1.12494	1.00160	1.13938	1.14683	1.17791	1.29195	AVG		1.14710		8.14541	15.00000	O
Anthracene	1.38710	1.44675	1.39632	1.32516	1.32492	1.19821	AVG		1.34641		6.39688	15.00000	O
Fluoranthene	1.15415	0.98499	1.07827	1.09447	1.07881	1.15156	AVG		1.09037		5.68516	15.00000	O
Pyrene	2.66385	2.66232	2.65101	2.31113	2.40890	2.55613	AVG		2.54222		5.89833	15.00000	O
Benzo(a)anthracene	1.10565	1.02402	1.14062	1.21408	1.22501	1.25608	AVG		1.16091		7.52888	15.00000	O
Chrysene	14798	26429	51944	159612	355882	428032	LNR	-0.11518	1.30161		0.99955	0.99000	O
Benzo(b)fluoranthene	1.14710	1.07683	1.27094	0.92928	1.07673	1.28561	AVG		1.13108		11.88231	15.00000	O
Benzo(k)fluoranthene	11696	23471	47325	169991	340631	392566	QUA	-0.34780	0.70669	-0.00555	0.99631	0.99000	O
Benzo(a)pyrene	7679	12872	29839	113516	244240	273419	LNR	-0.02608	1.20198		0.99631	0.99000	O
Indeno(1,2,3-cd)pyrene	1.00586	1.03510	0.94122	0.81910	0.83945	1.02674	AVG		0.94458		10.1000(	15.00000	O
Dibenzo(a,h)anthracene	0.73568	0.68131	0.62259	0.62064	0.64309	0.79195	AVG		0.68254		10.1031{	15.00000	O
Benzo(g,h,i)perylene	1.00272	0.98689	0.87571	0.73253	0.73516	0.89561	AVG		0.87144		13.4837{	15.00000	O
2-Methylnaphthalene-D10	10338	27219	57087	171701	389438	503630	LNR	-0.28262	0.43794		0.99698	0.99000	
Fluorene-D10	0.85020	0.87227	0.96966	0.92182	0.90645	0.93456	AVG		0.90916		4.74626	15.00000	
Pyrene-D10	1.18670	1.42650	1.42379	1.27334	1.32821	1.35347	AVG		1.33200		6.91211	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : GD340.D
Instrument ID : GCMS-G

SDG : SG9314
Date Analyzed : 09-DEC-13
Time Analyzed : 10:58

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	44.1		
68	Less than 2.0% of mass 69	0.5	1.21	1
69	Less than 100.0% of mass 198	42.0		
70	Less than 2.0% of mass 69	0.1	0.35	1
127	40.0 - 60.0% of mass 198	54.2		
197	Less than 1.0% of mass 198	0.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.8		
275	10.0 - 30.0% of mass 198	21.7		
365	1.0 - 100.0% of mass 198	2.6		
441	0.0 - 100.0% of mass 443	9.0	69.19	2
442	40.0 - 100.0% of mass 198	64.2		
443	17.0 - 23.0% of mass 442	13.1	20.35	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG135798-2	G0624.D	12/09/13	11:17
Method Blank Sample	WG135250-1RA	G0627.D	12/09/13	13:28

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG135798-2 **Analytical Date:** 12/09/13 11:17
Lab File ID : G0624.D **Instrument ID:** GCMS-G
Initial Calibration Date(s): 12/05/13 10:40 12/05/13 14:21 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
21 Naphthalene	1.13716	1.03178	1.03178	0.010	-9.26764	20.00000	Averaged	
27 2-Methylnaphthalene	1.00000	1.09864	0.83533	0.010	9.86437	20.00000	Quadratic	
39 Acenaphthylene	2.17535	2.26180	2.26180	0.010	3.97398	20.00000	Averaged	
42 Acenaphthene	1.46720	1.34030	1.34030	0.010	-8.64913	20.01000	Averaged	
49 Fluorene	1.53192	1.60212	1.60212	0.010	4.58248	20.00000	Averaged	
60 Phenanthrene	1.14710	1.15689	1.15689	0.010	0.85324	20.00000	Averaged	
61 Anthracene	1.34641	1.38709	1.38709	0.010	3.02138	20.00000	Averaged	
64 Fluoranthene	1.09037	1.05172	1.05172	0.010	-3.54465	20.01000	Averaged	
66 Pyrene	2.54222	2.96172	2.96172	0.010	16.50097	20.00000	Averaged	
68 Benzo(a)anthracene	1.16091	1.19175	1.19175	0.010	2.65643	20.00000	Averaged	
70 Chrysene	1.00000	1.08037	1.52615	0.010	8.03749	20.00000	Linear	
74 Benzo(b)fluoranthene	1.13108	1.35569	1.35569	0.010	19.85833	20.00000	Averaged	
75 Benzo(k)fluoranthene	1.00000	1.44661	2.50224	0.010	44.66086	20.00000	Quadratic	*
76 Benzo(a)pyrene	1.00000	1.02719	1.25974	0.010	2.71931	20.01000	Linear	
78 Indeno(1,2,3-cd)pyrene	0.94458	0.99200	0.99200	0.010	5.02008	20.00000	Averaged	
79 Dibenzo(a,h)anthracene	0.68254	0.72842	0.72842	0.010	6.72051	20.00000	Averaged	
80 Benzo(g,h,i)perylene	0.87144	0.96423	0.96423	0.010	10.64835	20.00000	Averaged	
26 2-Methylnaphthalene-D10	1.00000	1.15493	0.60480	0.010	15.49301	20.00000	Linear	
48 Fluorene-D10	0.90916	1.01956	1.01956	0.010	12.14307	20.00000	Averaged	
65 Pyrene-D10	1.33200	1.58648	1.58648	0.010	19.10497	20.00000	Averaged	

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : G0627.D
Instrument ID : GCMS-G
Matrix : AQ

SDG : SG9314
Lab Sample ID : WG135250-1RA
Date Extracted : 27-NOV-13
Date Analyzed : 09-DEC-13
Time Analyzed : 13:28

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
TF2-SB-RB05-1113	SG9314-14RA	G0717.D	12/14/13	16:02
Laboratory Control S	WG135250-2RA	G0728.D	12/16/13	11:58
Laboratory Control S	WG135250-3RA	G0729.D	12/16/13	12:40

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG135250-1RA
Client ID: Method Blank Sample
Project:
SDG: SG9314
Lab File ID: G0627.D

Sample Date:
Received Date:
Extract Date: 27-NOV-13
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG135250

Analysis Date: 09-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		64.6	%					
Fluorene-D10		54.8	%					
pyrene-d10		76.8	%					

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : GD342.D
Instrument ID : GCMS-G

SDG : SG9314
Date Analyzed : 11-DEC-13
Time Analyzed : 12:11

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	44.8		
68	Less than 2.0% of mass 69	0.5	1.22	1
69	Less than 100.0% of mass 198	44.0		
70	Less than 2.0% of mass 69	0.3	0.79	1
127	40.0 - 60.0% of mass 198	56.3		
197	Less than 1.0% of mass 198	0.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.2		
275	10.0 - 30.0% of mass 198	21.7		
365	1.0 - 100.0% of mass 198	2.8		
441	0.0 - 100.0% of mass 443	9.9	81.86	2
442	40.0 - 100.0% of mass 198	66.8		
443	17.0 - 23.0% of mass 442	12.1	18.09	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG135943-4	G0659.D	12/11/13	12:30
Initial Calibration	WG135943-2	G0660.D	12/11/13	13:12
Initial Calibration	WG135943-3	G0661.D	12/11/13	13:55
Initial Calibration	WG135943-5	G0662.D	12/11/13	14:38
Initial Calibration	WG135943-6	G0663.D	12/11/13	15:21
Initial Calibration	WG135943-7	G0664.D	12/11/13	16:04
Independent Source	WG135943-8	G0665.D	12/11/13	16:46

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG9314
Project : NAVSTA Newport CTO WE30 **Instrument ID:** GCMS-G
Lab File IDs : G0660.D G0661.D G0659.D **Column ID:**
G0662.D G0663.D G0664.D **Calibration Date(s):** 11-DEC-13 12:30
11-DEC-13 16:04

	0.200000(Level 1	0.500000(Level 2	1.0000 Level 3	3.0000 Level 4	7.0000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	1.05723	1.13847	1.19997	1.09294	1.02787	0.95170	AVG		1.07803		8.04965	15.00000	O
2-Methylnaphthalene	14846	31629	55402	187568	320048	677862	LNR	-0.23183	0.52805		0.99920	0.99000	O
Acenaphthylene	2.01391	2.22523	2.41374	2.36254	2.35239	2.21872	AVG		2.26442		6.43120	15.00000	O
Acenaphthene	1.81434	1.76622	1.56634	1.46509	1.48694	1.49119	AVG		1.59835		9.59135	15.00000	O
Fluorene	1.41247	1.37519	1.52301	1.44207	1.50303	1.56544	AVG		1.47020		4.91321	15.00000	O
Phenanthrene	1.23672	1.21443	1.46656	1.30772	1.33294	1.30594	AVG		1.31072		6.78607	15.00000	O
Anthracene	1.46034	1.44054	1.56718	1.27749	1.29851	1.28209	AVG		1.38769		8.61954	15.00000	O
Fluoranthene	1.06850	0.88027	1.09875	1.04545	1.15929	1.19495	AVG		1.07454		10.2699(	15.00000	O
Pyrene	2.89741	2.58989	2.77563	2.64254	2.27797	2.07798	AVG		2.54357		12.1598[	15.00000	O
Benzo(a)anthracene	1.04981	0.97488	1.06772	1.20431	1.23157	1.28163	AVG		1.13499		10.6496[	15.00000	O
Chrysene	9686	11962	26488	83451	203785	480955	QUA	0.06305	0.58920	0.01929	0.99836	0.99000	O
Benzo(b)fluoranthene	3575	4536	12376	58203	163183	444069	LNR	0.03314	1.15730		0.99663	0.99000	O
Benzo(k)fluoranthene	8446	11461	24541	80405	198322	529122	QUA	-0.22519	0.63684	0.00620	0.99227	0.99000	O
Benzo(a)pyrene	1.21636	1.14780	1.35309	1.40896	1.05208	1.12657	AVG		1.21748		11.3535[	15.00000	O
Indeno(1,2,3-cd)pyrene	0.81549	0.97542	1.04736	1.07058	0.85951	0.91617	AVG		0.94742		10.7693[	15.00000	O
Dibenzo(a,h)anthracene	0.59563	0.59978	0.70798	0.80914	0.65122	0.66532	AVG		0.67151		11.8436[	15.00000	O
Benzo(g,h,i)perylene	0.93625	1.03913	1.05356	1.03329	0.79697	0.82009	AVG		0.94655		12.1396[	15.00000	O
2-Methylnaphthalene-D10	9946	22410	39791	138610	246144	515332	LNR	-0.16965	0.40461		0.99931	0.99000	
Fluorene-D10	0.84305	0.92539	0.98432	0.89095	0.91025	0.94905	AVG		0.91717		5.30181	15.00000	
Pyrene-D10	1.65754	1.43591	1.30815	1.30757	1.22869	1.12151	AVG		1.34323		13.8144[	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : GD344.D
Instrument ID : GCMS-G

SDG : SG9314
Date Analyzed : 13-DEC-13
Time Analyzed : 09:47

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	43.1		
68	Less than 2.0% of mass 69	0.7	1.51	1
69	Less than 100.0% of mass 198	44.4		
70	Less than 2.0% of mass 69	0.3	0.73	1
127	40.0 - 60.0% of mass 198	59.3		
197	Less than 1.0% of mass 198	0.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.5		
275	10.0 - 30.0% of mass 198	20.8		
365	1.0 - 100.0% of mass 198	2.4		
441	0.0 - 100.0% of mass 443	8.4	70.59	2
442	40.0 - 100.0% of mass 198	58.7		
443	17.0 - 23.0% of mass 442	11.9	20.32	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG136116-2	G0693.D	12/13/13	10:07
Method Blank Sample	WG135526-1	G0695.D	12/13/13	11:32
Laboratory Control S	WG135526-2	G0696.D	12/13/13	12:15
TF2-003-SB1013-0204	SG9314-1	G0702.D	12/13/13	16:32
TF2-003-SB1019-0204	SG9314-3	G0704.D	12/13/13	17:57
TF2-003-SB1019-0810	SG9314-4	G0705.D	12/13/13	18:39
TF2-001-SS1001-0001	SG9314-5	G0706.D	12/13/13	19:21
Matrix Spike	WG135526-4	G0707.D	12/13/13	20:03
Matrix Spike Duplica	WG135526-5	G0708.D	12/13/13	20:44
TF2-001-SB1001-0204	SG9314-6	G0709.D	12/13/13	21:26
Laboratory Control S	WG135526-3RA	G0730.D	12/16/13	13:23

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG136116-2 **Analytical Date:** 12/13/13 10:07
Lab File ID : G0693.D **Instrument ID:** GCMS-G
Initial Calibration Date(s): 12/11/13 12:30 12/11/13 16:04 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
21 Naphthalene	1.07803	1.03458	1.03458	0.010	-4.03083	20.00000	Averaged
27 2-Methylnaphthalene	1.00000	1.09267	0.67492	0.010	9.26701	20.00000	Linear
39 Acenaphthylene	2.26442	2.14584	2.14584	0.010	-5.23665	20.00000	Averaged
42 Acenaphthene	1.59835	1.31986	1.31986	0.010	-17.42349	20.01000	Averaged
49 Fluorene	1.47020	1.50295	1.50295	0.010	2.22750	20.00000	Averaged
60 Phenanthrene	1.31072	1.29197	1.29197	0.010	-1.43002	20.00000	Averaged
61 Anthracene	1.38769	1.25199	1.25199	0.010	-9.77908	20.00000	Averaged
64 Fluoranthene	1.07454	1.12600	1.12600	0.010	4.78960	20.01000	Averaged
66 Pyrene	2.54357	2.42272	2.42272	0.010	-4.75134	20.00000	Averaged
68 Benzo(a)anthracene	1.13499	1.27571	1.27571	0.010	12.39832	20.00000	Averaged
70 Chrysene	1.00000	0.86993	1.31959	0.010	-13.00706	20.00000	Quadratic
74 Benzo(b)fluoranthene	1.00000	1.15864	1.31022	0.010	15.86423	20.00000	Linear
75 Benzo(k)fluoranthene	1.00000	1.04132	1.87525	0.010	4.13195	20.00000	Quadratic
76 Benzo(a)pyrene	1.21748	1.24763	1.24763	0.010	2.47690	20.01000	Averaged
78 Indeno(1,2,3-cd)pyrene	0.94742	0.85100	0.85100	0.010	-10.17690	20.00000	Averaged
79 Dibenzo(a,h)anthracene	0.67151	0.56132	0.56132	0.010	-16.40944	20.00000	Averaged
80 Benzo(g,h,i)perylene	0.94655	0.83970	0.83970	0.010	-11.28815	20.00000	Averaged
26 2-Methylnaphthalene-D10	1.00000	1.14150	0.51677	0.010	14.14952	20.00000	Linear
48 Fluorene-D10	0.91717	0.95275	0.95275	0.010	3.87937	20.00000	Averaged
65 Pyrene-D10	1.34323	1.28705	1.28705	0.010	-4.18225	20.00000	Averaged

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : G0695.D
Instrument ID : GCMS-G
Matrix : SL

SDG : SG9314
Lab Sample ID : WG135526-1
Date Extracted : 04-DEC-13
Date Analyzed : 13-DEC-13
Time Analyzed : 11:32

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135526-2	G0696.D	12/13/13	12:15
TF2-003-SB1013-0204	SG9314-1	G0702.D	12/13/13	16:32
TF2-003-SB1019-0204	SG9314-3	G0704.D	12/13/13	17:57
TF2-003-SB1019-0810	SG9314-4	G0705.D	12/13/13	18:39
TF2-001-SS1001-0001	SG9314-5	G0706.D	12/13/13	19:21
Matrix Spike	WG135526-4	G0707.D	12/13/13	20:03
Matrix Spike Duplica	WG135526-5	G0708.D	12/13/13	20:44
TF2-001-SB1001-0204	SG9314-6	G0709.D	12/13/13	21:26
TF2-001-SB1001-0810	SG9314-7	G0718.D	12/14/13	16:44
TF2-001-SS1002-0001	SG9314-8	G0719.D	12/14/13	17:25
TF2-001-SB1002-0204	SG9314-9	G0720.D	12/14/13	18:07
TF2-001-SB1002-0405	SG9314-10	G0721.D	12/14/13	18:48
TF2-001-SS1003-0001	SG9314-11	G0722.D	12/14/13	19:30
Matrix Spike	WG135526-6	G0723.D	12/14/13	20:12
Matrix Spike Duplica	WG135526-7	G0724.D	12/14/13	20:53
TF2-001-SB1003-0204	SG9314-12	G0725.D	12/14/13	21:35
TF2-SB-DUP09-1113	SG9314-13	G0726.D	12/14/13	22:17
Laboratory Control S	WG135526-3RA	G0730.D	12/16/13	13:23
TF2-003-SB1019-0204	SG9314-3DL	G0732.D	12/16/13	14:49
TF2-003-SB1013-0405	SG9314-2RA	G0733.D	12/16/13	15:32
TF2-003-SB1019-0810	SG9314-4RA	G0734.D	12/16/13	16:15
TF2-001-SB1001-0204	SG9314-6RA	G0735.D	12/16/13	16:58
TF2-001-SS1003-0001	SG9314-11RA	G0736.D	12/16/13	17:40

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG135526-1
Client ID: Method Blank Sample
Project:
SDG: SG9314
Lab File ID: G0695.D

Sample Date:
Received Date:
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 13-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		79.3	%					
Fluorene-D10		54.2	%					
Pyrene-D10		79.5	%					

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : GD345.D
Instrument ID : GCMS-G

SDG : SG9314
Date Analyzed : 14-DEC-13
Time Analyzed : 10:52

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	44.7		
68	Less than 2.0% of mass 69	0.8	1.86	1
69	Less than 100.0% of mass 198	42.6		
70	Less than 2.0% of mass 69	0.2	0.57	1
127	40.0 - 60.0% of mass 198	53.4		
197	Less than 1.0% of mass 198	0.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.7		
275	10.0 - 30.0% of mass 198	24.1		
365	1.0 - 100.0% of mass 198	2.8		
441	0.0 - 100.0% of mass 443	10.2	68.63	2
442	40.0 - 100.0% of mass 198	77.3		
443	17.0 - 23.0% of mass 442	14.9	19.31	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG136161-4	G0710.D	12/14/13	11:10
Initial Calibration	WG136161-2	G0711.D	12/14/13	11:54
Initial Calibration	WG136161-3	G0712.D	12/14/13	12:35
Initial Calibration	WG136161-5	G0713.D	12/14/13	13:16
Initial Calibration	WG136161-6	G0714.D	12/14/13	13:58
Initial Calibration	WG136161-7	G0715.D	12/14/13	14:39
Independent Source	WG136161-8	G0716.D	12/14/13	15:21
TF2-SB-RB05-1113	SG9314-14RA	G0717.D	12/14/13	16:02
TF2-001-SB1001-0810	SG9314-7	G0718.D	12/14/13	16:44
TF2-001-SS1002-0001	SG9314-8	G0719.D	12/14/13	17:25
TF2-001-SB1002-0204	SG9314-9	G0720.D	12/14/13	18:07
TF2-001-SB1002-0405	SG9314-10	G0721.D	12/14/13	18:48
TF2-001-SS1003-0001	SG9314-11	G0722.D	12/14/13	19:30
Matrix Spike	WG135526-6	G0723.D	12/14/13	20:12
Matrix Spike Duplica	WG135526-7	G0724.D	12/14/13	20:53
TF2-001-SB1003-0204	SG9314-12	G0725.D	12/14/13	21:35
TF2-SB-DUP09-1113	SG9314-13	G0726.D	12/14/13	22:17 ✓

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SG9314
Project : NAVSTA Newport CTO WE30
Instrument ID: GCMS-G
Lab File IDs : G0711.D G0712.D G0710.D G0713.D G0714.D G0715.D
Column ID:
Calibration Date(s): 14-DEC-13 11:10, 14-DEC-13 14:39

	Level 1 0.200000(	Level 2 0.500000(	Level 3 1.0000	Level 4 3.0000	Level 5 7.0000	Level 6 10.0000	Crv New	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.97314	1.02086	1.03630	0.98973	0.95229	0.89223	AVG		0.97743		5.29883	15.00000	O
2-Methylnaphthalene	0.71738	0.77457	0.78032	0.73773	0.70206	0.67993	AVG		0.73200		5.46496	15.00000	O
Acenaphthylene	2.22837	2.20708	2.27601	2.10680	2.15177	2.19077	AVG		2.19347		2.69515	15.00000	O
Acenaphthene	1.35073	1.36964	1.44687	1.34836	1.30238	1.27393	AVG		1.34865		4.42611	15.00000	O
Fluorene	1.46575	1.50078	1.49231	1.43820	1.40399	1.47380	AVG		1.46247		2.46664	15.00000	O
Phenanthrene	1.21936	1.20408	1.35688	1.31001	1.24644	1.29767	AVG		1.27241		4.62889	15.00000	O
Anthracene	1.38770	1.29849	1.41541	1.37700	1.26439	1.33886	AVG		1.34698		4.26225	15.00000	O
Fluoranthene	0.88395	0.88012	0.94640	0.91783	0.94694	0.94837	AVG		0.92060		3.47622	15.00000	O
Pyrene	3.13733	2.79479	2.60158	2.36240	2.14232	2.21740	AVG		2.54264		14.9164[illegible]	15.00000	O
Benzo(a)anthracene	1.20461	1.15428	1.27999	1.12606	1.17694	1.19992	AVG		1.19030		4.43675	15.00000	O
Chrysene	9596	25323	35331	110598	337392	392859	QUA	0.05473	0.65347	0.01981	0.99784	0.99000	O
Benzo(b)fluoranthene	1.12877	0.90446	1.29266	1.18949	1.32110	1.30926	AVG		1.19095		13.3939(	15.00000	O
Benzo(k)fluoranthene	2.30847	1.72551	1.91232	1.70568	1.61871	1.60002	AVG		1.81179		14.7613[illegible]	15.00000	O
Benzo(a)pyrene	1.44186	1.02341	1.30470	1.28277	1.21248	1.20718	AVG		1.24540		11.0874[illegible]	15.00000	O
Indeno(1,2,3-cd)pyrene	1.18445	0.88916	1.16400	1.03902	1.18477	1.15667	AVG		1.10301		10.7073[illegible]	15.00000	O
Dibenzo(a,h)anthracene	0.70482	0.63366	0.87166	0.77466	0.87845	0.88106	AVG		0.79072		13.2292(	15.00000	O
Benzo(g,h,i)perylene	1.25435	0.90392	1.14824	1.01128	1.10620	1.06866	AVG		1.08211		11.0564[illegible]	15.00000	O
2-Methylnaphthalene-D10	0.48076	0.57675	0.56846	0.51518	0.50128	0.47255	AVG		0.51916		8.49714	15.00000	
Fluorene-D10	0.92146	0.97931	0.96568	0.90697	0.89597	0.93774	AVG		0.93452		3.51767	15.00000	
Pyrene-D10	1.26549	1.35748	1.37628	1.28406	1.17848	1.24463	AVG		1.28441		5.71499	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : GD346.D
Instrument ID : GCMS-G

SDG : SG9314
Date Analyzed : 16-DEC-13
Time Analyzed : 10:34

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	44.1		
68	Less than 2.0% of mass 69	0.8	1.83	1
69	Less than 100.0% of mass 198	42.5		
70	Less than 2.0% of mass 69	0.3	0.74	1
127	40.0 - 60.0% of mass 198	53.4		
197	Less than 1.0% of mass 198	0.5		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.9		
275	10.0 - 30.0% of mass 198	24.4		
365	1.0 - 100.0% of mass 198	3.4		
441	0.0 - 100.0% of mass 443	12.4	75.38	2
442	40.0 - 100.0% of mass 198	87.8		
443	17.0 - 23.0% of mass 442	16.4	18.69	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG136254-2	G0727.D	12/16/13	11:10
Laboratory Control S	WG135250-2RA	G0728.D	12/16/13	11:58
Laboratory Control S	WG135250-3RA	G0729.D	12/16/13	12:40
TF2-003-SB1019-0204	SG9314-3DL	G0732.D	12/16/13	14:49
TF2-003-SB1013-0405	SG9314-2RA	G0733.D	12/16/13	15:32
TF2-003-SB1019-0810	SG9314-4RA	G0734.D	12/16/13	16:15
TF2-001-SB1001-0204	SG9314-6RA	G0735.D	12/16/13	16:58
TF2-001-SS1003-0001	SG9314-11RA	G0736.D	12/16/13	17:40

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG136254-2 **Analytical Date:** 12/16/13 11:10
Lab File ID : G0727.D **Instrument ID:** GCMS-G
Initial Calibration Date(s): 12/14/13 11:10 12/14/13 14:39 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
21 Naphthalene	0.97743	1.11245	1.11245	0.010	13.81466	20.00000	Averaged	
27 2-Methylnaphthalene	0.73200	0.86729	0.86729	0.010	18.48214	20.00000	Averaged	
39 Acenaphthylene	2.19347	2.36042	2.36042	0.010	7.61113	20.00000	Averaged	
42 Acenaphthene	1.34865	1.52230	1.52230	0.010	12.87583	20.01000	Averaged	
49 Fluorene	1.46247	1.58466	1.58466	0.010	8.35514	20.00000	Averaged	
60 Phenanthrene	1.27241	1.41433	1.41433	0.010	11.15377	20.00000	Averaged	
61 Anthracene	1.34698	1.56508	1.56508	0.010	16.19200	20.00000	Averaged	
64 Fluoranthene	0.92060	1.25626	1.25626	0.010	36.46074	20.01000	Averaged	*
66 Pyrene	2.54264	2.19542	2.19542	0.010	-13.65594	20.00000	Averaged	
68 Benzo(a)anthracene	1.19030	1.26641	1.26641	0.010	6.39382	20.00000	Averaged	
70 Chrysene	1.00000	0.96772	1.34530	0.010	-3.22805	20.00000	Quadratic	
74 Benzo(b)fluoranthene	1.19095	1.31832	1.31832	0.010	10.69427	20.00000	Averaged	
75 Benzo(k)fluoranthene	1.81179	1.61509	1.61509	0.010	-10.85633	20.00000	Averaged	
76 Benzo(a)pyrene	1.24540	1.19502	1.19502	0.010	-4.04541	20.01000	Averaged	
78 Indeno(1,2,3-cd)pyrene	1.10301	1.14368	1.14368	0.010	3.68726	20.00000	Averaged	
79 Dibenzo(a,h)anthracene	0.79072	0.85935	0.85935	0.010	8.67944	20.00000	Averaged	
80 Benzo(g,h,i)perylene	1.08211	1.08186	1.08186	0.010	-0.02335	20.00000	Averaged	
26 2-Methylnaphthalene-D10	0.51916	0.57033	0.57033	0.010	9.85485	20.00000	Averaged	
48 Fluorene-D10	0.93452	1.00551	1.00551	0.010	7.59604	20.00000	Averaged	
65 Pyrene-D10	1.28441	1.18509	1.18509	0.010	-7.73232	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG9314

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
TF2-003-SB1013-0204	SG9314-1		85.0		56.4		66.5	
TF2-001-SB1002-0405	SG9314-10		71.0		60.4		70.0	
TF2-001-SS1003-0001	SG9314-11		74.7		62.4		67.1	
TF2-001-SS1003-0001	SG9314-11RA		71.2		59.6		56.3	
TF2-001-SB1003-0204	SG9314-12		66.3		55.4		57.8	
TF2-SB-DUP09-1113	SG9314-13		62.3		57.9		65.3	
TF2-003-SB1013-0405	SG9314-2RA		79.0		66.1		57.8	
TF2-003-SB1019-0204	SG9314-3		102.	*	65.6		62.4	
TF2-003-SB1019-0204	SG9314-3DL		85.6		68.2		55.2	
TF2-003-SB1019-0810	SG9314-4		84.2		56.2		61.2	
TF2-003-SB1019-0810	SG9314-4RA		67.3		55.8		50.8	
TF2-001-SS1001-0001	SG9314-5		92.8		60.4		70.1	
TF2-001-SB1001-0204	SG9314-6		87.5		57.3		67.9	
TF2-001-SB1001-0204	SG9314-6RA		66.1		54.6		53.6	
TF2-001-SB1001-0810	SG9314-7		66.4		53.9		52.1	
TF2-001-SS1002-0001	SG9314-8		81.6		65.2		69.2	
TF2-001-SB1002-0204	SG9314-9		67.8		54.8		57.1	
Method Blank Sample	WG135526-1		79.3		54.2		79.5	
Laboratory Control S	WG135526-2		83.3		58.6		74.4	
Laboratory Control S	WG135526-3RA		63.1		54.7		61.9	
Matrix Spike	WG135526-4		83.8		57.8		69.4	
Matrix Spike Duplica	WG135526-5		89.4		62.3		71.7	
Matrix Spike	WG135526-6		75.4		65.4		72.1	
Matrix Spike Duplica	WG135526-7		72.3		60.5		60.4	

		QC Limits
PYR	PYRENE-D10	31-128
FLO	FLUORENE-D10	20-96
2MN	2-METHYLNAPHTHALENE-D10	19-94

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG9314

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
TF2-SB-RB05-1113	SG9314-14RA		77.1		67.6		82.2	
Method Blank Sample	WG135250-1RA		64.6		54.8		76.8	
Laboratory Control S	WG135250-2RA		90.2		72.5		77.0	
Laboratory Control S	WG135250-3RA		82.8		66.3		72.4	

		QC Limits
2MN	2-METHYLNAPHTHALENE-D10	43-92
FLO	FLUORENE-D10	29-101
PYR	PYRENE-D10	53-166

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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ANALYTICAL SERVICES

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Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG135250-2RA
LCSD ID: WG135250-3RA
Project:
SDG: SG9314
Report Date: 19-DEC-13
LCS File ID: G0728.D

Received Date:
Extract Date: 27-NOV-13
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG135250
LCSD File ID: G0729.D

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	2.00	1.38	69.0	1.33	66.5	ug/L	4	20	46-84
2-Methylnaphthalene	2.00	1.32	66.0	1.25	62.5	ug/L	5	20	51-114
Acenaphthylene	2.00	1.27	63.5	1.20	60.0	ug/L	6	20	55-105
Acenaphthene	2.00	1.42	71.0	1.35	67.5	ug/L	5	20	53-90
Fluorene	2.00	1.46	73.0	1.39	69.5	ug/L	5	20	53-95
Phenanthrene	2.00	1.70	85.0	1.61	80.5	ug/L	5	20	73-100
Anthracene	2.00	1.70	85.0	1.36	68.0*	ug/L	22*	20	70-95
Fluoranthene	2.00	2.14	107.	1.98	99.0	ug/L	8	20	81-109
Pyrene	2.00	1.38	69.0*	1.33	66.5*	ug/L	4	20	71-104
Benzo(a)anthracene	2.00	1.66	83.0	1.55	77.5	ug/L	7	20	70-110
Chrysene	2.00	1.62	81.0	1.57	78.5	ug/L	3	20	70-95
Benzo(b)Fluoranthene	2.00	1.81	90.5	1.76	88.0	ug/L	3	20	67-102
Benzo(k)fluoranthene	2.00	1.51	75.5	1.48	74.0	ug/L	2	20	68-103
Benzo(a)pyrene	2.00	1.52	76.0	1.48	74.0	ug/L	3	20	63-98
Indeno(1,2,3-cd)pyrene	2.00	1.58	79.0	1.43	71.5	ug/L	10	20	61-112
Dibenzo(a,h)anthracene	2.00	1.65	82.5	1.46	73.0	ug/L	12	20	66-108
Benzo(g,h,i)perylene	2.00	1.54	77.0	1.41	70.5	ug/L	9	20	62-106
2-Methylnaphthalene-D10			90.2		82.8				43-92
Fluorene-D10			72.5		66.3				29-101
Pyrene-d10			77.0		72.4				53-166

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LCS/LCSD Recovery Report

LCS ID: WG135526-2
LCSD ID: WG135526-3RA
Project:
SDG: SG9314
Report Date: 19-DEC-13
LCS File ID: G0696.D

Received Date:
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526
LCSD File ID: G0730.D

Analysis Date: 13-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	37.6	56.4	33.6	50.4	ug/Kgdrywt	11	30	10-129
2-Methylnaphthalene	66.7	38.1	57.1	31.6	47.4	ug/Kgdrywt	19	30	10-152
Acenaphthylene	66.7	33.7	50.5	29.5	44.2	ug/Kgdrywt	13	30	25-94
Acenaphthene	66.7	30.4	45.6	33.9	50.8	ug/Kgdrywt	11	30	33-98
Fluorene	66.7	38.4	57.6	37.4	56.1	ug/Kgdrywt	3	30	40-92
Phenanthrene	66.7	45.8	68.7	43.8	65.7	ug/Kgdrywt	4	30	46-96
Anthracene	66.7	40.8	61.2	42.2	63.3	ug/Kgdrywt	3	30	34-96
Fluoranthene	66.7	50.9	76.3	58.0	87.0	ug/Kgdrywt	13	30	38-116
Pyrene	66.7	47.0	70.5	37.9	56.8	ug/Kgdrywt	21	30	35-111
Benzo(a)anthracene	66.7	57.2	85.8	44.2	66.3	ug/Kgdrywt	26	30	48-100
Chrysene	66.7	47.5	71.2	44.9	67.3	ug/Kgdrywt	6	30	46-101
Benzo(b)Fluoranthene	66.7	58.5	87.7	40.8	61.2	ug/Kgdrywt	36*	30	53-100
Benzo(k)fluoranthene	66.7	58.7	88.0	35.5	53.2	ug/Kgdrywt	49*	30	49-96
Benzo(a)pyrene	66.7	52.0	78.0	32.4	48.6*	ug/Kgdrywt	46*	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	34.6	51.9	33.3	49.9*	ug/Kgdrywt	4	30	50-105
Dibenzo(a,h)anthracene	66.7	55.8	83.6	34.8	52.2*	ug/Kgdrywt	46*	30	55-105
Benzo(g,h,i)perylene	66.7	43.3	64.9	27.5	41.2*	ug/Kgdrywt	45*	30	53-103
2-Methylnaphthalene-D10			83.3		63.1				19-94
Fluorene-D10			58.6		54.7				20-96
Pyrene-D10			74.4		61.9				31-128

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MS/MSD Recovery Report

MS ID: WG135526-4
MSD ID: WG135526-5
Sample ID: SG9314-5
Client ID: TF2-001-SS1001-0001
Project:
SDG: SG9314
MS File ID: G0707.D

Received Date:
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526
Report Date: 19-DEC-13
MSD File ID: G0708.D

Analysis Date: 13-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 90.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	73.5	73.5	ug/Kgdrywt	U11.	36.	39.	49.2	53.3	8	30	10-129
2-Methylnaphthalene	73.5	73.5	ug/Kgdrywt	U11.	37.	43.	50.2	58.1	14	30	10-152
Acenaphthylene	73.5	73.5	ug/Kgdrywt	U11.	32.	36.	43.8	48.6	10	30	25-94
Acenaphthene	73.5	73.5	ug/Kgdrywt	U11.	29.	32.	39.6	44.1	11	30	33-98
Fluorene	73.5	73.5	ug/Kgdrywt	U11.	36.	41.	48.6	55.5	13	30	40-92
Phenanthrene	73.5	73.5	ug/Kgdrywt	J2.8	43.	50.	54.5	63.9	15	30	46-96
Anthracene	73.5	73.5	ug/Kgdrywt	U11.	34.	37.	45.6	50.6	10	30	34-96
Fluoranthene	73.5	73.5	ug/Kgdrywt	J7.6	51.	63.	58.8	75.1	21	30	38-116
Pyrene	73.5	73.5	ug/Kgdrywt	J6.2	49.	57.	57.9	69.6	16	30	35-111
Benzo(a)anthracene	73.5	73.5	ug/Kgdrywt	J4.7	54.	60.	66.4	74.7	11	30	48-100
Chrysene	73.5	73.5	ug/Kgdrywt	J5.8	41.	48.	48.4	57.9	16	30	46-101
Benzo(b)Fluoranthene	73.5	73.5	ug/Kgdrywt	J5.8	53.	63.	64.4	77.3	16	30	53-100
Benzo(k)fluoranthene	73.5	73.5	ug/Kgdrywt	U11.	47.	54.	64.5	73.6	13	30	49-96
Benzo(a)pyrene	73.5	73.5	ug/Kgdrywt	JMM3.8	40.	47.	50.0*	58.8*	15	30	61-101
Indeno(1,2,3-cd)pyrene	73.5	73.5	ug/Kgdrywt	J2.8	46.	50.	59.2	64.3	8	30	50-105
Dibenzo(a,h)anthracene	73.5	73.5	ug/Kgdrywt	U11.	49.	45.	67.2	60.9	10	30	55-105
Benzo(g,h,i)perylene	73.5	73.5	ug/Kgdrywt	JMM2.4	38.	36.	48.1*	45.0*	6	30	53-103
2-Methylnaphthalene-D10							83.8	89.4			19-94
Fluorene-D10							57.8	62.3			20-96
Pyrene-D10							69.4	71.7			31-128

600 Technology Way
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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

MS/MSD Recovery Report

MS ID: WG135526-6
MSD ID: WG135526-7
Sample ID: SG9314-11
Client ID: TF2-001-SS1003-0001
Project:
SDG: SG9314
MS File ID: G0723.D

Received Date:
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526
Report Date: 19-DEC-13
MSD File ID: G0724.D

Analysis Date: 14-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	74.5	74.7	ug/Kgdrywt	U11.	40.	37.	53.7	49.0	9	30	10-129
2-Methylnaphthalene	74.5	74.7	ug/Kgdrywt	U11.	37.	33.	49.9	44.3	12	30	10-152
Acenaphthylene	74.5	74.7	ug/Kgdrywt	U11.	38.	34.	51.6	45.2	13	30	25-94
Acenaphthene	74.5	74.7	ug/Kgdrywt	U11.	41.	38.	55.3	50.2	9	30	33-98
Fluorene	74.5	74.7	ug/Kgdrywt	U11.	44.	40.	59.1	53.5	10	30	40-92
Phenanthrene	74.5	74.7	ug/Kgdrywt	J3.5	58.	50.	72.8	61.7	15	30	46-96
Anthracene	74.5	74.7	ug/Kgdrywt	U11.	38.	39.	51.1	51.9	2	30	34-96
Fluoranthene	74.5	74.7	ug/Kgdrywt	25.	97.	93.	96.2	91.6	3	30	38-116
Pyrene	74.5	74.7	ug/Kgdrywt	J18.	75.	61.	76.9	57.9	20	30	35-111
Benzo(a)anthracene	74.5	74.7	ug/Kgdrywt	J21.	81.	75.	79.7	71.4	8	30	48-100
Chrysene	74.5	74.7	ug/Kgdrywt	J19.	67.	61.	64.7	56.5	9	30	46-101
Benzo(b)Fluoranthene	74.5	74.7	ug/Kgdrywt	25.	92.	85.	88.7	79.5	8	30	53-100
Benzo(k)fluoranthene	74.5	74.7	ug/Kgdrywt	J17.	62.	58.	60.3	55.4	6	30	49-96
Benzo(a)pyrene	74.5	74.7	ug/Kgdrywt	JMM18.	63.	58.	60.8*	53.8*	8	30	61-101
Indeno(1,2,3-cd)pyrene	74.5	74.7	ug/Kgdrywt	J11.	64.	56.	70.3	60.1	12	30	50-105
Dibenzo(a,h)anthracene	74.5	74.7	ug/Kgdrywt	J3.3	55.	49.	69.6	60.6	13	30	55-105
Benzo(g,h,i)perylene	74.5	74.7	ug/Kgdrywt	JMM9.3	48.	41.	51.9*	42.2*	16	30	53-103
2-Methylnaphthalene-D10							75.4	72.3			19-94
Fluorene-D10							65.4	60.5			20-96
Pyrene-D10							72.1	60.4			31-128

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG135571-4
Lab File ID : G0563.D

SDG: SG9314
Analytical Date: 12/05/13 10:40
Instrument ID: GCMS-G

		1,4-DICHLOROBENZENE-D4		NAPHTHALENE-D8		ACENAPHTHENE-D10	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	24149	9.31	75304	12.14	37718	16.28
	Upper Limit	48298	9.81	150608	12.64	75436	16.78
	Lower Limit	12074.5	8.81	37652	11.64	18859	15.78
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG135798-2	19025	9.29	62526	12.14	32764	16.26
Method Blank Sample	WG135250-1RA	17791	9.29	65705	12.14	28875	16.26

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG135571-4
Lab File ID : G0563.D

SDG: SG9314
Analytical Date: 12/05/13 10:40
Instrument ID: GCMS-G

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	58010		19.74		27381		26.07		17023		29.26	
	Upper Limit	116020		20.24		54762		26.57		34046		29.76	
	Lower Limit	29005		19.24		13690.5		25.57		8511.5		28.76	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG135798-2	49362		19.72		19825		26.05		9421		29.24	
Method Blank Sample	WG135250-1RA	46828		19.72		15300		26.07		9372		29.24	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG135943-4
Lab File ID : G0659.D

SDG: SG9314
Analytical Date: 12/11/13 12:30
Instrument ID: GCMS-G

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	21455		9.28		64713		12.11		27547		16.24	
	Upper Limit	42910		9.78		129426		12.61		55094		16.74	
	Lower Limit	10727.5		8.78		32356.5		11.61		13773.5		15.74	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG136116-2	24294		9.28		85666		12.11		38924		16.24	
Method Blank Sample	WG135526-1	24780		9.29		87728		12.11		39350		16.24	
Laboratory Control S	WG135526-2	25000		9.28		91453		12.11		40295		16.24	
TF2-003-SB1013-0204	SG9314-1	24734		9.29		85742		12.11		40335		16.24	
TF2-003-SB1019-0204	SG9314-3	25660		9.29		93019		12.11		45154		16.24	
TF2-003-SB1019-0810	SG9314-4	25389		9.29		92369		12.11		42673		16.24	
TF2-001-SS1001-0001	SG9314-5	27268		9.29		95890		12.11		45172		16.24	
Matrix Spike	WG135526-4	25493		9.28		94180		12.11		41496		16.24	
Matrix Spike Duplica	WG135526-5	26607		9.29		104027		12.11		46410		16.24	
TF2-001-SB1001-0204	SG9314-6	24827		9.29		88946		12.11		43063		16.24	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG135943-4
Lab File ID : G0659.D

SDG: SG9314
Analytical Date: 12/11/13 12:30
Instrument ID: GCMS-G

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	32469	19.70	14953	26.05	8894	29.23
	Upper Limit	64938	20.20	29906	26.55	17788	29.73
	Lower Limit	16234.5	19.20	7476.5	25.55	4447	28.73
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG136116-2	55320	19.70	26729	26.03	16846	29.21
Method Blank Sample	WG135526-1	49232	19.70	19303	26.03	13415	29.21
Laboratory Control S	WG135526-2	56615	19.70	26399	26.03	17882 *	29.21
TF2-003-SB1013-0204	SG9314-1	56067	19.70	24456	26.03	16807	29.21
TF2-003-SB1019-0204	SG9314-3	66037 *	19.70	30185 *	26.03	20406 *	29.21
TF2-003-SB1019-0810	SG9314-4	59809	19.70	26875	26.03	19831 *	29.21
TF2-001-SS1001-0001	SG9314-5	61013	19.70	28936	26.03	21543 *	29.21
Matrix Spike	WG135526-4	58066	19.70	25520	26.03	18211 *	29.21
Matrix Spike Duplica	WG135526-5	66084 *	19.70	29389	26.03	19384 *	29.21
TF2-001-SB1001-0204	SG9314-6	62017	19.70	28196	26.03	17937 *	29.21

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG136161-4
Lab File ID : G0710.D

SDG: SG9314
Analytical Date: 12/14/13 11:10
Instrument ID: GCMS-G

		1,4-DICHLOROBENZENE-D4		NAPHTHALENE-D8		ACENAPHTHENE-D10	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	28562	9.28	101698	12.12	44313	16.24
	Upper Limit	57124	9.78	203396	12.62	88626	16.74
	Lower Limit	14281	8.78	50849	11.62	22156.5	15.74
Client Sample ID	Lab Sample ID						
TF2-SB-RB05-1113	SG9314-14RA	28275	9.28	108423	12.11	48027	16.24
TF2-001-SB1001-0810	SG9314-7	31930	9.28	116480	12.12	50642	16.24
TF2-001-SS1002-0001	SG9314-8	32964	9.28	128278	12.11	57244	16.24
TF2-001-SB1002-0204	SG9314-9	29708	9.27	113871	12.11	49347	16.24
TF2-001-SB1002-0405	SG9314-10	31693	9.28	123189	12.12	50978	16.24
TF2-001-SS1003-0001	SG9314-11	29428	9.28	114034	12.12	50363	16.24
Matrix Spike	WG135526-6	32425	9.28	124955	12.11	54204	16.24
Matrix Spike Duplica	WG135526-7	31433	9.28	120740	12.11	51846	16.24
TF2-001-SB1003-0204	SG9314-12	31733	9.28	119687	12.12	52581	16.24
TF2-SB-DUP09-1113	SG9314-13	28666	9.27	111538	12.11	47594	16.24
Continuing Calibrati	WG136254-2	24020	9.26	77933	12.11	38601	16.24
Laboratory Control S	WG135250-2RA	22769	9.26	76675	12.11	38247	16.24
Laboratory Control S	WG135250-3RA	22916	9.26	75255	12.11	37957	16.24
Laboratory Control S	WG135526-3RA	21961	9.26	73719	12.12	36109	16.24
TF2-003-SB1019-0204	SG9314-3DL	22436	9.26	84314	12.11	39964	16.24
TF2-003-SB1013-0405	SG9314-2RA	24300	9.27	87251	12.11	41943	16.24
TF2-003-SB1019-0810	SG9314-4RA	24026	9.28	86804	12.11	40792	16.24
TF2-001-SB1001-0204	SG9314-6RA	25405	9.27	92849	12.11	41888	16.24
TF2-001-SS1003-0001	SG9314-11RA	28361	9.28	100836	12.11	45683	16.24

Area Upper Limit = +100% of internal standard area
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RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

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* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG136161-4
Lab File ID : G0710.D

SDG: SG9314
Analytical Date: 12/14/13 11:10
Instrument ID: GCMS-G

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	56355	19.70	20962	26.03	14613	29.21
	Upper Limit	112710	20.20	41924	26.53	29226	29.71
	Lower Limit	28177.5	19.20	10481	25.53	7306.5	28.71
Client Sample ID	Lab Sample ID						
TF2-SB-RB05-1113	SG9314-14RA	64117	19.70	28732	26.03	20809	29.21
TF2-001-SB1001-0810	SG9314-7	67302	19.70	28345	26.03	20357	29.21
TF2-001-SS1002-0001	SG9314-8	77251	19.70	36211	26.03	26637	29.21
TF2-001-SB1002-0204	SG9314-9	66907	19.70	32410	26.03	23282	29.21
TF2-001-SB1002-0405	SG9314-10	65889	19.70	26666	26.03	20140	29.21
TF2-001-SS1003-0001	SG9314-11	79456	19.70	37377	26.03	30549 *	29.21
Matrix Spike	WG135526-6	74751	19.70	32545	26.03	26228	29.21
Matrix Spike Duplica	WG135526-7	69906	19.70	36137	26.03	28933	29.21
TF2-001-SB1003-0204	SG9314-12	71007	19.70	33219	26.03	26184	29.21
TF2-SB-DUP09-1113	SG9314-13	64780	19.70	31734	26.03	25788	29.21
Continuing Calibrati	WG136254-2	55712	19.70	33027	26.01	27458	29.21
Laboratory Control S	WG135250-2RA	56842	19.70	33192	26.03	25381	29.21
Laboratory Control S	WG135250-3RA	55578	19.68	31253	26.03	22706	29.21
Laboratory Control S	WG135526-3RA	56481	19.68	32799	26.03	28021	29.21
TF2-003-SB1019-0204	SG9314-3DL	59358	19.68	38084	26.01	31980 *	29.19
TF2-003-SB1013-0405	SG9314-2RA	63570	19.68	43602 *	26.01	34173 *	29.19
TF2-003-SB1019-0810	SG9314-4RA	59946	19.68	39153	26.01	33110 *	29.19
TF2-001-SB1001-0204	SG9314-6RA	60236	19.70	36695	26.01	31453 *	29.19
TF2-001-SS1003-0001	SG9314-11RA	69874	19.70	44123 *	26.01	36206 *	29.19

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Data File: \\target_server\GG\chem\gcms-g.i\G120513.b\G0563.D
Report Date: 10-Dec-2013 15:39

Katahdin Analytical Services

Data file : \\target_server\GG\chem\gcms-g.i\G120513.b\G0563.D
Lab Smp Id: WG135571-4
Inj Date : 05-DEC-2013 10:40
Operator : JCG Inst ID: gcms-g.i
Smp Info : WG135571-4
Misc Info :
Comment :
Method : \\target_server\GG\chem\gcms-g.i\G120513.b\gspsim91.m
Meth Date : 05-Dec-2013 15:48 gcms-g.i Quant Type: ISTD
Cal Date : 14-NOV-2013 19:42 Cal File: G0327.D
Als bottle: 2 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.687	3.633	(0.304)	15485	1.00000	1.24	
	2 1,4-Dioxane	88	3.741	3.686	(0.402)	16832	1.00000	0.940	(aQ)
	3 Benzaldehyde	77	8.441	8.424	(0.907)	18592	1.00000	0.970	
	4 Phenol	94	8.805	8.806	(0.946)	147511	3.00000	3.14	
	5 Bis(2-Chloroethyl)ether	93	8.910	8.893	(0.957)	44551	1.00000	1.02	
	6 2-Chlorophenol	128	8.944	8.945	(0.961)	116784	3.00000	2.96	
*	7 1,4-Dichlorobenzene-D4	152	9.309	9.293	(1.000)	24149	0.80000		(aQ)
	8 2-Methylphenol	108	10.053	10.052	(1.080)	96495	3.00000	2.73	
	9 2,2'-Oxybis(1-chloropropane)	45	10.053	10.052	(1.080)	36753	1.00000	0.774	(Q)
	10 Acetophenone	105	10.299	10.279	(0.849)	46182	1.00000	1.08	
	11 Hexachloroethane	117	10.375	10.355	(1.114)	5776	1.00000	0.677	(Q)
	12 3&4-Methylphenol	108	10.394	10.393	(1.116)	127236	3.00000	3.22	
	13 N-Nitroso-di-n-propylamine	70	10.413	10.374	(1.119)	26950	1.00000	1.06	
	14 Nitrobenzene	77	10.640	10.639	(0.877)	51301	1.00000	1.16	
	15 Isophorone	82	11.229	11.184	(0.925)	54608	1.00000	1.13	
	16 2-Nitrophenol	139	11.406	11.383	(0.940)	58708	3.00000	3.30	
	17 2,4-Dimethylphenol	107	11.561	11.560	(0.953)	111977	3.00000	3.43	
	18 bis(2-Chloroethoxy)methane	93	11.782	11.759	(0.971)	41086	1.00000	1.25	
	19 2,4-Dichlorophenol	162	11.937	11.936	(0.984)	86620	3.00000	3.25	
*	20 Naphthalene-D8	136	12.136	12.136	(1.000)	75304	0.80000		(a)
	21 Naphthalene	128	12.180	12.180	(1.004)	118128	1.00000	1.10	

Data File: \\target_server\GG\chem\gcms-g.i\G120513.b\G0563.D
Report Date: 10-Dec-2013 15:39

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
	22 4-Chloroaniline	127	12.490	12.468	(1.029)	36276	1.00000	0.826(a)	
	23 Hexachlorobutadiene	225	12.645	12.645	(1.042)	17282	1.00000	1.15	
	24 Caprolactam	113	13.344	13.254	(1.099)	6928	1.00000	1.02	
	25 4-Chloro-3-Methylphenol	107	13.676	13.675	(1.127)	93806	3.00000	3.34	
$	26 2-Methylnaphthalene-D10	152	13.742	13.719	(1.132)	57087	1.00000	1.16	
	27 2-Methylnaphthalene	142	13.808	13.786	(1.138)	79134	1.00000	1.11	
	28 1-Methylnaphthalene	142	14.052	14.051	(1.158)	68711	1.00000	1.18	
	29 1,2,4,5-Tetrachlorobenzene	216	14.318	14.317	(0.880)	28733	1.00000	1.10	
	30 Hexachlorocyclopentadiene	237	14.362	14.361	(0.882)	12233	1.00000	0.937	
$	31 2,4-Dibromophenol	252	14.517	14.516	(0.892)	17318	1.00000	1.06	
	32 2,4,6-Trichlorophenol	196	14.605	14.605	(0.897)	57293	3.00000	3.27	
	33 2,4,5-Trichlorophenol	196	14.694	14.693	(0.903)	77734	3.00000	3.18	
	34 2-Chloronaphthalene	164	14.937	14.937	(0.918)	23459	1.00000	1.09	
	35 1,1'-Biphenyl	154	14.960	14.959	(0.919)	89243	1.00000	1.10	
	36 2-Nitroaniline	65	15.358	15.357	(0.944)	17525	1.00000	1.06	
	37 3-Nitroaniline	138	15.380	15.357	(0.945)	20860	1.00000	1.02	
	38 Dimethyl Phthalate	163	15.883	15.884	(0.976)	237865	3.00000	3.24	
	39 Acenaphthylene	152	15.903	15.884	(0.977)	110413	1.00000	1.08	
	40 2,6-Dinitrotoluene	165	16.041	16.042	(0.985)	17568	1.00000	1.08	
*	41 Acenaphthene-D10	164	16.278	16.259	(1.000)	37718	0.80000	(a)	
	42 Acenaphthene	153	16.337	16.338	(1.004)	81919	1.00000	1.18	
	43 2,4-Dinitrophenol	184	16.633	16.594	(1.022)	12749	3.00000	2.76	
	44 Dibenzofuran	168	16.731	16.733	(1.028)	92737	1.00000	1.07	
	45 4-Nitrophenol	109	16.909	16.871	(1.039)	13135	3.00000	2.75(Q)	
	46 2,4-Dinitrotoluene	165	16.968	16.950	(1.042)	23098	1.00000	0.978(Q)	
	47 2,3,4,6-Tetrachlorophenol	232	17.188	17.187	(1.056)	49078	3.00000	3.33	
$	48 Fluorene-D10	174	17.475	17.475	(1.074)	45717	1.00000	1.07(M)	M6
	49 Fluorene	166	17.537	17.536	(1.077)	76830	1.00000	1.06	
	50 Diethylphthalate	149	17.578	17.557	(1.080)	241473	3.00000	3.12	
	51 4-Chlorophenyl-Phenylether	204	17.619	17.619	(1.082)	34667	1.00000	1.07	
	52 4-Nitroaniline	138	17.845	17.824	(1.096)	7370	1.00000	0.892(QM)	M6
	53 4,6-Dinitro-2-Methylphenol	198	17.907	17.906	(0.907)	24496	3.00000	3.04	
	54 N-Nitrosodiphenylamine	169	17.948	17.947	(0.909)	65582	1.00000	1.13	
	55 4-Bromophenyl-phenylether	248	18.760	18.760	(0.950)	18348	1.00000	1.07	
	56 Hexachlorobenzene	284	19.038	19.039	(0.964)	21669	1.00000	1.08	
	57 Atrazine	200	19.381	19.381	(0.982)	15220	1.00000	1.06	
	58 Pentachlorophenol	266	19.509	19.509	(0.988)	35795	3.00000	3.15	
*	59 Phenanthrene-D10	188	19.744	19.723	(1.000)	58010	0.80000	(a)	
	60 Phenanthrene	178	19.787	19.788	(1.002)	82619	1.00000	0.993	
	61 Anthracene	178	19.894	19.895	(1.008)	101251	1.00000	1.04	
	62 Carbazole	167	20.401	20.379	(1.033)	68574	1.00000	0.990	
	63 Di-n-butylphthalate	149	21.455	21.454	(1.087)	432047	3.00000	3.10	
	64 Fluoranthene	202	22.624	22.624	(1.146)	78188	1.00000	0.989	
$	65 Pyrene-D10	212	23.112	23.096	(0.887)	48731	1.00000	1.07	
	66 Pyrene	202	23.144	23.143	(0.888)	90734	1.00000	1.04	
	67 Butylbenzylphthalate	149	25.003	25.002	(0.959)	184874	3.00000	3.55	
	68 Benzo(a)anthracene	228	26.032	26.014	(0.999)	39039	1.00000	0.982	
*	69 Chrysene-D12	240	26.070	26.071	(1.000)	27381	0.80000	(a)	
	70 Chrysene	228	26.128	26.129	(1.002)	51944	1.00000	1.07	
	71 3,3'-Dichlorobenzidine	252	26.166	26.148	(1.004)	5834	1.00000	0.995(M)	M3
	72 bis(2-Ethylhexyl)phthalate	149	26.473	26.474	(1.015)	224480	3.00000	3.26	
	73 Di-n-octylphthalate	149	27.863	27.846	(1.069)	286228	3.00000	3.15	
	74 Benzo(b)fluoranthene	252	28.457	28.457	(0.973)	27044	1.00000	1.12	
	75 Benzo(k)fluoranthene	252	28.509	28.510	(0.974)	47325	1.00000	1.26(H)	

2:06 pm, Dec 19, 2

Data File: \\target_server\GG\chem\gcms-g.i\G120513.b\G0563.D
Report Date: 10-Dec-2013 15:39

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	76 Benzo(a)pyrene	252	29.120	29.120	(0.995)	29839	1.00000	1.14 (Q)	
*	77 Perylene-D12	264	29.259	29.243	(1.000)	17023	0.80000	(aM)	M3
	78 Indeno(1,2,3-cd)pyrene	276	31.580	31.536	(1.079)	20028	1.00000	0.996	
	79 Dibenzo(a,h)anthracene	278	31.666	31.623	(1.082)	13248	1.00000	0.912	
	80 Benzo(g,h,i)perylene	276	32.227	32.183	(1.101)	18634	1.00000	1.00	
M	81 Total PAHs	100				1150513	1.00000	(a)	

JCQ
2:05 pm, Dec 19, 2

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Instrument ID : GC09
SDG : SG9314
Column ID : A

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	BFB	BFB
Initial Calibration	WG127983-2	07/26/13	10:52	31.92	
Initial Calibration	WG127983-3	07/26/13	11:46	31.84	
Initial Calibration	WG127983-4	07/26/13	12:39	31.82	
Initial Calibration	WG127983-5	07/26/13	13:32	31.84	
Initial Calibration	WG127983-6	07/26/13	14:25	31.85	
Initial Calibration	WG127983-1	07/26/13	17:56	31.89	
INDEPENDENT SOURCE	WG127983-7	07/26/13	18:50	31.91	
Continuing Calibrati	WG135522-4	12/04/13	08:15	31.65	
Method Blank Sample	WG135522-1	12/04/13	10:20	31.65	
Laboratory Control S	WG135522-2	12/04/13	11:14	31.65	
Laboratory Control S	WG135522-3	12/04/13	12:08	31.65	
TF2-SB-RB05-1113	SG9314-14	12/04/13	17:05	31.65	
TF2-W-TB05-1113	SG9314-15	12/04/13	17:58	31.66	
Continuing Calibrati	WG135522-5	12/04/13	22:32	31.67	
Continuing Calibrati	WG135529-8	12/05/13	08:01	31.64	
Method Blank Sample	WG135529-1	12/05/13	10:04	31.64	
Laboratory Control S	WG135529-2	12/05/13	10:58	31.65	
Laboratory Control S	WG135529-3	12/05/13	11:52	31.65	
Continuing Calibrati	WG135529-9	12/05/13	20:01	31.68	
TF2-003-SB1019-0810	SG9314-4	12/05/13	23:40	31.68	
TF2-001-SS1003-0001	SG9314-11	12/06/13	00:35	31.68	
TF2-SB-DUP09-1113	SG9314-13	12/06/13	01:29	31.68	
Matrix Spike	WG135529-6	12/06/13	03:19	31.69	
Matrix Spike Duplica	WG135529-7	12/06/13	04:14	31.69	
Continuing Calibrati	WG135529-10	12/06/13	05:08	31.69	

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG9314
Project : NAVSTA Newport CTO WE30 **Instrument ID:** GC09
Lab File IDs : 9GG2130.d 9GG2123.d 9GG2124.d 9GG2125.d 9GG2126.d 9GG2127.d **Column ID:** A
Calibration Date(s): 26-JUL-13 09:58 26-JUL-13 17:56

	Level 1 10.0000	Level 2 100.0000	Level 3 250.0000	Level 4 500.0000	Level 5 1000.0000	Level 6 2000.0000	Crv New	b	m1	m2	%RSD	Max %RSD	
Gasoline Range Organic	12176	12675	12913	12768	12910	13282	AVG		12787		2.84495	20.00000	M (
Methyl tert-butyl ether	6010	8181	8380	7569	7477	8149	AVG		7628		11.40841	20.00000	O
Benzene	15826	15860	16448	16739	17015	17326	AVG		16536		3.69285	20.00000	O
Toluene	15470	16041	16286	16166	16555	16718	AVG		16206		2.70556	20.00000	O
Ethylbenzene	14185	14823	15058	15019	15114	15298	AVG		14916		2.61143	20.00000	O
m+p-Xylenes	14785	15435	15552	15559	15638	15874	AVG		15474		2.37846	20.00000	O
o-Xylene	16358	14889	14896	15443	15410	15788	AVG		15464		3.61301	20.00000	O
1,2,4-trimethylbenzene	11095	12102	12347	12071	12262	12757	AVG		12106		4.56871	20.00000	O
1,3,5-trimethylbenzene	9784	10620	10743	10552	10765	11352	AVG		10636		4.74665	20.00000	O
Naphthalene	3461	3359	3870	3000	3223	3680	AVG		3432		9.12376	20.00000	O
p-Bromofluorobenzene	6432	6935	7300	7023	6937	7145	AVG		6962		4.23260	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG135522-4 **Analytical Date:** 12/04/13 08:15
Lab File ID : 9GL2041.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	12412	12412	0.100	-2.93145	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7977	7977	0.100	4.57648	20.00000	Averaged
4 Benzene	16536	15804	15804	0.100	-4.42812	20.00000	Averaged
5 Toluene	16206	15256	15256	0.100	-5.86371	20.00000	Averaged
7 Ethylbenzene	14916	14464	14464	0.100	-3.03481	20.00000	Averaged
8 m+p-Xylenes	15474	15051	15051	0.100	-2.73051	20.00000	Averaged
9 o-Xylene	15464	14686	14686	0.100	-5.03411	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	12233	12233	0.100	1.05229	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10577	10577	0.100	-0.55709	20.00000	Averaged
13 Naphthalene	3432	3026	3026	0.100	-11.84612	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6452	6452	0.100	-7.32215	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG135522-5 **Analytical Date:** 12/04/13 22:32
Lab File ID : 9GL2055.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11599	11599	0.100	-9.29240	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7431	7431	0.100	-2.58250	20.00000	Averaged
4 Benzene	16536	15139	15139	0.100	-8.44887	20.00000	Averaged
5 Toluene	16206	14287	14287	0.100	-11.84040	20.00000	Averaged
7 Ethylbenzene	14916	13480	13480	0.100	-9.63154	20.00000	Averaged
8 m+p-Xylenes	15474	13699	13699	0.100	-11.46640	20.00000	Averaged
9 o-Xylene	15464	13731	13731	0.100	-11.20816	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11126	11126	0.100	-8.09025	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	9828	9828	0.100	-7.59354	20.00000	Averaged
13 Naphthalene	3432	3569	3569	0.100	3.98633	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6070	6070	0.100	-12.80986	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG135529-8 **Analytical Date:** 12/05/13 08:01
Lab File ID : 9GL2056.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11940	11940	0.100	-6.62735	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7353	7353	0.100	-3.60300	20.00000	Averaged
4 Benzene	16536	15342	15342	0.100	-7.22207	20.00000	Averaged
5 Toluene	16206	14830	14830	0.100	-8.48985	20.00000	Averaged
7 Ethylbenzene	14916	13916	13916	0.100	-6.70667	20.00000	Averaged
8 m+p-Xylenes	15474	14438	14438	0.100	-6.69529	20.00000	Averaged
9 o-Xylene	15464	14770	14770	0.100	-4.49156	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11517	11517	0.100	-4.86067	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	9928	9928	0.100	-6.65522	20.00000	Averaged
13 Naphthalene	3432	2866	2866	0.100	-16.48764	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6466	6466	0.100	-7.12608	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG135529-9 **Analytical Date:** 12/05/13 20:01
Lab File ID : 9GL2068.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11163	11163	0.100	-12.70537	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7650	7650	0.100	0.29231	20.00000	Averaged
4 Benzene	16536	14268	14268	0.100	-13.71431	20.00000	Averaged
5 Toluene	16206	13734	13734	0.100	-15.25611	20.00000	Averaged
7 Ethylbenzene	14916	12912	12912	0.100	-13.43332	20.00000	Averaged
8 m+p-Xylenes	15474	13243	13243	0.100	-14.41952	20.00000	Averaged
9 o-Xylene	15464	13170	13170	0.100	-14.83567	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	10682	10682	0.100	-11.75962	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	9241	9241	0.100	-13.11325	20.00000	Averaged
13 Naphthalene	3432	3483	3483	0.100	1.47822	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6173	6173	0.100	-11.33469	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG135529-10 **Analytical Date:** 12/06/13 05:08
Lab File ID : 9GL2078.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	13111	13111	0.100	2.52901	20.00000	Averaged
3 Methyl tert-butyl ether	7628	8698	8698	0.100	14.03814	20.00000	Averaged
4 Benzene	16536	16917	16917	0.100	2.30277	20.00000	Averaged
5 Toluene	16206	16026	16026	0.100	-1.11309	20.00000	Averaged
7 Ethylbenzene	14916	15265	15265	0.100	2.33855	20.00000	Averaged
8 m+p-Xylenes	15474	15829	15829	0.100	2.29768	20.00000	Averaged
9 o-Xylene	15464	15168	15168	0.100	-1.91204	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	12736	12736	0.100	5.20986	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10752	10752	0.100	1.08732	20.00000	Averaged
13 Naphthalene	3432	3885	3885	0.100	13.18836	20.00000	Averaged
10 p-Bromofluorobenzene	6962	7182	7182	0.100	3.16276	20.00000	Averaged

*** = Compound out of QC criteria**

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : 9GL2043.D
Instrument ID : GC09
Heated Purge : No

SDG : SG9314
Lab Sample ID : WG135522-1
Date Analyzed : 04-DEC-13
Time Analyzed : 10:20

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135522-2	9GL2044.D	12/04/13	11:14
Laboratory Control S	WG135522-3	9GL2045.D	12/04/13	12:08
TF2-SB-RB05-1113	SG9314-14	9GL2049.D	12/04/13	17:05
TF2-W-TB05-1113	SG9314-15	9GL2050.D	12/04/13	17:58

Report of Analytical Results

Client:
Lab ID: WG135522-1
Client ID: Method Blank Sample
Project:
SDG: SG9314
Lab File ID: 9GL2043.D

Sample Date:
Received Date:
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135522

Analysis Date: 04-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA
Report Date: 18-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	8.0	ug/l	1	10	10.	6.7	8.0
p-Bromofluorobenzene		90.5	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029
http://www.katahdinlab.com

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : 9GL2058.D
Instrument ID : GC09
Heated Purge : No

SDG : SG9314
Lab Sample ID : WG135529-1
Date Analyzed : 05-DEC-13
Time Analyzed : 10:04

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135529-2	9GL2059.D	12/05/13	10:58
Laboratory Control S	WG135529-3	9GL2060.D	12/05/13	11:52
TF2-003-SB1019-0810	SG9314-4	9GL2072.D	12/05/13	23:40
TF2-001-SS1003-0001	SG9314-11	9GL2073.D	12/06/13	00:35
TF2-SB-DUP09-1113	SG9314-13	9GL2074.D	12/06/13	01:29
Matrix Spike	WG135529-6	9GL2076.D	12/06/13	03:19
Matrix Spike Duplica	WG135529-7	9GL2077.D	12/06/13	04:14

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG135529-1
Client ID: Method Blank Sample
Project:
SDG: SG9314
Lab File ID: 9GL2058.D

Sample Date:
Received Date:
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135529

Analysis Date: 05-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA
Report Date: 18-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		90.4	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG9314

Client Sample ID	Lab Sample ID	Col. ID	BFB #
TF2-SB-RB05-1113	SG9314-14	A	102.
TF2-W-TB05-1113	SG9314-15	A	99.5
Method Blank Sample	WG135522-1	A	90.5
Laboratory Control S	WG135522-2	A	103.
Laboratory Control S	WG135522-3	A	105.

		QC Limits
BFB	P-BROMOFLUOROBENZENE	79-121

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG9314

Client Sample ID	Lab Sample ID	Col. ID	BFB #
TF2-001-SS1003-0001	SG9314-11	A	92.0
TF2-SB-DUP09-1113	SG9314-13	A	97.9
TF2-003-SB1019-0810	SG9314-4	A	102.
Method Blank Sample	WG135529-1	A	90.4
Laboratory Control S	WG135529-2	A	99.2
Laboratory Control S	WG135529-3	A	100.
Matrix Spike	WG135529-6	A	97.7
Matrix Spike Duplica	WG135529-7	A	98.5

		QC Limits
BFB	P-BROMOFLUOROBENZENE	81-119

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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ANALYTICAL SERVICES

Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG135522-2
LCSD ID: WG135522-3
Project:
SDG: SG9314
Report Date: 18-DEC-13
LCS File ID: 9GL2044.D

Received Date:
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 M8015B
Lab Prep Batch: WG135522
LCSD File ID: 9GL2045.d

Analysis Date: 04-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	100.	94.2	94.2	99.9	99.9	ug/l	6	30	73-126
-Bromofluorobenzene			103.		105.				79-121

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG135529-2
LCSD ID: WG135529-3
Project:
SDG: SG9314
Report Date: 18-DEC-13
LCS File ID: 9GL2059.D

Received Date:
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135529
LCSD File ID: 9GL2060.d

Analysis Date: 05-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	25.0	23.7	94.8	23.5	94.0	mg/Kgdrywt	1	30	67-137
-Bromofluorobenzene			99.2		100.				81-119

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MS/MSD Recovery Report

MS ID: WG135529-6
MSD ID: WG135529-7
Sample ID: SG9314-11
Client ID: TF2-001-SS1003-0001
Project:
SDG: SG9314
MS File ID: 9GL2076.D

Received Date:
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135529
Report Date: 18-DEC-13
MSD File ID: 9GL2077.d

Analysis Date: 06-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 89.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	28.0	26.8	mg/Kgdryw	U2.0	25.	25.	90.4	91.8	3	30	67-137
-Bromofluorobenzene							97.7	98.5			81-119

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Instrument ID : GC01

SDG : SG9314
Column ID : A

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	TCX	
Initial Calibration	WG135854-4	12/10/13	12:24	17.24	
Initial Calibration	WG135854-6	12/10/13	12:52	17.25	
Initial Calibration	WG135854-8	12/10/13	13:21	17.25	
Initial Calibration	WG135854-10	12/10/13	13:49	17.25	
Initial Calibration	WG135854-12	12/10/13	14:18	17.25	
Initial Calibration	WG135854-14	12/10/13	14:46	17.24	
Method Blank Sample	WG135854-1	12/10/13	16:40	17.25	
Laboratory Control S	WG135854-2	12/10/13	17:09	17.25	
Laboratory Control S	WG135854-3	12/10/13	17:37	17.24	
TF2-SB-RB05-1113	SG9314-14	12/10/13	20:00	17.25	
TF2-W-TB05-1113	SG9314-15	12/10/13	20:28	17.25	
Continuing Calibrati	WG135854-16	12/10/13	20:57	17.25	

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File IDs : 1GL00054.D 1GL00055.D 1GL00056.D 1GL00057.D 1GL00058.D 1GL00059.D

SDG: SG9314
Instrument ID: GC01
Column ID: A
Calibration Date(s): 10-DEC-13 12:24 10-DEC-13 14:46

	Level 1 0.050000(	Level 2 0.100000(	Level 3 0.250000(	Level 4 0.500000(	Level 5 1.0000	Level 6 2.5000	Crv New	b	m1	m2	%RSD	Max %RSD	
1,2-Dibromoethane	49140	55760	56012	56194	59968	58702	AVG		55963		6.69508	20.00000	D
Tetrachloro-M-Xylene	65176	69044	74348	75611	73288	76826	AVG		72382		6.11432	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG135854-16 **Analytical Date:** 12/10/13 20:57
Lab File ID : 1GL00072.D **Instrument ID:** GC01
Initial Calibration Date(s): 12/10/13 12:24 12/10/13 14:46 **Column ID:** A

Compound	$\overline{RRF}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
2 1,2-Dibromoethane	55963	53800	0.010	-3.86437	30.00000	Averaged
5 Tetrachloro-M-Xylene	72382	75431	0.010	4.21231	30.00000	Averaged

*** = Compound out of QC criteria**

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Instrument ID : GC01

SDG : SG9314
Column ID : B

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	TCX	
Initial Calibration	WG135854-5	12/10/13	12:24	17.33	
Initial Calibration	WG135854-7	12/10/13	12:52	17.34	
Initial Calibration	WG135854-9	12/10/13	13:21	17.34	
Initial Calibration	WG135854-11	12/10/13	13:49	17.34	
Initial Calibration	WG135854-13	12/10/13	14:18	17.34	
Initial Calibration	WG135854-15	12/10/13	14:46	17.33	
Method Blank Sample	WG135854-1	12/10/13	16:40	17.34	
Laboratory Control S	WG135854-2	12/10/13	17:09	17.34	
Laboratory Control S	WG135854-3	12/10/13	17:37	17.34	
TF2-SB-RB05-1113	SG9314-14	12/10/13	20:00	17.34	
TF2-W-TB05-1113	SG9314-15	12/10/13	20:28	17.34	
Continuing Calibrati	WG135854-17	12/10/13	20:57	17.35	

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SG9314
Project : NAVSTA Newport CTO WE30
Instrument ID: GC01
Lab File IDs : 1GL00054.D 1GL00055.D 1GL00056.D 1GL00057.D 1GL00058.D 1GL00059.D
Column ID: B
Calibration Date(s): 10-DEC-13 12:24 10-DEC-13 14:46

	0.050000(Level 1	0.100000(Level 2	0.250000(Level 3	0.500000(Level 4	1.0000 Level 5	2.5000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
1,2-Dibromoethane	82380	86120	80476	81332	85345	83900	AVG		83259		2.69524	20.00000	O
Tetrachloro-M-Xylene	106978	106184	111217	105991	106212	122289	AVG		109812		5.85104	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG135854-17 **Analytical Date:** 12/10/13 20:57
Lab File ID : 1GL00072.D **Instrument ID:** GC01
Initial Calibration Date(s): 12/10/13 12:24 12/10/13 14:46 **Column ID:** B

Compound	$\overline{\text{RRF}}$/Amount	RF0.500	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
2 1,2-Dibromoethane	83259	76572	0.010	-8.03131	30.00000	Averaged
5 Tetrachloro-M-Xylene	109812	100864	0.010	-8.14842	30.00000	Averaged

*** = Compound out of QC criteria**

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : 1GL00063.D
Instrument ID : GC01
Heated Purge : No

SDG : SG9314
Lab Sample ID : WG135854-1
Date Analyzed : 10-DEC-13
Time Analyzed : 16:40

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135854-2	1GL00064.	12/10/13	17:09
Laboratory Control S	WG135854-3	1GL00065.	12/10/13	17:37
TF2-SB-RB05-1113	SG9314-14	1GL00070.	12/10/13	20:00
TF2-W-TB05-1113	SG9314-15	1GL00071.	12/10/13	20:28

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG135854-1
Client ID: Method Blank Sample
Project:
SDG: SG9314
Lab File ID: 1GL00063.D

Sample Date:
Received Date:
Extract Date: 10-DEC-13
Extracted By: JLP
Extraction Method: SW846 8011
Lab Prep Batch: WG135854

Analysis Date: 10-DEC-13
Analyst: JLP
Analysis Method: SW846 8011
Matrix: AQ
% Solids: NA
Report Date: 18-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
1,2-Dibromoethane	U	0.025	ug/L	1	.05	0.050	0.0073	0.025
Tetrachloro-M-Xylene		107.	%					

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG9314

Client Sample ID	Lab Sample ID	Col. ID	TCX	#
TF2-SB-RB05-1113	SG9314-14	A	71.5	
TF2-SB-RB05-1113	SG9314-14	B	67.8	
TF2-W-TB05-1113	SG9314-15	A	76.1	
TF2-W-TB05-1113	SG9314-15	B	71.6	
Method Blank Sample	WG135854-1	A	107.	
Method Blank Sample	WG135854-1	B	99.2	
Laboratory Control S	WG135854-2	A	110.	
Laboratory Control S	WG135854-2	B	113.	
Laboratory Control S	WG135854-3	A	100.	
Laboratory Control S	WG135854-3	B	95.6	

		QC Limits
TCX	TETRACHLORO-M-XYLENE	36-123

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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LCS/LCSD Recovery Report

LCS ID: WG135854-2
LCSD ID: WG135854-3
Project:
SDG: SG9314
Report Date: 18-DEC-13
LCS File ID: 1GL00064.D

Received Date:
Extract Date: 10-DEC-13
Extracted By: JLP
Extraction Method: SW846 8011
Lab Prep Batch: WG135854
LCSD File ID: 1GL00065.D

Analysis Date: 10-DEC-13
Analyst: JLP
Analysis Method: SW846 8011
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
,2-Dibromoethane	0.250	0.287	115.	0.258	103.	ug/L	10	30	60-140
`etrachloro-M-Xylene			113.		100.				36-123

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Instrument ID : GC10

SDG : SG9314
Column ID : A

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	OTP	NTD	
Initial Calibration	WG135417-3	11/27/13	18:47	9.82	14.72	
Initial Calibration	WG135417-5	11/27/13	19:26	9.819	14.72	
Initial Calibration	WG135417-4	11/27/13	20:05	9.82	14.72	
Initial Calibration	WG135417-2	11/27/13	20:44	9.821	14.72	
Initial Calibration	WG135417-1	11/27/13	21:23	9.822	14.72	
Independent Source	WG135417-6	11/27/13	22:02	9.819	14.72	
Continuing Calibrati	WG135417-12	12/05/13	14:28	9.814	14.71	
Method Blank Sample	WG135483-1	12/05/13	16:27	9.802	14.72	
Laboratory Control S	WG135483-2	12/05/13	17:07	9.794	14.71	
Laboratory Control S	WG135483-3	12/05/13	17:46	9.793	14.71	
Matrix Spike	WG135483-4	12/05/13	21:41	9.795	14.71	
Matrix Spike Duplica	WG135483-5	12/05/13	22:20	9.795	14.71	
Continuing Calibrati	WG135417-13	12/05/13	22:59	9.814	14.71	
Method Blank Sample	WG135406-1	12/05/13	23:38	9.796	14.7	
Laboratory Control S	WG135406-2	12/06/13	00:17	9.794	14.70	
Laboratory Control S	WG135406-3	12/06/13	00:56	9.795	14.70	
TF2-SB-RB05-1113	SG9314-14	12/06/13	01:35	9.797	14.70	
TF2-003-SB1019-0810	SG9314-4	12/06/13	02:15	9.794	14.71	
TF2-001-SS1003-0001	SG9314-11	12/06/13	02:54	9.794	14.71	
TF2-SB-DUP09-1113	SG9314-13	12/06/13	03:33	9.793	14.72	
Continuing Calibrati	WG135417-14	12/06/13	06:48	9.814	14.71	

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File IDs : AGK10409.EAGK10408.EAGK10405.E AGK10407.EAGK10406.E

SDG: SG9314
Instrument ID: GC10
Column ID: A
Calibration Date(s): 27-NOV-13 18:47 27-NOV-13 21:23

	Level 1	Level 2	Level 3	Level 4	Level 5		Crv					Max	
	5.0000	20.0000	50.0000	100.0000	200.0000		New	b	m1	m2	%RSD	%RSD	
Petroleum Range Organic	3207401	11948369	27679023	57859927	111741030		LNR	-13.04539	32919		0.99964	0.99000	M (
C-8	121120	558480	1472757	3322274	6528682		LNR	1.93175	33030		0.99918	0.99000	O
C-10	160678	683433	1634466	3407465	6722680		LNR	0.13169	33694		0.99987	0.99000	O
C-12	162526	706230	1651958	3437478	6748957		LNR	-0.13544	33812		0.99983	0.99000	O
C-14	166896	693775	1638710	3428968	6710379		LNR	-0.12142	33638		0.99980	0.99000	O
C-16	172145	697117	1644337	3433083	6683547		LNR	-0.33321	33502		0.99976	0.99000	O
C-18	195302	718285	1686904	3509892	6811160		LNR	-0.65127	34102		0.99973	0.99000	O
C-20	195203	730680	1695812	3514886	6760313		LNR	-0.99214	33854		0.99960	0.99000	O
C-22	203588	720719	1703069	3537520	6793044		LNR	-0.96059	34031		0.99957	0.99000	O
C-24	209421	709959	1579161	3570011	6734469		LNR	-0.46183	33891		0.99855	0.99000	O
C-26	210392	712774	1577799	3275178	6197846		LNR	-1.90914	30984		0.99919	0.99000	O
C-28	220739	741653	1627095	3348042	6342775		LNR	-2.12681	31670		0.99922	0.99000	O
C-30	204421	711161	1590346	3361671	6370018		LNR	-1.42418	31907		0.99919	0.99000	O
C-32	177802	705436	1616693	3364549	6473168		LNR	-0.91008	32428		0.99957	0.99000	O
C-34	191630	711417	1644515	3384457	6565358		LNR	-0.94350	32831		0.99974	0.99000	O
C-36	212813	744703	1719951	3434607	6645531		LNR	-1.64403	33148		0.99970	0.99000	O
C-38	183763	691910	1617310	3318770	6418918		LNR	-0.96332	32120		0.99971	0.99000	O
C-40	218956	710628	1578140	3211069	6234178		LNR	-1.67468	31043		0.99970	0.99000	O
O-Terphenyl	9478875	9480027	9159104	9354207	8933467		LNR	0.63587	37238		0.99695	0.99000	
n-Triacontane-D62	8469343	8548927	7964650	8243019	7927193		LNR	1.41469	27592		0.99434	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG135417-12 **Analytical Date:** 12/05/13 14:28
Lab File ID : AGL10076.D **Instrument ID:** GC10
Initial Calibration Date(s): 11/27/13 18:47 11/27/13 21:23 **Column ID:** A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	342	34386	0.010	0.61974	25.00000	Linear
2 C-8	20.00000	23.86751	36227	0.010	19.33756	25.00000	Linear
3 C-10	20.00000	20.46976	34264	0.010	2.34880	25.00000	Linear
4 C-12	20.00000	20.75437	35317	0.010	3.77187	25.00000	Linear
5 C-14	20.00000	20.45072	34600	0.010	2.25358	25.00000	Linear
6 C-16	20.00000	20.49636	34892	0.010	2.48178	25.00000	Linear
8 C-18	20.00000	20.29187	35710	0.010	1.45937	25.00000	Linear
10 C-20	20.00000	19.72856	35074	0.010	-1.35718	25.00000	Linear
11 C-22	20.00000	19.38908	34626	0.010	-3.05460	25.00000	Linear
12 C-24	20.00000	19.45071	33743	0.010	-2.74646	25.00000	Linear
13 C-26	20.00000	19.76970	33585	0.010	-1.15152	25.00000	Linear
14 C-28	20.00000	20.43014	35719	0.010	2.15072	25.00000	Linear
16 C-30	20.00000	19.82230	33895	0.010	-0.88848	25.00000	Linear
17 C-32	20.00000	20.09747	34062	0.010	0.48734	25.00000	Linear
18 C-34	20.00000	19.76859	34000	0.010	-1.15706	25.00000	Linear
19 C-36	20.00000	18.60447	33560	0.010	-6.97764	25.00000	Linear
20 C-38	20.00000	19.45436	32791	0.010	-2.72820	25.00000	Linear
21 C-40	20.00000	19.26115	32495	0.010	-3.69423	25.00000	Linear
9 O-Terphenyl	250	257	38112	0.010	2.60107	25.00000	Linear
15 n-Triacontane-D62	300	305	27950	0.010	1.77064	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG135417-13 **Analytical Date:** 12/05/13 22:59
Lab File ID : AGL10088.D **Instrument ID:** GC10
Initial Calibration Date(s): 11/27/13 18:47 11/27/13 21:23 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	860	33833	0.010	1.22863	25.00000	Linear
2 C-8	50.00000	52.37929	33325	0.010	4.75858	25.00000	Linear
3 C-10	50.00000	50.26887	33787	0.010	0.53775	25.00000	Linear
4 C-12	50.00000	50.59719	34308	0.010	1.19438	25.00000	Linear
5 C-14	50.00000	50.60674	34128	0.010	1.21348	25.00000	Linear
6 C-16	50.00000	50.62366	34143	0.010	1.24732	25.00000	Linear
8 C-18	50.00000	50.87176	35141	0.010	1.74351	25.00000	Linear
10 C-20	50.00000	50.74447	35030	0.010	1.48894	25.00000	Linear
11 C-22	50.00000	50.62174	35108	0.010	1.24347	25.00000	Linear
12 C-24	50.00000	51.81648	35435	0.010	3.63295	25.00000	Linear
13 C-26	50.00000	50.06153	32205	0.010	0.12306	25.00000	Linear
14 C-28	50.00000	50.31942	33219	0.010	0.63884	25.00000	Linear
16 C-30	50.00000	51.21058	33588	0.010	2.42117	25.00000	Linear
17 C-32	50.00000	51.08898	33725	0.010	2.17797	25.00000	Linear
18 C-34	50.00000	50.49919	33778	0.010	0.99839	25.00000	Linear
19 C-36	50.00000	49.54398	33936	0.010	-0.91204	25.00000	Linear
20 C-38	50.00000	49.65833	32519	0.010	-0.68334	25.00000	Linear
21 C-40	50.00000	49.53114	31791	0.010	-0.93773	25.00000	Linear
9 O-Terphenyl	250	257	38182	0.010	2.78774	25.00000	Linear
15 n-Triacontane-D62	300	296	27070	0.010	-1.42018	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG9314
Lab ID : WG135417-14 **Analytical Date:** 12/06/13 06:48
Lab File ID : AGL10100.D **Instrument ID:** GC10
Initial Calibration Date(s): 11/27/13 18:47 11/27/13 21:23 **Column ID:** A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	343	34496	0.010	0.94975	25.00000	Linear
2 C-8	20.00000	23.18939	35107	0.010	15.94697	25.00000	Linear
3 C-10	20.00000	20.05844	33571	0.010	0.29222	25.00000	Linear
4 C-12	20.00000	20.47380	34842	0.010	2.36898	25.00000	Linear
5 C-14	20.00000	20.28204	34317	0.010	1.41019	25.00000	Linear
6 C-16	20.00000	20.11733	34257	0.010	0.58667	25.00000	Linear
8 C-18	20.00000	20.04350	35287	0.010	0.21752	25.00000	Linear
10 C-20	20.00000	19.85809	35294	0.010	-0.70955	25.00000	Linear
11 C-22	20.00000	21.06388	37476	0.010	5.31942	25.00000	Linear
12 C-24	20.00000	19.84937	34418	0.010	-0.75316	25.00000	Linear
13 C-26	20.00000	20.16325	34195	0.010	0.81626	25.00000	Linear
14 C-28	20.00000	20.53112	35879	0.010	2.65562	25.00000	Linear
16 C-30	20.00000	20.26174	34596	0.010	1.30872	25.00000	Linear
17 C-32	20.00000	20.81934	35232	0.010	4.09670	25.00000	Linear
18 C-34	20.00000	19.76880	34000	0.010	-1.15599	25.00000	Linear
19 C-36	20.00000	18.53530	33446	0.010	-7.32351	25.00000	Linear
20 C-38	20.00000	19.73291	33238	0.010	-1.33546	25.00000	Linear
21 C-40	20.00000	18.48084	31284	0.010	-7.59578	25.00000	Linear
9 O-Terphenyl	250	253	37569	0.010	1.14318	25.00000	Linear
15 n-Triacontane-D62	300	306	27998	0.010	1.94381	25.00000	Linear

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : AGL10089.D
Instrument ID : GC10
Matrix : AQ

SDG : SG9314
Lab Sample ID : WG135406-1
Date Extracted : 02-DEC-13
Date Analyzed : 05-DEC-13
Time Analyzed : 23:38

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135406-2	AGL10090	12/06/13	00:17
Laboratory Control S	WG135406-3	AGL10091	12/06/13	00:56
TF2-SB-RB05-1113	SG9314-14	AGL10092	12/06/13	01:35

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Report of Analytical Results

Client:
Lab ID: WG135406-1
Client ID: Method Blank Sample
Project:
SDG: SG9314
Lab File ID: AGL10089.D

Sample Date:
Received Date:
Extract Date: 02-DEC-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG135406

Analysis Date: 05-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: AQ
% Solids: NA
Report Date: 14-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	250	ug/L	1	500	500	150	250
o-Terphenyl		91.0	%					
n-Triacontane-D62		90.0	%					

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : AGL10078.D
Instrument ID : GC10
Matrix : SL

SDG : SG9314
Lab Sample ID : WG135483-1
Date Extracted : 03-DEC-13
Date Analyzed : 05-DEC-13
Time Analyzed : 16:27

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135483-2	AGL10079	12/05/13	17:07
Laboratory Control S	WG135483-3	AGL10080	12/05/13	17:46
Matrix Spike	WG135483-4	AGL10086	12/05/13	21:41
Matrix Spike Duplica	WG135483-5	AGL10087	12/05/13	22:20
TF2-003-SB1019-0810	SG9314-4	AGL10093	12/06/13	02:15
TF2-001-SS1003-0001	SG9314-11	AGL10094	12/06/13	02:54
TF2-SB-DUP09-1113	SG9314-13	AGL10095	12/06/13	03:33

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Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG135483-1
Client ID: Method Blank Sample
Project:
SDG: SG9314
Lab File ID: AGL10078.D

Sample Date:
Received Date:
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135483

Analysis Date: 05-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA
Report Date: 18-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		84.8	%					
n-Triacontane-D62		80.0	%					

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG9314

Client Sample ID	Lab Sample ID	Col. ID	NTD	#	OTP	#
TF2-001-SS1003-0001	SG9314-11	A	81.1		90.2	
TF2-SB-DUP09-1113	SG9314-13	A	91.8		96.5	
TF2-003-SB1019-0810	SG9314-4	A	108.		95.4	
Method Blank Sample	WG135483-1	A	80.0		84.8	
Laboratory Control S	WG135483-2	A	80.0		87.9	
Laboratory Control S	WG135483-3	A	75.0		84.8	
Matrix Spike	WG135483-4	A	76.2		86.7	
Matrix Spike Duplica	WG135483-5	A	72.1		84.3	

		QC Limits
OTP	O-TERPHENYL	62-109
NTD	N-TRIACONTANE-D62	60-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG9314

Client Sample ID	Lab Sample ID	Col. ID	NTD	#	OTP	#
TF2-SB-RB05-1113	SG9314-14	A	76.7		82.0	
Method Blank Sample	WG135406-1	A	90.0		91.0	
Laboratory Control S	WG135406-2	A	76.7		67.0	*
Laboratory Control S	WG135406-3	A	70.0		91.0	

		QC Limits
OTP	O-TERPHENYL	82-142
NTD	N-TRIACONTANE-D62	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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LCS/LCSD Recovery Report

LCS ID: WG135483-2
LCSD ID: WG135483-3
Project:
SDG: SG9314
Report Date: 14-DEC-13
LCS File ID: AGL10079.D

Received Date:
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135483
LCSD File ID: AGL10080.D

Analysis Date: 05-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	60.0	48.0	80.0	48.0	80.0	mg/Kgdrywt	0	30	63-153
o-Terphenyl			87.9		84.8				62-109
n-Triacontane-D62			80.0		75.0				60-130

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LCS/LCSD Recovery Report

LCS ID: WG135406-2
LCSD ID: WG135406-3
Project:
SDG: SG9314
Report Date: 14-DEC-13
LCS File ID: AGL10090.D

Received Date:
Extract Date: 02-DEC-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG135406
LCSD File ID: AGL10091.D

Analysis Date: 06-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	1800	1100	61.1	1500	83.3	ug/L	31*	30	55-118
o-Terphenyl			67.0*		91.0				82-142
n-Triacontane-D62			76.7		70.0				70-130

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Cert No E87604

MS/MSD Recovery Report

MS ID: WG135483-4
MSD ID: WG135483-5
Sample ID: SG9314-11
Client ID: TF2-001-SS1003-0001
Project:
SDG: SG9314
MS File ID: AGL10086.D

Received Date:
Extract Date: 03-DEC-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135483
Report Date: 14-DEC-13
MSD File ID: AGL10087.D

Analysis Date: 05-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 89.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	62.9	62.5	mg/Kgdryw	J18.	68.	64.	79.5	73.6	6	30	63-153
-Terphenyl							86.7	84.3			62-109
-Triacontane-D62							76.2	72.1			60-130

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SAMPLE ID TF2-SB-RB05-1113

SAMPLE CALC for acetone

IS AREA	DILUTION	COMPOUND OF INTEREST AREA	IS AMOUNT (ug/L)	Final Extract Volume (mL)	AVE RRF	CONCENTRATION PPB
607407	1	41761	50	5	0.1665	20.65
				Sample Volume (mL)		
				5		

SAMPLE ID TF2-SB-RB05-1113

SAMPLE CALC for GRO

Initial Calibration Area	DILUTION	COMPOUND OF INTEREST AREA		Final Extract Volume (mL)		CONCENTRATION PPB
12787	1	100034		5		7.82
				Sample Volume (mL)		
				5		

SAMPLE ID TF2-003-SB1019-0204

SAMPLE CALC fo fluoranthene

IS AREA	DILUTION	COMPOUND OF INTEREST AREA	IS AMOUNT (ng/uL)	Final Extract Volume (mL)	AVE RRF	CONCENTRATION PPB
59358	4	528674	0.8	0.001	1.0904	1163.34
				Sample weight (kg)		
				0.0302		

Percent Solids

93

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Sample Calculation

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-14
Client ID: TF2-SB-RB05-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: S9485.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 03-DEC-13
Extracted By: REC
Extraction Method: SW846 5030
Lab Prep Batch: WG135476

Analysis Date: 03-DEC-13
Analyst: REC
Analysis Method: SW846 8260B
Matrix: AQ
% Solids: NA
Report Date: 06-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Bromomethane	U	1.0	ug/L	1	2	2.0	0.49	1.0
Carbon Disulfide	U	0.50	ug/L	1	1	1.0	0.25	0.50
Acetone		21	ug/L	1	5	5.0	2.2	2.5
Methyl tert-butyl Ether	U	0.50	ug/L	1	1	1.0	0.36	0.50
2-Butanone		7.7	ug/L	1	5	5.0	1.3	2.5
Benzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
Toluene	U	0.50	ug/L	1	1	1.0	0.27	0.50
4-Methyl-2-Pentanone	U	2.5	ug/L	1	5	5.0	1.3	2.5
2-Hexanone	U	2.5	ug/L	1	5	5.0	1.7	2.5
Ethylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
m+p-Xylenes	U	1.0	ug/L	1	2	2.0	0.59	1.0
o-Xylene	U	0.50	ug/L	1	1	1.0	0.25	0.50
Styrene	U	0.50	ug/L	1	1	1.0	0.23	0.50
Bromoform	U	0.50	ug/L	1	1	1.0	0.23	0.50
Isopropylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
N-Propylbenzene	U	0.50	ug/L	1	1	1.0	0.26	0.50
1,3,5-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.20	0.50
tert-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.31	0.50
1,2,4-Trimethylbenzene	U	0.50	ug/L	1	1	1.0	0.19	0.50
P-Isopropyltoluene	U	0.50	ug/L	1	1	1.0	0.25	0.50
N-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.23	0.50
sec-Butylbenzene	U	0.50	ug/L	1	1	1.0	0.21	0.50
Cyclohexane	U	0.50	ug/L	1	1	1.0	0.31	0.50
Methyl Acetate	UL	0.75	ug/L	1	1	1.0	0.53	0.75
Methylcyclohexane	U	0.50	ug/L	1	1	1.0	0.30	0.50
Naphthalene	U	0.50	ug/L	1	1	1.0	0.30	0.50
Xylenes (Total)	U	1.5	ug/L	1	3	3.0	0.25	1.5
P-Bromofluorobenzene		93.6	%					
Toluene-d8		93.7	%					
1,2-Dichloroethane-d4		89.0	%					
Dibromofluoromethane		92.4	%					

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Sample Calculation

Data File: \\target_server\gg\chem\gcms-s.i\S120313.b\S9485.D
Report Date: 06-Dec-2013 12:46

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-s.i\S120313.b\S9485.D
Lab Smp Id: SG9314-14 Client Smp ID: TF2-SB-RB05-1113
Inj Date : 03-DEC-2013 14:30
Operator : REC Inst ID: gcms-s.i
Smp Info : SG9314-14
Misc Info : WG135476,WG135281-4
Comment : SW846 5030
Method : \\Target_server\gg\chem\gcms-s.i\S120313.b\s826a40.m
Meth Date : 06-Dec-2013 12:43 gcms-s.i Quant Type: ISTD
Cal Date : 21-NOV-2013 11:20 Cal File: S9247.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * 5/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	sample purged
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/l)	CONCENTRATIONS FINAL (ug/l)	REVIEW CODE
	15 Acetone	43	5.066	5.060	(0.610)	41761	20.6532	20.6	
$	37 Dibromofluoromethane	113	7.689	7.690	(0.926)	241183	46.2050	46.2	
	40 2-Butanone	43	7.861	7.854	(0.947)	22398	7.73029	7.7	
*	42 Pentafluorobenzene	168	8.304	8.311	(1.000)	607407	50.0000		
$	45 1,2-Dichloroethane-D4	65	8.361	8.369	(1.007)	347466	44.5181	44.5	
*	49 1,4-Difluorobenzene	114	8.962	8.970	(1.000)	903698	50.0000		
$	55 Toluene-D8	98	10.563	10.571	(1.179)	979210	46.8491	46.8	
*	66 Chlorobenzene-D5	117	12.443	12.451	(1.000)	865826	50.0000		
$	76 P-Bromofluorobenzene	95	14.101	14.109	(1.573)	410535	46.8242	46.8	
*	91 1,4-Dichlorobenzene-D4	152	15.802	15.810	(1.000)	480710	50.0000		

Sample Calculation

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG9314
Project : NAVSTA Newport CTO WE30 **Instrument ID:** GCMS-S
Lab File IDs : S9247.D S9248.D S9249.D **Column ID:**
S9250.D S9251.D S9252.D **Calibration Date(s):** 21-NOV-13 11:20
21-NOV-13 14:22

	Level 1 1.0000	Level 2 5.0000	Level 3 20.0000	Level 4 50.0000	Level 5 100.0000	Level 6 200.0000	Crv New	b	m1	m2	%RSD	Max %RSD	
Bromomethane	7983	19964	63671	171945	365670	737794	LNR	2.600e-00	0.27656		0.99970	0.99000	O
Carbon Disulfide	1.63290	1.61163	1.48741	1.48850	1.43661	1.27347	AVG		1.48842		8.75681	15.00000	O
Acetone	0.23820	0.17870	0.15623	0.14369	0.14192	0.13994	AVG		0.16645		22.8380	15.00000	W
Methyl tert-butyl ether	1.69001	1.61917	1.61895	1.56153	1.49322	1.30045	AVG		1.54722		8.89615	15.00000	O
2-Butanone	0.27102	0.24311	0.23879	0.22973	0.22918	0.21922	AVG		0.23851		7.53419	15.00000	O
Benzene	1.43648	1.34928	1.30543	1.28468	1.24223	1.07762	AVG		1.28262		9.37522	15.00000	O
Cyclohexane	0.92725	0.99911	0.96997	0.94440	0.93283	0.89307	AVG		0.94444		3.87870	15.00000	O
Toluene	0.88924	0.85469	0.82508	0.81453	0.79777	0.72561	AVG		0.81782		6.79244	15.00000	O
4-methyl-2-pentanone	0.37864	0.36068	0.35820	0.33981	0.31267	0.24369	AVG		0.33228		14.6923	15.00000	O
2-Hexanone	0.28461	0.26975	0.26847	0.25724	0.24758	0.21509	AVG		0.25712		9.36864	15.00000	O
Ethylbenzene	0.56704	0.56565	0.54154	0.54141	0.53806	0.51801	AVG		0.54529		3.39466	15.00000	O
Xylenes (total)	+++++	+++++	+++++	+++++	+++++	+++++	AVG		0.000e+00		0.000e+(	15.00000	M
m+p-Xylenes	0.70108	0.65597	0.64662	0.63114	0.60303	0.52035	AVG		0.62637		9.75743	15.00000	O
o-Xylene	0.62311	0.61777	0.59848	0.59522	0.58385	0.56090	AVG		0.59655		3.81766	15.00000	O
Styrene	1.11070	1.08880	1.09788	1.08025	1.04717	0.94572	AVG		1.06175		5.72147	15.00000	O
Bromoform	0.15074	0.15865	0.18781	0.19850	0.20935	0.21785	AVG		0.18715		14.5403	15.00000	O
Isopropylbenzene	3.14543	3.12760	2.96614	2.90113	2.78592	2.32481	AVG		2.87517		10.5101	15.00000	O
N-Propylbenzene	3.73180	3.78125	3.52513	3.43714	3.24569	2.57935	AVG		3.38339		13.0053	15.00000	O
1,3,5-Trimethylbenzene	3.09510	2.91250	2.78859	2.74835	2.68209	2.24823	AVG		2.74581		10.3429	15.00000	O
tert-Butylbenzene	2.65878	2.58836	2.48277	2.47965	2.47960	2.26580	AVG		2.49249		5.34241	15.00000	O
1,2,4-Trimethylbenzene	3.13024	2.91389	2.79393	2.75089	2.68249	2.25953	AVG		2.75516		10.4984	15.00000	O
P-Isopropyltoluene	3.04645	2.93585	2.78063	2.74361	2.65637	2.24962	AVG		2.73542		10.0951	15.00000	O
N-Butylbenzene	3.20832	2.90299	2.77250	2.73743	2.64610	2.23565	AVG		2.75050		11.6055	15.00000	O
sec-Butylbenzene	3.42231	3.40509	3.20535	3.16101	3.02580	2.49264	AVG		3.11870		10.9591	15.00000	O
Naphthalene	2.65118	1.95103	2.07384	2.14377	2.17946	1.97771	AVG		2.16283		11.8091	15.00000	O
Methyl Acetate	0.60668	0.51166	0.49302	0.48603	0.48670	0.50282	AVG		0.51448		8.98560	15.00000	O
Methylcyclohexane	0.90836	0.95777	0.97384	0.96353	0.93167	0.89718	AVG		0.93872		3.33785	15.00000	O
Dibromofluoromethane	0.41842	0.41501	0.43669	0.43495	0.44385	0.42918	AVG		0.42968		2.59157	15.00000	
1,2-Dichloroethane-D4	0.66101	0.64350	0.65251	0.64247	0.64275	0.61270	AVG		0.64249		2.54012	15.00000	
Toluene-D8	1.32424	1.18888	1.19446	1.15728	1.12962	0.94413	AVG		1.15643		10.6927	15.00000	
P-Bromofluorobenzene	0.60253	0.47113	0.47348	0.46130	0.46377	0.43836	AVG		0.48509		12.1346	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac Cert No E87604

Report of Analytical Results

Sample Calculation

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-3DL
Client ID: TF2-003-SB1019-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: G0732.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG135526

Analysis Date: 16-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 19-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	43.	ug/Kgdrywt	4	20	86.	11.	43.
2-Methylnaphthalene	U	43.	ug/Kgdrywt	4	20	86.	9.4	43.
Acenaphthylene	U	43.	ug/Kgdrywt	4	20	86.	5.1	43.
Acenaphthene	J	27.	ug/Kgdrywt	4	20	86.	6.4	43.
Fluorene	U	43.	ug/Kgdrywt	4	20	86.	14.	43.
Phenanthrene		660	ug/Kgdrywt	4	20	86.	7.7	43.
Anthracene	J	77.	ug/Kgdrywt	4	20	86.	5.1	43.
Fluoranthene		1100	ug/Kgdrywt	4	20	86.	7.7	43.
Pyrene		740	ug/Kgdrywt	4	20	86.	9.0	43.
Benzo(a)anthracene		410	ug/Kgdrywt	4	20	86.	8.1	43.
Chrysene		440	ug/Kgdrywt	4	20	86.	7.3	43.
Benzo(b)Fluoranthene		250	ug/Kgdrywt	4	20	86.	10.	43.
Benzo(k)fluoranthene		230	ug/Kgdrywt	4	20	86.	13.	43.
Benzo(a)pyrene		220	ug/Kgdrywt	4	20	86.	14.	43.
Indeno(1,2,3-cd)pyrene		110	ug/Kgdrywt	4	20	86.	8.1	43.
Dibenzo(a,h)anthracene	J	54.	ug/Kgdrywt	4	20	86.	7.7	43.
Benzo(g,h,i)perylene		110	ug/Kgdrywt	4	20	86.	8.6	43.
2-Methylnaphthalene-D10		85.6	%					
Fluorene-D10		68.2	%					
Pyrene-D10		55.2	%					

600 Technology Way
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Data File: \\target_server\GG\chem\gcms-g.i\G121613.b\G0732.D
Report Date: 19-Dec-2013 12:07

Sample Calculation

Katahdin Analytical Services

Data file : \\target_server\GG\chem\gcms-g.i\G121613.b\G0732.D
Lab Smp Id: SG9314-3DL Client Smp ID: TF2-003-SB1019-0204
Inj Date : 16-DEC-2013 14:49 MS Autotune Date: 29-JUL-2005 08:48
Operator : JCG Inst ID: gcms-g.i
Smp Info : SG9314-3DL
Misc Info : WG136254,WG135526,WG136161-4
Comment :
Method : \\target_server\GG\chem\gcms-g.i\G121613.b\GSPSIM93.m
Meth Date : 16-Dec-2013 11:49 cgomez Quant Type: ISTD
Cal Date : 14-DEC-2013 14:39 Cal File: G0715.D
Als bottle: 7
Dil Factor: 4.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	4.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03020	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	7.333	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW C
*	7 1,4-Dichlorobenzene-D4	152	9.257	9.258	(1.000)	22436	0.80000	(Q)	
*	20 Naphthalene-D8	136	12.114	12.114	(1.000)	84314	0.80000		
$	26 2-Methylnaphthalene-D10	152	13.698	13.696	(1.131)	23438	0.42836	61.2	
*	41 Acenaphthene-D10	164	16.238	16.237	(1.000)	39964	0.80000		
	42 Acenaphthene	153	16.297	16.297	(1.004)	12613	0.18721	26.8(a)	
$	48 Fluorene-D10	174	17.434	17.434	(1.074)	15950	0.34166	48.8	
*	59 Phenanthrene-D10	188	19.680	19.703	(1.000)	59358	0.80000		
	60 Phenanthrene	178	19.745	19.746	(1.003)	435337	4.61115	659	
	61 Anthracene	178	19.852	19.853	(1.009)	54153	0.54184	77.4(a)	
	64 Fluoranthene	202	22.577	22.576	(1.147)	528674	7.73974	1110	
$	65 Pyrene-D10	212	23.049	23.064	(0.886)	16915	0.27664	39.5	
	66 Pyrene	202	23.096	23.096	(0.888)	629316	5.19914	743	
	68 Benzo(a)anthracene	228	25.974	25.974	(0.999)	163925	2.89292	413	
*	69 Chrysene-D12	240	26.013	26.012	(1.000)	38084	0.80000		
	70 Chrysene	228	26.070	26.070	(1.002)	191824	3.07908	440	
	74 Benzo(b)fluoranthene	252	28.404	28.405	(0.973)	82910	1.74150	249	
	75 Benzo(k)fluoranthene	252	28.439	28.457	(0.974)	117557	1.62313	232(M)	M6
	76 Benzo(a)pyrene	252	29.067	29.068	(0.996)	77642	1.55955	223	
*	77 Perylene-D12	264	29.189	29.208	(1.000)	31980	0.80000		
	78 Indeno(1,2,3-cd)pyrene	276	31.465	31.479	(1.078)	34180	0.77518	111(H)	
	79 Dibenzo(a,h)anthracene	278	31.537	31.565	(1.080)	12033	0.38068	54.4(a)	

JCG
1:51 pm, Dec 19, 2

Form 6
Initial Calibration Summary

Sample Calculation

Lab Name : Katahdin Analytical Services
SDG: SG9314
Project : NAVSTA Newport CTO WE30
Instrument ID: GCMS-G
Lab File IDs : G0564.D G0565.D G0563.D G0566.D G0567.D G0568.D
Column ID:
Calibration Date(s): 05-DEC-13 10:40, 05-DEC-13 14:21

	0.200000(Level 1	0.500000(Level 2	1.0000 Level 3	3.0000 Level 4	7.0000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	1.09549	1.41395	1.25495	1.11503	0.99735	0.94622	AVG		1.13716		15.1660:	15.00000	W(
2-Methylnaphthalene	18510	40565	79134	223104	475003	610076	QUA	-0.14049	1.36242	0.08365	0.99895	0.99000	O
Acenaphthylene	2.10965	2.08444	2.34186	2.22209	2.14846	2.14561	AVG		2.17535		4.31724	15.00000	O
Acenaphthene	1.38171	1.40328	1.73750	1.46641	1.41804	1.39626	AVG		1.46720		9.24071	15.00000	O
Fluorene	1.55916	1.49400	1.62957	1.49862	1.49050	1.51969	AVG		1.53192		3.53802	15.00000	O
Phenanthrene	1.12494	1.00160	1.13938	1.14683	1.17791	1.29195	AVG		1.14710		8.14541	15.00000	O
Anthracene	1.38710	1.44675	1.39632	1.32516	1.32492	1.19821	AVG		1.34641		6.39688	15.00000	O
Fluoranthene	1.15415	0.98499	1.07827	1.09447	1.07881	1.15156	AVG		1.09037		5.68516	15.00000	O
Pyrene	2.66385	2.66232	2.65101	2.31113	2.40890	2.55613	AVG		2.54222		5.89833	15.00000	O
Benzo(a)anthracene	1.10565	1.02402	1.14062	1.21408	1.22501	1.25608	AVG		1.16091		7.52888	15.00000	O
Chrysene	14798	26429	51944	159612	355882	428032	LNR	-0.11518	1.30161		0.99955	0.99000	O
Benzo(b)fluoranthene	1.14710	1.07683	1.27094	0.92928	1.07673	1.28561	AVG		1.13108		11.88231	15.00000	O
Benzo(k)fluoranthene	11696	23471	47325	169991	340631	392566	QUA	-0.34780	0.70669	-0.00555	0.99631	0.99000	O
Benzo(a)pyrene	7679	12872	29839	113516	244240	273419	LNR	-0.02608	1.20198		0.99631	0.99000	O
Indeno(1,2,3-cd)pyrene	1.00586	1.03510	0.94122	0.81910	0.83945	1.02674	AVG		0.94458		10.1000(	15.00000	O
Dibenzo(a,h)anthracene	0.73568	0.68131	0.62259	0.62064	0.64309	0.79195	AVG		0.68254		10.1031{	15.00000	O
Benzo(g,h,i)perylene	1.00272	0.98689	0.87571	0.73253	0.73516	0.89561	AVG		0.87144		13.4837{	15.00000	O
2-Methylnaphthalene-D10	10338	27219	57087	171701	389438	503630	LNR	-0.28262	0.43794		0.99698	0.99000	
Fluorene-D10	0.85020	0.87227	0.96966	0.92182	0.90645	0.93456	AVG		0.90916		4.74626	15.00000	
Pyrene-D10	1.18670	1.42650	1.42379	1.27334	1.32821	1.35347	AVG		1.33200		6.91211	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Katahdin
ANALYTICAL SERVICES

Sample Calculations

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9314-14
Client ID: TF2-SB-RB05-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9314
Lab File ID: 9GL2049.D

Sample Date: 25-NOV-13
Received Date: 25-NOV-13
Extract Date: 04-DEC-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135522

Analysis Date: 04-DEC-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA
Report Date: 18-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	J	7.8	ug/l	1	10	10.	6.7	8.0
p-Bromofluorobenzene		102.	%					

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http://www.katahdinlab.com

Data File: \\target_server\GG\chem\gc09.i\GC09GL04A1.b\9GL2049.d
Report Date: 18-Dec-2013 08:41

Sample Calculation

Katahdin Analytical Services

Data file : \\target_server\GG\chem\gc09.i\GC09GL04A1.b\9GL2049.d
Lab Smp Id: SG9314-14 Client Smp ID: TF2-SB-RB05-1113
Inj Date : 04-DEC-2013 17:05
Operator : JLP Inst ID: gc09.i
Smp Info : SG9314-14
Misc Info : WG135522,WG127983-2
Comment : SW846 5030B
Method : \\TARGET_SERVER\GG\chem\gc09.i\GC09GL04A1.B\GROB017C.m
Meth Date : 05-Dec-2013 06:57 jprescott Quant Type: ESTD
Cal Date : 26-JUL-2013 17:56 Cal File: 9GG2130.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: SW8015M-GRO.sub
Target Version: 4.12
Processing Host: V200T2

Concentration Formula: Amt * DF * Vt/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00500	Final Volume (L)
Vo	0.00500	Sample Volume (L)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/L)	REVIEW CODE
S 6 Gasoline Range Organics	5.780-42.813			100034	7.82297	7.82(aM)	
$ 10 p-Bromofluorobenzene	31.652	31.610	0.042	141227	20.2857	20.3	M2

QC Flag Legend

JLP
8:59 am, Dec 18, 2013

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Sample Calculation

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File IDs : 9GG2130.d 9GG2123.d 9GG2124.d 9GG2125.d 9GG2126.d 9GG2127.d

SDG: SG9314
Instrument ID: GC09
Column ID: A
Calibration Date(s): 26-JUL-13 09:58, 26-JUL-13 17:56

	Level 1 10.0000	Level 2 100.0000	Level 3 250.0000	Level 4 500.0000	Level 5 1000.0000	Level 6 2000.0000	Crv New	b	m1	m2	%RSD	Max %RSD	
Gasoline Range Organic	12176	12675	12913	12768	12910	13282	AVG		12787		2.84495	20.00000	M
Methyl tert-butyl ether	6010	8181	8380	7569	7477	8149	AVG		7628		11.40841	20.00000	O
Benzene	15826	15860	16448	16739	17015	17326	AVG		16536		3.69285	20.00000	O
Toluene	15470	16041	16286	16166	16555	16718	AVG		16206		2.70556	20.00000	O
Ethylbenzene	14185	14823	15058	15019	15114	15298	AVG		14916		2.61143	20.00000	O
m+p-Xylenes	14785	15435	15552	15559	15638	15874	AVG		15474		2.37846	20.00000	O
o-Xylene	16358	14889	14896	15443	15410	15788	AVG		15464		3.61301	20.00000	O
1,2,4-trimethylbenzene	11095	12102	12347	12071	12262	12757	AVG		12106		4.56871	20.00000	O
1,3,5-trimethylbenzene	9784	10620	10743	10552	10765	11352	AVG		10636		4.74665	20.00000	O
Naphthalene	3461	3359	3870	3000	3223	3680	AVG		3432		9.12376	20.00000	O
p-Bromofluorobenzene	6432	6935	7300	7023	6937	7145	AVG		6962		4.23260	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Tetra Tech **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **FEBRUARY 19, 2014**

FROM: **TERRI L. SOLOMON** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS, TOTAL SOLIDS**
CTO WE30 NAVSTA NEWPORT
SAMPLE DELIVERY GROUP (SDG) – SG9314

SAMPLES: 13/Soil/

TF2-001-SB1001-0204	TF2-001-SB1001-0810
TF2-001-SB1002-0204	TF2-001-SB1002-0405
TF2-001-SB1003-0204	TF2-001-SS1001-0001
TF2-001-SS1002-0001	TF2-001-SS1003-0001
TF2-003-SB1013-0204	TF2-003-SB1013-0405
TF2-003-SB1019-0204	TF2-003-SB1019-0810
TF2-SB-DUP09-1113	

1/Aqueous/

TF2-SB-RB05-1113

Overview

The sample set for NAVSTA Newport, CTO WE30, SDG SG9314, consists of thirteen (13) soil environmental samples and one (1) rinsate blank. One (1) field duplicate pair (TF2-001-SS1003-0001 / TF2-SB-DUP09-1113) was included within this SDG.

All soil samples were analyzed for target analyte list (TAL) metals and total solids. Sample TF2-SB-RB05-1113 was analyzed for TAL metals only. Metals analyses were conducted using SW-846 method 6020A. Mercury analyses were conducted using SW-846 method 7471B and 7470A. Total solids analyses were conducted using Standard Method 2540G.

These data were evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • ICP/MS Tune
* • Initial and Continuing Calibrations
• Laboratory Method / Preparation Blanks
* • ICP Interference Analysis
* • Laboratory Control Sample Results
• Matrix Spike Recoveries
• Laboratory Duplicate Precision
* • Serial Dilution Results
* • Internal Standard Recoveries
• Field Duplicate Results
* • Detection Limits

* - All quality control criteria were met for this parameter.

Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets. Appendix D contains the documentation to support the findings as discussed in this validation report.

Laboratory Method / Preparation Blanks

The following contaminants were detected in laboratory method / preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Antimony[1]	0.013 ug/L	0.0065 mg/kg
Barium[1]	0.020 ug/L	0.01 mg/kg
Cobalt[1]	0.009 ug/L	0.0045 mg/kg
Iron[2]	6.672 ug/L	3.336 mg/kg
Manganese[3]	0.096 ugL	0.048 mg/kg
Thallium[1]	0.004 ug/L	0.002 mg/kg

(1) Maximum concentration present in a method blank (12/12/2013) affecting all soil samples..
(2) Maximum concentration present in a method blank (12/12/2013) affecting all soil samples except TF2-001-SB1001-0810.
(3) Maximum concentration present in a method blank (12/12/2013) affecting all soil samples except TF2-001-SS1001-0001, TF2-001-SB1001-0204 and TF2-001-SB1001-0810.

Analyte	Maximum Concentration	Action Level
Iron[4]	6.552 ug/L	3.276 mg/kg
Manganese[5]	0.033 ug/L	0.0165 mg/kg

(4) Maximum concentration present in a method blank (12/17/2013) affecting sample TF2-001-SB1001-0810.
(5) Maximum concentration present in a method blank (12/17/2013) affecting samples TF2-001-SB1001-0204 and TF2-001-SB1001-0810.

Analyte	Maximum Concentration	Action Level
Manganese[6]	0.021 ug/L	0.0105 mg/kg

(6) Maximum concentration present in a method blank (12/18/2013) affecting sample TF2-001-SS1001-0001.

Analyte	Maximum Concentration	Action Level
Aluminum[7]	0.613 mg/kg	3.065 mg/kg

Calcium[7]	7.335 mg/kg	36.675 mg/kg
Chromium[7]	0.111 mg/kg	0.555 mg/kg
Copper[7]	0.086 mg/kg	0.43 mg/kg
Lead[7]	0.013 mg/kg	0.065 mg/kg
Magnesium[7]	1.464 mg/kg	7.32 mg/kg
Nickel[7]	0.109 mg/kg	0.545 mg/kg
Sodium[7]	4.708 mg/kg	23.54 mg/kg
Zinc[7]	0.572 mg/kg	2.86 mg/kg

[7] Maximum concentration present in a preparation blank (batch GL101MS1) affecting all soil samples.

Analyte	Maximum Concentration	Action Level
Mercury[8]	0.005 mg/kg	0.025 mg/kg

[10] Maximum concentration present in a preparation blank (batch GL12HGS1) affecting sample all soil samples.

An action level of 5X the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the blank action level and less than the limit of detection (LOD) were qualified "U" as a result of laboratory blank contamination and raised to the LOD. Positive results less than the blank action level and greater than the LOD were qualified "U" as a result of laboratory blank contamination.

For the ICP/MS analyses all samples were analyzed at either a 1X, 5X, 10X or 25X dilution, all method blanks were analyzed at a 1X dilution and all preparation blanks were analyzed at a 5X dilution.

Matrix Spike Recoveries

The matrix spike percent recovery for antimony was < 80% quality control limit for sample TF2-001-SS1001-0001. The matrix spike percent recovery for potassium was > 120% quality control limit for sample TF2-001-SS1001-0001. Only sample TF2-001-SS1001-0001 was affected. The positive results reported for antimony and potassium were qualified as estimated, "J".

The matrix spike percent recoveries for antimony and mercury were < 80% quality control limit for sample TF2-001-SS1003-0001. The matrix spike percent recoveries for calcium and potassium were > 120% quality control limit for sample TF2-001-SS1003-0001. Samples TF2-001-SS1003-0001 and TF2-SB-DUP09-1113 were affected. The positive results reported for antimony, calcium, mercury and potassium were qualified as estimated, "J".

Laboratory Duplicate Precision

The laboratory duplicate range was greater than 2X the LOQ for mercury for sample TF2-001-SS1003-0001. The positive result reported for mercury for sample TF2-001-SS1003-0001 was qualified as estimated, "J".

Field Duplicate Precision

The field duplicate relative percent difference was greater than 2X the LOQ for mercury for sample pair TF2-001-SS1003-0001 / TF2-SB-DUP09-1113. The positive and nondetected results reported for mercury for all samples were qualified as estimated, "J" and "UJ", respectively.

Notes

Positive results reported below the limit of quantitation (LOQ) but above the method detection limit (MDL) were qualified as estimated, "J".

Nondetected results are reported to the limit of detection (LOD).

Internal standard recoveries were not summarized from the laboratory. The raw data was used for validation. All internal standard recoveries were within quality control limits.

Executive Summary

Laboratory Performance: Several contaminants were present in the laboratory method / preparation blanks. The laboratory duplicate range was greater than 2X the LOQ for mercury for sample TF2-001-SS1003-0001.

Other Factors Affecting Data Quality: Positive results reported below the LOQ but above the MDL were qualified as estimated. The matrix spike percent recoveries for antimony, potassium, calcium and/or mercury were outside the quality control limits. The field duplicate relative percent difference was greater than 2X the LOQ for mercury for sample pair TF2-001-SS1003-0001 / TF2-SB-DUP09-1113.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", January 2010, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", July 2013.

The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech
Terri L. Solomon
Environmental Scientist

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C – Region I Worksheets
4. Appendix D – Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1001-0204			TF2-001-SB1001-0810			TF2-001-SB1002-0204			TF2-001-SB1002-0405		
SDG: SG9314	LAB_ID	SG9314-006			SG9314-007			SG9314-009			SG9314-010		
FRACTION: M	SAMP_DATE	11/25/2013			11/25/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	89.5			92.2			88.3			86.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		14900			20500			15200			12200		
ANTIMONY		0.07			0.03	U	A	0.09			0.11		
ARSENIC		11.3			6.2			11.9			12.5		
BARIUM		16.2			7.2			19.8			19.2		
BERYLLIUM		0.36			0.28			0.36			0.39		
CADMIUM		0.13			0.06	J	P	0.07	J	P	0.28		
CALCIUM		825			1550			720			1210		
CHROMIUM		18.3			26.5			17.9			14.9		
COBALT		14.9			20.3			8.7			7.4		
COPPER		19			20.6			15			12.1		
IRON		28100			42500			23000			17000		
LEAD		14.8			11.4			13.5			15.4		
MAGNESIUM		4270			7010			3760			2380		
MANGANESE		374			385			225			227		
MERCURY		0.06	J	G	0.015	UJ	G	0.06	J	G	0.1	J	G
NICKEL		26.1			34.7			16			12.5		
POTASSIUM		362			221			461			526		
SELENIUM		0.33	J	P	0.17	J	P	0.37	J	P	0.36	J	P
SILVER		0.03	J	P	0.02	J	P	0.04	J	P	0.04	J	P
SODIUM		43.6	J	P	42.6	J	P	56.4	J	P	56.9	J	P
THALLIUM		0.05	J	P	0.02	J	P	0.08	J	P	0.1		
VANADIUM		16.7			20.3			20.5			19.7		
ZINC		55			73.6			43.4			41.6		

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1003-0204			TF2-001-SS1001-0001			TF2-001-SS1002-0001			TF2-001-SS1003-0001		
SDG: SG9314	LAB_ID	SG9314-012			SG9314-005			SG9314-008			SG9314-011		
FRACTION: M	SAMP_DATE	11/25/2013			11/25/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	86.7			90.1			89.8			89.2		
	DUP_OF										TF2-001-SS1003-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		11600			12600			14200			14600		
ANTIMONY		0.07	J	P	0.13	J	D	0.08	J	P	0.09	J	D
ARSENIC		7.7			5.1			6.1			7.1		
BARIUM		17.9			15.4			14.6			14.2		
BERYLLIUM		0.36			0.3			0.3			0.34		
CADMIUM		0.1	J	P	0.08			0.1			0.08		
CALCIUM		1030			843			833			666	J	D
CHROMIUM		14.4			16.5			17.5			18		
COBALT		6.2			14.4			16.6			12		
COPPER		11.4			17			17.3			18.5		
IRON		18500			25600			27800			27000		
LEAD		12.8			11.4			12.2			16.4		
MAGNESIUM		2930			3920			4560			4190		
MANGANESE		168			458			394			332		
MERCURY		0.04	J	G	0.016	U	A	0.02	U	A	0.21	J	DFG
NICKEL		13.5			26.2			26.6			23.2		
POTASSIUM		581			302	J	D	390			390	J	D
SELENIUM		0.31	J	P	0.2	J	P	0.21	J	P	0.29	J	P
SILVER		0.04	J	P	0.03	J	P	0.04	J	P	0.07	J	P
SODIUM		58	J	P	47.6	J	P	60.9	J	P	53.1	J	P
THALLIUM		0.07	J	P	0.04	J	P	0.04	J	P	0.05	J	P
VANADIUM		17.7			17.9			20.6			21.1		
ZINC		34.7			56.6			61.5			52.6		

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1013-0204			TF2-003-SB1013-0405			TF2-003-SB1019-0204			TF2-003-SB1019-0810		
SDG: SG9314	LAB_ID	SG9314-001			SG9314-002			SG9314-003			SG9314-004		
FRACTION: M	SAMP_DATE	11/25/2013			11/25/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	93.3			91.6			92.7			89.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		10400			11700			11000			13200		
ANTIMONY		0.07	J	P	0.06	J	P	0.11			0.07	J	P
ARSENIC		4.5			3.8			5.6			4.1		
BARIUM		14.3			17.6			19.6			11.5		
BERYLLIUM		0.28			0.34			0.31			0.28		
CADMIUM		0.07	J	P	0.07	J	P	0.09			0.04	J	P
CALCIUM		614			1110			1060			908		
CHROMIUM		12.9			15.8			13.9			18		
COBALT		7.4			6.1			8.7			11.3		
COPPER		13.2			12.6			17.1			15.6		
IRON		20400			19400			21400			27200		
LEAD		9.8			9.4			13.9			10.9		
MAGNESIUM		3490			3300			3630			4610		
MANGANESE		221			179			279			226		
MERCURY		0.015	U	A	0.014	U	A	0.02	U	A	0.016	U	A
NICKEL		17.2			15.4			17.8			20.4		
POTASSIUM		487			628			598			528		
SELENIUM		0.26	J	P	0.29	J	P	0.24	J	P	0.24	J	P
SILVER		0.03	J	P	0.04	J	P	0.04	J	P	0.03	J	P
SODIUM		61.9	J	P	84.4			52.4	J	P	53.9	J	P
THALLIUM		0.04	J	P	0.07	J	P	0.06			0.05	J	P
VANADIUM		14.5			17.5			15.4			16.5		
ZINC		39.5			37.4			46.4			49.7		

PROJ_NO: 03019	NSAMPLE	TF2-SB-DUP09-1113
SDG: SG9314	LAB_ID	SG9314-013
FRACTION: M	SAMP_DATE	11/25/2013
MEDIA: SOIL	QC_TYPE	NM
	UNITS	MG/KG
	PCT_SOLIDS	89.3
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
ALUMINUM	14000		
ANTIMONY	0.08	J	DP
ARSENIC	6.4		
BARIUM	12.4		
BERYLLIUM	0.35		
CADMIUM	0.07	J	DP
CALCIUM	502		
CHROMIUM	17.3		
COBALT	11		
COPPER	18.1		
IRON	24700		
LEAD	14		
MAGNESIUM	4100		
MANGANESE	277		
MERCURY	0.09	J	DG
NICKEL	23.2		
POTASSIUM	357	J	D
SELENIUM	0.11	J	P
SILVER	0.05	J	P
SODIUM	59.3	J	P
THALLIUM	0.04	J	P
VANADIUM	18.4		
ZINC	52.7		

PROJ_NO: 03019	NSAMPLE	TF2-SB-RB05-1113
SDG: SG9314	LAB_ID	SG9314-014
FRACTION: M	SAMP_DATE	11/25/2013
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
ALUMINUM	14.6	J	P
ANTIMONY	0.5	U	
ARSENIC	4	U	
BARIUM	1	U	
BERYLLIUM	0.2	U	
CADMIUM	0.2	U	
CALCIUM	80	U	
CHROMIUM	1.2	J	P
COBALT	0.3	U	
COPPER	1.2	J	P
IRON	60	U	
LEAD	0.26	J	P
MAGNESIUM	80	U	
MANGANESE	1	U	
MERCURY	0.1	U	
NICKEL	0.52	J	P
POTASSIUM	400	U	
SELENIUM	3	U	
SILVER	0.4	U	
SODIUM	400	U	
THALLIUM	0.4	U	
VANADIUM	1.2	J	P
ZINC	5.5	J	P

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SB-RB05-1113

Matrix: WATER **SDG Name:** SG9314

Percent Solids: 0.00 **Lab Sample ID:** SG9314-014

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14.6	J		MS	5	300	4.40	40
7440-36-0	ANTIMONY, TOTAL	0.50	U		MS	5	1.0	0.05	0.50
7440-38-2	ARSENIC, TOTAL	4.0	U		MS	5	5.0	2.25	4.0
7440-39-3	BARIUM, TOTAL	1.0	U		MS	5	2.0	0.25	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	U		MS	5	1.0	0.04	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.03	0.20
7440-70-2	CALCIUM, TOTAL	80	U		MS	5	100	20.45	80
7440-47-3	CHROMIUM, TOTAL	1.2	J		MS	5	5.0	0.20	4.0
7440-48-4	COBALT, TOTAL	0.30	U		MS	5	1.0	0.05	0.30
7440-50-8	COPPER, TOTAL	1.2	J		MS	5	3.0	0.20	2.0
7439-89-6	IRON, TOTAL	60	U		MS	5	100	12.75	60
7439-92-1	LEAD, TOTAL	0.26	J		MS	5	1.0	0.05	0.50
7439-95-4	MAGNESIUM, TOTAL	80	U		MS	5	100	7.80	80
7439-96-5	MANGANESE, TOTAL	1.0	U		MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.01	0.10
7440-02-0	NICKEL, TOTAL	0.52	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	400	U		MS	5	1000	30.70	400
7782-49-2	SELENIUM, TOTAL	3.0	U		MS	5	5.0	0.20	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-23-5	SODIUM, TOTAL	400	U		MS	5	1000	18.50	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-62-2	VANADIUM, TOTAL	1.2	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	5.5	J		MS	5	10	3.90	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1001-0204

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 89.5 **Lab Sample ID:** SG9314-006

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14900			MS	5	21	0.36	2.8
7440-36-0	ANTIMONY, TOTAL	0.07		N	MS	5	0.070	0.01	0.035
7440-38-2	ARSENIC, TOTAL	11.3		*	MS	5	0.35	0.11	0.28
7440-39-3	BARIUM, TOTAL	16.2			MS	5	0.14	0.02	0.070
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.070	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.13			MS	5	0.070	0.007	0.014
7440-70-2	CALCIUM, TOTAL	825		N	MS	10	14	5.38	11
7440-47-3	CHROMIUM, TOTAL	18.3			MS	5	0.35	0.04	0.28
7440-48-4	COBALT, TOTAL	14.9			MS	5	0.070	0.004	0.021
7440-50-8	COPPER, TOTAL	19.0			MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	28100			MS	5	7.0	1.69	4.2
7439-92-1	LEAD, TOTAL	14.8			MS	5	0.070	0.004	0.035
7439-95-4	MAGNESIUM, TOTAL	4270			MS	5	7.0	0.96	5.6
7439-96-5	MANGANESE, TOTAL	374			MS	10	0.28	0.06	0.14
7439-97-6	MERCURY, TOTAL	0.06		N*	CV	1	0.029	0.004	0.015
7440-02-0	NICKEL, TOTAL	26.1			MS	5	0.14	0.02	0.084
7440-09-7	POTASSIUM, TOTAL	362		N	MS	5	70	3.21	28
7782-49-2	SELENIUM, TOTAL	0.33	J		MS	5	0.35	0.03	0.21
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.070	0.004	0.028
7440-23-5	SODIUM, TOTAL	43.6	J		MS	5	70	1.80	28
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.070	0.007	0.028
7440-62-2	VANADIUM, TOTAL	16.7			MS	5	0.35	0.08	0.28
7440-66-6	ZINC, TOTAL	55.0			MS	5	0.70	0.09	0.56

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1001-0810

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 92.2 **Lab Sample ID:** SG9314-007

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	20500			MS	5	18	0.31	2.4
7440-36-0	ANTIMONY, TOTAL	0.03	J	N	MS	5	0.061	0.01	0.030
7440-38-2	ARSENIC, TOTAL	6.2		*	MS	5	0.30	0.09	0.24
7440-39-3	BARIUM, TOTAL	7.2			MS	5	0.12	0.02	0.061
7440-41-7	BERYLLIUM, TOTAL	0.28			MS	5	0.061	0.002	0.012
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.061	0.006	0.012
7440-70-2	CALCIUM, TOTAL	1550		N	MS	10	12	4.64	9.7
7440-47-3	CHROMIUM, TOTAL	26.5			MS	5	0.30	0.03	0.24
7440-48-4	COBALT, TOTAL	20.3			MS	5	0.061	0.003	0.018
7440-50-8	COPPER, TOTAL	20.6			MS	5	0.18	0.04	0.12
7439-89-6	IRON, TOTAL	42500			MS	10	12	2.91	7.3
7439-92-1	LEAD, TOTAL	11.4			MS	5	0.061	0.003	0.030
7439-95-4	MAGNESIUM, TOTAL	7010			MS	5	6.1	0.83	4.8
7439-96-5	MANGANESE, TOTAL	385			MS	10	0.24	0.05	0.12
7439-97-6	MERCURY, TOTAL	0.015	U	N*	CV	1	0.029	0.004	0.015
7440-02-0	NICKEL, TOTAL	34.7			MS	5	0.12	0.02	0.073
7440-09-7	POTASSIUM, TOTAL	221		N	MS	5	61	2.76	24
7782-49-2	SELENIUM, TOTAL	0.17	J		MS	5	0.30	0.02	0.18
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.061	0.003	0.024
7440-23-5	SODIUM, TOTAL	42.6	J		MS	5	61	1.55	24
7440-28-0	THALLIUM, TOTAL	0.02	J		MS	5	0.061	0.006	0.024
7440-62-2	VANADIUM, TOTAL	20.3			MS	5	0.30	0.07	0.24
7440-66-6	ZINC, TOTAL	73.6			MS	5	0.61	0.08	0.48

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1002-0204

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 88.3 **Lab Sample ID:** SG9314-009

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15200			MS	5	26	0.44	3.4
7440-36-0	ANTIMONY, TOTAL	0.09		N	MS	5	0.086	0.02	0.043
7440-38-2	ARSENIC, TOTAL	11.9		*	MS	5	0.43	0.13	0.34
7440-39-3	BARIUM, TOTAL	19.8			MS	5	0.17	0.03	0.086
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.086	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.086	0.009	0.017
7440-70-2	CALCIUM, TOTAL	720		N	MS	5	8.6	3.28	6.9
7440-47-3	CHROMIUM, TOTAL	17.9			MS	5	0.43	0.04	0.34
7440-48-4	COBALT, TOTAL	8.7			MS	5	0.086	0.004	0.026
7440-50-8	COPPER, TOTAL	15.0			MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	23000			MS	5	8.6	2.06	5.1
7439-92-1	LEAD, TOTAL	13.5			MS	5	0.086	0.004	0.043
7439-95-4	MAGNESIUM, TOTAL	3760			MS	5	8.6	1.17	6.9
7439-96-5	MANGANESE, TOTAL	225			MS	5	0.17	0.03	0.086
7439-97-6	MERCURY, TOTAL	0.06		N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	16.0			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	461		N	MS	5	86	3.91	34
7782-49-2	SELENIUM, TOTAL	0.37	J		MS	5	0.43	0.03	0.26
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.086	0.004	0.034
7440-23-5	SODIUM, TOTAL	56.4	J		MS	5	86	2.20	34
7440-28-0	THALLIUM, TOTAL	0.08	J		MS	5	0.086	0.009	0.034
7440-62-2	VANADIUM, TOTAL	20.5			MS	5	0.43	0.09	0.34
7440-66-6	ZINC, TOTAL	43.4			MS	5	0.86	0.11	0.69

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1002-0405

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 86.1 **Lab Sample ID:** SG9314-010

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12200			MS	5	22	0.37	2.9
7440-36-0	ANTIMONY, TOTAL	0.11		N	MS	5	0.073	0.01	0.037
7440-38-2	ARSENIC, TOTAL	12.5		*	MS	5	0.37	0.11	0.29
7440-39-3	BARIUM, TOTAL	19.2			MS	5	0.15	0.03	0.073
7440-41-7	BERYLLIUM, TOTAL	0.39			MS	5	0.073	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.28			MS	5	0.073	0.007	0.015
7440-70-2	CALCIUM, TOTAL	1210		N	MS	5	7.3	2.81	5.9
7440-47-3	CHROMIUM, TOTAL	14.9			MS	5	0.37	0.04	0.29
7440-48-4	COBALT, TOTAL	7.4			MS	5	0.073	0.004	0.022
7440-50-8	COPPER, TOTAL	12.1			MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	17000			MS	5	7.3	1.76	4.4
7439-92-1	LEAD, TOTAL	15.4			MS	5	0.073	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	2380			MS	5	7.3	1.00	5.9
7439-96-5	MANGANESE, TOTAL	227			MS	5	0.15	0.03	0.073
7439-97-6	MERCURY, TOTAL	0.1		N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	12.5			MS	5	0.15	0.02	0.088
7440-09-7	POTASSIUM, TOTAL	526		N	MS	5	73	3.35	29
7782-49-2	SELENIUM, TOTAL	0.36	J		MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.073	0.004	0.029
7440-23-5	SODIUM, TOTAL	56.9	J		MS	5	73	1.88	29
7440-28-0	THALLIUM, TOTAL	0.10			MS	5	0.073	0.007	0.029
7440-62-2	VANADIUM, TOTAL	19.7			MS	5	0.37	0.08	0.29
7440-66-6	ZINC, TOTAL	41.6			MS	5	0.73	0.10	0.59

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SB1003-0204

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 86.7 **Lab Sample ID:** SG9314-012

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11600			MS	5	30	0.52	4.0
7440-36-0	ANTIMONY, TOTAL	0.07	J	N	MS	5	0.10	0.02	0.051
7440-38-2	ARSENIC, TOTAL	7.7		*	MS	5	0.51	0.15	0.40
7440-39-3	BARIUM, TOTAL	17.9			MS	5	0.20	0.04	0.10
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.10	0.004	0.020
7440-43-9	CADMIUM, TOTAL	0.1	J		MS	5	0.10	0.01	0.020
7440-70-2	CALCIUM, TOTAL	1030		N	MS	5	10	3.87	8.1
7440-47-3	CHROMIUM, TOTAL	14.4			MS	5	0.51	0.05	0.40
7440-48-4	COBALT, TOTAL	6.2			MS	5	0.10	0.005	0.030
7440-50-8	COPPER, TOTAL	11.4			MS	5	0.30	0.07	0.20
7439-89-6	IRON, TOTAL	18500			MS	5	10	2.43	6.1
7439-92-1	LEAD, TOTAL	12.8			MS	5	0.10	0.005	0.051
7439-95-4	MAGNESIUM, TOTAL	2930			MS	5	10	1.38	8.1
7439-96-5	MANGANESE, TOTAL	168			MS	5	0.20	0.04	0.10
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	13.5			MS	5	0.20	0.03	0.12
7440-09-7	POTASSIUM, TOTAL	581		N	MS	5	100	4.62	40
7782-49-2	SELENIUM, TOTAL	0.31	J		MS	5	0.51	0.04	0.30
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.10	0.005	0.040
7440-23-5	SODIUM, TOTAL	58.0	J		MS	5	100	2.60	40
7440-28-0	THALLIUM, TOTAL	0.07	J		MS	5	0.10	0.01	0.040
7440-62-2	VANADIUM, TOTAL	17.7			MS	5	0.51	0.11	0.40
7440-66-6	ZINC, TOTAL	34.7			MS	5	1.0	0.13	0.81

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1001-0001

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 90.1 **Lab Sample ID:** SG9314-005

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12600			MS	5	18	0.31	2.4
7440-36-0	ANTIMONY, TOTAL	0.13		N	MS	5	0.060	0.01	0.030
7440-38-2	ARSENIC, TOTAL	5.1		*	MS	5	0.30	0.09	0.24
7440-39-3	BARIUM, TOTAL	15.4			MS	5	0.12	0.02	0.060
7440-41-7	BERYLLIUM, TOTAL	0.30			MS	5	0.060	0.002	0.012
7440-43-9	CADMIUM, TOTAL	0.08			MS	5	0.060	0.006	0.012
7440-70-2	CALCIUM, TOTAL	843		N	MS	10	12	4.59	9.6
7440-47-3	CHROMIUM, TOTAL	16.5			MS	5	0.30	0.03	0.24
7440-48-4	COBALT, TOTAL	14.4			MS	5	0.060	0.003	0.018
7440-50-8	COPPER, TOTAL	17.0			MS	5	0.18	0.04	0.12
7439-89-6	IRON, TOTAL	25600			MS	5	6.0	1.44	3.6
7439-92-1	LEAD, TOTAL	11.4			MS	5	0.060	0.003	0.030
7439-95-4	MAGNESIUM, TOTAL	3920			MS	5	6.0	0.82	4.8
7439-96-5	MANGANESE, TOTAL	458			MS	25	0.60	0.12	0.30
7439-97-6	MERCURY, TOTAL	0.01	J	N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	26.2			MS	5	0.12	0.02	0.072
7440-09-7	POTASSIUM, TOTAL	302		N	MS	5	60	2.74	24
7782-49-2	SELENIUM, TOTAL	0.20	J		MS	5	0.30	0.02	0.18
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.060	0.003	0.024
7440-23-5	SODIUM, TOTAL	47.6	J		MS	5	60	1.54	24
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.060	0.006	0.024
7440-62-2	VANADIUM, TOTAL	17.9			MS	5	0.30	0.07	0.24
7440-66-6	ZINC, TOTAL	56.6			MS	5	0.60	0.08	0.48

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1002-0001

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 89.8 **Lab Sample ID:** SG9314-008

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14200			MS	5	24	0.41	3.2
7440-36-0	ANTIMONY, TOTAL	0.08	J	N	MS	5	0.080	0.02	0.040
7440-38-2	ARSENIC, TOTAL	6.1		*	MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	14.6			MS	5	0.16	0.03	0.080
7440-41-7	BERYLLIUM, TOTAL	0.30			MS	5	0.080	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.10			MS	5	0.080	0.008	0.016
7440-70-2	CALCIUM, TOTAL	833		N	MS	5	8.0	3.06	6.4
7440-47-3	CHROMIUM, TOTAL	17.5			MS	5	0.40	0.04	0.32
7440-48-4	COBALT, TOTAL	16.6			MS	5	0.080	0.004	0.024
7440-50-8	COPPER, TOTAL	17.3			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	27800			MS	5	8.0	1.92	4.8
7439-92-1	LEAD, TOTAL	12.2			MS	5	0.080	0.004	0.040
7439-95-4	MAGNESIUM, TOTAL	4560			MS	5	8.0	1.09	6.4
7439-96-5	MANGANESE, TOTAL	394			MS	5	0.16	0.03	0.080
7439-97-6	MERCURY, TOTAL	0.02	J	N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	26.6			MS	5	0.16	0.02	0.096
7440-09-7	POTASSIUM, TOTAL	390		N	MS	5	80	3.65	32
7782-49-2	SELENIUM, TOTAL	0.21	J		MS	5	0.40	0.03	0.24
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.080	0.004	0.032
7440-23-5	SODIUM, TOTAL	60.9	J		MS	5	80	2.05	32
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.080	0.008	0.032
7440-62-2	VANADIUM, TOTAL	20.6			MS	5	0.40	0.09	0.32
7440-66-6	ZINC, TOTAL	61.5			MS	5	0.80	0.10	0.64

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1003-0001

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 89.2 **Lab Sample ID:** SG9314-011

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14600			MS	5	21	0.36	2.8
7440-36-0	ANTIMONY, TOTAL	0.09		N	MS	5	0.070	0.01	0.035
7440-38-2	ARSENIC, TOTAL	7.1		*	MS	5	0.35	0.11	0.28
7440-39-3	BARIUM, TOTAL	14.2			MS	5	0.14	0.02	0.070
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.070	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.08			MS	5	0.070	0.007	0.014
7440-70-2	CALCIUM, TOTAL	666		N	MS	10	14	5.36	11
7440-47-3	CHROMIUM, TOTAL	18.0			MS	5	0.35	0.04	0.28
7440-48-4	COBALT, TOTAL	12.0			MS	5	0.070	0.004	0.021
7440-50-8	COPPER, TOTAL	18.5			MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	27000			MS	5	7.0	1.68	4.2
7439-92-1	LEAD, TOTAL	16.4			MS	5	0.070	0.004	0.035
7439-95-4	MAGNESIUM, TOTAL	4190			MS	5	7.0	0.96	5.6
7439-96-5	MANGANESE, TOTAL	332			MS	5	0.14	0.03	0.070
7439-97-6	MERCURY, TOTAL	0.21		N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	23.2			MS	5	0.14	0.02	0.084
7440-09-7	POTASSIUM, TOTAL	390		N	MS	5	70	3.19	28
7782-49-2	SELENIUM, TOTAL	0.29	J		MS	5	0.35	0.03	0.21
7440-22-4	SILVER, TOTAL	0.07	J		MS	5	0.070	0.004	0.028
7440-23-5	SODIUM, TOTAL	53.1	J		MS	5	70	1.80	28
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.070	0.007	0.028
7440-62-2	VANADIUM, TOTAL	21.1			MS	5	0.35	0.08	0.28
7440-66-6	ZINC, TOTAL	52.6			MS	5	0.70	0.09	0.56

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1013-0204

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 93.3 **Lab Sample ID:** SG9314-001

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	10400			MS	5	26	0.45	3.5
7440-36-0	ANTIMONY, TOTAL	0.07	J	N	MS	5	0.089	0.02	0.044
7440-38-2	ARSENIC, TOTAL	4.5		*	MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	14.3			MS	5	0.18	0.03	0.089
7440-41-7	BERYLLIUM, TOTAL	0.28			MS	5	0.089	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.089	0.009	0.018
7440-70-2	CALCIUM, TOTAL	614		N	MS	5	8.9	3.39	7.1
7440-47-3	CHROMIUM, TOTAL	12.9			MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	7.4			MS	5	0.089	0.004	0.026
7440-50-8	COPPER, TOTAL	13.2			MS	5	0.26	0.06	0.18
7439-89-6	IRON, TOTAL	20400			MS	5	8.9	2.13	5.3
7439-92-1	LEAD, TOTAL	9.8			MS	5	0.089	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	3490			MS	5	8.9	1.21	7.1
7439-96-5	MANGANESE, TOTAL	221			MS	5	0.18	0.04	0.089
7439-97-6	MERCURY, TOTAL	0.009	J	N*	CV	1	0.030	0.004	0.015
7440-02-0	NICKEL, TOTAL	17.2			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	487		N	MS	5	89	4.04	35
7782-49-2	SELENIUM, TOTAL	0.26	J		MS	5	0.44	0.04	0.26
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.089	0.004	0.035
7440-23-5	SODIUM, TOTAL	61.9	J		MS	5	89	2.27	35
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.089	0.009	0.035
7440-62-2	VANADIUM, TOTAL	14.5			MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	39.5			MS	5	0.89	0.12	0.71

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1013-0405

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 91.6 **Lab Sample ID:** SG9314-002

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11700			MS	5	21	0.35	2.8
7440-36-0	ANTIMONY, TOTAL	0.06	J	N	MS	5	0.070	0.01	0.035
7440-38-2	ARSENIC, TOTAL	3.8		*	MS	5	0.35	0.10	0.28
7440-39-3	BARIUM, TOTAL	17.6			MS	5	0.14	0.02	0.070
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.070	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.070	0.007	0.014
7440-70-2	CALCIUM, TOTAL	1110		N	MS	5	7.0	2.66	5.6
7440-47-3	CHROMIUM, TOTAL	15.8			MS	5	0.35	0.03	0.28
7440-48-4	COBALT, TOTAL	6.1			MS	5	0.070	0.003	0.021
7440-50-8	COPPER, TOTAL	12.6			MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	19400			MS	5	7.0	1.67	4.2
7439-92-1	LEAD, TOTAL	9.4			MS	5	0.070	0.003	0.035
7439-95-4	MAGNESIUM, TOTAL	3300			MS	5	7.0	0.95	5.6
7439-96-5	MANGANESE, TOTAL	179			MS	5	0.14	0.03	0.070
7439-97-6	MERCURY, TOTAL	0.01	J	N*	CV	1	0.028	0.004	0.014
7440-02-0	NICKEL, TOTAL	15.4			MS	5	0.14	0.02	0.083
7440-09-7	POTASSIUM, TOTAL	628		N	MS	5	70	3.17	28
7782-49-2	SELENIUM, TOTAL	0.29	J		MS	5	0.35	0.03	0.21
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.070	0.003	0.028
7440-23-5	SODIUM, TOTAL	84.4			MS	5	70	1.78	28
7440-28-0	THALLIUM, TOTAL	0.07	J		MS	5	0.070	0.007	0.028
7440-62-2	VANADIUM, TOTAL	17.5			MS	5	0.35	0.08	0.28
7440-66-6	ZINC, TOTAL	37.4			MS	5	0.70	0.09	0.56

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1019-0204

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 92.7 **Lab Sample ID:** SG9314-003

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11000			MS	5	18	0.30	2.4
7440-36-0	ANTIMONY, TOTAL	0.11		N	MS	5	0.059	0.01	0.029
7440-38-2	ARSENIC, TOTAL	5.6		*	MS	5	0.29	0.09	0.24
7440-39-3	BARIUM, TOTAL	19.6			MS	5	0.12	0.02	0.059
7440-41-7	BERYLLIUM, TOTAL	0.31			MS	5	0.059	0.002	0.012
7440-43-9	CADMIUM, TOTAL	0.09			MS	5	0.059	0.006	0.012
7440-70-2	CALCIUM, TOTAL	1060		N	MS	5	5.9	2.26	4.7
7440-47-3	CHROMIUM, TOTAL	13.9			MS	5	0.29	0.03	0.24
7440-48-4	COBALT, TOTAL	8.7			MS	5	0.059	0.003	0.018
7440-50-8	COPPER, TOTAL	17.1			MS	5	0.18	0.04	0.12
7439-89-6	IRON, TOTAL	21400			MS	5	5.9	1.42	3.5
7439-92-1	LEAD, TOTAL	13.9			MS	5	0.059	0.003	0.029
7439-95-4	MAGNESIUM, TOTAL	3630			MS	5	5.9	0.80	4.7
7439-96-5	MANGANESE, TOTAL	279			MS	5	0.12	0.02	0.059
7439-97-6	MERCURY, TOTAL	0.02	J	N*	CV	1	0.024	0.004	0.012
7440-02-0	NICKEL, TOTAL	17.8			MS	5	0.12	0.01	0.071
7440-09-7	POTASSIUM, TOTAL	598		N	MS	5	59	2.69	24
7782-49-2	SELENIUM, TOTAL	0.24	J		MS	5	0.29	0.02	0.18
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.059	0.003	0.024
7440-23-5	SODIUM, TOTAL	52.4	J		MS	5	59	1.51	24
7440-28-0	THALLIUM, TOTAL	0.06			MS	5	0.059	0.006	0.024
7440-62-2	VANADIUM, TOTAL	15.4			MS	5	0.29	0.06	0.24
7440-66-6	ZINC, TOTAL	46.4			MS	5	0.59	0.08	0.47

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1019-0810

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 89.3 **Lab Sample ID:** SG9314-004

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13200			MS	5	21	0.35	2.8
7440-36-0	ANTIMONY, TOTAL	0.07	J	N	MS	5	0.070	0.01	0.035
7440-38-2	ARSENIC, TOTAL	4.1		*	MS	5	0.35	0.10	0.28
7440-39-3	BARIUM, TOTAL	11.5			MS	5	0.14	0.02	0.070
7440-41-7	BERYLLIUM, TOTAL	0.28			MS	5	0.070	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.04	J		MS	5	0.070	0.007	0.014
7440-70-2	CALCIUM, TOTAL	908		N	MS	5	7.0	2.66	5.6
7440-47-3	CHROMIUM, TOTAL	18.0			MS	5	0.35	0.03	0.28
7440-48-4	COBALT, TOTAL	11.3			MS	5	0.070	0.003	0.021
7440-50-8	COPPER, TOTAL	15.6			MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	27200			MS	5	7.0	1.67	4.2
7439-92-1	LEAD, TOTAL	10.9			MS	5	0.070	0.003	0.035
7439-95-4	MAGNESIUM, TOTAL	4610			MS	5	7.0	0.95	5.6
7439-96-5	MANGANESE, TOTAL	226			MS	5	0.14	0.03	0.070
7439-97-6	MERCURY, TOTAL	0.005	J	N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	20.4			MS	5	0.14	0.02	0.083
7440-09-7	POTASSIUM, TOTAL	528		N	MS	5	70	3.17	28
7782-49-2	SELENIUM, TOTAL	0.24	J		MS	5	0.35	0.03	0.21
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.070	0.003	0.028
7440-23-5	SODIUM, TOTAL	53.9	J		MS	5	70	1.78	28
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.070	0.007	0.028
7440-62-2	VANADIUM, TOTAL	16.5			MS	5	0.35	0.08	0.28
7440-66-6	ZINC, TOTAL	49.7			MS	5	0.70	0.09	0.56

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SB-DUP09-1113

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 89.3 **Lab Sample ID:** SG9314-013

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14000			MS	5	26	0.44	3.4
7440-36-0	ANTIMONY, TOTAL	0.08	J	N	MS	5	0.085	0.02	0.043
7440-38-2	ARSENIC, TOTAL	6.4		*	MS	5	0.43	0.13	0.34
7440-39-3	BARIUM, TOTAL	12.4			MS	5	0.17	0.03	0.085
7440-41-7	BERYLLIUM, TOTAL	0.35			MS	5	0.085	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.085	0.009	0.017
7440-70-2	CALCIUM, TOTAL	502		N	MS	5	8.5	3.27	6.8
7440-47-3	CHROMIUM, TOTAL	17.3			MS	5	0.43	0.04	0.34
7440-48-4	COBALT, TOTAL	11.0			MS	5	0.085	0.004	0.026
7440-50-8	COPPER, TOTAL	18.1			MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	24700			MS	5	8.5	2.05	5.1
7439-92-1	LEAD, TOTAL	14.0			MS	5	0.085	0.004	0.043
7439-95-4	MAGNESIUM, TOTAL	4100			MS	5	8.5	1.17	6.8
7439-96-5	MANGANESE, TOTAL	277			MS	5	0.17	0.03	0.085
7439-97-6	MERCURY, TOTAL	0.09		N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	23.2			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	357		N	MS	5	85	3.90	34
7782-49-2	SELENIUM, TOTAL	0.11	J		MS	5	0.43	0.03	0.26
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.085	0.004	0.034
7440-23-5	SODIUM, TOTAL	59.3	J		MS	5	85	2.19	34
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.085	0.009	0.034
7440-62-2	VANADIUM, TOTAL	18.4			MS	5	0.43	0.09	0.34
7440-66-6	ZINC, TOTAL	52.7			MS	5	0.85	0.11	0.68

Comments:

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9314-6
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9314

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1001-0204	SL	25-NOV-13	25-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	89. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:11:03	SM2540G	06-DEC-13	

Katahdin Analytical Services 500012

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9314-7
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9314

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1001-0810	SL	25-NOV-13	25-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	92. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:11:14	SM2540G	06-DEC-13	

Katahdin Analytical Services 500013

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9314-9
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9314

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1002-0204	SL	25-NOV-13	25-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	88. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:11:36	SM2540G	06-DEC-13	

Katahdin Analytical Services 5000015

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9314-10
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9314

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1002-0405	SL	25-NOV-13	25-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	86. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:11:46	SM2540G	06-DEC-13	

Katahdin Analytical Services 5000016

Katahdin
ANALYTICAL SERVICES

Accredited in accordance with nelac
Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9314-12
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9314

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SB1003-0204	SL	25-NOV-13	25-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	87. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:12:06	SM2540G	06-DEC-13	

Katahdin Analytical Services 5000018

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9314-5
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9314

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SS1001-0001	SL	25-NOV-13	25-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	90. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:10:54	SM2540G	06-DEC-13	

Katahdin Analytical Services 5000011

Katahdin
ANALYTICAL SERVICES

Accredited in accordance with nelac
Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9314-8
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9314

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SS1002-0001	SL	25-NOV-13	25-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	90. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:11:25	SM2540G	06-DEC-13	

Katahdin Analytical Services 5000014

Katahdin
ANALYTICAL SERVICES

Accredited in accordance with nelac
Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9314-11
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9314

Sample Description	Matrix	Date Sampled	Date Received
TF2-001-SS1003-0001	SL	25-NOV-13	25-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	89. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:11:55	SM2540G	06-DEC-13	

Katahdin Analytical Services 5000017

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9314-1
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9314

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1013-0204	SL	25-NOV-13	25-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	93. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:10:18	SM2540G	06-DEC-13	

Katahdin Analytical Services 5000007

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9314-2
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9314

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1013-0405	SL	25-NOV-13	25-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	92. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:10:28	SM2540G	06-DEC-13	

Katahdin Analytical Services 5000008

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9314-3
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9314

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1019-0204	SL	25-NOV-13	25-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	93. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:10:37	SM2540G	06-DEC-13	

Katahdin Analytical Services 5000009

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9314-4
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9314

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1019-0810	SL	25-NOV-13	25-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	89. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:10:45	SM2540G	06-DEC-13	

Katahdin Analytical Services 500010

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9314-13
Report Date: 17-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9314

Sample Description	Matrix	Date Sampled	Date Received
TF2-SB-DUP09-1113	SL	25-NOV-13	25-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	89. %	1		N/A	SM2540G	WG135684	09-DEC-13 07:12:16	SM2540G	06-DEC-13	

Katahdin Analytical Services 5000019

APPENDIX C
REGION I WORKSHEETS

EPA-NE - Data Validation Worksheet
INORG
Case: _____ SDG: _____

COMPLETE SDG FILE (CSF) AUDIT

Inorganic Parameters: _____

Missing Information	Date Lab Contacted	Date Received

Validator: Helen Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-1
Case: _____ SDG: _____

See Validation letter

I. PRESERVATION AND HOLDING TIMES

Circle sample numbers with exceeded technical holding times or omitted preservation.
Circle all exceeded technical holding times.

Sample No.	Matrix	Pres. Code		Date Sampled	Metals		Hg		CN		Action
		Metals	CN		Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	

Preservation Code:
1. Cool (≤ 6°C)
2. pH < 2 with HNO_3
3. pH > 12 with NaOH
4. Room Temperature
5. Freeze
6. Reducing agent (for oxidants)
7. Treated for sulfides
8. Other - _____

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Sampler: _____ Company: _____ Contacted: Y N Date: _____

Validator: Alan Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-II
Case: _____ SDG: _____

See validation letter

II. ICP-MS TUNE

List all Tunes that are outside method QC acceptance criteria. Use a separate sheet if more than one instrument was used for sample analysis.

Method:_____Instrument ID: _____

Method QC acceptance criteria for mass calibration:_____

Method QC acceptance criteria for resolution check/peak width:_____ at_____% peak height.

Method QC acceptance criteria for % RSD:_____

Analysis Date and Time	Analyte	Mass Calibration			Mass Resolution		% RSD of Absolute Signals	Analyte/Samples Affected	Action
		True Mass (amu)	Measured Mass (amu)	Absolute Difference of Masses (amu)	Peak Width (amu)	% Peak Height			

Comments:

Validator: Alan Salomon

Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-III-C/D
Case: _____ SDG: _____

See validation letter

III. CALIBRATIONS

C. Initial and Continuing Calibration Verifications - List all ICV and CCV analyte recoveries that are outside the method QC acceptance criteria.

ICV method QC acceptance criteria: _____ CCV method QC acceptance criteria: _____

Date/Time	Instrument ID	Analyte	ICV/CCV #	% R	Samples Affected	Action

D. Quantitation Limit Check Standard - List all QL Check Standard analytes that are outside method QC acceptance criteria (for non-CLP methods).

QL Check Standard method QC acceptance criteria: _____

Date	Instr.	Analyte	QL Check Std. #	% R	Affected Range	Samples Affected	Action

Comments: _____

EPA-NE - Data Validation Worksheet
INORG-III-A/B
Case: _____ SDG: _____

See validation letter

III. CALIBRATIONS

A. Initial Calibration - List all calibration correlation coefficients that are outside the method QC acceptance criteria and/or the y-intercept of the calibration curve that is >CRQL.

Calibration correlation QC acceptance criteria: _____ Calibration Type: _____

Date/Time	Instrument ID	Analyte	Correlation Coefficient.	y-Intercept	CRQL	Samples Affected	Action

B. Initial Calibration Standard Concentration Verifications – Review CLP Form 16-IN and list all calculated %Ds that are >30 of the true value of any non-zero standard.

Date/time	Instrument ID	Analyte	True Conc.	Found Conc.	%D	Samples Affected	Action

Comments: _____

Validator: Mary Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-IV-C.2
Case: _____ SDG: _____

See validation letter

IV. BLANKS

C.2 Blank Actions - List the maximum concentrations of each analyte among all blanks associated with each sample.

Analyte	Type of Blank	Date Blank Originated	Max. Conc. (units)	MDL or (-MDL) (units)	CRQL or (-CRQL) (units)	10xCRQL	Samples Affected	Action

Comments:

Refer to EPA New England Data Review Program Supplemental guidance for blank contamination actions (Section 2.6).

Validator: Kim Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-IV-A/B
Case: _____ SDG: _____

See validation letter

IV. BLANKS - List the blank contamination and negative blank results below.

Sampler: _____ Company: _____ Contacted: Y N Date: _____

A. Laboratory: Preparation (Method) and Calibration (Instrument) Blanks

Date Prepared	Date Analyzed	Blank Type (ICB/CCB#/Prep Blank)	Matrix	Instrument	Analyte	Concentration	Units

B. Field: Equipment (Rinsate) and Bottle Blanks

Date Sampled	Date Analyzed	Sample No. (Blank Type)	Matrix	Instrument	Analyte	Concentration	Units

Were the proper number of blanks analyzed at the proper frequency? Y N

For ICP MS - Are internal standard responses in all blanks within method QC acceptance criteria? Y N

Comments: _____

Validator: Dawn Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-IV-C.1
Case: _____ SDG: _____
IV. BLANKS **C.1 Blank Contamination Worksheet**

see validation letter

Circle or list the highest concentration of each contaminant.

Analyte	Date Analyzed	ICB	CCB							PBW	PBS	EB	BB	Max. Conc.	CRQL
			1	2	3	4	5	6	7						
Aluminum															
Antimony															
Arsenic															
Barium															
Beryllium															
Cadmium															
Calcium															
Chromium															
Cobalt															
Copper															
Iron															
Lead															
Magnesium															
Manganese															
Mercury															
Nickel															
Potassium															
Selenium															
Silver															
Sodium															
Thallium															
Vanadium															
Zinc															
Cyanide															

Validator: Kim Solomon Date: 1/13/2014

EPA NE - Data Validation Worksheet
INORG-V-A
Case: _____ SDG: _____

NA

V. A. ICP-AES INTERFERENCE CHECK SAMPLE - ICSAB

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± CRQL. whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: Mary Sulman

Date: 1/13/2014

EPA NE - Data Validation Worksheet
INORG-V-B
Case: _____ SDG: _____

NA

V. B. ICP-AES INTERFERENCE CHECK SAMPLE - ICSA

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: Yana Solomon

Date: 1/13/2014

EPA NE - Data Validation Worksheet
INORG-VI-A
Case: _____ SDG: _____

See validation letter

VI. A. ICP-MS INTERFERENCE CHECK SAMPLE - ICSAB

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: Helen Solomon

Date: 1/13/2014

EPA NE - Data Validation Worksheet
INORG-VI-B
Case: _____ SDG: _____

See validation letter

VI. B. ICP-MS INTERFERENCE CHECK SAMPLE - ICSA

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: Kim Solomon

Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-VII
Case: _____ SDG: _____

See validation letter

VII. ICP-MS INTERNAL STANDARDS

List all internal standards that are outside method QC acceptance criteria.

Method: _____ Method QC acceptance criteria: _____

Sample Number	Date and Time Analyzed	IS, amu	% RI	Analytes Affected (amu)	Action
Comments:					

Validator: Lisa Solomon

Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-VIII
Case: _____ SDG: _____

See validation letter

VIII. MATRIX SPIKES - List all matrix spike analytes that are outside method QC acceptance criteria.

Use a separate worksheet for each matrix spike sample.

Sample No.: _____ Matrix: _____

Method	Analyte	Spiked Sample Result	Sample Result	Amount of Spike Added	MS % Recovery	Method QC Limits % Recovery	Post-Digest Spike % Recovery	Action
Comments:								

Refer to EPA New England Data Review Program Supplemental guidance for additional matrix spike actions (Section 2.12).

Validator: Lisa Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-IX
Case: _____ SDG: _____

see validation letter

IX. LABORATORY DUPLICATE SAMPLES - List all analytes that are outside method QC acceptance criteria for the specific matrix.

Use a separate worksheet for each laboratory duplicate sample.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Laboratory duplicate sample method QC acceptance criteria:_____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the field duplicate sample data indicate acceptable field precision? Y N

Comments:_____

Validator: Alexis Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-X
Case: _____ SDG: _____

See validation letter

X. FIELD DUPLICATES - List all field duplicate analytes that are outside criteria.

Use a separate worksheet for each field duplicate pair.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the laboratory duplicate sample data indicate acceptable laboratory precision? Y N
Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.9).

Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for contact and resolution obtained: _____

Validator: Andrew Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-XI
Case: _____ SDG: _____

See validation letter

XI. ICP SERIAL DILUTIONS

Use a separate worksheet for each serial dilution sample.

Sample No.:_____ Matrix:_____ Method:_____

List all serial dilution analytes that are outside method QC acceptance criteria.

% Difference method QC acceptance criteria: _____
Minimum concentration required to apply the % D criteria (e.g., 50x MDL): _____

Analyte	MDL	Min. Conc. Required	Sample Result	Serial Dilution Sample Result (corrected for dilution)	% D	Action

Comments:

Validator: Nan Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet

INORG-XII

Case: _____ SDG: _____

see validation letter

XII. LABORATORY CONTROL SAMPLES

List all analytes that are outside criteria.

SDG No.:_____ Case:_____

Are more than one-half of the LCS analytes within criteria for each parameter and method? **Y** **N**

Date Prepared	Date Analyzed	Parameter/ Method	Matrix	Analyte	% Recovery (or Observed Conc.)	Method QC Acceptance Criteria	Samples Affected	Action

Comments:

Validator: Lisa Solomon

Date: 1/13/2014

EPA-NE - Data Validation Worksheet
INORG-XIII
Case: _____ SDG: _____

NA

XIII. PERFORMANCE EVALUATION SAMPLES

List all analytes that are outside criteria.

Indicate the source of the PES: Region 1 EPA PES Non-EPA PES

Are more than one-half of the PES analytes within criteria for each parameter and method? **Y** **N**

PE Sample Number	Ampule Number	Parameter/ Method	Type of PES	Matrix	Analyte	Conc.	PES Score*	Samples Affected	Action

* For Region 1 PESs indicate the Region 1 PES Score Report Result: Action High, Action Low, Analyte Missed, Contaminant.
For Non-EPA PESs indicate the Non-EPA PES Score: PES Analyte Missed; PES Analyte Contaminant; PES Analyte Hit (% Recovery Limits).
Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Comments: _____

Validator: Alan Solomon Date: 1/13/2014

EPA-NE - Data Validation Worksheet

INORG-XIV

Case: _____ SDG: _____

See Validation Letter

XIV. ANALYTE QUANTITATION, REPORTED QUANTITATION LIMITS AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per analytical method

Do all soil/sediment samples have % solids greater than 30%? **Y** **N**

- If no, were any steps employed to address the high moisture content? _____
- Indicate the action and list the affected sample nos.: _____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Method		Calculation
ICP-AES		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
ICP-MS		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
Mercury		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		
Cyanide		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		

Validator: Kelly Sulzman Date: 1/13/2014

APPENDIX D
SUPPORT DOCUMENTATION

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT CTO WE30
SG9314

Sample Receipt

The following sample was received on November 25, 2013 and was logged in under Katahdin Analytical Services work order number SG9314 for a hardcopy due date of December 16, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG9314-1	TF2-003-SB1013-0204
SG9314-2	TF2-003-SB1013-0405
SG9314-3	TF2-003-SB1019-0204
SG9314-4	TF2-003-SB1019-0810
SG9314-5	TF2-001-SS1001-0001
SG9314-6	TF2-001-SB1001-0204
SG9314-7	TF2-001-SB1001-0810
SG9314-8	TF2-001-SS1002-0001
SG9314-9	TF2-001-SB1002-0204
SG9314-10	TF2-001-SB1002-0405
SG9314-11	TF2-001-SS1003-0001
SG9314-12	TF2-001-SB1003-0204
SG9314-13	TF2-SB-DUP09-1113
SG9314-14	TF2-SB-RB05-1113
SG9314-15	TF2-W-TB05-1113

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG9314were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8260B Analysis

The initial calibration analyzed on the S instrument on 11/21/13 had a %RSD value for acetone that exceeded the method acceptance limit of 15%. Although the %RSD is greater than 15%, acetone was calibrated with the average model since this calibration model is more accurate for this analyte at concentrations near the LOQ than either the linear or quadratic calibration models.

The calibration verification standard (file S9476) had low responses for the target analytes carbon disulfide, cyclohexane, and methyl acetate that resulted in %D's that exceeded the DoD QSM acceptance limits of 20%.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are based on DoD QSM acceptance limits for the full list of spiked compounds and laboratory established acceptance limits for all other analytes. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

FL-PRO Analysis

Sample SG9314-11 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

Sample SG9314-13 and 14 were manually integrated for the petroleum range organics, surrogates o-terphenyl and/or n-triacontane-d62. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The LCS WG135406-2 had a recovery for the surrogate o-terphenyl that was low and outside of the method acceptance limits. Since the spike recovery was acceptable and the LCSD had acceptable surrogate and spike recoveries, no further action was taken.

8015 GRO Analysis

Sample SG9314-11 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

Sample SG9314-14 was manually integrated for the GRO range. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

8011 Analysis

Due to laboratory error, the samples were extracted and analyzed one day out of hold time. The client was contacted and informed the laboratory to proceed since the samples were within two times the hold time.

8270D SIM Analysis

All soil samples and associated QC were subjected to the GPC sample clean-up process.

Samples SG9314-5 and 11 were used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

Samples SG9314-1, 2RA, 3DL, 4, 6RA, 8, 9, 10, 11, 12 and 13 were manually integrated for the analytes acenaphthylene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene and/or the internal standard perylene-d12,. The specific reason for the manual integration is indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Sample SG9314-3 had a high recovery for the surrogate 2-methylnaphthalene, which was outside of the laboratory established acceptance limits. Since the diluted analysis had acceptable surrogate recoveries, no further action was taken.

Samples SG9314-2RA, 3, 3DL, 4, 4RA, 5, 6, 6RA, 11, and 11RA had high responses for the internal standards phenanthrene-d10, chrysene-d12 and/or perylene-d12, that resulted in %D's which were outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the midpoint standard of the initial calibration. This was confirmed on reanalysis.

Sample SG9314-5 and the MS/MSD WG135526-4 and 5 had high responses for the internal standards phenanthrene-d10 and perylene-d12, that resulted in %D's which were outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the midpoint standard of the initial calibration. Since sample SG9314-5 is the native sample for the MS/MSD and the internal standard deviations confirm a matrix effect, the samples were not reanalyzed.

The independent check standard (file G0569) associated with the initial calibration on the G instrument on 12/05/2013 had high concentrations for the target analytes chrysene and benzo(k)fluoranthene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The independent check standard (file G0665) associated with the initial calibration on the G instrument on 12/11/2013 had a low concentration for the target analyte benzo(b)fluoranthene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The independent check standard (file G0716) associated with the initial calibration on the G instrument on 12/14/2013 had low concentrations for the target analytes acenaphthylene and pyrene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The CV's (files G0624 and G0727) had high responses for the target analytes fluoranthene and/or benzo(k)fluoranthene which resulted in %D's that were greater than the acceptance limit of 20% from DoD QSM Version 4.1.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are statistically derived limits for the full list of spiked compounds and are statistically derived limits

for the surrogates. Although DoD QSM acceptance limits were requested for this project, laboratory established acceptance limits were used because the DoD QSM does not list acceptance limits for 8270SIM. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these statistical acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

The LCSD WG135526-3RA had four spiked target analytes with recoveries that were low and outside of the laboratory established acceptance limits. The DoD QSM allowable number of exceedances for 17 target analytes is one analyte. Since the LCS WG135526-2 was acceptable, no further action was taken. The LCS had a high response for the internal standard perylene-d12 that resulted in a %D which was outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the midpoint standard of the initial calibration.

The LCSD WG135250-3RA had two spiked target analytes with recoveries that were low and outside of the laboratory established acceptance limits. The DoD QSM allowable number of exceedances for 17 target analytes is one analyte. Since the LCS WG135250-2RA was acceptable, after factoring in the allowed number of exceedances, no further action was taken.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG9314 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Aqueous-matrix Katahdin Sample No. SG9314-14 was originally digested for ICP-MS analysis on 12/06/13 (QC Batch GL06IMW2) in accordance with USEPA Method 3010A. The measured copper (2.365 ug/L), lead (0.505 ug/L), and zinc (10.135 ug/L) concentrations of the preparation blank that was digested in this batch is greater than ½ the laboratory's reporting limits. However, because the measured concentrations of these elements in Katahdin Sample No. SG9314-14 are less than the Limits of Detection, no corrective action was required for these metals.

Soil-matrix Katahdin Sample Nos. SG9314-(1-13) were digested for ICP-MS analysis on 12/06/13 (QC Batch GL06IMS1) in accordance with USEPA Method 3050B Katahdin Sample Nos. SG9314-(5, 11) were prepared in duplicate and with matrix spike aliquots in this digestion batch. The measured nickel concentration (0.109 mg/kg) of the preparation blank that was digested in this batch is greater than ½ the laboratory's reporting limit. However, because the measured nickel concentrations of all associated samples are more than ten times that of the preparation blank, no corrective action was required.

ICP-MS analyses of Work Order SG9314 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	**Associated Analytes**
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Aqueous-matrix Katahdin Sample Number SG9314-14 was digested for mercury analysis on 12/06/13 (QC Batch GL06HGW2) in accordance with USEPA Method 7470A..

Solid-matrix Katahdin Sample Numbers SG9314-(1-13) were digested for mercury analysis on 12/12/13 (QC Batch GL12HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Nos. SG9314-(5, 11) were prepared in duplicate and with matrix spike aliquots in this digestion batch.

Mercury analysis of the Katahdin Work Order SG9314 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG9314-5 is within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for all analytes.

The laboratory duplicate analysis of Katahdin Sample No. SG9314-11 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for arsenic and mercury.

The measured recoveries of antimony and potassium the matrix-spiked aliquot of Katahdin Sample No. SG9314-5 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The measured recoveries of antimony, calcium, and mercury the matrix-spiked aliquot of Katahdin Sample No. SG9314-11 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The serial dilution analyses of Katahdin Sample Nos. SG9314-(5, 11) are within the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for all analytes.

The measured recoveries of all analytes in a post-digestion matrix spike aliquot of Katahdin Sample Nos. SG9314-(5, 11) are within the laboratory's acceptance limits (75% - 125% recovery of the added element, if the native concentration is less than four times the amount added).

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the laboratory's limits of quantitation (LOQ) are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQ's, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG9314 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
12.20.13

Leslie Dimond
Quality Assurance Officer

SDG 1910 / 1922

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** N2 1922 | **PAGE** 1 **OF** 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112602710 CO59	Wilmington MA	D Sexton	978 934 8945	Katahdin Analytical Services / T Adams
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Kjarkut 112603019 CO30		K Jarkut	781 801 0457	1000 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier in RI - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE / YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	G	G	G					
									PRESERVATIVE USED									
									4oz NaTHIO	4oz	40ml MeOH	4oz	4oz					
									TYPE OF ANALYSIS									
									40ml VOC (low)	40ml VOC (med)	40ml 8260	40ml TPH, methods (Volatile)	4oz Solids (Extractable)					
11/22	1200	TF3-00-TB09-1113	—	—	—	QC	G	5	2	1	2	—	—					
11/22	1245	TF3-001-SB101-0002	101	1	2	SO	G	7	2	1	2	1	1					
11/22	1250	TF3-001-SB101-0204	101	2	4	SO	G	7	2	1	2	1	1					
11/22	1320	TF3-001-SS106-0001	106	0	1	SO	G	7	2	1	2	1	1					
11/22	1323	TF3-001-SB106-0204	106	2	4	SO	G	7	2	1	2	1	1					
11/22	1330	TF3-001-SS107-0001	107	0	1	SO	G	7	2	1	2	1	1					
11/22	1335	TF3-001-SB107-0204	107	2	4	SO	G	7	2	1	2	1	1					
11/22	1415	TF3-001-SS108-0001	108	0	1	SO	G	7	2	1	2	1	1					
11/22	1418	TF3-001-SB108-0204	108	2	4	SO	G	7	2	1	2	1	1					
11/22	0000	TF3-SB-DUP06-1113	—	—	—	SO	G	7	2	1	2	1	1					
11/25	0815	TF2-003-SB1013-0204	1013	2	4	SO	G	1	—	—	—	1	—					
11/25	0820	TF2-003-SB1013-0405	1013	4	5	SO	G	1	—	—	—	1	—					
11/25	0835	TF2-003-SB1019-0204	1019	2	4	SO	G	1	—	—	—	1	—					

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11/25/13	1445	1. RECEIVED BY	11/25/13	1705
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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FORM NO. TtNUS-001

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364998 364014
QP 11.26.13

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER Nº 1923 | PAGE 2 OF 2

PROJECT NO: 112603019 CT030	FACILITY: Wilmington MA	PROJECT MANAGER D Seiken	PHONE NUMBER 978 474 8445	LABORATORY NAME AND CONTACT: Katahdin Anal. Services / J Obrin
SAMPLERS (SIGNATURE) K Jaikut		FIELD OPERATIONS LEADER K Jaikut	PHONE NUMBER 781 801 0457	ADDRESS 600 Technology Way
		CARRIER/WAYBILL NUMBER Courier pick up in RI		CITY, STATE Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	TYPE OF ANALYSIS: PAH metals total solids	EXTPH	GRO	PAH	EXTPH	Metals	VOC	GRO	COMMENTS
									PRESERVATIVE USED									
										G ≤6°C	G ≤6°C	G ≤6°C	G 10ml MeOH ≤6°C	G ≤6°C	P HNO3 ≤6°C	G HCL ≤6°C	G HCL ≤6°C	
										4oz	4oz		40ml		250ml poly			
11/25	0850	TF2-003-SB1019-0810	1019	8	10	SO	G	4		1	1	2						
11/25	1005	TF2-001-SS1001-0001	1001	0	1	SO	G	1		1	—	—						
11/25	1010	TF2-001-SB1001-0204	1001	2	4	SO	G	1		1	—	—						
11/25	1025	TF2-001-SB1001-0810	1001	8	10	SO	G	1		1	—	—						
11/25	1035	TF2-001-SS1002-0001	1002	0	1	SO	G	1		1	—	—					1	
11/25	1040	TF2-001-SB1002-0204	1002	2	4	SO	G	1		1	—	—						
11/25	1045	TF2-001-SB1002-0405	1002	4	5	SO	G	1		1	—	—						
11/25	1140	TF2-001-SS1003-0001	1003	0	1	SO	G	4		1	1	2						
11/25	1145	TF2-001-SB1003-0204	1003	2	4	SO	G	1		1	—	—						
11/25	0000	TF2-SB-DUP09-1113	—	—	—	SO	G	4		1	1	2	2	2	1	3	2	11/25/13
11/25	1100	TF2-SB-RB05-1113	—	—	—	QC	G	10		—	—	—	2	2	1	3	2	
11/25	1105	TF2-W-TB05-1113	—	—	—	QC	G	4		—	—	—	—	—	—	2	2	

1. RELINQUISHED BY K Jaikut	DATE 11/25/13	TIME 1405	1. RECEIVED BY	DATE 11/25/13	TIME 1405
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME
COMMENTS					

SDG# 36000

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4/02R
FORM NO. TtNUS-001

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name Katahdin Analytical Services

SDG Name: SG9314 **SOW No.** SW846

Client Field ID	Lab Sample ID
TF2-001-SB1001-0204	SG9314-006
TF2-001-SB1001-0810	SG9314-007
TF2-001-SB1002-0204	SG9314-009
TF2-001-SB1002-0405	SG9314-010
TF2-001-SB1003-0204	SG9314-012
TF2-001-SS1001-0001	SG9314-005
TF2-001-SS1001-0001	SG9314-005D
TF2-001-SS1001-0001	SG9314-005S
TF2-001-SS1002-0001	SG9314-008
TF2-001-SS1003-0001	SG9314-011
TF2-001-SS1003-0001	SG9314-011D
TF2-001-SS1003-0001	SG9314-011S
TF2-003-SB1013-0204	SG9314-001
TF2-003-SB1013-0405	SG9314-002
TF2-003-SB1019-0204	SG9314-003
TF2-003-SB1019-0810	SG9314-004
TF2-SB-DUP09-1113	SG9314-013
TF2-SB-RB05-1113	SG9314-014

Were ICP interelement corrections applied ?	Yes
Were ICP background corrections applied ?	Yes
If yes - were raw data generated before application of background corrections ?	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: George Brewer Name: George Brewer

Date: 12/20/13 Title: Inorganics Dept Mgr

HOLDTIME

SDG SG9314

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-003-SB1019-0810	SG9314-004	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-SB-DUP09-1113	SG9314-013	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-003-SB1019-0204	SG9314-003	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-003-SB1013-0405	SG9314-002	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-003-SB1013-0204	SG9314-001	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SS1003-0001	SG9314-011	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SS1002-0001	SG9314-008	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SB1003-0204	SG9314-012	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SB1002-0405	SG9314-010	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SB1002-0204	SG9314-009	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SB1001-0810	SG9314-007	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SB1001-0204	SG9314-006	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	MG/KG	TF2-001-SS1001-0001	SG9314-005	NM	11/25/2013	12/12/2013	12/14/2013	17	2	19
HG	UG/L	TF2-SB-RB05-1113	SG9314-014	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
M	MG/KG	TF2-003-SB1019-0810	SG9314-004	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-001-SS1003-0001	SG9314-011	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SS1003-0001	SG9314-011	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-003-SB1013-0204	SG9314-001	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-003-SB1013-0204	SG9314-001	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-003-SB1013-0405	SG9314-002	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-003-SB1013-0405	SG9314-002	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-003-SB1019-0204	SG9314-003	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-003-SB1019-0810	SG9314-004	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-SB-DUP09-1113	SG9314-013	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SS1002-0001	SG9314-008	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SB1002-0204	SG9314-009	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-003-SB1019-0204	SG9314-003	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SS1001-0001	SG9314-005	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SS1001-0001	SG9314-005	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SB1003-0204	SG9314-012	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SB1003-0204	SG9314-012	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SB1002-0405	SG9314-010	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-SB-DUP09-1113	SG9314-013	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-001-SB1002-0204	SG9314-009	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SS1002-0001	SG9314-008	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SB1001-0810	SG9314-007	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SB1001-0810	SG9314-007	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SB1001-0204	SG9314-006	NM	11/25/2013	12/10/2013	12/17/2013	15	7	22
M	MG/KG	TF2-001-SB1001-0204	SG9314-006	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SB1002-0405	SG9314-010	NM	11/25/2013	12/10/2013	12/12/2013	15	2	17
M	MG/KG	TF2-001-SS1001-0001	SG9314-005	NM	11/25/2013	12/10/2013	12/18/2013	15	8	23
M	UG/L	TF2-SB-RB05-1113	SG9314-014	NM	11/25/2013	12/06/2013	12/11/2013	11	5	16
	%	TF2-001-SS1003-0001	SG9314-11	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-003-SB1019-0810	SG9314-4	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SB1001-0204	SG9314-6	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SB1001-0810	SG9314-7	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SB1002-0204	SG9314-9	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SB1002-0405	SG9314-10	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-SB-DUP09-1113	SG9314-13	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SB1003-0204	SG9314-12	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-003-SB1013-0405	SG9314-2	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-003-SB1013-0204	SG9314-1	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SS1001-0001	SG9314-5	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-001-SS1002-0001	SG9314-8	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
	%	TF2-003-SB1019-0204	SG9314-3	NM	11/25/2013	12/06/2013	12/09/2013	11	3	14
OV	%	TF2-W-TB05-1113	SG9314-15	NM	11/25/2013	12/10/2013	12/10/2013	15	0	15
OV	%	TF2-SB-RB05-1113	SG9314-14	NM	11/25/2013	12/03/2013	12/03/2013	8	0	8
OV	%	TF2-SB-RB05-1113	SG9314-14	NM	11/25/2013	12/10/2013	12/10/2013	15	0	15
OV	%	TF2-W-TB05-1113	SG9314-15	NM	11/25/2013	12/03/2013	12/03/2013	8	0	8
OV	UG/L	TF2-W-TB05-1113	SG9314-15	NM	11/25/2013	12/10/2013	12/10/2013	15	0	15
OV	UG/L	TF2-W-TB05-1113	SG9314-15	NM	11/25/2013	12/03/2013	12/03/2013	8	0	8
OV	UG/L	TF2-SB-RB05-1113	SG9314-14	NM	11/25/2013	12/10/2013	12/10/2013	15	0	15
OV	UG/L	TF2-SB-RB05-1113	SG9314-14	NM	11/25/2013	12/03/2013	12/03/2013	8	0	8
SIM	%	TF2-003-SB1013-0405	SG9314-2RA	NM	11/25/2013	12/04/2013	12/16/2013	9	12	21
SIM	%	TF2-SB-DUP09-1113	SG9314-13	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	%	TF2-SB-RB05-1113	SG9314-14RA	NM	11/25/2013	11/27/2013	12/14/2013	2	17	19
SIM	%	TF2-001-SS1003-0001	SG9314-11	NM	11/25/2013	12/04/2013	12/14/2013	9	10	19
SIM	%	TF2-001-SB1001-0204	SG9314-6	NM	11/25/2013	12/04/2013	12/13/2013	9	9	18
SIM	%	TF2-001-SB1001-0204	SG9314-6RA	NM	11/25/2013	12/04/2013	12/16/2013	9	12	21

NAVSTA NEWPORT
SOIL DATA
SG9314

FRACTION	CHEMICAL	TF2-001-SS1003-0001	UNITS	TF2-SB-DUP09-1113	RPD	D
M	ALUMINUM	14600	MG/KG	14000	4.20	600.00
M	ANTIMONY	0.09	MG/KG	0.08 J	11.76	0.01
M	ARSENIC	7.1	MG/KG	6.4	10.37	0.70
M	BARIUM	14.2	MG/KG	12.4	13.53	1.80
M	BERYLLIUM	0.34	MG/KG	0.35	2.90	0.01
M	CADMIUM	0.08	MG/KG	0.07 J	13.33	0.01
M	CALCIUM	666	MG/KG	502	28.08	164.00
M	CHROMIUM	18	MG/KG	17.3	3.97	0.70
M	COBALT	12	MG/KG	11	8.70	1.00
M	COPPER	18.5	MG/KG	18.1	2.19	0.40
M	IRON	27000	MG/KG	24700	8.90	2300.00
M	LEAD	16.4	MG/KG	14	15.79	2.40
M	MAGNESIUM	4190	MG/KG	4100	2.17	90.00
M	MANGANESE	332	MG/KG	277	18.06	55.00
M	MERCURY	0.21	MG/KG	0.09	80.00	0.12
M	NICKEL	23.2	MG/KG	23.2	0.00	0.00
M	POTASSIUM	390	MG/KG	357	8.84	33.00
M	SELENIUM	0.29 J	MG/KG	0.11 J	90.00	0.18
M	SILVER	0.07 J	MG/KG	0.05 J	33.33	0.02
M	SODIUM	53.1 J	MG/KG	59.3 J	11.03	6.20
M	THALLIUM	0.05 J	MG/KG	0.04 J	22.22	0.01
M	VANADIUM	21.1	MG/KG	18.4	13.67	2.70
M	ZINC	52.6	MG/KG	52.7	0.19	0.10
MISC	TOTAL SOLIDS	89	%	89	0.00	0.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Instrument ID: CETAC M6100 **File Name:** HGL09A

Date: 12/9/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	13:18	Hg
Standard #1 (0.2 p		1	13:21	Hg
Standard #2 (0.5 p		1	13:23	Hg
Standard #3 (1.0 p		1	13:25	Hg
Standard #4 (5.0 p		1	13:27	Hg
Standard #5 (10.0		1	13:29	Hg
ICV		1	13:31	HG
ICB		1	13:33	HG
PQL		1	13:35	HG
CCV		1	13:37	HG
CCB		1	13:40	HG
ZZZZZZ		1	13:42	
ZZZZZZ		1	13:44	
ZZZZZZ		1	13:46	
ZZZZZZ		1	13:48	
ZZZZZZ		1	13:50	
ZZZZZZ		1	13:52	
ZZZZZZ		1	13:54	
ZZZZZZ		1	13:56	
ZZZZZZ		1	13:59	
CCV		1	14:01	HG
CCB		1	14:03	HG
PBWGL06HGW2		1	14:05	HG
LCSWGL06HGW2		1	14:07	HG
ZZZZZZ		1	14:09	
ZZZZZZ		1	14:11	
ZZZZZZ		5	14:13	
ZZZZZZ		1	14:16	
ZZZZZZ		1	14:18	
ZZZZZZ		1	14:20	
ZZZZZZ		1	14:22	
ZZZZZZ		1	14:24	
CCV		1	14:26	HG
CCB		1	14:29	HG
ZZZZZZ		1	14:31	
ZZZZZZ		1	14:34	
ZZZZZZ		1	14:36	
SG9314-014	TF2-SB-RB05-1113	1	14:38	HG
ZZZZZZ		1	14:40	
ZZZZZZ		1	14:42	
ZZZZZZ		1	14:44	
ZZZZZZ		1	14:46	
ZZZZZZ		1	14:49	
ZZZZZZ		1	14:51	
CCV		1	14:53	HG
CCB		1	14:55	HG

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Instrument ID: CETAC M6100 **File Name:** HGL14A

Date: 12/14/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	9:34	Hg
Standard #1 (0.2 p		1	9:36	Hg
Standard #2 (0.5 p		1	9:38	Hg
Standard #3 (1.0 p		1	9:40	Hg
Standard #4 (5.0 p		1	9:42	Hg
Standard #5 (10.0		1	9:44	Hg
ICV		1	9:46	HG
ICB		1	9:48	HG
PQL		1	9:50	HG
LCSOGL12HGS1		1	9:53	HG
PBSGL12HGS1		1	9:55	HG
ZZZZZZ		1	9:57	
ZZZZZZ		1	9:59	
ZZZZZZ		1	10:01	
ZZZZZZ		1	10:03	
SG9314-001	TF2-003-SB1013-0204	1	10:05	HG
SG9314-002	TF2-003-SB1013-0405	1	10:07	HG
SG9314-003	TF2-003-SB1019-0204	1	10:09	HG
CCV		1	10:12	HG
CCB		1	10:14	HG
SG9314-004	TF2-003-SB1019-0810	1	10:16	HG
SG9314-005	TF2-001-SS1001-0001	1	10:18	HG
SG9314-005L	TF2-001-SS1001-0001L	5	10:20	HG
ZZZZZZ		1	10:22	
SG9314-005D	TF2-001-SS1001-0001D	1	10:24	HG
SG9314-005S	TF2-001-SS1001-0001S	1	10:26	HG
SG9314-006	TF2-001-SB1001-0204	1	10:29	HG
SG9314-007	TF2-001-SB1001-0810	1	10:31	HG
SG9314-008	TF2-001-SS1002-0001	1	10:33	HG
SG9314-009	TF2-001-SB1002-0204	1	10:35	HG
CCV		1	10:37	HG
CCB		1	10:39	HG
SG9314-010	TF2-001-SB1002-0405	1	10:41	HG
SG9314-011	TF2-001-SS1003-0001	1	10:43	HG
SG9314-011L	TF2-001-SS1003-0001L	5	10:46	HG
ZZZZZZ		1	10:48	
SG9314-011D	TF2-001-SS1003-0001D	1	10:50	HG
SG9314-011S	TF2-001-SS1003-0001S	1	10:52	HG
SG9314-012	TF2-001-SB1003-0204	1	10:54	HG
SG9314-013	TF2-SB-DUP09-1113	1	10:59	HG
ZZZZZZ		1	11:03	
SG9314-005A	TF2-001-SS1001-0001A	1	11:05	HG
CCV		1	11:07	HG
CCB		1	11:09	HG
ZZZZZZ		1	11:11	
ZZZZZZ		1	11:14	
ZZZZZZ		1	11:16	
ZZZZZZ		1	11:18	
ZZZZZZ		1	11:20	
ZZZZZZ		1	11:22	

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Instrument ID: CETAC M6100 **File Name:** HGL14A

Date: 12/14/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	11:24	
ZZZZZZ		1	11:27	
ZZZZZZ		5	11:29	
ZZZZZZ		1	11:31	
CCV		1	11:33	HG
CCB		1	11:35	HG
ZZZZZZ		1	11:37	
ZZZZZZ		1	11:39	
ZZZZZZ		1	11:42	
ZZZZZZ		1	11:44	
ZZZZZZ		1	11:46	
ZZZZZZ		1	11:48	
ZZZZZZ		1	11:50	
ZZZZZZ		1	11:52	
ZZZZZZ		1	11:54	
CCV		1	11:57	HG
CCB		1	11:59	HG
SG9314-011A	TF2-001-SS1003-0001A	1	12:01	HG
ZZZZZZ		1	12:03	
ZZZZZZ		1	12:05	
ZZZZZZ		1	12:07	
ZZZZZZ		1	12:10	
ZZZZZZ		1	12:12	
ZZZZZZ		1	12:14	
ZZZZZZ		1	12:16	
CCV		1	12:18	HG
CCB		1	12:20	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL11A

Date: 12/11/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	16:38	
ZZZZZZ		1	16:41	
Cal Blank		1	17:06	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 1		1	17:09	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 2		1	17:12	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 3		1	17:16	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 4		1	17:19	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	17:22	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	17:25	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	17:28	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSA		1	17:31	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	17:35	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCV		1	17:38	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	17:42	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	17:45	
ZZZZZZ		5	17:48	
ZZZZZZ		5	17:51	
ZZZZZZ		5	17:55	
ZZZZZZ		10	17:58	
ZZZZZZ		5	18:01	
ZZZZZZ		5	18:04	
ZZZZZZ		10	18:08	
ZZZZZZ		50	18:11	
ZZZZZZ		10	18:14	
CCV		1	18:18	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:21	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		10	18:24	
ZZZZZZ		10	18:27	
ZZZZZZ		10	18:31	
ZZZZZZ		10	18:34	
ZZZZZZ		10	18:37	
ZZZZZZ		10	18:41	
ZZZZZZ		10	18:44	
ZZZZZZ		5	18:47	
ZZZZZZ		5	18:51	
ZZZZZZ		5	18:54	
CCV		1	18:57	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:01	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	19:04	
ZZZZZZ		5	19:07	
ZZZZZZ		5	19:11	
ZZZZZZ		25	19:14	
ZZZZZZ		5	19:18	
ZZZZZZ		5	19:21	
ZZZZZZ		5	19:25	
ZZZZZZ		5	19:28	
ZZZZZZ		5	19:32	
ZZZZZZ		5	19:35	
CCV		1	19:38	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:42	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL11A

Date: 12/11/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		5	19:45	
ZZZZZZ		5	19:49	
ZZZZZZ		5	19:52	
ZZZZZZ		5	19:55	
ZZZZZZ		5	19:59	
ZZZZZZ		5	20:03	
ZZZZZZ		5	20:06	
ZZZZZZ		5	20:10	
ZZZZZZ		5	20:13	
ZZZZZZ		5	20:17	
CCV		1	20:20	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:23	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	20:27	
ZZZZZZ		5	20:31	
ZZZZZZ		5	20:34	
PBWGL06IMW2		5	20:38	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V
LCSWGL06IMW2		5	20:41	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	20:44	
ZZZZZZ		5	20:48	
ZZZZZZ		5	20:51	
ZZZZZZ		25	20:54	
ZZZZZZ		5	20:58	
CCV		1	21:01	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	21:04	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	21:08	
ZZZZZZ		5	21:11	
ZZZZZZ		5	21:15	
ZZZZZZ		5	21:18	
ZZZZZZ		5	21:22	
ZZZZZZ		5	21:25	
ZZZZZZ		5	21:28	
ZZZZZZ		5	21:32	
ZZZZZZ		5	21:35	
SG9314-014	TF2-SB-RB05-1113	5	21:38	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
CCV		1	21:42	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	21:45	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL12A

Date: 12/12/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	14:13	
ZZZZZZ		1	14:16	
Cal Blank		1	14:41	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 1		1	14:44	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 2		1	14:47	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 3		1	14:51	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 4		1	14:54	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	14:57	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	15:00	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	15:04	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSA		1	15:07	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	15:10	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCV		1	15:14	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	15:17	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		10	15:20	
ZZZZZZ		10	15:23	
ZZZZZZ		10	15:27	
ZZZZZZ		10	15:30	
ZZZZZZ		10	15:33	
ZZZZZZ		10	15:37	
ZZZZZZ		1	15:40	
ZZZZZZ		1	15:43	
ZZZZZZ		5	15:47	
ZZZZZZ		5	15:50	
CCV		1	15:53	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	15:56	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	16:00	
ZZZZZZ		5	16:03	
ZZZZZZ		5	16:06	
ZZZZZZ		5	16:10	
ZZZZZZ		5	16:13	
ZZZZZZ		5	16:16	
ZZZZZZ		5	16:20	
ZZZZZZ		5	16:23	
ZZZZZZ		25	16:26	
ZZZZZZ		5	16:30	
CCV		1	16:33	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	16:36	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	16:40	
ZZZZZZ		5	16:43	
ZZZZZZ		5	16:46	
ZZZZZZ		25	16:50	
ZZZZZZ		5	16:53	
ZZZZZZ		5	16:56	
ZZZZZZ		5	17:00	
ZZZZZZ		5	17:03	
ZZZZZZ		5	17:07	
ZZZZZZ		5	17:10	
CCV		1	17:14	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	17:17	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL12A

Date: 12/12/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		10	17:20	
PBWGL06IMW2		5	17:24	Zn
ZZZZZZ		5	17:27	
ZZZZZZ		5	17:30	
ZZZZZZ		5	17:34	
ZZZZZZ		5	17:37	
PBSGL10IMS1		5	17:41	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
LCSOGL10IMS1		5	17:44	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	17:47	
ZZZZZZ		5	17:51	
CCV		1	17:54	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	17:58	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	18:01	
SG9314-001	TF2-003-SB1013-0204	5	18:05	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9314-002	TF2-003-SB1013-0405	5	18:08	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9314-003	TF2-003-SB1019-0204	5	18:11	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9314-004	TF2-003-SB1019-0810	5	18:15	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9314-005	TF2-001-SS1001-0001	5	18:18	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
SG9314-005L	TF2-001-SS1001-0001L	25	18:22	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
SG9314-005A	TF2-001-SS1001-0001A	5	18:25	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
SG9314-005D	TF2-001-SS1001-0001D	5	18:29	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
SG9314-005S	TF2-001-SS1001-0001S	5	18:32	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
CCV		1	18:36	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:39	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG9314-006	TF2-001-SB1001-0204	5	18:43	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
SG9314-007	TF2-001-SB1001-0810	5	18:46	Al Sb As Ba Be Cd Cr Co Cu Pb Mg Ni K Se Ag Na Tl V Zn
SG9314-008	TF2-001-SS1002-0001	5	18:50	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9314-009	TF2-001-SB1002-0204	5	18:53	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9314-010	TF2-001-SB1002-0405	5	18:57	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9314-011	TF2-001-SS1003-0001	5	19:00	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9314-011L	TF2-001-SS1003-0001L	25	19:04	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9314-011A	TF2-001-SS1003-0001A	5	19:07	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9314-011D	TF2-001-SS1003-0001D	5	19:11	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9314-011S	TF2-001-SS1003-0001S	5	19:14	Al Sb As Ba Be Cd Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
CCV		1	19:18	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:21	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG9314-012	TF2-001-SB1003-0204	5	19:25	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9314-013	TF2-SB-DUP09-1113	5	19:28	Al Sb As Ba Cd Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	19:32	
ZZZZZZ		5	19:35	
ZZZZZZ		5	19:38	
ZZZZZZ		5	19:42	
ZZZZZZ		5	19:45	
ZZZZZZ		5	19:49	
ZZZZZZ		5	19:53	
ZZZZZZ		25	19:56	
CCV		1	20:00	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:03	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL17A

Date: 12/17/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	12:58	
ZZZZZZ		1	13:01	
Cal Blank		1	13:27	Al Be Ca Fe Mg Mn Mo K Na
Cal Std 1		1	13:30	Al Be Ca Fe Mg Mn Mo K Na
Cal Std 2		1	13:33	Al Be Ca Fe Mg Mn Mo K Na
Cal Std 3		1	13:36	Al Be Ca Fe Mg Mn Mo K Na
Cal Std 4		1	13:39	Al Be Ca Fe Mg Mn Mo K Na
ICV		1	13:42	Al Be Ca Fe Mg Mn Mo K Na
ICB		1	13:45	Al Be Ca Fe Mg Mn Mo K Na
PQL		1	13:49	Al Be Ca Fe Mg Mn Mo K Na
ICSA		1	13:52	Al Be Ca Fe Mg Mn Mo K Na
ICSAB		1	13:55	Al Be Ca Fe Mg Mn Mo K Na
CCV		1	13:59	Al Be Ca Fe Mg Mn Mo K Na
CCB		1	14:02	Al Be Ca Fe Mg Mn Mo K Na
ZZZZZZ		5	14:05	
CCV		1	14:08	Al Be Ca Fe Mg Mn Mo K Na
CCB		1	14:12	Al Be Ca Fe Mg Mn Mo K Na
PBSGL10IMS1		5	14:15	Ca
LCSOGL10IMS1		5	14:18	Ca
ZZZZZZ		5	14:21	
ZZZZZZ		10	14:25	
ZZZZZZ		10	14:28	
SG9314-001	TF2-003-SB1013-0204	5	14:32	Ca
SG9314-002	TF2-003-SB1013-0405	5	14:35	Ca
SG9314-003	TF2-003-SB1019-0204	5	14:38	Ca
SG9314-004	TF2-003-SB1019-0810	5	14:42	Ca
SG9314-005	TF2-001-SS1001-0001	10	14:45	Ca
CCV		1	14:48	Al Be Ca Fe Mg Mn Mo K Na
CCB		1	14:52	Al Be Ca Fe Mg Mn Mo K Na
SG9314-005L	TF2-001-SS1001-0001L	50	14:55	Ca
SG9314-005A	TF2-001-SS1001-0001A	10	14:58	Ca
SG9314-005D	TF2-001-SS1001-0001D	10	15:02	Ca
SG9314-005S	TF2-001-SS1001-0001S	10	15:05	Ca
SG9314-006	TF2-001-SB1001-0204	10	15:09	Ca Mn
SG9314-007	TF2-001-SB1001-0810	10	15:12	Ca Fe Mn
SG9314-008	TF2-001-SS1002-0001	5	15:16	Ca
SG9314-009	TF2-001-SB1002-0204	5	15:19	Ca
SG9314-010	TF2-001-SB1002-0405	5	15:23	Ca
SG9314-011	TF2-001-SS1003-0001	10	15:26	Ca
CCV		1	15:30	Al Be Ca Fe Mg Mn Mo K Na
CCB		1	15:33	Al Be Ca Fe Mg Mn Mo K Na
SG9314-011L	TF2-001-SS1003-0001L	50	15:36	Ca
SG9314-011A	TF2-001-SS1003-0001A	10	15:40	Ca
SG9314-011D	TF2-001-SS1003-0001D	10	15:43	Ca
SG9314-011S	TF2-001-SS1003-0001S	10	15:47	Ca Mn
SG9314-012	TF2-001-SB1003-0204	5	15:50	Be Ca
SG9314-013	TF2-SB-DUP09-1113	5	15:54	Be Ca
ZZZZZZ		5	15:57	
ZZZZZZ		5	16:01	
ZZZZZZ		5	16:04	

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL17A

Date: 12/17/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements								
ZZZZZZ		10	16:08									
CCV		1	16:11	Al	Be	Ca	Fe	Mg	Mn	Mo	K	Na
CCB		1	16:14	Al	Be	Ca	Fe	Mg	Mn	Mo	K	Na

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL18A

Date: 12/18/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
ZZZZZZ		1	17:25							
ZZZZZZ		1	17:28							
Cal Blank		1	17:53	Al	Ca	Fe	Mg	Mn	Mo	K	Na
Cal Std 1		1	17:56	Al	Ca	Fe	Mg	Mn	Mo	K	Na
Cal Std 2		1	17:59	Al	Ca	Fe	Mg	Mn	Mo	K	Na
Cal Std 3		1	18:02	Al	Ca	Fe	Mg	Mn	Mo	K	Na
Cal Std 4		1	18:05	Al	Ca	Fe	Mg	Mn	Mo	K	Na
ICV		1	18:09	Al	Ca	Fe	Mg	Mn	Mo	K	Na
ICB		1	18:12	Al	Ca	Fe	Mg	Mn	Mo	K	Na
PQL		1	18:15	Al	Ca	Fe	Mg	Mn	Mo	K	Na
ICSA		1	18:18	Al	Ca	Fe	Mg	Mn	Mo	K	Na
ICSAB		1	18:22	Al	Ca	Fe	Mg	Mn	Mo	K	Na
CCV		1	18:25	Al	Ca	Fe	Mg	Mn	Mo	K	Na
CCB		1	18:28	Al	Ca	Fe	Mg	Mn	Mo	K	Na
ZZZZZZ		1	18:31							
ZZZZZZ		1	18:35							
ZZZZZZ		1	18:38							
ZZZZZZ		1	18:41							
ZZZZZZ		1	18:45							
ZZZZZZ		1	18:48							
ZZZZZZ		5	18:51							
ZZZZZZ		1	18:54							
CCV		1	18:58	Al	Ca	Fe	Mg	Mn	Mo	K	Na
CCB		1	19:01	Al	Ca	Fe	Mg	Mn	Mo	K	Na
SG9314-005	TF2-001-SS1001-0001	25	19:04					Mn			
SG9314-005L	TF2-001-SS1001-0001L	125	19:07					Mn			
CCV		1	19:11	Al	Ca	Fe	Mg	Mn	Mo	K	Na
CCB		1	19:14	Al	Ca	Fe	Mg	Mn	Mo	K	Na
SG9314-005A	TF2-001-SS1001-0001A	25	19:17					Mn			
SG9314-005D	TF2-001-SS1001-0001D	25	19:21					Mn			
SG9314-005S	TF2-001-SS1001-0001S	25	19:24					Mn			
ZZZZZZ		10	19:27							
ZZZZZZ		5	19:31							
ZZZZZZ		5	19:34							
ZZZZZZ		5	19:37							
ZZZZZZ		5	19:41							
ZZZZZZ		5	19:44							
ZZZZZZ		10	19:48							
CCV		1	19:51	Al	Ca	Fe	Mg	Mn	Mo	K	Na
CCB		1	19:54	Al	Ca	Fe	Mg	Mn	Mo	K	Na

FORM XIV - IN

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL06HGW2

Matrix: WATER **SDG Name:** SG9314

Method: CV **Prep Date:** 12/06/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWGL06HGW2	LCSWGL06HGW2	0.025	0.025	
PBWGL06HGW2	PBWGL06HGW2	0.025	0.025	
TF2-SB-RB05-1113	SG9314-014	0.025	0.025	F

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL06IMW2

Matrix: WATER **SDG Name:** SG9314

Method: MS **Prep Date:** 12/06/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWGL06IMW2	LCSWGL06IMW2	0.05	0.05	
PBWGL06IMW2	PBWGL06IMW2	0.05	0.05	
TF2-SB-RB05-1113	SG9314-014	0.05	0.05	F

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL10IMS1

Matrix: SOIL **SDG Name:** SG9314

Method: MS **Prep Date:** 12/10/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGL10IMS1	LCSOGL10IMS1	1	0.1	
PBSGL10IMS1	PBSGL10IMS1	1	0.1	
TF2-003-SB1013-0204	SG9314-001	1.21	0.1	G
TF2-003-SB1013-0405	SG9314-002	1.57	0.1	G
TF2-003-SB1019-0204	SG9314-003	1.83	0.1	G
TF2-003-SB1019-0810	SG9314-004	1.61	0.1	F
TF2-001-SS1001-0001	SG9314-005	1.85	0.1	G
TF2-001-SS1001-0001D	SG9314-005D	1.93	0.1	G
TF2-001-SS1001-0001S	SG9314-005S	1.84	0.1	G
TF2-001-SB1001-0204	SG9314-006	1.59	0.1	G
TF2-001-SB1001-0810	SG9314-007	1.79	0.1	G
TF2-001-SS1002-0001	SG9314-008	1.39	0.1	G
TF2-001-SB1002-0204	SG9314-009	1.32	0.1	G
TF2-001-SB1002-0405	SG9314-010	1.58	0.1	G
TF2-001-SS1003-0001	SG9314-011	1.6	0.1	F
TF2-001-SS1003-0001D	SG9314-011D	1.55	0.1	F
TF2-001-SS1003-0001S	SG9314-011S	1.58	0.1	F
TF2-001-SB1003-0204	SG9314-012	1.14	0.1	G
TF2-SB-DUP09-1113	SG9314-013	1.31	0.1	G

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL12HGS1

Matrix: SOIL **SDG Name:** SG9314

Method: CV **Prep Date:** 12/12/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGL12HGS1	LCSOGL12HGS1	0.6	0.1	
PBSGL12HGS1	PBSGL12HGS1	0.6	0.1	
TF2-003-SB1013-0204	SG9314-001	0.72	0.1	G
TF2-003-SB1013-0405	SG9314-002	0.78	0.1	G
TF2-003-SB1019-0204	SG9314-003	0.89	0.1	G
TF2-003-SB1019-0810	SG9314-004	0.69	0.1	F
TF2-001-SS1001-0001	SG9314-005	0.71	0.1	G
TF2-001-SS1001-0001D	SG9314-005D	0.71	0.1	G
TF2-001-SS1001-0001S	SG9314-005S	0.76	0.1	G
TF2-001-SB1001-0204	SG9314-006	0.78	0.1	G
TF2-001-SB1001-0810	SG9314-007	0.75	0.1	G
TF2-001-SS1002-0001	SG9314-008	0.71	0.1	G
TF2-001-SB1002-0204	SG9314-009	0.71	0.1	G
TF2-001-SB1002-0405	SG9314-010	0.75	0.1	G
TF2-001-SS1003-0001	SG9314-011	0.71	0.1	G
TF2-001-SS1003-0001D	SG9314-011D	0.7	0.1	G
TF2-001-SS1003-0001S	SG9314-011S	0.75	0.1	G
TF2-001-SB1003-0204	SG9314-012	0.73	0.1	G
TF2-SB-DUP09-1113	SG9314-013	0.72	0.1	F

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/30/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
MERCURY	0.20	0.03	CV

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 6/11/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
ALUMINUM	60	0.34	MS
ANTIMONY	0.20	0.006	MS
ARSENIC	1.0	0.41	MS
BARIUM	0.40	0.02	MS
BERYLLIUM	0.20	0.003	MS
CADMIUM	0.20	0.004	MS
CALCIUM	20	4.10	MS
CHROMIUM	1.0	0.03	MS
COBALT	0.20	0.006	MS
COPPER	0.60	0.03	MS
IRON	20	4.70	MS
LEAD	0.20	0.009	MS
MAGNESIUM	20	0.69	MS
MANGANESE	0.40	0.02	MS
MOLYBDENUM	1.0	0.12	MS
NICKEL	0.40	0.02	MS
POTASSIUM	200	8.20	MS
SELENIUM	1.0	0.64	MS
SILVER	0.20	0.004	MS
SODIUM	200	3.90	MS
THALLIUM	0.20	0.003	MS
VANADIUM	1.0	0.15	MS
ZINC	2.0	0.13	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/7/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.02	mg/Kg	CV	SW846 7471A / 7471

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 2/9/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.10	ug/L	CV	SW846 7470A / 7470

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	8.00	ug/L	MS	
ANTIMONY	0.10	ug/L	MS	
ARSENIC	0.80	ug/L	MS	
BARIUM	0.20	ug/L	MS	
BERYLLIUM	0.04	ug/L	MS	
CADMIUM	0.04	ug/L	MS	
CALCIUM	16.00	ug/L	MS	
CHROMIUM	0.80	ug/L	MS	
COBALT	0.06	ug/L	MS	
COPPER	0.40	ug/L	MS	
IRON	12.00	ug/L	MS	
LEAD	0.10	ug/L	MS	
MAGNESIUM	16.00	ug/L	MS	
MANGANESE	0.20	ug/L	MS	
NICKEL	0.24	ug/L	MS	
POTASSIUM	80.00	ug/L	MS	
SELENIUM	0.60	ug/L	MS	
SILVER	0.08	ug/L	MS	
SODIUM	80.00	ug/L	MS	
THALLIUM	0.08	ug/L	MS	
VANADIUM	0.80	ug/L	MS	
ZINC	1.60	ug/L	MS	

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.80	mg/kg	MS	SW846 3050B / 6010/200.7
ANTIMONY	0.01	mg/kg	MS	SW846 3050B / 6010/200.7
ARSENIC	0.08	mg/kg	MS	SW846 3050B / 6010/200.7
BARIUM	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
BERYLLIUM	0.004	mg/Kg	MS	SW846 3050B / 6010/200.7
CADMIUM	0.004	mg/kg	MS	SW846 3050B / 6010/200.7
CALCIUM	1.60	mg/kg	MS	SW846 3050B / 6010/200.7
CHROMIUM	0.08	mg/kg	MS	SW846 3050B / 6010/200.7
COBALT	0.006	mg/kg	MS	SW846 3050B / 6010/200.7
COPPER	0.04	mg/kg	MS	SW846 3050B / 6010/200.7
IRON	1.20	mg/kg	MS	SW846 3050B / 6010/200.7
LEAD	0.01	mg/Kg	MS	SW846 3050B / 6010/200.7
MAGNESIUM	1.60	mg/kg	MS	SW846 3050B / 6010/200.7
MANGANESE	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
NICKEL	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
POTASSIUM	8.00	mg/Kg	MS	SW846 3050B / 6010/200.7
SELENIUM	0.06	mg/kg	MS	SW846 3050B / 6010/200.7
SILVER	0.008	mg/kg	MS	SW846 3050B / 6010/200.7
SODIUM	8.00	mg/kg	MS	SW846 3050B / 6010/200.7
THALLIUM	0.008	mg/kg	MS	SW846 3050B / 6010/200.7
VANADIUM	0.08	mg/Kg	MS	SW846 3050B / 6010/200.7
ZINC	0.16	mg/kg	MS	SW846 3050B / 6010/200.7

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/7/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.005	mg/Kg	CV	SW846 7471A / SW846 7471A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 2/9/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.01	ug/L	CV	SW846 7470A / SW846 7470A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.88	ug/L	MS	SW846 3010A / SW846 6020
ANTIMONY	0.01	ug/L	MS	SW846 3010A / SW846 6020
ARSENIC	0.45	ug/L	MS	SW846 3010A / SW846 6020
BARIUM	0.05	ug/L	MS	SW846 3010A / SW846 6020
BERYLLIUM	0.007	ug/L	MS	SW846 3010A / SW846 6020
CADMIUM	0.006	ug/L	MS	SW846 3010A / SW846 6020
CALCIUM	4.09	ug/L	MS	SW846 3010A / SW846 6020
CHROMIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020
COBALT	0.01	ug/L	MS	SW846 3010A / SW846 6020
COPPER	0.04	ug/L	MS	SW846 3010A / SW846 6020
IRON	2.55	ug/L	MS	SW846 3010A / SW846 6020
LEAD	0.01	ug/L	MS	SW846 3010A / SW846 6020
MAGNESIUM	1.56	ug/L	MS	SW846 3010A / SW846 6020
MANGANESE	0.07	ug/L	MS	SW846 3010A / SW846 6020
NICKEL	0.03	ug/L	MS	SW846 3010A / SW846 6020
POTASSIUM	6.14	ug/L	MS	SW846 3010A / SW846 6020
SELENIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020
SILVER	0.01	ug/L	MS	SW846 3010A / SW846 6020
SODIUM	3.70	ug/L	MS	SW846 3010A / SW846 6020
THALLIUM	0.01	ug/L	MS	SW846 3010A / SW846 6020
VANADIUM	0.10	ug/L	MS	SW846 3010A / SW846 6020
ZINC	0.78	ug/L	MS	SW846 3010A / SW846 6020

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.10	mg/kg	MS	SW846 3050B / SW846 6020
ANTIMONY	0.004	mg/kg	MS	SW846 3050B / SW846 6020
ARSENIC	0.03	mg/kg	MS	SW846 3050B / SW846 6020
BARIUM	0.007	mg/kg	MS	SW846 3050B / SW846 6020
BERYLLIUM	0.0008	mg/kg	MS	SW846 3050B / SW846 6020
CADMIUM	0.002	mg/kg	MS	SW846 3050B / SW846 6020
CALCIUM	0.77	mg/kg	MS	SW846 3050B / SW846 6020
CHROMIUM	0.010	mg/kg	MS	SW846 3050B / SW846 6020
COBALT	0.001	mg/kg	MS	SW846 3050B / SW846 6020
COPPER	0.01	mg/kg	MS	SW846 3050B / SW846 6020
IRON	0.48	mg/kg	MS	SW846 3050B / SW846 6020
LEAD	0.001	mg/kg	MS	SW846 3050B / SW846 6020
MAGNESIUM	0.27	mg/kg	MS	SW846 3050B / SW846 6020
MANGANESE	0.008	mg/kg	MS	SW846 3050B / SW846 6020
NICKEL	0.005	mg/kg	MS	SW846 3050B / SW846 6020
POTASSIUM	0.91	mg/kg	MS	SW846 3050B / SW846 6020
SELENIUM	0.008	mg/kg	MS	SW846 3050B / SW846 6020
SILVER	0.001	mg/kg	MS	SW846 3050B / SW846 6020
SODIUM	0.51	mg/kg	MS	SW846 3050B / SW846 6020
THALLIUM	0.002	mg/kg	MS	SW846 3050B / SW846 6020
VANADIUM	0.02	mg/kg	MS	SW846 3050B / SW846 6020
ZINC	0.03	mg/kg	MS	SW846 3050B / SW846 6020

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICV

File: HGL09A Dec 09, 2013 13:31

Analyte	True	Found	%R (1)
MERCURY	6.0	5.51	91.8

SAMPLE: CCV

File: HGL09A Dec 09, 2013 13:37

Analyte	True	Found	%R (1)
MERCURY	5.0	4.80	96.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: HGL09A Dec 09, 2013 14:01

Analyte	True	Found	%R (1)
MERCURY	5.0	4.99	99.8

SAMPLE: CCV

File: HGL09A Dec 09, 2013 14:26

Analyte	True	Found	%R (1)
MERCURY	5.0	4.77	95.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: HGL09A Dec 09, 2013 14:53

Analyte	True	Found	%R (1)
MERCURY	5.0	5.12	102.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICV

File: HGL14A Dec 14, 2013 9:46

Analyte	True	Found	%R (1)
MERCURY	6.0	5.76	96.0

SAMPLE: CCV

File: HGL14A Dec 14, 2013 10:12

Analyte	True	Found	%R (1)
MERCURY	5.0	5.47	109.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: HGL14A Dec 14, 2013 10:37

Analyte	True	Found	%R (1)
MERCURY	5.0	5.21	104.2

SAMPLE: CCV

File: HGL14A Dec 14, 2013 11:07

Analyte	True	Found	%R (1)
MERCURY	5.0	5.34	106.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: HGL14A Dec 14, 2013 11:33

Analyte	True	Found	%R (1)
MERCURY	5.0	5.31	106.2

SAMPLE: CCV

File: HGL14A Dec 14, 2013 11:57

Analyte	True	Found	%R (1)
MERCURY	5.0	5.17	103.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: HGL14A Dec 14, 2013 12:18

Analyte	True	Found	%R (1)
MERCURY	5.0	5.14	102.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICV

File: JGL11A Dec 11, 2013 17:22

Analyte	True	Found	%R (1)
ALUMINUM	400.0	409.50	102.4
ANTIMONY	20.0	20.17	100.9
ARSENIC	20.0	20.20	101.0
BARIUM	20.0	20.18	100.9
BERYLLIUM	20.0	19.88	99.4
CADMIUM	20.0	20.44	102.2
CALCIUM	4000.0	3815.00	95.4
CHROMIUM	20.0	20.21	101.1
COBALT	20.0	20.47	102.3
COPPER	20.0	20.40	102.0
IRON	4000.0	3822.00	95.5
LEAD	20.0	20.16	100.8
MAGNESIUM	4000.0	3939.00	98.5
MANGANESE	20.0	18.91	94.5
MOLYBDENUM	40.0	41.14	102.8
NICKEL	20.0	20.06	100.3
POTASSIUM	4000.0	3940.00	98.5
SELENIUM	20.0	20.35	101.8
SILVER	20.0	21.47	107.3
SODIUM	4000.0	3880.00	97.0
THALLIUM	20.0	21.12	105.6
VANADIUM	20.0	20.14	100.7
ZINC	20.0	20.38	101.9

SAMPLE: CCV

File: JGL11A Dec 11, 2013 17:38

Analyte	True	Found	%R (1)
ALUMINUM	500.0	496.20	99.2
ANTIMONY	25.0	24.33	97.3
ARSENIC	25.0	24.44	97.8
BARIUM	25.0	24.38	97.5
BERYLLIUM	10.0	9.81	98.1
CADMIUM	10.0	9.91	99.1
CALCIUM	5000.0	4868.00	97.4
CHROMIUM	25.0	24.42	97.7
COBALT	10.0	9.86	98.6
COPPER	25.0	24.89	99.6
IRON	5000.0	4874.00	97.5
LEAD	25.0	24.54	98.2
MAGNESIUM	5000.0	4931.00	98.6
MANGANESE	25.0	24.47	97.9
MOLYBDENUM	25.0	25.71	102.8
NICKEL	25.0	24.45	97.8
POTASSIUM	5000.0	4872.00	97.4
SELENIUM	25.0	24.45	97.8
SILVER	10.0	10.00	100.0
SODIUM	5000.0	4918.00	98.4
THALLIUM	10.0	9.74	97.4
VANADIUM	25.0	24.37	97.5
ZINC	25.0	24.63	98.5

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: JGL11A Dec 11, 2013 18:18

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.60	101.1
ANTIMONY	25.0	24.27	97.1
ARSENIC	25.0	24.82	99.3
BARIUM	25.0	24.13	96.5
BERYLLIUM	10.0	9.85	98.5
CADMIUM	10.0	10.19	101.9
CALCIUM	5000.0	4840.00	96.8
CHROMIUM	25.0	24.67	98.7
COBALT	10.0	9.87	98.7
COPPER	25.0	24.86	99.4
IRON	5000.0	4791.00	95.8
LEAD	25.0	24.79	99.2
MAGNESIUM	5000.0	4938.00	98.8
MANGANESE	25.0	24.81	99.2
MOLYBDENUM	25.0	25.10	100.4
NICKEL	25.0	24.72	98.9
POTASSIUM	5000.0	4845.00	96.9
SELENIUM	25.0	25.26	101.0
SILVER	10.0	10.25	102.5
SODIUM	5000.0	4807.00	96.1
THALLIUM	10.0	9.86	98.6
VANADIUM	25.0	24.70	98.8
ZINC	25.0	25.30	101.2

SAMPLE: CCV

File: JGL11A Dec 11, 2013 18:57

Analyte	True	Found	%R (1)
ALUMINUM	500.0	497.80	99.6
ANTIMONY	25.0	24.42	97.7
ARSENIC	25.0	24.69	98.8
BARIUM	25.0	24.48	97.9
BERYLLIUM	10.0	9.70	97.0
CADMIUM	10.0	10.18	101.8
CALCIUM	5000.0	4933.00	98.7
CHROMIUM	25.0	24.38	97.5
COBALT	10.0	9.84	98.4
COPPER	25.0	24.86	99.4
IRON	5000.0	4800.00	96.0
LEAD	25.0	24.82	99.3
MAGNESIUM	5000.0	4910.00	98.2
MANGANESE	25.0	24.73	98.9
MOLYBDENUM	25.0	25.14	100.6
NICKEL	25.0	24.20	96.8
POTASSIUM	5000.0	4832.00	96.6
SELENIUM	25.0	24.29	97.2
SILVER	10.0	10.27	102.7
SODIUM	5000.0	4815.00	96.3
THALLIUM	10.0	9.90	99.0
VANADIUM	25.0	24.61	98.4
ZINC	25.0	24.79	99.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: JGL11A Dec 11, 2013 19:38

Analyte	True	Found	%R (1)
ALUMINUM	500.0	496.80	99.4
ANTIMONY	25.0	24.43	97.7
ARSENIC	25.0	24.76	99.0
BARIUM	25.0	24.64	98.6
BERYLLIUM	10.0	9.26	92.6
CADMIUM	10.0	10.11	101.1
CALCIUM	5000.0	4895.00	97.9
CHROMIUM	25.0	24.72	98.9
COBALT	10.0	9.98	99.8
COPPER	25.0	25.00	100.0
IRON	5000.0	4917.00	98.3
LEAD	25.0	24.70	98.8
MAGNESIUM	5000.0	4871.00	97.4
MANGANESE	25.0	24.76	99.0
MOLYBDENUM	25.0	25.20	100.8
NICKEL	25.0	24.64	98.6
POTASSIUM	5000.0	4857.00	97.1
SELENIUM	25.0	24.51	98.0
SILVER	10.0	10.20	102.0
SODIUM	5000.0	4836.00	96.7
THALLIUM	10.0	9.77	97.7
VANADIUM	25.0	24.66	98.6
ZINC	25.0	24.89	99.6

SAMPLE: CCV

File: JGL11A Dec 11, 2013 20:20

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.10	101.2
ANTIMONY	25.0	23.99	96.0
ARSENIC	25.0	24.75	99.0
BARIUM	25.0	24.24	97.0
BERYLLIUM	10.0	9.41	94.1
CADMIUM	10.0	10.30	103.0
CALCIUM	5000.0	4862.00	97.2
CHROMIUM	25.0	24.95	99.8
COBALT	10.0	9.94	99.4
COPPER	25.0	25.16	100.6
IRON	5000.0	4826.00	96.5
LEAD	25.0	24.70	98.8
MAGNESIUM	5000.0	4937.00	98.7
MANGANESE	25.0	25.04	100.2
MOLYBDENUM	25.0	25.37	101.5
NICKEL	25.0	24.79	99.2
POTASSIUM	5000.0	4890.00	97.8
SELENIUM	25.0	25.09	100.4
SILVER	10.0	10.38	103.8
SODIUM	5000.0	4850.00	97.0
THALLIUM	10.0	9.89	98.9
VANADIUM	25.0	24.93	99.7
ZINC	25.0	25.54	102.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: JGL11A Dec 11, 2013 21:01

Analyte	True	Found	%R (1)
ALUMINUM	500.0	510.60	102.1
ANTIMONY	25.0	23.90	95.6
ARSENIC	25.0	24.98	99.9
BARIUM	25.0	24.38	97.5
BERYLLIUM	10.0	9.47	94.7
CADMIUM	10.0	10.25	102.5
CALCIUM	5000.0	4724.00	94.5
CHROMIUM	25.0	24.90	99.6
COBALT	10.0	9.91	99.1
COPPER	25.0	25.08	100.3
IRON	5000.0	4862.00	97.2
LEAD	25.0	24.83	99.3
MAGNESIUM	5000.0	4944.00	98.9
MANGANESE	25.0	25.34	101.4
MOLYBDENUM	25.0	25.13	100.5
NICKEL	25.0	24.77	99.1
POTASSIUM	5000.0	4893.00	97.9
SELENIUM	25.0	24.69	98.8
SILVER	10.0	10.40	104.0
SODIUM	5000.0	4820.00	96.4
THALLIUM	10.0	9.80	98.0
VANADIUM	25.0	25.16	100.6
ZINC	25.0	25.50	102.0

SAMPLE: CCV

File: JGL11A Dec 11, 2013 21:42

Analyte	True	Found	%R (1)
ALUMINUM	500.0	500.80	100.2
ANTIMONY	25.0	23.85	95.4
ARSENIC	25.0	24.99	100.0
BARIUM	25.0	24.35	97.4
BERYLLIUM	10.0	9.45	94.5
CADMIUM	10.0	10.36	103.6
CALCIUM	5000.0	4860.00	97.2
CHROMIUM	25.0	25.06	100.2
COBALT	10.0	10.22	102.2
COPPER	25.0	25.13	100.5
IRON	5000.0	4860.00	97.2
LEAD	25.0	24.74	99.0
MAGNESIUM	5000.0	4994.00	99.9
MANGANESE	25.0	25.08	100.3
MOLYBDENUM	25.0	25.29	101.2
NICKEL	25.0	24.79	99.2
POTASSIUM	5000.0	4937.00	98.7
SELENIUM	25.0	25.09	100.4
SILVER	10.0	10.38	103.8
SODIUM	5000.0	4920.00	98.4
THALLIUM	10.0	9.84	98.4
VANADIUM	25.0	25.06	100.2
ZINC	25.0	25.18	100.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICV

File: JGL12A Dec 12, 2013 14:57

Analyte	True	Found	%R (1)
ALUMINUM	400.0	423.70	105.9
ANTIMONY	20.0	19.68	98.4
ARSENIC	20.0	19.69	98.5
BARIUM	20.0	20.01	100.1
BERYLLIUM	20.0	19.92	99.6
CADMIUM	20.0	19.74	98.7
CALCIUM	4000.0	3950.00	98.8
CHROMIUM	20.0	19.85	99.3
COBALT	20.0	20.31	101.5
COPPER	20.0	20.05	100.3
IRON	4000.0	3911.00	97.8
LEAD	20.0	19.65	98.3
MAGNESIUM	4000.0	4094.00	102.4
MANGANESE	20.0	18.62	93.1
MOLYBDENUM	40.0	40.32	100.8
NICKEL	20.0	20.16	100.8
POTASSIUM	4000.0	4008.00	100.2
SELENIUM	20.0	20.05	100.3
SILVER	20.0	20.89	104.5
SODIUM	4000.0	4066.00	101.6
THALLIUM	20.0	20.57	102.8
VANADIUM	20.0	19.66	98.3
ZINC	20.0	20.29	101.4

SAMPLE: CCV

File: JGL12A Dec 12, 2013 15:14

Analyte	True	Found	%R (1)
ALUMINUM	500.0	499.60	99.9
ANTIMONY	25.0	24.44	97.8
ARSENIC	25.0	24.26	97.0
BARIUM	25.0	24.87	99.5
BERYLLIUM	10.0	9.84	98.4
CADMIUM	10.0	9.76	97.6
CALCIUM	5000.0	4940.00	98.8
CHROMIUM	25.0	24.24	97.0
COBALT	10.0	9.71	97.1
COPPER	25.0	24.77	99.1
IRON	5000.0	4860.00	97.2
LEAD	25.0	24.53	98.1
MAGNESIUM	5000.0	4960.00	99.2
MANGANESE	25.0	24.43	97.7
MOLYBDENUM	25.0	25.60	102.4
NICKEL	25.0	26.10	104.4
POTASSIUM	5000.0	4878.00	97.6
SELENIUM	25.0	24.06	96.2
SILVER	10.0	10.02	100.2
SODIUM	5000.0	4949.00	99.0
THALLIUM	10.0	9.60	96.0
VANADIUM	25.0	24.20	96.8
ZINC	25.0	24.92	99.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: JGL12A Dec 12, 2013 15:53

Analyte	True	Found	%R (1)
ALUMINUM	500.0	504.50	100.9
ANTIMONY	25.0	23.77	95.1
ARSENIC	25.0	24.61	98.4
BARIUM	25.0	24.16	96.6
BERYLLIUM	10.0	9.32	93.2
CADMIUM	10.0	9.89	98.9
CALCIUM	5000.0	4930.00	98.6
CHROMIUM	25.0	24.60	98.4
COBALT	10.0	9.89	98.9
COPPER	25.0	24.67	98.7
IRON	5000.0	4897.00	97.9
LEAD	25.0	24.52	98.1
MAGNESIUM	5000.0	4936.00	98.7
MANGANESE	25.0	24.75	99.0
MOLYBDENUM	25.0	24.70	98.8
NICKEL	25.0	26.40	105.6
POTASSIUM	5000.0	4873.00	97.5
SELENIUM	25.0	24.67	98.7
SILVER	10.0	10.12	101.2
SODIUM	5000.0	4912.00	98.2
THALLIUM	10.0	9.67	96.7
VANADIUM	25.0	24.36	97.4
ZINC	25.0	24.53	98.1

SAMPLE: CCV

File: JGL12A Dec 12, 2013 16:33

Analyte	True	Found	%R (1)
ALUMINUM	500.0	499.30	99.9
ANTIMONY	25.0	24.23	96.9
ARSENIC	25.0	24.50	98.0
BARIUM	25.0	24.39	97.6
BERYLLIUM	10.0	9.53	95.3
CADMIUM	10.0	9.85	98.5
CALCIUM	5000.0	4907.00	98.1
CHROMIUM	25.0	24.29	97.2
COBALT	10.0	9.84	98.4
COPPER	25.0	24.71	98.8
IRON	5000.0	4871.00	97.4
LEAD	25.0	24.32	97.3
MAGNESIUM	5000.0	4946.00	98.9
MANGANESE	25.0	24.70	98.8
MOLYBDENUM	25.0	24.40	97.6
NICKEL	25.0	26.44	105.8
POTASSIUM	5000.0	4863.00	97.3
SELENIUM	25.0	24.53	98.1
SILVER	10.0	10.11	101.1
SODIUM	5000.0	4957.00	99.1
THALLIUM	10.0	9.71	97.1
VANADIUM	25.0	24.11	96.4
ZINC	25.0	24.44	97.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: JGL12A Dec 12, 2013 17:14

Analyte	True	Found	%R (1)
ALUMINUM	500.0	496.30	99.3
ANTIMONY	25.0	24.41	97.6
ARSENIC	25.0	24.35	97.4
BARIUM	25.0	24.48	97.9
BERYLLIUM	10.0	9.50	95.0
CADMIUM	10.0	9.73	97.3
CALCIUM	5000.0	4913.00	98.3
CHROMIUM	25.0	24.50	98.0
COBALT	10.0	9.73	97.3
COPPER	25.0	24.49	98.0
IRON	5000.0	4864.00	97.3
LEAD	25.0	24.56	98.2
MAGNESIUM	5000.0	4945.00	98.9
MANGANESE	25.0	24.47	97.9
MOLYBDENUM	25.0	24.47	97.9
NICKEL	25.0	26.21	104.8
POTASSIUM	5000.0	4844.00	96.9
SELENIUM	25.0	24.60	98.4
SILVER	10.0	9.97	99.7
SODIUM	5000.0	4935.00	98.7
THALLIUM	10.0	9.69	96.9
VANADIUM	25.0	24.32	97.3
ZINC	25.0	24.77	99.1

SAMPLE: CCV

File: JGL12A Dec 12, 2013 17:54

Analyte	True	Found	%R (1)
ALUMINUM	500.0	501.40	100.3
ANTIMONY	25.0	24.27	97.1
ARSENIC	25.0	24.42	97.7
BARIUM	25.0	24.36	97.4
BERYLLIUM	10.0	9.46	94.6
CADMIUM	10.0	9.90	99.0
CALCIUM	5000.0	4939.00	98.8
CHROMIUM	25.0	24.43	97.7
COBALT	10.0	9.87	98.7
COPPER	25.0	24.85	99.4
IRON	5000.0	4894.00	97.9
LEAD	25.0	24.66	98.6
MAGNESIUM	5000.0	4923.00	98.5
MANGANESE	25.0	24.64	98.6
MOLYBDENUM	25.0	24.64	98.6
NICKEL	25.0	26.18	104.7
POTASSIUM	5000.0	4835.00	96.7
SELENIUM	25.0	24.67	98.7
SILVER	10.0	10.09	100.9
SODIUM	5000.0	4876.00	97.5
THALLIUM	10.0	9.67	96.7
VANADIUM	25.0	24.27	97.1
ZINC	25.0	24.43	97.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: JGL12A Dec 12, 2013 18:36

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.20	101.2
ANTIMONY	25.0	23.55	94.2
ARSENIC	25.0	24.13	96.5
BARIUM	25.0	24.34	97.4
BERYLLIUM	10.0	9.31	93.1
CADMIUM	10.0	10.04	100.4
CALCIUM	5000.0	4932.00	98.6
CHROMIUM	25.0	24.47	97.9
COBALT	10.0	9.78	97.8
COPPER	25.0	24.33	97.3
IRON	5000.0	4921.00	98.4
LEAD	25.0	24.69	98.8
MAGNESIUM	5000.0	4977.00	99.5
MANGANESE	25.0	24.65	98.6
MOLYBDENUM	25.0	24.60	98.4
NICKEL	25.0	26.09	104.4
POTASSIUM	5000.0	4833.00	96.7
SELENIUM	25.0	24.45	97.8
SILVER	10.0	10.06	100.6
SODIUM	5000.0	4884.00	97.7
THALLIUM	10.0	9.67	96.7
VANADIUM	25.0	24.23	96.9
ZINC	25.0	24.56	98.2

SAMPLE: CCV

File: JGL12A Dec 12, 2013 19:18

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.30	101.1
ANTIMONY	25.0	23.73	94.9
ARSENIC	25.0	24.28	97.1
BARIUM	25.0	24.00	96.0
BERYLLIUM	10.0	9.20	92.0
CADMIUM	10.0	9.92	99.2
CALCIUM	5000.0	4958.00	99.2
CHROMIUM	25.0	24.29	97.2
COBALT	10.0	9.74	97.4
COPPER	25.0	24.36	97.4
IRON	5000.0	4816.00	96.3
LEAD	25.0	24.31	97.2
MAGNESIUM	5000.0	5001.00	100.0
MANGANESE	25.0	24.54	98.2
MOLYBDENUM	25.0	24.49	98.0
NICKEL	25.0	24.22	96.9
POTASSIUM	5000.0	4899.00	98.0
SELENIUM	25.0	24.48	97.9
SILVER	10.0	10.06	100.6
SODIUM	5000.0	4969.00	99.4
THALLIUM	10.0	9.64	96.4
VANADIUM	25.0	24.25	97.0
ZINC	25.0	24.55	98.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: JGL12A Dec 12, 2013 20:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	508.70	101.7
ANTIMONY	25.0	23.41	93.6
ARSENIC	25.0	23.69	94.8
BARIUM	25.0	23.73	94.9
BERYLLIUM	10.0	8.66	86.6 *
CADMIUM	10.0	9.60	96.0
CALCIUM	5000.0	4852.00	97.0
CHROMIUM	25.0	23.99	96.0
COBALT	10.0	9.53	95.3
COPPER	25.0	23.98	95.9
IRON	5000.0	4653.00	93.1
LEAD	25.0	24.34	97.4
MAGNESIUM	5000.0	5040.00	100.8
MANGANESE	25.0	24.21	96.8
MOLYBDENUM	25.0	23.94	95.8
NICKEL	25.0	23.74	95.0
POTASSIUM	5000.0	4984.00	99.7
SELENIUM	25.0	23.97	95.9
SILVER	10.0	9.85	98.5
SODIUM	5000.0	5009.00	100.2
THALLIUM	10.0	9.60	96.0
VANADIUM	25.0	23.80	95.2
ZINC	25.0	23.90	95.6

NO Samples Affected

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICV

File: JGL17A Dec 17, 2013 13:42

Analyte	True	Found	%R (1)
ALUMINUM	400.0	421.10	105.3
BERYLLIUM	20.0	20.06	100.3
CALCIUM	4000.0	3949.00	98.7
IRON	4000.0	3953.00	98.8
MAGNESIUM	4000.0	4110.00	102.8
MANGANESE	20.0	18.70	93.5
MOLYBDENUM	40.0	40.76	101.9
POTASSIUM	4000.0	4024.00	100.6
SODIUM	4000.0	3981.00	99.5

SAMPLE: CCV

File: JGL17A Dec 17, 2013 13:59

Analyte	True	Found	%R (1)
ALUMINUM	500.0	498.50	99.7
BERYLLIUM	10.0	9.97	99.7
CALCIUM	5000.0	5004.00	100.1
IRON	5000.0	4773.00	95.5
MAGNESIUM	5000.0	5034.00	100.7
MANGANESE	25.0	24.18	96.7
MOLYBDENUM	25.0	25.65	102.6
POTASSIUM	5000.0	4887.00	97.7
SODIUM	5000.0	4931.00	98.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: JGL17A Dec 17, 2013 14:08

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.70	98.9
BERYLLIUM	10.0	9.84	98.4
CALCIUM	5000.0	4843.00	96.9
IRON	5000.0	4851.00	97.0
MAGNESIUM	5000.0	4975.00	99.5
MANGANESE	25.0	24.59	98.4
MOLYBDENUM	25.0	24.61	98.4
POTASSIUM	5000.0	4877.00	97.5
SODIUM	5000.0	4774.00	95.5

SAMPLE: CCV

File: JGL17A Dec 17, 2013 14:48

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.10	101.4
BERYLLIUM	10.0	9.55	95.5
CALCIUM	5000.0	4880.00	97.6
IRON	5000.0	4851.00	97.0
MAGNESIUM	5000.0	5052.00	101.0
MANGANESE	25.0	24.48	97.9
MOLYBDENUM	25.0	24.49	98.0
POTASSIUM	5000.0	4908.00	98.2
SODIUM	5000.0	4899.00	98.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: JGL17A Dec 17, 2013 15:30

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.80	101.4
BERYLLIUM	10.0	9.49	94.9
CALCIUM	5000.0	4787.00	95.7
IRON	5000.0	4780.00	95.6
MAGNESIUM	5000.0	5074.00	101.5
MANGANESE	25.0	24.28	97.1
MOLYBDENUM	25.0	23.93	95.7
POTASSIUM	5000.0	4906.00	98.1
SODIUM	5000.0	4947.00	98.9

SAMPLE: CCV

File: JGL17A Dec 17, 2013 16:11

Analyte	True	Found	%R (1)
ALUMINUM	500.0	514.90	103.0
BERYLLIUM	10.0	9.39	93.9
CALCIUM	5000.0	4838.00	96.8
IRON	5000.0	4829.00	96.6
MAGNESIUM	5000.0	5168.00	103.4
MANGANESE	25.0	24.75	99.0
MOLYBDENUM	25.0	24.10	96.4
POTASSIUM	5000.0	4999.00	100.0
SODIUM	5000.0	5087.00	101.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICV

File: JGL18A Dec 18, 2013 18:09

Analyte	True	Found	%R (1)
ALUMINUM	400.0	422.70	105.7
CALCIUM	4000.0	3930.00	98.3
IRON	4000.0	3986.00	99.7
MAGNESIUM	4000.0	4048.00	101.2
MANGANESE	20.0	18.54	92.7
MOLYBDENUM	40.0	40.73	101.8
POTASSIUM	4000.0	4077.00	101.9
SODIUM	4000.0	4034.00	100.8

SAMPLE: CCV

File: JGL18A Dec 18, 2013 18:25

Analyte	True	Found	%R (1)
ALUMINUM	500.0	502.80	100.6
CALCIUM	5000.0	4862.00	97.2
IRON	5000.0	4835.00	96.7
MAGNESIUM	5000.0	5071.00	101.4
MANGANESE	25.0	24.58	98.3
MOLYBDENUM	25.0	25.91	103.6
POTASSIUM	5000.0	4965.00	99.3
SODIUM	5000.0	5045.00	100.9

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: JGL18A Dec 18, 2013 18:58

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.30	101.3
CALCIUM	5000.0	4874.00	97.5
IRON	5000.0	4864.00	97.3
MAGNESIUM	5000.0	5045.00	100.9
MANGANESE	25.0	24.91	99.6
MOLYBDENUM	25.0	25.06	100.2
POTASSIUM	5000.0	4935.00	98.7
SODIUM	5000.0	4931.00	98.6

SAMPLE: CCV

File: JGL18A Dec 18, 2013 19:11

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.60	101.1
CALCIUM	5000.0	4848.00	97.0
IRON	5000.0	4912.00	98.2
MAGNESIUM	5000.0	5041.00	100.8
MANGANESE	25.0	25.09	100.4
MOLYBDENUM	25.0	25.01	100.0
POTASSIUM	5000.0	4885.00	97.7
SODIUM	5000.0	4956.00	99.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCV

File: JGL18A Dec 18, 2013 19:51

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.60	101.5
CALCIUM	5000.0	4813.00	96.3
IRON	5000.0	4920.00	98.4
MAGNESIUM	5000.0	4995.00	99.9
MANGANESE	25.0	25.27	101.1
MOLYBDENUM	25.0	25.10	100.4
POTASSIUM	5000.0	4924.00	98.5
SODIUM	5000.0	4855.00	97.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: PQL

File: HGL09A Dec 09, 2013 13:35

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.17	85.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: PQL

File: HGL14A Dec 14, 2013 09:50

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.16	80.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: PQL

File: JGL11A Dec 11, 2013 17:28

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	60.12	100.2
ANTIMONY	0.2	0.18	90.0
ARSENIC	1.0	0.94	94.0
BARIUM	0.4	0.40	100.0
BERYLLIUM	0.2	0.18	90.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	19.09	95.5
CHROMIUM	1.0	1.00	100.0
COBALT	0.2	0.20	100.0
COPPER	0.6	0.62	103.3
IRON	20.0	17.67	88.4
LEAD	0.2	0.18	90.0
MAGNESIUM	20.0	20.51	102.6
MANGANESE	0.4	0.32	80.0
MOLYBDENUM	1.0	1.03	103.0
NICKEL	0.4	0.41	102.5
POTASSIUM	200.0	206.30	103.2
SELENIUM	1.0	0.98	98.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	205.00	102.5
THALLIUM	0.2	0.18	90.0
VANADIUM	1.0	1.04	104.0
ZINC	2.0	2.21	110.5

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: PQL

File: JGL12A Dec 12, 2013 15:04

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	59.44	99.1
ANTIMONY	0.2	0.17	85.0
ARSENIC	1.0	0.82	82.0
BARIUM	0.4	0.44	110.0
BERYLLIUM	0.2	0.19	95.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	11.79	58.9 •
CHROMIUM	1.0	0.91	91.0
COBALT	0.2	0.18	90.0
COPPER	0.6	0.63	105.0
IRON	20.0	19.03	95.2
LEAD	0.2	0.19	95.0
MAGNESIUM	20.0	20.10	100.5
MANGANESE	0.4	0.33	82.5
MOLYBDENUM	1.0	0.98	98.0
NICKEL	0.4	0.39	97.5
POTASSIUM	200.0	192.70	96.3
SELENIUM	1.0	0.85	85.0
SILVER	0.2	0.19	95.0
SODIUM	200.0	205.90	103.0
THALLIUM	0.2	0.17	85.0
VANADIUM	1.0	0.87	87.0
ZINC	2.0	2.10	105.0

NO samples affected

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: PQL

File: JGL17A Dec 17, 2013 13:49

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	59.97	99.9
BERYLLIUM	0.2	0.17	85.0
CALCIUM	20.0	22.15	110.8
IRON	20.0	17.10	85.5
MAGNESIUM	20.0	20.51	102.6
MANGANESE	0.4	0.43	107.5
MOLYBDENUM	1.0	1.01	101.0
POTASSIUM	200.0	198.90	99.5
SODIUM	200.0	204.10	102.1

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: PQL

File: JGL18A Dec 18, 2013 18:15

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	59.83	99.7
CALCIUM	20.0	17.57	87.9
IRON	20.0	19.13	95.6
MAGNESIUM	20.0	20.37	101.8
MANGANESE	0.4	0.33	82.5
MOLYBDENUM	1.0	1.05	105.0
POTASSIUM	200.0	198.30	99.2
SODIUM	200.0	209.20	104.6

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICB

File: HGL09A Dec 09, 2013 13:33

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL09A Dec 09, 2013 13:40

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL09A Dec 09, 2013 14:03

Analyte	Result	C
MERCURY	0.030	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCB

File: HGL09A Dec 09, 2013 14:29

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL09A Dec 09, 2013 14:55

Analyte	Result	C
MERCURY	0.030	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICB

File: HGL14A Dec 14, 2013 9:48

Analyte	Result	C
MERCURY	-0.089	U

SAMPLE: CCB

File: HGL14A Dec 14, 2013 10:14

Analyte	Result	C
MERCURY	-0.073	U

SAMPLE: CCB

File: HGL14A Dec 14, 2013 10:39

Analyte	Result	C
MERCURY	-0.067	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCB

File: HGL14A Dec 14, 2013 11:09

Analyte	Result	C
MERCURY	-0.082	U

SAMPLE: CCB

File: HGL14A Dec 14, 2013 11:35

Analyte	Result	C
MERCURY	-0.076	U

SAMPLE: CCB

File: HGL14A Dec 14, 2013 11:59

Analyte	Result	C
MERCURY	-0.086	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCB

File: HGL14A Dec 14, 2013 12:20

Analyte	Result	C
MERCURY	-0.090	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

only RB affected no qual.

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICB

File: JGL11A Dec 11, 2013 17:25

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.016	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	-0.024	U
MOLYBDENUM	0.138	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.005	J
SODIUM	3.900	U
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB

File: JGL11A Dec 11, 2013 17:42

Analyte	Result	C
ALUMINUM	0.378	J
ANTIMONY	0.006	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.011	J
COPPER	0.062	J
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	-0.050	U
MOLYBDENUM	0.506	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	5.074	J
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB

File: JGL11A Dec 11, 2013 18:21

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.013	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	-0.028	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCB
File: JGL11A Dec 11, 2013 19:01

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.009	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-5.214	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-6.500	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	-0.050	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.005	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL11A Dec 11, 2013 19:42

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.006	U
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-6.982	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-6.584	U
LEAD	0.010	J
MAGNESIUM	0.690	U
MANGANESE	-0.070	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL11A Dec 11, 2013 20:23

Analyte	Result	C
ALUMINUM	1.273	J
ANTIMONY	0.007	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-5.630	U
CHROMIUM	0.034	J
COBALT	-0.010	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	-0.045	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.005	J
SODIUM	3.900	U
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCB

File: JGL11A Dec 11, 2013 21:04

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.006	U
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-4.352	U
CHROMIUM	0.095	J
COBALT	-0.008	U
COPPER	0.030	U
IRON	-5.546	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	-0.063	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	-4.113	U
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB

File: JGL11A Dec 11, 2013 21:45

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.007	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-4.945	U
CHROMIUM	0.066	J
COBALT	0.006	U
COPPER	0.030	U
IRON	-8.511	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	-0.071	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	-4.211	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICB
File: JGL12A Dec 12, 2013 15:00

Analyte	Result	C
ALUMINUM	-0.669	U
ANTIMONY	0.007	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.004	J
CADMIUM	0.004	U
CALCIUM	-6.315	U
CHROMIUM	-0.153	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.005	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL12A Dec 12, 2013 15:17

Analyte	Result	C
ALUMINUM	-0.516	U
ANTIMONY	0.011	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.056	U
COBALT	0.006	U
COPPER	0.091	J
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	-0.023	U
MOLYBDENUM	0.458	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	6.756	J
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL12A Dec 12, 2013 15:56

Analyte	Result	C
ALUMINUM	-0.508	U
ANTIMONY	0.010	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-5.647	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCB
File: JGL12A Dec 12, 2013 16:36

Analyte	Result	C
ALUMINUM	-0.623	U
ANTIMONY	0.017	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-8.459	U
CHROMIUM	-0.036	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-7.130	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL12A Dec 12, 2013 17:17

Analyte	Result	C
ALUMINUM	-0.605	U
ANTIMONY	0.013	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	-0.005	U
CALCIUM	-6.888	U
CHROMIUM	-0.089	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-6.055	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL12A Dec 12, 2013 17:58

Analyte	Result	C
ALUMINUM	-0.558	U
ANTIMONY	0.007	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-8.506	U
CHROMIUM	-0.130	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCB
File: JGL12A Dec 12, 2013 18:39

Analyte	Result	C
ALUMINUM	2.876	J
ANTIMONY	0.009	J
ARSENIC	0.410	U
BARIUM	0.020	J
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-8.074	U
CHROMIUM	-0.168	U
COBALT	0.009	J
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	1.176	J
MANGANESE	0.096	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL12A Dec 12, 2013 19:21

Analyte	Result	C
ALUMINUM	-0.448	U
ANTIMONY	0.013	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-12.480	U
CHROMIUM	-0.161	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.011	J
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL12A Dec 12, 2013 20:03

Analyte	Result	C
ALUMINUM	2.305	J
ANTIMONY	0.011	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-10.740	U
CHROMIUM	-0.160	U
COBALT	0.006	U
COPPER	0.030	U
IRON	6.672	J
LEAD	0.009	U
MAGNESIUM	1.460	J
MANGANESE	0.089	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICB
File: JGL17A Dec 17, 2013 13:45

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.124	J
POTASSIUM	8.200	U
SODIUM	3.900	U

SAMPLE: CCB
File: JGL17A Dec 17, 2013 14:02

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	4.453	J
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.505	J
POTASSIUM	8.200	U
SODIUM	6.036	J

SAMPLE: CCB
File: JGL17A Dec 17, 2013 14:12

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.005	J
CALCIUM	4.100	U
IRON	-6.183	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.179	J
POTASSIUM	8.200	U
SODIUM	3.900	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCB
File: JGL17A Dec 17, 2013 14:52

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
POTASSIUM	9.031	J
SODIUM	3.900	U

SAMPLE: CCB
File: JGL17A Dec 17, 2013 15:33

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
IRON	6.552	J
MAGNESIUM	0.690	U
MANGANESE	0.029	J
MOLYBDENUM	0.120	U
POTASSIUM	13.470	J
SODIUM	3.900	U

SAMPLE: CCB
File: JGL17A Dec 17, 2013 16:14

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.033	J
MOLYBDENUM	0.120	U
POTASSIUM	12.310	J
SODIUM	3.900	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICB
File: JGL18A Dec 18, 2013 18:12

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	4.100	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.123	J
POTASSIUM	8.200	U
SODIUM	3.900	U

SAMPLE: CCB
File: JGL18A Dec 18, 2013 18:28

Analyte	Result	C
ALUMINUM	0.539	J
CALCIUM	4.100	U
IRON	-8.959	U
MAGNESIUM	1.134	J
MANGANESE	0.020	U
MOLYBDENUM	0.544	J
POTASSIUM	8.200	U
SODIUM	6.768	J

SAMPLE: CCB
File: JGL18A Dec 18, 2013 19:01

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	4.100	U
IRON	-6.301	U
MAGNESIUM	0.690	U
MANGANESE	0.021	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	5.711	J

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: CCB

File: JGL18A Dec 18, 2013 19:14

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	4.100	U
IRON	-6.602	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
POTASSIUM	-9.258	U
SODIUM	3.900	U

SAMPLE: CCB

File: JGL18A Dec 18, 2013 19:54

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	-4.175	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.028	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGL06HGW2

Matrix: WATER **SDG Name:** SG9314

QC Batch ID: GL06HGW2

Concentration Units : ug/L

Analyte	RESULT	C
MERCURY	0.010	J

Affects RB only no qual.

FORM III (Part 2) - IN

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGL06IMW2

Matrix: WATER **SDG Name:** SG9314

QC Batch ID: GL06IMW2

Concentration Units : ug/L

Analyte	RESULT	C
ALUMINUM	12.005	J
ANTIMONY	0.50	U
ARSENIC	4.0	U
BARIUM	1.0	U
BERYLLIUM	0.20	U
CADMIUM	0.037	J
CALCIUM	80	U
CHROMIUM	0.739	J
COBALT	0.30	U
COPPER	2.363	J
IRON	60	U
LEAD	0.505	J
MAGNESIUM	80	U
MANGANESE	0.359	J
NICKEL	0.913	J
POTASSIUM	400	U
SELENIUM	0.190	J
SILVER	0.40	U
SODIUM	400	U
THALLIUM	0.40	U
VANADIUM	4.0	U
ZINC	10.135	

Affects RB only no qual

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL10IMS1

Matrix: SOIL **SDG Name:** SG9314

QC Batch ID: GL10IMS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	0.613	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.10	U
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	7.335	J
CHROMIUM	0.111	J
COBALT	0.030	U
COPPER	0.086	J
IRON	6.0	U
LEAD	0.013	J
MAGNESIUM	1.464	J
MANGANESE	0.10	U
NICKEL	0.109	J
POTASSIUM	40	U
SELENIUM	0.30	U
SILVER	0.040	U
SODIUM	4.708	J
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.572	J

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL12HGS1

Matrix: SOIL **SDG Name:** SG9314

QC Batch ID: GL12HGS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.005	J

FORM III (Part 2) - IN

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL11A Dec 11, 2013 17:31

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	92550	92.5
ANTIMONY	0	0	
ARSENIC	0	0	
BARIUM	0	0	
BERYLLIUM	0	0	
CADMIUM	0	0	
CALCIUM	100000	91180	91.2
CHROMIUM	0	1	
COBALT	0	0	
COPPER	0	1	
IRON	100000	87450	87.5
LEAD	0	0	
MAGNESIUM	100000	92650	92.7
MANGANESE	0	0	
MOLYBDENUM	2000	1861	93.0
NICKEL	0	0	
POTASSIUM	100000	93870	93.9
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	94650	94.7
THALLIUM	0	0	
VANADIUM	0	0	
ZINC	0	3	

SAMPLE: ICSAB

File: JGL11A Dec 11, 2013 17:35

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	95770	95.8
ANTIMONY	20	20	100.0
ARSENIC	20	20	100.0
BARIUM	21	20	95.2
BERYLLIUM	20	20	100.0
CADMIUM	20	19	95.0
CALCIUM	100000	93740	93.7
CHROMIUM	20	21	105.0
COBALT	20	19	95.0
COPPER	20	19	95.0
IRON	100000	90910	90.9
LEAD	20	20	100.0
MAGNESIUM	100000	94350	94.3
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1937	96.9
NICKEL	20	19	95.0
POTASSIUM	100000	96850	96.9
SELENIUM	20	20	100.0
SILVER	20	19	95.0
SODIUM	100000	96590	96.6
THALLIUM	20	21	105.0
VANADIUM	20	20	100.0
ZINC	20	22	110.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL12A Dec 12, 2013 15:07

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	94320	94.3
ANTIMONY	0	0	
ARSENIC	0	0	
BARIUM	0	0	
BERYLLIUM	0	0	
CADMIUM	0	0	
CALCIUM	100000	93090	93.1
CHROMIUM	0	1	
COBALT	0	0	
COPPER	0	1	
IRON	100000	86430	86.4
LEAD	0	0	
MAGNESIUM	100000	92870	92.9
MANGANESE	0	0	
MOLYBDENUM	2000	1821	91.0
NICKEL	0	0	
POTASSIUM	100000	95180	95.2
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	95580	95.6
THALLIUM	0	0	
VANADIUM	0	0	
ZINC	0	3	

SAMPLE: ICSAB

File: JGL12A Dec 12, 2013 15:10

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	94980	95.0
ANTIMONY	20	20	100.0
ARSENIC	20	20	100.0
BARIUM	21	20	95.2
BERYLLIUM	20	20	100.0
CADMIUM	20	18	90.0
CALCIUM	100000	93660	93.7
CHROMIUM	20	20	100.0
COBALT	20	19	95.0
COPPER	20	19	95.0
IRON	100000	88590	88.6
LEAD	20	20	100.0
MAGNESIUM	100000	94190	94.2
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1891	94.5
NICKEL	20	18	90.0
POTASSIUM	100000	96220	96.2
SELENIUM	20	19	95.0
SILVER	20	18	90.0
SODIUM	100000	96640	96.6
THALLIUM	20	20	100.0
VANADIUM	20	19	95.0
ZINC	20	21	105.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL17A Dec 17, 2013 13:52

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	91940	91.9
BERYLLIUM	0	0	
CALCIUM	100000	91100	91.1
IRON	100000	88250	88.3
MAGNESIUM	100000	92860	92.9
MANGANESE	0	0	
MOLYBDENUM	2000	1837	91.8
POTASSIUM	100000	93310	93.3
SODIUM	100000	93570	93.6

SAMPLE: ICSAB

File: JGL17A Dec 17, 2013 13:55

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	92390	92.4
BERYLLIUM	20	20	100.0
CALCIUM	100000	92730	92.7
IRON	100000	88290	88.3
MAGNESIUM	100000	93770	93.8
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1875	93.8
POTASSIUM	100000	94050	94.0
SODIUM	100000	94180	94.2

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG9314

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL18A Dec 18, 2013 18:18

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	94180	94.2
CALCIUM	100000	93030	93.0
IRON	100000	89460	89.5
MAGNESIUM	100000	93560	93.6
MANGANESE	0	0	
MOLYBDENUM	2000	1898	94.9
POTASSIUM	100000	96510	96.5
SODIUM	100000	96370	96.4

SAMPLE: ICSAB

File: JGL18A Dec 18, 2013 18:22

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	92130	92.1
CALCIUM	100000	92590	92.6
IRON	100000	88650	88.6
MAGNESIUM	100000	92000	92.0
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1908	95.4
POTASSIUM	100000	96330	96.3
SODIUM	100000	94430	94.4

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1001-0001S

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 90.1 **Lab Sample ID:** SG9314-005S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	14792.7924		12651.7150		120.66	1774.5		80	120	MS
ANTIMONY, TOTAL	2.2400		0.1328		6.03	34.9	N	80	120	MS
ARSENIC, TOTAL	10.4792		5.1003		6.03	89.2		80	120	MS
BARIUM, TOTAL	138.8483		15.3549		120.66	102.3		80	120	MS
BERYLLIUM, TOTAL	3.0047		0.3054		3.02	89.4		80	120	MS
CADMIUM, TOTAL	14.8380		0.0757		15.08	97.9		80	120	MS
CALCIUM, TOTAL	1320.0094		843.0476		150.82	316.2		80	120	MS
CHROMIUM, TOTAL	29.7726		16.4979		12.07	110.0		80	120	MS
COBALT, TOTAL	44.5232		14.3618		30.16	100.0		80	120	MS
COPPER, TOTAL	32.3366		17.0080		15.08	101.6		80	120	MS
IRON, TOTAL	27139.2238		25645.4493		60.33	2476.0		80	120	MS
LEAD, TOTAL	17.6886		11.4456		6.03	103.5		80	120	MS
MAGNESIUM, TOTAL	4476.4486		3921.2216		301.65	184.1		80	120	MS
MANGANESE, TOTAL	562.2709		458.1259		30.16	345.3		80	120	MS
MERCURY, TOTAL	0.1370		0.0133	J	0.15	82.5		80	120	CV
NICKEL, TOTAL	55.8350		26.2485		30.16	98.1		80	120	MS
POTASSIUM, TOTAL	1197.8421		301.8171		603.29	148.5	N	80	120	MS
SELENIUM, TOTAL	5.7916		0.2059	J	6.03	92.6		80	120	MS
SILVER, TOTAL	3.0587		0.0279	J	3.02	100.4		80	120	MS
SODIUM, TOTAL	525.7716		47.6127	J	452.47	105.7		80	120	MS
THALLIUM, TOTAL	6.1084		0.0445	J	6.03	100.6		80	120	MS
VANADIUM, TOTAL	50.0433		17.9470		30.16	106.4		80	120	MS
ZINC, TOTAL	88.3525		56.5532		30.16	105.4		80	120	MS

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services | **Client Field ID:** TF2-001-SS1003-0001S

Matrix: SOIL | **SDG Name:** SG9314

Percent Solids: 89.2 | **Lab Sample ID:** SG9314-011S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	16414.6995		14605.0296		141.9	1275.3		80	120	MS
ANTIMONY, TOTAL	2.5890		0.0898		7.1	35.2	N	80	120	MS
ARSENIC, TOTAL	14.7048		7.1116		7.1	106.9		80	120	MS
BARIUM, TOTAL	154.0364		14.2162		141.9	98.5		80	120	MS
BERYLLIUM, TOTAL	3.4653		0.3351		3.55	88.2		80	120	MS
CADMIUM, TOTAL	16.8794		0.0826		17.74	94.7		80	120	MS
CALCIUM, TOTAL	883.3499		666.1071		177.38	122.5	N	80	120	MS
CHROMIUM, TOTAL	31.9106		17.9646		14.19	98.3		80	120	MS
COBALT, TOTAL	48.2117		11.9951		35.48	102.1		80	120	MS
COPPER, TOTAL	36.0080		18.4866		17.74	98.8		80	120	MS
IRON, TOTAL	26677.8777		27024.0342		70.95	-487.9		80	120	MS
LEAD, TOTAL	22.5307		16.3637		7.1	86.9		80	120	MS
MAGNESIUM, TOTAL	4491.2491		4193.3846		354.76	84.0		80	120	MS
MANGANESE, TOTAL	411.5205		331.7223		35.48	224.9		80	120	MS
MERCURY, TOTAL	0.2360		0.2064		0.15	19.7	N	80	120	CV
NICKEL, TOTAL	54.7393		23.1670		35.48	89.0		80	120	MS
POTASSIUM, TOTAL	1353.4056		389.5609		709.52	135.8	N	80	120	MS
SELENIUM, TOTAL	6.6517		0.2927	J	7.1	89.6		80	120	MS
SILVER, TOTAL	3.5582		0.0665	J	3.55	98.4		80	120	MS
SODIUM, TOTAL	572.5810		53.1442	J	532.14	97.6		80	120	MS
THALLIUM, TOTAL	6.9604		0.0492	J	7.1	97.3		80	120	MS
VANADIUM, TOTAL	55.3779		21.1106		35.48	96.6		80	120	MS
ZINC, TOTAL	81.5591		52.6538		35.48	81.5		80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1001-0001S

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 90.1 **Lab Sample ID:** SG9314-005A

Concentration Units : ug/L

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	42590.0000		42170.0000		600	70.0		75	125	MS
ANTIMONY, TOTAL	2.0450		0.4425		2	80.1		75	125	MS
ARSENIC, TOTAL	26.0300		17.0000		10	90.3		75	125	MS
BARIUM, TOTAL	54.1700		51.1800		4	74.8		75	125	MS
BERYLLIUM, TOTAL	2.6670		1.0180		2	82.4		75	125	MS
CADMIUM, TOTAL	1.9320		0.2522		2	84.0		75	125	MS
CALCIUM, TOTAL	1573.0000		1405.0000		200	84.0		75	125	MS
CHROMIUM, TOTAL	64.4800		54.9900		10	94.9		75	125	MS
COBALT, TOTAL	49.1700		47.8700		2	65.0		75	125	MS
COPPER, TOTAL	61.3300		56.6900		6	77.3		75	125	MS
IRON, TOTAL	84690.0000		85480.0000		200	-395.0		75	125	MS
LEAD, TOTAL	39.7700		38.1500		2	81.0		75	125	MS
MAGNESIUM, TOTAL	13050.0000		13070.0000		200	-10.0		75	125	MS
MANGANESE, TOTAL	308.0000		305.4000		4	65.0		75	125	MS
MERCURY, TOTAL	0.8970		0.0850	J	1	81.2		75	125	CV
NICKEL, TOTAL	89.5900		87.4900		4	52.5		75	125	MS
POTASSIUM, TOTAL	2872.0000		1006.0000		2000	93.3		75	125	MS
SELENIUM, TOTAL	10.1900		0.6863	J	10	95.0		75	125	MS
SILVER, TOTAL	1.8800		0.0929	J	2	89.4		75	125	MS
SODIUM, TOTAL	1992.0000		158.7000	J	2000	91.7		75	125	MS
THALLIUM, TOTAL	1.8570		0.1482	J	2	85.4		75	125	MS
VANADIUM, TOTAL	68.6600		59.8200		10	88.4		75	125	MS
ZINC, TOTAL	206.8000		188.5000		20	91.5		75	125	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1003-0001S

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 89.2 **Lab Sample ID:** SG9314-011A

Concentration Units : ug/L

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	42030.0000		41690.0000		600	56.7		75	125	MS
ANTIMONY, TOTAL	1.9010		0.2564		2	82.2		75	125	MS
ARSENIC, TOTAL	28.9500		20.3000		10	86.5		75	125	MS
BARIUM, TOTAL	44.7000		40.5800		4	103.0		75	125	MS
BERYLLIUM, TOTAL	2.4930		0.9565		2	76.8		75	125	MS
CADMIUM, TOTAL	1.9130		0.2359		2	83.9		75	125	MS
CALCIUM, TOTAL	1120.0000		950.7000		200	84.6		75	125	MS
CHROMIUM, TOTAL	60.3300		51.2800		10	90.5		75	125	MS
COBALT, TOTAL	35.6400		34.2400		2	70.0		75	125	MS
COPPER, TOTAL	57.9500		52.7700		6	86.3		75	125	MS
IRON, TOTAL	77030.0000		77140.0000		200	-55.0		75	125	MS
LEAD, TOTAL	47.9100		46.7100		2	60.0		75	125	MS
MAGNESIUM, TOTAL	12100.0000		11970.0000		200	65.0		75	125	MS
MANGANESE, TOTAL	945.9000		946.9000		4	-25.0		75	125	MS
MERCURY, TOTAL	2.1890		1.3070		1	88.2		75	125	CV
NICKEL, TOTAL	68.7700		66.1300		4	66.0		75	125	MS
POTASSIUM, TOTAL	2995.0000		1112.0000		2000	94.2		75	125	MS
SELENIUM, TOTAL	9.6310		0.8355	J	10	88.0		75	125	MS
SILVER, TOTAL	1.9750		0.1897	J	2	89.3		75	125	MS
SODIUM, TOTAL	2026.0000		151.7000	J	2000	93.7		75	125	MS
THALLIUM, TOTAL	1.8920		0.1405	J	2	87.6		75	125	MS
VANADIUM, TOTAL	68.5100		60.2600		10	82.5		75	125	MS
ZINC, TOTAL	167.4000		150.3000		20	85.5		75	125	MS

Comments:

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1001-0001D

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 90.1 **Lab Sample ID:** SG9314-005D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M
ALUMINUM, TOTAL		12651.7150		11744.8093		7.4		MS
ANTIMONY, TOTAL	0.058	0.1328		0.0982		30.0		MS
ARSENIC, TOTAL		5.1003		4.2591		18.0		MS
BARIUM, TOTAL		15.3549		14.7011		4.4		MS
BERYLLIUM, TOTAL	0.058	0.3054		0.2762		10.0		MS
CADMIUM, TOTAL	0.058	0.0757		0.0722		4.7		MS
CALCIUM, TOTAL		843.0476		830.5340		1.5		MS
CHROMIUM, TOTAL		16.4979		15.2245		8.0		MS
COBALT, TOTAL		14.3618		13.3323		7.4		MS
COPPER, TOTAL		17.0080		16.9615		0.3		MS
IRON, TOTAL		25645.4493		23647.7881		8.1		MS
LEAD, TOTAL		11.4456		9.6167		17.4		MS
MAGNESIUM, TOTAL		3921.2216		3678.1614		6.4		MS
MANGANESE, TOTAL		458.1259		438.4173		4.4		MS
MERCURY, TOTAL		0.0133	J	0.0111	J	18.0		CV
NICKEL, TOTAL		26.2485		24.5738		6.6		MS
POTASSIUM, TOTAL		301.8171		293.6202		2.8		MS
SELENIUM, TOTAL		0.2059	J	0.2459	J	17.7		MS
SILVER, TOTAL		0.0279	J	0.0305	J	8.9		MS
SODIUM, TOTAL	58	47.6127	J	65.7123		31.9		MS
THALLIUM, TOTAL		0.0445	J	0.0360	J	21.1		MS
VANADIUM, TOTAL		17.9470		17.2922		3.7		MS
ZINC, TOTAL		56.5532		54.4103		3.9		MS

Comments:

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1003-0001D

Matrix: SOIL **SDG Name:** SG9314

Percent Solids: 89.2 **Lab Sample ID:** SG9314-011D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M
ALUMINUM, TOTAL		14605.0296		14747.0812		1.0		MS
ANTIMONY, TOTAL	0.072	0.0898		0.1018		12.5		MS
ARSENIC, TOTAL		7.1116		8.9792		23.2	OK*	MS
BARIUM, TOTAL		14.2162		15.6837		9.8		MS
BERYLLIUM, TOTAL	0.072	0.3351		0.3754		11.3		MS
CADMIUM, TOTAL	0.072	0.0826		0.0881		6.4		MS
CALCIUM, TOTAL		666.1071		600.3704		10.4		MS
CHROMIUM, TOTAL		17.9646		17.9294		0.2		MS
COBALT, TOTAL		11.9951		11.7709		1.9		MS
COPPER, TOTAL		18.4866		20.0738		8.2		MS
IRON, TOTAL		27024.0342		26163.5931		3.2		MS
LEAD, TOTAL		16.3637		16.1972		1.0		MS
MAGNESIUM, TOTAL		4193.3846		4104.4476		2.1		MS
MANGANESE, TOTAL		331.7223		303.4760		8.9		MS
MERCURY, TOTAL	0.032	0.2064		0.0910		77.6	*	CV
NICKEL, TOTAL		23.1670		22.8837		1.2		MS
POTASSIUM, TOTAL		389.5609		461.4339		16.9		MS
SELENIUM, TOTAL		0.2927	J	0.2739	J	6.6		MS
SILVER, TOTAL	0.072	0.0665	J	0.0748		11.7		MS
SODIUM, TOTAL		53.1442	J	59.9936	J	12.1		MS
THALLIUM, TOTAL		0.0492	J	0.0558	J	12.6		MS
VANADIUM, TOTAL		21.1106		20.9743		0.6		MS
ZINC, TOTAL		52.6538		51.4231		2.4		MS

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL10IMS1

Matrix: SOIL **SDG Name:** SG9314

QC Batch ID: GL10IMS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	210.00	105.0	80	120
ANTIMONY	10.00	9.69	96.9	80	120
ARSENIC	10.00	10.10	101.0	80	120
BARIUM	200.00	197.00	98.5	80	120
BERYLLIUM	5.00	4.76	95.2	80	120
CADMIUM	25.00	26.20	104.8	80	120
CALCIUM	250.00	230.95	92.4	80	120
CHROMIUM	20.00	20.30	101.5	80	120
COBALT	50.00	51.40	102.8	80	120
COPPER	25.00	25.32	101.3	80	120
IRON	100.00	97.50	97.5	80	120
LEAD	10.00	10.24	102.4	80	120
MAGNESIUM	500.00	518.00	103.6	80	120
MANGANESE	50.00	48.08	96.2	80	120
NICKEL	50.00	50.95	101.9	80	120
POTASSIUM	1000.00	1005.00	100.5	80	120
SELENIUM	10.00	9.85	98.5	80	120
SILVER	5.00	5.41	108.2	80	120
SODIUM	750.00	773.50	103.1	80	120
THALLIUM	10.00	10.07	100.7	80	120
VANADIUM	50.00	50.20	100.4	80	120
ZINC	50.00	50.50	101.0	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL12HGS1

Matrix: SOIL **SDG Name:** SG9314

QC Batch ID: GL12HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.75	90.4	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGL06HGW2

Matrix: WATER **SDG Name:** SG9314

QC Batch ID: GL06HGW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	5.00	5.21	104.2	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGL06IMW2

Matrix: WATER **SDG Name:** SG9314

QC Batch ID: GL06IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000.00	2065.00	103.3	80	120
ANTIMONY	100.00	96.65	96.7	80	120
ARSENIC	100.00	104.00	104.0	80	120
BARIUM	2000.00	1976.50	98.8	80	120
BERYLLIUM	50.00	44.35	88.7	80	120
CADMIUM	250.00	274.30	109.7	80	120
CALCIUM	2500.00	2164.50	86.6	80	120
CHROMIUM	200.00	208.65	104.3	80	120
COBALT	500.00	527.50	105.5	80	120
COPPER	250.00	262.85	105.1	80	120
IRON	1000.00	1008.50	100.8	80	120
LEAD	100.00	104.50	104.5	80	120
MAGNESIUM	5000.00	5035.00	100.7	80	120
MANGANESE	500.00	485.45	97.1	80	120
NICKEL	500.00	519.00	103.8	80	120
POTASSIUM	10000.00	10085.00	100.8	80	120
SELENIUM	100.00	103.90	103.9	80	120
SILVER	50.00	56.65	113.3	80	120
SODIUM	7500.00	7605.00	101.4	80	120
THALLIUM	100.00	102.90	102.9	80	120
VANADIUM	500.00	500.50	100.1	80	120
ZINC	500.00	524.50	104.9	80	120

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1001-0001L

Matrix: SOIL **SDG Name:** SG9314

Lab Sample ID: SG9314-005L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	42170.00		43090.00		2.2		MS
ANTIMONY, TOTAL	0.44		0.39	J	11.4		MS
ARSENIC, TOTAL	17.00		16.25		4.4		MS
BARIUM, TOTAL	51.18		51.90		1.4		MS
BERYLLIUM, TOTAL	1.02		1.01		1.0		MS
CADMIUM, TOTAL	0.25		0.27	J	8.0		MS
CALCIUM, TOTAL	1405.00		1486.50		5.8		MS
CHROMIUM, TOTAL	54.99		56.65		3.0		MS
COBALT, TOTAL	47.87		50.15		4.8		MS
COPPER, TOTAL	56.69		60.70		7.1		MS
IRON, TOTAL	85480.00		90850.00		6.3		MS
LEAD, TOTAL	38.15		37.79		0.9		MS
MAGNESIUM, TOTAL	13070.00		13915.00		6.5		MS
MANGANESE, TOTAL	305.40		309.45		1.3		MS
MERCURY, TOTAL	0.09	J	-0.19	U	100.0		CV
NICKEL, TOTAL	87.49		92.00		5.2		MS
POTASSIUM, TOTAL	1006.00		1007.50		0.1		MS
SELENIUM, TOTAL	0.69	J	0.18	U	100.0		MS
SILVER, TOTAL	0.09	J	0.10	J	11.1		MS
SODIUM, TOTAL	158.70	J	158.80	J	0.1		MS
THALLIUM, TOTAL	0.15	J	0.14	J	6.7		MS
VANADIUM, TOTAL	59.82		62.35		4.2		MS
ZINC, TOTAL	188.50		201.25		6.8		MS

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-001-SS1003-0001L

Matrix: SOIL **SDG Name:** SG9314

Lab Sample ID: SG9314-011L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	41690.00		43020.00		3.2		MS
ANTIMONY, TOTAL	0.26		0.26	J	0.0		MS
ARSENIC, TOTAL	20.30		19.38		4.5		MS
BARIUM, TOTAL	40.58		43.08		6.2		MS
BERYLLIUM, TOTAL	0.96		0.99	J	3.1		MS
CADMIUM, TOTAL	0.24		0.29	J	20.8		MS
CALCIUM, TOTAL	950.70		983.00		3.4		MS
CHROMIUM, TOTAL	51.28		53.15		3.6		MS
COBALT, TOTAL	34.24		35.65		4.1		MS
COPPER, TOTAL	52.77		56.35		6.8		MS
IRON, TOTAL	77140.00		82000.00		6.3		MS
LEAD, TOTAL	46.71		46.60		0.2		MS
MAGNESIUM, TOTAL	11970.00		13005.00		8.6		MS
MANGANESE, TOTAL	946.90		1019.50		7.7		MS
MERCURY, TOTAL	1.31		1.04		20.6		CV
NICKEL, TOTAL	66.13		70.00		5.9		MS
POTASSIUM, TOTAL	1112.00		1163.50		4.6		MS
SELENIUM, TOTAL	0.84	J	-0.24	U	100.0		MS
SILVER, TOTAL	0.19	J	0.20	J	5.3		MS
SODIUM, TOTAL	151.70	J	152.85	J	0.8		MS
THALLIUM, TOTAL	0.14	J	0.17	J	21.4		MS
VANADIUM, TOTAL	60.26		61.60		2.2		MS
ZINC, TOTAL	150.30		159.65		6.2		MS

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
PQL				CRDL	12/14/13 09:50:55 am	0.162	911	4.74		1.00
Replicates	866.8	963.0	885.7	928.0						
% Recovery	80.86									
LCSOGL12HGS1				LCS	12/14/13 09:53:01 am	4.483	17607	0.27		1.00
Replicates	17565.7	17647.9	17565.6	17647.1						
% Recovery	89.66									
PBSGL12HGS1				PBK	12/14/13 09:55:07 am	-0.082	-32	96.53		1.00
Replicates	8.1	-33.2	-68.1	-36.4						
SG9298-007				UNK	12/14/13 09:57:14 am	0.047	468	4.81		1.00
Replicates	449.0	471.6	452.7	498.2						
SG9298-008				UNK	12/14/13 09:59:22 am	0.026	388	5.91		1.00
Replicates	380.6	368.8	380.1	421.0						
SG9298-009				UNK	12/14/13 10:01:29 am	0.047	466	3.44		1.00
Replicates	442.6	471.8	479.0	470.6						
SG9298-010				UNK	12/14/13 10:03:36 am	0.090	633	6.56		1.00
Replicates	575.9	665.1	662.0	628.1						

Wg TF2-003-SB1013-0204 rep result 0.009 mg/kg

SG9314-001				UNK	12/14/13 10:05:43 am	0.058	510	8.39		1.00
Replicates	570.4	485.8	510.0	474.5						

$\left(0.0586\frac{g}{L}\right)\left(\frac{0.1L}{0.72g}\right)\left(\frac{1mg}{1000ug}\right)\left(\frac{1000g}{1kg}\right)\left(\frac{1}{933}\right) = 0.0086\ mg/kg$

SG9314-002				UNK	12/14/13 10:07:50 am	0.088	625	5.70		1.00
Replicates	588.9	599.4	658.2	652.2						
SG9314-003				UNK	12/14/13 10:09:58 am	0.195	1038	1.54		1.00
Replicates	1027.6	1020.8	1052.1	1050.8						
CCV				CCV	12/14/13 10:12:06 am	5.466	21406	0.63		1.00
Replicates	21270.9	21381.5	21379.5	21591.1						
% Recovery	109.32									
CCB				CCB	12/14/13 10:14:11 am	-0.073	4	956.63		1.00
Replicates	19.1	-32.5	43.2	-15.6						

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL12A.B\073SMPL.D\073SMPL.D#
Date Acquired: Dec 12 2013 06:05 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9314-001
Misc Info: DILUTION 1.6/8
Vial Number: 2406
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 12 2013 02:56 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Sample
TF2-003-SB1013-0204
Co - rep result 7.4 mg/kg

$\left(16.71\frac{ug}{L}\right)\left(\frac{0.1L}{1.21g}\right)\left(\frac{1mg}{1000ug}\right)\left(\frac{1000g}{1kg}\right)\left(\frac{1}{.933}\right)(5)$

7.4 mg/kg

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.1615	0.6323	ppb	1.32	100.	
11 B	10.06	2.012	ppb	2.86	1000.	
23 Na	699.	139.8	ppb	2.02	200000.	
25 Mg	39,365.	7,873.	ppb	0.95	200000.	
27 Al	117,200.	23,440.	ppb	1.52	200000.	
28 Si	4,066.5	813.3	ppb	3.81	#VALUE!	
29 Si	5,750.	1,150.	ppb	8.63	10000.	
39 K	5,495.	1,099.	ppb	0.91	200000.	
43 Ca	7,145.	1,429.	ppb	2.79	200000.	
44 Ca	6,710.	1,342.	ppb	0.46	200000.	
51 V	163.35	32.67	ppb	0.73	1000.	
52 Cr	145.8	29.16	ppb	0.36	1000.	
53 Cr	169.35	33.87	ppb	0.61	1000.	
55 Mn	2,490.5	498.1	ppb	1.03	1000.	
56 Fe	241,050.	48,210.	ppb	1.05	200000.	
57 Fe	229,700.	45,940.	ppb	0.24	100000.	
59 Co	83.55	16.71	ppb	0.62	1000.	
60 Ni	194.15	38.83	ppb	0.35	500.	
63 Cu	148.2	29.64	ppb	0.42	1000.	
65 Cu	149.15	29.83	ppb	0.67	500.	
66 Zn	446.05	89.21	ppb	0.65	500.	
68 Zn	442.45	88.49	ppb	0.80	1000.	
75 As	51.2	10.24	ppb	1.72	1000.	
82 Se	2.9055	0.5811	ppb	20.46	500.	
88 Sr	94.55	18.91	ppb	1.54	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.625	1.925	ppb	1.68	1000.	
107 Ag	0.3288	0.0658	ppb	12.12	250.	
109 Ag	0.3434	0.0687	ppb	8.08	100.	
111 Cd	1.4785	0.2957	ppb	5.57	500.	
114 Cd	0.8185	0.1637	ppb	10.91	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	26.815	5.363	ppb	0.97	500.	
120 Sn	26.92	5.384	ppb	1.32	1000.	
121 Sb	0.7775	0.1555	ppb	1.88	1000.	
123 Sb	0.746	0.1492	ppb	13.47	1000.	
135 Ba	161.05	32.21	ppb	2.15	1000.	
137 Ba	161.3	32.26	ppb	1.44	#VALUE!	
182 W	0.916	0.1832	ppb ---		#VALUE!	
203 Tl	0.4801	0.096	ppb	9.27	1000.	
205 Tl	0.499	0.0998	ppb	6.64	#VALUE!	
208 Pb	110.95	22.19	ppb	0.97	1000.	
232 Th	64.95	12.99	ppb	1.68	1000.	
238 U	11.35	2.27	ppb	1.74	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2787493.30	0.84	2677333.80	104.1	69.5 - 130	
45 Sc	2086431.00	0.25	2096026.60	99.5	69.5 - 130	
72 Ge	453710.16	0.68	465370.88	97.5	69.5 - 130	
159 Tb	4922636.50	0.20	4891823.00	100.6	69.5 - 130	
209 Bi	3098402.30	1.04	3117266.80	99.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL12A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Blank Sample Summary Report

Total Solids

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG135684	SM2540	09-DEC-13	06-DEC-13	U 1 %	1 %	N/A

Katahdin Analytical Services 5000003

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Laboratory Control Sample Summary Report

Total Solids

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG135684-2	LCS	WG135684	09-DEC-13	06-DEC-13	%	90	91.	101	80-120	

Katahdin Analytical Services 5000004

Tetra Tech INC **INTERNAL CORRESPONDENCE**

TO:	**D. SEIKEN**	**DATE:**	**FEBRUARY 13, 2014**
FROM:	**A. COGNETTI**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PCDD/PCDF**
NAVSTA NEWPORT, CTO WE30
SAMPLE DELIVERY GROUP (SDG) 320-5143-1

SAMPLES: 1/Aqueous/PCDD/PCDF

TF2-SB-RB05-1113

18/Soil/PCDD/PCDF

TF2-001-SB1001-0204	TF2-001-SB1002-0204	TF2-001-SB1003-0204
TF2-001-SB1004-0204	TF2-001-SB1007-0204	TF2-001-SB1008-0204
TF2-001-SB1009-0204	TF2-001-SS1001-0001	TF2-001-SS1002-0001
TF2-001-SS1003-0001	TF2-001-SS1004-0001	TF2-001-SS1007-0001
TF2-001-SS1008-0001	TF2-001-SS1009-0001	TF2-003-SB1013-0204
TF2-003-SB1019-0204	TF2-SB-DUP09-1113	TF2-SB-DUP10-1113

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG 320-5143-1 consisted of eighteen (18) soil samples and one (1) aqueous rinse blank sample. All samples were analyzed for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDF), as indicated above. There are two (2) field duplicate sample pairs included in this SDG: TF2-SB-DUP09-1113/TF2-001-SS1003-0001 and TF2-SB-DUP10-1113/TF2-001-SB1004-0204.

The samples were collected by Tetra Tech on November 25, 2013 and analyzed by Test America Laboratories Inc. All analyses were conducted in accordance with EPA SW-846 Method 8290 for PCDDs and PCDFs, analytical and reporting protocols.

The data contained in this SDG were validated under EPA Region I Tier II protocol with regard to the following parameters:

* • Data completeness
• Hold times
* • Mass Calibration
* • HRGC/HRMS Tuning and System Performance
* • Chromatographic Resolution /Window Defining Mixtures
* • Initial and continuing calibration
• Method Blank results
* • Blank Spike/Blank Spike Duplicate Results
* • Matrix Spike/Matrix Spike Duplicate Results
* • Surrogate Recoveries
* • Clean-up Standard Recoveries
• Internal Standard Recoveries
* • Field Duplicate Precision
* • Estimated Detection Limits

- Compound Quantitation
* • Compound Identification

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

HOLD TIME

Several samples were extracted outside the 45 day sample extraction to analysis hold time. No validation action was taken since PCDDs/PCSFs are considered very stable compounds. The method states, "The holding times listed in this method are recommendations. PCDDs and PCDFs are very stable in a variety of matrices, and holding times under the conditions listed in this section may be as long as a year for certain matrices."

HRGC/HRMS INSTRUMENT TUNING AND SYSTEM PERFORMANCE

The laboratory narrative indicated a problem with an instrumentation auto end resolution check not being completed within 12 hours of the beginning of the initial resolution check due to an instrument malfunction. The instrumentation affected was rebooted and an end resolution check was performed with compliant results (without changing the instrument tune parameters). No validation action was taken for this issue.

BLANKS

The following compounds were detected in method blank associated with batch 320-31001 analyzed on December 30, 2013 affecting the soil samples:

Compound	Maximum Concentration (pg/g)	Action Level (pg/g)
1,2,3,4,7,8-HxCDF	0.0505	0.25
1,2,3,4,6,7,8-HpCDD	0.0679	0.34
1,2,3,4,6,7,8-HpCDF	0.215	1.08
OCDD	0.286	1.43
OCDF	0.199	0.995
Total HxCDF	0.0505	0.25
Total HpCDD	0.171	0.855
Total HpCDF	0.215	1.08

An action level of 10X for the maximum level for OCDD and OCDF, 5X for the other PCDD/PCDFs has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination for each individual sample. Detected results less than the action level were qualified as (U).

The following compounds were detected in method blank associated with batch 320-31006 analyzed on December 28, 2013 affecting the soil samples.

Compound	Maximum Concentration (pg/g)	Action Level (pg/g)
1,2,3,4,7,8-HxCDF	0.0742	0.371
1,2,3,4,6,7,8-HpCDD	0.0717	0.36
1,2,3,4,6,7,8-HpCDF	0.316	1.58
OCDD	0.548	2.74
OCDF	0.305	1.53
Total HxCDF	0.742	3.71
Total HpCDD	0.205	1.03
Total HpCDF	0.316	1.58

An action level of 10X for the maximum level for OCDD and OCDF, 5X for the other PCDD/PCDFs has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination for each individual sample. Detected results less than the action level were qualified as (U).

The following compounds were detected in method blank associated with batch 320-31203 analyzed on December 27, 2013 affecting the soil samples.

Compound	Maximum Concentration (pg/L)
1,2,3,4,7,8-HxCDD	1.56
1,2,3,6,7,8-HxCDD	1.71
1,2,3,7,8,9-HxCDD	1.80
1,2,3,4,7,8-HxCDF	1.88
1,2,3,6,7,8-HxCDF	1.55
1,2,3,7,8,9-HxCDF	1.83
2,3,4,6,7,8-HxCDF	1.49
OCDD	10.5
OCDF	5.39
Total HxCDD	5.08
Total HxCDF	6.74

No action was taken on the affected rinsate blank sample.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

The MS/MSD %Rs of OCDD were outside quality control limits in sample TF2-001-SB1008-0204. The sample concentration was greater than 4X the spike amount. No action was required.

INTERNAL STANDARD RECOVERY

The internal standard recoveries for 13C-OCDD in diluted samples TF2-001-SS1002-0001 and TF2-001-SB1002-0204 were below the 40% lower quality control limit. The detected OCDD result in samples TF2-001-SS1002-0001 and TF2-001-SB1002-0204 were qualified as estimated (J).

COMPOUND QUANTIFICATION

Positive sample analyte results with ion ratios outside of the limits were reported as EMPC (estimated maximum possible concentration) results and were qualified estimated, (J).

ADDITIONAL COMMENTS

The surrogate recovery of 13C-OCDD was less than the lower quality control limit in the diluted analyses of samples TF2-001-SS1002-0001 (10X) and TF2-001-SB1002-0204 (10.4X). No action was required.

The rinsate blank contained a detection of OCDD. No action was taken on the detected results in the soil environmental samples.

Positive sample analyte results below the reporting limit (RL) but above the estimated detection limit (EDL) were qualified estimated, (J).

Non-detected sample analyte results were reported at the EDL.

EXECUTIVE SUMMARY

Laboratory Performance: Contamination was detected in the laboratory method blank. The internal standard recoveries for 13C-OCDD in diluted samples TF2-001-SS1002-0001 and TF2-001-SB1002-0204 were below the 40% lower quality control limit.

Other Factors Affecting Data Quality: Positive results reported below the RL but above the EDL were qualified as estimated, (J). Positive sample analyte results reported as EMPC (estimated maximum possible concentration) results were qualified estimated, (J). Several samples had percent solids less than 30%.

The data for these analyses were reviewed with reference to the EPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans (Sept. 2011), to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Guidance/Procedures Attachment 2-3b: Example Organic Data Review Worksheets (1/13) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

For Tetra Tech
Ann Cognetti
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1001-0204			TF2-001-SB1002-0204			TF2-001-SB1003-0204			TF2-001-SB1004-0204		
SDG: 320-5143-1	LAB_ID	320-5143-4			320-5143-6			320-5143-8			320-5143-10		
FRACTION: DIOX	SAMP_DATE	11/25/2013			11/25/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	90.8			89.6			87.1			88.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		4600			5900	J	N	4500			6000		
1,2,3,4,6,7,8,9-OCDF		1.4	J	P	1.3	J	P	0.96	U	A	2.1	J	P
1,2,3,4,6,7,8-HPCDD		25			30			29			33		
1,2,3,4,6,7,8-HPCDF		0.95	U	A	0.51	U	A	0.44	U	A	0.71	U	A
1,2,3,4,7,8,9-HPCDF		0.078	J	P	0.039	U		0.03	U		0.032	U	
1,2,3,4,7,8-HXCDD		0.13	J	PW	0.27	J	P	0.2	J	PW	0.22	J	PW
1,2,3,4,7,8-HXCDF		0.28	U	A	0.18	U	A	0.13	U	A	0.27	U	A
1,2,3,6,7,8-HXCDD		0.21	J	P	0.25	J	P	0.31	J	P	0.26	J	PW
1,2,3,6,7,8-HXCDF		0.51	J	P	0.29	J	P	0.42	J	P	0.49	J	P
1,2,3,7,8,9-HXCDD		0.26	J	P	0.32	J	P	0.33	J	PW	0.32	J	PW
1,2,3,7,8,9-HXCDF		0.031	U		0.038	U		0.027	U		0.03	U	
1,2,3,7,8-PECDD		0.069	U		0.092	U		0.075	U		0.075	U	
1,2,3,7,8-PECDF		0.04	U		0.041	U		0.07	U		0.035	U	
2,3,4,6,7,8-HXCDF		0.13	J	PW	0.034	U		0.071	J	PW	0.027	U	
2,3,4,7,8-PECDF		0.042	U		0.077	J	PW	0.089	J	P	0.037	U	
2,3,7,8-TCDD		0.042	U		0.05	U		0.043	U		0.041	U	
2,3,7,8-TCDF		0.34	U		0.38	U		0.33	U		0.28	U	
TOTAL HPCDD		44			61			65			63		
TOTAL HPCDF		1.2	J	PW	0.51	U	A	0.65	U	A	0.86	U	A
TOTAL HXCDD		3	J	PW	4.7	J	PW	6.9	J	W	5.2	J	PW
TOTAL HXCDF		2.3	J	PW	0.67	J	PW	1.2	J	PW	1	J	PW
TOTAL PECDD		1.3	J	PW	0.98	J	PW	1.7	J	PW	2.1	J	PW
TOTAL PECDF		1.8	J	PW	0.37	J	PW	1.1	J	PW	0.41	J	P
TOTAL TCDD		0.29	J	PW	0.96	J	PW	1.7	J	W	1.3	J	W
TOTAL TCDF		0.88	J	PW	2.1	J	W	2.3	J	W	2.2	J	W

PROJ_NO: 03019	NSAMPLE	TF2-001-SB1007-0204			TF2-001-SB1008-0204			TF2-001-SB1009-0204			TF2-001-SS1001-0001		
SDG: 320-5143-1	LAB_ID	320-5143-13			320-5143-14			320-5143-16			320-5143-3		
FRACTION: DIOX	SAMP_DATE	11/25/2013			11/25/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	89.0			87.4			89.2			89.7		
	DUP_OF												

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD	14000			5000			7400			4500		
1,2,3,4,6,7,8,9-OCDF	2.1	J	P	1	U	A	1.1	U	A	2.1	J	P
1,2,3,4,6,7,8-HPCDD	150			35			33			29		
1,2,3,4,6,7,8-HPCDF	1.1	U	A	0.69	U	A	0.51	U	A	0.92	U	A
1,2,3,4,7,8,9-HPCDF	0.026	U		0.082	J	P	0.075	J	PW	0.031	U	
1,2,3,4,7,8-HXCDD	0.45	J	P	0.44	J	P	0.18	J	P	0.19	J	PW
1,2,3,4,7,8-HXCDF	0.32	U	A	0.34	U	A	0.28	U	A	0.29	J	PW
1,2,3,6,7,8-HXCDD	0.78	J	P	0.54	J	P	0.22	J	P	0.22	J	PW
1,2,3,6,7,8-HXCDF	0.2	J	PW	0.3	J	P	0.42	J	P	0.19	J	PW
1,2,3,7,8,9-HXCDD	0.88	J	PW	0.74	J	P	0.26	J	PW	0.31	J	PW
1,2,3,7,8,9-HXCDF	0.12	J	P	0.023	U		0.14	J	PW	0.031	U	
1,2,3,7,8-PECDD	0.05	U		0.16	J	P	0.051	U		0.062	U	
1,2,3,7,8-PECDF	0.08	J	PW	0.15	J	PW	0.07	J	PW	0.04	U	
2,3,4,6,7,8-HXCDF	0.15	J	P	0.21	J	P	0.2	J	P	0.096	J	PW
2,3,4,7,8-PECDF	0.097	J	P	0.034	U		0.1	J	P	0.13	J	P
2,3,7,8-TCDD	0.038	U		0.039	U		0.029	U		0.044	U	
2,3,7,8-TCDF	0.29	U		0.34	U		0.2	U		0.26	U	
TOTAL HPCDD	270			86			57			51		
TOTAL HPCDF	1.9	J	P	0.98	U	A	1	U	A	1.6	J	PW
TOTAL HXCDD	22	J	W	9.5			2.5	J	PW	3.2	J	PW
TOTAL HXCDF	1.9	U	A	1.5	U	A	2.2	U	A	2.3	J	PW
TOTAL PECDD	2.7	J	PW	1.8	J	PW	1.4	J	PW	0.6	J	PW
TOTAL PECDF	1.4	J	PW	1.8	J	PW	1.7	J	PW	1.6	J	PW
TOTAL TCDD	1.2	J	W	0.69	J	PW	0.46	J	PW	0.054	U	
TOTAL TCDF	1.6	J	W	4.1	J	W	1	J	PW	1.1	J	W

PROJ_NO: 03019	NSAMPLE	TF2-001-SS1002-0001			TF2-001-SS1003-0001			TF2-001-SS1004-0001			TF2-001-SS1007-0001		
SDG: 320-5143-1	LAB_ID	320-5143-5			320-5143-7			320-5143-9			320-5143-12		
FRACTION: DIOX	SAMP_DATE	11/25/2013			11/25/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	89.3			89.1			87.3			84.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		4700	J	N	6400			4900			6000		
1,2,3,4,6,7,8,9-OCDF		2.4	J	PW	2.2	J	P	3.5	J	P	6.6	J	P
1,2,3,4,6,7,8-HPCDD		30			36			34			50		
1,2,3,4,6,7,8-HPCDF		1.6	J	P	1.6	J	P	2.5	J	P	4.8	J	P
1,2,3,4,7,8,9-HPCDF		0.049	U		0.053	U		0.14	J	PW	0.044	U	
1,2,3,4,7,8-HXCDD		0.22	J	PW	0.29	J	P	0.3	J	PW	0.48	J	PW
1,2,3,4,7,8-HXCDF		0.51	J	P	0.76	J	P	0.53	J	PW	1	J	P
1,2,3,6,7,8-HXCDD		0.4	J	P	0.54	J	P	0.57	J	P	1.1	J	P
1,2,3,6,7,8-HXCDF		0.48	J	P	0.46	J	P	0.41	J	P	0.73	J	P
1,2,3,7,8,9-HXCDD		0.31	J	PW	0.44	J	PW	0.52	J	PW	1.1	J	P
1,2,3,7,8,9-HXCDF		0.034	U		0.039	U		0.037	U		0.034	U	
1,2,3,7,8-PECDD		0.07	U		0.092	U		0.063	U		0.2	J	P
1,2,3,7,8-PECDF		0.04	U		0.045	U		0.13	J	P	0.26	J	PW
2,3,4,6,7,8-HXCDF		0.19	J	PW	0.33	J	P	0.22	J	PW	0.73	J	P
2,3,4,7,8-PECDF		0.12	J	PW	0.29	J	P	0.18	J	P	0.43	J	P
2,3,7,8-TCDD		0.043	U		0.042	U		0.033	U		0.044	U	
2,3,7,8-TCDF		0.36	U		0.36	J	PW	0.3	U		0.77	U	
TOTAL HPCDD		54			66			64			100		
TOTAL HPCDF		3.3	J	P	2.9	J	P	4.7	J	PW	9.7		
TOTAL HXCDD		4	J	PW	5.6	J	W	6	q	W	11	J	W
TOTAL HXCDF		3.8	J	PW	5.9	J	W	5	J	PW	9.5		
TOTAL PECDD		1.1	J	PW	1.3	J	PW	1.3	J	PW	3	J	PW
TOTAL PECDF		2.7	J	PW	3.8	J	PW	3.1	J	PW	7.6	J	W
TOTAL TCDD		0.35	J	PW	0.46	J	PW	0.36	J	P	1.1	J	PW
TOTAL TCDF		1	J	PW	3	J	W	1.5	J	W	4.2	J	W

PROJ_NO: 03019	NSAMPLE	TF2-001-SS1008-0001			TF2-001-SS1009-0001			TF2-003-SB1013-0204			TF2-003-SB1019-0204		
SDG: 320-5143-1	LAB_ID	320-5143-15			320-5143-17			320-5143-1			320-5143-2		
FRACTION: DIOX	SAMP_DATE	11/25/2013			11/25/2013			11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	87.8			89.8			93.3			91.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		6600			4000			2600			4200		
1,2,3,4,6,7,8,9-OCDF		2	J	P	9.4	J	P	0.82	U	A	6.4	J	P
1,2,3,4,6,7,8-HPCDD		33			46			24			64		
1,2,3,4,6,7,8-HPCDF		1.3	U	A	5.6			0.44	U	A	14		
1,2,3,4,7,8,9-HPCDF		0.15	J	P	0.31	J	P	0.033	U		0.73	J	P
1,2,3,4,7,8-HXCDD		0.29	J	P	0.44	J	P	0.12	J	P	3.6	J	P
1,2,3,4,7,8-HXCDF		0.36	U	A	0.88	J	P	0.11	U	A	3.8	J	P
1,2,3,6,7,8-HXCDD		0.54	J	P	1.2	J	P	0.21	J	PW	8		
1,2,3,6,7,8-HXCDF		0.52	J	P	0.65	J	P	0.31	J	P	2.6	J	P
1,2,3,7,8,9-HXCDD		0.55	J	P	1.1	J	P	0.46	J	P	5.9		
1,2,3,7,8,9-HXCDF		0.027	U		0.026	U		0.028	U		0.08	J	PW
1,2,3,7,8-PECDD		0.11	J	P	0.056	U		0.048	U		2.9	J	P
1,2,3,7,8-PECDF		0.077	U		0.2	J	PW	0.043	U		1.7	J	P
2,3,4,6,7,8-HXCDF		0.4	J	P	0.61	J	P	0.025	U		2.3	J	P
2,3,4,7,8-PECDF		0.15	J	P	0.21	J	P	0.033	U		2.1	J	P
2,3,7,8-TCDD		0.032	U		0.031	U		0.027	U		0.47	J	PW
2,3,7,8-TCDF		0.29	U		0.24	U		0.23	U		1.1		
TOTAL HPCDD		60			81			42	J	W	120		
TOTAL HPCDF		2.5	J	P	11			0.68	U	A	19	J	W
TOTAL HXCDD		5.3	J	PW	9.4	J	W	4.9	J	PW	98		
TOTAL HXCDF		4.5	J	PW	8.4			0.74	J	PW	24	J	W
TOTAL PECDD		1.1	J	PW	1.6	J	PW	1	J	PW	110	J	W
TOTAL PECDF		2.9	J	PW	4.1	J	PW	0.31	J	PW	24	J	W
TOTAL TCDD		0.86	J	PW	0.4	J	P	1.1	J	W	86	J	W
TOTAL TCDF		1.9	J	W	1.2	J	W	0.96	J	PW	25	J	W

PROJ_NO: 03019	NSAMPLE	TF2-SB-DUP09-1113			TF2-SB-DUP10-1113		
SDG: 320-5143-1	LAB_ID	320-5143-11			320-5143-18		
FRACTION: DIOX	SAMP_DATE	11/25/2013			11/25/2013		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	NG/KG			NG/KG		
	PCT_SOLIDS	88.7			82.1		
	DUP_OF	TF2-001-SS1003-0001			TF2-001-SB1004-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		7300			7500		
1,2,3,4,6,7,8,9-OCDF		2.7	J	P	0.96	U	A
1,2,3,4,6,7,8-HPCDD		36			35		
1,2,3,4,6,7,8-HPCDF		1.6	U	A	0.49	U	A
1,2,3,4,7,8,9-HPCDF		0.29	J	P	0.022	U	
1,2,3,4,7,8-HXCDD		0.3	J	P	0.061	U	
1,2,3,4,7,8-HXCDF		0.62	J	P	0.19	U	A
1,2,3,6,7,8-HXCDD		0.42	J	PW	0.28	J	P
1,2,3,6,7,8-HXCDF		0.51	J	PW	0.64	J	P
1,2,3,7,8,9-HXCDD		0.44	J	P	0.37	J	P
1,2,3,7,8,9-HXCDF		0.035	U		0.021	U	
1,2,3,7,8-PECDD		0.093	J	PW	0.12	J	P
1,2,3,7,8-PECDF		0.24	J	P	0.058	J	P
2,3,4,6,7,8-HXCDF		0.57	J	P	0.13	J	P
2,3,4,7,8-PECDF		0.23	J	P	0.033	U	
2,3,7,8-TCDD		0.038	U		0.04	U	
2,3,7,8-TCDF		0.25	U		0.26	U	
TOTAL HPCDD		66			66		
TOTAL HPCDF		3	J	P	0.73	U	A
TOTAL HXCDD		4.9	J	PW	5.5	J	P
TOTAL HXCDF		5.4	J	PW	1.3	U	A
TOTAL PECDD		0.91	J	PW	2.3	J	P
TOTAL PECDF		4.4	J	PW	0.7	J	PW
TOTAL TCDD		0.64	J	P	1.2	J	W
TOTAL TCDF		2.5	J	W	2.3	J	W

PROJ_NO: 03019	NSAMPLE	TF2-SB-RB05-1113		
SDG: 320-5143-1	LAB_ID	320-5143-19		
FRACTION: DIOX	SAMP_DATE	11/25/2013		
MEDIA: WATER	QC_TYPE	NM		
	UNITS	PG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		3.3	J	PW
1,2,3,4,6,7,8,9-OCDF		1.3	U	
1,2,3,4,6,7,8-HPCDD		1	U	
1,2,3,4,6,7,8-HPCDF		1	U	
1,2,3,4,7,8,9-HPCDF		1.2	U	
1,2,3,4,7,8-HXCDD		0.54	U	
1,2,3,4,7,8-HXCDF		0.45	U	
1,2,3,6,7,8-HXCDD		0.53	U	
1,2,3,6,7,8-HXCDF		0.4	U	
1,2,3,7,8,9-HXCDD		0.46	U	
1,2,3,7,8,9-HXCDF		0.46	U	
1,2,3,7,8-PECDD		1	U	
1,2,3,7,8-PECDF		1.1	U	
2,3,4,6,7,8-HXCDF		0.44	U	
2,3,4,7,8-PECDF		1.1	U	
2,3,7,8-TCDD		0.47	U	
2,3,7,8-TCDF		0.51	U	
TOTAL HPCDD		1	U	
TOTAL HPCDF		1.2	U	
TOTAL HXCDD		0.54	U	
TOTAL HXCDF		0.46	U	
TOTAL PECDD		1	U	
TOTAL PECDF		1.1	U	
TOTAL TCDD		0.53	U	
TOTAL TCDF		0.51	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1001-0204 | Lab Sample ID: 320-5143-4

Matrix: Solid | Lab File ID: 27DE133D5_85.d

Analysis Method: 8290A | Date Collected: 11/25/2013 10:10

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.06(g) | Date Analyzed: 12/30/2013 04:00

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.042
40321-76-4	1,2,3,7,8-PeCDD	ND		5.5	0.069
57117-41-6	1,2,3,7,8-PeCDF	ND		5.5	0.040
57117-31-4	2,3,4,7,8-PeCDF	ND		5.5	0.042
39227-28-6	1,2,3,4,7,8-HxCDD	0.13	J q	5.5	0.059
57653-85-7	1,2,3,6,7,8-HxCDD	0.21	J	5.5	0.041
19408-74-3	1,2,3,7,8,9-HxCDD	0.26	J	5.5	0.043
70648-26-9	1,2,3,4,7,8-HxCDF	0.28	J q B	5.5	0.033
57117-44-9	1,2,3,6,7,8-HxCDF	0.51	J	5.5	0.024
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.5	0.031
60851-34-5	2,3,4,6,7,8-HxCDF	0.13	J q	5.5	0.028
35822-46-9	1,2,3,4,6,7,8-HpCDD	25	B	5.5	0.18
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.95	J B	5.5	0.032
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.078	J	5.5	0.038
39001-02-0	OCDF	1.4	J B	11	0.047
41903-57-5	Total TCDD	0.29	J q	1.1	0.042
30402-14-3	Total TCDF	0.88	J q	1.1	0.027
36088-22-9	Total PeCDD	1.3	J q	5.5	0.069
30402-15-4	Total PeCDF	1.8	J q	5.5	0.041
34465-46-8	Total HxCDD	3.0	J q	5.5	0.048
55684-94-1	Total HxCDF	2.3	J q B	5.5	0.029
37871-00-4	Total HpCDD	44	B	5.5	0.18
38998-75-3	Total HpCDF	1.2	J q B	5.5	0.035

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1001-0204 Lab Sample ID: 320-5143-4

Matrix: Solid Lab File ID: 27DE133D5_85.d

Analysis Method: 8290A Date Collected: 11/25/2013 10:10

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.06(g) Date Analyzed: 12/30/2013 04:00

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	54		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	59		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	60		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	59		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	72		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	85		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1001-0204 RA Lab Sample ID: 320-5143-4 RA

Matrix: Solid Lab File ID: 31DE13C5D2_008.d

Analysis Method: 8290A Date Collected: 11/25/2013 10:10

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.06(g) Date Analyzed: 12/31/2013 14:37

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32982 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.34

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	62		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1001-0204 DL Lab Sample ID: 320-5143-4 DL

Matrix: Solid Lab File ID: 30DE13A9D5_007.d

Analysis Method: 8290A Date Collected: 11/25/2013 10:10

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.06(g) Date Analyzed: 12/31/2013 01:03

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32907 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	4600	B	110	34

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	57		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1002-0204 Lab Sample ID: 320-5143-6

Matrix: Solid Lab File ID: 27DE133D5_87.d

Analysis Method: 8290A Date Collected: 11/25/2013 10:40

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.03(g) Date Analyzed: 12/30/2013 05:23

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.050
40321-76-4	1,2,3,7,8-PeCDD	ND		5.6	0.092
57117-41-6	1,2,3,7,8-PeCDF	ND		5.6	0.041
57117-31-4	2,3,4,7,8-PeCDF	0.077	J q	5.6	0.043
39227-28-6	1,2,3,4,7,8-HxCDD	0.27	J	5.6	0.11
57653-85-7	1,2,3,6,7,8-HxCDD	0.25	J	5.6	0.077
19408-74-3	1,2,3,7,8,9-HxCDD	0.32	J	5.6	0.080
70648-26-9	1,2,3,4,7,8-HxCDF	0.18	J q B	5.6	0.039
57117-44-9	1,2,3,6,7,8-HxCDF	0.29	J	5.6	0.029
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.6	0.038
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.6	0.034
35822-46-9	1,2,3,4,6,7,8-HpCDD	30	B	5.6	0.24
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.51	J B	5.6	0.033
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.6	0.039
39001-02-0	OCDF	1.3	J B	11	0.051
41903-57-5	Total TCDD	0.96	J q	1.1	0.050
30402-14-3	Total TCDF	2.1	q	1.1	0.028
36088-22-9	Total PeCDD	0.98	J q	5.6	0.092
30402-15-4	Total PeCDF	0.37	J q	5.6	0.042
34465-46-8	Total HxCDD	4.7	J q	5.6	0.089
55684-94-1	Total HxCDF	0.67	J q B	5.6	0.035
37871-00-4	Total HpCDD	61	B	5.6	0.24
38998-75-3	Total HpCDF	0.51	J B	5.6	0.036

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1002-0204 | Lab Sample ID: 320-5143-6

Matrix: Solid | Lab File ID: 27DE133D5_87.d

Analysis Method: 8290A | Date Collected: 11/25/2013 10:40

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.03(g) | Date Analyzed: 12/30/2013 05:23

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 10.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	45		40-135
89059-46-1	13C-2,3,7,8-TCDF	41		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	44		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	42		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	48		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	46		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	56		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	53		40-135
114423-97-1	13C-OCDD	67		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1002-0204 RA | Lab Sample ID: 320-5143-6 RA

Matrix: Solid | Lab File ID: 31DE13C5D2_010.d

Analysis Method: 8290A | Date Collected: 11/25/2013 10:40

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.03(g) | Date Analyzed: 12/31/2013 15:52

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 10.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32982 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.38

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	47		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1002-0204 DL Lab Sample ID: 320-5143-6 DL

Matrix: Solid Lab File ID: 30DE13A9D5_009.d

Analysis Method: 8290A Date Collected: 11/25/2013 10:40

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.03(g) Date Analyzed: 12/31/2013 02:28

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32907 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	5900	B	110	50

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	26	Q *	40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1003-0204 Lab Sample ID: 320-5143-8

Matrix: Solid Lab File ID: 27DE133D5_89.d

Analysis Method: 8290A Date Collected: 11/25/2013 11:45

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.00(g) Date Analyzed: 12/30/2013 06:47

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 12.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.043
40321-76-4	1,2,3,7,8-PeCDD	ND		5.7	0.075
57117-41-6	1,2,3,7,8-PeCDF	ND		5.7	0.070
57117-31-4	2,3,4,7,8-PeCDF	0.089	J	5.7	0.033
39227-28-6	1,2,3,4,7,8-HxCDD	0.20	J q	5.7	0.15
57653-85-7	1,2,3,6,7,8-HxCDD	0.31	J	5.7	0.10
19408-74-3	1,2,3,7,8,9-HxCDD	0.33	J q	5.7	0.11
70648-26-9	1,2,3,4,7,8-HxCDF	0.13	J q B	5.7	0.028
57117-44-9	1,2,3,6,7,8-HxCDF	0.42	J	5.7	0.021
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.7	0.027
60851-34-5	2,3,4,6,7,8-HxCDF	0.071	J q	5.7	0.024
35822-46-9	1,2,3,4,6,7,8-HpCDD	29	B	5.7	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.44	J B	5.7	0.026
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.7	0.030
3268-87-9	OCDD	4500	B	11	1.0
39001-02-0	OCDF	0.96	J B	11	0.040
41903-57-5	Total TCDD	1.7	q	1.1	0.043
30402-14-3	Total TCDF	2.3	q	1.1	0.022
36088-22-9	Total PeCDD	1.7	J q	5.7	0.075
30402-15-4	Total PeCDF	1.1	J q	5.7	0.052
34465-46-8	Total HxCDD	6.9	q	5.7	0.12
55684-94-1	Total HxCDF	1.2	J q B	5.7	0.025
37871-00-4	Total HpCDD	65	B	5.7	0.21
38998-75-3	Total HpCDF	0.65	J B	5.7	0.028

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1003-0204 Lab Sample ID: 320-5143-8

Matrix: Solid Lab File ID: 27DE133D5_89.d

Analysis Method: 8290A Date Collected: 11/25/2013 11:45

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.00(g) Date Analyzed: 12/30/2013 06:47

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 12.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		40-135
89059-46-1	13C-2,3,7,8-TCDF	62		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	68		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	66		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	74		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	68		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	86		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	80		40-135
114423-97-1	13C-OCDD	105		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1003-0204 RA Lab Sample ID: 320-5143-8 RA

Matrix: Solid Lab File ID: 31DE13C5D2_012.d

Analysis Method: 8290A Date Collected: 11/25/2013 11:45

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.00(g) Date Analyzed: 12/31/2013 17:06

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 12.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32982 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.33

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1004-0204 | Lab Sample ID: 320-5143-10

Matrix: Solid | Lab File ID: 27DE133D5_91.d

Analysis Method: 8290A | Date Collected: 11/25/2013 13:10

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.21(g) | Date Analyzed: 12/30/2013 08:10

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 11.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.041
40321-76-4	1,2,3,7,8-PeCDD	ND		5.5	0.075
57117-41-6	1,2,3,7,8-PeCDF	ND		5.5	0.035
57117-31-4	2,3,4,7,8-PeCDF	ND		5.5	0.037
39227-28-6	1,2,3,4,7,8-HxCDD	0.22	J q	5.5	0.078
57653-85-7	1,2,3,6,7,8-HxCDD	0.26	J q	5.5	0.055
19408-74-3	1,2,3,7,8,9-HxCDD	0.32	J q	5.5	0.057
70648-26-9	1,2,3,4,7,8-HxCDF	0.27	J q B	5.5	0.031
57117-44-9	1,2,3,6,7,8-HxCDF	0.49	J	5.5	0.023
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.5	0.030
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.5	0.027
35822-46-9	1,2,3,4,6,7,8-HpCDD	33	B	5.5	0.19
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.71	J B	5.5	0.027
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.5	0.032
39001-02-0	OCDF	2.1	J B	11	0.048
41903-57-5	Total TCDD	1.3	q	1.1	0.041
30402-14-3	Total TCDF	2.2	q	1.1	0.022
36088-22-9	Total PeCDD	2.1	J q	5.5	0.075
30402-15-4	Total PeCDF	0.41	J	5.5	0.036
34465-46-8	Total HxCDD	5.2	J q	5.5	0.063
55684-94-1	Total HxCDF	1.0	J q B	5.5	0.028
37871-00-4	Total HpCDD	63	B	5.5	0.19
38998-75-3	Total HpCDF	0.86	J q B	5.5	0.029

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1004-0204 | Lab Sample ID: 320-5143-10

Matrix: Solid | Lab File ID: 27DE133D5_91.d

Analysis Method: 8290A | Date Collected: 11/25/2013 13:10

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.21(g) | Date Analyzed: 12/30/2013 08:10

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 11.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	61		40-135
89059-46-1	13C-2,3,7,8-TCDF	55		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	60		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	61		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	60		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	74		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	71		40-135
114423-97-1	13C-OCDD	89		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1004-0204 RA Lab Sample ID: 320-5143-10 RA

Matrix: Solid Lab File ID: 31DE13C5D2_014.d

Analysis Method: 8290A Date Collected: 11/25/2013 13:10

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.21(g) Date Analyzed: 12/31/2013 18:21

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32982 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.28

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1004-0204 DL | Lab Sample ID: 320-5143-10 DL

Matrix: Solid | Lab File ID: 30DE13A9D5_013.d

Analysis Method: 8290A | Date Collected: 11/25/2013 13:10

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.21(g) | Date Analyzed: 12/31/2013 05:19

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 11.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32907 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	6000	B	110	44

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	42		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1007-0204 Lab Sample ID: 320-5143-13

Matrix: Solid Lab File ID: 27DE1310D5_33.d

Analysis Method: 8290A Date Collected: 11/25/2013 13:40

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.06(g) Date Analyzed: 12/28/2013 12:40

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.038
40321-76-4	1,2,3,7,8-PeCDD	ND		5.6	0.050
57117-41-6	1,2,3,7,8-PeCDF	0.080	J q	5.6	0.032
57117-31-4	2,3,4,7,8-PeCDF	0.097	J	5.6	0.033
39227-28-6	1,2,3,4,7,8-HxCDD	0.45	J	5.6	0.046
57653-85-7	1,2,3,6,7,8-HxCDD	0.78	J	5.6	0.041
19408-74-3	1,2,3,7,8,9-HxCDD	0.88	J q	5.6	0.038
70648-26-9	1,2,3,4,7,8-HxCDF	0.32	J B	5.6	0.020
57117-44-9	1,2,3,6,7,8-HxCDF	0.20	J q	5.6	0.017
72918-21-9	1,2,3,7,8,9-HxCDF	0.12	J	5.6	0.020
60851-34-5	2,3,4,6,7,8-HxCDF	0.15	J	5.6	0.019
35822-46-9	1,2,3,4,6,7,8-HpCDD	150	B	5.6	0.26
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.1	J B	5.6	0.022
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.6	0.026
39001-02-0	OCDF	2.1	J B	11	0.024
41903-57-5	Total TCDD	1.2	q	1.1	0.038
30402-14-3	Total TCDF	1.6	q	1.1	0.021
36088-22-9	Total PeCDD	2.7	J q	5.6	0.050
30402-15-4	Total PeCDF	1.4	J q	5.6	0.033
34465-46-8	Total HxCDD	22	q	5.6	0.042
55684-94-1	Total HxCDF	1.9	J B q	5.6	0.019
37871-00-4	Total HpCDD	270	B	5.6	0.26
38998-75-3	Total HpCDF	1.9	J B	5.6	0.024

FORM I

DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1007-0204 Lab Sample ID: 320-5143-13

Matrix: Solid Lab File ID: 27DE1310D5_33.d

Analysis Method: 8290A Date Collected: 11/25/2013 13:40

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.06(g) Date Analyzed: 12/28/2013 12:40

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	60		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	58		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	60		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	59		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	61		40-135
114423-97-1	13C-OCDD	74		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1007-0204 RA Lab Sample ID: 320-5143-13 RA

Matrix: Solid Lab File ID: 02JA14B5D2_006.d

Analysis Method: 8290A Date Collected: 11/25/2013 13:40

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.06(g) Date Analyzed: 01/02/2014 22:00

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33166 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.29

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	60		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1007-0204 DL | Lab Sample ID: 320-5143-13 DL

Matrix: Solid | Lab File ID: 31DE13A10D5_6.d

Analysis Method: 8290A | Date Collected: 11/25/2013 13:40

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.06(g) | Date Analyzed: 12/31/2013 13:42

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 11.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33085 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	14000	B	110	2.0

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	67		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1008-0204 | Lab Sample ID: 320-5143-14

Matrix: Solid | Lab File ID: 27DE1310D5_34.d

Analysis Method: 8290A | Date Collected: 11/25/2013 12:45

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.15(g) | Date Analyzed: 12/28/2013 13:26

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 12.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.039
40321-76-4	1,2,3,7,8-PeCDD	0.16	J	5.6	0.074
57117-41-6	1,2,3,7,8-PeCDF	0.15	J q	5.6	0.033
57117-31-4	2,3,4,7,8-PeCDF	ND		5.6	0.034
39227-28-6	1,2,3,4,7,8-HxCDD	0.44	J	5.6	0.063
57653-85-7	1,2,3,6,7,8-HxCDD	0.54	J	5.6	0.055
19408-74-3	1,2,3,7,8,9-HxCDD	0.74	J	5.6	0.051
70648-26-9	1,2,3,4,7,8-HxCDF	0.34	J B	5.6	0.023
57117-44-9	1,2,3,6,7,8-HxCDF	0.30	J	5.6	0.020
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.6	0.023
60851-34-5	2,3,4,6,7,8-HxCDF	0.21	J	5.6	0.022
35822-46-9	1,2,3,4,6,7,8-HpCDD	35	B	5.6	0.14
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.69	J B	5.6	0.020
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.082	J	5.6	0.023
39001-02-0	OCDF	1.0	J B	11	0.026
41903-57-5	Total TCDD	0.69	J q	1.1	0.039
30402-14-3	Total TCDF	4.1	q	1.1	0.023
36088-22-9	Total PeCDD	1.8	J q	5.6	0.074
30402-15-4	Total PeCDF	1.8	J q	5.6	0.034
34465-46-8	Total HxCDD	9.5		5.6	0.056
55684-94-1	Total HxCDF	1.5	J B q	5.6	0.022
37871-00-4	Total HpCDD	86	B	5.6	0.14
38998-75-3	Total HpCDF	0.98	J B	5.6	0.021

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1008-0204 | Lab Sample ID: 320-5143-14

Matrix: Solid | Lab File ID: 27DE1310D5_34.d

Analysis Method: 8290A | Date Collected: 11/25/2013 12:45

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.15(g) | Date Analyzed: 12/28/2013 13:26

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 12.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		40-135
89059-46-1	13C-2,3,7,8-TCDF	58		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	56		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	65		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	65		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	65		40-135
114423-97-1	13C-OCDD	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1008-0204 RA Lab Sample ID: 320-5143-14 RA

Matrix: Solid Lab File ID: 02JA14B5D2_007.d

Analysis Method: 8290A Date Collected: 11/25/2013 12:45

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.15(g) Date Analyzed: 01/02/2014 22:37

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 12.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33166 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.34

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	60		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1008-0204 DL Lab Sample ID: 320-5143-14 DL

Matrix: Solid Lab File ID: 31DE13A10D5_7.d

Analysis Method: 8290A Date Collected: 11/25/2013 12:45

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.15(g) Date Analyzed: 12/31/2013 14:28

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 12.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33085 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	5000	B	110	1.6

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1009-0204 Lab Sample ID: 320-5143-16

Matrix: Solid Lab File ID: 27DE1310D5_38.d

Analysis Method: 8290A Date Collected: 11/25/2013 12:05

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.11(g) Date Analyzed: 12/28/2013 16:31

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.029
40321-76-4	1,2,3,7,8-PeCDD	ND		5.5	0.051
57117-41-6	1,2,3,7,8-PeCDF	0.070	J q	5.5	0.024
57117-31-4	2,3,4,7,8-PeCDF	0.10	J	5.5	0.025
39227-28-6	1,2,3,4,7,8-HxCDD	0.18	J	5.5	0.036
57653-85-7	1,2,3,6,7,8-HxCDD	0.22	J	5.5	0.032
19408-74-3	1,2,3,7,8,9-HxCDD	0.26	J q	5.5	0.029
70648-26-9	1,2,3,4,7,8-HxCDF	0.28	J B	5.5	0.020
57117-44-9	1,2,3,6,7,8-HxCDF	0.42	J	5.5	0.017
72918-21-9	1,2,3,7,8,9-HxCDF	0.14	J q	5.5	0.020
60851-34-5	2,3,4,6,7,8-HxCDF	0.20	J	5.5	0.019
35822-46-9	1,2,3,4,6,7,8-HpCDD	33	B	5.5	0.15
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.51	J B	5.5	0.015
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.075	J q	5.5	0.017
39001-02-0	OCDF	1.1	J B	11	0.021
41903-57-5	Total TCDD	0.46	J q	1.1	0.029
30402-14-3	Total TCDF	1.0	J q	1.1	0.017
36088-22-9	Total PeCDD	1.4	J q	5.5	0.051
30402-15-4	Total PeCDF	1.7	J q	5.5	0.025
34465-46-8	Total HxCDD	2.5	J q	5.5	0.032
55684-94-1	Total HxCDF	2.2	J q B	5.5	0.019
37871-00-4	Total HpCDD	57	B	5.5	0.15
38998-75-3	Total HpCDF	1.0	J q B	5.5	0.016

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1009-0204 Lab Sample ID: 320-5143-16

Matrix: Solid Lab File ID: 27DE1310D5_38.d

Analysis Method: 8290A Date Collected: 11/25/2013 12:05

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.11(g) Date Analyzed: 12/28/2013 16:31

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	72		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	70		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	71		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	82		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	75		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	76		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	78		40-135
114423-97-1	13C-OCDD	93		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1009-0204 RA Lab Sample ID: 320-5143-16 RA

Matrix: Solid Lab File ID: 02JA14B5D2_011.d

Analysis Method: 8290A Date Collected: 11/25/2013 12:05

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.11(g) Date Analyzed: 01/03/2014 01:07

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33166 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.20

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SB1009-0204 DL | Lab Sample ID: 320-5143-16 DL

Matrix: Solid | Lab File ID: 31DE13A10D5_11.d

Analysis Method: 8290A | Date Collected: 11/25/2013 12:05

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.11(g) | Date Analyzed: 12/31/2013 17:32

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 10.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33085 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	7400	B	110	1.1

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	87		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1001-0001 Lab Sample ID: 320-5143-3

Matrix: Solid Lab File ID: 27DE133D5_84.d

Analysis Method: 8290A Date Collected: 11/25/2013 10:05

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.01(g) Date Analyzed: 12/30/2013 03:18

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.044
40321-76-4	1,2,3,7,8-PeCDD	ND		5.6	0.062
57117-41-6	1,2,3,7,8-PeCDF	ND		5.6	0.040
57117-31-4	2,3,4,7,8-PeCDF	0.13	J	5.6	0.042
39227-28-6	1,2,3,4,7,8-HxCDD	0.19	J q	5.6	0.061
57653-85-7	1,2,3,6,7,8-HxCDD	0.22	J q	5.6	0.043
19408-74-3	1,2,3,7,8,9-HxCDD	0.31	J q	5.6	0.044
70648-26-9	1,2,3,4,7,8-HxCDF	0.29	J q B	5.6	0.032
57117-44-9	1,2,3,6,7,8-HxCDF	0.19	J q	5.6	0.024
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.6	0.031
60851-34-5	2,3,4,6,7,8-HxCDF	0.096	J q	5.6	0.028
35822-46-9	1,2,3,4,6,7,8-HpCDD	29	B	5.6	0.16
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.92	J B	5.6	0.027
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.6	0.031
39001-02-0	OCDF	2.1	J B	11	0.046
41903-57-5	Total TCDD	ND		1.1	0.054
30402-14-3	Total TCDF	1.1	q	1.1	0.024
36088-22-9	Total PeCDD	0.60	J q	5.6	0.062
30402-15-4	Total PeCDF	1.6	J q	5.6	0.041
34465-46-8	Total HxCDD	3.2	J q	5.6	0.049
55684-94-1	Total HxCDF	2.3	J q B	5.6	0.028
37871-00-4	Total HpCDD	51	B	5.6	0.16
38998-75-3	Total HpCDF	1.6	J q B	5.6	0.029

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1001-0001 Lab Sample ID: 320-5143-3

Matrix: Solid Lab File ID: 27DE133D5_84.d

Analysis Method: 8290A Date Collected: 11/25/2013 10:05

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.01(g) Date Analyzed: 12/30/2013 03:18

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	60		40-135
89059-46-1	13C-2,3,7,8-TCDF	54		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	59		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	60		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	61		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	84		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1001-0001 RA Lab Sample ID: 320-5143-3 RA

Matrix: Solid Lab File ID: 31DE13C5D2_007.d

Analysis Method: 8290A Date Collected: 11/25/2013 10:05

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.01(g) Date Analyzed: 12/31/2013 13:59

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32982 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.26

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1001-0001 DL Lab Sample ID: 320-5143-3 DL

Matrix: Solid Lab File ID: 30DE13A9D5_006.d

Analysis Method: 8290A Date Collected: 11/25/2013 10:05

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.01(g) Date Analyzed: 12/31/2013 00:20

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32907 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	4500	B	110	24

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	63		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1002-0001 Lab Sample ID: 320-5143-5

Matrix: Solid Lab File ID: 27DE133D5_86.d

Analysis Method: 8290A Date Collected: 11/25/2013 10:35

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.03(g) Date Analyzed: 12/30/2013 04:41

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.043
40321-76-4	1,2,3,7,8-PeCDD	ND		5.6	0.070
57117-41-6	1,2,3,7,8-PeCDF	ND		5.6	0.040
57117-31-4	2,3,4,7,8-PeCDF	0.12	J q	5.6	0.042
39227-28-6	1,2,3,4,7,8-HxCDD	0.22	J q	5.6	0.099
57653-85-7	1,2,3,6,7,8-HxCDD	0.40	J	5.6	0.070
19408-74-3	1,2,3,7,8,9-HxCDD	0.31	J q	5.6	0.072
70648-26-9	1,2,3,4,7,8-HxCDF	0.51	J B	5.6	0.036
57117-44-9	1,2,3,6,7,8-HxCDF	0.48	J	5.6	0.027
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.6	0.034
60851-34-5	2,3,4,6,7,8-HxCDF	0.19	J q	5.6	0.031
35822-46-9	1,2,3,4,6,7,8-HpCDD	30	B	5.6	0.19
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.6	J B	5.6	0.042
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.6	0.049
39001-02-0	OCDF	2.4	J q B	11	0.048
41903-57-5	Total TCDD	0.35	J q	1.1	0.043
30402-14-3	Total TCDF	1.0	J q	1.1	0.026
36088-22-9	Total PeCDD	1.1	J q	5.6	0.070
30402-15-4	Total PeCDF	2.7	J q	5.6	0.041
34465-46-8	Total HxCDD	4.0	J q	5.6	0.080
55684-94-1	Total HxCDF	3.8	J q B	5.6	0.032
37871-00-4	Total HpCDD	54	B	5.6	0.19
38998-75-3	Total HpCDF	3.3	J B	5.6	0.045

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1002-0001 Lab Sample ID: 320-5143-5

Matrix: Solid Lab File ID: 27DE133D5_86.d

Analysis Method: 8290A Date Collected: 11/25/2013 10:35

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.03(g) Date Analyzed: 12/30/2013 04:41

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	53		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	57		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	55		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	59		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	58		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	71		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	65		40-135
114423-97-1	13C-OCDD	82		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1002-0001 RA Lab Sample ID: 320-5143-5 RA

Matrix: Solid Lab File ID: 31DE13C5D2_009.d

Analysis Method: 8290A Date Collected: 11/25/2013 10:35

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.03(g) Date Analyzed: 12/31/2013 15:14

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32982 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.36

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	57		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1002-0001 DL Lab Sample ID: 320-5143-5 DL

Matrix: Solid Lab File ID: 30DE13A9D5_008.d

Analysis Method: 8290A Date Collected: 11/25/2013 10:35

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.03(g) Date Analyzed: 12/31/2013 01:46

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32907 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	4700	B	110	41

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	35	*	40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1003-0001 Lab Sample ID: 320-5143-7

Matrix: Solid Lab File ID: 27DE133D5_88.d

Analysis Method: 8290A Date Collected: 11/25/2013 11:40

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.10(g) Date Analyzed: 12/30/2013 06:05

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.042
40321-76-4	1,2,3,7,8-PeCDD	ND		5.6	0.092
57117-41-6	1,2,3,7,8-PeCDF	ND		5.6	0.045
57117-31-4	2,3,4,7,8-PeCDF	0.29	J	5.6	0.047
39227-28-6	1,2,3,4,7,8-HxCDD	0.29	J	5.6	0.071
57653-85-7	1,2,3,6,7,8-HxCDD	0.54	J	5.6	0.050
19408-74-3	1,2,3,7,8,9-HxCDD	0.44	J q	5.6	0.052
70648-26-9	1,2,3,4,7,8-HxCDF	0.76	J B	5.6	0.041
57117-44-9	1,2,3,6,7,8-HxCDF	0.46	J	5.6	0.030
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.6	0.039
60851-34-5	2,3,4,6,7,8-HxCDF	0.33	J	5.6	0.035
35822-46-9	1,2,3,4,6,7,8-HpCDD	36	B	5.6	0.22
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.6	J B	5.6	0.045
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.6	0.053
39001-02-0	OCDF	2.2	J B	11	0.052
41903-57-5	Total TCDD	0.46	J q	1.1	0.042
30402-14-3	Total TCDF	3.0	q	1.1	0.025
36088-22-9	Total PeCDD	1.3	J q	5.6	0.092
30402-15-4	Total PeCDF	3.8	J q	5.6	0.046
34465-46-8	Total HxCDD	5.6	q	5.6	0.057
55684-94-1	Total HxCDF	5.9	q B	5.6	0.036
37871-00-4	Total HpCDD	66	B	5.6	0.22
38998-75-3	Total HpCDF	2.9	J B	5.6	0.049

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1003-0001 | Lab Sample ID: 320-5143-7

Matrix: Solid | Lab File ID: 27DE133D5_88.d

Analysis Method: 8290A | Date Collected: 11/25/2013 11:40

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.10(g) | Date Analyzed: 12/30/2013 06:05

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 10.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		40-135
89059-46-1	13C-2,3,7,8-TCDF	53		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	56		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	55		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	61		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	56		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	70		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	65		40-135
114423-97-1	13C-OCDD	86		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1003-0001 RA | Lab Sample ID: 320-5143-7 RA

Matrix: Solid | Lab File ID: 31DE13C5D2_011.d

Analysis Method: 8290A | Date Collected: 11/25/2013 11:40

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.10(g) | Date Analyzed: 12/31/2013 16:29

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 10.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32982 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.36	J q	1.1	0.36

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	58		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1003-0001 DL | Lab Sample ID: 320-5143-7 DL

Matrix: Solid | Lab File ID: 30DE13A9D5_010.d

Analysis Method: 8290A | Date Collected: 11/25/2013 11:40

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.10(g) | Date Analyzed: 12/31/2013 03:11

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 10.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32907 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	6400	B	110	65

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	46		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1004-0001 Lab Sample ID: 320-5143-9

Matrix: Solid Lab File ID: 27DE133D5_90.d

Analysis Method: 8290A Date Collected: 11/25/2013 13:00

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.01(g) Date Analyzed: 12/30/2013 07:29

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 12.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.033
40321-76-4	1,2,3,7,8-PeCDD	ND		5.7	0.063
57117-41-6	1,2,3,7,8-PeCDF	0.13	J	5.7	0.032
57117-31-4	2,3,4,7,8-PeCDF	0.18	J	5.7	0.034
39227-28-6	1,2,3,4,7,8-HxCDD	0.30	J q	5.7	0.066
57653-85-7	1,2,3,6,7,8-HxCDD	0.57	J	5.7	0.047
19408-74-3	1,2,3,7,8,9-HxCDD	0.52	J q	5.7	0.048
70648-26-9	1,2,3,4,7,8-HxCDF	0.53	J q B	5.7	0.038
57117-44-9	1,2,3,6,7,8-HxCDF	0.41	J	5.7	0.028
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.7	0.037
60851-34-5	2,3,4,6,7,8-HxCDF	0.22	J q	5.7	0.033
35822-46-9	1,2,3,4,6,7,8-HpCDD	34	B	5.7	0.18
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.5	J B	5.7	0.040
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.14	J q	5.7	0.047
39001-02-0	OCDF	3.5	J B	11	0.041
41903-57-5	Total TCDD	0.36	J	1.1	0.033
30402-14-3	Total TCDF	1.5	q	1.1	0.020
36088-22-9	Total PeCDD	1.3	J q	5.7	0.063
30402-15-4	Total PeCDF	3.1	J q	5.7	0.033
34465-46-8	Total HxCDD	6.0	q	5.7	0.054
55684-94-1	Total HxCDF	5.0	J q B	5.7	0.034
37871-00-4	Total HpCDD	64	B	5.7	0.18
38998-75-3	Total HpCDF	4.7	J q B	5.7	0.043

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1004-0001 | Lab Sample ID: 320-5143-9

Matrix: Solid | Lab File ID: 27DE133D5_90.d

Analysis Method: 8290A | Date Collected: 11/25/2013 13:00

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.01(g) | Date Analyzed: 12/30/2013 07:29

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 12.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	74		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	73		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	70		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	79		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	74		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	89		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	84		40-135
114423-97-1	13C-OCDD	105		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1004-0001 RA | Lab Sample ID: 320-5143-9 RA

Matrix: Solid | Lab File ID: 31DE13C5D2_013.d

Analysis Method: 8290A | Date Collected: 11/25/2013 13:00

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.01(g) | Date Analyzed: 12/31/2013 17:44

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 12.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32982 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.30

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1004-0001 DL | Lab Sample ID: 320-5143-9 DL

Matrix: Solid | Lab File ID: 30DE13A9D5_012.d

Analysis Method: 8290A | Date Collected: 11/25/2013 13:00

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.01(g) | Date Analyzed: 12/31/2013 04:36

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 12.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32907 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	4900	B	110	41

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	52		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1007-0001 | Lab Sample ID: 320-5143-12

Matrix: Solid | Lab File ID: 27DE1310D5_32.d

Analysis Method: 8290A | Date Collected: 11/25/2013 13:30

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.15(g) | Date Analyzed: 12/28/2013 11:54

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 15.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.2	0.044
40321-76-4	1,2,3,7,8-PeCDD	0.20	J	5.8	0.078
57117-41-6	1,2,3,7,8-PeCDF	0.26	J q	5.8	0.045
57117-31-4	2,3,4,7,8-PeCDF	0.43	J	5.8	0.046
39227-28-6	1,2,3,4,7,8-HxCDD	0.48	J q	5.8	0.052
57653-85-7	1,2,3,6,7,8-HxCDD	1.1	J	5.8	0.046
19408-74-3	1,2,3,7,8,9-HxCDD	1.1	J	5.8	0.043
70648-26-9	1,2,3,4,7,8-HxCDF	1.0	J B	5.8	0.033
57117-44-9	1,2,3,6,7,8-HxCDF	0.73	J	5.8	0.028
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.8	0.034
60851-34-5	2,3,4,6,7,8-HxCDF	0.73	J	5.8	0.031
35822-46-9	1,2,3,4,6,7,8-HpCDD	50	B	5.8	0.18
67562-39-4	1,2,3,4,6,7,8-HpCDF	4.8	J B	5.8	0.037
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.8	0.044
39001-02-0	OCDF	6.6	J B	12	0.031
41903-57-5	Total TCDD	1.1	J q	1.2	0.044
30402-14-3	Total TCDF	4.2	q	1.2	0.028
36088-22-9	Total PeCDD	3.0	J q	5.8	0.078
30402-15-4	Total PeCDF	7.6	q	5.8	0.046
34465-46-8	Total HxCDD	11	q	5.8	0.047
55684-94-1	Total HxCDF	9.5	B	5.8	0.032
37871-00-4	Total HpCDD	100	B	5.8	0.18
38998-75-3	Total HpCDF	9.7	B	5.8	0.040

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1007-0001 Lab Sample ID: 320-5143-12

Matrix: Solid Lab File ID: 27DE1310D5_32.d

Analysis Method: 8290A Date Collected: 11/25/2013 13:30

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.15(g) Date Analyzed: 12/28/2013 11:54

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 15.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	59		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	57		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	58		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	68		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	61		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	64		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	65		40-135
114423-97-1	13C-OCDD	75		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1007-0001 RA Lab Sample ID: 320-5143-12 RA

Matrix: Solid Lab File ID: 02JA14B5D2_005.d

Analysis Method: 8290A Date Collected: 11/25/2013 13:30

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.15(g) Date Analyzed: 01/02/2014 21:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 15.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33166 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.2	0.77

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	63		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1007-0001 DL | Lab Sample ID: 320-5143-12 DL

Matrix: Solid | Lab File ID: 31DE13A10D5_5.d

Analysis Method: 8290A | Date Collected: 11/25/2013 13:30

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.15(g) | Date Analyzed: 12/31/2013 12:56

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 15.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33085 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	6000	B	120	2.1

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	63		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1008-0001 | Lab Sample ID: 320-5143-15

Matrix: Solid | Lab File ID: 27DE1310D5_37.d

Analysis Method: 8290A | Date Collected: 11/25/2013 12:40

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.09(g) | Date Analyzed: 12/28/2013 15:44

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 12.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.032
40321-76-4	1,2,3,7,8-PeCDD	0.11	J	5.6	0.058
57117-41-6	1,2,3,7,8-PeCDF	ND		5.6	0.077
57117-31-4	2,3,4,7,8-PeCDF	0.15	J	5.6	0.038
39227-28-6	1,2,3,4,7,8-HxCDD	0.29	J	5.6	0.037
57653-85-7	1,2,3,6,7,8-HxCDD	0.54	J	5.6	0.033
19408-74-3	1,2,3,7,8,9-HxCDD	0.55	J	5.6	0.030
70648-26-9	1,2,3,4,7,8-HxCDF	0.36	J q B	5.6	0.027
57117-44-9	1,2,3,6,7,8-HxCDF	0.52	J	5.6	0.023
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.6	0.027
60851-34-5	2,3,4,6,7,8-HxCDF	0.40	J	5.6	0.025
35822-46-9	1,2,3,4,6,7,8-HpCDD	33	B	5.6	0.14
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.3	J B	5.6	0.024
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.15	J	5.6	0.028
39001-02-0	OCDF	2.0	J B	11	0.026
41903-57-5	Total TCDD	0.86	J q	1.1	0.032
30402-14-3	Total TCDF	1.9	q	1.1	0.022
36088-22-9	Total PeCDD	1.1	J q	5.6	0.058
30402-15-4	Total PeCDF	2.9	J q	5.6	0.057
34465-46-8	Total HxCDD	5.3	J q	5.6	0.033
55684-94-1	Total HxCDF	4.5	J q B	5.6	0.026
37871-00-4	Total HpCDD	60	B	5.6	0.14
38998-75-3	Total HpCDF	2.5	J B	5.6	0.026

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1008-0001 | Lab Sample ID: 320-5143-15

Matrix: Solid | Lab File ID: 27DE1310D5_37.d

Analysis Method: 8290A | Date Collected: 11/25/2013 12:40

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.09(g) | Date Analyzed: 12/28/2013 15:44

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 12.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	62		40-135
89059-46-1	13C-2,3,7,8-TCDF	63		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	60		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	61		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	71		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	66		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	69		40-135
114423-97-1	13C-OCDD	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1008-0001 RA Lab Sample ID: 320-5143-15 RA

Matrix: Solid Lab File ID: 02JA14B5D2_010.d

Analysis Method: 8290A Date Collected: 11/25/2013 12:40

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.09(g) Date Analyzed: 01/03/2014 00:30

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 12.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33166 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.29

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	63		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1008-0001 DL | Lab Sample ID: 320-5143-15 DL

Matrix: Solid | Lab File ID: 31DE13A10D5_10.d

Analysis Method: 8290A | Date Collected: 11/25/2013 12:40

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.09(g) | Date Analyzed: 12/31/2013 16:46

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 12.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33085 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	6600	B	110	1.6

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	64		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1009-0001 Lab Sample ID: 320-5143-17

Matrix: Solid Lab File ID: 27DE1310D5_39.d

Analysis Method: 8290A Date Collected: 11/25/2013 12:00

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.00(g) Date Analyzed: 12/28/2013 17:17

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.031
40321-76-4	1,2,3,7,8-PeCDD	ND		5.6	0.056
57117-41-6	1,2,3,7,8-PeCDF	0.20	J q	5.6	0.032
57117-31-4	2,3,4,7,8-PeCDF	0.21	J	5.6	0.033
39227-28-6	1,2,3,4,7,8-HxCDD	0.44	J	5.6	0.044
57653-85-7	1,2,3,6,7,8-HxCDD	1.2	J	5.6	0.039
19408-74-3	1,2,3,7,8,9-HxCDD	1.1	J	5.6	0.036
70648-26-9	1,2,3,4,7,8-HxCDF	0.88	J B	5.6	0.026
57117-44-9	1,2,3,6,7,8-HxCDF	0.65	J	5.6	0.022
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.6	0.026
60851-34-5	2,3,4,6,7,8-HxCDF	0.61	J	5.6	0.024
35822-46-9	1,2,3,4,6,7,8-HpCDD	46	B	5.6	0.14
67562-39-4	1,2,3,4,6,7,8-HpCDF	5.6	B	5.6	0.038
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.31	J	5.6	0.044
3268-87-9	OCDD	4000	B	11	0.30
39001-02-0	OCDF	9.4	J B	11	0.024
41903-57-5	Total TCDD	0.40	J	1.1	0.031
30402-14-3	Total TCDF	1.2	q	1.1	0.019
36088-22-9	Total PeCDD	1.6	J q	5.6	0.056
30402-15-4	Total PeCDF	4.1	J q	5.6	0.033
34465-46-8	Total HxCDD	9.4	q	5.6	0.040
55684-94-1	Total HxCDF	8.4	B	5.6	0.024
37871-00-4	Total HpCDD	81	B	5.6	0.14
38998-75-3	Total HpCDF	11	B	5.6	0.041

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1009-0001 Lab Sample ID: 320-5143-17

Matrix: Solid Lab File ID: 27DE1310D5_39.d

Analysis Method: 8290A Date Collected: 11/25/2013 12:00

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.00(g) Date Analyzed: 12/28/2013 17:17

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		40-135
89059-46-1	13C-2,3,7,8-TCDF	71		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	68		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	69		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	82		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	76		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	74		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	76		40-135
114423-97-1	13C-OCDD	86		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-001-SS1009-0001 RA Lab Sample ID: 320-5143-17 RA

Matrix: Solid Lab File ID: 02JA14B5D2_012.d

Analysis Method: 8290A Date Collected: 11/25/2013 12:00

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.00(g) Date Analyzed: 01/03/2014 01:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33166 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.24

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-003-SB1013-0204 | Lab Sample ID: 320-5143-1

Matrix: Solid | Lab File ID: 27DE133D5_82.d

Analysis Method: 8290A | Date Collected: 11/25/2013 08:15

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.03(g) | Date Analyzed: 12/30/2013 01:54

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.027
40321-76-4	1,2,3,7,8-PeCDD	ND		5.3	0.048
57117-41-6	1,2,3,7,8-PeCDF	ND		5.3	0.043
57117-31-4	2,3,4,7,8-PeCDF	ND		5.3	0.033
39227-28-6	1,2,3,4,7,8-HxCDD	0.12	J	5.3	0.062
57653-85-7	1,2,3,6,7,8-HxCDD	0.21	J q	5.3	0.044
19408-74-3	1,2,3,7,8,9-HxCDD	0.46	J	5.3	0.045
70648-26-9	1,2,3,4,7,8-HxCDF	0.11	J q B	5.3	0.029
57117-44-9	1,2,3,6,7,8-HxCDF	0.31	J	5.3	0.022
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.028
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.3	0.025
35822-46-9	1,2,3,4,6,7,8-HpCDD	24	B	5.3	0.15
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.44	J B	5.3	0.028
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.3	0.033
3268-87-9	OCDD	2600	B	11	0.65
39001-02-0	OCDF	0.82	J B	11	0.038
41903-57-5	Total TCDD	1.1	q	1.1	0.027
30402-14-3	Total TCDF	0.96	J q	1.1	0.023
36088-22-9	Total PeCDD	1.0	J q	5.3	0.048
30402-15-4	Total PeCDF	0.31	J q	5.3	0.038
34465-46-8	Total HxCDD	4.9	J q	5.3	0.051
55684-94-1	Total HxCDF	0.74	J q B	5.3	0.026
37871-00-4	Total HpCDD	42	q B	5.3	0.15
38998-75-3	Total HpCDF	0.68	J B	5.3	0.031

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-003-SB1013-0204 Lab Sample ID: 320-5143-1

Matrix: Solid Lab File ID: 27DE133D5_82.d

Analysis Method: 8290A Date Collected: 11/25/2013 08:15

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.03(g) Date Analyzed: 12/30/2013 01:54

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		40-135
89059-46-1	13C-2,3,7,8-TCDF	53		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	57		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	55		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	59		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	58		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	71		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	66		40-135
114423-97-1	13C-OCDD	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-003-SB1013-0204 RA Lab Sample ID: 320-5143-1 RA

Matrix: Solid Lab File ID: 31DE13C5D2_005.d

Analysis Method: 8290A Date Collected: 11/25/2013 08:15

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.03(g) Date Analyzed: 12/31/2013 12:44

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32982 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.23

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	59		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-003-SB1019-0204 | Lab Sample ID: 320-5143-2

Matrix: Solid | Lab File ID: 27DE133D5_83.d

Analysis Method: 8290A | Date Collected: 11/25/2013 08:35

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.08(g) | Date Analyzed: 12/30/2013 02:36

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.47	J q	1.1	0.12
40321-76-4	1,2,3,7,8-PeCDD	2.9	J	5.4	0.28
57117-41-6	1,2,3,7,8-PeCDF	1.7	J	5.4	0.050
57117-31-4	2,3,4,7,8-PeCDF	2.1	J	5.4	0.053
39227-28-6	1,2,3,4,7,8-HxCDD	3.6	J	5.4	0.14
57653-85-7	1,2,3,6,7,8-HxCDD	8.0		5.4	0.097
19408-74-3	1,2,3,7,8,9-HxCDD	5.9		5.4	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	3.8	J B	5.4	0.053
57117-44-9	1,2,3,6,7,8-HxCDF	2.6	J	5.4	0.040
72918-21-9	1,2,3,7,8,9-HxCDF	0.080	J q	5.4	0.051
60851-34-5	2,3,4,6,7,8-HxCDF	2.3	J	5.4	0.046
35822-46-9	1,2,3,4,6,7,8-HpCDD	64	B	5.4	0.25
67562-39-4	1,2,3,4,6,7,8-HpCDF	14	B	5.4	0.065
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.73	J	5.4	0.076
3268-87-9	OCDD	4200	B	11	0.98
39001-02-0	OCDF	6.4	J B	11	0.057
41903-57-5	Total TCDD	86	q	1.1	0.12
30402-14-3	Total TCDF	25	q	1.1	0.032
36088-22-9	Total PeCDD	110	q	5.4	0.28
30402-15-4	Total PeCDF	24	q	5.4	0.052
34465-46-8	Total HxCDD	98		5.4	0.11
55684-94-1	Total HxCDF	24	q B	5.4	0.048
37871-00-4	Total HpCDD	120	B	5.4	0.25
38998-75-3	Total HpCDF	19	q B	5.4	0.071

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-003-SB1019-0204 | Lab Sample ID: 320-5143-2

Matrix: Solid | Lab File ID: 27DE133D5_83.d

Analysis Method: 8290A | Date Collected: 11/25/2013 08:35

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.08(g) | Date Analyzed: 12/30/2013 02:36

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	53		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	57		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	56		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	59		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	70		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	65		40-135
114423-97-1	13C-OCDD	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-003-SB1019-0204 RA Lab Sample ID: 320-5143-2 RA

Matrix: Solid Lab File ID: 31DE13C5D2_006.d

Analysis Method: 8290A Date Collected: 11/25/2013 08:35

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10.08(g) Date Analyzed: 12/31/2013 13:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32982 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.1		1.1	0.38

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	59		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-SB-DUP09-1113 | Lab Sample ID: 320-5143-11

Matrix: Solid | Lab File ID: 27DE1310D5_31.d

Analysis Method: 8290A | Date Collected: 11/25/2013 00:00

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.06(g) | Date Analyzed: 12/28/2013 11:08

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 11.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.038
40321-76-4	1,2,3,7,8-PeCDD	0.093	J q	5.6	0.060
57117-41-6	1,2,3,7,8-PeCDF	0.24	J	5.6	0.036
57117-31-4	2,3,4,7,8-PeCDF	0.23	J	5.6	0.037
39227-28-6	1,2,3,4,7,8-HxCDD	0.30	J	5.6	0.044
57653-85-7	1,2,3,6,7,8-HxCDD	0.42	J q	5.6	0.039
19408-74-3	1,2,3,7,8,9-HxCDD	0.44	J	5.6	0.036
70648-26-9	1,2,3,4,7,8-HxCDF	0.62	J B	5.6	0.034
57117-44-9	1,2,3,6,7,8-HxCDF	0.51	J q	5.6	0.029
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.6	0.035
60851-34-5	2,3,4,6,7,8-HxCDF	0.57	J	5.6	0.032
35822-46-9	1,2,3,4,6,7,8-HpCDD	36	B	5.6	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.6	J B	5.6	0.026
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.29	J	5.6	0.030
39001-02-0	OCDF	2.7	J B	11	0.033
41903-57-5	Total TCDD	0.64	J	1.1	0.038
30402-14-3	Total TCDF	2.5	q	1.1	0.025
36088-22-9	Total PeCDD	0.91	J q	5.6	0.060
30402-15-4	Total PeCDF	4.4	J q	5.6	0.037
34465-46-8	Total HxCDD	4.9	J q	5.6	0.040
55684-94-1	Total HxCDF	5.4	J B q	5.6	0.032
37871-00-4	Total HpCDD	66	B	5.6	0.21
38998-75-3	Total HpCDF	3.0	J B	5.6	0.028

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-SB-DUP09-1113 Lab Sample ID: 320-5143-11

Matrix: Solid Lab File ID: 27DE1310D5_31.d

Analysis Method: 8290A Date Collected: 11/25/2013 00:00

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.06(g) Date Analyzed: 12/28/2013 11:08

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	59		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	57		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	60		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-SB-DUP09-1113 RA Lab Sample ID: 320-5143-11 RA

Matrix: Solid Lab File ID: 02JA14B5D2_004.d

Analysis Method: 8290A Date Collected: 11/25/2013 00:00

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.06(g) Date Analyzed: 01/02/2014 20:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33166 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.25

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-SB-DUP09-1113 DL | Lab Sample ID: 320-5143-11 DL

Matrix: Solid | Lab File ID: 31DE13A10D5_4.d

Analysis Method: 8290A | Date Collected: 11/25/2013 00:00

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.06(g) | Date Analyzed: 12/31/2013 12:10

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 11.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33085 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	7300	B	110	2.3

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	63		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-SB-DUP10-1113 Lab Sample ID: 320-5143-18

Matrix: Solid Lab File ID: 27DE1310D5_40.d

Analysis Method: 8290A Date Collected: 11/25/2013 00:00

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.14(g) Date Analyzed: 12/28/2013 18:03

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 17.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.2	0.040
40321-76-4	1,2,3,7,8-PeCDD	0.12	J	6.0	0.061
57117-41-6	1,2,3,7,8-PeCDF	0.058	J	6.0	0.032
57117-31-4	2,3,4,7,8-PeCDF	ND		6.0	0.033
39227-28-6	1,2,3,4,7,8-HxCDD	ND		6.0	0.061
57653-85-7	1,2,3,6,7,8-HxCDD	0.28	J	6.0	0.054
19408-74-3	1,2,3,7,8,9-HxCDD	0.37	J	6.0	0.050
70648-26-9	1,2,3,4,7,8-HxCDF	0.19	J q B	6.0	0.020
57117-44-9	1,2,3,6,7,8-HxCDF	0.64	J	6.0	0.017
72918-21-9	1,2,3,7,8,9-HxCDF	ND		6.0	0.021
60851-34-5	2,3,4,6,7,8-HxCDF	0.13	J	6.0	0.019
35822-46-9	1,2,3,4,6,7,8-HpCDD	35	B	6.0	0.15
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.49	J B	6.0	0.019
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		6.0	0.022
39001-02-0	OCDF	0.96	J q B	12	0.021
41903-57-5	Total TCDD	1.2	q	1.2	0.040
30402-14-3	Total TCDF	2.3	q	1.2	0.018
36088-22-9	Total PeCDD	2.3	J	6.0	0.061
30402-15-4	Total PeCDF	0.70	J q	6.0	0.032
34465-46-8	Total HxCDD	5.5	J	6.0	0.055
55684-94-1	Total HxCDF	1.3	J q B	6.0	0.019
37871-00-4	Total HpCDD	66	B	6.0	0.15
38998-75-3	Total HpCDF	0.73	J B	6.0	0.021

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-SB-DUP10-1113 | Lab Sample ID: 320-5143-18

Matrix: Solid | Lab File ID: 27DE1310D5_40.d

Analysis Method: 8290A | Date Collected: 11/25/2013 00:00

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.14(g) | Date Analyzed: 12/28/2013 18:03

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 17.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	69		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	70		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	82		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	75		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	77		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	79		40-135
114423-97-1	13C-OCDD	92		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-SB-DUP10-1113 RA | Lab Sample ID: 320-5143-18 RA

Matrix: Solid | Lab File ID: 02JA14B5D2_013.d

Analysis Method: 8290A | Date Collected: 11/25/2013 00:00

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.14(g) | Date Analyzed: 01/03/2014 02:22

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 17.9 | GPC Cleanup: (Y/N) N

Analysis Batch No.: 33166 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.2	0.26

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	74		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-SB-DUP10-1113 DL Lab Sample ID: 320-5143-18 DL

Matrix: Solid Lab File ID: 31DE13A10D5_12.d

Analysis Method: 8290A Date Collected: 11/25/2013 00:00

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10.14(g) Date Analyzed: 12/31/2013 18:18

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 17.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33085 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	7500	B	120	2.0

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	78		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-SB-RB05-1113 Lab Sample ID: 320-5143-19

Matrix: Water Lab File ID: 27DE13A9D5_010.d

Analysis Method: 8290A Date Collected: 11/25/2013 11:00

Extract. Method: 8290 Date Extracted: 12/05/2013 13:52

Sample wt/vol: 1062.2(mL) Date Analyzed: 12/27/2013 18:02

Con. Extract Vol.: 20.00(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 32760 Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		9.4	0.47
51207-31-9	2,3,7,8-TCDF	ND		9.4	0.51
40321-76-4	1,2,3,7,8-PeCDD	ND		47	1.0
57117-41-6	1,2,3,7,8-PeCDF	ND		47	1.1
57117-31-4	2,3,4,7,8-PeCDF	ND		47	1.1
39227-28-6	1,2,3,4,7,8-HxCDD	ND		47	0.54
57653-85-7	1,2,3,6,7,8-HxCDD	ND		47	0.53
19408-74-3	1,2,3,7,8,9-HxCDD	ND		47	0.46
70648-26-9	1,2,3,4,7,8-HxCDF	ND		47	0.45
57117-44-9	1,2,3,6,7,8-HxCDF	ND		47	0.40
72918-21-9	1,2,3,7,8,9-HxCDF	ND		47	0.46
60851-34-5	2,3,4,6,7,8-HxCDF	ND		47	0.44
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		47	1.0
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		47	1.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		47	1.2
3268-87-9	OCDD	3.3	J q B	94	1.3
39001-02-0	OCDF	ND		94	1.3
41903-57-5	Total TCDD	ND		9.4	0.53
30402-14-3	Total TCDF	ND		9.4	0.51
36088-22-9	Total PeCDD	ND		47	1.0
30402-15-4	Total PeCDF	ND		47	1.1
34465-46-8	Total HxCDD	ND		47	0.54
55684-94-1	Total HxCDF	ND		47	0.46
37871-00-4	Total HpCDD	ND		47	1.0
38998-75-3	Total HpCDF	ND		47	1.2

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: TF2-SB-RB05-1113 Lab Sample ID: 320-5143-19

Matrix: Water Lab File ID: 27DE13A9D5_010.d

Analysis Method: 8290A Date Collected: 11/25/2013 11:00

Extract. Method: 8290 Date Extracted: 12/05/2013 13:52

Sample wt/vol: 1062.2(mL) Date Analyzed: 12/27/2013 18:02

Con. Extract Vol.: 20.00(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 32760 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	81		40-135
89059-46-1	13C-2,3,7,8-TCDF	82		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	85		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	80		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	94		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	79		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	81		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	83		40-135
114423-97-1	13C-OCDD	77		40-135

APPENDIX C

REGIONAL WORKSHEETS

APPENDIX D

SUPPORT DOCUMENTATION

CASE NARRATIVE

Client: Tetra Tech, Inc.

Project: FT2 Portsmouth RI, CTO WE 30

Report Number: 320-5143-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica West Sacramento attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

All parameters for which TestAmerica West Sacramento has certification were evaluated to the QSM specified reporting convention or to the client specified format if different from QSM. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Receipt
The samples were received on 11/29/2013 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

Except:

One or more containers for the following samples were received broken or leaking: Samples TF2-001-SB1001-0204 (320-5143-4) and TF2-SB-DUP10-1113 (320-5143-18) were received with the bottom broken. The samples were safely transferred to a new 250AGB. No sample volume lost.

Dioxin - Method 8290A
Ion abundance ratios are outside criteria for one or more analytes in the following samples and method blank: (MB 320-31001/1-A), (MB 320-31203/1-A), (MB 320-31006/1-A), TF2-001-SB1007-0204 (320-5143-13), TF2-001-SB1008-0204 (320-5143-14), TF2-001-SB1009-0204 (320-5143-16), TF2-001-SS1007-0001 (320-5143-12), TF2-001-SS1008-0001 (320-5143-15), TF2-001-SS1009-0001 (320-5143-17), TF2-SB-DUP09-1113 (320-5143-11), TF2-SB-DUP10-1113 (320-5143-18), TF2-SB-RB05-1113 (320-5143-19), TF2-001-SB1001-0204 (320-5143-4), TF2-001-SB1002-0204 (320-5143-6), TF2-001-SB1003-0204 (320-5143-8), TF2-001-SB1004-0204 (320-5143-10), TF2-001-SS1001-0001 (320-5143-3), TF2-001-SS1002-0001 (320-5143-5), TF2-001-SS1003-0001 (320-5143-7), TF2-001-SS1004-0001 (320-5143-9), TF2-003-SB1013-0204 (320-5143-1), TF2-003-SB1019-0204 (320-5143-2). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC). The affected analytes have been flagged.

The data for the mass resolution check analyzed prior to analysis of samples in analytical batch 32869 was lost due to a network error. The instrument was scheduled to automatically perform and record a mass resolution check at every Continuing Calibration Verification (CCV) standard injection. The opening CCV standard in batch 32869 was affected by the network problem that caused failure of the mass resolution check data to be recorded. The opening CCV standard injected on 12/29/13 at 23:40. The closest recorded mass resolution check prior to the injection of the opening CCV in batch 32869 was on 12/29/13 at 14:09 and it was acceptable. The closing CCV for batch 32869 injected on 12/30/13 at 09:44, and an acceptable mass resolution check was performed and recorded at that time.

The mass resolution checks recorded before and after the analytical batch were acceptable and demonstrated that the minimum static resolving power criteria of the instrument was met. The opening and closing CCV standards met acceptance criteria. All Isotope Dilution Analytes in the samples, method blank and LCS were within acceptance limits as well as the LCS target analyte recoveries.

A matrix spike / matrix spike duplicate was not prepared with samples in extraction batch 31001 as per QSM protocol. The client requested MS /MSD for this job was prepared in a different extraction batch.

The ion abundance ratio for the Isotope Dilution Analyte (IDA) 13C-OCDD is outside criteria in the following sample: TF2-001-SB1002-0204 (320-5143-6). The theoretical area for the IDA was used to quantitate the IDA's recovery.

The Isotope Dilution Analyte (IDA) recovery of 13C-OCDD associated with the following samples is below the method recommended limit: TF2-001-SB1002-0204 (320-5143-6), TF2-001-SS1002-0001 (320-5143-5). Sample dilution is the most probable cause as the recoveries in the undiluted sample injections were acceptable. Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the samples. All detection limits are below the lower calibration.

The following samples were diluted to bring the concentration of OCDD within the calibration range: TF2-001-SB1001-0204 (320-5143-4), TF2-001-SB1002-0204 (320-5143-6), TF2-001-SB1004-0204 (320-5143-10), TF2-001-SS1001-0001 (320-5143-3), TF2-001-SS1002-0001 (320-5143-5), TF2-001-SS1003-0001 (320-5143-7), TF2-001-SS1004-0001 (320-5143-9), TF2-001-SB1007-0204 (320-5143-13), TF2-001-SB1008-0204 (320-5143-14), TF2-001-SB1008-0204 (320-5143-14 MS), TF2-001-SB1008-0204 (320-5143-14 MSD), TF2-001-SB1009-0204 (320-5143-16), TF2-001-SS1007-0001 (320-5143-12), TF2-001-SS1008-0001 (320-5143-15), TF2-SB-DUP09-1113 (320-5143-11), TF2-SB-DUP10-1113 (320-5143-18). Elevated reporting limits (RLs) are provided.

Method(s) 8290A: The matrix spike / matrix spike duplicate (MS/MSD) recovery for OCDD in preparation batch 31006 was outside control limits. This is due to the native OCDD concentration present in the parent sample being greater than 4X the spike amount for the MS/MSD. The associated laboratory control sample (LCS) recovery was within acceptance limits.

No other analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

Dioxin Prep
No analytical or quality issues were noted.

Method Summary

Client: Tetra Tech, Inc.
Project/Site: FT2 Portsmouth RI, CTO WE 30

TestAmerica Job ID: 320-5143-1

Method	Method Description	Protocol	Laboratory
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: FT2 Portsmouth RI, CTO WE 30

TestAmerica Job ID: 320-5143-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-5143-1	TF2-003-SB1013-0204	Solid	11/25/13 08:15	11/29/13 09:15
320-5143-2	TF2-003-SB1019-0204	Solid	11/25/13 08:35	11/29/13 09:15
320-5143-3	TF2-001-SS1001-0001	Solid	11/25/13 10:05	11/29/13 09:15
320-5143-4	TF2-001-SB1001-0204	Solid	11/25/13 10:10	11/29/13 09:15
320-5143-5	TF2-001-SS1002-0001	Solid	11/25/13 10:35	11/29/13 09:15
320-5143-6	TF2-001-SB1002-0204	Solid	11/25/13 10:40	11/29/13 09:15
320-5143-7	TF2-001-SS1003-0001	Solid	11/25/13 11:40	11/29/13 09:15
320-5143-8	TF2-001-SB1003-0204	Solid	11/25/13 11:45	11/29/13 09:15
320-5143-9	TF2-001-SS1004-0001	Solid	11/25/13 13:00	11/29/13 09:15
320-5143-10	TF2-001-SB1004-0204	Solid	11/25/13 13:10	11/29/13 09:15
320-5143-11	TF2-SB-DUP09-1113	Solid	11/25/13 00:00	11/29/13 09:15
320-5143-12	TF2-001-SS1007-0001	Solid	11/25/13 13:30	11/29/13 09:15
320-5143-13	TF2-001-SB1007-0204	Solid	11/25/13 13:40	11/29/13 09:15
320-5143-14	TF2-001-SB1008-0204	Solid	11/25/13 12:45	11/29/13 09:15
320-5143-15	TF2-001-SS1008-0001	Solid	11/25/13 12:40	11/29/13 09:15
320-5143-16	TF2-001-SB1009-0204	Solid	11/25/13 12:05	11/29/13 09:15
320-5143-17	TF2-001-SS1009-0001	Solid	11/25/13 12:00	11/29/13 09:15
320-5143-18	TF2-SB-DUP10-1113	Solid	11/25/13 00:00	11/29/13 09:15
320-5143-19	TF2-SB-RB05-1113	Water	11/25/13 11:00	11/29/13 09:15

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1927 | PAGE 1 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03019 CTO 30	Wilmington, MA	Debra Seiken	978 474 8445	Test America / J. Kellmann
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Kjaikut		Kayleen Jaikut	781 801 0457	880 Riverside Parkway
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Fed Ex AB # 8759 3797 5336		West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G G
PRESERVATIVE USED: ≤6°C ≤6°C
TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS 8290 | DIOXIN, IL Amber

320-5143 Chain of Custody

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS			COMMENTS
11/25	0815	TF2-003-SB1013-0204	1013	2	4	SO	G	1	1	KJ 11/26/13	
11/25	0835	TF2-003-SB1019-0204	1019	2	4	SO	G	1	1		
11/25	1005	TF2-001-SS1001-0001	1001	0	1	SO	G	1	1		
11/25	1010	TF2-001-SB1001-0204	1001	2	4	SO	G	1	1		
11/25	1035	TF2-001-SS1002-0001	1002	0	1	SO	G	1	1		
11/25	1040	TF2-001-SB1002-0204	1002	2	4	SO	G	1	1		
11/25	1140	TF2-001-SS1003-0001	1003	0	1	SO	G	1	1		
11/25	1145	TF2-001-SB1003-0204	1003	2	4	SO	G	1	1		
11/25	1300	TF2-001-SS1004-0001	1004	0	1	SO	G	1	1		
11/25	1310	TF2-001-SB1004-0204	1004	2	4	SO	G	1	1	KJ 11/26/13	
11/25	0000	TF2-SB-DUP09-1113	—	—	—	SO	G	1	1		
11/25	1330	TF2-001-SS1007-0001	1007	0	1	SO	G	1	1		
11/25	1340	TF2-001-SB1007-0204	1007	2	4	SO	G	1	1		

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		DATE	TIME		DATE	TIME
1 RELINQUISHED BY	Kjaikut	11/26/13	1600	1. RECEIVED BY Fed Ex	11/26/13	1600
2 RELINQUISHED BY		DATE	TIME	2 RECEIVED BY Kim Nelson	11-29-13	915
3 RELINQUISHED BY		DATE	TIME	3 RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) K Rorsid Bronnum @ 11/30/13 | YELLOW (FIELD COPY) ~~Rorsid Bronnum @ 11/29/13~~ | PINK (FILE COPY)

1.1°C

4/02R
FORM NO. TtNUS-001

01/15/2014

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1926 | PAGE 2 OF 2

PROJECT NO: 112G03019 CTO 30	FACILITY: Wilmington MA	PROJECT MANAGER Debra Selkun	PHONE NUMBER 978 474 8445	LABORATORY NAME AND CONTACT: Test America / J. Kellmann
SAMPLERS (SIGNATURE) KJalkut		FIELD OPERATIONS LEADER Kayleen Jalkut	PHONE NUMBER 781 801 0457	ADDRESS 880 Riverside Parkway
		CARRIER/WAYBILL NUMBER FedEx AB # 8759 3797 5336		CITY, STATE West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐ ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G								
									≤6°C	≤6°C								
									PRESERVATIVE USED									
									TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS 8D2	DIOXIN, IL AMBER								
11/25	1245	TF2-001-SB1008-0204	1008	2	4	SO	G	2	2	—								Lab QC
11/25	1240	TF2-001-SS1008-0001	1008	0	1	SO	G	1	1	—								
11/25	1205	TF2-001-SB1009-0204	1009	2	4	SO	G	1	1	—								
11/25	1200	TF2-001-SS1009-0001	1009	0	1	SO	G	1	1	—								
11/25	0000	TF2-SB-DUP10-1113	—	—	—	SO	G	1	1	—								
11/25	1100	TF2-SB-RB05-1113	—	—	—	QC	G	2	—	2								

KJ 11/26/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY KJalkut	11/26/13	1600	1. RECEIVED BY FedEx	11/26/13	1600
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY Kim Nelson	11-29-13	915
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 4/02R FORM NO. TtNUS-001

* Received samples with Bottom Broken @ 11/29/13

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01/15/2014

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 320-5143-1

Login Number: 5143

List Source: TestAmerica Sacramento

List Number: 1

Creator: Nelson, Kym D

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	False	Received broken. Transferred to new containers with minimal or no sample loss.
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

HOLDTIME

PROJ_NO 03019

SDG	SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
320-5143-1	DIOX	PG/G	TF2-001-SB1007-0204	320-5143-13	NM	11/25/2013	12/03/2013	01/02/2014	8	30	38
320-5143-1	DIOX	PG/G	TF2-001-SS1002-0001	320-5143-5	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-001-SS1002-0001	320-5143-5	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-001-SS1002-0001	320-5143-5	NM	11/25/2013	12/03/2013	12/30/2013	8	27	35
320-5143-1	DIOX	PG/G	TF2-001-SS1001-0001	320-5143-3	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-001-SS1001-0001	320-5143-3	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-001-SS1001-0001	320-5143-3	NM	11/25/2013	12/03/2013	12/30/2013	8	27	35
320-5143-1	DIOX	PG/G	TF2-001-SB1009-0204	320-5143-16	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-001-SB1009-0204	320-5143-16	NM	11/25/2013	12/03/2013	01/03/2014	8	31	39
320-5143-1	DIOX	PG/G	TF2-001-SB1009-0204	320-5143-16	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-001-SB1009-0204	320-5143-16	NM	11/25/2013	12/03/2013	12/28/2013	8	25	33
320-5143-1	DIOX	PG/G	TF2-001-SB1008-0204	320-5143-14	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-001-SB1008-0204	320-5143-14	NM	11/25/2013	12/03/2013	01/02/2014	8	30	38
320-5143-1	DIOX	PG/G	TF2-001-SB1008-0204	320-5143-14	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-001-SB1001-0204	320-5143-4	NM	11/25/2013	12/03/2013	12/30/2013	8	27	35
320-5143-1	DIOX	PG/G	TF2-001-SB1003-0204	320-5143-8	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51

SDG	SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
320-5143-1	DIOX	PG/G	TF2-001-SB1001-0204	320-5143-4	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-001-SB1001-0204	320-5143-4	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-001-SB1002-0204	320-5143-6	NM	11/25/2013	12/03/2013	12/30/2013	8	27	35
320-5143-1	DIOX	PG/G	TF2-001-SB1002-0204	320-5143-6	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-001-SB1002-0204	320-5143-6	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-001-SB1008-0204	320-5143-14	NM	11/25/2013	12/03/2013	12/28/2013	8	25	33
320-5143-1	DIOX	PG/G	TF2-001-SB1003-0204	320-5143-8	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-001-SB1007-0204	320-5143-13	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-001-SB1004-0204	320-5143-10	NM	11/25/2013	12/03/2013	12/30/2013	8	27	35
320-5143-1	DIOX	PG/G	TF2-001-SB1004-0204	320-5143-10	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-001-SB1004-0204	320-5143-10	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-001-SB1007-0204	320-5143-13	NM	11/25/2013	12/03/2013	12/28/2013	8	25	33
320-5143-1	DIOX	PG/G	TF2-001-SB1007-0204	320-5143-13	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-001-SS1003-0001	320-5143-7	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-001-SB1003-0204	320-5143-8	NM	11/25/2013	12/03/2013	12/30/2013	8	27	35
320-5143-1	DIOX	PG/G	TF2-001-SS1009-0001	320-5143-17	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-SB-DUP10-1113	320-5143-18	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-SB-DUP10-1113	320-5143-18	NM	11/25/2013	12/03/2013	01/03/2014	8	31	39
320-5143-1	DIOX	PG/G	TF2-SB-DUP10-1113	320-5143-18	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36

SDG	SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
320-5143-1	DIOX	PG/G	TF2-SB-DUP10-1113	320-5143-18	NM	11/25/2013	12/03/2013	12/28/2013	8	25	33
320-5143-1	DIOX	PG/G	TF2-SB-DUP09-1113	320-5143-11	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-SB-DUP09-1113	320-5143-11	NM	11/25/2013	12/03/2013	01/02/2014	8	30	38
320-5143-1	DIOX	PG/G	TF2-SB-DUP09-1113	320-5143-11	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-SB-DUP09-1113	320-5143-11	NM	11/25/2013	12/03/2013	12/28/2013	8	25	33
320-5143-1	DIOX	PG/G	TF2-003-SB1019-0204	320-5143-2	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-003-SB1019-0204	320-5143-2	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-003-SB1019-0204	320-5143-2	NM	11/25/2013	12/03/2013	12/30/2013	8	27	35
320-5143-1	DIOX	PG/G	TF2-003-SB1013-0204	320-5143-1	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-001-SS1003-0001	320-5143-7	NM	11/25/2013	12/03/2013	12/30/2013	8	27	35
320-5143-1	DIOX	PG/G	TF2-003-SB1013-0204	320-5143-1	NM	11/25/2013	12/03/2013	12/30/2013	8	27	35
320-5143-1	DIOX	PG/G	TF2-001-SS1007-0001	320-5143-12	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-001-SS1004-0001	320-5143-9	NM	11/25/2013	12/03/2013	12/30/2013	8	27	35
320-5143-1	DIOX	PG/G	TF2-001-SS1004-0001	320-5143-9	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-001-SS1004-0001	320-5143-9	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-001-SS1007-0001	320-5143-12	NM	11/25/2013	12/03/2013	12/28/2013	8	25	33
320-5143-1	DIOX	PG/G	TF2-003-SB1013-0204	320-5143-1	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-001-SS1007-0001	320-5143-12	NM	11/25/2013	12/03/2013	01/02/2014	8	30	38
320-5143-1	DIOX	PG/G	TF2-001-SS1003-0001	320-5143-7	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36

SDG	SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
320-5143-1	DIOX	PG/G	TF2-001-SS1008-0001	320-5143-15	NM	11/25/2013	12/03/2013	12/28/2013	8	25	33
320-5143-1	DIOX	PG/G	TF2-001-SS1008-0001	320-5143-15	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/G	TF2-001-SS1008-0001	320-5143-15	NM	11/25/2013	12/03/2013	01/03/2014	8	31	39
320-5143-1	DIOX	PG/G	TF2-001-SS1008-0001	320-5143-15	NM	11/25/2013	01/15/2014	01/15/2014	51	0	51
320-5143-1	DIOX	PG/G	TF2-001-SS1009-0001	320-5143-17	NM	11/25/2013	12/03/2013	12/28/2013	8	25	33
320-5143-1	DIOX	PG/G	TF2-001-SS1009-0001	320-5143-17	NM	11/25/2013	12/03/2013	01/03/2014	8	31	39
320-5143-1	DIOX	PG/G	TF2-001-SS1007-0001	320-5143-12	NM	11/25/2013	12/03/2013	12/31/2013	8	28	36
320-5143-1	DIOX	PG/L	TF2-SB-RB05-1113	320-5143-19	NM	11/25/2013	12/30/2013	12/30/2013	35	0	35
320-5143-1	DIOX	PG/L	TF2-SB-RB05-1113	320-5143-19	NM	11/25/2013	12/05/2013	12/27/2013	10	22	32

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab File ID: 27DE133D5_81.d Lab Sample ID: MB 320-31001/1-A

Matrix: Solid Date Extracted: 12/03/2013 09:50

Instrument ID: 3D5 Date Analyzed: 12/30/2013 01:12

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-003-SB1013-0204	320-5143-1	27DE133D5_82.d	12/30/2013 01:54
TF2-003-SB1019-0204	320-5143-2	27DE133D5_83.d	12/30/2013 02:36
TF2-001-SS1001-0001	320-5143-3	27DE133D5_84.d	12/30/2013 03:18
TF2-001-SB1001-0204	320-5143-4	27DE133D5_85.d	12/30/2013 04:00
TF2-001-SS1002-0001	320-5143-5	27DE133D5_86.d	12/30/2013 04:41
TF2-001-SB1002-0204	320-5143-6	27DE133D5_87.d	12/30/2013 05:23
TF2-001-SS1003-0001	320-5143-7	27DE133D5_88.d	12/30/2013 06:05
TF2-001-SB1003-0204	320-5143-8	27DE133D5_89.d	12/30/2013 06:47
TF2-001-SS1004-0001	320-5143-9	27DE133D5_90.d	12/30/2013 07:29
TF2-001-SB1004-0204	320-5143-10	27DE133D5_91.d	12/30/2013 08:10
	LCS 320-31001/2-A	27DE133D5_92.d	12/30/2013 08:52
TF2-001-SS1001-0001 DL	320-5143-3 DL	30DE13A9D5_006.d	12/31/2013 00:20
TF2-001-SB1001-0204 DL	320-5143-4 DL	30DE13A9D5_007.d	12/31/2013 01:03
TF2-001-SS1002-0001 DL	320-5143-5 DL	30DE13A9D5_008.d	12/31/2013 01:46
TF2-001-SB1002-0204 DL	320-5143-6 DL	30DE13A9D5_009.d	12/31/2013 02:28
TF2-001-SS1003-0001 DL	320-5143-7 DL	30DE13A9D5_010.d	12/31/2013 03:11
TF2-001-SS1004-0001 DL	320-5143-9 DL	30DE13A9D5_012.d	12/31/2013 04:36
TF2-001-SB1004-0204 DL	320-5143-10 DL	30DE13A9D5_013.d	12/31/2013 05:19
TF2-003-SB1013-0204 RA	320-5143-1 RA	31DE13C5D2_005.d	12/31/2013 12:44
TF2-003-SB1019-0204 RA	320-5143-2 RA	31DE13C5D2_006.d	12/31/2013 13:22
TF2-001-SS1001-0001 RA	320-5143-3 RA	31DE13C5D2_007.d	12/31/2013 13:59
TF2-001-SB1001-0204 RA	320-5143-4 RA	31DE13C5D2_008.d	12/31/2013 14:37

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab File ID: 27DE133D5_81.d Lab Sample ID: MB 320-31001/1-A

Matrix: Solid Date Extracted: 12/03/2013 09:50

Instrument ID: 3D5 Date Analyzed: 12/30/2013 01:12

Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-001-SS1002-0001 RA	320-5143-5 RA	31DE13C5D2_009.d	12/31/2013 15:14
TF2-001-SB1002-0204 RA	320-5143-6 RA	31DE13C5D2_010.d	12/31/2013 15:52
TF2-001-SS1003-0001 RA	320-5143-7 RA	31DE13C5D2_011.d	12/31/2013 16:29
TF2-001-SB1003-0204 RA	320-5143-8 RA	31DE13C5D2_012.d	12/31/2013 17:06
TF2-001-SS1004-0001 RA	320-5143-9 RA	31DE13C5D2_013.d	12/31/2013 17:44
TF2-001-SB1004-0204 RA	320-5143-10 RA	31DE13C5D2_014.d	12/31/2013 18:21

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-31001/1-A

Matrix: Solid | Lab File ID: 27DE133D5_81.d

Analysis Method: 8290A | Date Collected:

Extract. Method: 8290 | Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10(g) | Date Analyzed: 12/30/2013 01:12

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.025
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.020
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.031
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.025
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.027
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.028
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.019
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.020
70648-26-9	1,2,3,4,7,8-HxCDF	0.0505	J	5.0	0.020
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.015
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.020
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.018
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.0679	J	5.0	0.024
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.215	J	5.0	0.022
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.026
3268-87-9	OCDD	0.286	J	10	0.025
39001-02-0	OCDF	0.199	J	10	0.033
41903-57-5	Total TCDD	ND		1.0	0.025
30402-14-3	Total TCDF	ND		1.0	0.020
36088-22-9	Total PeCDD	ND		5.0	0.031
30402-15-4	Total PeCDF	ND		5.0	0.027
34465-46-8	Total HxCDD	ND		5.0	0.032
55684-94-1	Total HxCDF	0.0505	J	5.0	0.018
37871-00-4	Total HpCDD	0.171	J	5.0	0.024
38998-75-3	Total HpCDF	0.215	J	5.0	0.024

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-31001/1-A

Matrix: Solid Lab File ID: 27DE133D5_81.d

Analysis Method: 8290A Date Collected:

Extract. Method: 8290 Date Extracted: 12/03/2013 09:50

Sample wt/vol: 10(g) Date Analyzed: 12/30/2013 01:12

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 32869 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	59		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	63		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	60		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	67		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	79		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	73		40-135
114423-97-1	13C-OCDD	77		40-135

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab File ID: 27DE1310D5_30.d Lab Sample ID: MB 320-31006/1-A

Matrix: Solid Date Extracted: 12/03/2013 10:02

Instrument ID: 10D5 Date Analyzed: 12/28/2013 10:22

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-SB-DUP09-1113	320-5143-11	27DE1310D5_31.d	12/28/2013 11:08
TF2-001-SS1007-0001	320-5143-12	27DE1310D5_32.d	12/28/2013 11:54
TF2-001-SB1007-0204	320-5143-13	27DE1310D5_33.d	12/28/2013 12:40
TF2-001-SB1008-0204	320-5143-14	27DE1310D5_34.d	12/28/2013 13:26
TF2-001-SB1008-0204 MS	320-5143-14 MS	27DE1310D5_35.d	12/28/2013 14:12
TF2-001-SB1008-0204 MSD	320-5143-14 MSD	27DE1310D5_36.d	12/28/2013 14:58
TF2-001-SS1008-0001	320-5143-15	27DE1310D5_37.d	12/28/2013 15:44
TF2-001-SB1009-0204	320-5143-16	27DE1310D5_38.d	12/28/2013 16:31
TF2-001-SS1009-0001	320-5143-17	27DE1310D5_39.d	12/28/2013 17:17
TF2-SB-DUP10-1113	320-5143-18	27DE1310D5_40.d	12/28/2013 18:03
	LCS 320-31006/2-A	27DE1310D5_41.d	12/28/2013 18:49
TF2-SB-DUP09-1113 DL	320-5143-11 DL	31DE13A10D5_4.d	12/31/2013 12:10
TF2-001-SS1007-0001 DL	320-5143-12 DL	31DE13A10D5_5.d	12/31/2013 12:56
TF2-001-SB1007-0204 DL	320-5143-13 DL	31DE13A10D5_6.d	12/31/2013 13:42
TF2-001-SB1008-0204 DL	320-5143-14 DL	31DE13A10D5_7.d	12/31/2013 14:28
TF2-001-SB1008-0204 MS DL	320-5143-14 MS DL	31DE13A10D5_8.d	12/31/2013 15:14
TF2-001-SB1008-0204 MSD DL	320-5143-14 MSD DL	31DE13A10D5_9.d	12/31/2013 16:00
TF2-001-SS1008-0001 DL	320-5143-15 DL	31DE13A10D5_10.d	12/31/2013 16:46
TF2-001-SB1009-0204 DL	320-5143-16 DL	31DE13A10D5_11.d	12/31/2013 17:32
TF2-SB-DUP10-1113 DL	320-5143-18 DL	31DE13A10D5_12.d	12/31/2013 18:18
TF2-SB-DUP09-1113 RA	320-5143-11 RA	02JA14B5D2_004.d	01/02/2014 20:45
TF2-001-SS1007-0001 RA	320-5143-12 RA	02JA14B5D2_005.d	01/02/2014 21:22

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab File ID: 27DE1310D5_30.d Lab Sample ID: MB 320-31006/1-A

Matrix: Solid Date Extracted: 12/03/2013 10:02

Instrument ID: 10D5 Date Analyzed: 12/28/2013 10:22

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-001-SB1007-0204 RA	320-5143-13 RA	02JA14B5D2_006.d	01/02/2014 22:00
TF2-001-SB1008-0204 RA	320-5143-14 RA	02JA14B5D2_007.d	01/02/2014 22:37
TF2-001-SB1008-0204 MS RA	320-5143-14 MS RA	02JA14B5D2_008.d	01/02/2014 23:15
TF2-001-SB1008-0204 MSD RA	320-5143-14 MSD RA	02JA14B5D2_009.d	01/02/2014 23:52
TF2-001-SS1008-0001 RA	320-5143-15 RA	02JA14B5D2_010.d	01/03/2014 00:30
TF2-001-SB1009-0204 RA	320-5143-16 RA	02JA14B5D2_011.d	01/03/2014 01:07
TF2-001-SS1009-0001 RA	320-5143-17 RA	02JA14B5D2_012.d	01/03/2014 01:45
TF2-SB-DUP10-1113 RA	320-5143-18 RA	02JA14B5D2_013.d	01/03/2014 02:22

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-31006/1-A

Matrix: Solid Lab File ID: 27DE1310D5_30.d

Analysis Method: 8290A Date Collected:

Extract. Method: 8290 Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10(g) Date Analyzed: 12/28/2013 10:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.028
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.045
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.042
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.030
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.031
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.029
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.026
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.024
70648-26-9	1,2,3,4,7,8-HxCDF	0.0742	J	5.0	0.021
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.018
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.021
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.019
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.0717	J	5.0	0.026
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.316	J	5.0	0.019
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.022
3268-87-9	OCDD	0.548	J	10	0.028
39001-02-0	OCDF	0.305	J	10	0.029
41903-57-5	Total TCDD	ND		1.0	0.028
30402-14-3	Total TCDF	ND		1.0	0.045
36088-22-9	Total PeCDD	ND		5.0	0.042
30402-15-4	Total PeCDF	ND		5.0	0.031
34465-46-8	Total HxCDD	ND		5.0	0.029
55684-94-1	Total HxCDF	0.0742	J	5.0	0.020
37871-00-4	Total HpCDD	0.205	J	5.0	0.026
38998-75-3	Total HpCDF	0.316	J	5.0	0.020

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-31006/1-A

Matrix: Solid | Lab File ID: 27DE1310D5_30.d

Analysis Method: 8290A | Date Collected:

Extract. Method: 8290 | Date Extracted: 12/03/2013 10:02

Sample wt/vol: 10(g) | Date Analyzed: 12/28/2013 10:22

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32800 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	58		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	58		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	58		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	68		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	63		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	57		40-135

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab File ID: 27DE13A9D5_009.d Lab Sample ID: MB 320-31203/1-A

Matrix: Water Date Extracted: 12/05/2013 13:52

Instrument ID: 9D5 Date Analyzed: 12/27/2013 17:19

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-31203/2-A	27DE13A9D5_008.d	12/27/2013 16:37
TF2-SB-RB05-1113	320-5143-19	27DE13A9D5_010.d	12/27/2013 18:02

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-31203/1-A

Matrix: Water | Lab File ID: 27DE13A9D5_009.d

Analysis Method: 8290A | Date Collected:

Extract. Method: 8290 | Date Extracted: 12/05/2013 13:52

Sample wt/vol: 1000(mL) | Date Analyzed: 12/27/2013 17:19

Con. Extract Vol.: 20.00(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32760 | Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.62
51207-31-9	2,3,7,8-TCDF	ND		10	0.59
40321-76-4	1,2,3,7,8-PeCDD	ND		50	1.2
57117-41-6	1,2,3,7,8-PeCDF	ND		50	1.2
57117-31-4	2,3,4,7,8-PeCDF	ND		50	1.2
39227-28-6	1,2,3,4,7,8-HxCDD	1.56	J	50	0.63
57653-85-7	1,2,3,6,7,8-HxCDD	1.71	J	50	0.62
19408-74-3	1,2,3,7,8,9-HxCDD	1.80	J	50	0.54
70648-26-9	1,2,3,4,7,8-HxCDF	1.88	J	50	0.75
57117-44-9	1,2,3,6,7,8-HxCDF	1.55	J	50	0.66
72918-21-9	1,2,3,7,8,9-HxCDF	1.83	J	50	0.76
60851-34-5	2,3,4,6,7,8-HxCDF	1.49	J	50	0.72
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		50	1.6
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		50	1.7
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	2.0
3268-87-9	OCDD	10.5	J	100	2.6
39001-02-0	OCDF	5.39	J	100	2.2
41903-57-5	Total TCDD	ND		10	0.62
30402-14-3	Total TCDF	ND		10	0.59
36088-22-9	Total PeCDD	ND		50	1.2
30402-15-4	Total PeCDF	ND		50	1.2
34465-46-8	Total HxCDD	5.08	J	50	0.59
55684-94-1	Total HxCDF	6.74	J	50	0.72
37871-00-4	Total HpCDD	ND		50	1.6
38998-75-3	Total HpCDF	ND		50	2.0

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5143-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-31203/1-A

Matrix: Water | Lab File ID: 27DE13A9D5_009.d

Analysis Method: 8290A | Date Collected:

Extract. Method: 8290 | Date Extracted: 12/05/2013 13:52

Sample wt/vol: 1000(mL) | Date Analyzed: 12/27/2013 17:19

Con. Extract Vol.: 20.00(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32760 | Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	83		40-135
89059-46-1	13C-2,3,7,8-TCDF	84		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	86		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	83		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	96		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	86		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	74		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	76		40-135
114423-97-1	13C-OCDD	69		40-135

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Batch Number: 31001 Batch Start Date: 12/03/13 09:50 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/04/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ExtractionID	RotoVapID	HRDXNIDA 00105	HRDXNIS 00040
MB 320-31001/1		8290, 8290A		10 g	20 uL	B1-10	9	1 mL	20 uL
LCS 320-31001/2		8290, 8290A		10 g	20 uL	B2	2	1 mL	20 uL
320-5143-A-1	TF2-003-SB1013-0204	8290, 8290A	T	10.03 g	20 uL	B3-56	9	1 mL	20 uL
320-5143-A-2	TF2-003-SB1019-0204	8290, 8290A	T	10.08 g	20 uL	B4-18	2	1 mL	20 uL
320-5143-A-3	TF2-001-SS1001-0001	8290, 8290A	T	10.01 g	20 uL	B5-35	9	1 mL	20 uL
320-5143-A-4	TF2-001-SB1001-0204	8290, 8290A	T	10.06 g	20 uL	B6-29	2	1 mL	20 uL
320-5143-A-5	TF2-001-SS1002-0001	8290, 8290A	T	10.03 g	20 uL	C1-70	9	1 mL	20 uL
320-5143-A-6	TF2-001-SB1002-0204	8290, 8290A	T	10.03 g	20 uL	C2-5	2	1 mL	20 uL
320-5143-A-7	TF2-001-SS1003-0001	8290, 8290A	T	10.10 g	20 uL	C3	9	1 mL	20 uL
320-5143-A-8	TF2-001-SB1003-0204	8290, 8290A	T	10.00 g	20 uL	C4	2	1 mL	20 uL
320-5143-A-9	TF2-001-SS1004-0001	8290, 8290A	T	10.01 g	20 uL	C5-7	9	1 mL	20 uL
320-5143-A-10	TF2-001-SB1004-0204	8290, 8290A	T	10.21 g	20 uL	C6	2	1 mL	20 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNSU 00058	HRDXNTA 00027				
MB 320-31001/1		8290, 8290A		1 mL					
LCS 320-31001/2		8290, 8290A		1 mL	50 uL				
320-5143-A-1	TF2-003-SB1013-0204	8290, 8290A	T	1 mL					
320-5143-A-2	TF2-003-SB1019-0204	8290, 8290A	T	1 mL					
320-5143-A-3	TF2-001-SS1001-0001	8290, 8290A	T	1 mL					
320-5143-A-4	TF2-001-SB1001-0204	8290, 8290A	T	1 mL					
320-5143-A-5	TF2-001-SS1002-0001	8290, 8290A	T	1 mL					
320-5143-A-6	TF2-001-SB1002-0204	8290, 8290A	T	1 mL					
320-5143-A-7	TF2-001-SS1003-0001	8290, 8290A	T	1 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Batch Number: 31001 Batch Start Date: 12/03/13 09:50 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/04/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNSU 00058	HRDXNTA 00027				
320-5143-A-8	TF2-001-SB1003-0204	8290, 8290A	T	1 mL					
320-5143-A-9	TF2-001-SS1004-0001	8290, 8290A	T	1 mL					
320-5143-A-10	TF2-001-SB1004-0204	8290, 8290A	T	1 mL					

Batch Notes	
20% DCM:Hexane	4022-119C mL
65% DCM:Hexane	4022-120B mL
Acid Alumina	32
Balance ID	QA-074
C14	MEL 12/04/13
Hexane Lot#	0000056763 mL
IFB Clean Up	MEL 12/04/13
Na2SO4 Lot Number	0000055053
IDA Reagent Drop	GDB 12/03/13
IDA Reagent Drop Witness	TGL 12/03/13
IS Reagent Drop	TGL 12/04/13
IS Reagent Drop Witness	TGL 12/04/13
SU Reagent Drop	TGL 12/03/13
SU Reagent Drop Witness	MEL 12/04/13
TA Reagent Drop Witness	GDB 12/03/13
Silica Gel Lot Number	4022-120F
Soxhlet/Soxtherm End	15:35
Soxhlet/Soxtherm Start	12:35
Split Volume	GDB 12/04/13 mL
Storage Box	EPA-37
Toluene Lot #	0000054726 mL

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Batch Number: 31001 Batch Start Date: 12/03/13 09:50 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/04/13 15:00

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Batch Number: 31006 Batch Start Date: 12/03/13 10:02 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/04/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ExtractionID	RotoVapID	HRDXNIDA 00105	HRDXNIS 00040
MB 320-31006/1		8290, 8290A		10 g	20 uL	D1-48	9	1 mL	20 uL
LCS 320-31006/2		8290, 8290A		10 g	20 uL	D2	2	1 mL	20 uL
320-5143-A-11	TF2-SB-DUP09-1113	8290, 8290A	T	10.06 g	20 uL	D3-97	9	1 mL	20 uL
320-5143-A-12	TF2-001-SS1007-0001	8290, 8290A	T	10.15 g	20 uL	D4-30	2	1 mL	20 uL
320-5143-A-13	TF2-001-SB1007-0204	8290, 8290A	T	10.06 g	20 uL	D5-64	9	1 mL	20 uL
320-5143-A-14	TF2-001-SB1008-0204	8290, 8290A	T	10.15 g	20 uL	D6	2	1 mL	20 uL
320-5143-A-14 MS	TF2-001-SB1008-0204	8290, 8290A	T	10.07 g	20 uL	E1-71	9	1 mL	20 uL
320-5143-A-14 MSD	TF2-001-SB1008-0204	8290, 8290A	T	10.07 g	20 uL	E2-17	2	1 mL	20 uL
320-5143-A-15	TF2-001-SS1008-0001	8290, 8290A	T	10.09 g	20 uL	E3-9	9	1 mL	20 uL
320-5143-A-16	TF2-001-SB1009-0204	8290, 8290A	T	10.11 g	20 uL	E4-65	2	1 mL	20 uL
320-5143-A-17	TF2-001-SS1009-0001	8290, 8290A	T	10.00 g	20 uL	E5-40	9	1 mL	20 uL
320-5143-A-18	TF2-SB-DUP10-1113	8290, 8290A	T	10.14 g	20 uL	E6	2	1 mL	20 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNSU 00058	HRDXNTA 00027				
MB 320-31006/1		8290, 8290A		1 mL					
LCS 320-31006/2		8290, 8290A		1 mL	50 uL				
320-5143-A-11	TF2-SB-DUP09-1113	8290, 8290A	T	1 mL					
320-5143-A-12	TF2-001-SS1007-0001	8290, 8290A	T	1 mL					
320-5143-A-13	TF2-001-SB1007-0204	8290, 8290A	T	1 mL					
320-5143-A-14	TF2-001-SB1008-0204	8290, 8290A	T	1 mL					
320-5143-A-14 MS	TF2-001-SB1008-0204	8290, 8290A	T	1 mL	50 uL				
320-5143-A-14 MSD	TF2-001-SB1008-0204	8290, 8290A	T	1 mL	50 uL				
320-5143-A-15	TF2-001-SS1008-0001	8290, 8290A	T	1 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Field Duplicate Precision

ANALYTE	TF2-SB-DUP09-1113	TF2-001-SS1003-0001	RPD	DIFFERENCE
1,2,3,4,6,7,8,9-OCDD	7300	6400	13.14	900
1,2,3,4,6,7,8,9-OCDF	2.7	2.2	20.41	0.5
1,2,3,4,6,7,8-HPCDD	36	36	0.00	0
1,2,3,4,6,7,8-HPCDF	ND	1.6	200.00	0
1,2,3,4,7,8,9-HPCDF	0.29	ND	200.00	0.237
1,2,3,4,7,8-HXCDD	0.3	0.29	3.39	0.01
1,2,3,4,7,8-HXCDF	0.62	0.76	20.29	0.14
1,2,3,6,7,8-HXCDD	0.42	0.54	25.00	0.12
1,2,3,6,7,8-HXCDF	0.51	0.46	10.31	0.05
1,2,3,7,8,9-HXCDD	0.44	0.44	0.00	0
1,2,3,7,8-PECDD	0.093	ND	200.00	0.001
1,2,3,7,8-PECDF	0.24	ND	200.00	0.195
2,3,4,6,7,8-HXCDF	0.57	0.33	53.33	0.24
2,3,4,7,8-PECDF	0.23	0.29	23.08	0.06
2,3,7,8-TCDF	ND	0.36	200.00	0.11
TOTAL HPCDD	66	66	0.00	0
TOTAL HPCDF	3	2.9	3.39	0.1
TOTAL HXCDD	4.9	5.6	13.33	0.7
TOTAL HXCDF	5.4	5.9	8.85	0.5
TOTAL PECDD	0.91	1.3	35.29	0.39
TOTAL PECDF	4.4	3.8	14.63	0.6
TOTAL TCDD	0.64	0.46	32.73	0.18
TOTAL TCDF	2.5	3	18.18	0.5

Field Duplicate Precision

ANALYTE	TF2-SB-DUP10-1113	TF2-001-SB1004-0204	RPD	DIFFERENCE
1,2,3,4,6,7,8,9-OCDD	7500	6000	22.22	1500
1,2,3,4,6,7,8,9-OCDF	ND	2.1	200.00	1.14
1,2,3,4,6,7,8-HPCDD	35	33	5.88	2
1,2,3,4,7,8-HXCDD	ND	0.22	200.00	0.159
1,2,3,6,7,8-HXCDD	0.28	0.26	7.41	0.02
1,2,3,6,7,8-HXCDF	0.64	0.49	26.55	0.15
1,2,3,7,8,9-HXCDD	0.37	0.32	14.49	0.05
1,2,3,7,8-PECDD	0.12	ND	ND	0.045
1,2,3,7,8-PECDF	0.058	ND	200.00	0.023
2,3,4,6,7,8-HXCDF	0.13	ND	200.00	0.103
TOTAL HPCDD	66	63	4.65	3
TOTAL HXCDD	5.5	5.2	5.61	0.3
TOTAL HXCDF	ND	1	200.00	0.3
TOTAL PECDD	2.3	2.1	9.09	0.2
TOTAL PECDF	0.7	0.41	52.25	0.29
TOTAL TCDD	1.2	1.3	8.00	0.1
TOTAL TCDF	2.3	2.2	4.44	0.1

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/23/2013 14:57

Analysis Batch Number: 32536 End Date: 12/23/2013 20:50

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32536/1		12/23/2013 14:57	1	23DE13A3D5_1.d	DB-5 0.32(mm)
ZZZZZ		12/23/2013 15:49	1		DB-5 0.32(mm)
IC 320-32536/3		12/23/2013 16:39	1	23DE13A3D5_3.d	DB-5 0.32(mm)
IC 320-32536/4		12/23/2013 17:21	1	23DE13A3D5_4.d	DB-5 0.32(mm)
IC 320-32536/5		12/23/2013 18:02	1	23DE13A3D5_5.d	DB-5 0.32(mm)
IC 320-32536/6		12/23/2013 18:44	1	23DE13A3D5_6.d	DB-5 0.32(mm)
IC 320-32536/7		12/23/2013 19:26	1	23DE13A3D5_7.d	DB-5 0.32(mm)
ZZZZZ		12/23/2013 20:08	1		DB-5 0.32(mm)
ICV 320-32536/9		12/23/2013 20:50	1	23DE13A3D5_9.d	DB-5 0.32(mm)

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1 Analy Batch No.: 32536

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/23/2013 16:39 Calibration End Date: 12/23/2013 19:26 Calibration ID: 5694

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32536/3	23DE13A3D5_3.d
Level 2	IC 320-32536/4	23DE13A3D5_4.d
Level 3	IC 320-32536/5	23DE13A3D5_5.d
Level 4	IC 320-32536/6	23DE13A3D5_6.d
Level 5	IC 320-32536/7	23DE13A3D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9066	0.9848	1.0052	0.9868	1.0235	AveID		0.9814				4.6		20.0			
2,3,7,8-TCDD	1.2929	1.2631	1.2665	1.2825	1.2631	AveID		1.2736				1.1		20.0			
1,2,3,7,8-PeCDF	1.0319	1.1150	1.1719	1.1085	1.1773	AveID		1.1209				5.3		20.0			
2,3,4,7,8-PeCDF	1.0397	1.0564	1.1065	1.0522	1.1178	AveID		1.0745				3.3		20.0			
1,2,3,7,8-PeCDD	1.0076	1.1357	1.1508	1.0982	1.1482	AveID		1.1081				5.4		20.0			
1,2,3,4,7,8-HxCDF	1.0336	0.8601	1.0947	1.0240	1.0711	AveID		1.0167				9.1		20.0			
1,2,3,6,7,8-HxCDF	1.3754	1.1338	1.5017	1.4567	1.3657	AveID		1.3667				10.0		20.0			
2,3,4,6,7,8-HxCDF	1.1387	0.9758	1.2869	1.2395	1.2033	AveID		1.1689				10.0		20.0			
1,2,3,4,7,8-HxCDD	0.7237	0.6962	0.7910	0.7398	0.8674	AveID		0.7636				8.8		20.0			
1,2,3,6,7,8-HxCDD	1.0405	0.9829	1.1547	1.1068	1.1212	AveID		1.0812				6.4		20.0			
1,2,3,7,8,9-HxCDD	0.9476	0.9872	1.1371	1.0623	1.0939	AveID		1.0456				7.4		20.0			
1,2,3,7,8,9-HxCDF	1.0144	0.9379	1.1576	1.0839	1.0786	AveID		1.0545				7.8		20.0			
1,2,3,4,6,7,8-HpCDF	1.3777	1.4703	1.4554	1.4520	1.4503	AveID		1.4411				2.5		20.0			
1,2,3,4,6,7,8-HpCDD	1.0951	1.1090	1.1547	1.1146	1.1761	AveID		1.1299				3.0		20.0			
1,2,3,4,7,8,9-HpCDF	1.1037	1.2392	1.2566	1.2603	1.2699	AveID		1.2259				5.6		20.0			
OCDD	1.0941	1.1666	1.2545	1.2161	1.2701	AveID		1.2002				6.0		20.0			
OCDF	1.6686	1.6878	1.7166	1.8003	1.8499	AveID		1.7446				4.4		20.0			
13C-2,3,7,8-TCDF	2.0661	2.0256	2.0822	1.9611	1.9511	Ave		2.0172				3.0		20.0			
13C-2,3,7,8-TCDD	1.1139	1.0810	1.1103	1.0539	1.1051	Ave		1.0929				2.3		20.0			
13C-1,2,3,7,8-PeCDF	1.5781	1.5189	1.5232	1.4758	1.5160	Ave		1.5224				2.4		20.0			
13C-1,2,3,7,8-PeCDD	0.9337	0.8721	0.9016	0.8490	0.9057	Ave		0.8924				3.7		20.0			
13C-1,2,3,4,7,8-HxCDF	1.0547	1.2696	1.1009	1.0889	1.1844	Ave		1.1397				7.6		20.0			
13C-1,2,3,6,7,8-HxCDD	1.0082	1.0596	1.0336	1.0286	1.0492	Ave		1.0358				1.9		20.0			
13C-1,2,3,4,6,7,8-HpCDF	0.8164	0.7910	0.8468	0.8149	0.9081	Ave		0.8354				5.4		20.0			
13C-1,2,3,4,6,7,8-HpCDD	0.6057	0.6108	0.6648	0.6460	0.6852	Ave		0.6425				5.3		20.0			
13C-OCDD	0.3729	0.3762	0.4234	0.4004	0.4804	Ave		0.4107				11.0		20.0			
37Cl4-2,3,7,8-TCDD	1.6215	1.6288	1.6486	1.6816	1.7028	Ave		1.6567				2.1		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1 Analy Batch No.: 32536

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/23/2013 16:39 Calibration End Date: 12/23/2013 19:26 Calibration ID: 5694

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32536/3	23DE13A3D5_3.d
Level 2	IC 320-32536/4	23DE13A3D5_4.d
Level 3	IC 320-32536/5	23DE13A3D5_5.d
Level 4	IC 320-32536/6	23DE13A3D5_6.d
Level 5	IC 320-32536/7	23DE13A3D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	674374	3202466	17028736	61961087	295637038	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	580367	2393189	11673173	44979267	219349389	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	4267022	19931624	100290356	370960489	1903732254	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	4345494	18898503	94415176	352734332	1811208368	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	2489827	11414720	58157907	210681471	1101514449	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	2832410	11545413	60192871	226073468	1256566401	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	3739732	15821917	82794100	317761083	1614625519	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	3004187	13737275	71217487	276927616	1427455263	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1897118	7950489	42422505	154168006	902528175	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	2753145	11488543	60984135	232682440	1166054353	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	2373003	11214765	61121953	221215738	1124414202	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	2584345	13057023	62967266	238005702	1238608708	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	2825972	11728532	57815058	222142163	1184929725	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	1547081	6864662	36326958	134991383	737707699	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	2207049	10151016	49324510	191887150	1051552635	2.50	10.0	50.0	200	1000
OCDD		AveID	1782885	8094640	44536491	168724499	1025266991	5.00	20.0	100	400	2000
OCDF		AveID	2750500	11923655	64144843	251705071	1507682132	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	155505655	170112365	165658711	155850585	147915669	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	82477679	88248158	86364050	81386612	85673221	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	165479079	174344247	168678400	168481048	161150010	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	101157998	101983025	98855535	96813399	96098492	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	67309477	85604449	70085298	68063552	71731520	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	104558392	118369173	106828074	104869894	104576250	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	47019097	48883537	48685688	46877933	51042755	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	58469473	61684905	63714500	61909817	62590650	100	100	100	100	100
13C-OCDD	13CHx(	Ave	65090062	74014921	75134241	69920441	82262634	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	700247	3078337	14937712	61844566	293733956	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\JAN2013.PRO\SampleDB\23DE13A3D5.SPL
Last Modified: Monday, December 23, 2013 14:57:04 Pacific Standard Time
Printed: Monday, December 23, 2013 17:08:06 Pacific Standard Time

Page Position (1, 1)

	File Name	File Text	Sample ID	Meth/Matrix	Bottle	BOX #	Analyst
1	23DE13A3D5_1	DB-5 CPSM HRDXNCP_00021	CPS 122313	—	Tray1:1		SMA
2	23DE13A3D5_2	Reagent Blank C-14	RB 122313	—	Tray1:2		SMA
3	23DE13A3D5_3	CS-2 HRDXNL2_00010	IC 122313	—	Tray1:3		SMA
4	23DE13A3D5_4	CS-3 HRDXNL3_00008	IC 122313A	—	Tray1:4		SMA
5	23DE13A3D5_5	CS-4 HRDXNL4_00015	IC 122313B	—	Tray1:5		SMA
6	23DE13A3D5_6	CS-5 HRDXNL5_00013	IC 122313C	—	Tray1:6		SMA
7	23DE13A3D5_7	CS-6 HRDXNL6_00007	IC 122313D	—	Tray1:7		SMA
8	23DE13A3D5_8	Reagent Blank C-14	RB 122313A	—	Tray1:2		SMA
9	23DE13A3D5_9	2nd Source HRDXNIC_00016	ICV 122313	—	Tray1:8		SMA
10	23DE13A3D5_10	DB-5 CPSM HRDXNCP_00021	CPS 122313A	—	Tray1:1		SMA

logfile checked
12/24/13 JRB

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\JAN2013.PRO\SampleDB\23DE13A3D5.SPL
Last Modified: Monday, December 23, 2013 14:57:04 Pacific Standard Time
Printed: Monday, December 23, 2013 17:08:06 Pacific Standard Time

Sample Size	Units	FV_uL	Inj Vol	Sam Typ	MS File	Inl File	ConA	ConB	ConC	ConD	ConE
1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---	---
1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---	---
1.000000	---	---	2.000000	Standard	DIOXIN3D5	DIOXIN	0.5	2.5	5	100	200
1.000000	---	---	2.000000	Standard	DIOXIN3D5	DIOXIN	2	10	20	100	200
1.000000	---	---	2.000000	Standard	DIOXIN3D5	DIOXIN	10	50	100	100	200
1.000000	---	---	2.000000	Standard	DIOXIN3D5	DIOXIN	40	200	400	100	200
1.000000	---	---	2.000000	Standard	DIOXIN3D5	DIOXIN	200	1000	2000	100	200
1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---	---
1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	2000	4000
1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---	---

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\JAN2013.PRO\SampleDB\23DE13A3D5.SPL
Last Modified: Monday, December 23, 2013 14:57:04 Pacific Standard Time
Printed: Monday, December 23, 2013 17:08:06 Pacific Standard Time

ConF	ConG	Process	Process Options	Action On Error
---	---	---	---	---
---	---	---	---	---
0.25	100	---	---	---
1	100	---	---	---
5	100	---	---	---
20	100	---	---	---
100	100	---	---	---
---	---	---	---	---
400	2000	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/29/2013 23:40

Analysis Batch Number: 32869 End Date: 12/30/2013 09:44

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-32869/1		12/29/2013 23:40	1	27DE133D5_79.d	DB-5 0.32(mm)
CPS 320-32869/2		12/30/2013 00:31	1	27DE133D5_80.d	DB-5 0.32(mm)
MB 320-31001/1-A		12/30/2013 01:12	1	27DE133D5_81.d	DB-5 0.32(mm)
320-5143-1	TF2-003-SB1013-0204	12/30/2013 01:54	1	27DE133D5_82.d	DB-5 0.32(mm)
320-5143-2	TF2-003-SB1019-0204	12/30/2013 02:36	1	27DE133D5_83.d	DB-5 0.32(mm)
320-5143-3	TF2-001-SS1001-0001	12/30/2013 03:18	1	27DE133D5_84.d	DB-5 0.32(mm)
320-5143-4	TF2-001-SB1001-0204	12/30/2013 04:00	1	27DE133D5_85.d	DB-5 0.32(mm)
320-5143-5	TF2-001-SS1002-0001	12/30/2013 04:41	1	27DE133D5_86.d	DB-5 0.32(mm)
320-5143-6	TF2-001-SB1002-0204	12/30/2013 05:23	1	27DE133D5_87.d	DB-5 0.32(mm)
320-5143-7	TF2-001-SS1003-0001	12/30/2013 06:05	1	27DE133D5_88.d	DB-5 0.32(mm)
320-5143-8	TF2-001-SB1003-0204	12/30/2013 06:47	1	27DE133D5_89.d	DB-5 0.32(mm)
320-5143-9	TF2-001-SS1004-0001	12/30/2013 07:29	1	27DE133D5_90.d	DB-5 0.32(mm)
320-5143-10	TF2-001-SB1004-0204	12/30/2013 08:10	1	27DE133D5_91.d	DB-5 0.32(mm)
LCS 320-31001/2-A		12/30/2013 08:52	1	27DE133D5_92.d	DB-5 0.32(mm)
CCV 320-32869/15		12/30/2013 09:44	1	27DE133D5_93.d	DB-5 0.32(mm)

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID (1): CPS 320-32536/1 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/23/2013 14:57

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.11	23

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID (1): CPS 320-32869/2 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/30/2013 00:31

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.14	19

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: ICV 320-32536/9 Calibration Date: 12/23/2013 20:50

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 23DE13A3D5_9.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	1.004		10.2	10.0	2.3	30.0
2,3,7,8-TCDD	AveID	1.274	1.272		9.98	10.0	-0.2	30.0
1,2,3,7,8-PeCDF	AveID	1.121	1.208		26.9	25.0	7.7	30.0
2,3,4,7,8-PeCDF	AveID	1.075	1.108		25.8	25.0	3.1	30.0
1,2,3,7,8-PeCDD	AveID	1.108	1.134		25.6	25.0	2.3	30.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.129		27.8	25.0	11.1	30.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.585		29.0	25.0	15.9	30.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.366		29.2	25.0	16.9	30.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.7622		25.0	25.0	-0.2	30.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.155		26.7	25.0	6.8	30.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.175		28.1	25.0	12.3	30.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.211		28.7	25.0	14.9	30.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.543		26.8	25.0	7.1	30.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.196		26.5	25.0	5.9	30.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.220		24.9	25.0	-0.5	30.0
OCDD	AveID	1.200	1.274		53.1	50.0	6.1	30.0
OCDF	AveID	1.745	1.885		54.0	50.0	8.1	30.0
13C-2,3,7,8-TCDF	Ave	2.017	1.933		95.8	100	-4.2	
13C-2,3,7,8-TCDD	Ave	1.093	1.051		96.2	100	-3.8	
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.408		92.5	100	-7.5	
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8239		83.5	100	-7.7	
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.021		89.6	100	-10.4	
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.016		98.1	100	-1.9	
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8562		102	100	2.5	
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.6164		95.9	100	-4.1	
13C-OCDD	Ave	0.4107	0.3938		192	200	-4.1	
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.525		9.21	10.0	-7.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: CCV 320-32869/1 Calibration Date: 12/29/2013 23:40

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 27DE133D5_79.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9764		9.95	10.0	-0.5	20.0
2,3,7,8-TCDD	AveID	1.274	1.199		9.41	10.0	-5.9	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.162		51.8	50.0	3.6	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.096		51.0	50.0	2.0	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.121		50.6	50.0	1.2	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.091		53.7	50.0	7.3	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.345		49.2	50.0	-1.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.209		51.7	50.0	3.4	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.8059		52.8	50.0	5.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.109		51.3	50.0	2.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.118		53.5	50.0	6.9	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.108		52.5	50.0	5.1	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.471		51.0	50.0	2.1	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.152		51.0	50.0	1.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.314		53.6	50.0	7.2	20.0
OCDD	AveID	1.200	1.282		107	100	6.8	20.0
OCDF	AveID	1.745	1.730		99.1	100	-0.9	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.788		88.7	100	-11.3	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.083		99.1	100	-0.9	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.391		91.4	100	-8.6	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8427		94.4	100	-5.6	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.128		99.0	100	-1.0	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.038		100	100	0.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.9253		111	100	10.8	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.7819		122	100	21.7	30.0
13C-OCDD	Ave	0.4107	0.5052		246	200	23.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.568		4.73	5.00	-5.3	

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\JAN2013.PRO\SampleDB\27DE133D5.SPL
Last Modified: Monday, December 30, 2013 08:37:16 Pacific Standard Time
Printed: Monday, December 30, 2013 08:37:19 Pacific Standard Time

	File Name	File Text	Sample ID	Meth/Matrix	Bottle	BOX #
1	27DE133D5_1	DB-5 CPSM HRDXNCP_00021	CPS 122713	—	Tray1:1	
2	27DE133D5_2	CS-4 HRDXNL4_00015	CCV 122713	—	Tray1:2	
3	27DE133D5_3	Reagent Blank C-14	RB 122713	—	Tray1:3	
4	27DE133D5_4	MB 320-30618/1-A	MB 320-30618/1-A	8290/Water	Tray1:73	90
5	27DE133D5_5	LCS 320-30618/2-A	LCS 320-30618/2-A	8290/Water	Tray1:74	
6	27DE133D5_6	320-5083-A-2-A (30618)	320-5083-A-2-A (30618)	8290/Water	Tray1:75	
7	27DE133D5_7	320-5088-B-11-A (30618)	320-5088-B-11-A (30618)	8290/Water	Tray1:76	
8	27DE133D5_8	500-67260-M-1-A	500-67260-M-1-A	8290/Water	Tray1:77	
9	27DE133D5_9	Reagent Blank C-14	RB 122713A	—	Tray1:3	
10	27DE133D5_10	MB 320-31102/1-A	MB 320-31102/1-A	8290/Water	Tray1:78	95
11	27DE133D5_11	LCS 320-31102/2-A	LCS 320-31102/2-A	8290/Water	Tray1:79	
12	27DE133D5_12	320-5023-A-1-A	320-5023-A-1-A	8290/Water	Tray1:80	
13	27DE133D5_13	Reagent Blank C-14	RB 122713B	—	Tray1:3	
14	27DE133D5_14	CS-4 HRDXNL4_00015	CCV 122713A	—	Tray1:2	
15	27DE133D5_15	DB-5 CPSM HRDXNCP_00021	CPS 122713A	—	Tray1:1	
16	27DE133D5_16	Reagent Blank C-14	RB 122713C	—	Tray1:3	
17	27DE133D5_17	MB 320-30694/1-A	MB 320-30694/1-A	8290/Solid	Tray1:4	91
18	27DE133D5_18	LCS 320-30694/2-A	LCS 320-30694/2-A	8290/Solid	Tray1:5	
19	27DE133D5_19	LCSD 320-30694/3-A	LCSD 320-30694/3-A	8290/Solid	Tray1:6	
20	27DE133D5_20	640-45654-B-5-A	640-45654-B-5-A	8290/Solid	Tray1:7	
21	27DE133D5_21	640-45654-B-6-A	640-45654-B-6-A	8290/Solid	Tray1:8	
22	27DE133D5_22	640-45654-B-6-B MS	640-45654-B-6-B MS	8290/Solid	Tray1:9	
23	27DE133D5_23	640-45654-B-6-C MSD	640-45654-B-6-C MSD	8290/Solid	Tray1:10	
24	27DE133D5_24	640-45654-A-7-B	640-45654-A-7-B	8290/Solid	Tray1:11	
25	27DE133D5_25	280-48637-B-24-B	280-48637-B-24-B	1613B/Solid	Tray1:12	
26	27DE133D5_26	Reagent Blank C-14	RB 122713D	—	Tray1:3	
27	27DE133D5_27	CS-4 HRDXNL4_00015	CCV 122713B	—	Tray1:2	
28	27DE133D5_28	DB-5 CPSM HRDXNCP_00021	CPS 122713B	—	Tray1:1	
29	27DE133D5_29	Reagent Blank C-14	RB 122713E	—	Tray1:3	
30	27DE133D5_30	MB 320-30730/1-A	MB 320-30730/1-A	8290/Water	Tray1:13	90
31	27DE133D5_31	LCS 320-30730/2-A	LCS 320-30730/2-A	8290/Water	Tray1:14	
32	27DE133D5_32	320-5045-J-1-A	320-5045-J-1-A	8290/Water	Tray1:15	
33	27DE133D5_33	320-5045-F-3-A	320-5045-F-3-A	8290/Water	Tray1:16	
34	27DE133D5_34	320-5081-K-2-A	320-5081-K-2-A	8290/Water	Tray1:17	
35	27DE133D5_35	320-5081-K-4-A	320-5081-K-4-A	8290/Water	Tray1:18	
36	27DE133D5_36	320-5095-D-2-A	320-5095-D-2-A	8290/Water	Tray1:19	
37	27DE133D5_37	320-5095-G-2-A MS	320-5095-G-2-A MS	8290/Water	Tray1:20	
38	27DE133D5_38	320-5095-G-2-B MSD	320-5095-G-2-B MSD	8290/Water	Tray1:21	
39	27DE133D5_39	Reagent Blank C-14	RB 122713F	—	Tray1:3	
40	27DE133D5_40	CS-4 HRDXNL4_00015	CCV 122713C	—	Tray1:2	
41	27DE133D5_41	DB-5 CPSM HRDXNCP_00021	CPS 122713C	—	Tray1:1	
42	27DE133D5_42	Reagent Blank C-14	RB 122713G	—	Tray1:3	
43	27DE133D5_43	320-5095-H-5-A	320-5095-H-5-A	8290/Water	Tray1:22	90
44	27DE133D5_44	320-5096-A-2-A	320-5096-A-2-A	8290/Water	Tray1:23	
45	27DE133D5_45	320-5047-A-1-A	320-5047-A-1-A	Solid/8290A	Tray1:24	89
46	27DE133D5_46	320-5047-A-2-A	320-5047-A-2-A	Solid/8290A	Tray1:25	
47	27DE133D5_47	Reagent Blank C-14	Reagent Blank C-14	—	Tray1:3	
48	27DE133D5_48	MB 320-32154/1-A	MB 320-32154/1-A	1613BT/DW	Tray1:26	1
49	27DE133D5_49	LCS 320-32154/2-A	LCS 320-32154/2-A	1613BT/DW	Tray1:27	
50	27DE133D5_50	LLCS 320-32154/3-A	LLCS 320-32154/3-A	1613BT/DW	Tray1:28	
51	27DE133D5_51	320-5300-A-1-A	320-5300-A-1-A	1613BT/DW	Tray1:29	
52	27DE133D5_52	Reagent Blank C-14	RB 122713I	—	Tray1:3	
53	27DE133D5_53	CS-4 HRDXNL4_00015	CCV 122713D	—	Tray1:2	
54	27DE133D5_54	DB-5 CPSM HRDXNCP_00021	CPS 122713D	—	Tray1:1	
55	27DE133D5_55	Reagent Blank C-14	RB 122713J	—	Tray1:3	
56	27DE133D5_56	320-5335-A-1-A	320-5335-A-1-A	1613BT/DW	Tray1:30	1
57	27DE133D5_57	320-5363-A-1-A	320-5363-A-1-A	1613BT/DW	Tray1:31	
58	27DE133D5_58	440-64995-AP-1-A	440-64995-AP-1-A	1613BT/DW	Tray1:32	

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\JAN2013.PRO\SampleDB\27DE133D5.SPL
Last Modified: Monday, December 30, 2013 08:37:16 Pacific Standard Time
Printed: Monday, December 30, 2013 08:37:19 Pacific Standard Time

	File Name	File Text	Sample ID	Meth/Matrix	Bottle	BOX #
59	27DE133D5_59	550-15852-AE-1-A	550-15852-AE-1-A	1613BT/DW	Tray1:33	
60	27DE133D5_60	550-16049-X-1-A	550-16049-X-1-A	1613BT/DW	Tray1:34	
61	27DE133D5_61	550-16126-T-1-A	550-16126-T-1-A	1613BT/DW	Tray1:35	
62	27DE133D5_62	550-16131-T-1-A	550-16131-T-1-A	1613BT/DW	Tray1:36	
63	27DE133D5_63	MB 320-32458/1-A	MB 320-32458/1-A	1613BT/DW	Tray1:37	2
64	27DE133D5_64	LCS 320-32458/2-A	LCS 320-32458/2-A	1613BT/DW	Tray1:38	
65	27DE133D5_65	Reagent Blank C-14	RB 122713K	—	Tray1:3	
66	27DE133D5_66	CS-4 HRDXNL4_00015	CCV 122713E	—	Tray1:2	
67	27DE133D5_67	DB-5 CPSM HRDXNCP_00021	CPS 122713E	—	Tray1:1	
68	27DE133D5_68	Reagent Blank C-14	RB 122713L	—	Tray1:3	
69	27DE133D5_69	LLCS 320-32458/3-A	LLCS 320-32458/3-A	1613BT/DW	Tray1:39	2
70	27DE133D5_70	320-5424-A-1-A	320-5424-A-1-A	1613BT/DW	Tray1:40	
71	27DE133D5_71	320-5425-A-1-A	320-5425-A-1-A	1613BT/DW	Tray1:41	
72	27DE133D5_72	320-5442-A-1-A	320-5442-A-1-A	1613BT/DW	Tray1:42	
73	27DE133D5_73	440-65423-O-1-A	440-65423-O-1-A	1613BT/DW	Tray1:43	
74	27DE133D5_74	440-65674-AF-1-A	440-65674-AF-1-A	1613BT/DW	Tray1:44	
75	27DE133D5_75	550-16136-T-1-A	550-16136-T-1-A	1613BT/DW	Tray1:45	
76	27DE133D5_76	550-16197-A-1-A	550-16197-A-1-A	1613BT/DW	Tray1:46	
77	27DE133D5_77	680-97180-B-3-A	680-97180-B-3-A	1613BT/DW	Tray1:47	
78	27DE133D5_78	Reagent Blank C-14	RB 122713M	—	Tray1:3	
79	27DE133D5_79	CS-4 HRDXNL4_00015	CCV 122713F	—	Tray1:2	
80	27DE133D5_80	DB-5 CPSM HRDXNCP_00021	CPS 122713F	—	Tray1:1	
81	27DE133D5_81	MB 320-31001/1-A	MB 320-31001/1-A	8290/Solid	Tray1:48	EPA-37
82	27DE133D5_82	320-5143-A-1-A	320-5143-A-1-A	8290/Solid	Tray1:49	
83	27DE133D5_83	320-5143-A-2-A	320-5143-A-2-A	8290/Solid	Tray1:50	
84	27DE133D5_84	320-5143-A-3-A	320-5143-A-3-A	8290/Solid	Tray1:51	
85	27DE133D5_85	320-5143-A-4-A	320-5143-A-4-A	8290/Solid	Tray1:52	
86	27DE133D5_86	320-5143-A-5-A	320-5143-A-5-A	8290/Solid	Tray1:53	
87	27DE133D5_87	320-5143-A-6-A	320-5143-A-6-A	8290/Solid	Tray1:54	
88	27DE133D5_88	320-5143-A-7-A	320-5143-A-7-A	8290/Solid	Tray1:55	
89	27DE133D5_89	320-5143-A-8-A	320-5143-A-8-A	8290/Solid	Tray1:56	
90	27DE133D5_90	320-5143-A-9-A	320-5143-A-9-A	8290/Solid	Tray1:57	
91	27DE133D5_91	320-5143-A-10-A	320-5143-A-10-A	8290/Solid	Tray1:58	
92	27DE133D5_92	LCS 320-31001/2-A	LCS 320-31001/2-A	8290/Solid	Tray1:59	
93	27DE133D5_93	CS-4 HRDXNL4_00015	CCV 122713G	—	Tray1:2	

Log File Reviewed
VD 12.30.13

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\JAN2013.PRO\SampleDB\27DE133D5.SPL
Last Modified: Monday, December 30, 2013 08:37:16 Pacific Standard Time
Printed: Monday, December 30, 2013 08:37:19 Pacific Standard Time

Analyst	Sample Size	Units	FV_uL	Inj Vol	Sam Typ	MS File	Inl File	ConA	ConB	ConC	ConD
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	10	50	100	100
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\JAN2013.PRO\SampleDB\27DE133D5.SPL
Last Modified: Monday, December 30, 2013 08:37:16 Pacific Standard Time
Printed: Monday, December 30, 2013 08:37:19 Pacific Standard Time

Analyst	Sample Size	Units	FV_uL	Inj Vol	Sam Typ	MS File	Inl File	ConA	ConB	ConC	ConD
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	10	50	100	100
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	10	50	100	100
JRB	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	---	---	---	---
JRB/SMA	1.000000	---	---	2.000000	Analyte	DIOXIN3D5	DIOXIN	10	50	100	100

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\JAN2013.PRO\SampleDB\27DE133D5.SPL
Last Modified: Monday, December 30, 2013 08:37:16 Pacific Standard Time
Printed: Monday, December 30, 2013 08:37:19 Pacific Standard Time

ConE	ConF	ConG	Process	Process Options	Action On Error
---	---	---	---	---	---
200	5	100	---	---	---
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---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
200	5	100	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
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---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
200	5	100	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
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200	5	100	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
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200	5	100	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
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Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\JAN2013.PRO\SampleDB\27DE133D5.SPL
Last Modified: Monday, December 30, 2013 08:37:16 Pacific Standard Time
Printed: Monday, December 30, 2013 08:37:19 Pacific Standard Time

ConE	ConF	ConG	Process	Process Options	Action On Error
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---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
200	5	100	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
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---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
200	5	100	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
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---	---	---	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error
200	5	100	ResolutionCheck	C:\MassLynx\Autospec\dioxinendres.dat	Ignore Error

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: CCV 320-32869/15 Calibration Date: 12/30/2013 09:44

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 27DE133D5_93.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9649		9.83	10.0	-1.7	20.0
2,3,7,8-TCDD	AveID	1.274	1.221		9.59	10.0	-4.1	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.114		49.7	50.0	-0.6	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.062		49.4	50.0	-1.2	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.094		49.4	50.0	-1.2	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.051		51.7	50.0	3.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.449		53.0	50.0	6.0	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.215		52.0	50.0	4.0	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.8182		53.6	50.0	7.1	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.102		51.0	50.0	1.9	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.108		53.0	50.0	5.9	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.082		51.3	50.0	2.6	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.442		50.0	50.0	0.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.157		51.2	50.0	2.4	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.247		50.9	50.0	1.7	20.0
OCDD	AveID	1.200	1.234		103	100	2.8	20.0
OCDF	AveID	1.745	1.602		91.8	100	-8.2	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.828		90.6	100	-9.4	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.066		97.5	100	-2.5	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.467		96.3	100	-3.7	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8835		99.0	100	-1.0	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.065		93.4	100	-6.6	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.023		98.8	100	-1.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8897		106	100	6.5	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.7400		115	100	15.2	30.0
13C-OCDD	Ave	0.4107	0.4767		232	200	16.1	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.610		4.86	5.00	-2.8	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Instrument ID: 10D5 Start Date: 12/22/2013 13:44

Analysis Batch Number: 32566 End Date: 12/22/2013 19:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32566/1		12/22/2013 13:44	1	22DE13A10D5_1.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/22/2013 14:30	1		SPB-Octyl 0.25(mm)
IC 320-32566/3		12/22/2013 15:15	1	22DE13A10D5_3.d	SPB-Octyl 0.25(mm)
IC 320-32566/4		12/22/2013 16:01	1	22DE13A10D5_4.d	SPB-Octyl 0.25(mm)
IC 320-32566/5		12/22/2013 16:47	1	22DE13A10D5_5.d	SPB-Octyl 0.25(mm)
IC 320-32566/6		12/22/2013 17:32	1	22DE13A10D5_6.d	SPB-Octyl 0.25(mm)
IC 320-32566/7		12/22/2013 18:18	1	22DE13A10D5_7.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/22/2013 19:03	1		SPB-Octyl 0.25(mm)
ICV 320-32566/9		12/22/2013 19:49	1	22DE13A10D5_9.d	SPB-Octyl 0.25(mm)

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1 Analy Batch No.: 32566

SDG No.:

Instrument ID: 10D5 GC Column: SPB-Octyl ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/22/2013 15:15 Calibration End Date: 12/22/2013 18:18 Calibration ID: 5715

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32566/3	22DE13A10D5_3.d
Level 2	IC 320-32566/4	22DE13A10D5_4.d
Level 3	IC 320-32566/5	22DE13A10D5_5.d
Level 4	IC 320-32566/6	22DE13A10D5_6.d
Level 5	IC 320-32566/7	22DE13A10D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9170	0.9431	0.9989	0.9685	1.0079	AveID		0.9671				3.9		20.0			
2,3,7,8-TCDD	0.9231	0.9517	1.0180	1.0055	1.0416	AveID		0.9880				5.0		20.0			
1,2,3,7,8-PeCDF	0.9285	0.9856	1.0360	1.0099	1.0269	AveID		0.9974				4.3		20.0			
2,3,4,7,8-PeCDF	0.9053	0.9734	1.0103	0.9776	1.0033	AveID		0.9740				4.3		20.0			
1,2,3,7,8-PeCDD	0.8501	0.9077	0.9747	0.9339	0.9514	AveID		0.9236				5.2		20.0			
1,2,3,4,7,8-HxCDF	1.0810	0.9387	1.2070	1.1524	1.1729	AveID		1.1104				9.6		20.0			
1,2,3,6,7,8-HxCDF	1.2687	1.0921	1.4095	1.3651	1.3836	AveID		1.3038				10.0		20.0			
2,3,4,6,7,8-HxCDF	1.1350	0.9992	1.2701	1.2350	1.2490	AveID		1.1777				9.5		20.0			
1,2,3,4,7,8-HxCDD	0.7815	0.8942	0.9511	0.8930	0.8976	AveID		0.8835				7.0		20.0			
1,2,3,6,7,8-HxCDD	0.9189	1.0093	1.0382	1.0122	1.0316	AveID		1.0020				4.8		20.0			
1,2,3,7,8,9-HxCDD	0.9931	1.1316	1.1287	1.0710	1.0817	AveID		1.0812				5.2		20.0			
1,2,3,7,8,9-HxCDF	1.0928	0.9490	1.1606	1.1284	1.1226	AveID		1.0907				7.6		20.0			
1,2,3,4,6,7,8-HpCDF	1.2569	1.3557	1.3687	1.3445	1.3892	AveID		1.3430				3.8		20.0			
1,2,3,4,6,7,8-HpCDD	0.9387	0.9739	1.0185	0.9850	1.0187	AveID		0.9870				3.4		20.0			
1,2,3,4,7,8,9-HpCDF	1.0641	1.1308	1.1687	1.1563	1.2249	AveID		1.1490				5.1		20.0			
OCDD	1.0549	1.0710	1.0945	1.0651	1.0943	AveID		1.0760				1.7		20.0			
OCDF	1.2454	1.3183	1.3570	1.3546	1.3888	AveID		1.3328				4.1		20.0			
13C-2,3,7,8-TCDF	1.5492	1.5245	1.4941	1.4931	1.4967	Ave		1.5115				1.6		20.0			
13C-2,3,7,8-TCDD	1.1123	1.0841	1.0850	1.0754	1.0947	Ave		1.0903				1.3		20.0			
13C-1,2,3,7,8-PeCDF	1.2346	1.1921	1.1857	1.1975	1.2683	Ave		1.2156				2.9		20.0			
13C-1,2,3,7,8-PeCDD	0.8907	0.8637	0.8462	0.8689	0.9317	Ave		0.8802				3.7		20.0			
13C-1,2,3,4,7,8-HxCDF	1.0833	1.3277	1.1295	1.1113	1.0767	Ave		1.1457				9.1		20.0			
13C-1,2,3,6,7,8-HxCDD	0.9274	0.8941	0.9346	0.9294	0.9210	Ave		0.9213				1.7		20.0			
13C-1,2,3,4,6,7,8-HpCDF	0.8496	0.8487	0.8854	0.8566	0.8339	Ave		0.8548				2.2		20.0			
13C-1,2,3,4,6,7,8-HpCDD	0.7878	0.7873	0.8222	0.8047	0.7979	Ave		0.8000				1.8		20.0			
13C-OCDD	0.6187	0.6204	0.6628	0.6610	0.6971	Ave		0.6520				5.1		20.0			
37Cl4-2,3,7,8-TCDD	1.3097	1.3047	1.4191	1.4792	1.5184	Ave		1.4062				6.9		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1 Analy Batch No.: 32566

SDG No.:

Instrument ID: 10D5 GC Column: SPB-Octyl ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/22/2013 15:15 Calibration End Date: 12/22/2013 18:18 Calibration ID: 5715

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32566/3	22DE13A10D5_3.d
Level 2	IC 320-32566/4	22DE13A10D5_4.d
Level 3	IC 320-32566/5	22DE13A10D5_5.d
Level 4	IC 320-32566/6	22DE13A10D5_6.d
Level 5	IC 320-32566/7	22DE13A10D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	863258	4021761	17769983	89190314	458907971	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	639017	2908398	13186941	66108414	345996005	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	5139164	22613347	102691034	515720215	2713946948	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	4970616	22231369	99327851	497485548	2673370214	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	3414006	15037540	68559587	346155465	1862382282	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	3927206	17649951	79718907	399638196	2133831556	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	4649809	20260450	93381170	477620463	2524582075	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	4133202	18516764	84164861	430795012	2262710181	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	2364048	11547950	51543412	259116758	1399547182	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	2799120	12300035	56246065	294991969	1616211013	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	2971724	14056872	61106943	309133062	1689663703	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	3923057	17689601	77094436	390561458	2003655882	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	3345534	14650844	64333990	328772178	1796403536	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	2213154	9822730	44926875	226405156	1266025833	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	2793374	12097767	54808453	282236394	1589646648	2.50	10.0	50.0	200	1000
OCDD		AveID	3682874	15886033	71693677	370325105	2196841952	5.00	20.0	100	400	2000
OCDF		AveID	4414215	19615134	89746190	471260302	2839057227	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	199338093	210291372	179150103	229642692	228807947	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	143823241	148978567	129862423	163986114	165279774	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	222530087	227604422	197182291	254982944	266773300	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	159497217	165917388	140449265	185183291	196969093	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	89009382	115713200	81832744	106462003	112469138	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	124076259	124197854	109762761	144771368	156781801	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	62070676	64989157	56248942	73601411	79170644	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	96860631	102213657	88624001	115126492	125258063	100	100	100	100	100
13C-OCDD	13CHx(	Ave	139618866	147845388	133314669	176292267	202025187	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	963345	4086236	19314961	103241374	523265071	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Sample List: C:\MassLynx\JAN2013.PRO\SampleDB\22DE13A10D5.SPL
Last Modified: Sunday, December 22, 2013 13:36:55 Pacific Standard Time
Printed: Monday, December 23, 2013 06:39:07 Pacific Standard Time

Page Position (1, 1)

	File Name	File Text	Sample ID	Meht/Matrix	BOX #	Sample Size	Unit
1	22DE13A10D5_1	DB-5 CPSM HRDXNCP_00021	CP122213	---	---	1.000000	---
2	22DE13A10D5_2	Reagent Blank C-14	RB 122213	---	---	1.000000	---
3	22DE13A10D5_3	CS-2 HRDXNL2_00010	IC 122213	---	---	1.000000	---
4	22DE13A10D5_4	CS-3 HRDXNL3_00008	IC 122213A	---	---	1.000000	---
5	22DE13A10D5_5	CS-4 HRDXNL4_00015	IC 122213B	---	---	1.000000	---
6	22DE13A10D5_6	CS-5 HRDXNL5_00013	IC 122213C	---	---	1.000000	---
7	22DE13A10D5_7	CS-6 HRDXNL6_00007	IC 122213D	---	---	1.000000	---
8	22DE13A10D5_8	Reagent Blank C-14	RB 122013A	---	---	1.000000	---
9	22DE13A10D5_9	2nd Source HRDXNIC_00016	ICV 122213	1613	---	1.000000	---
10	22DE13A10D5_10	DB-5 CPSM HRDXNCP_00021	CP122213A	---	---	1.000000	---

logfile Checked
12/26/13 JRB

FV_ul	Bottle	Inj Vol	Sample Type	User	MS File	Inlet File	Conc A	Conc B	Conc C
---	Tray01:1	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	---	---	---
---	Tray01:2	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	---	---	---
---	Tray01:3	2.000000	Standard	SMA	DIOXIN10D5NEW	DIOXINNOGC	0.5	2.5	5
---	Tray01:4	2.000000	Standard	SMA	DIOXIN10D5NEW	DIOXINNOGC	2	10	20
---	Tray01:5	2.000000	Standard	SMA	DIOXIN10D5NEW	DIOXINNOGC	10	50	100
---	Tray01:6	2.000000	Standard	SMA	DIOXIN10D5NEW	DIOXINNOGC	40	200	400
---	Tray01:7	2.000000	Standard	SMA	DIOXIN10D5NEW	DIOXINNOGC	200	1000	2000
---	Tray01:2	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	---	---	---
---	Tray01:8	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	---	---	---
---	Tray01:1	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	---	---	---

Sample List: C:\MassLynx\JAN2013.PRO\SampleDB\22DE13A10D5.SPL
Last Modified: Sunday, December 22, 2013 13:36:55 Pacific Standard Time
Printed: Monday, December 23, 2013 06:39:07 Pacific Standard Time

Conc D	Conc E	Process	Process Options	Action On Error
---	---	---	---	---
---	---	---	---	---
100	200	---	---	---
100	200	---	---	---
100	200	---	---	---
100	200	---	---	---
100	200	---	---	---
---	---	---	---	---
2000	4000	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat	Ignore Error
---	---	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat	Ignore Error

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Instrument ID: 10D5 Start Date: 12/28/2013 08:40

Analysis Batch Number: 32800 End Date: 12/28/2013 19:45

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-32800/28		12/28/2013 08:40	1	27DE1310D5_28.d	SPB-Octyl 0.25(mm)
CPS 320-32800/29		12/28/2013 09:36	1	27DE1310D5_29.d	SPB-Octyl 0.25(mm)
MB 320-31006/1-A		12/28/2013 10:22	1	27DE1310D5_30.d	SPB-Octyl 0.25(mm)
320-5143-11	TF2-SB-DUP09-1113	12/28/2013 11:08	1	27DE1310D5_31.d	SPB-Octyl 0.25(mm)
320-5143-12	TF2-001-SS1007-0001	12/28/2013 11:54	1	27DE1310D5_32.d	SPB-Octyl 0.25(mm)
320-5143-13	TF2-001-SB1007-0204	12/28/2013 12:40	1	27DE1310D5_33.d	SPB-Octyl 0.25(mm)
320-5143-14	TF2-001-SB1008-0204	12/28/2013 13:26	1	27DE1310D5_34.d	SPB-Octyl 0.25(mm)
320-5143-14 MS	TF2-001-SB1008-0204 MS	12/28/2013 14:12	1	27DE1310D5_35.d	SPB-Octyl 0.25(mm)
320-5143-14 MSD	TF2-001-SB1008-0204 MSD	12/28/2013 14:58	1	27DE1310D5_36.d	SPB-Octyl 0.25(mm)
320-5143-15	TF2-001-SS1008-0001	12/28/2013 15:44	1	27DE1310D5_37.d	SPB-Octyl 0.25(mm)
320-5143-16	TF2-001-SB1009-0204	12/28/2013 16:31	1	27DE1310D5_38.d	SPB-Octyl 0.25(mm)
320-5143-17	TF2-001-SS1009-0001	12/28/2013 17:17	1	27DE1310D5_39.d	SPB-Octyl 0.25(mm)
320-5143-18	TF2-SB-DUP10-1113	12/28/2013 18:03	1	27DE1310D5_40.d	SPB-Octyl 0.25(mm)
LCS 320-31006/2-A		12/28/2013 18:49	1	27DE1310D5_41.d	SPB-Octyl 0.25(mm)
CCV 320-32800/42		12/28/2013 19:45	1	27DE1310D5_42.d	SPB-Octyl 0.25(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Instrument ID: 10D5 Start Date: 12/31/2013 09:43

Analysis Batch Number: 33085 End Date: 12/31/2013 20:00

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-33085/1		12/31/2013 09:43	1	31DE13A10D5_1.d	SPB-Octyl 0.25(mm)
CPS 320-33085/2		12/31/2013 10:29	1	31DE13A10D5_2.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/31/2013 11:15	1		SPB-Octyl 0.25(mm)
320-5143-11 DL	TF2-SB-DUP09-1113 DL	12/31/2013 12:10	10	31DE13A10D5_4.d	SPB-Octyl 0.25(mm)
320-5143-12 DL	TF2-001-SS1007-0001 DL	12/31/2013 12:56	10	31DE13A10D5_5.d	SPB-Octyl 0.25(mm)
320-5143-13 DL	TF2-001-SB1007-0204 DL	12/31/2013 13:42	10	31DE13A10D5_6.d	SPB-Octyl 0.25(mm)
320-5143-14 DL	TF2-001-SB1008-0204 DL	12/31/2013 14:28	10	31DE13A10D5_7.d	SPB-Octyl 0.25(mm)
320-5143-14 MS DL	TF2-001-SB1008-0204 MS DL	12/31/2013 15:14	10	31DE13A10D5_8.d	SPB-Octyl 0.25(mm)
320-5143-14 MSD DL	TF2-001-SB1008-0204 MSD DL	12/31/2013 16:00	10	31DE13A10D5_9.d	SPB-Octyl 0.25(mm)
320-5143-15 DL	TF2-001-SS1008-0001 DL	12/31/2013 16:46	10	31DE13A10D5_10.d	SPB-Octyl 0.25(mm)
320-5143-16 DL	TF2-001-SB1009-0204 DL	12/31/2013 17:32	10	31DE13A10D5_11.d	SPB-Octyl 0.25(mm)
320-5143-18 DL	TF2-SB-DUP10-1113 DL	12/31/2013 18:18	10	31DE13A10D5_12.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/31/2013 19:04	1		SPB-Octyl 0.25(mm)
CCV 320-33085/14		12/31/2013 20:00	1	31DE13A10D5_14.d	SPB-Octyl 0.25(mm)

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID (1): CPS 320-32566/1 Instrument ID (1): 10D5

GC Column (1): SPB-Octyl ID: 0.25(mm) Date Analyzed (1): 12/22/2013 13:44

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.59	17

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID (1): CPS 320-32800/29 Instrument ID (1): 10D5

GC Column (1): SPB-Octyl ID: 0.25(mm) Date Analyzed (1): 12/28/2013 09:36

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.56	19

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID (1): CPS 320-33085/2 Instrument ID (1): 10D5

GC Column (1): SPB-Octyl ID: 0.25(mm) Date Analyzed (1): 12/31/2013 10:29

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.56	21

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: ICV 320-32566/9 Calibration Date: 12/22/2013 19:49

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 22DE13A10D5_9.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	1.008		10.4	10.0	4.2	30.0
2,3,7,8-TCDD	AveID	0.9880	1.026		10.4	10.0	3.8	30.0
1,2,3,7,8-PeCDF	AveID	0.997	1.058		26.5	25.0	6.0	30.0
2,3,4,7,8-PeCDF	AveID	0.9740	1.018		26.1	25.0	4.6	30.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9353		25.3	25.0	1.3	30.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.309		29.5	25.0	17.9	30.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.545		29.6	25.0	18.5	30.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.400		29.7	25.0	18.9	30.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.8607		24.4	25.0	-2.6	30.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.075		26.8	25.0	7.3	30.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.126		26.0	25.0	4.2	30.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.296		29.7	25.0	18.8	30.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.456		27.1	25.0	8.4	30.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	1.039		26.3	25.0	5.3	30.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.189		25.9	25.0	3.5	30.0
OCDD	AveID	1.076	1.103		51.3	50.0	2.6	30.0
OCDF	AveID	1.333	1.331		49.9	50.0	-0.1	30.0
13C-2,3,7,8-TCDF	Ave	1.512	1.535		102	100	1.6	
13C-2,3,7,8-TCDD	Ave	1.090	1.112		102	100	2.0	
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.214		99.9	100	-0.1	
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8727		99.1	100	-0.9	
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.023		89.3	100	-10.7	
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	0.9703		105	100	5.3	
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8563		100	100	0.2	
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.7976		99.7	100	-0.3	
13C-OCDD	Ave	0.6520	0.6433		197	200	-1.3	
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.420		10.1	10.0	0.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: CCV 320-32800/28 Calibration Date: 12/28/2013 08:40

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 27DE1310D5_28.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	1.017		10.5	10.0	5.1	20.0
2,3,7,8-TCDD	AveID	0.9880	1.019		10.3	10.0	3.1	20.0
1,2,3,7,8-PeCDF	AveID	0.997	1.069		53.6	50.0	7.2	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	1.035		53.1	50.0	6.3	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9534		51.6	50.0	3.2	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.228		55.3	50.0	10.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.557		59.7	50.0	19.4	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.362		57.8	50.0	15.7	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.8360		47.3	50.0	-5.4	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.058		52.8	50.0	5.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.054		48.7	50.0	-2.5	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.183		54.2	50.0	8.4	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.404		52.3	50.0	4.6	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	1.006		51.0	50.0	1.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.107		48.2	50.0	-3.6	20.0
OCDD	AveID	1.076	1.069		99.4	100	-0.6	20.0
OCDF	AveID	1.333	1.310		98.3	100	-1.7	20.0
13C-2,3,7,8-TCDF	Ave	1.512	1.511		99.9	100	-0.0	30.0
13C-2,3,7,8-TCDD	Ave	1.090	1.081		99.2	100	-0.8	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.213		99.8	100	-0.2	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8584		97.5	100	-2.5	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.142		99.7	100	-0.3	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	1.024		111	100	11.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8777		103	100	2.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.7896		98.7	100	-1.3	30.0
13C-OCDD	Ave	0.6520	0.6292		193	200	-3.5	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.408		5.01	5.00	0.1	

	File Name	File Text	Sample ID	Meht/Matrix	BOX #	Bottle
1	27DE1310D5_1	CS-4 HRDXNL4_00017	CCV 122713	—	—	Tray01:2
2	27DE1310D5_2	DB-5 CPSM HRDXNCP_00021	CPS 122713	—	—	Tray01:1
3	27DE1310D5_3	MB 320-31008/1-A	MB 320-31008/1-A	8290/Solid	93	Tray01:4
4	27DE1310D5_4	LCS 320-31008/2-A	LCS 320-31008/2-A	8290/Solid	—	Tray01:5
5	27DE1310D5_5	320-5088-A-7-A	320-5088-A-7-A	8290A/Solid	EPA38	Tray01:6
6	27DE1310D5_6	320-5088-A-8-A	320-5088-A-8-A	8290A/Solid	—	Tray01:7
7	27DE1310D5_7	320-5088-A-9-A	320-5088-A-9-A	8290A/Solid	—	Tray01:8
8	27DE1310D5_8	320-5088-A-9-B MS	320-5088-A-9-B MS	8290A/Solid	—	Tray01:9
9	27DE1310D5_9	320-5088-A-9-C MSD	320-5088-A-9-C MSD	8290A/Solid	—	Tray01:10
10	27DE1310D5_10	320-5088-A-10-A	320-5088-A-10-A	8290A/Solid	—	Tray01:11
11	27DE1310D5_11	320-5096-D-1-A	320-5096-D-1-A	8290/Solid	93	Tray01:12
12	27DE1310D5_12	320-5096-D-3-A	320-5096-D-3-A	8290/Solid	—	Tray01:15
13	27DE1310D5_13	Reagent Blank C-14	RB 122713A	—	—	Tray01:3
14	27DE1310D5_14	CS-4 HRDXNL4_00015	CCV 122713A	—	—	Tray01:2
15	27DE1310D5_15	DB-5 CPSM HRDXNCP_00021	CPS 122713A	—	—	Tray01:1
16	27DE1310D5_16	Reagent Blank C-14	RB 122713B	—	—	Tray01:3
17	27DE1310D5_17	320-5096-D-4-A	320-5096-D-4-A	8290/Solid	—	Tray01:16
18	27DE1310D5_18	320-5096-D-5-A	320-5096-D-5-A	8290/Solid	93	Tray01:17
19	27DE1310D5_19	320-5096-B-5-A MS	320-5096-B-5-A MS	8290/Solid	—	Tray01:18
20	27DE1310D5_20	320-5096-B-5-B MSD	320-5096-B-5-B MSD	8290/Solid	—	Tray01:19
21	27DE1310D5_21	320-5096-D-6-A	320-5096-D-6-A	8290/Solid	—	Tray01:20
22	27DE1310D5_22	320-5096-D-7-A	320-5096-D-7-A	8290/Solid	—	Tray01:21
23	27DE1310D5_23	320-5113-A-1-A	320-5113-A-1-A	8290/Solid	—	Tray01:22
24	27DE1310D5_24	320-5113-A-2-A	320-5113-A-2-A	8290/Solid	—	Tray01:23
25	27DE1310D5_25	320-5113-A-3-A	320-5113-A-3-A	8290/Solid	—	Tray01:24
26	27DE1310D5_26	320-5113-A-4-A	320-5113-A-4-A	8290/Solid	—	Tray01:25
27	27DE1310D5_27	Reagent Blank C-14	RB 122713C	—	—	Tray01:3
28	27DE1310D5_28	CS-4 HRDXNL4_00015	CCV 122713B	—	—	Tray01:2
29	27DE1310D5_29	DB-5 CPSM HRDXNCP_00021	CPS 122713B	—	—	Tray01:1
30	27DE1310D5_30	MB 320-31006/1-A	MB 320-31006/1-A	8290/Solid	EPA38	Tray01:26
31	27DE1310D5_31	320-5143-A-11-A	320-5143-A-11-A	8290/Solid	—	Tray01:29
32	27DE1310D5_32	320-5143-A-12-A	320-5143-A-12-A	8290/Solid	—	Tray01:30
33	27DE1310D5_33	320-5143-A-13-A	320-5143-A-13-A	8290/Solid	—	Tray01:31
34	27DE1310D5_34	320-5143-A-14-A	320-5143-A-14-A	8290/Solid	—	Tray01:32
35	27DE1310D5_35	320-5143-A-14-B MS	320-5143-A-14-B MS	8290/Solid	—	Tray01:33
36	27DE1310D5_36	320-5143-A-14-C MSD	320-5143-A-14-C MSD	8290/Solid	—	Tray01:34
37	27DE1310D5_37	320-5143-A-15-A	320-5143-A-15-A	8290/Solid	—	Tray01:35
38	27DE1310D5_38	320-5143-A-16-A	320-5143-A-16-A	8290/Solid	—	Tray01:36
39	27DE1310D5_39	320-5143-A-17-A	320-5143-A-17-A	8290/Solid	—	Tray01:37
40	27DE1310D5_40	320-5143-A-18-A	320-5143-A-18-A	8290/Solid	—	Tray01:38
41	27DE1310D5_41	LCS 320-31006/2-A	LCS 320-31006/2-A	8290/Solid	—	Tray01:39
42	27DE1310D5_42	CS-4 HRDXNL4_00015	CCV 122713C	—	—	Tray01:2
43	27DE1310D5_43	DB-5 CPSM HRDXNCP_00021	CPS 122713B	—	—	Tray01:1
44	27DE1310D5_44	Reagent Blank C-14	RB 122713B	—	—	Tray01:3
45	27DE1310D5_45	MB 320-30940/1-A	MB 320-30940/1-A	8290/Solid	92	Tray01:40
46	27DE1310D5_46	LCS 320-30940/2-A	LCS 320-30940/2-A	8290/Solid	—	Tray01:43
47	27DE1310D5_47	320-5005-A-1-A	320-5005-A-1-A	8290/Solid	—	Tray01:44
48	27DE1310D5_48	320-5115-A-1-A	320-5115-A-1-A	8290/Solid	—	Tray01:45
49	27DE1310D5_49	320-5115-A-2-A	320-5115-A-2-A	8290/Solid	—	Tray01:46
50	27DE1310D5_50	320-5115-A-3-A	320-5115-A-3-A	8290/Solid	—	Tray01:47
51	27DE1310D5_51	320-5115-A-4-A	320-5115-A-4-A	8290/Solid	—	Tray01:48
52	27DE1310D5_52	320-5115-A-5-A	320-5115-A-5-A	8290/Solid	—	Tray01:49
53	27DE1310D5_53	320-5115-A-6-A	320-5115-A-6-A	8290/Solid	—	Tray01:50
54	27DE1310D5_54	CS-4 HRDXNL4_00015	CCV 122713D	—	—	Tray01:2
55	27DE1310D5_55	CS-4 HRDXNL4_00016	QC 12-26-13	—	—	Tray01:51
56	27DE1310D5_56	CS-4 HRDXNL4_00017	QC 12-26-13	—	—	Tray01:52

logfile checked
12/30/13 JBB

Sample Size	Unit	FV_ul	Inj Vol	Sample Type	User	MS File	Inlet File	Conc A	Conc B
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	10	50
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	g	20	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	g	20	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	10	50
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	10	50
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
10.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	10	50
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	10	50
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—
1.000000	—	—	2.000000	Analyte	SMA	DIOXIN10D5NEW	DIOXINNOGC	—	—

Conc C	Conc D	Conc E	Process	Process Options	Action On Error
100	100	200	—	—	—
—	—	—	—	—	—
—	2000	4000	—	—	—
—	2000	4000	—	—	—
—	2000	4000	—	—	—
—	2000	4000	—	—	—
—	2000	4000	—	—	—
—	2000	4000	—	—	—
—	2000	4000	—	—	—
—	2000	4000	—	—	—
—	2000	4000	—	—	—
—	2000	4000	—	—	—
—	—	—	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat	Ignore Error
100	100	200	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat	Ignore Error
—	—	—	—	—	—
—	—	—	—	—	—
—	2000	4000	—	—	—
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—	—	—	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat	Ignore Error
100	100	200	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat	Ignore Error
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—	—	—	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat	Ignore Error
100	100	200	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat	Ignore Error
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—	—	—	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat	Ignore Error
100	100	200	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat	Ignore Error
—	—	—	—	—	—
—	—	—	—	—	—

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: CCV 320-32800/42 Calibration Date: 12/28/2013 19:45

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 27DE1310D5_42.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	1.001		10.3	10.0	3.5	20.0
2,3,7,8-TCDD	AveID	0.9880	1.000		10.1	10.0	1.2	20.0
1,2,3,7,8-PeCDF	AveID	0.997	1.054		52.8	50.0	5.7	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	1.029		52.8	50.0	5.6	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9666		52.3	50.0	4.7	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.208		54.4	50.0	8.8	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.541		59.1	50.0	18.2	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.352		57.4	50.0	14.8	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.8509		48.2	50.0	-3.7	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.040		51.9	50.0	3.7	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.051		48.6	50.0	-2.8	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.157		53.0	50.0	6.0	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.423		53.0	50.0	6.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	1.022		51.8	50.0	3.6	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.133		49.3	50.0	-1.4	20.0
OCDD	AveID	1.076	1.079		100	100	0.2	20.0
OCDF	AveID	1.333	1.335		100	100	0.1	20.0
13C-2,3,7,8-TCDF	Ave	1.512	1.506		99.6	100	-0.4	30.0
13C-2,3,7,8-TCDD	Ave	1.090	1.083		99.3	100	-0.7	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.192		98.1	100	-1.9	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8370		95.1	100	-4.9	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.141		99.6	100	-0.4	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	1.013		110	100	9.9	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8557		100	100	0.1	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.7725		96.6	100	-3.4	30.0
13C-OCDD	Ave	0.6520	0.6061		186	200	-7.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.382		4.91	5.00	-1.8	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: CCV 320-33085/1 Calibration Date: 12/31/2013 09:43

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 31DE13A10D5_1.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	1.007		10.4	10.0	4.1	20.0
2,3,7,8-TCDD	AveID	0.9880	1.024		10.4	10.0	3.7	20.0
1,2,3,7,8-PeCDF	AveID	0.997	1.057		53.0	50.0	6.0	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	1.023		52.5	50.0	5.0	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9547		51.7	50.0	3.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.233		55.5	50.0	11.0	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.698		65.1	50.0	30.2*	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.455		61.8	50.0	23.5*	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.7479		42.3	50.0	-15.3	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.052		52.5	50.0	5.0	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.043		48.2	50.0	-3.5	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.253		57.4	50.0	14.9	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.388		51.7	50.0	3.4	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	1.051		53.2	50.0	6.4	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.062		46.2	50.0	-7.5	20.0
OCDD	AveID	1.076	1.093		102	100	1.6	20.0
OCDF	AveID	1.333	1.309		98.2	100	-1.8	20.0
13C-2,3,7,8-TCDF	Ave	1.512	1.483		98.1	100	-1.9	30.0
13C-2,3,7,8-TCDD	Ave	1.090	1.063		97.5	100	-2.5	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.193		98.1	100	-1.9	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8540		97.0	100	-3.0	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.012		88.3	100	-11.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	1.026		111	100	11.4	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8346		97.6	100	-2.4	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.6951		86.9	100	-13.1	30.0
13C-OCDD	Ave	0.6520	0.6001		184	200	-8.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.424		5.06	5.00	1.3	

	File Name	File Text	Sample ID	Bottle	Meht/Matrix	BOX #
1	31DE13A10D5_1	CS-4 HRDXNL4_00015	CCV 123113A	Tray01:2	---	---
2	31DE13A10D5_2	DB-5 CPSM HRDXNCP_00021	CPS 123113A	Tray01:1	---	---
3	31DE13A10D5_3	Reagent Blank C-14	RB 123113A	Tray01:3	---	---
4	31DE13A10D5_4	320-5143-A-11-A 10x	320-5143-A-11-A 10x	Tray01:4	8290A/Solid	EPA-38
5	31DE13A10D5_5	320-5143-A-12-A 10x	320-5143-A-12-A 10x	Tray01:5	8290A/Solid	---
6	31DE13A10D5_6	320-5143-A-13-A 10x	320-5143-A-13-A 10x	Tray01:6	8290A/Solid	---
7	31DE13A10D5_7	320-5143-A-14-A 10x	320-5143-A-14-A 10x	Tray01:7	8290A/Solid	---
8	31DE13A10D5_8	320-5143-A-14-B MS 10x	320-5143-A-14-B MS 10x	Tray01:8	8290A/Solid	---
9	31DE13A10D5_9	320-5143-A-14-C MSD 10x	320-5143-A-14-C MSD 10x	Tray01:9	8290A/Solid	---
10	31DE13A10D5_10	320-5143-A-15-A 10x	320-5143-A-15-A 10x	Tray01:10	8290A/Solid	---
11	31DE13A10D5_11	320-5143-A-16-A 10x	320-5143-A-16-A 10x	Tray01:11	8290A/Solid	---
12	31DE13A10D5_12	320-5143-A-18-A 10x	320-5143-A-18-A 10x	Tray01:12	8290A/Solid	---
13	31DE13A10D5_13	Reagent Blank C-14	RB 123113B	Tray01:3	---	---
14	31DE13A10D5_14	CS-4 HRDXNL4_00015	CCV 123113B	Tray01:2	---	---
15	31DE13A10D5_15	DB-5 CPSM HRDXNCP_00021	CPS 123113B	Tray01:1	---	---
16	31DE13A10D5_16	Reagent Blank C-14	RB 123013G	Tray01:3	---	---
17	31DE13A10D5_17	MB 320-31005/1-A	MB 320-31005/1-A	Tray01:15	8290/Solid	92
18	31DE13A10D5_18	LCS 320-31005/2-A	LCS 320-31005/2-A	Tray01:16	8290/Solid	---
19	31DE13A10D5_19	MB 320-31112/1-A	MB 320-31112/1-A	Tray01:17	8290A/Solid	EPA-38
20	31DE13A10D5_20	LCS 320-31112/2-A	LCS 320-31112/2-A	Tray01:18	8290A/Solid	---
21	31DE13A10D5_21	280-49221-C-1-A	280-49221-C-1-A	Tray01:19	8290/Solid	92
22	31DE13A10D5_22	500-66391-B-1-G	500-66391-B-1-G	Tray01:20	8290/Solid	---
23	31DE13A10D5_23	320-5145-A-1-A	320-5145-A-1-A	Tray01:21	8290A/Solid	EPA-38
24	31DE13A10D5_24	320-5145-A-2-A	320-5145-A-2-A	Tray01:22	8290A/Solid	---
25	31DE13A10D5_25	Reagent Blank C-14	RB 123013H	Tray01:3	---	---
26	31DE13A10D5_26	CS-4 HRDXNL4_00015	CCV 123013F	Tray01:2	---	---
27	31DE13A10D5_27	DB-5 CPSM HRDXNCP_00021	CPS 123013E	Tray01:1	---	---
28	31DE13A10D5_28	Reagent Blank C-14	RB 123013I	Tray01:3	---	---
29	31DE13A10D5_29	320-5145-A-3-A	320-5145-A-3-A	Tray01:23	8290A/Solid	---
30	31DE13A10D5_30	320-5145-A-4-A	320-5145-A-4-A	Tray01:24	8290A/Solid	EPA-38
31	31DE13A10D5_31	320-5145-A-5-A	320-5145-A-5-A	Tray01:25	8290A/Solid	---
32	31DE13A10D5_32	320-5145-A-6-A	320-5145-A-6-A	Tray01:26	8290A/Solid	---
33	31DE13A10D5_33	320-5145-A-7-A	320-5145-A-7-A	Tray01:29	8290A/Solid	---
34	31DE13A10D5_34	320-5145-A-8-A	320-5145-A-8-A	Tray01:30	8290A/Solid	---
35	31DE13A10D5_35	320-5145-A-9-A	320-5145-A-9-A	Tray01:31	8290A/Solid	---
36	31DE13A10D5_36	320-5146-A-1-A	320-5146-A-1-A	Tray01:32	8290A/Solid	---
37	31DE13A10D5_37	320-5146-A-2-A	320-5146-A-2-A	Tray01:33	8290A/Solid	---
38	31DE13A10D5_38	Reagent Blank C-14	RB 123021J	Tray01:3	---	---
39	31DE13A10D5_39	CS-4 HRDXNL4_00015	CCV 123013G	Tray01:2	---	---
40	31DE13A10D5_40	HRDXNSU-00062	SURQC 12-26-13	Tray01:34	QC-59	---

logfile Checked
1/2/14 JRB

User	Sample Size	Unit	FV_ul	Inj Vol	Sample Type	MS File	Inlet File	Conc A	Conc B
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	10	50
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	10	50
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	10	50
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	10.000000	g	20	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	---	---
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	10	50
SMA	1.000000	---	---	2.000000	Analyte	DIOXIN10D5NEW	DIOXINNOGC	10	50

Conc C	Conc D	Conc E	Conc F	Conc G	Process	Process Options
100	100	200	5	100	—	—
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—	—	—	—	—	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	—	—	—	—	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat
100	100	200	5	100	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat
—	—	—	—	—	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	—	—	—	—	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat
100	100	200	5	100	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat
—	—	—	—	—	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	—	—
—	2000	4000	400	2000	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat
100	100	200	5	100	ResolutionCheck	C:\Masslynx\Autospec\dioxinendres.dat
100	100	200	5	100	—	—

Action On Error

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FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: CCV 320-33085/14 Calibration Date: 12/31/2013 20:00

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 31DE13A10D5_14.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	1.022		10.6	10.0	5.7	20.0
2,3,7,8-TCDD	AveID	0.9880	1.021		10.3	10.0	3.3	20.0
1,2,3,7,8-PeCDF	AveID	0.997	1.058		53.0	50.0	6.0	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	1.016		52.2	50.0	4.3	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9414		51.0	50.0	1.9	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.222		55.0	50.0	10.1	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.440		55.2	50.0	10.5	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.285		54.6	50.0	9.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.8955		50.7	50.0	1.4	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.060		52.9	50.0	5.7	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.077		49.8	50.0	-0.4	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.158		53.1	50.0	6.2	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.405		52.3	50.0	4.6	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	1.009		51.1	50.0	2.2	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.075		46.8	50.0	-6.4	20.0
OCDD	AveID	1.076	1.083		101	100	0.6	20.0
OCDF	AveID	1.333	1.322		99.2	100	-0.8	20.0
13C-2,3,7,8-TCDF	Ave	1.512	1.493		98.8	100	-1.2	30.0
13C-2,3,7,8-TCDD	Ave	1.090	1.083		99.3	100	-0.7	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.212		99.7	100	-0.3	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8792		99.9	100	-0.1	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.153		101	100	0.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	0.9800		106	100	6.4	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8951		105	100	4.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.7569		94.6	100	-5.4	30.0
13C-OCDD	Ave	0.6520	0.6167		189	200	-5.4	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.429		5.08	5.00	1.6	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Instrument ID: 9D5 Start Date: 12/18/2013 09:48

Analysis Batch Number: 32212 End Date: 12/18/2013 16:15

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32212/1		12/18/2013 09:48	1	18DE139D5_001.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 10:30	1		DB-5 0.32(mm)
IC 320-32212/3		12/18/2013 11:13	1	18DE139D5_003.d	DB-5 0.32(mm)
IC 320-32212/4		12/18/2013 11:56	1	18DE139D5_004.d	DB-5 0.32(mm)
IC 320-32212/5		12/18/2013 12:38	1	18DE139D5_005.d	DB-5 0.32(mm)
IC 320-32212/6		12/18/2013 13:21	1	18DE139D5_006.d	DB-5 0.32(mm)
IC 320-32212/7		12/18/2013 14:04	1	18DE139D5_007.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 14:46	1		DB-5 0.32(mm)
ICV 320-32212/9		12/18/2013 15:29	1	18DE139D5_009.d	DB-5 0.32(mm)
CPS 320-32212/10		12/18/2013 16:15	1		DB-5 0.32(mm)

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1 Analy Batch No.: 32212

SDG No.:

Instrument ID: 9D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/18/2013 11:13 Calibration End Date: 12/18/2013 14:04 Calibration ID: 5616

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32212/3	18DE139D5_003.d
Level 2	IC 320-32212/4	18DE139D5_004.d
Level 3	IC 320-32212/5	18DE139D5_005.d
Level 4	IC 320-32212/6	18DE139D5_006.d
Level 5	IC 320-32212/7	18DE139D5_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.1274	1.0435	1.0624	1.0176	1.0412	AveID		1.0584				3.9		20.0			
2,3,7,8-TCDD	1.0418	1.0609	1.0959	1.0662	1.0996	AveID		1.0729				2.3		20.0			
1,2,3,7,8-PeCDF	1.1882	1.1712	1.1847	1.1554	1.1979	AveID		1.1795				1.4		20.0			
2,3,4,7,8-PeCDF	1.1055	1.1640	1.1568	1.0965	1.1478	AveID		1.1341				2.7		20.0			
1,2,3,7,8-PeCDD	0.9049	1.0247	0.9670	0.9346	0.9435	AveID		0.9549				4.7		20.0			
1,2,3,4,7,8-HxCDF	1.0719	0.9133	1.1657	1.0881	1.1409	AveID		1.0760				9.2		20.0			
1,2,3,6,7,8-HxCDF	1.2495	1.0350	1.3253	1.2498	1.2258	AveID		1.2171				8.9		20.0			
2,3,4,6,7,8-HxCDF	1.1106	0.9637	1.2180	1.1667	1.1558	AveID		1.1230				8.6		20.0			
1,2,3,4,7,8-HxCDD	1.1073	1.2406	1.1888	1.2077	1.1984	AveID		1.1886				4.2		20.0			
1,2,3,6,7,8-HxCDD	1.1760	1.3056	1.1875	1.1904	1.1817	AveID		1.2083				4.5		20.0			
1,2,3,7,8,9-HxCDD	1.4712	1.5681	1.2642	1.3811	1.3031	AveID		1.3975				8.9		20.0			
1,2,3,7,8,9-HxCDF	1.0240	0.9256	1.1502	1.1058	1.0827	AveID		1.0577				8.2		20.0			
1,2,3,4,6,7,8-HpCDF	1.5666	1.5772	1.5793	1.5062	1.5193	AveID		1.5497				2.2		20.0			
1,2,3,4,6,7,8-HpCDD	0.9657	0.9871	1.0254	0.9901	1.0226	AveID		0.9982				2.5		20.0			
1,2,3,4,7,8,9-HpCDF	1.2334	1.3573	1.2836	1.2752	1.2590	AveID		1.2817				3.6		20.0			
OCDD	1.2963	1.2552	1.2393	1.1812	1.1875	AveID		1.2319				3.9		20.0			
OCDF	1.4542	1.4747	1.4895	1.4436	1.4640	AveID		1.4652				1.2		20.0			
13C-2,3,7,8-TCDF	1.6251	1.6433	1.6175	1.6342	1.5879	Ave		1.6216				1.3		20.0			
13C-2,3,7,8-TCDD	1.0772	1.0822	1.0772	1.0700	1.0551	Ave		1.0723				1.0		20.0			
13C-1,2,3,7,8-PeCDF	1.0943	1.1578	1.1463	1.1994	1.1895	Ave		1.1574				3.6		20.0			
13C-1,2,3,7,8-PeCDD	0.7844	0.6615	0.8065	0.8302	0.8543	Ave		0.7874				9.5		20.0			
13C-1,2,3,4,7,8-HxCDF	1.3636	1.5550	1.3554	1.2848	1.3213	Ave		1.3760				7.6		20.0			
13C-1,2,3,6,7,8-HxCDD	0.8142	0.7596	0.9369	0.8112	0.8537	Ave		0.8351				7.9		20.0			
13C-1,2,3,4,6,7,8-HpCDF	1.0280	0.9656	1.0160	0.9633	0.9291	Ave		0.9804				4.2		20.0			
13C-1,2,3,4,6,7,8-HpCDD	0.9257	0.9025	0.9157	0.8813	0.8220	Ave		0.8894				4.6		20.0			
13C-OCDD	0.6999	0.7284	0.7250	0.7502	0.6966	Ave		0.7200				3.1		20.0			
37Cl4-2,3,7,8-TCDD	1.2476	1.3913	1.4003	1.4531	1.4018	Ave		1.3788				5.6		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1 Analy Batch No.: 32212

SDG No.:

Instrument ID: 9D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/18/2013 11:13 Calibration End Date: 12/18/2013 14:04 Calibration ID: 5616

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32212/3	18DE139D5_003.d
Level 2	IC 320-32212/4	18DE139D5_004.d
Level 3	IC 320-32212/5	18DE139D5_005.d
Level 4	IC 320-32212/6	18DE139D5_006.d
Level 5	IC 320-32212/7	18DE139D5_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	792980	3634138	15287526	74591405	323078411	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	466361	2448768	10703845	52890319	233162717	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	3851968	20032595	84253570	436363012	1945225487	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	3536428	19941518	82698163	412963663	1865973403	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	2120366	9867631	48704323	244044649	1100872012	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	2696146	14896928	62811391	323020147	1490558390	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	3109997	16833952	69803305	374520429	1614227992	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	2804656	15709511	65059231	349670889	1509923938	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1711745	9821823	43906151	236395366	1005203968	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	1682616	10375585	44364589	215224567	1006331759	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	2176857	12461569	46672482	260256328	1093223279	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	2565055	14988445	61847013	329879795	1421256512	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	2789359	15092616	59503817	315953766	1313707576	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	1538221	8728589	34792968	190363911	780567771	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	2232930	12918383	48522728	268499471	1089474811	2.50	10.0	50.0	200	1000
OCDD		AveID	2872234	16751235	62678982	360930230	1435426597	5.00	20.0	100	400	2000
OCDF		AveID	3313235	19389804	74363888	440172107	1772521971	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	138993094	173718870	144908584	185263943	154386415	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	91284522	113052054	95919299	119600136	103585933	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	127378610	166576988	140188816	186644868	160538539	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	90245761	92304088	96318323	127113639	113399538	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	62411067	101753918	66780238	92705850	81645162	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	63138720	84301530	76998414	98817728	87836911	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	41686748	55228866	44440042	61938030	52495250	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	63602274	87510351	67245437	95712163	74597668	100	100	100	100	100
13C-OCDD	13CHx(	Ave	86522765	128381287	96803972	148305438	118946357	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	610103	3361943	14312230	75128776	314602844	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
18DE139D5	1	CPS 121813	DB-5 CPSM HRDXNCP_00021				1.00000	
18DE139D5	2	RB 121813	Reagent Blank C-14				1.00000	
18DE139D5	3	IC 121813	CS-2 HRDXNL2_00010				1.00000	
18DE139D5	4	IC 121813A	CS-3 HRDXNL3_00008				1.00000	
18DE139D5	5	IC 121813B	CS-4 HRDXNL4_00015				1.00000	
18DE139D5	6	IC 121813C	CS-5 HRDXNL5_00013				1.00000	
18DE139D5	7	IC 121813D	CS-6 HRDXNL6_00007				1.00000	
18DE139D5	8	RB 121813A	Reagent Blank C-14				1.00000	
18DE139D5	9	ICV 121813	2nd Source HRDXNIC_00016				1.00000	
18DE139D5	10	CPS 121813A	DB-5 CPSM HRDXNCP_00021				1.00000	
18DE139D5	11						1.00000	
18DE139D5	12						1.00000	
18DE139D5	13						1.00000	
18DE139D5	14						1.00000	
18DE139D5	15						1.00000	
18DE139D5	16						1.00000	
18DE139D5	17		SMA 12-18-13				1.00000	
18DE139D5	18						1.00000	

logfile checked
12-18-13 ALM

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Instrument ID: 9D5 Start Date: 12/27/2013 11:35

Analysis Batch Number: 32760 End Date: 12/27/2013 20:52

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32760/1		12/27/2013 11:35	1	27DE13A9D5_001.d	DB-5 0.32(mm)
CCV 320-32760/2		12/27/2013 12:18	1	27DE13A9D5_002.d	DB-5 0.32(mm)
ZZZZZ		12/27/2013 13:03	1		DB-5 0.32(mm)
LCS 320-31203/2-A		12/27/2013 16:37	1	27DE13A9D5_008.d	DB-5 0.32(mm)
MB 320-31203/1-A		12/27/2013 17:19	1	27DE13A9D5_009.d	DB-5 0.32(mm)
320-5143-19	TF2-SB-RB05-1113	12/27/2013 18:02	1	27DE13A9D5_010.d	DB-5 0.32(mm)
ZZZZZ		12/27/2013 18:45	1		DB-5 0.32(mm)
ZZZZZ		12/27/2013 19:27	1		DB-5 0.32(mm)
ZZZZZ		12/27/2013 20:10	1		DB-5 0.32(mm)
CCV 320-32760/14		12/27/2013 20:52	1	27DE13A9D5_014.d	DB-5 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Instrument ID: 9D5 Start Date: 12/30/2013 20:47

Analysis Batch Number: 32907 End Date: 12/31/2013 06:45

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32907/1		12/30/2013 20:47	1	30DE13A9D5_001.d	DB-5 0.32(mm)
CCV 320-32907/2		12/30/2013 21:29	1	30DE13A9D5_002.d	DB-5 0.32(mm)
ZZZZZ		12/30/2013 22:12	1		DB-5 0.32(mm)
320-5143-3 DL	TF2-001-SS1001-0001 DL	12/31/2013 00:20	10	30DE13A9D5_006.d	DB-5 0.32(mm)
320-5143-4 DL	TF2-001-SB1001-0204 DL	12/31/2013 01:03	10	30DE13A9D5_007.d	DB-5 0.32(mm)
320-5143-5 DL	TF2-001-SS1002-0001 DL	12/31/2013 01:46	10	30DE13A9D5_008.d	DB-5 0.32(mm)
320-5143-6 DL	TF2-001-SB1002-0204 DL	12/31/2013 02:28	10	30DE13A9D5_009.d	DB-5 0.32(mm)
320-5143-7 DL	TF2-001-SS1003-0001 DL	12/31/2013 03:11	10	30DE13A9D5_010.d	DB-5 0.32(mm)
ZZZZZ		12/31/2013 03:54	10		DB-5 0.32(mm)
320-5143-9 DL	TF2-001-SS1004-0001 DL	12/31/2013 04:36	10	30DE13A9D5_012.d	DB-5 0.32(mm)
320-5143-10 DL	TF2-001-SB1004-0204 DL	12/31/2013 05:19	10	30DE13A9D5_013.d	DB-5 0.32(mm)
ZZZZZ		12/31/2013 06:02	1		DB-5 0.32(mm)
CCV 320-32907/15		12/31/2013 06:45	1	30DE13A9D5_015.d	DB-5 0.32(mm)

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID (1): CPS 320-32212/1 Instrument ID (1): 9D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/18/2013 09:48

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.38	18

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID (1): CPS 320-32760/1 Instrument ID (1): 9D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/27/2013 11:35

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.28	19

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID (1): CPS 320-32907/1 Instrument ID (1): 9D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/30/2013 20:47

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.31	23

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: ICV 320-32212/9 Calibration Date: 12/18/2013 15:29

Instrument ID: 9D5 Calib Start Date: 12/18/2013 11:13

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/18/2013 14:04

Lab File ID: 18DE139D5_009.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.058	1.084		10.2	10.0	2.4	30.0
2,3,7,8-TCDD	AveID	1.073	1.137		10.6	10.0	6.0	30.0
1,2,3,7,8-PeCDF	AveID	1.179	1.243		26.3	25.0	5.4	30.0
2,3,4,7,8-PeCDF	AveID	1.134	1.207		26.6	25.0	6.4	30.0
1,2,3,7,8-PeCDD	AveID	0.9549	0.9468		24.8	25.0	-0.9	30.0
1,2,3,4,7,8-HxCDF	AveID	1.076	1.257		29.2	25.0	16.8	30.0
1,2,3,6,7,8-HxCDF	AveID	1.217	1.399		28.7	25.0	14.9	30.0
2,3,4,6,7,8-HxCDF	AveID	1.123	1.336		29.7	25.0	19.0	30.0
1,2,3,4,7,8-HxCDD	AveID	1.189	1.173		24.7	25.0	-1.3	30.0
1,2,3,6,7,8-HxCDD	AveID	1.208	1.245		25.8	25.0	3.1	30.0
1,2,3,7,8,9-HxCDD	AveID	1.398	1.370		24.5	25.0	-2.0	30.0
1,2,3,7,8,9-HxCDF	AveID	1.058	1.184		28.0	25.0	12.0	30.0
1,2,3,4,6,7,8-HpCDF	AveID	1.550	1.682		27.1	25.0	8.5	30.0
1,2,3,4,6,7,8-HpCDD	AveID	0.998	1.057		26.5	25.0	5.9	30.0
1,2,3,4,7,8,9-HpCDF	AveID	1.282	1.349		26.3	25.0	5.2	30.0
OCDD	AveID	1.232	1.292		52.4	50.0	4.8	30.0
OCDF	AveID	1.465	1.529		52.2	50.0	4.4	30.0
13C-2,3,7,8-TCDF	Ave	1.622	1.687		104	100	4.0	
13C-2,3,7,8-TCDD	Ave	1.072	1.088		101	100	1.4	
13C-1,2,3,7,8-PeCDF	Ave	1.157	1.199		104	100	3.6	
13C-1,2,3,7,8-PeCDD	Ave	0.7874	0.8711		111	100	10.6	
13C-1,2,3,4,7,8-HxCDF	Ave	1.376	1.257		91.4	100	-8.6	
13C-1,2,3,6,7,8-HxCDD	Ave	0.8351	0.9158		110	100	9.7	
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9804	0.9428		96.2	100	-3.8	
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8894	0.8431		94.8	100	-5.2	
13C-OCDD	Ave	0.7200	0.7029		195	200	-2.4	
37Cl4-2,3,7,8-TCDD	Ave	1.379	1.398		10.1	10.0	1.4	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: CCV 320-32760/2 Calibration Date: 12/27/2013 12:18

Instrument ID: 9D5 Calib Start Date: 12/18/2013 11:13

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/18/2013 14:04

Lab File ID: 27DE13A9D5_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.058	0.9663		9.13	10.0	-8.7	20.0
2,3,7,8-TCDD	AveID	1.073	1.111		10.4	10.0	3.5	20.0
1,2,3,7,8-PeCDF	AveID	1.179	1.157		49.0	50.0	-1.9	20.0
2,3,4,7,8-PeCDF	AveID	1.134	1.142		50.3	50.0	0.7	20.0
1,2,3,7,8-PeCDD	AveID	0.9549	0.9181		48.1	50.0	-3.9	20.0
1,2,3,4,7,8-HxCDF	AveID	1.076	1.141		53.0	50.0	6.0	20.0
1,2,3,6,7,8-HxCDF	AveID	1.217	1.331		54.7	50.0	9.4	20.0
2,3,4,6,7,8-HxCDF	AveID	1.123	1.214		54.1	50.0	8.1	20.0
1,2,3,4,7,8-HxCDD	AveID	1.189	1.052		44.2	50.0	-11.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.208	1.211		50.1	50.0	0.3	20.0
1,2,3,7,8,9-HxCDD	AveID	1.398	1.354		48.5	50.0	-3.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.058	1.136		53.7	50.0	7.4	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.550	1.456		47.0	50.0	-6.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.998	1.030		51.6	50.0	3.2	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.282	1.198		46.7	50.0	-6.5	20.0
OCDD	AveID	1.232	1.178		95.7	100	-4.3	20.0
OCDF	AveID	1.465	1.450		99.0	100	-1.0	20.0
13C-2,3,7,8-TCDF	Ave	1.622	1.656		102	100	2.1	30.0
13C-2,3,7,8-TCDD	Ave	1.072	1.078		101	100	0.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.157	1.149		99.3	100	-0.7	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7874	0.8310		106	100	5.5	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.376	1.213		88.2	100	-11.8	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.8351	0.8810		105	100	5.5	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9804	1.037		106	100	5.8	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8894	0.9052		102	100	1.8	30.0
13C-OCDD	Ave	0.7200	0.6521		181	200	-9.4	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.379	1.458		5.29	5.00	5.8	

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
27DE13A9D5	1	CPS 122713	DB-5 CPSM HRDXNCP_00021				1.00000	
27DE13A9D5	2	CCV 122713	CS-4 HRDXNL4_00015				1.00000	
27DE13A9D5	3	RB 122713	Reagent Blank C-14				1.00000	
27DE13A9D5	4	320-30731	LCS 320-30731/2-A	20	1613B/8290/S	90	10.00000	g
27DE13A9D5	5	320-30731	440-62693-B-1-A	20	8290/SOLID		10.22000	g
27DE13A9D5	6	320-30731	440-62693-B-4-A	20	8290/SOLID		10.07000	g
27DE13A9D5	7	320-30731	440-62693-B-6-A	20	8290/SOLID		10.25000	g
27DE13A9D5	8	320-31203	LCS 320-31203/2-A	20	8290/WATER	E38	1.00000	L
27DE13A9D5	9	320-31203	MB 320-31203/1-A	20	8290/WATER		1.00000	L
27DE13A9D5	10	320-31203	320-5143-A-19-A	20	8290A/WATER		1.06220	L
27DE13A9D5	11	320-31203	320-5145-A-10-A	20	8290A/WATER		1.05170	L
27DE13A9D5	12	320-31203	680-96439-K-22-A	20	8290A/WATER		0.95540	L
27DE13A9D5	13	RB 122713A	Reagent Blank C-14				1.00000	
27DE13A9D5	14	CCV 122713A	CS-4 HRDXNL4_00015				1.00000	
27DE13A9D5	15						1.00000	
27DE13A9D5	16						1.00000	
27DE13A9D5	17		JRB, AJS 12-27-13				1.00000	
27DE13A9D5	18						1.00000	

log file checked
12-29-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: CCV 320-32907/15 Calibration Date: 12/31/2013 06:45

Instrument ID: 9D5 Calib Start Date: 12/18/2013 11:13

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/18/2013 14:04

Lab File ID: 30DE13A9D5_015.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.058	1.002		9.46	10.0	-5.4	20.0
2,3,7,8-TCDD	AveID	1.073	0.9564		8.91	10.0	-10.9	20.0
1,2,3,7,8-PeCDF	AveID	1.179	1.204		51.0	50.0	2.1	20.0
2,3,4,7,8-PeCDF	AveID	1.134	1.140		50.3	50.0	0.5	20.0
1,2,3,7,8-PeCDD	AveID	0.9549	0.9396		49.2	50.0	-1.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.076	1.134		52.7	50.0	5.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.217	1.388		57.0	50.0	14.0	20.0
2,3,4,6,7,8-HxCDF	AveID	1.123	1.211		53.9	50.0	7.8	20.0
1,2,3,4,7,8-HxCDD	AveID	1.189	1.040		43.7	50.0	-12.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.208	1.317		54.5	50.0	9.0	20.0
1,2,3,7,8,9-HxCDD	AveID	1.398	1.315		47.1	50.0	-5.9	20.0
1,2,3,7,8,9-HxCDF	AveID	1.058	1.084		51.2	50.0	2.5	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.550	1.554		50.1	50.0	0.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.998	0.9692		48.5	50.0	-2.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.282	1.188		46.3	50.0	-7.3	20.0
OCDD	AveID	1.232	1.238		101	100	0.5	20.0
OCDF	AveID	1.465	1.642		112	100	12.0	20.0
13C-2,3,7,8-TCDF	Ave	1.622	1.475		91.0	100	-9.0	30.0
13C-2,3,7,8-TCDD	Ave	1.072	1.066		99.4	100	-0.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.157	0.9700		83.8	100	-16.2	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7874	0.6804		86.4	100	-13.6	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.376	1.450		105	100	5.3	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.8351	0.9308		111	100	11.5	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9804	0.9723		99.2	100	-0.8	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8894	0.9140		103	100	2.8	30.0
13C-OCDD	Ave	0.7200	0.5706		158	200	-20.8	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.379	1.274		4.62	5.00	-7.6	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Instrument ID: 5D2 Start Date: 12/30/2013 21:48

Analysis Batch Number: 32960 End Date: 12/31/2013 03:33

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32960/2		12/30/2013 21:48	1		DB-225 0.32(mm)
IC 320-32960/4		12/30/2013 23:11	1	30DE13C5D2_004.d	DB-225 0.32(mm)
IC 320-32960/5		12/30/2013 23:48	1	30DE13C5D2_005.d	DB-225 0.32(mm)
IC 320-32960/6		12/31/2013 01:04	1	30DE13C5D2_007.d	DB-225 0.32(mm)
IC 320-32960/7		12/31/2013 01:41	1	30DE13C5D2_008.d	DB-225 0.32(mm)
IC 320-32960/8		12/31/2013 02:19	1	30DE13C5D2_009.d	DB-225 0.32(mm)
ICV 320-32960/10		12/31/2013 03:33	1	30DE13C5D2_011.d	DB-225 0.32(mm)

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1 Analy Batch No.: 32960

SDG No.:

Instrument ID: 5D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/30/2013 23:11 Calibration End Date: 12/31/2013 02:19 Calibration ID: 5765

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32960/4	30DE13C5D2_004.d
Level 2	IC 320-32960/5	30DE13C5D2_005.d
Level 3	IC 320-32960/6	30DE13C5D2_007.d
Level 4	IC 320-32960/7	30DE13C5D2_008.d
Level 5	IC 320-32960/8	30DE13C5D2_009.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.6222	1.7089	1.5590	1.5753	1.7465	AveID		1.6424				5.0		20.0			
2,3,7,8-TCDF	0.8921	0.8171	0.8043	0.7932	0.8661	AveID		0.8346				5.1		20.0			
13C-2,3,7,8-TCDD	1.0076	1.0075	1.0234	0.9769	0.9496	Ave		0.9930				3.0		20.0			
13C-2,3,7,8-TCDF	2.1975	2.2438	2.2362	2.1635	2.1587	Ave		2.1999				1.8		20.0			
37Cl4-2,3,7,8-TCDD	1.7266	1.4786	1.5362	1.5793	1.6223	Ave		1.5886				5.9		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1 Analy Batch No.: 32960

SDG No.:

Instrument ID: 5D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/30/2013 23:11 Calibration End Date: 12/31/2013 02:19 Calibration ID: 5765

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32960/4	30DE13C5D2_004.d
Level 2	IC 320-32960/5	30DE13C5D2_005.d
Level 3	IC 320-32960/6	30DE13C5D2_007.d
Level 4	IC 320-32960/7	30DE13C5D2_008.d
Level 5	IC 320-32960/8	30DE13C5D2_009.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	272464	1551980	7485310	23665639	120768581	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	370300	1762657	8086983	25574045	132892762	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCI	Ave	35880447	45362702	46014307	36764276	33822470	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCI	Ave	81408485	103274735	104703930	82376819	78255618	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCI	Ave	359889	1545726	8125666	27629245	133970516	0.250	1.00	5.00	20.0	100

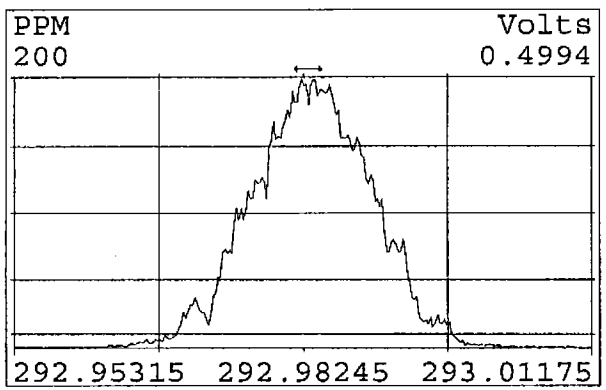
Curve Type Legend:

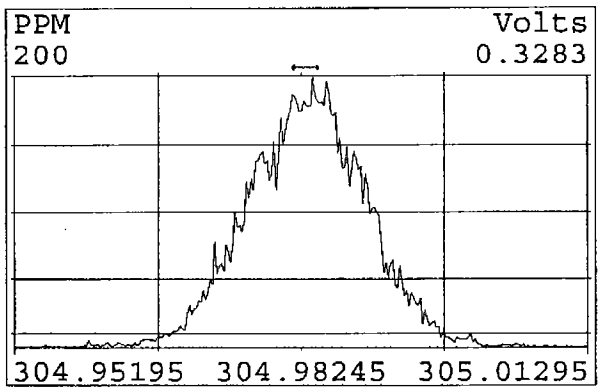
Ave = Average ISTD
AveID = Average isotope dilution

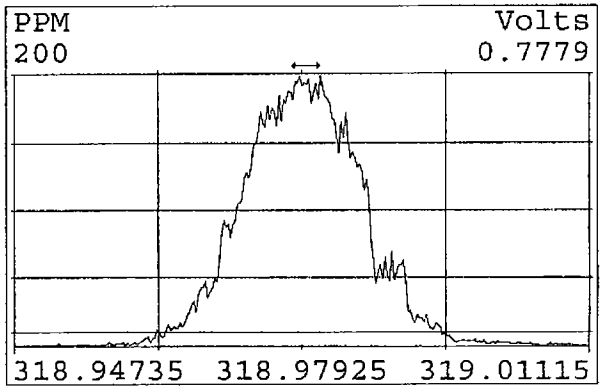
ata file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
30DE13C5D2	1	RB 123013	Reagent Blank				1.00000	
30DE13C5D2	2	CPS 123013	DB225 CPSM HRDXNCP_00019				1.00000	
30DE13C5D2	3	RB 123013A	Reagent Blank				1.00000	
30DE13C5D2	4	IC 123013	CS-2 HRDXNL2_00010				1.00000	
30DE13C5D2	5	IC 123013A	CS-3 HRDXNL3_00008				1.00000	
30DE13C5D2	6	IC 123013B	CS-4 HRDXNL4_00016				1.00000	
30DE13C5D2	7	IC 123013C	CS-4 HRDXNL4_00015				1.00000	
30DE13C5D2	8	IC 123013D	CS-5 HRDXNL5_00013				1.00000	
30DE13C5D2	9	IC 123013E	CS-6 HRDXNL6_00007				1.00000	
30DE13C5D2	10	RB 123013B	Reagent Blank				1.00000	
30DE13C5D2	11	ICV 123013	2nd Source HRDXNIC_00016				1.00000	
30DE13C5D2	12	CPS 123013A	DB225 CPSM HRDXNCP_00019				1.00000	
30DE13C5D2	13						1.00000	
30DE13C5D2	14						1.00000	
30DE13C5D2	15						1.00000	
30DE13C5D2	16						1.00000	
30DE13C5D2	17						1.00000	
30DE13C5D2	18						1.00000	
30DE13C5D2	19		ALM 12-30-13				1.00000	
30DE13C5D2	20						1.00000	

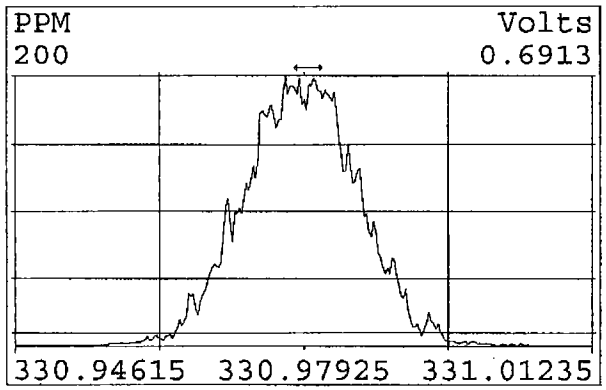
Logfile checked
12-31-13
SMA

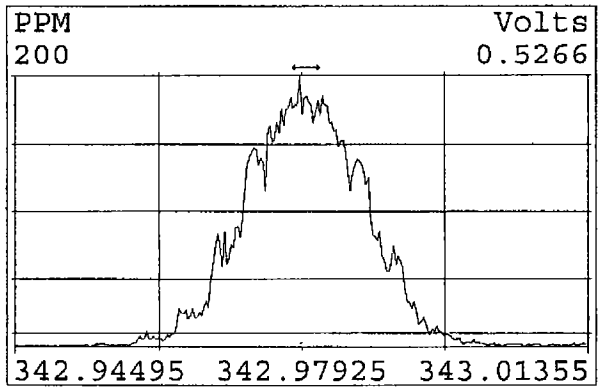
Peak Locate Examination:30-DEC-2013:21:08 File:30DE13C5D2
Experiment:DB225RES Function:1 Reference:PFK

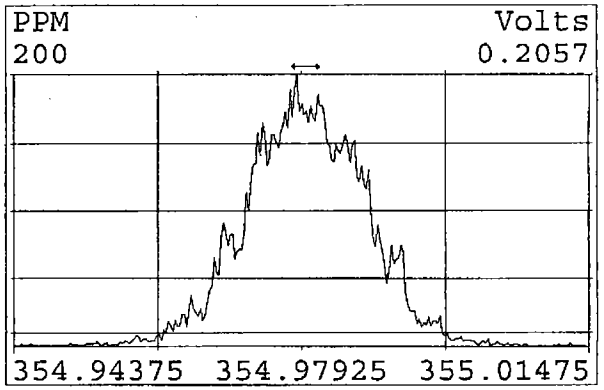


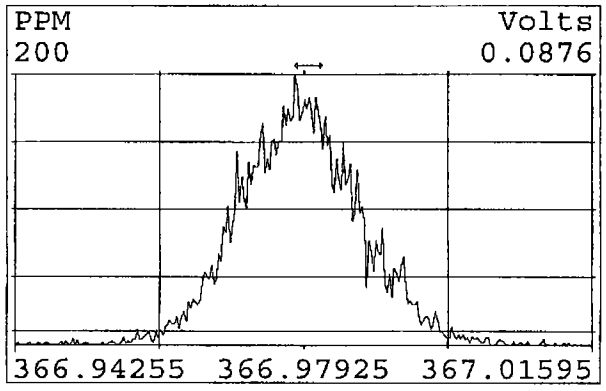


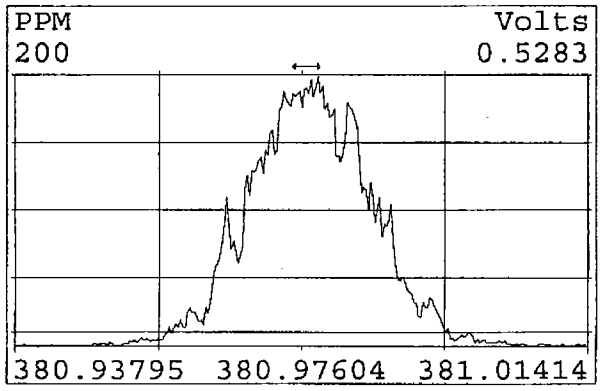




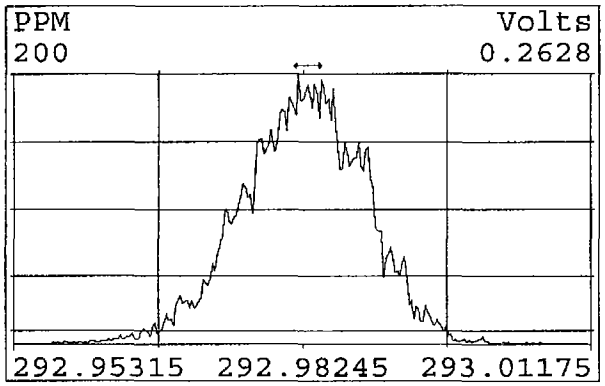


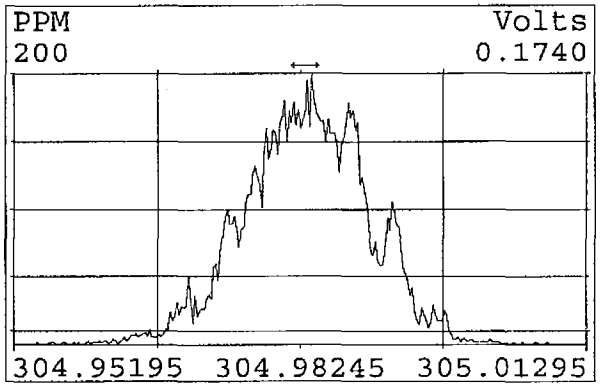


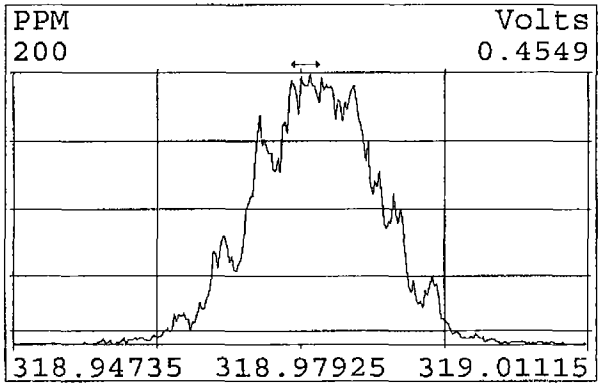


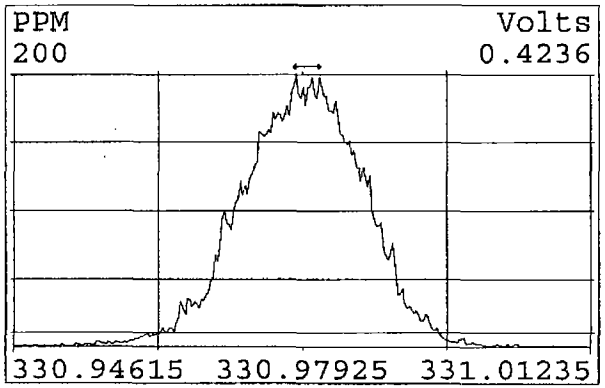


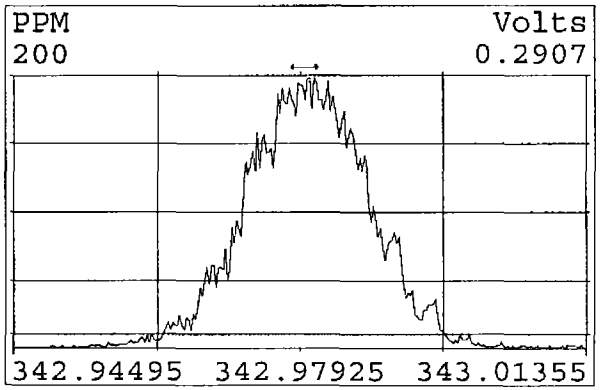
Peak Locate Examination:31-DEC-2013:06:33 File:30DE13C5D2ENDRES
Experiment:DB225RES Function:1 Reference:PFK

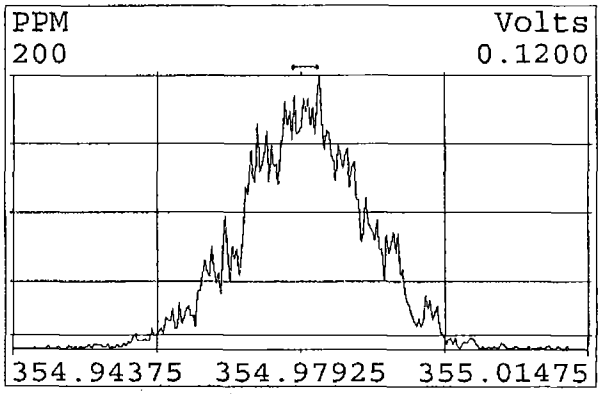


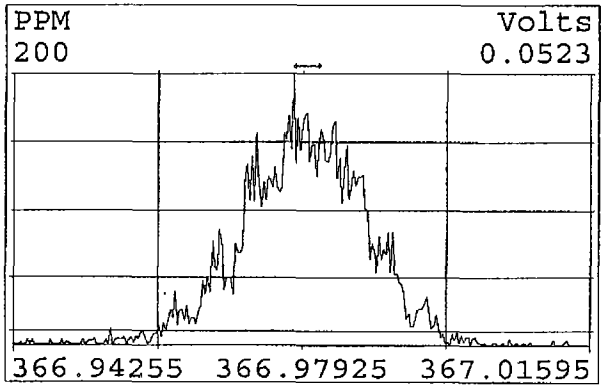


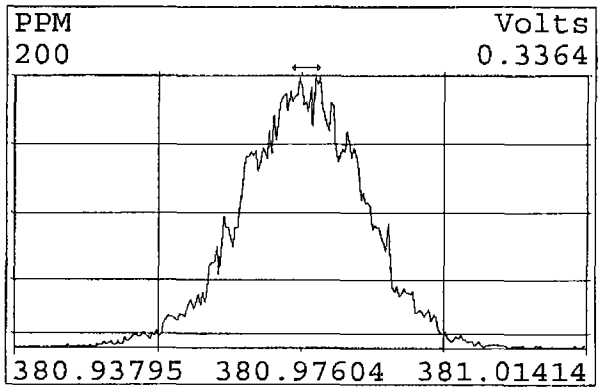












DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Instrument ID: 5D2 Start Date: 12/31/2013 10:52

Analysis Batch Number: 32982 End Date: 12/31/2013 19:36

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-32982/1		12/31/2013 10:52	1	31DE13C5D2_002.d	DB-225 0.32(mm)
CPS 320-32982/2		12/31/2013 11:29	1	31DE13C5D2_003.d	DB-225 0.32(mm)
ZZZZZ		12/31/2013 12:07	1		DB-225 0.32(mm)
320-5143-1 RA	TF2-003-SB1013-0204 RA	12/31/2013 12:44	1	31DE13C5D2_005.d	DB-225 0.32(mm)
320-5143-2 RA	TF2-003-SB1019-0204 RA	12/31/2013 13:22	1	31DE13C5D2_006.d	DB-225 0.32(mm)
320-5143-3 RA	TF2-001-SS1001-0001 RA	12/31/2013 13:59	1	31DE13C5D2_007.d	DB-225 0.32(mm)
320-5143-4 RA	TF2-001-SB1001-0204 RA	12/31/2013 14:37	1	31DE13C5D2_008.d	DB-225 0.32(mm)
320-5143-5 RA	TF2-001-SS1002-0001 RA	12/31/2013 15:14	1	31DE13C5D2_009.d	DB-225 0.32(mm)
320-5143-6 RA	TF2-001-SB1002-0204 RA	12/31/2013 15:52	1	31DE13C5D2_010.d	DB-225 0.32(mm)
320-5143-7 RA	TF2-001-SS1003-0001 RA	12/31/2013 16:29	1	31DE13C5D2_011.d	DB-225 0.32(mm)
320-5143-8 RA	TF2-001-SB1003-0204 RA	12/31/2013 17:06	1	31DE13C5D2_012.d	DB-225 0.32(mm)
320-5143-9 RA	TF2-001-SS1004-0001 RA	12/31/2013 17:44	1	31DE13C5D2_013.d	DB-225 0.32(mm)
320-5143-10 RA	TF2-001-SB1004-0204 RA	12/31/2013 18:21	1	31DE13C5D2_014.d	DB-225 0.32(mm)
ZZZZZ		12/31/2013 18:59	1		DB-225 0.32(mm)
CCV 320-32982/15		12/31/2013 19:36	1	31DE13C5D2_016.d	DB-225 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Instrument ID: 5D2 Start Date: 01/02/2014 18:53

Analysis Batch Number: 33166 End Date: 01/03/2014 03:37

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-33166/1		01/02/2014 18:53	1	02JA14B5D2_001.d	DB-225 0.32(mm)
CCV 320-33166/2		01/02/2014 19:30	1	02JA14B5D2_002.d	DB-225 0.32(mm)
ZZZZZ		01/02/2014 20:07	1		DB-225 0.32(mm)
320-5143-11 RA	TF2-SB-DUP09-1113 RA	01/02/2014 20:45	1	02JA14B5D2_004.d	DB-225 0.32(mm)
320-5143-12 RA	TF2-001-SS1007-0001 RA	01/02/2014 21:22	1	02JA14B5D2_005.d	DB-225 0.32(mm)
320-5143-13 RA	TF2-001-SB1007-0204 RA	01/02/2014 22:00	1	02JA14B5D2_006.d	DB-225 0.32(mm)
320-5143-14 RA	TF2-001-SB1008-0204 RA	01/02/2014 22:37	1	02JA14B5D2_007.d	DB-225 0.32(mm)
320-5143-14 MS RA	TF2-001-SB1008-0204 MS RA	01/02/2014 23:15	1	02JA14B5D2_008.d	DB-225 0.32(mm)
320-5143-14 MSD RA	TF2-001-SB1008-0204 MSD RA	01/02/2014 23:52	1	02JA14B5D2_009.d	DB-225 0.32(mm)
320-5143-15 RA	TF2-001-SS1008-0001 RA	01/03/2014 00:30	1	02JA14B5D2_010.d	DB-225 0.32(mm)
320-5143-16 RA	TF2-001-SB1009-0204 RA	01/03/2014 01:07	1	02JA14B5D2_011.d	DB-225 0.32(mm)
320-5143-17 RA	TF2-001-SS1009-0001 RA	01/03/2014 01:45	1	02JA14B5D2_012.d	DB-225 0.32(mm)
320-5143-18 RA	TF2-SB-DUP10-1113 RA	01/03/2014 02:22	1	02JA14B5D2_013.d	DB-225 0.32(mm)
ZZZZZ		01/03/2014 03:00	1		DB-225 0.32(mm)
CCV 320-33166/15		01/03/2014 03:37	1	02JA14B5D2_015.d	DB-225 0.32(mm)

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID (1): CPS 320-32982/2 Instrument ID (1): 5D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 12/31/2013 11:29

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.30	15

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID (1): CPS 320-33166/1 Instrument ID (1): 5D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 01/02/2014 18:53

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.29	21

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: ICV 320-32960/10 Calibration Date: 12/31/2013 03:33

Instrument ID: 5D2 Calib Start Date: 12/30/2013 23:11

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/31/2013 02:19

Lab File ID: 30DE13C5D2_011.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.642	1.619		9.86	10.0	-1.4	30.0
2,3,7,8-TCDF	AveID	0.8346	0.7844		9.09	10.0	-6.0	30.0
13C-2,3,7,8-TCDD	Ave	0.9930	1.007		101	100	1.4	
13C-2,3,7,8-TCDF	Ave	2.200	2.296		104	100	4.3	
37Cl4-2,3,7,8-TCDD	Ave	1.589	1.503		9.10	10.0	-5.4	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: CCV 320-32982/1 Calibration Date: 12/31/2013 10:52

Instrument ID: 5D2 Calib Start Date: 12/30/2013 23:11

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/31/2013 02:19

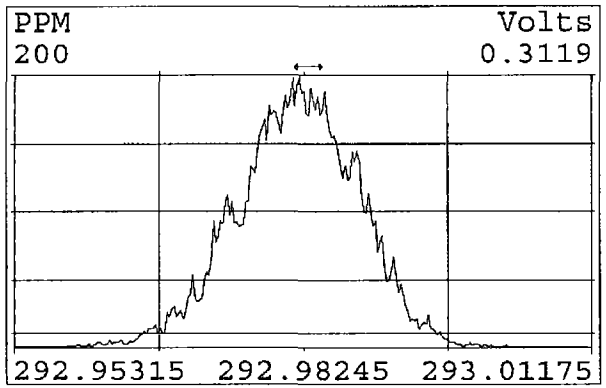
Lab File ID: 31DE13C5D2_002.d Conc. Units: pg/uL

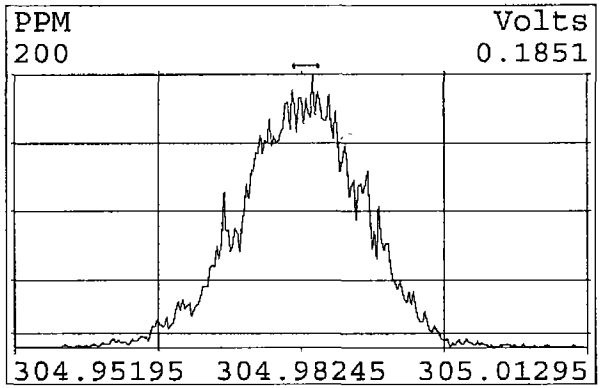
ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.642	1.649		10.0	10.0	0.4	20.0
2,3,7,8-TCDF	AveID	0.8346	0.8303		9.95	10.0	-0.5	20.0
13C-2,3,7,8-TCDD	Ave	0.9930	1.004		101	100	1.1	30.0
13C-2,3,7,8-TCDF	Ave	2.200	2.299		105	100	4.5	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.589	1.585		4.99	5.00	-0.2	

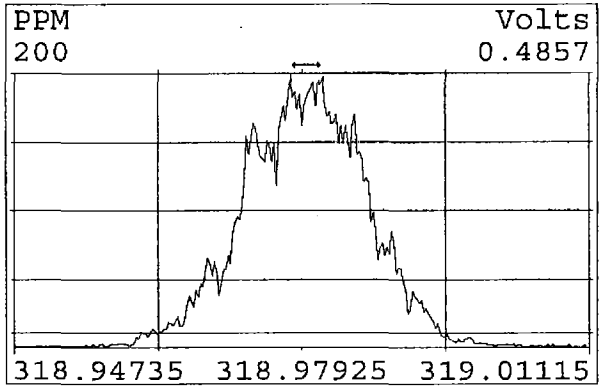
ta file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
31DE13C5D2	1	CCV 123113	CS-4 HRDXNL4_00016				1.00000	
31DE13C5D2	2	CCV 123113A	CS-4 HRDXNL4_00015				1.00000	
31DE13C5D2	3	CPS 123113	DB225 CPSM HRDXNCP_00019				1.00000	
31DE13C5D2	4	RB 123113	Reagent Blank C-14				1.00000	
31DE13C5D2	5	320-31001	320-5143-A-1-A	20	8290A/Solid	EP37	10.00000	g
31DE13C5D2	6	320-31001	320-5143-A-2-A	20	8290A/Solid		10.00000	g
31DE13C5D2	7	320-31001	320-5143-A-3-A	20	8290A/Solid		10.00000	g
31DE13C5D2	8	320-31001	320-5143-A-4-A	20	8290A/Solid		10.00000	g
31DE13C5D2	9	320-31001	320-5143-A-5-A	20	8290A/Solid		10.00000	g
31DE13C5D2	10	320-31001	320-5143-A-6-A	20	8290A/Solid		10.00000	g
31DE13C5D2	11	320-31001	320-5143-A-7-A	20	8290A/Solid		10.00000	g
31DE13C5D2	12	320-31001	320-5143-A-8-A	20	8290A/Solid		10.00000	g
31DE13C5D2	13	320-31001	320-5143-A-9-A	20	8290A/Solid		10.00000	g
31DE13C5D2	14	320-31001	320-5143-A-10-A	20	8290A/Solid		10.00000	g
31DE13C5D2	15	RB 123113A	Reagent Blank C-14				1.00000	
31DE13C5D2	16	CCV 123113B	CS-4 HRDXNL4_00015				1.00000	
31DE13C5D2	17						1.00000	
31DE13C5D2	18						1.00000	
31DE13C5D2	19						1.00000	
31DE13C5D2	20						1.00000	
31DE13C5D2	21						1.00000	
31DE13C5D2	22						1.00000	
31DE13C5D2	23		JRB 12-31-13				1.00000	
DE13C5D2	24						1.00000	

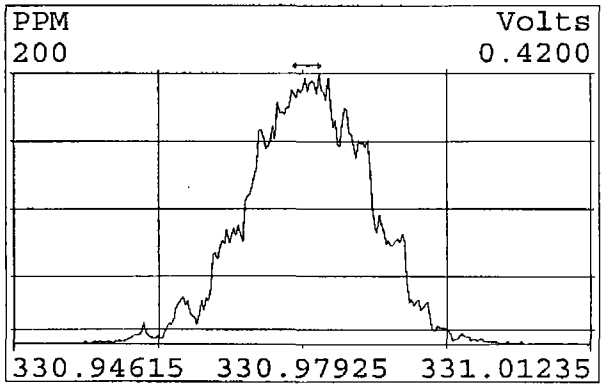
log file v'd
NK 12/31/13

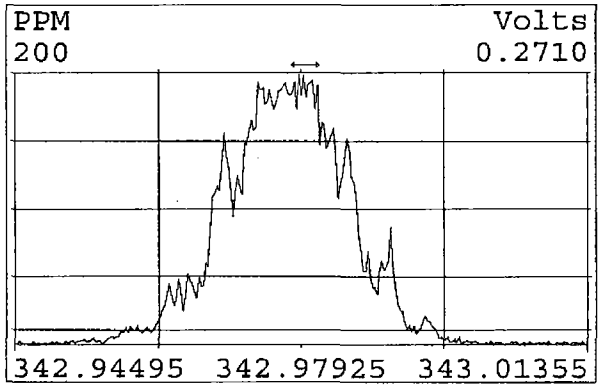
Peak Locate Examination:31-DEC-2013:10:12 File:31DE13C5D2
Experiment:DB225RES Function:1 Reference:PFK

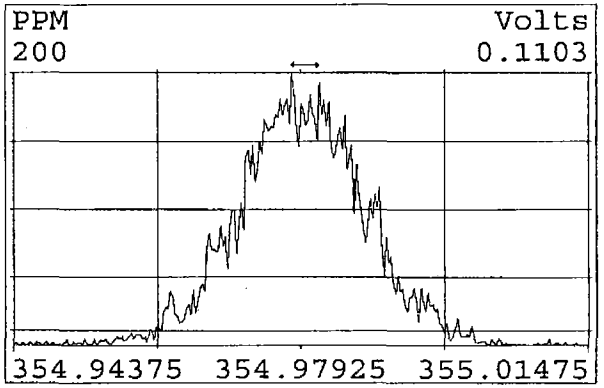


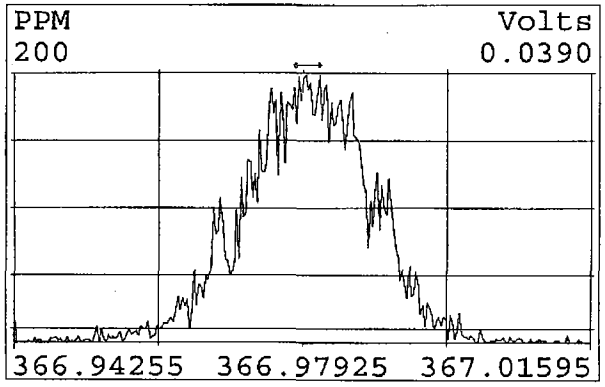


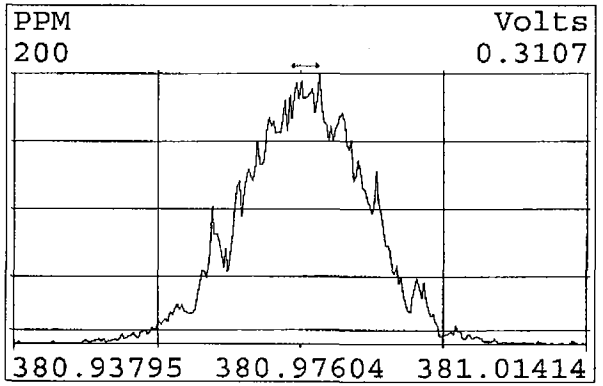




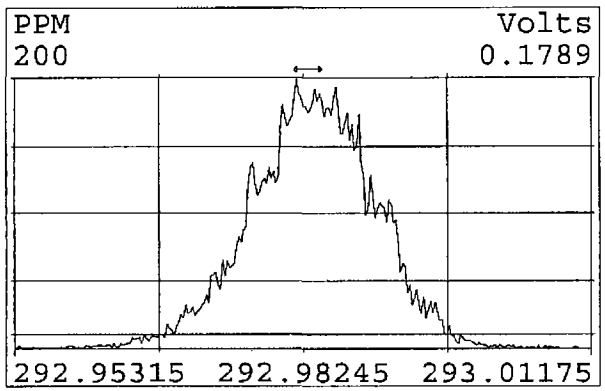


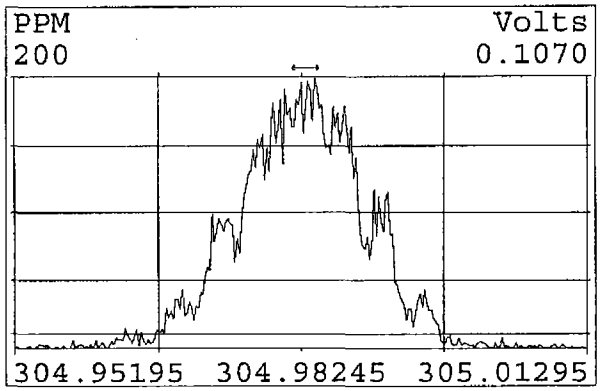


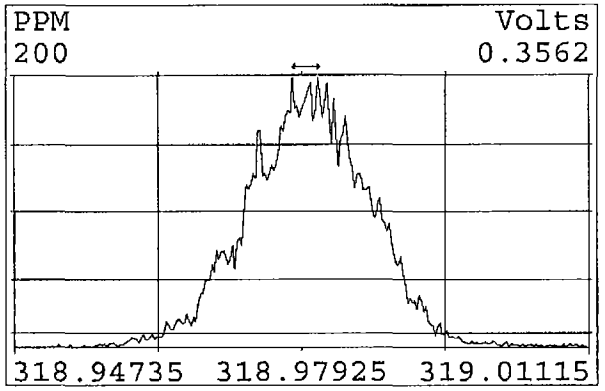


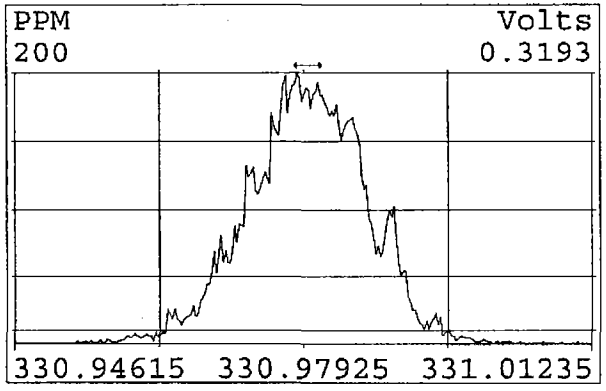


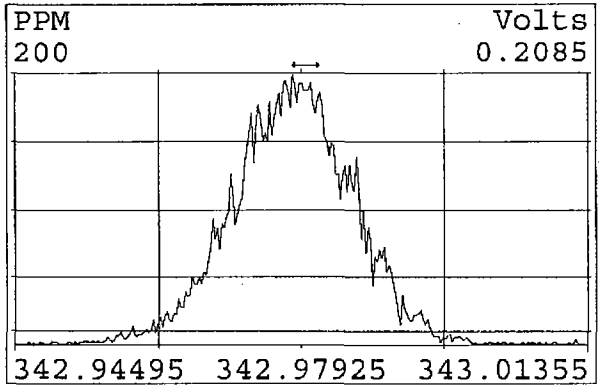
Peak Locate Examination:31-DEC-2013:20:25 File:RESCHK31DE13C5D2
Experiment:DB225RES Function:1 Reference:PFK

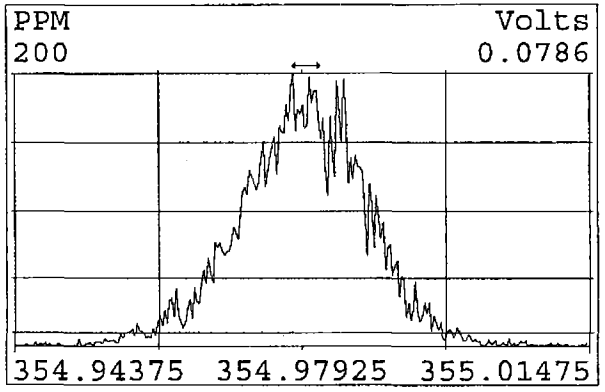


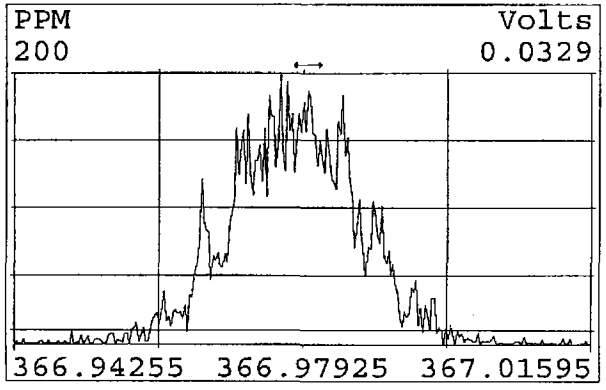


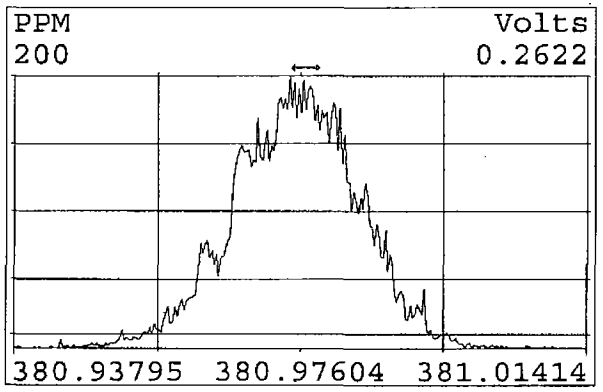












FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: CCV 320-32982/15 Calibration Date: 12/31/2013 19:36

Instrument ID: 5D2 Calib Start Date: 12/30/2013 23:11

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/31/2013 02:19

Lab File ID: 31DE13C5D2_016.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.642	1.643		10.0	10.0	0.0	20.0
2,3,7,8-TCDF	AveID	0.8346	0.8214		9.84	10.0	-1.6	20.0
13C-2,3,7,8-TCDD	Ave	0.9930	0.9825		98.9	100	-1.1	30.0
13C-2,3,7,8-TCDF	Ave	2.200	2.248		102	100	2.2	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.589	1.590		5.01	5.00	0.1	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: CCV 320-33166/2 Calibration Date: 01/02/2014 19:30

Instrument ID: 5D2 Calib Start Date: 12/30/2013 23:11

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/31/2013 02:19

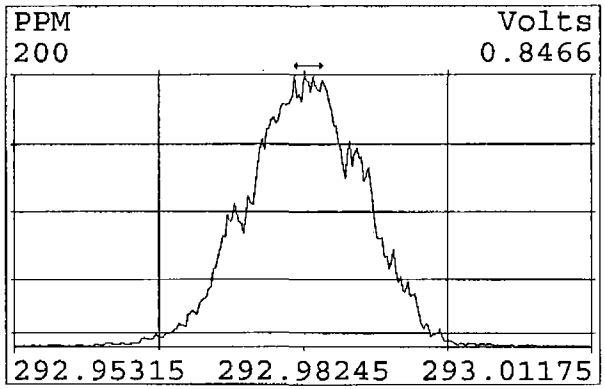
Lab File ID: 02JA14B5D2_002.d Conc. Units: pg/uL

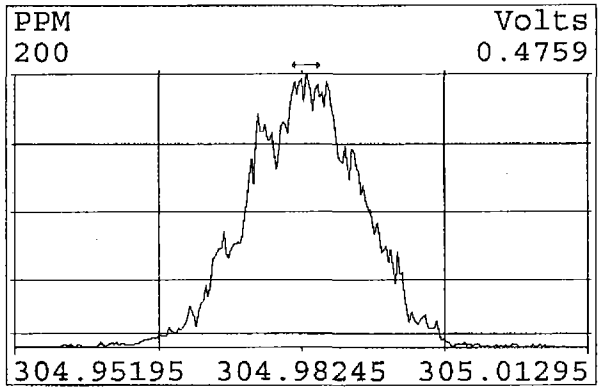
ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.642	1.612		9.82	10.0	-1.8	20.0
2,3,7,8-TCDF	AveID	0.8346	0.7826		9.38	10.0	-6.2	20.0
13C-2,3,7,8-TCDD	Ave	0.9930	1.012		102	100	1.9	30.0
13C-2,3,7,8-TCDF	Ave	2.200	2.262		103	100	2.8	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.589	1.887		5.94	5.00	18.8	

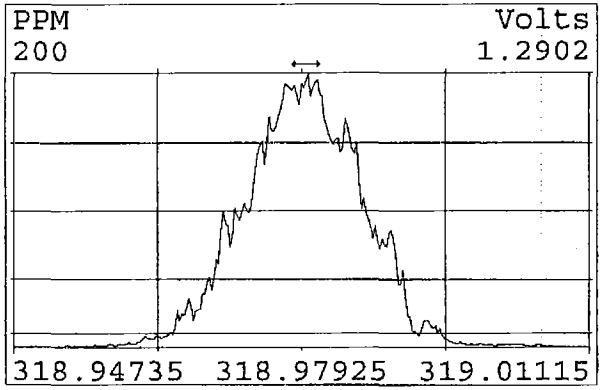
ata file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
02JA14B5D2	1	CPS 010214	DB225 CPSM HRDXNCP_00019				1.00000	
02JA14B5D2	2	CCV 010214	CS-4 HRDXNL4_00015				1.00000	
02JA14B5D2	3	RB 010214	Reagent Blank C-14				1.00000	
02JA14B5D2	4	320-31006	320-5143-A-11-A	20	8290A/Solid	EP38	10.00000	g
02JA14B5D2	5	320-31006	320-5143-A-12-A	20	8290A/Solid		10.00000	g
02JA14B5D2	6	320-31006	320-5143-A-13-A	20	8290A/Solid		10.00000	g
02JA14B5D2	7	320-31006	320-5143-A-14-A	20	8290A/Solid		10.00000	g
02JA14B5D2	8	320-31006	320-5143-A-14-B MS	20	8290A/Solid		10.00000	g
02JA14B5D2	9	320-31006	320-5143-A-14-C MSD	20	8290A/Solid		10.00000	g
02JA14B5D2	10	320-31006	320-5143-A-15-A	20	8290A/Solid		10.00000	g
02JA14B5D2	11	320-31006	320-5143-A-16-A	20	8290A/Solid		10.00000	g
02JA14B5D2	12	320-31006	320-5143-A-17-A	20	8290A/Solid		10.00000	g
02JA14B5D2	13	320-31006	320-5143-A-18-A	20	8290A/Solid		10.00000	g
02JA14B5D2	14	RB 010214A	Reagent Blank C-14				1.00000	
02JA14B5D2	15	CCV 010214A	CS-4 HRDXNL4_00015				1.00000	
02JA14B5D2	16						1.00000	
02JA14B5D2	17						1.00000	
02JA14B5D2	18						1.00000	
02JA14B5D2	19						1.00000	
02JA14B5D2	20						1.00000	
02JA14B5D2	21		ALM 01-02-14				1.00000	
02JA14B5D2	22						1.00000	

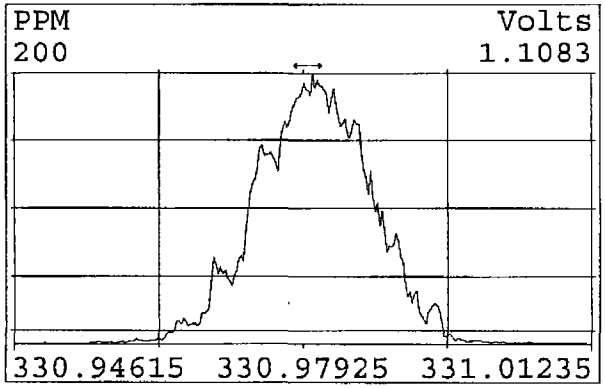
Logfile checked
01-03-14
SMA

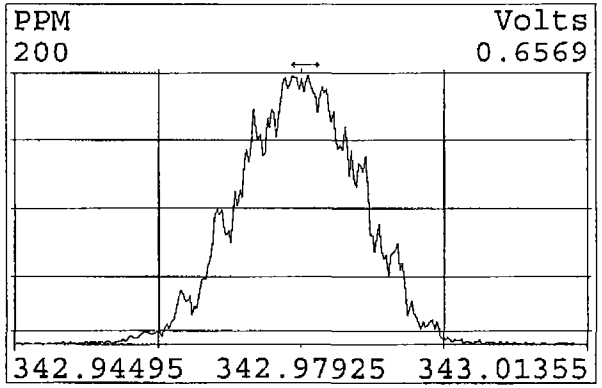
Peak Locate Examination: 2-JAN-2014:18:49 File:02JA14B5D2
Experiment:DB225RES Function:1 Reference:PFK

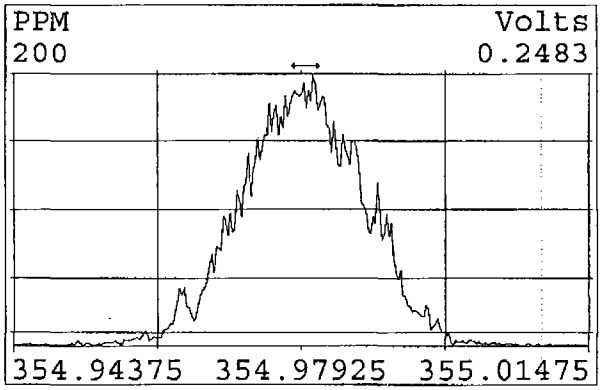


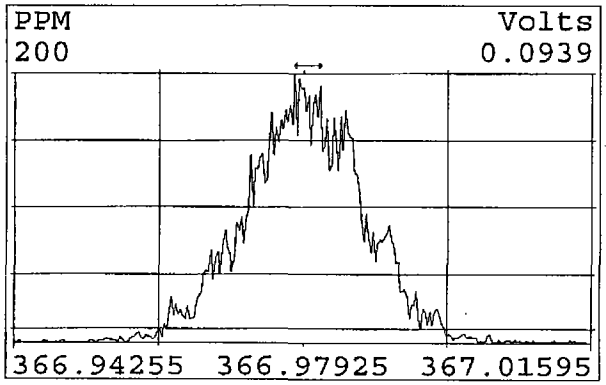


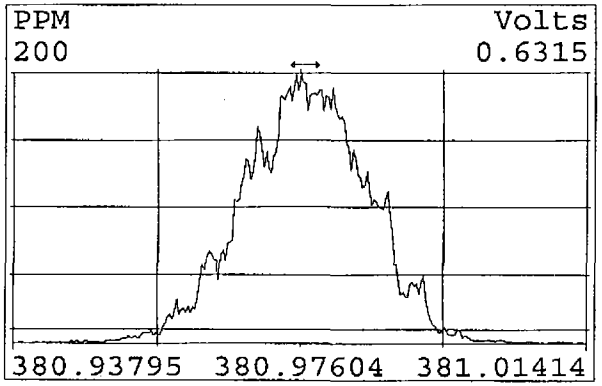




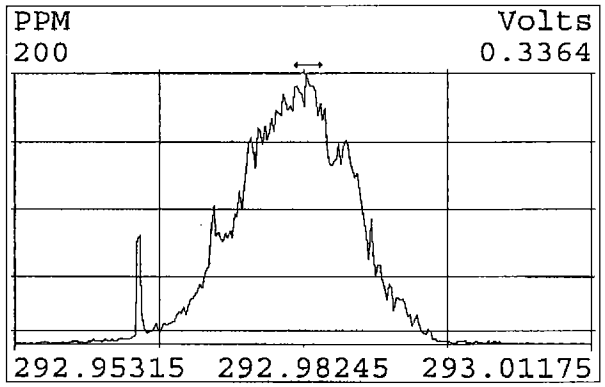


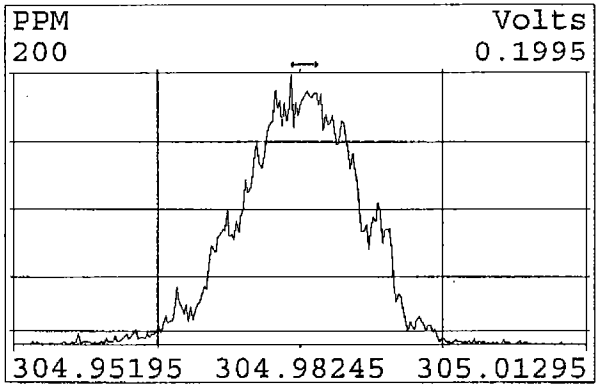


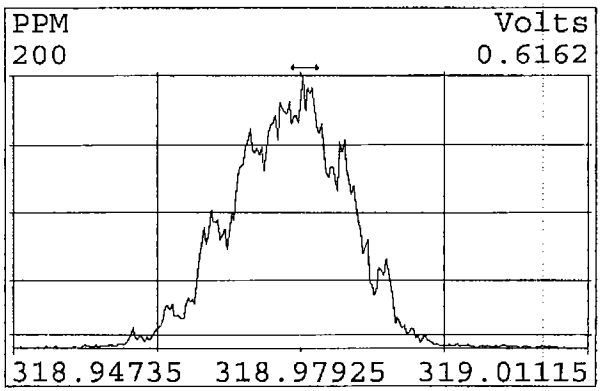


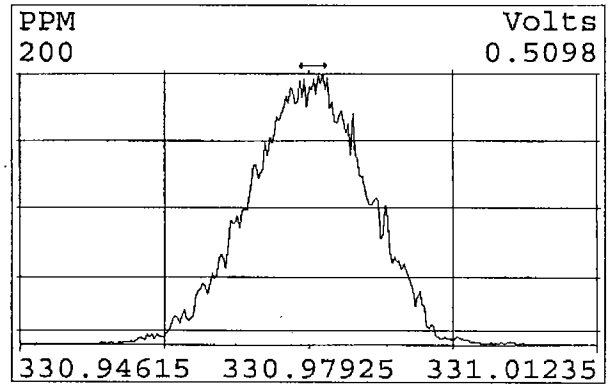


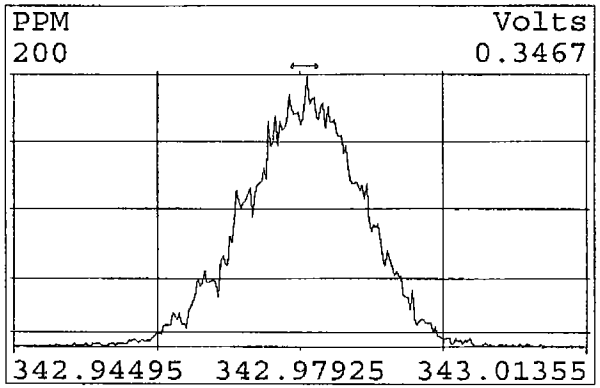
Peak Locate Examination: 3-JAN-2014:05:36 File:RESCHECK5D2
Experiment:DB225RES Function:1 Reference:PFK

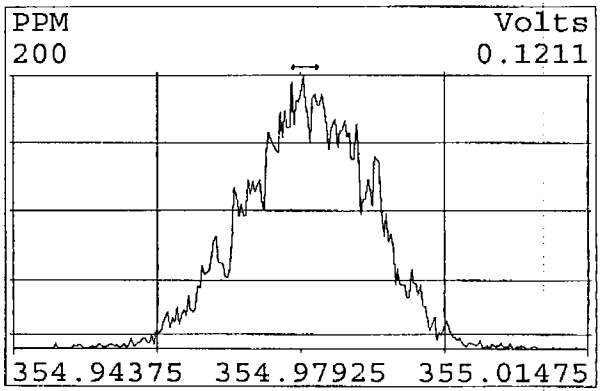


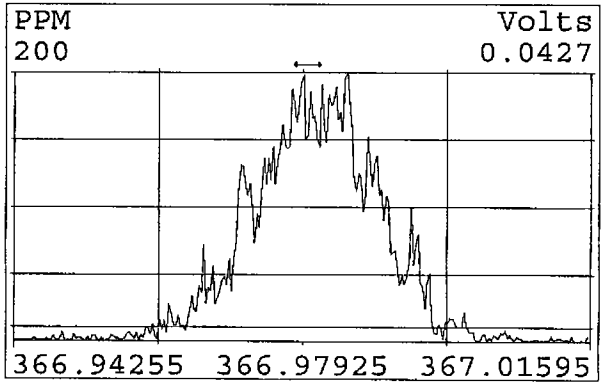


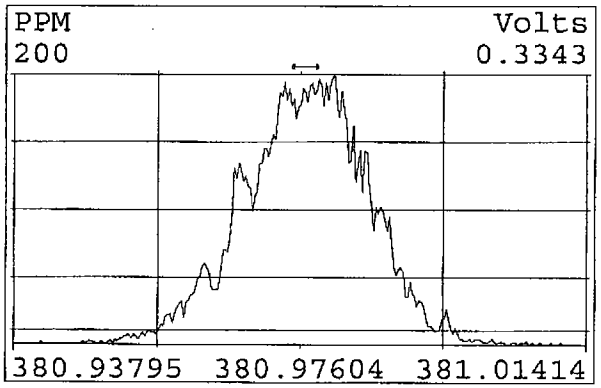












FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Lab Sample ID: CCV 320-33166/15 Calibration Date: 01/03/2014 03:37

Instrument ID: 5D2 Calib Start Date: 12/30/2013 23:11

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/31/2013 02:19

Lab File ID: 02JA14B5D2_015.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.642	1.654		10.1	10.0	0.7	20.0
2,3,7,8-TCDF	AveID	0.8346	0.7850		9.41	10.0	-5.9	20.0
13C-2,3,7,8-TCDD	Ave	0.9930	1.011		102	100	1.8	30.0
13C-2,3,7,8-TCDF	Ave	2.200	2.273		103	100	3.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.589	1.772		5.58	5.00	11.6	

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-001-SS1001-0001 DL	320-5143-3 DL	63
TF2-001-SB1001-0204 DL	320-5143-4 DL	57
TF2-001-SS1002-0001 DL	320-5143-5 DL	35 *
TF2-001-SB1002-0204 DL	320-5143-6 DL	26 q *
TF2-001-SS1003-0001 DL	320-5143-7 DL	46
TF2-001-SS1004-0001 DL	320-5143-9 DL	52
TF2-001-SB1004-0204 DL	320-5143-10 DL	42
TF2-SB-DUP09-1113 DL	320-5143-11 DL	63
TF2-001-SS1007-0001 DL	320-5143-12 DL	63
TF2-001-SB1007-0204 DL	320-5143-13 DL	67
TF2-001-SB1008-0204 DL	320-5143-14 DL	69
TF2-001-SS1008-0001 DL	320-5143-15 DL	64
TF2-001-SB1009-0204 DL	320-5143-16 DL	87
TF2-SB-DUP10-1113 DL	320-5143-18 DL	78
TF2-001-SB1008-0204 MS DL	320-5143-14 MS DL	62
TF2-001-SB1008-0204 MSD DL	320-5143-14 MSD DL	68

10X OCTD
10.4X

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-225 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #
TF2-003-SB1013-0204 RA	320-5143-1 RA	59
TF2-003-SB1019-0204 RA	320-5143-2 RA	59
TF2-001-SS1001-0001 RA	320-5143-3 RA	61
TF2-001-SB1001-0204 RA	320-5143-4 RA	62
TF2-001-SS1002-0001 RA	320-5143-5 RA	57
TF2-001-SB1002-0204 RA	320-5143-6 RA	47
TF2-001-SS1003-0001 RA	320-5143-7 RA	58
TF2-001-SB1003-0204 RA	320-5143-8 RA	69
TF2-001-SS1004-0001 RA	320-5143-9 RA	77
TF2-001-SB1004-0204 RA	320-5143-10 RA	61
TF2-SB-DUP09-1113 RA	320-5143-11 RA	61
TF2-001-SS1007-0001 RA	320-5143-12 RA	63
TF2-001-SB1007-0204 RA	320-5143-13 RA	60
TF2-001-SB1008-0204 RA	320-5143-14 RA	60
TF2-001-SS1008-0001 RA	320-5143-15 RA	63
TF2-001-SB1009-0204 RA	320-5143-16 RA	76
TF2-001-SS1009-0001 RA	320-5143-17 RA	72
TF2-SB-DUP10-1113 RA	320-5143-18 RA	74
TF2-001-SB1008-0204 MS RA	320-5143-14 MS RA	58
TF2-001-SB1008-0204 MSD RA	320-5143-14 MSD RA	69

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-003-SB1013-0204	320-5143-1	53	58	55	57	58	59	66	71
TF2-003-SB1019-0204	320-5143-2	53	59	56	57	59	64	65	70
TF2-001-SS1001-0001	320-5143-3	54	60	57	59	61	60	67	73
TF2-001-SB1001-0204	320-5143-4	54	59	57	59	59	60	67	72
TF2-001-SS1002-0001	320-5143-5	53	59	55	57	58	59	65	71
TF2-001-SB1002-0204	320-5143-6	41	45	42	44	46	48	53	56
TF2-001-SS1003-0001	320-5143-7	53	58	55	56	56	61	65	70
TF2-001-SB1003-0204	320-5143-8	62	70	66	68	68	74	80	86
TF2-001-SS1004-0001	320-5143-9	66	74	70	73	74	79	84	89
TF2-001-SB1004-0204	320-5143-10	55	61	57	60	60	61	71	74
TF2-SB-DUP09-1113	320-5143-11	59	59	57	57	60	70	62	61
TF2-001-SS1007-0001	320-5143-12	59	59	58	57	61	68	65	64
TF2-001-SB1007-0204	320-5143-13	60	59	60	58	59	64	61	61
TF2-001-SB1008-0204	320-5143-14	58	58	57	56	65	70	65	65
TF2-001-SS1008-0001	320-5143-15	63	62	61	60	66	71	69	66
TF2-001-SB1009-0204	320-5143-16	72	72	71	70	75	82	78	76
TF2-001-SS1009-0001	320-5143-17	71	70	69	68	76	82	76	74
TF2-SB-DUP10-1113	320-5143-18	72	71	70	69	75	82	79	77
	MB 320-31001/1-A	59	63	60	63	67	66	73	79
	MB 320-31006/1-A	58	59	58	58	63	68	62	61
	LCS 320-31001/2-A	52	58	56	59	57	57	63	69
	LCS 320-31006/2-A	60	60	60	58	65	72	64	62
TF2-001-SB1008-0204 MS	320-5143-14 MS	56	57	57	55	62	67	63	62
TF2-001-SB1008-0204 MSD	320-5143-14 MSD	65	65	65	64	69	74	72	70

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-003-SB1013-0204	320-5143-1	79
TF2-003-SB1019-0204	320-5143-2	79
TF2-001-SS1001-0001	320-5143-3	84
TF2-001-SB1001-0204	320-5143-4	85
TF2-001-SS1002-0001	320-5143-5	82
TF2-001-SB1002-0204	320-5143-6	67
TF2-001-SS1003-0001	320-5143-7	86
TF2-001-SB1003-0204	320-5143-8	105
TF2-001-SS1004-0001	320-5143-9	105
TF2-001-SB1004-0204	320-5143-10	89
TF2-SB-DUP09-1113	320-5143-11	72
TF2-001-SS1007-0001	320-5143-12	75
TF2-001-SB1007-0204	320-5143-13	74
TF2-001-SB1008-0204	320-5143-14	71
TF2-001-SS1008-0001	320-5143-15	79
TF2-001-SB1009-0204	320-5143-16	93
TF2-001-SS1009-0001	320-5143-17	86
TF2-SB-DUP10-1113	320-5143-18	92
	MB 320-31001/1-A	77
	MB 320-31006/1-A	57
	LCS 320-31001/2-A	68
	LCS 320-31006/2-A	60
TF2-001-SB1008-0204 MS	320-5143-14 MS	69
TF2-001-SB1008-0204 MSD	320-5143-14 MSD	81

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-SB-RB05-1113	320-5143-19	82	81	80	85	79	94	83	81
	MB 320-31203/1-A	84	83	83	86	86	96	76	74
	LCS 320-31203/2-A	83	81	87	92	99	94	67	70

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-SB-RB05-1113	320-5143-19	77
	MB 320-31203/1-A	69
	LCS 320-31203/2-A	72

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 27DE133D5_92.d

Lab ID: LCS 320-31001/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	19.7	98	77-130	
2,3,7,8-TCDF	20.0	19.9	100	79-137	
1,2,3,7,8-PeCDD	100	98.8	99	79-134	
1,2,3,7,8-PeCDF	100	104	104	81-134	
2,3,4,7,8-PeCDF	100	102	102	76-132	
1,2,3,4,7,8-HxCDD	100	109	109	65-144	
1,2,3,6,7,8-HxCDD	100	109	109	73-147	
1,2,3,7,8,9-HxCDD	100	112	112	80-143	
1,2,3,4,7,8-HxCDF	100	108	108	72-140	
1,2,3,6,7,8-HxCDF	100	106	106	63-152	
1,2,3,7,8,9-HxCDF	100	106	106	72-152	
2,3,4,6,7,8-HxCDF	100	110	110	72-151	
1,2,3,4,6,7,8-HpCDD	100	102	102	86-134	
1,2,3,4,6,7,8-HpCDF	100	104	104	81-137	
1,2,3,4,7,8,9-HpCDF	100	104	104	79-139	
OCDD	200	215	108	80-137	
OCDF	200	201	101	75-141	
13C-2,3,7,8-TCDD	200	115	58	40-135	
13C-2,3,7,8-TCDF	200	105	52	40-135	
13C-1,2,3,7,8-PeCDD	200	118	59	40-135	
13C-1,2,3,7,8-PeCDF	200	111	56	40-135	
13C-1,2,3,6,7,8-HxCDD	200	114	57	40-135	
13C-1,2,3,4,7,8-HxCDF	200	113	57	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	138	69	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	125	63	40-135	
13C-OCDD	400	270	68	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 27DE1310D5_41.d

Lab ID: LCS 320-31006/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	20.7	103	77-130	
2,3,7,8-TCDF	20.0	20.5	102	79-137	
1,2,3,7,8-PeCDD	100	106	106	79-134	
1,2,3,7,8-PeCDF	100	108	108	81-134	
2,3,4,7,8-PeCDF	100	107	107	76-132	
1,2,3,4,7,8-HxCDD	100	93.8	94	65-144	
1,2,3,6,7,8-HxCDD	100	106	106	73-147	
1,2,3,7,8,9-HxCDD	100	97.7	98	80-143	
1,2,3,4,7,8-HxCDF	100	112	112	72-140	
1,2,3,6,7,8-HxCDF	100	115	115	63-152	
1,2,3,7,8,9-HxCDF	100	106	106	72-152	
2,3,4,6,7,8-HxCDF	100	115	115	72-151	
1,2,3,4,6,7,8-HpCDD	100	106	106	86-134	
1,2,3,4,6,7,8-HpCDF	100	108	108	81-137	
1,2,3,4,7,8,9-HpCDF	100	100	100	79-139	
OCDD	200	212	106	80-137	
OCDF	200	204	102	75-141	
13C-2,3,7,8-TCDD	200	121	60	40-135	
13C-2,3,7,8-TCDF	200	120	60	40-135	
13C-1,2,3,7,8-PeCDD	200	116	58	40-135	
13C-1,2,3,7,8-PeCDF	200	120	60	40-135	
13C-1,2,3,6,7,8-HxCDD	200	144	72	40-135	
13C-1,2,3,4,7,8-HxCDF	200	130	65	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	123	62	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	128	64	40-135	
13C-OCDD	400	240	60	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 27DE13A9D5_008.d

Lab ID: LCS 320-31203/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	224	112	64-142	
2,3,7,8-TCDF	200	188	94	71-142	
1,2,3,7,8-PeCDD	1000	1070	107	71-140	
1,2,3,7,8-PeCDF	1000	1050	105	76-135	
2,3,4,7,8-PeCDF	1000	1050	105	74-137	
1,2,3,4,7,8-HxCDD	1000	1020	102	56-146	
1,2,3,6,7,8-HxCDD	1000	1070	107	73-144	
1,2,3,7,8,9-HxCDD	1000	958	96	71-151	
1,2,3,4,7,8-HxCDF	1000	1140	114	75-131	
1,2,3,6,7,8-HxCDF	1000	1040	104	76-133	
1,2,3,7,8,9-HxCDF	1000	826	83	77-142	
2,3,4,6,7,8-HxCDF	1000	942	94	80-137	
1,2,3,4,6,7,8-HpCDD	1000	1120	112	78-139	
1,2,3,4,6,7,8-HpCDF	1000	1020	102	79-133	
1,2,3,4,7,8,9-HpCDF	1000	1080	108	83-130	
OCDD	2000	2130	106	80-132	
OCDF	2000	2100	105	72-140	
13C-2,3,7,8-TCDD	2000	1630	81	40-135	
13C-2,3,7,8-TCDF	2000	1650	83	40-135	
13C-1,2,3,7,8-PeCDD	2000	1830	92	40-135	
13C-1,2,3,7,8-PeCDF	2000	1740	87	40-135	
13C-1,2,3,6,7,8-HxCDD	2000	1880	94	40-135	
13C-1,2,3,4,7,8-HxCDF	2000	1980	99	40-135	
13C-1,2,3,4,6,7,8-HpCDD	2000	1390	70	40-135	
13C-1,2,3,4,6,7,8-HpCDF	2000	1340	67	40-135	
13C-OCDD	4000	2880	72	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 27DE1310D5_35.d

Lab ID: 320-5143-14 MS Client ID: TF2-001-SB1008-0204 MS

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	22.7	ND	23.6	104	77-130	
1,2,3,7,8-PeCDD	114	0.16 J	124	109	79-134	
1,2,3,7,8-PeCDF	114	0.15 J	125	110	81-134	
2,3,4,7,8-PeCDF	114	ND	125	110	76-132	
1,2,3,4,7,8-HxCDD	114	0.44 J	111	97	65-144	
1,2,3,6,7,8-HxCDD	114	0.54 J	125	110	73-147	
1,2,3,7,8,9-HxCDD	114	0.74 J	114	100	80-143	
1,2,3,4,7,8-HxCDF	114	0.34 J	131	115	72-140	
1,2,3,6,7,8-HxCDF	114	0.30 J	134	118	63-152	
1,2,3,7,8,9-HxCDF	114	ND	124	109	72-152	
2,3,4,6,7,8-HxCDF	114	0.21 J	134	117	72-151	
1,2,3,4,6,7,8-HpCDD	114	35	161	111	86-134	
1,2,3,4,6,7,8-HpCDF	114	0.69 J	125	110	81-137	
1,2,3,4,7,8,9-HpCDF	114	0.082 J	119	104	79-139	
OCDF	227	1.0 J	235	103	75-141	
13C-2,3,7,8-TCDD	227	130	129	57	40-135	
13C-2,3,7,8-TCDF	227	130	128	56	40-135	
13C-1,2,3,7,8-PeCDD	227	130	125	55	40-135	
13C-1,2,3,7,8-PeCDF	227	130	129	57	40-135	
13C-1,2,3,6,7,8-HxCDD	227	160	153	67	40-135	
13C-1,2,3,4,7,8-HxCDF	227	150	140	62	40-135	
13C-1,2,3,4,6,7,8-HpCDD	227	150	141	62	40-135	
13C-1,2,3,4,6,7,8-HpCDF	227	150	143	63	40-135	
13C-OCDD	454	320	314	69	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 27DE1310D5_36.d

Lab ID: 320-5143-14 MSD Client ID: TF2-001-SB1008-0204 MSD

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	22.7	23.5	104	0	20	77-130	
1,2,3,7,8-PeCDD	114	120	106	3	20	79-134	
1,2,3,7,8-PeCDF	114	122	108	2	20	81-134	
2,3,4,7,8-PeCDF	114	123	109	1	20	76-132	
1,2,3,4,7,8-HxCDD	114	118	103	6	20	65-144	
1,2,3,6,7,8-HxCDD	114	120	105	4	20	73-147	
1,2,3,7,8,9-HxCDD	114	113	99	1	20	80-143	
1,2,3,4,7,8-HxCDF	114	126	111	4	20	72-140	
1,2,3,6,7,8-HxCDF	114	132	116	2	20	63-152	
1,2,3,7,8,9-HxCDF	114	125	110	1	20	72-152	
2,3,4,6,7,8-HxCDF	114	134	118	0	20	72-151	
1,2,3,4,6,7,8-HpCDD	114	157	108	2	20	86-134	
1,2,3,4,6,7,8-HpCDF	114	121	106	3	20	81-137	
1,2,3,4,7,8,9-HpCDF	114	114	100	4	20	79-139	
OCDF	227	221	97	6	20	75-141	
13C-2,3,7,8-TCDD	227	148	65			40-135	
13C-2,3,7,8-TCDF	227	147	65			40-135	
13C-1,2,3,7,8-PeCDD	227	146	64			40-135	
13C-1,2,3,7,8-PeCDF	227	148	65			40-135	
13C-1,2,3,6,7,8-HxCDD	227	167	74			40-135	
13C-1,2,3,4,7,8-HxCDF	227	156	69			40-135	
13C-1,2,3,4,6,7,8-HpCDD	227	158	70			40-135	
13C-1,2,3,4,6,7,8-HpCDF	227	162	72			40-135	
13C-OCDD	454	367	81			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 02JA14B5D2_008.d

Lab ID: 320-5143-14 MS RA Client ID: TF2-001-SB1008-0204 MS RA

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDF	22.7	ND	22.9	101	79-137	
13C-2,3,7,8-TCDF	227	140	132	58	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 02JA14B5D2_009.d

Lab ID: 320-5143-14 MSD RA Client ID: TF2-001-SB1008-0204 MSD RA

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDF	22.7	22.1	97	4	20	79-137	
13C-2,3,7,8-TCDF	227	157	69			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31DE13A10D5_8.d

Lab ID: 320-5143-14 MS DL Client ID: TF2-001-SB1008-0204 MS DL

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
OCDD	227	5000	6080	494	80-137	4
13C-OCDD	454	310	281	62	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5143-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31DE13A10D5_9.d

Lab ID: 320-5143-14 MSD DL Client ID: TF2-001-SB1008-0204 MSD DL

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
OCDD	227	5340	167	13	20	80-137	4
13C-OCDD	454	308	68			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

Tetra Tech **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 7, 2014**

FROM: **EDWARD SEDLMYER** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PAH / GRO / EPH**
NAVSTA NEWPORT, CTO WE30
SDG SG8184

SAMPLES:

3/Aqueous/PAH/GRO

TF2-SS-RB01-1013	TF2-SS-RB02-1013
TF2-W-TB02-1013	

2/Aqueous/EPH

TF2-SS-RB01-1013	TF2-SS-RB02-1013

32/Soil/PAH

TF2-004/5-SS-DUP01-1013	TF2-004/5-SS-DUP02-1013	TF2-004/5-SS-DUP03-1013
TF2-004/5-SS1020-0001	TF2-004/5-SS1021-000.7	TF2-004/5-SS1022-000.9
TF2-004/5-SS1023-000.8	TF2-004/5-SS1024-000.6	TF2-004/5-SS1025-000.8
TF2-004/5-SS1026-000.8	TF2-004/5-SS1027-0001	TF2-004/5-SS1028-000.8
TF2-004/5-SS1029-000.6	TF2-004/5-SS1030-000.6	TF2-004/5-SS1031-000.8
TF2-004/5-SS1032-000.9	TF2-004/5-SS1033-000.8	TF2-004/5-SS1034-000.6
TF2-004/5-SS1035-0001	TF2-004/5-SS1036-000.6	TF2-004/5-SS1037-000.7
TF2-004/5-SS1038-000.7	TF2-004/5-SS1039-000.9	TF2-004/5-SS1040-000.9
TF2-004/5-SS1041-000.7	TF2-004/5-SS1042-000.5	TF2-004/5-SS1044-000.5
TF2-004/5-SS1045-000.5	TF2-004/5-SS1046-000.5	TF2-004/5-SS1047-000.8
TF2-004/5-SS1048-000.8	TF2-004/5-SS1049-000.9	

6/Soil/GRO/EPH

TF2-004/5-SS-DUP01-1013	TF2-004/5-SS1020-0001	TF2-004/5-SS1027-0001
TF2-004/5-SS1039-000.9	TF2-004/5-SS1049-000.9	TF2-W-TB01-1013

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG SG8184 consisted of thirty-two (32) soil samples, two (2) rinse blanks, and two (2) trip blanks. The samples were analyzed as listed above for polynuclear aromatic hydrocarbons (PAH), gasoline range organics (GRO), and extractable petroleum hydrocarbons (EPH C8-C44). Three (3) field duplicate sample pairs were included in this sample delivery group (SDG): TF2-004/5-SS1020-0001 / TF2-004/5-SS-DUP01-1013, TF2-004/5-SS1035-0001 / TF2-004/5-SS-DUP02-1013, and TF2-004/5-SS1041-000.7 / TF2-004/5-SS-DUP03-1013.

The samples were collected by Tetra Tech on October 18 and 21, 2013 and analyzed by Katahdin Analytical Services for all fractions. All analyses were conducted in accordance with EPA SW-846 Methods 8270D SIM, 8015B, and Florida-PRO analytical and reporting protocols. A Tier II validation was conducted on the referenced samples. The data was evaluated based on the following parameters:

* • Data Completeness
• Holding Times
* • GC/MS Instrument Tuning
• Blank Results
• Initial and Continuing Calibration
• Surrogate Spike Recoveries
• Internal Standard Recoveries
• Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Results
• Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
• Field Duplicate Precision
* • Detection Limits
* • Compound Identification and Quantification

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

INITIAL AND CONTINUING CALIBRATION

The PAH continuing calibration verification analyzed on 10/29/13 @11:56 on instrument GCMS-G had a %D greater than the 20% quality control limit for indeno(1,2,3-cd)pyrene. The detected and nondetected results for samples TF2-004/5-SS1024-000.6, TF2-004/5-SS1025-000.8, TF2-004/5-SS1026-000.8, TF2-004/5-SS1041-000.7, TF2-004/5-SS1042-000.5, TF2-004/5-SS1044-000.5, TF2-004/5-SS1045-000.5, TF2-004/5-SS1046-000.5, and TF2-SS-RB01-1013 were qualified as estimated (J) and (UJ), respectively.

The PAH continuing calibration verification analyzed on 10/30/13 @10:25 on instrument GCMS-G had a %D greater than the 20% quality control limit for chrysene. The detected results for samples TF2-SS-RB02-1013, TF2-004/5-SS-DUP01-1013, TF2-004/5-SS1020-0001, TF2-004/5-SS1022-000.9, TF2-004/5-SS1023-000.8, TF2-004/5-SS1031-000.8, TF2-004/5-SS1032-000.9, and TF2-004/5-SS1038-000.7 were qualified as estimated (J) and (UJ), respectively.

HOLDING TIME

The PAH surrogate recoveries for all surrogates were less than the laboratory control limit for sample TF2-SS-RB01-1013. The sample was re-extracted three days outside the seven day extraction hold time with acceptable surrogate recoveries. The re-extracted results were used for validation because the re-extracted results have detections for naphthalene and 2-methylnaphthalene. The detected and nondetected results for sample TF2-SS-RB01-1013 have been qualified as estimated (J) and (UJ), respectively.

The Florida-PRO surrogate recoveries for all surrogates were less than the laboratory control limit for samples TF2-004/5-SS1039-000.9 and TF2-004/5-SS1049-000.9. The samples were re-extracted 10 and 7 days outside the 14 day extraction hold time with acceptable surrogate recoveries. The re-extracted results were used for validation because the re-extracted results have higher concentrations. The detected results for samples TF2-004/5-SS1039-000.9 and TF2-004/5-SS1049-000.9 have been qualified as estimated (J).

SURROGATE SPIKE RECOVERIES

The Florida-PRO surrogate recovery for O-terphenyl was less than the laboratory control limit for sample TF2-SS-RB01-1013. The nondetected EPH C8-C44 result for sample TF2-SS-RB01-1013 has been qualified as estimated (UJ).

MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

The PAH MS/MSD performed on sample TF2-004/5-SS1027-0001 had several percent recoveries outside the quality control limit. The sample results were qualified as listed below.

Analyte	%MS	%MSD	RPD	Qualifier for sample result
Benzo(a)pyrene	51.7	51.4	Ok	UJ
Dibenzo(a,h)anthracene	50.4	48.9	Ok	UJ
Benzo(g,h,i)perylene	33.8	31.4	Ok	UJ

The Florida-PRO MS/MSD performed on sample TF2-004/5-SS1027-0001 had a percent recovery less than the quality control limit in the MSD. No action was taken on this basis because the MS had an acceptable percent recovery.

Analyte	%MS	%MSD	RPD	Qualifier for sample result
Florida-PRO	Ok	62.6	Ok	None

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE (LCS/LCSD)

The PAH LCS/LCSD associated with batch WG133048 had a percent recovery for benzo(g,h,i)perylene less than the laboratory control limit in the LCSD. No action was taken on this basis because the LCS had an acceptable recovery.

The PAH LCS/LCSD associated with batch WG133367 had percent recoveries for dibenzo(a,h)anthracene and benzo(g,h,i)perylene less than the laboratory control limit in the LCSD. No action was taken on this basis because the LCS had acceptable recoveries.

The Florida-PRO LCS/LCSD associated with batch WG133426 had a percent recovery outside the quality control limit. In addition, the relative percent difference (RPD) was exceeded the quality control limit. The detected results for the affected samples were qualified as listed below.

Analyte	%LCS	%LCSD	RPD	Qualifier for sample result
Florida-PRO	56.4	Ok	34	J

INTERNAL STANDARDS

The PAH internal standard perylene-d12 had recoveries less than the quality control limit for the undiluted samples TF2-004/5-SS1025-000.8 and TF2-004/5-SS1046-000.5. The detected results for compounds quantified using perylene-d12 in the affected samples have been qualified as estimated (J).

Field Duplicate Precision

Field duplicate imprecision, defined as a relative percent difference (RPD) > 50%, was noted for the following parameters: fluoranthene, pyrene, and TPH C5-C12. Detected results were qualified as estimated, (J).

ADDITIONAL COMMENTS

Petroleum range organic results were expressed and reported as EPH C8-C44 in the database.

Gasoline range organic results were expressed and reported as TPH C5-C12 in the database.

The rinse blanks (TF2-SS-RB01-1013 and TF2-SS-RB02-1013) had detections for naphthalene and 2-methylnaphthalene at maximum concentrations of 0.085 ug/L and 0.11 ug/L, respectively. No action was taken on this basis.

The rinse blank (TF2-SS-RB01-1013) had a detection for GRO at a concentrations of 14 ug/L. No action was taken on this basis.

The PAH continuing calibration verification analyzed on 11/01/13 @13:30 on instrument GCMS-G had a %D greater than the 20% quality control limit for naphthalene. No action was taken on this basis because the diluted sample associated with this calibration did not have naphthalene reported from the dilution.

The PAH LCS/LCSD associated with batch WG133040 had several percent recoveries and relative percent differences (RPDs) outside the laboratory control limits. No action was taken on this basis because the associated sample was not used for validation.

Samples TF2-004/5-SS1021-000.7, TF2-004/5-SS1023-000.8, TF2-004/5-SS1025-000.8, TF2-004/5-SS1026-000.8, and TF2-004/5-SS1047-000.8 required dilutions for the PAH fraction due to concentrations greater than the linear calibration range of the instrument.

Positive results reported below the quantitation limit but above the method detection limit (MDL) were qualified as estimated, (J).

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: Extraction hold time noncompliances resulted in the qualification of data in the PAH and EPH fractions. Continuing calibration noncompliances resulted in the qualification of data in the PAH fraction. Surrogate recovery noncompliances resulted in the qualification of data in the EPH fraction. LCS/LCSD recovery noncompliances resulted in the qualification of data for the EPH fraction. MS/MSD recovery noncompliances resulted in the qualification of data in the PAH fraction. Internal standard recovery noncompliances resulted in the qualification of data for the PAH fraction in samples TF2-004/5-SS1025-000.8 and TF2-004/5-SS1046-000.5.

Other Factors Affecting Data Quality: Positive results reported below the limit of quantitation (LOQ) but above the MDL were qualified. Field duplicate imprecision was noted for fluoranthene, pyrene, and TPH C5-C12.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (June 2008), and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

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Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-SS-RB01-1013RE			TF2-SS-RB02-1013		
SDG: SG8184	LAB_ID	SG8184-18RE			SG8184-36RERA		
FRACTION: PAH	SAMP_DATE	10/18/2013			10/21/2013		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		0.11	J	HP	0.075	J	P
ACENAPHTHENE		0.094	UJ	H	0.094	U	
ACENAPHTHYLENE		0.094	UJ	H	0.094	U	
ANTHRACENE		0.094	UJ	H	0.094	U	
BENZO(A)ANTHRACENE		0.094	UJ	H	0.094	U	
BENZO(A)PYRENE		0.094	UJ	H	0.094	U	
BENZO(B)FLUORANTHENE		0.094	UJ	H	0.094	U	
BENZO(G,H,I)PERYLENE		0.094	UJ	H	0.094	U	
BENZO(K)FLUORANTHENE		0.094	UJ	H	0.094	U	
CHRYSENE		0.094	UJ	H	0.094	UJ	C
DIBENZO(A,H)ANTHRACENE		0.094	UJ	H	0.094	U	
FLUORANTHENE		0.094	UJ	H	0.094	U	
FLUORENE		0.094	UJ	H	0.094	U	
INDENO(1,2,3-CD)PYRENE		0.094	UJ	CH	0.094	U	
NAPHTHALENE		0.085	J	HP	0.062	J	P
PHENANTHRENE		0.094	UJ	H	0.094	U	
PYRENE		0.094	UJ	H	0.094	U	

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1020-0001			TF2-004/5-SS1021-000.7			TF2-004/5-SS1021-000.7DL			TF2-004/5-SS1022-000.9		
SDG: SG8184	LAB_ID	SG8184-8			SG8184-7			SG8184-7DL			SG8184-6		
FRACTION: PAH	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	98.0			96.4			96.4			94.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	U		24						10	U	
ACENAPHTHENE		1.6	J	P	300						10	U	
ACENAPHTHYLENE		10	U		9.5	J	P				10	U	
ANTHRACENE		5.8	J	P				650			10	U	
BENZO(A)ANTHRACENE		17	J	P				1500			5.9	J	P
BENZO(A)PYRENE		16	J	P				1200			5.7	J	P
BENZO(B)FLUORANTHENE		27						2000			9.4	J	P
BENZO(G,H,I)PERYLENE		8.2	J	P				540			2.8	J	P
BENZO(K)FLUORANTHENE		9.7	J	P				660			4.3	J	P
CHRYSENE		20	J	CP				1800			7.5	J	CP
DIBENZO(A,H)ANTHRACENE		3.5	J	P	210						2.4	J	P
FLUORANTHENE		48	J	G				3700			15	J	P
FLUORENE		10	U		230						10	U	
INDENO(1,2,3-CD)PYRENE		5.2	J	P				830			10	U	
NAPHTHALENE		10	U		58						10	U	
PHENANTHRENE		24						2800			5.7	J	P
PYRENE		36	J	G				3400			11	J	P

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1023-000.8			TF2-004/5-SS1023-000.8DL			TF2-004/5-SS1024-000.6			TF2-004/5-SS1025-000.8		
SDG: SG8184	LAB_ID	SG8184-5			SG8184-5DL			SG8184-4			SG8184-2		
FRACTION: PAH	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	94.2			94.2			95.1			93.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		19	J	P				9.7	U		5.9	J	P
ACENAPHTHENE		59						3.1	J	P	56		
ACENAPHTHYLENE		10	U					2.2	J	P	10	U	
ANTHRACENE		150						18	J	P	91		
BENZO(A)ANTHRACENE		260						44			270		
BENZO(A)PYRENE		190						54			200	J	N
BENZO(B)FLUORANTHENE		330						110			310	J	N
BENZO(G,H,I)PERYLENE		58						32			84	J	N
BENZO(K)FLUORANTHENE		140						37			130	J	N
CHRYSENE		270	J	C				62			300		
DIBENZO(A,H)ANTHRACENE		32						14	J	P	39	J	N
FLUORANTHENE					690			120					
FLUORENE		67						3.5	J	P	51		
INDENO(1,2,3-CD)PYRENE		120						44	J	C	150	J	CN
NAPHTHALENE		31						9.7	U		14	J	P
PHENANTHRENE					650			54					
PYRENE					540			89					

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1025-000.8DL	TF2-004/5-SS1026-000.8	TF2-004/5-SS1026-000.8DL	TF2-004/5-SS1027-0001
SDG: SG8184	LAB_ID	SG8184-2DL	SG8184-3	SG8184-3DL	SG8184-15
FRACTION: PAH	SAMP_DATE	10/18/2013	10/18/2013	10/18/2013	10/18/2013
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM
	UNITS	UG/KG	UG/KG	UG/KG	UG/KG
	PCT_SOLIDS	93.5	96.7	96.7	94.5
	DUP_OF				

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE				9.6	U					10	U	
ACENAPHTHENE				30						10	U	
ACENAPHTHYLENE				9.6	U					10	U	
ANTHRACENE				57						10	U	
BENZO(A)ANTHRACENE				210						2.9	J	P
BENZO(A)PYRENE				180						10	UJ	D
BENZO(B)FLUORANTHENE				320						5.2	J	P
BENZO(G,H,I)PERYLENE				83						10	UJ	D
BENZO(K)FLUORANTHENE				90						10	U	
CHRYSENE				250						4.4	J	P
DIBENZO(A,H)ANTHRACENE				41						10	UJ	D
FLUORANTHENE	680						520			8.2	J	P
FLUORENE				23						10	U	
INDENO(1,2,3-CD)PYRENE				150	J	C				10	U	
NAPHTHALENE				9.6	U					10	U	
PHENANTHRENE	580						330			3.4	J	P
PYRENE	620						500			6.5	J	P

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1028-000.8			TF2-004/5-SS1029-000.6			TF2-004/5-SS1030-000.6			TF2-004/5-SS1031-000.8		
SDG: SG8184	LAB_ID	SG8184-14			SG8184-13			SG8184-12			SG8184-10		
FRACTION: PAH	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.1			96.9			95.3			93.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.9	U		9.9	U		9.4	U		9.8	U	
ACENAPHTHENE		1.8	J	P	4.7	J	P	4.8	J	P	1.9	J	P
ACENAPHTHYLENE		2.6	J	P	7.4	J	P	2	J	P	1.4	J	P
ANTHRACENE		4.1	J	P	11	J	P	18	J	P	4.7	J	P
BENZO(A)ANTHRACENE		36			88			66			32		
BENZO(A)PYRENE		36			86			57			31		
BENZO(B)FLUORANTHENE		58			160			100			47		
BENZO(G,H,I)PERYLENE		19	J	P	42			27			16	J	P
BENZO(K)FLUORANTHENE		26			50			37			26		
CHRYSENE		43			110			79			36	J	C
DIBENZO(A,H)ANTHRACENE		7.9	J	P	22			12	J	P	7.7	J	P
FLUORANTHENE		86			180			130			75		
FLUORENE		9.9	U		5	J	P	4.4	J	P	9.8	U	
INDENO(1,2,3-CD)PYRENE		23			70			48			20	J	P
NAPHTHALENE		9.9	U		9.9	U		9.4	U		9.8	U	
PHENANTHRENE		33			81			66			33		
PYRENE		69			170			130			60		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1032-000.9			TF2-004/5-SS1033-000.8			TF2-004/5-SS1034-000.6			TF2-004/5-SS1035-0001		
SDG: SG8184	LAB_ID	SG8184-9			SG8184-26			SG8184-24			SG8184-25		
FRACTION: PAH	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	92.4			95.5			95.2			94.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		11	U		9.8	U		9.7	U		10	U	
ACENAPHTHENE		5.3	J	P	9.8	U		2	J	P	3	J	P
ACENAPHTHYLENE		11	U		9.8	U		4	J	P	4.9	J	P
ANTHRACENE		15	J	P	1.9	J	P	5.8	J	P	7.6	J	P
BENZO(A)ANTHRACENE		53			14	J	P	47			72		
BENZO(A)PYRENE		51			11	J	P	48			74		
BENZO(B)FLUORANTHENE		82			22			87			140		
BENZO(G,H,I)PERYLENE		18	J	P	5.1	J	P	23			37		
BENZO(K)FLUORANTHENE		40			7.6	J	P	25			41		
CHRYSENE		69	J	C	17	J	P	56			87		
DIBENZO(A,H)ANTHRACENE		9.3	J	P	3.1	J	P	12	J	P	18	J	P
FLUORANTHENE		130			33			97			160		
FLUORENE		3.7	J	P	9.8	U		9.7	U		10	U	
INDENO(1,2,3-CD)PYRENE		31			2.4	J	P	34			60		
NAPHTHALENE		11	U		9.8	U		9.7	U		10	U	
PHENANTHRENE		66			14	J	P	35			56		
PYRENE		110			23			82			130		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1036-000.6			TF2-004/5-SS1037-000.7			TF2-004/5-SS1038-000.7			TF2-004/5-SS1039-000.9		
SDG: SG8184	LAB_ID	SG8184-22			SG8184-21			SG8184-20			SG8184-17		
FRACTION: PAH	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	96.9			97.4			93.7			93.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	J	P	9.8	U		9.9	U		10	U	
ACENAPHTHENE		23			1.9	J	P	3.2	J	P	2.8	J	P
ACENAPHTHYLENE		4.9	J	P	1.5	J	P	3.5	J	P	4.5	J	P
ANTHRACENE		52			4.5	J	P	7.6	J	P	8.8	J	P
BENZO(A)ANTHRACENE		140			34			52			54		
BENZO(A)PYRENE		120			32			55			53		
BENZO(B)FLUORANTHENE		180			57			86			95		
BENZO(G,H,I)PERYLENE		48			19	J	P	21			25		
BENZO(K)FLUORANTHENE		82			20	J	P	43			28		
CHRYSENE		150			45			70	J	C	60		
DIBENZO(A,H)ANTHRACENE		26			9.1	J	P	12	J	P	12	J	P
FLUORANTHENE		320			72			120			120		
FLUORENE		25			9.8	U		6	J	P	10	U	
INDENO(1,2,3-CD)PYRENE		89			25			38			36		
NAPHTHALENE		13	J	P	9.8	U		9.9	U		10	U	
PHENANTHRENE		250			33			50			48		
PYRENE		290			70			110			94		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1040-000.9			TF2-004/5-SS1041-000.7			TF2-004/5-SS1042-000.5			TF2-004/5-SS1044-000.5		
SDG: SG8184	LAB_ID	SG8184-16			SG8184-34			SG8184-33			SG8184-32		
FRACTION: PAH	SAMP_DATE	10/18/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.3			95.5			94.1			96.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		11	U		10	U		10	U		9.8	U	
ACENAPHTHENE		6.8	J	P	10	U		2.1	J	P	1.9	J	P
ACENAPHTHYLENE		1.8	J	P	10	U		4.1	J	P	3.1	J	P
ANTHRACENE		16	J	P	10	U		4.8	J	P	4.1	J	P
BENZO(A)ANTHRACENE		74			6.5	J	P	40			45		
BENZO(A)PYRENE		65			6.7	J	P	48			46		
BENZO(B)FLUORANTHENE		130			11	J	P	77			74		
BENZO(G,H,I)PERYLENE		30			4.3	J	P	27			23		
BENZO(K)FLUORANTHENE		37			5.4	J	P	30			30		
CHRYSENE		84			9	J	P	54			58		
DIBENZO(A,H)ANTHRACENE		15	J	P	3.8	J	P	12	J	P	11	J	P
FLUORANTHENE		180			14	J	P	92			87		
FLUORENE		5.2	J	P	10	U		10	U		9.8	U	
INDENO(1,2,3-CD)PYRENE		49			10	UJ	C	43	J	C	33	J	C
NAPHTHALENE		11	U		10	U		10	U		9.8	U	
PHENANTHRENE		92			6.6	J	P	39			31		
PYRENE		150			14	J	P	83			80		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1045-000.5			TF2-004/5-SS1046-000.5			TF2-004/5-SS1047-000.8			TF2-004/5-SS1047-000.8DL		
SDG: SG8184	LAB_ID	SG8184-31			SG8184-30			SG8184-29			SG8184-29DL		
FRACTION: PAH	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	96.0			97.2			92.9			92.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	U		9.7	U		72					
ACENAPHTHENE		8.1	J	P	9.7	U		140					
ACENAPHTHYLENE		5	J	P	1.3	J	P	10	U				
ANTHRACENE		21			4.1	J	P				360		
BENZO(A)ANTHRACENE		110			24						530		
BENZO(A)PYRENE		100			28	J	N				390		
BENZO(B)FLUORANTHENE		170			42	J	N				500		
BENZO(G,H,I)PERYLENE		46			17	J	NP	110					
BENZO(K)FLUORANTHENE		59			21	J	N	180					
CHRYSENE		130			37						480		
DIBENZO(A,H)ANTHRACENE		25			7.3	J	NP	58					
FLUORANTHENE		240			57						1100		
FLUORENE		8.7	J	P	9.7	U		130					
INDENO(1,2,3-CD)PYRENE		76	J	C	20	J	CN	210					
NAPHTHALENE		10	U		9.7	U		96					
PHENANTHRENE		130			27						1100		
PYRENE		210			57						960		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1048-000.8			TF2-004/5-SS1049-000.9			TF2-004/5-SS-DUP01-1013			TF2-004/5-SS-DUP02-1013		
SDG: SG8184	LAB_ID	SG8184-28			SG8184-27			SG8184-11			SG8184-23		
FRACTION: PAH	SAMP_DATE	10/21/2013			10/21/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.5			93.9			97.1			95.3		
	DUP_OF							TF2-004/5-SS1020-0001			TF2-004/5-SS1035-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		2.2	J	P	10	U		10	U		10	U	
ACENAPHTHENE		3.8	J	P	1.8	J	P	10	U		3.6	J	P
ACENAPHTHYLENE		11	J	P	2.4	J	P	10	U		5.2	J	P
ANTHRACENE		16	J	P	4.7	J	P	3.3	J	P	7.9	J	P
BENZO(A)ANTHRACENE		95			36			11	J	P	83		
BENZO(A)PYRENE		110			39			10	J	P	81		
BENZO(B)FLUORANTHENE		210			67			17	J	P	160		
BENZO(G,H,I)PERYLENE		47			20	J	P	5.3	J	P	38		
BENZO(K)FLUORANTHENE		62			27			6.6	J	P	44		
CHRYSENE		130			50			14	J	CP	100		
DIBENZO(A,H)ANTHRACENE		23			10	J	P	2	J	P	19	J	P
FLUORANTHENE		190			80			28	J	G	180		
FLUORENE		3.7	J	P	10	U		10	U		10	U	
INDENO(1,2,3-CD)PYRENE		84			27			10	U		65		
NAPHTHALENE		9.7	U		10	U		10	U		10	U	
PHENANTHRENE		73			34			12	J	P	64		
PYRENE		190			78			21	J	G	170		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS-DUP03-1013		
SDG: SG8184	LAB_ID	SG8184-35		
FRACTION: PAH	SAMP_DATE	10/21/2013		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	UG/KG		
	PCT_SOLIDS	96.0		
	DUP_OF	TF2-004/5-SS1041-000.7		
PARAMETER		RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.7	U	
ACENAPHTHENE		9.7	U	
ACENAPHTHYLENE		9.7	U	
ANTHRACENE		1.7	J	P
BENZO(A)ANTHRACENE		7.6	J	P
BENZO(A)PYRENE		7.3	J	P
BENZO(B)FLUORANTHENE		13	J	P
BENZO(G,H,I)PERYLENE		3.7	J	P
BENZO(K)FLUORANTHENE		5	J	P
CHRYSENE		9.9	J	P
DIBENZO(A,H)ANTHRACENE		9.7	U	
FLUORANTHENE		21		
FLUORENE		9.7	U	
INDENO(1,2,3-CD)PYRENE		9.7	U	
NAPHTHALENE		9.7	U	
PHENANTHRENE		8.6	J	P
PYRENE		15	J	P

PROJ_NO: 03019	NSAMPLE	TF2-SS-RB01-1013			TF2-W-TB01-1013			TF2-W-TB02-1013		
SDG: SG8184	LAB_ID	SG8184-18			SG8184-1			SG8184-19RA		
FRACTION: PET	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			MG/KG			UG/L		
	PCT_SOLIDS	0.0			100.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
EPH (C08-C44)		240	UJ	R						
TPH (C05-C12)		14			2	U		8	U	

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1020-0001			TF2-004/5-SS1027-0001			TF2-004/5-SS1039-000.9			TF2-004/5-SS1039-000.9RE		
SDG: SG8184	LAB_ID	SG8184-8			SG8184-15			SG8184-17			SG8184-17RE		
FRACTION: PET	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	98.0			94.5			93.0			93.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
EPH (C08-C44)		32	J	E	15	J	EP				52	J	H
TPH (C05-C12)		2.4	J	GP	2	U		7					

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1049-000.9			TF2-004/5-SS1049-000.9RE			TF2-004/5-SS-DUP01-1013		
SDG: SG8184	LAB_ID	SG8184-27			SG8184-27RE			SG8184-11		
FRACTION: PET	SAMP_DATE	10/21/2013			10/21/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	93.9			93.9			97.1		
	DUP_OF							TF2-004/5-SS1020-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
EPH (C08-C44)					160	J	H	32	J	E
TPH (C05-C12)		2.4	U					9.4	J	G

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-11
Client ID: 004/5-SS-DUP01-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0157.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	J	12.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	3.3	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		28.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		21.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	11.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	J	14.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	J	17.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	J	6.6	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene	J	10.	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	2.0	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	J	5.3	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		45.5	%					
Fluorene-D10		62.2	%					
Pyrene-D10		64.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-23
Client ID: 004/5-SS-DUP02-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0115.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 28-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	5.2	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	3.6	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		64.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	7.9	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		180	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		170	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		83.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		100	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		160	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		44.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene		81.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		65.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	19.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene		38.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		59.4	%					
Fluorene-D10		73.0	%					
Pyrene-D10		88.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-35
Client ID: 004/5-SS-DUP03-1013
Project: NAVSTA Newport Tank Farm
SDG: SG8184
Lab File ID: G0168.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.5	9.7
2-Methylnaphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.1	9.7
Acenaphthylene	U	9.7	ug/Kgdrywt	1	20	19.	1.2	9.7
Acenaphthene	U	9.7	ug/Kgdrywt	1	20	19.	1.4	9.7
Fluorene	U	9.7	ug/Kgdrywt	1	20	19.	3.1	9.7
Phenanthrene	J	8.6	ug/Kgdrywt	1	20	19.	1.7	9.7
Anthracene	J	1.7	ug/Kgdrywt	1	20	19.	1.2	9.7
Fluoranthene		21.	ug/Kgdrywt	1	20	19.	1.7	9.7
Pyrene	J	15.	ug/Kgdrywt	1	20	19.	2.0	9.7
Benzo(a)anthracene	J	7.6	ug/Kgdrywt	1	20	19.	1.8	9.7
Chrysene	J	9.9	ug/Kgdrywt	1	20	19.	1.6	9.7
Benzo(b)Fluoranthene	J	13.	ug/Kgdrywt	1	20	19.	2.3	9.7
Benzo(k)fluoranthene	J	5.0	ug/Kgdrywt	1	20	19.	3.0	9.7
Benzo(a)pyrene	J	7.3	ug/Kgdrywt	1	20	19.	3.2	9.7
Indeno(1,2,3-cd)pyrene	U	9.7	ug/Kgdrywt	1	20	19.	1.8	9.7
Dibenzo(a,h)anthracene	U	9.7	ug/Kgdrywt	1	20	19.	1.7	9.7
Benzo(g,h,i)perylene	J	3.7	ug/Kgdrywt	1	20	19.	1.9	9.7
2-Methylnaphthalene-D10		46.4	%					
Fluorene-D10		64.3	%					
Pyrene-D10		64.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-8
Client ID: 004/5-SS1020-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0155.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 98.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	1.6	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		24.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	5.8	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		48.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		36.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	17.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	J	20.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		27.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	J	9.7	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene	J	16.	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene	J	5.2	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	3.5	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	J	8.2	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		52.8	%					
Fluorene-D10		72.6	%					
Pyrene-D10		79.5	%					

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Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-7
Client ID: 004/5-SS1021-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0177.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		58.	ug/Kgdrywt	1	20	20.	2.5	9.8
2-Methylnaphthalene		24.	ug/Kgdrywt	1	20	20.	2.1	9.8
Acenaphthylene	J	9.5	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene		300	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene		230	ug/Kgdrywt	1	20	20.	3.1	9.8
Phenanthrene	E	2800	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	E	440	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene	E	4300	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene	E	3800	ug/Kgdrywt	1	20	20.	2.0	9.8
Benzo(a)anthracene	E	1800	ug/Kgdrywt	1	20	20.	1.8	9.8
Chrysene	E	1800	ug/Kgdrywt	1	20	20.	1.6	9.8
Benzo(b)Fluoranthene	E	1800	ug/Kgdrywt	1	20	20.	2.3	9.8
Benzo(k)fluoranthene	E	690	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	E	1200	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene	E	780	ug/Kgdrywt	1	20	20.	1.8	9.8
Dibenzo(a,h)anthracene		210	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	E	400	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		72.8	%					
Fluorene-D10		80.6	%					
Pyrene-D10		94.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-7DL
Client ID: 004/5-SS1021-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0182.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	240	ug/Kgdrywt	25	20	490	63.	240
2-Methylnaphthalene	U	240	ug/Kgdrywt	25	20	490	54.	240
Acenaphthylene	U	240	ug/Kgdrywt	25	20	490	29.	240
Acenaphthene	J	290	ug/Kgdrywt	25	20	490	36.	240
Fluorene	J	240	ug/Kgdrywt	25	20	490	78.	240
Phenanthrene		2800	ug/Kgdrywt	25	20	490	44.	240
Anthracene		650	ug/Kgdrywt	25	20	490	29.	240
Fluoranthene		3700	ug/Kgdrywt	25	20	490	44.	240
Pyrene		3400	ug/Kgdrywt	25	20	490	51.	240
Benzo(a)anthracene		1500	ug/Kgdrywt	25	20	490	46.	240
Chrysene		1800	ug/Kgdrywt	25	20	490	41.	240
Benzo(b)Fluoranthene		2000	ug/Kgdrywt	25	20	490	58.	240
Benzo(k)fluoranthene		660	ug/Kgdrywt	25	20	490	76.	240
Benzo(a)pyrene		1200	ug/Kgdrywt	25	20	490	80.	240
Indeno(1,2,3-cd)pyrene		830	ug/Kgdrywt	25	20	490	46.	240
Dibenzo(a,h)anthracene	J	260	ug/Kgdrywt	25	20	490	44.	240
Benzo(g,h,i)perylene		540	ug/Kgdrywt	25	20	490	49.	240
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-6
Client ID: 004/5-SS1022-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0154.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	J	5.7	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	J	15.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	J	11.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	5.9	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	J	7.5	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	J	9.4	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	J	4.3	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	J	5.7	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	2.4	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	J	2.8	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		53.1	%					
Fluorene-D10		63.8	%					
Pyrene-D10		67.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-5
Client ID: 004/5-SS1023-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0160.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		31.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	J	19.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene		59.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene		67.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	E	650	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		150	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	E	660	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	E	570	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		260	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		270	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		330	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		140	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene		190	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		120	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		32.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene		58.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		78.4	%					
Fluorene-D10		81.6	%					
Pyrene-D10		88.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-5DL
Client ID: 004/5-SS1023-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0169.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	29.	ug/Kgdrywt	4	20	80.	10.	40.
2-Methylnaphthalene	J	16.	ug/Kgdrywt	4	20	80.	8.8	40.
Acenaphthylene	U	40.	ug/Kgdrywt	4	20	80.	4.8	40.
Acenaphthene	J	58.	ug/Kgdrywt	4	20	80.	6.0	40.
Fluorene	J	61.	ug/Kgdrywt	4	20	80.	13.	40.
Phenanthrene		650	ug/Kgdrywt	4	20	80.	7.2	40.
Anthracene		200	ug/Kgdrywt	4	20	80.	4.8	40.
Fluoranthene		690	ug/Kgdrywt	4	20	80.	7.2	40.
Pyrene		540	ug/Kgdrywt	4	20	80.	8.4	40.
Benzo(a)anthracene		270	ug/Kgdrywt	4	20	80.	7.6	40.
Chrysene		250	ug/Kgdrywt	4	20	80.	6.8	40.
Benzo(b)Fluoranthene		310	ug/Kgdrywt	4	20	80.	9.6	40.
Benzo(k)fluoranthene		99.	ug/Kgdrywt	4	20	80.	12.	40.
Benzo(a)pyrene		180	ug/Kgdrywt	4	20	80.	13.	40.
Indeno(1,2,3-cd)pyrene		100	ug/Kgdrywt	4	20	80.	7.6	40.
Dibenzo(a,h)anthracene	J	36.	ug/Kgdrywt	4	20	80.	7.2	40.
Benzo(g,h,i)perylene	J	74.	ug/Kgdrywt	4	20	80.	8.0	40.
2-Methylnaphthalene-D10		48.2	%					
Fluorene-D10		74.6	%					
Pyrene-D10		84.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-4
Client ID: 004/5-SS1024-000.6
Project: NAVSTA Newport Tank Farm
SDG: SG8184
Lab File ID: G0138.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 29-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.5	9.7
2-Methylnaphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.1	9.7
Acenaphthylene	J	2.2	ug/Kgdrywt	1	20	19.	1.2	9.7
Acenaphthene	J	3.1	ug/Kgdrywt	1	20	19.	1.5	9.7
Fluorene	J	3.5	ug/Kgdrywt	1	20	19.	3.1	9.7
Phenanthrene		54.	ug/Kgdrywt	1	20	19.	1.8	9.7
Anthracene	J	18.	ug/Kgdrywt	1	20	19.	1.2	9.7
Fluoranthene		120	ug/Kgdrywt	1	20	19.	1.8	9.7
Pyrene		89.	ug/Kgdrywt	1	20	19.	2.0	9.7
Benzo(a)anthracene		44.	ug/Kgdrywt	1	20	19.	1.8	9.7
Chrysene		62.	ug/Kgdrywt	1	20	19.	1.6	9.7
Benzo(b)Fluoranthene		110	ug/Kgdrywt	1	20	19.	2.3	9.7
Benzo(k)fluoranthene		37.	ug/Kgdrywt	1	20	19.	3.0	9.7
Benzo(a)pyrene		54.	ug/Kgdrywt	1	20	19.	3.2	9.7
Indeno(1,2,3-cd)pyrene		44.	ug/Kgdrywt	1	20	19.	1.8	9.7
Dibenzo(a,h)anthracene	J	14.	ug/Kgdrywt	1	20	19.	1.8	9.7
Benzo(g,h,i)perylene		32.	ug/Kgdrywt	1	20	19.	1.9	9.7
2-Methylnaphthalene-D10		63.2	%					
Fluorene-D10		82.6	%					
Pyrene-D10		64.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-2
Client ID: 004/5-SS1025-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0136.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 29-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	14.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	J	5.9	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene		56.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene		51.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	E	670	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		91.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	E	740	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	E	700	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		270	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		300	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		310	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		130	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene		200	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		150	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		39.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene		84.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		49.2	%					
Fluorene-D10		63.0	%					
Pyrene-D10		81.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-2DL
Client ID: 004/5-SS1025-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0152.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	22.	ug/Kgdrywt	4	20	81.	10.	40.
2-Methylnaphthalene	U	40.	ug/Kgdrywt	4	20	81.	8.9	40.
Acenaphthylene	U	40.	ug/Kgdrywt	4	20	81.	4.8	40.
Acenaphthene	J	52.	ug/Kgdrywt	4	20	81.	6.1	40.
Fluorene	J	54.	ug/Kgdrywt	4	20	81.	13.	40.
Phenanthrene		580	ug/Kgdrywt	4	20	81.	7.3	40.
Anthracene		120	ug/Kgdrywt	4	20	81.	4.8	40.
Fluoranthene		680	ug/Kgdrywt	4	20	81.	7.3	40.
Pyrene		620	ug/Kgdrywt	4	20	81.	8.5	40.
Benzo(a)anthracene		240	ug/Kgdrywt	4	20	81.	7.7	40.
Chrysene		300	ug/Kgdrywt	4	20	81.	6.9	40.
Benzo(b)Fluoranthene		300	ug/Kgdrywt	4	20	81.	9.7	40.
Benzo(k)fluoranthene		120	ug/Kgdrywt	4	20	81.	12.	40.
Benzo(a)pyrene		190	ug/Kgdrywt	4	20	81.	13.	40.
Indeno(1,2,3-cd)pyrene		120	ug/Kgdrywt	4	20	81.	7.7	40.
Dibenzo(a,h)anthracene	J	38.	ug/Kgdrywt	4	20	81.	7.3	40.
Benzo(g,h,i)perylene		82.	ug/Kgdrywt	4	20	81.	8.1	40.
2-Methylnaphthalene-D10		40.4	%					
Fluorene-D10		79.4	%					
Pyrene-D10		73.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-3
Client ID: 004/5-SS1026-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0137.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 29-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.6	ug/Kgdrywt	1	20	19.	2.5	9.6
2-Methylnaphthalene	U	9.6	ug/Kgdrywt	1	20	19.	2.1	9.6
Acenaphthylene	U	9.6	ug/Kgdrywt	1	20	19.	1.2	9.6
Acenaphthene		30.	ug/Kgdrywt	1	20	19.	1.4	9.6
Fluorene		23.	ug/Kgdrywt	1	20	19.	3.1	9.6
Phenanthrene	E	390	ug/Kgdrywt	1	20	19.	1.7	9.6
Anthracene		57.	ug/Kgdrywt	1	20	19.	1.2	9.6
Fluoranthene	E	540	ug/Kgdrywt	1	20	19.	1.7	9.6
Pyrene	E	500	ug/Kgdrywt	1	20	19.	2.0	9.6
Benzo(a)anthracene		210	ug/Kgdrywt	1	20	19.	1.8	9.6
Chrysene		250	ug/Kgdrywt	1	20	19.	1.6	9.6
Benzo(b)Fluoranthene		320	ug/Kgdrywt	1	20	19.	2.3	9.6
Benzo(k)fluoranthene		90.	ug/Kgdrywt	1	20	19.	3.0	9.6
Benzo(a)pyrene		180	ug/Kgdrywt	1	20	19.	3.2	9.6
Indeno(1,2,3-cd)pyrene		150	ug/Kgdrywt	1	20	19.	1.8	9.6
Dibenzo(a,h)anthracene		41.	ug/Kgdrywt	1	20	19.	1.7	9.6
Benzo(g,h,i)perylene		83.	ug/Kgdrywt	1	20	19.	1.9	9.6
2-Methylnaphthalene-D10		57.3	%					
Fluorene-D10		73.8	%					
Pyrene-D10		83.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-3DL
Client ID: 004/5-SS1026-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0153.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	29.	ug/Kgdrywt	3	20	58.	7.5	29.
2-Methylnaphthalene	U	29.	ug/Kgdrywt	3	20	58.	6.3	29.
Acenaphthylene	U	29.	ug/Kgdrywt	3	20	58.	3.4	29.
Acenaphthene	J	32.	ug/Kgdrywt	3	20	58.	4.3	29.
Fluorene	J	24.	ug/Kgdrywt	3	20	58.	9.2	29.
Phenanthrene		330	ug/Kgdrywt	3	20	58.	5.2	29.
Anthracene		63.	ug/Kgdrywt	3	20	58.	3.4	29.
Fluoranthene		520	ug/Kgdrywt	3	20	58.	5.2	29.
Pyrene		500	ug/Kgdrywt	3	20	58.	6.0	29.
Benzo(a)anthracene		220	ug/Kgdrywt	3	20	58.	5.5	29.
Chrysene		240	ug/Kgdrywt	3	20	58.	4.9	29.
Benzo(b)Fluoranthene		260	ug/Kgdrywt	3	20	58.	6.9	29.
Benzo(k)fluoranthene		140	ug/Kgdrywt	3	20	58.	8.9	29.
Benzo(a)pyrene		180	ug/Kgdrywt	3	20	58.	9.5	29.
Indeno(1,2,3-cd)pyrene		120	ug/Kgdrywt	3	20	58.	5.5	29.
Dibenzo(a,h)anthracene	J	37.	ug/Kgdrywt	3	20	58.	5.2	29.
Benzo(g,h,i)perylene		72.	ug/Kgdrywt	3	20	58.	5.8	29.
2-Methylnaphthalene-D10		52.5	%					
Fluorene-D10		72.5	%					
Pyrene-D10		92.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-15
Client ID: 004/5-SS1027-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0165.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	J	3.4	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	J	8.2	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	J	6.5	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	J	2.9	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	J	4.4	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	J	5.2	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	UMM	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	UMM	10.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	UMM	10.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		56.2	%					
Fluorene-D10		59.8	%					
Pyrene-D10		62.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-14
Client ID: 004/5-SS1028-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0171.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	2.6	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene	J	1.8	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene	U	9.9	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene		33.	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene	J	4.1	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene		86.	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene		69.	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene		36.	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene		43.	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene		58.	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene		26.	ug/Kgdrywt	1	20	20.	3.1	9.9
Benzo(a)pyrene		36.	ug/Kgdrywt	1	20	20.	3.3	9.9
Indeno(1,2,3-cd)pyrene		23.	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene	J	7.9	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene	J	19.	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		52.9	%					
Fluorene-D10		68.9	%					
Pyrene-D10		70.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-13
Client ID: 004/5-SS1029-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0175.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	7.4	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene	J	4.7	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene	J	5.0	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene		81.	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene	J	11.	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene		180	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene		170	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene		88.	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene		110	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene		160	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene		50.	ug/Kgdrywt	1	20	20.	3.1	9.9
Benzo(a)pyrene		86.	ug/Kgdrywt	1	20	20.	3.3	9.9
Indeno(1,2,3-cd)pyrene		70.	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene		22.	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene		42.	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		58.0	%					
Fluorene-D10		71.4	%					
Pyrene-D10		80.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-12
Client ID: 004/5-SS1030-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0176.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.4	9.4
2-Methylnaphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.1	9.4
Acenaphthylene	J	2.0	ug/Kgdrywt	1	20	19.	1.1	9.4
Acenaphthene	J	4.8	ug/Kgdrywt	1	20	19.	1.4	9.4
Fluorene	J	4.4	ug/Kgdrywt	1	20	19.	3.0	9.4
Phenanthrene		66.	ug/Kgdrywt	1	20	19.	1.7	9.4
Anthracene	J	18.	ug/Kgdrywt	1	20	19.	1.1	9.4
Fluoranthene		130	ug/Kgdrywt	1	20	19.	1.7	9.4
Pyrene		130	ug/Kgdrywt	1	20	19.	2.0	9.4
Benzo(a)anthracene		66.	ug/Kgdrywt	1	20	19.	1.8	9.4
Chrysene		79.	ug/Kgdrywt	1	20	19.	1.6	9.4
Benzo(b)Fluoranthene		100	ug/Kgdrywt	1	20	19.	2.3	9.4
Benzo(k)fluoranthene		37.	ug/Kgdrywt	1	20	19.	2.9	9.4
Benzo(a)pyrene		57.	ug/Kgdrywt	1	20	19.	3.1	9.4
Indeno(1,2,3-cd)pyrene		48.	ug/Kgdrywt	1	20	19.	1.8	9.4
Dibenzo(a,h)anthracene	J	12.	ug/Kgdrywt	1	20	19.	1.7	9.4
Benzo(g,h,i)perylene		27.	ug/Kgdrywt	1	20	19.	1.9	9.4
2-Methylnaphthalene-D10		71.8	%					
Fluorene-D10		75.2	%					
Pyrene-D10		85.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-10
Client ID: 004/5-SS1031-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0156.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.6	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	J	1.4	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	J	1.9	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	U	9.8	ug/Kgdrywt	1	20	20.	3.2	9.8
Phenanthrene		33.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	4.7	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		75.	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		60.	ug/Kgdrywt	1	20	20.	2.1	9.8
Benzo(a)anthracene		32.	ug/Kgdrywt	1	20	20.	1.9	9.8
Chrysene		36.	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		47.	ug/Kgdrywt	1	20	20.	2.4	9.8
Benzo(k)fluoranthene		26.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene		31.	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene	J	20.	ug/Kgdrywt	1	20	20.	1.9	9.8
Dibenzo(a,h)anthracene	J	7.7	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	J	16.	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		47.5	%					
Fluorene-D10		62.7	%					
Pyrene-D10		67.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-9
Client ID: 004/5-SS1032-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0158.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	J	5.3	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	J	3.7	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene		66.	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene	J	15.	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene		130	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene		110	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene		53.	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene		69.	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene		82.	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene		40.	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene		51.	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene		31.	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	J	9.3	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	J	18.	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		56.2	%					
Fluorene-D10		71.1	%					
Pyrene-D10		75.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-26
Client ID: 004/5-SS1033-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0118.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 28-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.6	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	U	9.8	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	U	9.8	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	U	9.8	ug/Kgdrywt	1	20	20.	3.1	9.8
Phenanthrene	J	14.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	1.9	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		33.	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		23.	ug/Kgdrywt	1	20	20.	2.1	9.8
Benzo(a)anthracene	J	14.	ug/Kgdrywt	1	20	20.	1.9	9.8
Chrysene	J	17.	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		22.	ug/Kgdrywt	1	20	20.	2.4	9.8
Benzo(k)fluoranthene	J	7.6	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	J	11.	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene	J	2.4	ug/Kgdrywt	1	20	20.	1.9	9.8
Dibenzo(a,h)anthracene	J	3.1	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	J	5.1	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		62.4	%					
Fluorene-D10		63.7	%					
Pyrene-D10		61.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-24
Client ID: 004/5-SS1034-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0116.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 28-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.5	9.7
2-Methylnaphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.1	9.7
Acenaphthylene	J	4.0	ug/Kgdrywt	1	20	19.	1.2	9.7
Acenaphthene	J	2.0	ug/Kgdrywt	1	20	19.	1.4	9.7
Fluorene	U	9.7	ug/Kgdrywt	1	20	19.	3.1	9.7
Phenanthrene		35.	ug/Kgdrywt	1	20	19.	1.7	9.7
Anthracene	J	5.8	ug/Kgdrywt	1	20	19.	1.2	9.7
Fluoranthene		97.	ug/Kgdrywt	1	20	19.	1.7	9.7
Pyrene		82.	ug/Kgdrywt	1	20	19.	2.0	9.7
Benzo(a)anthracene		47.	ug/Kgdrywt	1	20	19.	1.8	9.7
Chrysene		56.	ug/Kgdrywt	1	20	19.	1.6	9.7
Benzo(b)Fluoranthene		87.	ug/Kgdrywt	1	20	19.	2.3	9.7
Benzo(k)fluoranthene		25.	ug/Kgdrywt	1	20	19.	3.0	9.7
Benzo(a)pyrene		48.	ug/Kgdrywt	1	20	19.	3.2	9.7
Indeno(1,2,3-cd)pyrene		34.	ug/Kgdrywt	1	20	19.	1.8	9.7
Dibenzo(a,h)anthracene	J	12.	ug/Kgdrywt	1	20	19.	1.7	9.7
Benzo(g,h,i)perylene		23.	ug/Kgdrywt	1	20	19.	1.9	9.7
2-Methylnaphthalene-D10		64.1	%					
Fluorene-D10		68.3	%					
Pyrene-D10		77.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-25
Client ID: 004/5-SS1035-0001
Project: NAVSTA Newport Tank Farm
SDG: SG8184
Lab File ID: G0117.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 28-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	4.9	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	3.0	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		56.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	7.6	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		160	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		130	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		72.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		87.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		140	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		41.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene		74.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		60.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	18.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene		37.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		43.5	%					
Fluorene-D10		56.0	%					
Pyrene-D10		60.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-22
Client ID: 004/5-SS1036-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0114.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 28-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	13.	ug/Kgdrywt	1	20	20.	2.6	9.8
2-Methylnaphthalene	J	10.	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	J	4.9	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene		23.	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene		25.	ug/Kgdrywt	1	20	20.	3.2	9.8
Phenanthrene		250	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene		52.	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		320	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		290	ug/Kgdrywt	1	20	20.	2.1	9.8
Benzo(a)anthracene		140	ug/Kgdrywt	1	20	20.	1.9	9.8
Chrysene		150	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		180	ug/Kgdrywt	1	20	20.	2.4	9.8
Benzo(k)fluoranthene		82.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene		120	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		89.	ug/Kgdrywt	1	20	20.	1.9	9.8
Dibenzo(a,h)anthracene		26.	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene		48.	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		62.7	%					
Fluorene-D10		73.0	%					
Pyrene-D10		83.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-21
Client ID: 004/5-SS1037-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0113.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 28-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.5	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	J	1.5	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	J	1.9	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	U	9.8	ug/Kgdrywt	1	20	20.	3.1	9.8
Phenanthrene		33.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	4.5	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		72.	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		70.	ug/Kgdrywt	1	20	20.	2.0	9.8
Benzo(a)anthracene		34.	ug/Kgdrywt	1	20	20.	1.8	9.8
Chrysene		45.	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		57.	ug/Kgdrywt	1	20	20.	2.3	9.8
Benzo(k)fluoranthene	J	20.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene		32.	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		25.	ug/Kgdrywt	1	20	20.	1.8	9.8
Dibenzo(a,h)anthracene	J	9.1	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	J	19.	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		63.3	%					
Fluorene-D10		74.4	%					
Pyrene-D10		90.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-20
Client ID: 004/5-SS1038-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0159.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	3.5	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene	J	3.2	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene	J	6.0	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene		50.	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene	J	7.6	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene		120	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene		110	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene		52.	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene		70.	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene		86.	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene		43.	ug/Kgdrywt	1	20	20.	3.1	9.9
Benzo(a)pyrene		55.	ug/Kgdrywt	1	20	20.	3.3	9.9
Indeno(1,2,3-cd)pyrene		38.	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene	J	12.	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene		21.	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		44.3	%					
Fluorene-D10		63.8	%					
Pyrene-D10		70.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-17
Client ID: 004/5-SS1039-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0173.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	J	4.5	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	J	2.8	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene		48.	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	J	8.8	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene		120	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene		94.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene		54.	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene		60.	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene		95.	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene		28.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene		53.	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene		36.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	J	12.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene		25.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		64.6	%					
Fluorene-D10		70.7	%					
Pyrene-D10		74.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-16
Client ID: 004/5-SS1040-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0174.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 90.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	J	1.8	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	J	6.8	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	J	5.2	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene		92.	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	J	16.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene		180	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene		150	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene		74.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene		84.	ug/Kgdrywt	1	20	22.	1.8	11.
Benzo(b)Fluoranthene		130	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene		37.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene		65.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene		49.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	15.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene		30.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		54.5	%					
Fluorene-D10		70.2	%					
Pyrene-D10		75.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-34
Client ID: 004/5-SS1041-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0130.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 29-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	J	6.6	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	J	14.	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	J	14.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	J	6.5	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	J	9.0	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	J	11.	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	J	5.4	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	J	6.7	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	J	3.8	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	J	4.3	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		43.4	%					
Fluorene-D10		60.5	%					
Pyrene-D10		73.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-33
Client ID: 004/5-SS1042-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0134.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 29-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	4.1	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	2.1	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		39.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	4.8	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		92.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		83.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		40.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		54.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		77.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		30.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene		48.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		43.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	12.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene		27.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		57.2	%					
Fluorene-D10		68.7	%					
Pyrene-D10		71.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-32
Client ID: 004/5-SS1044-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0133.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 29-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.6	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	J	3.1	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	J	1.9	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	U	9.8	ug/Kgdrywt	1	20	20.	3.2	9.8
Phenanthrene		31.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	4.1	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		87.	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		80.	ug/Kgdrywt	1	20	20.	2.1	9.8
Benzo(a)anthracene		45.	ug/Kgdrywt	1	20	20.	1.9	9.8
Chrysene		58.	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		74.	ug/Kgdrywt	1	20	20.	2.4	9.8
Benzo(k)fluoranthene		30.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene		46.	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		33.	ug/Kgdrywt	1	20	20.	1.9	9.8
Dibenzo(a,h)anthracene	J	11.	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene		23.	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		43.6	%					
Fluorene-D10		66.6	%					
Pyrene-D10		59.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-31
Client ID: 004/5-SS1045-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0132.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 29-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	5.0	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	8.1	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	8.7	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		130	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		21.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		240	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		210	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		110	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		130	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		170	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		59.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene		100	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		76.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		25.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene		46.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		49.8	%					
Fluorene-D10		71.8	%					
Pyrene-D10		84.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-30
Client ID: 004/5-SS1046-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0135.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 29-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.5	9.7
2-Methylnaphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.1	9.7
Acenaphthylene	J	1.3	ug/Kgdrywt	1	20	19.	1.2	9.7
Acenaphthene	U	9.7	ug/Kgdrywt	1	20	19.	1.5	9.7
Fluorene	U	9.7	ug/Kgdrywt	1	20	19.	3.1	9.7
Phenanthrene		27.	ug/Kgdrywt	1	20	19.	1.8	9.7
Anthracene	J	4.1	ug/Kgdrywt	1	20	19.	1.2	9.7
Fluoranthene		57.	ug/Kgdrywt	1	20	19.	1.8	9.7
Pyrene		57.	ug/Kgdrywt	1	20	19.	2.0	9.7
Benzo(a)anthracene		24.	ug/Kgdrywt	1	20	19.	1.8	9.7
Chrysene		37.	ug/Kgdrywt	1	20	19.	1.6	9.7
Benzo(b)Fluoranthene		42.	ug/Kgdrywt	1	20	19.	2.3	9.7
Benzo(k)fluoranthene		21.	ug/Kgdrywt	1	20	19.	3.0	9.7
Benzo(a)pyrene		28.	ug/Kgdrywt	1	20	19.	3.2	9.7
Indeno(1,2,3-cd)pyrene		20.	ug/Kgdrywt	1	20	19.	1.8	9.7
Dibenzo(a,h)anthracene	J	7.3	ug/Kgdrywt	1	20	19.	1.8	9.7
Benzo(g,h,i)perylene	J	17.	ug/Kgdrywt	1	20	19.	1.9	9.7
2-Methylnaphthalene-D10		46.8	%					
Fluorene-D10		65.6	%					
Pyrene-D10		80.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-29
Client ID: 004/5-SS1047-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0121.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 29-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		96.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene		72.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene		140	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene		130	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	E	1200	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	E	300	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	E	1000	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	E	1000	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	E	510	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	E	450	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	E	540	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene		180	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	E	360	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene		210	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene		58.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene		110	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		69.9	%					
Fluorene-D10		67.9	%					
Pyrene-D10		79.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-29DL
Client ID: 004/5-SS1047-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0170.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	98.	ug/Kgdrywt	6	20	120	16.	62.
2-Methylnaphthalene	J	52.	ug/Kgdrywt	6	20	120	14.	62.
Acenaphthylene	U	62.	ug/Kgdrywt	6	20	120	7.5	62.
Acenaphthene		150	ug/Kgdrywt	6	20	120	9.4	62.
Fluorene		150	ug/Kgdrywt	6	20	120	20.	62.
Phenanthrene		1100	ug/Kgdrywt	6	20	120	11.	62.
Anthracene		360	ug/Kgdrywt	6	20	120	7.5	62.
Fluoranthene		1100	ug/Kgdrywt	6	20	120	11.	62.
Pyrene		960	ug/Kgdrywt	6	20	120	13.	62.
Benzo(a)anthracene		530	ug/Kgdrywt	6	20	120	12.	62.
Chrysene		480	ug/Kgdrywt	6	20	120	11.	62.
Benzo(b)Fluoranthene		500	ug/Kgdrywt	6	20	120	15.	62.
Benzo(k)fluoranthene		260	ug/Kgdrywt	6	20	120	19.	62.
Benzo(a)pyrene		390	ug/Kgdrywt	6	20	120	21.	62.
Indeno(1,2,3-cd)pyrene		230	ug/Kgdrywt	6	20	120	12.	62.
Dibenzo(a,h)anthracene	J	73.	ug/Kgdrywt	6	20	120	11.	62.
Benzo(g,h,i)perylene		160	ug/Kgdrywt	6	20	120	12.	62.
2-Methylnaphthalene-D10		33.4	%					
Fluorene-D10		72.2	%					
Pyrene-D10		74.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-28
Client ID: 004/5-SS1048-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0120.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 28-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.5	9.7
2-Methylnaphthalene	J	2.2	ug/Kgdrywt	1	20	19.	2.1	9.7
Acenaphthylene	J	11.	ug/Kgdrywt	1	20	19.	1.2	9.7
Acenaphthene	J	3.8	ug/Kgdrywt	1	20	19.	1.4	9.7
Fluorene	J	3.7	ug/Kgdrywt	1	20	19.	3.1	9.7
Phenanthrene		73.	ug/Kgdrywt	1	20	19.	1.7	9.7
Anthracene	J	16.	ug/Kgdrywt	1	20	19.	1.2	9.7
Fluoranthene		190	ug/Kgdrywt	1	20	19.	1.7	9.7
Pyrene		190	ug/Kgdrywt	1	20	19.	2.0	9.7
Benzo(a)anthracene		95.	ug/Kgdrywt	1	20	19.	1.8	9.7
Chrysene		130	ug/Kgdrywt	1	20	19.	1.6	9.7
Benzo(b)Fluoranthene		210	ug/Kgdrywt	1	20	19.	2.3	9.7
Benzo(k)fluoranthene		62.	ug/Kgdrywt	1	20	19.	3.0	9.7
Benzo(a)pyrene		110	ug/Kgdrywt	1	20	19.	3.2	9.7
Indeno(1,2,3-cd)pyrene		84.	ug/Kgdrywt	1	20	19.	1.8	9.7
Dibenzo(a,h)anthracene		23.	ug/Kgdrywt	1	20	19.	1.7	9.7
Benzo(g,h,i)perylene		47.	ug/Kgdrywt	1	20	19.	1.9	9.7
2-Methylnaphthalene-D10		70.5	%					
Fluorene-D10		68.5	%					
Pyrene-D10		75.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-27
Client ID: 004/5-SS1049-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0119.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 28-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	J	2.4	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	J	1.8	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene		34.	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	J	4.7	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene		80.	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene		78.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene		36.	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene		50.	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene		67.	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene		27.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene		39.	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene		27.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	J	10.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	J	20.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		76.4	%					
Fluorene-D10		66.8	%					
Pyrene-D10		81.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-18
Client ID: TF2-SS-RB01-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0148.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133040

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
2-Methylnaphthalene	U	0.095	ug/L	1	.2	0.19	0.073	0.095
Acenaphthylene	U	0.095	ug/L	1	.2	0.19	0.051	0.095
Acenaphthene	U	0.095	ug/L	1	.2	0.19	0.061	0.095
Fluorene	U	0.095	ug/L	1	.2	0.19	0.058	0.095
Phenanthrene	U	0.095	ug/L	1	.2	0.19	0.048	0.095
Anthracene	U	0.095	ug/L	1	.2	0.19	0.042	0.095
Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.070	0.095
Pyrene	U	0.095	ug/L	1	.2	0.19	0.056	0.095
Benzo(a)anthracene	U	0.095	ug/L	1	.2	0.19	0.044	0.095
Chrysene	U	0.095	ug/L	1	.2	0.19	0.034	0.095
Benzo(b)Fluoranthene	U	0.095	ug/L	1	.2	0.19	0.085	0.095
Benzo(k)fluoranthene	U	0.095	ug/L	1	.2	0.19	0.047	0.095
Benzo(a)pyrene	U	0.095	ug/L	1	.2	0.19	0.063	0.095
Indeno(1,2,3-cd)pyrene	U	0.095	ug/L	1	.2	0.19	0.050	0.095
Dibenzo(a,h)anthracene	U	0.095	ug/L	1	.2	0.19	0.067	0.095
Benzo(g,h,i)perylene	U	0.095	ug/L	1	.2	0.19	0.062	0.095
2-Methylnaphthalene-D10	*	13.6	%					
Fluorene-D10	*	20.0	%					
pyrene-d10	*	34.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-18RE
Client ID: TF2-SS-RB01-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0128.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 28-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133367

Analysis Date: 29-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	0.085	ug/L	1	.2	0.19	0.060	0.094
2-Methylnaphthalene	J	0.11	ug/L	1	.2	0.19	0.073	0.094
Acenaphthylene	U	0.094	ug/L	1	.2	0.19	0.051	0.094
Acenaphthene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Fluorene	U	0.094	ug/L	1	.2	0.19	0.058	0.094
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Anthracene	U	0.094	ug/L	1	.2	0.19	0.042	0.094
Fluoranthene	U	0.094	ug/L	1	.2	0.19	0.069	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	U	0.094	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)Fluoranthene	U	0.094	ug/L	1	.2	0.19	0.084	0.094
Benzo(k)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.046	0.094
Benzo(a)pyrene	U	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
Benzo(g,h,i)perylene	U	0.094	ug/L	1	.2	0.19	0.061	0.094
2-Methylnaphthalene-D10		77.7	%					
Fluorene-D10		72.0	%					
pyrene-d10		98.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-36RERA
Client ID: TF2-SS-RB02-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0150.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 28-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133367

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 13-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	0.062	ug/L	1	.2	0.19	0.060	0.094
2-Methylnaphthalene	J	0.075	ug/L	1	.2	0.19	0.073	0.094
Acenaphthylene	U	0.094	ug/L	1	.2	0.19	0.051	0.094
Acenaphthene	U	0.094	ug/L	1	.2	0.19	0.060	0.094
Fluorene	U	0.094	ug/L	1	.2	0.19	0.058	0.094
Phenanthrene	U	0.094	ug/L	1	.2	0.19	0.048	0.094
Anthracene	U	0.094	ug/L	1	.2	0.19	0.042	0.094
Fluoranthene	U	0.094	ug/L	1	.2	0.19	0.069	0.094
Pyrene	U	0.094	ug/L	1	.2	0.19	0.056	0.094
Benzo(a)anthracene	U	0.094	ug/L	1	.2	0.19	0.043	0.094
Chrysene	U	0.094	ug/L	1	.2	0.19	0.034	0.094
Benzo(b)Fluoranthene	U	0.094	ug/L	1	.2	0.19	0.084	0.094
Benzo(k)fluoranthene	U	0.094	ug/L	1	.2	0.19	0.046	0.094
Benzo(a)pyrene	U	0.094	ug/L	1	.2	0.19	0.062	0.094
Indeno(1,2,3-cd)pyrene	U	0.094	ug/L	1	.2	0.19	0.049	0.094
Dibenzo(a,h)anthracene	U	0.094	ug/L	1	.2	0.19	0.066	0.094
Benzo(g,h,i)perylene	U	0.094	ug/L	1	.2	0.19	0.061	0.094
2-Methylnaphthalene-D10		70.7	%					
Fluorene-D10		66.6	%					
pyrene-d10		84.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-11
Client ID: 004/5-SS-DUP01-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: AGK20054.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 97.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	32.	mg/Kgdrywt	1	20	20.	5.8	10.
o-Terphenyl		83.8	%					
n-Triacontane-D62		98.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-8
Client ID: 004/5-SS1020-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: AGK20053.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 98.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	32.	mg/Kgdrywt	1	20	19.	5.3	9.3
o-Terphenyl		68.2	%					
n-Triacontane-D62		81.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-15
Client ID: 004/5-SS1027-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: AGK20050.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 94.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	JL	15.	mg/Kgdrywt	1	20	19.	5.4	9.6
o-Terphenyl		82.5	%					
n-Triacontane-D62		97.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-17
Client ID: 004/5-SS1039-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: AGK20055.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 93.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		41.	mg/Kgdrywt	1	20	20.	5.8	10.
o-Terphenyl	*	47.9	%					
n-Triacontane-D62	*	58.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-17RE
Client ID: 004/5-SS1039-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: AGK20119.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 93.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		52.	mg/Kgdrywt	1	20	21.	6.0	10.
o-Terphenyl		83.8	%					
n-Triacontane-D62		94.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-27
Client ID: 004/5-SS1049-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: AGK20060.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 06-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 94.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		39.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl	*	14.8	%					
n-Triacontane-D62	*	18.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-27RE
Client ID: 004/5-SS1049-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: AGK20120.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 94.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		160	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		81.8	%					
n-Triacontane-D62		92.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-18
Client ID: TF2-SS-RB01-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: AGK20047.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 25-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133105

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: AQ
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	UL	240	ug/L	1	500	470	140	240
o-Terphenyl	*	79.5	%					
n-Triacontane-D62		95.4	%					

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Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-11
Client ID: 004/5-SS-DUP01-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: 9GJ4053.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133099

Analysis Date: 24-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 97.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics		9.4	mg/Kgdrywt	1	2.5	3.2	2.3	2.5
p-Bromofluorobenzene		92.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-8
Client ID: 004/5-SS1020-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: 9GJ4052.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133099

Analysis Date: 24-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 98.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	J	2.4	mg/Kgdrywt	1	2.5	2.8	2.1	2.3
p-Bromofluorobenzene		92.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-15
Client ID: 004/5-SS1027-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: 9GJ4054.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133099

Analysis Date: 24-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 94.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		90.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-17
Client ID: 004/5-SS1039-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: 9GJ4055.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133099

Analysis Date: 25-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 93.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics		7.0	mg/Kgdrywt	1	2.5	3.3	2.4	2.6
p-Bromofluorobenzene		89.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-27
Client ID: 004/5-SS1049-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: 9GJ4056.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133099

Analysis Date: 25-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 94.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.4	mg/Kgdrywt	1	2.5	3.0	2.2	2.4
p-Bromofluorobenzene		98.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-1
Client ID: TF2-W-TB01-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: 9GJ4050.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133099

Analysis Date: 24-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 100
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		92.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-19RA
Client ID: TF2-W-TB02-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: 9GJ4073.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133172

Analysis Date: 25-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	8.0	ug/l	1	10	10.	6.7	8.0
p-Bromofluorobenzene		92.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-18RA
Client ID: TF2-SS-RB01-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: 9GJ4072.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133172

Analysis Date: 25-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics		14	ug/l	1	10	10.	6.7	8.0
p-Bromofluorobenzene		95.5	%					

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APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8184

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: PAH / GRO / Florida-PRO

Missing Information	Date Lab Contacted	Date Received

Validator: Edward Sudlow Date: 11/27/13

See DV Report

EPA-NE - Data Validation
VOA/SV/Pest/PCB-I

Case: MAVSTA Newport SDG: SG8184

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: Edward Wallace Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8/84

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: Edward Sadlon Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8184

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: Edward Sullivan

Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8184

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: Edward Ludlow Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: SG 8184

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Edward Kellogg Date: 11/27/13

See DV Report

EPA NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8184

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Edward Sedlmyer Date: 4/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8184

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Edward Sedlay Date: 11/27/13

EPA-NE - Data Validation Worksheet See DV Report

Case: NAVSTA Newport SDG: SG 8184

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator: Edward Hedbye Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 81841

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)
Comments:								

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: Edward Sadlyn Date: 11/27/13

See DU Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: SG8184

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: Edward Sedlmyer Date: 11/27/13

See DU Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: SG8184

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: Edward Lee Rogers Date: 11/27/13

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8184

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Validator: Edward Sadlon Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8184

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: Edward Sadlon Date: 11/27/13

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 568184

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: Edward Sedlmyer Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8184

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4
2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4
4MP= 4-Methyhlphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: Edward Sullivan Date: 4/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8184

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedlmayer Date: 11/27/13

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8184

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery			% Recovery		
			Fluoranthene			Naphthalene	
			Pyrene			2-Methylnaphthalene	
			Benzo(a)anthracene			Acenaphthylene	
			Chrysene			Acenaphthene	
			Benzo(b)fluoranthene			Fluorene	
			Benzo(k)fluoranthene			Pentachlorophenol	
			Benzo(a)pyrene			Phenanthrene	
			Indeno(1,2,2-cd)pyrene			Anthracene	
			Dibenzo(a,h)anthracene				
			Benzo(g,h,i)perylene				

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedlmyer Date: 11/27/13

SecSV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8184

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1,2-Dichloroethane-d_4

Validator: Edward Ledbury Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8184

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedlazo Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8154

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Edward S. Sedlmyer Date: 11/27/13

Ser DV Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: SG 8184

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: Edward Sadlyn Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8184

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sadlyn Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8184

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: Edward Sedlmyer Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: SG 8184

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sedlmyer Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8184

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: Edward Sedlmyer Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8184

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: Edward Wedlmyer Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 81841

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: Edward Sullivan Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8184

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: Edward Swallow

Date: 11/27/13

EPA-NE - Data Validation Worksheet See DV Report

Case: NAVSTA Newport SDG: SG8184

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: Edward Sedlmyer Date: 11/27/13

See DV Report

EPA NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: SG 8184

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? Y N

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? Y N

Validator: Edward Sedlmyer Date: 11/27/13

EPA-NE - Data Validation Worksheet See DV Report

Case: NAVSTA Newport SDG: SG8184

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: Edward Sedlmyer Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8184

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Sverbeyer Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8184

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Sedlmayer Date: 11/27/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8184

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: Edward Hathaway Date: 11/27/13

APPENDIX D

SUPPORT DOCUMENTATION

HOLDTIME

SDG SG8184

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-004/5-SS1020-0001	SG8184-8	NM	10/18/2013	10/30/2013	11/05/2013	12	6	18
	%	TF2-004/5-SS1027-0001	SG8184-15	NM	10/18/2013	10/30/2013	11/05/2013	12	6	18
	%	TF2-004/5-SS1039-000.9	SG8184-17	NM	10/18/2013	10/30/2013	11/05/2013	12	6	18
	%	TF2-004/5-SS1039-000.9	SG8184-17RE	NM	10/18/2013	11/11/2013	11/11/2013	24	0	24
	%	TF2-004/5-SS1049-000.9	SG8184-27	NM	10/21/2013	10/30/2013	11/06/2013	9	7	16
	%	TF2-004/5-SS1049-000.9	SG8184-27RE	NM	10/21/2013	11/11/2013	11/11/2013	21	0	21
	%	TF2-004/5-SS-DUP01-101	SG8184-11	NM	10/18/2013	10/30/2013	11/05/2013	12	6	18
	%	TF2-SS-RB01-1013	SG8184-18	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
	MG/KG DRY	TF2-004/5-SS1049-000.9	SG8184-27RE	NM	10/21/2013	11/11/2013	11/11/2013	21	0	21
	MG/KG DRY	TF2-004/5-SS-DUP01-101	SG8184-11	NM	10/18/2013	10/30/2013	11/05/2013	12	6	18
	MG/KG DRY	TF2-004/5-SS1049-000.9	SG8184-27	NM	10/21/2013	10/30/2013	11/06/2013	9	7	16
	MG/KG DRY	TF2-004/5-SS1039-000.9	SG8184-17RE	NM	10/18/2013	11/11/2013	11/11/2013	24	0	24
	MG/KG DRY	TF2-004/5-SS1027-0001	SG8184-15	NM	10/18/2013	10/30/2013	11/05/2013	12	6	18
	MG/KG DRY	TF2-004/5-SS1020-0001	SG8184-8	NM	10/18/2013	10/30/2013	11/05/2013	12	6	18
	MG/KG DRY	TF2-004/5-SS1039-000.9	SG8184-17	NM	10/18/2013	10/30/2013	11/05/2013	12	6	18

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	UG/L	TF2-SS-RB01-1013	SG8184-18	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
HG	MG/KG	TF2-004/5-SS1048-000.8	SG8184-028	NM	10/21/2013	11/07/2013	11/08/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1038-000.7	SG8184-020	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1039-000.9	SG8184-017	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1040-000.9	SG8184-016	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1041-000.7	SG8184-034	NM	10/21/2013	11/07/2013	11/08/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1042-000.5	SG8184-033	NM	10/21/2013	11/07/2013	11/08/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1044-000.5	SG8184-032	NM	10/21/2013	11/07/2013	11/08/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1045-000.5	SG8184-031	NM	10/21/2013	11/07/2013	11/08/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1047-000.8	SG8184-029	NM	10/21/2013	11/07/2013	11/08/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1049-000.9	SG8184-027	NM	10/21/2013	11/07/2013	11/08/2013	17	1	18
HG	MG/KG	TF2-004/5-SS-DUP01-101	SG8184-011	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS-DUP02-101	SG8184-023	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1037-000.7	SG8184-021	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1025-000.8	SG8184-002	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1046-000.5	SG8184-030	NM	10/21/2013	11/07/2013	11/08/2013	17	1	18
HG	MG/KG	TF2-004/5-SS-DUP03-101	SG8184-035	NM	10/21/2013	11/07/2013	11/08/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1020-0001	SG8184-008	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-004/5-SS1021-000.7	SG8184-007	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1022-000.9	SG8184-006	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1023-000.8	SG8184-005	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1024-000.6	SG8184-004	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1027-0001	SG8184-015	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1026-000.8	SG8184-003	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1036-000.6	SG8184-022	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1028-000.8	SG8184-014	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1029-000.6	SG8184-013	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1030-000.6	SG8184-012	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1032-000.9	SG8184-009	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	MG/KG	TF2-004/5-SS1034-000.6	SG8184-024	NM	10/18/2013	11/07/2013	11/08/2013	20	1	21
HG	MG/KG	TF2-004/5-SS1035-0001	SG8184-025	NM	10/18/2013	11/07/2013	11/08/2013	20	1	21
HG	MG/KG	TF2-004/5-SS1033-000.8	SG8184-026	NM	10/18/2013	11/07/2013	11/08/2013	20	1	21
HG	MG/KG	TF2-004/5-SS1031-000.8	SG8184-010	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
HG	UG/L	TF2-SS-RB01-1013	SG8184-018	NM	10/18/2013	11/06/2013	11/06/2013	19	0	19
HG	UG/L	TF2-SS-RB02-1013	SG8184-036	NM	10/21/2013	11/06/2013	11/06/2013	16	0	16
M	MG/KG	TF2-004/5-SS1023-000.8	SG8184-005	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SS1020-0001	SG8184-008	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1020-0001	SG8184-008	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1021-000.7	SG8184-007	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1021-000.7	SG8184-007	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1022-000.9	SG8184-006	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1027-0001	SG8184-015	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1023-000.8	SG8184-005	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1047-000.8	SG8184-029	NM	10/21/2013	11/05/2013	11/11/2013	15	6	21
M	MG/KG	TF2-004/5-SS1024-000.6	SG8184-004	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1024-000.6	SG8184-004	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1025-000.8	SG8184-002	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1025-000.8	SG8184-002	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1026-000.8	SG8184-003	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1026-000.8	SG8184-003	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1027-0001	SG8184-015	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1022-000.9	SG8184-006	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS-DUP03-101	SG8184-035	NM	10/21/2013	11/05/2013	11/08/2013	15	3	18
M	MG/KG	TF2-004/5-SS1045-000.5	SG8184-031	NM	10/21/2013	11/05/2013	11/11/2013	15	6	21

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SS1045-000.5	SG8184-031	NM	10/21/2013	11/05/2013	11/08/2013	15	3	18
M	MG/KG	TF2-004/5-SS1046-000.5	SG8184-030	NM	10/21/2013	11/05/2013	11/08/2013	15	3	18
M	MG/KG	TF2-004/5-SS1044-000.5	SG8184-032	NM	10/21/2013	11/05/2013	11/08/2013	15	3	18
M	MG/KG	TF2-004/5-SS1042-000.5	SG8184-033	NM	10/21/2013	11/05/2013	11/11/2013	15	6	21
M	MG/KG	TF2-004/5-SS1042-000.5	SG8184-033	NM	10/21/2013	11/05/2013	11/08/2013	15	3	18
M	MG/KG	TF2-004/5-SS1041-000.7	SG8184-034	NM	10/21/2013	11/05/2013	11/11/2013	15	6	21
M	MG/KG	TF2-004/5-SS1046-000.5	SG8184-030	NM	10/21/2013	11/05/2013	11/11/2013	15	6	21
M	MG/KG	TF2-004/5-SS-DUP03-101	SG8184-035	NM	10/21/2013	11/05/2013	11/11/2013	15	6	21
M	MG/KG	TF2-004/5-SS1047-000.8	SG8184-029	NM	10/21/2013	11/05/2013	11/08/2013	15	3	18
M	MG/KG	TF2-004/5-SS-DUP02-101	SG8184-023	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS-DUP01-101	SG8184-011	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1044-000.5	SG8184-032	NM	10/21/2013	11/05/2013	11/11/2013	15	6	21
M	MG/KG	TF2-004/5-SS1049-000.9	SG8184-027	NM	10/21/2013	11/05/2013	11/11/2013	15	6	21
M	MG/KG	TF2-004/5-SS1049-000.9	SG8184-027	NM	10/21/2013	11/05/2013	11/08/2013	15	3	18
M	MG/KG	TF2-004/5-SS1048-000.8	SG8184-028	NM	10/21/2013	11/05/2013	11/11/2013	15	6	21
M	MG/KG	TF2-004/5-SS1048-000.8	SG8184-028	NM	10/21/2013	11/05/2013	11/08/2013	15	3	18
M	MG/KG	TF2-004/5-SS-DUP01-101	SG8184-011	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1041-000.7	SG8184-034	NM	10/21/2013	11/05/2013	11/08/2013	15	3	18

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SS1036-000.6	SG8184-022	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1040-000.9	SG8184-016	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1040-000.9	SG8184-016	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1039-000.9	SG8184-017	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1039-000.9	SG8184-017	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1038-000.7	SG8184-020	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1038-000.7	SG8184-020	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1037-000.7	SG8184-021	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1028-000.8	SG8184-014	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS-DUP02-101	SG8184-023	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1037-000.7	SG8184-021	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1036-000.6	SG8184-022	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1035-0001	SG8184-025	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1035-0001	SG8184-025	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1034-000.6	SG8184-024	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1033-000.8	SG8184-026	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1033-000.8	SG8184-026	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1028-000.8	SG8184-014	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SS1032-000.9	SG8184-009	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1032-000.9	SG8184-009	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1029-000.6	SG8184-013	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1029-000.6	SG8184-013	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1034-000.6	SG8184-024	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1030-000.6	SG8184-012	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	MG/KG	TF2-004/5-SS1030-000.6	SG8184-012	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1031-000.8	SG8184-010	NM	10/18/2013	11/05/2013	11/11/2013	18	6	24
M	MG/KG	TF2-004/5-SS1031-000.8	SG8184-010	NM	10/18/2013	11/05/2013	11/08/2013	18	3	21
M	UG/L	TF2-SS-RB02-1013	SG8184-036	NM	10/21/2013	11/01/2013	11/08/2013	11	7	18
M	UG/L	TF2-SS-RB01-1013	SG8184-018	NM	10/18/2013	11/07/2013	11/11/2013	20	4	24
M	UG/L	TF2-SS-RB02-1013	SG8184-036	NM	10/21/2013	11/07/2013	11/08/2013	17	1	18
M	UG/L	TF2-SS-RB02-1013	SG8184-036	NM	10/21/2013	11/07/2013	11/11/2013	17	4	21
M	UG/L	TF2-SS-RB01-1013	SG8184-018	NM	10/18/2013	11/01/2013	11/08/2013	14	7	21
M	UG/L	TF2-SS-RB01-1013	SG8184-018	NM	10/18/2013	11/07/2013	11/08/2013	20	1	21
	%	TF2-004/5-SS1042-000.5	SG8184-33	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
	%	TF2-004/5-SS1040-000.9	SG8184-16	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1041-000.7	SG8184-34	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-004/5-SS1044-000.5	SG8184-32	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
	%	TF2-004/5-SS1045-000.5	SG8184-31	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
	%	TF2-004/5-SS1046-000.5	SG8184-30	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
	%	TF2-004/5-SS1047-000.8	SG8184-29	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
	%	TF2-004/5-SS1022-000.9	SG8184-6	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1021-000.7	SG8184-7	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1026-000.8	SG8184-3	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1049-000.9	SG8184-27	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
	%	TF2-004/5-SS1020-0001	SG8184-8	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS-DUP01-101	SG8184-11	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS-DUP02-101	SG8184-23	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-W-TB01-1013	SG8184-1	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1048-000.8	SG8184-28	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
	%	TF2-004/5-SS1033-000.8	SG8184-26	NM	10/18/2013	10/25/2013	10/26/2013	7	1	8
	%	TF2-004/5-SS1027-0001	SG8184-15	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1025-000.8	SG8184-2	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1028-000.8	SG8184-14	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1029-000.6	SG8184-13	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-004/5-SS1030-000.6	SG8184-12	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1035-0001	SG8184-25	NM	10/18/2013	10/25/2013	10/26/2013	7	1	8
	%	TF2-004/5-SS1032-000.9	SG8184-9	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1023-000.8	SG8184-5	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1034-000.6	SG8184-24	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS-DUP03-101	SG8184-35	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
	%	TF2-004/5-SS1036-000.6	SG8184-22	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1037-000.7	SG8184-21	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1038-000.7	SG8184-20	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1024-000.6	SG8184-4	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1039-000.9	SG8184-17	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-004/5-SS1031-000.8	SG8184-10	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
SIM	%	TF2-004/5-SS1023-000.8	SG8184-5DL	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	%	TF2-004/5-SS1034-000.6	SG8184-24	NM	10/18/2013	10/24/2013	10/28/2013	6	4	10
SIM	%	TF2-004/5-SS1033-000.8	SG8184-26	NM	10/18/2013	10/24/2013	10/28/2013	6	4	10
SIM	%	TF2-004/5-SS1032-000.9	SG8184-9	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	%	TF2-004/5-SS1035-0001	SG8184-25	NM	10/18/2013	10/24/2013	10/28/2013	6	4	10
SIM	%	TF2-004/5-SS1044-000.5	SG8184-32	NM	10/21/2013	10/24/2013	10/29/2013	3	5	8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	%	TF2-004/5-SS1021-000.7	SG8184-7DL	NM	10/18/2013	10/23/2013	11/01/2013	5	9	14
SIM	%	TF2-004/5-SS1021-000.7	SG8184-7	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	%	TF2-004/5-SS1020-0001	SG8184-8	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	%	TF2-004/5-SS1039-000.9	SG8184-17	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	%	TF2-004/5-SS1038-000.7	SG8184-20	NM	10/18/2013	10/24/2013	10/30/2013	6	6	12
SIM	%	TF2-004/5-SS1023-000.8	SG8184-5	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	%	TF2-004/5-SS1036-000.6	SG8184-22	NM	10/18/2013	10/24/2013	10/28/2013	6	4	10
SIM	%	TF2-004/5-SS1040-000.9	SG8184-16	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	%	TF2-SS-RB02-1013	SG8184-36RERA	NM	10/21/2013	10/28/2013	10/30/2013	7	2	9
SIM	%	TF2-SS-RB01-1013	SG8184-18RE	NM	10/18/2013	10/28/2013	10/29/2013	10	1	11
SIM	%	TF2-SS-RB01-1013	SG8184-18	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	%	TF2-004/5-SS-DUP03-101	SG8184-35	NM	10/21/2013	10/24/2013	10/31/2013	3	7	10
SIM	%	TF2-004/5-SS-DUP02-101	SG8184-23	NM	10/18/2013	10/24/2013	10/28/2013	6	4	10
SIM	%	TF2-004/5-SS-DUP01-101	SG8184-11	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	%	TF2-004/5-SS1049-000.9	SG8184-27	NM	10/21/2013	10/24/2013	10/28/2013	3	4	7
SIM	%	TF2-004/5-SS1037-000.7	SG8184-21	NM	10/18/2013	10/24/2013	10/28/2013	6	4	10
SIM	%	TF2-004/5-SS1048-000.8	SG8184-28	NM	10/21/2013	10/24/2013	10/28/2013	3	4	7
SIM	%	TF2-004/5-SS1030-000.6	SG8184-12	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	%	TF2-004/5-SS1029-000.6	SG8184-13	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	%	TF2-004/5-SS1028-000.8	SG8184-14	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	%	TF2-004/5-SS1027-0001	SG8184-15	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	%	TF2-004/5-SS1047-000.8	SG8184-29DL	NM	10/21/2013	10/24/2013	10/31/2013	3	7	10
SIM	%	TF2-004/5-SS1026-000.8	SG8184-3DL	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	%	TF2-004/5-SS1022-000.9	SG8184-6	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	%	TF2-004/5-SS1046-000.5	SG8184-30	NM	10/21/2013	10/24/2013	10/29/2013	3	5	8
SIM	%	TF2-004/5-SS1031-000.8	SG8184-10	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	%	TF2-004/5-SS1026-000.8	SG8184-3	NM	10/18/2013	10/23/2013	10/29/2013	5	6	11
SIM	%	TF2-004/5-SS1045-000.5	SG8184-31	NM	10/21/2013	10/24/2013	10/29/2013	3	5	8
SIM	%	TF2-004/5-SS1025-000.8	SG8184-2DL	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	%	TF2-004/5-SS1025-000.8	SG8184-2	NM	10/18/2013	10/23/2013	10/29/2013	5	6	11
SIM	%	TF2-004/5-SS1024-000.6	SG8184-4	NM	10/18/2013	10/23/2013	10/29/2013	5	6	11
SIM	%	TF2-004/5-SS1042-000.5	SG8184-33	NM	10/21/2013	10/24/2013	10/29/2013	3	5	8
SIM	%	TF2-004/5-SS1041-000.7	SG8184-34	NM	10/21/2013	10/24/2013	10/29/2013	3	5	8
SIM	%	TF2-004/5-SS1047-000.8	SG8184-29	NM	10/21/2013	10/24/2013	10/29/2013	3	5	8
SIM	UG/KG DRY	TF2-004/5-SS1026-000.8	SG8184-3	NM	10/18/2013	10/23/2013	10/29/2013	5	6	11
SIM	UG/KG DRY	TF2-004/5-SS1042-000.5	SG8184-33	NM	10/21/2013	10/24/2013	10/29/2013	3	5	8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/KG DRY	TF2-004/5-SS1035-0001	SG8184-25	NM	10/18/2013	10/24/2013	10/28/2013	6	4	10
SIM	UG/KG DRY	TF2-004/5-SS1034-000.6	SG8184-24	NM	10/18/2013	10/24/2013	10/28/2013	6	4	10
SIM	UG/KG DRY	TF2-004/5-SS1033-000.8	SG8184-26	NM	10/18/2013	10/24/2013	10/28/2013	6	4	10
SIM	UG/KG DRY	TF2-004/5-SS1032-000.9	SG8184-9	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	UG/KG DRY	TF2-004/5-SS1031-000.8	SG8184-10	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	UG/KG DRY	TF2-004/5-SS1030-000.6	SG8184-12	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	UG/KG DRY	TF2-004/5-SS1029-000.6	SG8184-13	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	UG/KG DRY	TF2-004/5-SS1028-000.8	SG8184-14	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	UG/KG DRY	TF2-004/5-SS1037-000.7	SG8184-21	NM	10/18/2013	10/24/2013	10/28/2013	6	4	10
SIM	UG/KG DRY	TF2-004/5-SS1026-000.8	SG8184-3DL	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	UG/KG DRY	TF2-004/5-SS1038-000.7	SG8184-20	NM	10/18/2013	10/24/2013	10/30/2013	6	6	12
SIM	UG/KG DRY	TF2-004/5-SS1025-000.8	SG8184-2DL	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	UG/KG DRY	TF2-004/5-SS1025-000.8	SG8184-2	NM	10/18/2013	10/23/2013	10/29/2013	5	6	11
SIM	UG/KG DRY	TF2-004/5-SS1024-000.6	SG8184-4	NM	10/18/2013	10/23/2013	10/29/2013	5	6	11
SIM	UG/KG DRY	TF2-004/5-SS1023-000.8	SG8184-5DL	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	UG/KG DRY	TF2-004/5-SS1023-000.8	SG8184-5	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	UG/KG DRY	TF2-004/5-SS1022-000.9	SG8184-6	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	UG/KG DRY	TF2-004/5-SS1021-000.7	SG8184-7DL	NM	10/18/2013	10/23/2013	11/01/2013	5	9	14

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/KG DRY	TF2-004/5-SS1021-000.7	SG8184-7	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	UG/KG DRY	TF2-004/5-SS1020-0001	SG8184-8	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	UG/KG DRY	TF2-004/5-SS1027-0001	SG8184-15	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	UG/KG DRY	TF2-004/5-SS1047-000.8	SG8184-29DL	NM	10/21/2013	10/24/2013	10/31/2013	3	7	10
SIM	UG/KG DRY	TF2-004/5-SS1039-000.9	SG8184-17	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	UG/KG DRY	TF2-004/5-SS1040-000.9	SG8184-16	NM	10/18/2013	10/23/2013	10/31/2013	5	8	13
SIM	UG/KG DRY	TF2-004/5-SS1045-000.5	SG8184-31	NM	10/21/2013	10/24/2013	10/29/2013	3	5	8
SIM	UG/KG DRY	TF2-004/5-SS1041-000.7	SG8184-34	NM	10/21/2013	10/24/2013	10/29/2013	3	5	8
SIM	UG/KG DRY	TF2-004/5-SS1044-000.5	SG8184-32	NM	10/21/2013	10/24/2013	10/29/2013	3	5	8
SIM	UG/KG DRY	TF2-004/5-SS1046-000.5	SG8184-30	NM	10/21/2013	10/24/2013	10/29/2013	3	5	8
SIM	UG/KG DRY	TF2-004/5-SS1047-000.8	SG8184-29	NM	10/21/2013	10/24/2013	10/29/2013	3	5	8
SIM	UG/KG DRY	TF2-004/5-SS-DUP03-101	SG8184-35	NM	10/21/2013	10/24/2013	10/31/2013	3	7	10
SIM	UG/KG DRY	TF2-004/5-SS-DUP02-101	SG8184-23	NM	10/18/2013	10/24/2013	10/28/2013	6	4	10
SIM	UG/KG DRY	TF2-004/5-SS-DUP01-101	SG8184-11	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
SIM	UG/KG DRY	TF2-004/5-SS1049-000.9	SG8184-27	NM	10/21/2013	10/24/2013	10/28/2013	3	4	7
SIM	UG/KG DRY	TF2-004/5-SS1036-000.6	SG8184-22	NM	10/18/2013	10/24/2013	10/28/2013	6	4	10
SIM	UG/KG DRY	TF2-004/5-SS1048-000.8	SG8184-28	NM	10/21/2013	10/24/2013	10/28/2013	3	4	7
SIM	UG/L	TF2-SS-RB01-1013	SG8184-18RE	NM	10/18/2013	10/28/2013	10/29/2013	10	1	11

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/L	TF2-SS-RB02-1013	SG8184-36RERA	NM	10/21/2013	10/28/2013	10/30/2013	7	2	9
SIM	UG/L	TF2-SS-RB01-1013	SG8184-18	NM	10/18/2013	10/23/2013	10/30/2013	5	7	12
	%	TF2-004/5-SS1049-000.9	SG8184-27	NM	10/21/2013	10/24/2013	10/25/2013	3	1	4
	%	TF2-004/5-SS1020-0001	SG8184-8	NM	10/18/2013	10/24/2013	10/24/2013	6	0	6
	%	TF2-SS-RB01-1013	SG8184-18RA	NM	10/18/2013	10/25/2013	10/25/2013	7	0	7
	%	TF2-W-TB01-1013	SG8184-1	NM	10/18/2013	10/24/2013	10/24/2013	6	0	6
	%	TF2-004/5-SS1039-000.9	SG8184-17	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	%	TF2-W-TB02-1013	SG8184-19RA	NM	10/18/2013	10/25/2013	10/25/2013	7	0	7
	%	TF2-004/5-SS1027-0001	SG8184-15	NM	10/18/2013	10/24/2013	10/24/2013	6	0	6
	%	TF2-004/5-SS-DUP01-101	SG8184-11	NM	10/18/2013	10/24/2013	10/24/2013	6	0	6
	MG/KG DRY	TF2-004/5-SS1020-0001	SG8184-8	NM	10/18/2013	10/24/2013	10/24/2013	6	0	6
	MG/KG DRY	TF2-004/5-SS1039-000.9	SG8184-17	NM	10/18/2013	10/24/2013	10/25/2013	6	1	7
	MG/KG DRY	TF2-004/5-SS1049-000.9	SG8184-27	NM	10/21/2013	10/24/2013	10/25/2013	3	1	4
	MG/KG DRY	TF2-004/5-SS-DUP01-101	SG8184-11	NM	10/18/2013	10/24/2013	10/24/2013	6	0	6
	MG/KG DRY	TF2-W-TB01-1013	SG8184-1	NM	10/18/2013	10/24/2013	10/24/2013	6	0	6
	MG/KG DRY	TF2-004/5-SS1027-0001	SG8184-15	NM	10/18/2013	10/24/2013	10/24/2013	6	0	6
	UG/L	TF2-SS-RB01-1013	SG8184-18RA	NM	10/18/2013	10/25/2013	10/25/2013	7	0	7
	UG/L	TF2-W-TB02-1013	SG8184-19RA	NM	10/18/2013	10/25/2013	10/25/2013	7	0	7

NAVSTA NEWPORT
SOIL DATA
SG8184

FRACTION	CHEMICAL	TF2-004/5-SS1020-0001	UNITS	F2-004/5-SS-DUP01-101	RPD	D
PAH	ACENAPHTHENE	1.6 J	UG/KG	ND	200.00	1.60
PAH	ANTHRACENE	5.8 J	UG/KG	3.3 J	54.95	2.50
PAH	BENZO(A)ANTHRACENE	17 J	UG/KG	11 J	42.86	6.00
PAH	BENZO(A)PYRENE	16 J	UG/KG	10 J	46.15	6.00
PAH	BENZO(B)FLUORANTHENE	27	UG/KG	17 J	45.45	10.00
PAH	BENZO(G,H,I)PERYLENE	8.2 J	UG/KG	5.3 J	42.96	2.90
PAH	BENZO(K)FLUORANTHENE	9.7 J	UG/KG	6.6 J	38.04	3.10
PAH	CHRYSENE	20 J	UG/KG	14 J	35.29	6.00
PAH	DIBENZO(A,H)ANTHRACENE	3.5 J	UG/KG	2 J	54.55	1.50
PAH	FLUORANTHENE	48	UG/KG	28	52.63	20.00
PAH	INDENO(1,2,3-CD)PYRENE	5.2 J	UG/KG	ND	200.00	5.20
PAH	PHENANTHRENE	24	UG/KG	12 J	66.67	12.00
PAH	PYRENE	36	UG/KG	21	52.63	15.00
PET	EXTRACTABLE PETROLEUM HYDROC	32 J	MG/KG	32 J	0.00	0.00
PET	GASOLINE RANGE ORGANICS	2.4 J	MG/KG	9.4	118.64	7.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8184

FRACTION	CHEMICAL	TF2-004/5-SS1035-0001	UNITS	F2-004/5-SS-DUP02-101	RPD	D
PAH	ACENAPHTHENE	3 J	UG/KG	3.6 J	18.18	0.60
PAH	ACENAPHTHYLENE	4.9 J	UG/KG	5.2 J	5.94	0.30
PAH	ANTHRACENE	7.6 J	UG/KG	7.9 J	3.87	0.30
PAH	BENZO(A)ANTHRACENE	72	UG/KG	83	14.19	11.00
PAH	BENZO(A)PYRENE	74	UG/KG	81	9.03	7.00
PAH	BENZO(B)FLUORANTHENE	140	UG/KG	160	13.33	20.00
PAH	BENZO(G,H,I)PERYLENE	37	UG/KG	38	2.67	1.00
PAH	BENZO(K)FLUORANTHENE	41	UG/KG	44	7.06	3.00
PAH	CHRYSENE	87	UG/KG	100	13.90	13.00
PAH	DIBENZO(A,H)ANTHRACENE	18 J	UG/KG	19 J	5.41	1.00
PAH	FLUORANTHENE	160	UG/KG	180	11.76	20.00
PAH	INDENO(1,2,3-CD)PYRENE	60	UG/KG	65	8.00	5.00
PAH	PHENANTHRENE	56	UG/KG	64	13.33	8.00
PAH	PYRENE	130	UG/KG	170	26.67	40.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8184

FRACTION	CHEMICAL	TF2-004/5-SS1041-000.7	UNITS	F2-004/5-SS-DUP03-101	RPD	D	
PAH	ANTHRACENE	ND	UG/KG	1.7 J	200.00	1.70	C. K<2xRL
PAH	BENZO(A)ANTHRACENE	6.5 J	UG/KG	7.6 J	15.60	1.10	
PAH	BENZO(A)PYRENE	6.7 J	UG/KG	7.3 J	8.57	0.60	
PAH	BENZO(B)FLUORANTHENE	11 J	UG/KG	13 J	16.67	2.00	
PAH	BENZO(G,H,I)PERYLENE	4.3 J	UG/KG	3.7 J	15.00	0.60	
PAH	BENZO(K)FLUORANTHENE	5.4 J	UG/KG	5 J	7.69	0.40	
PAH	CHRYSENE	9 J	UG/KG	9.9 J	9.52	0.90	
PAH	DIBENZO(A,H)ANTHRACENE	3.8 J	UG/KG	ND	200.00	3.80	D. K<2xRL
PAH	FLUORANTHENE	14 J	UG/KG	21	40.00	7.00	
PAH	PHENANTHRENE	6.6 J	UG/KG	8.6 J	26.32	2.00	
PAH	PYRENE	14 J	UG/KG	15 J	6.90	1.00	

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

TETRA TECH NUS, INC.
NAVSTA NEWPORT
TANK FARM 2 CTO WE30
SG8184

KATAHDIN ANALYTICAL SERVICES, INC.
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT TANK FARM 2 CTO WE30
SG8184

Sample Receipt

The following sample was received on October 21, 2013 and was logged in under Katahdin Analytical Services work order number SG8184 for a hardcopy due date of November 08, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG8184-1	TF2-W-TB01-1016
SG8184-2	TF2-004/5-SS1025-000.8
SG8184-3	TF2-004/5-SS1026-000.8
SG8184-4	TF2-004/5-SS1024-000.6
SG8184-5	TF2-004/5-SS1023-000.8
SG8184-6	TF2-004/5-SS1022-000.9
SG8184-7	TF2-004/5-SS1021-000.7
SG8184-8	TF2-004/5-SS1020-0001
SG8184-9	TF2-004/5-SS1032-000.9
SG8184-10	TF2-004/5-SS1031-000.8
SG8184-11	TF2-004/5-SS-DUP01-1013
SG8184-12	TF2-004/5-SS1030-000.6
SG8184-13	TF2-004/5-SS1029-000.6
SG8184-14	TF2-004/5-SS1028-000.8
SG8184-15	TF2-004/5-SS1027-0001
SG8184-16	TF2-004/5-SS1040-000.9
SG8184-17	TF2-004/5-SS1039-000.9
SG8184-18	TF2-SS-RB01-1013
SG8184-19	TF2-W-TB02-1013
SG8184-20	TF2-004/5-SS1038-000.7
SG8184-21	TF2-004/5-SS1037-000.7
SG8184-22	TF2-004/5-SS1036-000.6
SG8184-23	TF2-004/5-SS-DUP02-1013
SG8184-24	TF2-004/5-SS1034-000.6
SG8184-25	TF2-004/5-SS1035-0001
SG8184-26	TF2-004/5-SS1033-000.8
SG8184-27	TF2-004/5-SS1049-000.9
SG8184-28	TF2-004/5-SS1048-000.8
SG8184-29	TF2-004/5-SS1047-000.8
SG8184-30	TF2-004/5-SS1046-000.5
SG8184-31	TF2-004/5-SS1045-000.5
SG8184-32	TF2-004/5-SS1044-000.5
SG8184-33	TF2-004/5-SS1042-000.5
SG8184-34	TF2-004/5-SS1041-000.7
SG8184-35	TF2-004/5-SS-DUP03-1013
SG8184-36	TF2-SS-RB02-1013

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Some of the client IDs on the Chain of Custody exceeds the 19-character limit of the Katahdin Analytical Information Management System. Therefore, the first characters "TF2-" in the client ID all samples with the exception of samples SG8184-1, 18, 19 and 36 were omitted on all forms.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG8184 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

Sample SG8184-15 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as requested by the client.

8270D SIM Analysis

All soil samples and associated QC were subjected to the GPC sample clean-up process.

All soil samples were manually integrated for the analytes acenaphthylene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene and/or the surrogate fluorene-d10. The specific reason for the manual integration is indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Samples SG8184-2, 30 and the LCS WG133040-2RA had low responses for the internal standard perylene-d12 that resulted in %D's which were outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the ICAL midpoint standard.

The independent check standard (file G0111) associated with the initial calibration on the G instrument on 10/28/2013 had a low concentration for the target analyte benzo(a)anthracene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The initial calibration analyzed on the G instrument on 11/11/2013 had %RSD values for a few

analytes that exceeded the method acceptance limit of 15%. For these analytes, either a linear or quadratic model was used for quantitation instead of an average response factor. The target analyte chrysene failed for both the linear and quadratic models in the initial calibration curve due to the correlation coefficient and the coefficient of determination being less than the method acceptance criteria of 0.995 and 0.990 respectively. This compound was calibrated using the average model.

The CV (file G0122) had high responses for the target analyte indeno(1,2,3-cd)pyrene and the surrogate pyrene-d10. The CV (file G0144) had a high response for the target analyte chrysene. The CV (file G0181) had a high response for the target analyte naphthalene. These responses resulted in %D's that were greater than the acceptance limit of 20% from DoD QSM.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are statistically derived limits for the full list of spiked compounds and are statistically derived limits for the surrogates. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these statistical acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

The LCS WG133040-2RA had a low recovery for one surrogate and had low recoveries for 13 spiked target analytes, which were outside of the laboratory established acceptance limits. The LCSD WG133040-3RA had low recoveries for five spiked target analytes. The DoD QSM allowable number of exceedances for 17 target analytes is one analyte. The associated sample SG8184-18 had low recoveries for all three surrogates and was reextracted three days out of hold time and analyzed. The results for both analyses are reported.

8015M-FLPRO Analysis

Samples SG8184-8, 11, 17, 17RE, 27, and 27RE were manually integrated for the extraction surrogates o-terphenyl and N-Triacontane-d62, and Petroleum Range Organics The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Samples SG 8184-17 and 27 had low recoveries for the extraction surrogates o-terphenyl and N-Triacontane-d62 that were outside the method acceptance limits. The samples were reextracted seven days outside of hold time. The results of both analyses are reported.

Sample SG8184-18 had a low recovery for the extraction surrogate o-terphenyl that was outside of the method acceptance limits. Since there was no additional sample aliquot, no further action was taken.

The LCS WG133105-2 had a low recovery for the extraction surrogate o-terphenyl that was outside of the method acceptance limits. Since the spike recovery was acceptable, no further action was taken.

The LCS WG133426-2 had a low recovery for Petroleum Range Organics that was outside of method acceptance limits. Since the associated LCSD had acceptable recoveries, no further action was taken.

Note: The Form VII has a column for %D that is set to 25%. The DoD QSM criterion for a CV is 20%D. All of the compounds in the CV's were evaluated to 20% criteria.

8015B GRO Analysis

Samples SG8184-8, 11 and 17 were manually integrated for Gasoline Range Organics. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG8184 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Aqueous-matrix Katahdin Sample Nos. SG8184-(18, 36) were originally digested for ICP-MS analysis on 11/01/13 (QC Batch GK01IMW2) in accordance with USEPA Method 3010A. Because the method blank that was prepared in this batch was contaminated with several elements, these samples were redigested for ICP-MS analysis on 11/07/13 (QC Batch GK07IMW1). Redigestates of client samples are identified on the sample preparation logs and analysis run logs by the suffix "R" appended to the Katahdin Sample Number, e.g. "SG8184-018R" The measured calcium concentration (240 ug/L) of the preparation blank that was prepared in the redigestion batch is greater than the laboratory's Limit of Quantitation (LOQ). However, because the preparation blanks from both digestion batches for Katahdin Sample Nos. SG8184-(18,36) were contaminated with calcium, and because the measured concentrations of calcium (a common laboratory contaminant) in these samples are low, no further corrective action was taken.

Soil-matrix Katahdin Sample Nos. SG8184-(2-17, 20-23) were digested for ICP-MS analysis on 11/05/13 (QC Batch GK05IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8184-15 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentration of calcium (12.9 mg/kg) in the preparation blank from this batch is greater than the laboratory's LOQ, and the measured manganese concentration (0.183 mg/kg) is more than one half the laboratory's LOQ. However, because the measured concentrations of calcium and manganese in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

Soil-matrix Katahdin Sample Nos. SG8184-(24-35) were digested for ICP-MS analysis on

11/05/13 (QC Batch GK05IMS2) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8184-35 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentration of calcium (11.2 mg/kg) in the preparation blank from this batch is greater than the laboratory's LOQ, and the measured manganese concentration (0.179 mg/kg) is more than one half the laboratory's LOQ. However, because the measured concentrations of calcium and manganese in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

ICP-MS analyses of Work Order SG8184 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	**Associated Analytes**
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Solid-matrix Katahdin Sample Numbers SG8184-(2-17, 20-23) were digested for mercury analysis on 11/05/13 (QC Batch GK05HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Number SG8184-15 was prepared in duplicate and with a matrix spike in this digestion batch.

Solid-matrix Katahdin Sample Numbers SG8184-(24-35) were digested for mercury analysis on 11/07/13 (QC Batch GK0HGS1) in accordance with USEPA Method 7471B.

Aqueous-matrix Katahdin Sample Numbers SG8184-(18, 36) were digested for mercury analysis on 11/06/13 (QC Batch GK06HGW2) in accordance with USEPA Method 7471B.

Mercury analysis of the Katahdin Work Order SG8184 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG1884-15 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for potassium (24.9% RPD).

The laboratory duplicate analysis of Katahdin Sample No. SG8184-35 is within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for all analytes.

The measured recoveries of antimony (46.2%) and calcium (173.3%) in the matrix-spiked aliquot of Katahdin Sample No. SG8184-15 are outside the laboratory's acceptance criteria criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The measured recoveries of antimony (47.3%), calcium (168.2%), chromium (130.9%), lead (135.3%), and zinc (126.4%) in the matrix-spiked aliquot of Katahdin Sample No. SG8184-35 are outside the laboratory's acceptance criteria criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The serial dilution analysis of Katahdin Sample Number SG8184-15 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for barium (12.1% difference), cobalt (12.0%), magnesium (15.0%), and manganese (17.8%).

The serial dilution analysis of Katahdin Sample Number SG8184-35 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for magnesium (14.5%), and manganese (16.8%).

The measured recoveries of aluminum, calcium, copper, iron, magnesium, and manganese in the post-digestion matrix-spiked aliquot of Katahdin Sample Number SG8184-15 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

The measured recoveries of aluminum, iron, magnesium, and manganese in the post-digestion matrix-spiked aliquot of Katahdin Sample Number SG8184-35 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's method detection limit (MDL). All results were

evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the MDL is listed in the concentration column. These LOQs and MDLs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG8184 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
11.18.13

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Jennifer Obrin

From: Jalkut, Kayleen [Kayleen.Jalkut@tetratech.com]
Sent: Thursday, October 24, 2013 11:08 AM
To: Jennifer Obrin (jobrin@katahdinlab.com)
Subject: TF2, CTO WE 30, need you to discard some samples

Jen,
Please discard the GRO and ExTPH samples with the following identifiers:

TF2-004/5-SS1035-0001 SG 8184 -25
TF2-004/5-SS1041-000.7 -34
TF2-004/5-SS-DUP02-1013 -23
TF2-004/5-SS-DUP03-1013 -35

However, please analyze the PAH, metals, and total solids sample from each of the above locations

Kayleen

Kayleen Jalkut, P.G. | Geologist, Site Manager
Direct: 978.474.8417 | Main: 978.474.8400 | Fax: 978.474.8499
kayleen.jalkut@tetratech.com

Tetra Tech, Inc. | Complex World, Clear Solutions™
250 Andover Street, Suite 200 | Wilmington, MA 01887 | www.tetratech.com

PLEASE NOTE: This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2014.0.4158 / Virus Database: 3614/6775 - Release Date: 10/23/13

Jennifer Obrin

From: Seiken, Dabra [Dabra.Seiken@tetratech.com]
Sent: Friday, November 08, 2013 10:02 AM
To: Jennifer Obrin; Jalkut, Kayleen
Cc: Carper, Kelly; Samchuck, Joseph
Subject: RE: Newport non-conformance

Please re-prepare and re-analyze the samples.

Dabra I. Seiken, CG, PG

From: Jennifer Obrin [mailto:jobrin@katahdinlab.com]
Sent: Thursday, November 07, 2013 4:04 PM
To: Seiken, Dabra; Jalkut, Kayleen
Subject: Newport non-conformance

The GC lab has come to me with a non-conformance regarding the FI-PRO analysis for 4 samples from the Newport project.

SG8254-3 (TF2-004/5-SS1056-000.6) had low surrogate OTP recovery at 60%, the window is 62-109
SG8184-17 (TF2-004/5-SS1039-000.9) had low surrogate OTP recovery at 49%, the window is 62-109
SG8184-18 (TF2-SS-RB01-1013) had low surrogate OTP recovery at 80%, the window is 82-142
SG8184-27 (TF2-004/5-SS1049-000.9) had low surrogate OTP recovery at 15%, the window is 62-109

Please let me know how you would like to have the lab proceed. Hold times were 11/1 and 11/4.

Thank you,

Jennifer Obrin
Federal Programs Project Manager
Katahdin Analytical Services
A Woman-Owned Small Business Enterprise
DoD ELAP Accredited
600 Technology Way
Scarborough, Maine 04074
Direct - 207.874.2400 x17
Cell - 207.333.7469
Fax - 207.775.4029

Katahdin Analytical Services, Inc. **Sample Receipt Condition Report**

Client:	Tetra Tech	KAS PM:	JO	Sampled By:	Client
Project:		KIMS Entry By:	GN	Delivered By:	~~Client~~ KAS
KAS Work Order#:	SG8184	KIMS Review By:	JO	Received By:	DM
SDG #:		Cooler: 1 of 3		Date/Time Rec.:	10-21-13 16:20

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 1.3
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

1 jar 551035-0001 missing.

RB02; 2 Dioxin bottles, DUP03, 551041-0007 Dioxin jars in Cooler.

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: ~~FedEx~~ KAS
KAS Work Order#: SG8184	KIMS Review By: JO	Received By: DM
SDG #:	Cooler: 2 of 3	Date/Time Rec.: 10-21-13 16:20

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 2.4
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:				✓	
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

0000014

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client:	Tetra Tech	KAS PM:	JO	Sampled By:	Client
Project:		KIMS Entry By:	GN	Delivered By:	~~Client~~ KAS
KAS Work Order#:	SG8184	KIMS Review By:	JO	Received By:	DM
SDG #:		Cooler:	3 of 3	Date/Time Rec.:	10-21-13 16:20

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 2.0
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?	✓				
Soil/Sediment:					
Received in airtight container?	✓				
Received in methanol?	✓				
Methanol covering soil?	✓				
D.I. Water - Received within 48 hour HT?	✓				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9					
Cyanide – pH >12					

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

SG8184

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER No. 027651 | PAGE 1 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019 CTO WE30	Wilmington, MA	Debra Selken	978 474 8445	Katahdin Analytical Services / J. Dorin
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
		Kayleen Jalhut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		CITY, STATE
		Courier plu-hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	G	G						
									PRESERVATIVE USED		MeOH, ≤6°C		MeOH ≤6°C	≤6°C				
									TYPE OF ANALYSIS		40ml vials w/ 10ml MeOH only	8oz jar - PAH, metals, total solids	40ml vials w/ soil and MeOH (10ml) GRO	4oz jar - EXTPH, total solids				
10/18	1030	TF2-W-TB01-1013	—	—	—	QC	G	2	2	—	—	—						
10/18	1045	TF2-004/5-SS1025-000.8	SS1025	0	0.8	SO	G	1	—	1	—	—						
10/18	1055	TF2-004/5-SS1026-000.8	SS1026	0	0.8	SO	G	1	—	1	—	—						
10/18	1105	TF2-004/5-SS1024-000.6	SS1024	0	0.6	SO	G	1	—	1	—	—						
10/18	1110	TF2-004/5-SS1023-000.8	SS1023	0	0.8	SO	G	1	—	1	—	—						
10/18	1118	TF2-004/5-SS1022-000.9	SS1022	0	0.9	SO	G	1	—	1	—	—						
10/18	1130	TF2-004/5-SS1021-000.7	SS1021	0	0.7	SO	G	1	—	1	—	—						
10/18	1140	TF2-004/5-SS1020-0001	SS1020	0	1	SO	G	4	—	1	2	1						
10/18	1155	TF2-004/5-SS1032-000.9	SS1032	0	0.9	SO	G	1	—	1	—	—						
10/18	1205	TF2-004/5-SS1031-000.8	SS1031	0	0.8	SO	G	1	—	1	—	—						
10/18	0000	TF2-004/5-SS-DUP01-1013	—	—	—	SO	G	4	—	1	2	1						
10/18	1320	TF2-004/5-SS1030-000.6	SS1030	0	0.6	SO	G	1	—	1	—	—						
10/18	1330	TF2-004/5-SS1029-000.6	SS1029	0	0.6	SO	G	1	—	1	—	—						

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	10/21/13	1300	1. RECEIVED BY	10/21/13	1300
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

00006

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER NO. 027653 | PAGE 2 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03019 CB WE30	Wilmington, MA	Debra Seiken	978 474 8445	Katahdin Analytical Services / J. Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
K Jalkut, Peter Seil		Kayleen Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier plus - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
									G	G	G	G	G	P	G		
									PRESERVATIVE USED								
									≤6°C	10 ml MeOH ≤6°C	≤6°C	≤6°C	HCl ≤6°C	HNO3 ≤6°C	HCl ≤6°C		
									TYPE OF ANALYSIS								
									8021x - PAH, metals, total solids	40 ml vial w/ soil and MeOH - GRO	4oz jar - ExTPH, total solids	2 1L amber bottles - PAH	1L amber bottles w/ HCl - ExTPH	250 ml HDPE plastic - w/ HNO3 metals	40 ml vial w/ HCl - GRO		
10/18	1335	TF2-004/5-SS1028-000.8	SS1028	0	0.8	SO	G	1	1	—	—	—	—	—	—		
10/18	1345	TF2-004/5-SS1027-0001	SS1027	0	1	SO	G	11	2	6	3	—	—	—	—		Lab QC
10/18	1350	TF2-004/5-SS1040-000.9	SS1040	0	0.9	SO	G	1	1	—	—	—	—	—	—		
10/18	1400	TF2-004/5-SS1039-000.9	SS1039	0	0.9	SO	G	4	1	2	1	—	—	—	—		
10/18	1400	TF2-SS-RB01-1013	—	—	—	QC	G	7	—	—	—	2	2	1	2		
10/18	1405	TF2-W-TB02-1013	—	—	—	QC	G	2	—	—	—	—	—	—	2		KJ 10/21/13
10/18	1410	TF2-004/5-SS1038-000.7	SS1038	0	0.9	SO	G	1	1	—	—	—	—	—	—		
10/18	1415	TF2-004/5-SS1037-000.7	SS1037	0	0.7	SO	G	1	1	—	—	—	—	—	—		
10/18	1425	TF2-004/5-SS1036-000.6	SS1036	0	0.6	SO	G	1	1	—	—	—	—	—	—		
10/18	0000	TF2-004/5-SS-DUP02-1013	—	—	—	SO	G	4	1	2	1	—	—	—	—		
10/18	1445	TF2-004/5-SS1034-000.6	SS1034	0	0.6	SO	G	1	1	—	—	—	—	—	—		
10/18	1435	TF2-004/5-SS1035-0001	SS1035	0	1	SO	G	4	1	2	1	—	—	—	—		
10/18	1455	TF2-004/5-SS1033-000.8	SS1033	0	0.8	SO	G	1	1	—	—	—	—	—	—		

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: K Jalkut	10/21/13	1300	1. RECEIVED BY:		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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4/02R
FORM NO. TINUS-001

2 pages

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26580 | PAGE 3 OF 3

PROJECT NO: 112G03019 CTO WE30	FACILITY: Wilmington MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445	LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J. Obrin
SAMPLERS (SIGNATURE): K Jalkut		FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781 801 0457	ADDRESS: 600 Technology Way
		CARRIER/WAYBILL NUMBER: Courier plu-hand delivery		CITY, STATE: Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)										COMMENTS
									G	G	G	G	P						
									PRESERVATIVE USED			≤ 6°C	MeOH, ≤ 6°C	≤ 6°C	≤ 6°C	HNO3 ≤ 6°C			
									TYPE OF ANALYSIS	8oz glass jar - PAH, metals, total solids	40ml vials w/ soilt MeOH - GRO	4oz glass jar - EXTPH, total solids	1L amber glass - PAHs	250ml HDPE - metals w/HNO3					
10/21	0920	TF2-004/5-SS1049-000.9	SS1049	0	0.9	SO	G	4		1	2	1	—	—					
10/21	0930	TF2-004/5-SS1048-000.8	SS1048	0	0.8	SO	G	1		1	—	—	—	—					
10/21	0940	TF2-004/5-SS1047-000.8	SS1047	0	0.8	SO	G	1		1	—	—	—	—					
10/21	0950	TF2-004/5-SS1046-000.5	SS1046	0	0.5	SO	G	1		1	—	—	—	—					
10/21	1000	TF2-004/5-SS1045-000.5	SS1045	0	0.5	SO	G	1		1	—	—	—	—					
10/21	1010	TF2-004/5-SS1044-000.5	SS1044	0	0.5	SO	G	1		1	—	—	—	—					
10/21	1020	TF2-004/5-SS1042-000.5	SS1042	0	0.5	SO	G	1		1	—	—	—	—					
10/21	1035	TF2-004/5-SS1041-000.7	SS1041	0	0.7	SO	G	4		1	2	1	—	—					
10/21	0000	TF2-004/5-SS-DUP03-1013	—	—	—	SO	G	4		1	2	1	—	—					
10/21	1150	TF2-SS-RB02-1013	—	—	—	QC	G	3		—	—	—	2	1					

KJ 10/21/13

KJ 10/21/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: K Jalkut	10/21/13	1300	1. RECEIVED BY:		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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FORM NO. TtNUS-001

SAMPLE DATA SUMMARY PACKAGE

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	Spiked sample recovery not within control limits.
*	Duplicate sample analysis not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS
(Refer to BOD Qualifiers Page for BOD footnotes)

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1	pH
H2	DO
H3	sulfite
H4	residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG8184

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
TF2-SS-RB01-1013	SG8184-18		13.6	*	20.0	*	34.0	*
TF2-SS-RB01-1013	SG8184-18RE		77.7		72.0		98.5	
TF2-SS-RB02-1013	SG8184-36RER/		70.7		66.6		84.4	
Method Blank Sample	WG133040-1RA		60.3		79.4		101.	
Laboratory Control S	WG133040-2RA		41.0	*	46.7		61.3	
Laboratory Control S	WG133040-3RA		56.3		60.7		78.7	
Method Blank Sample	WG133367-1RA		62.1		68.7		85.0	
Laboratory Control S	WG133367-2		74.8		71.4		91.8	
Laboratory Control S	WG133367-3		73.4		74.7		85.2	

		QC Limits
2MN	2-METHYLNAPHTHALENE-D10	43-92
FLO	FLUORENE-D10	29-101
PYR	PYRENE-D10	53-166

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
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sales@katahdinlab.com

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8184

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
004/5-SS1031-000.8	SG8184-10		47.5		62.7		67.6	
004/5-SS-DUP01-1013	SG8184-11		45.5		62.2		64.7	
004/5-SS1030-000.6	SG8184-12		71.8		75.2		85.8	
004/5-SS1029-000.6	SG8184-13		58.0		71.4		80.7	
004/5-SS1028-000.8	SG8184-14		52.9		68.9		70.2	
004/5-SS1027-0001	SG8184-15		56.2		59.8		62.0	
004/5-SS1040-000.9	SG8184-16		54.5		70.2		75.7	
004/5-SS1039-000.9	SG8184-17		64.6		70.7		74.0	
004/5-SS1025-000.8	SG8184-2		49.2		63.0		81.0	
004/5-SS1038-000.7	SG8184-20		44.3		63.8		70.4	
004/5-SS1037-000.7	SG8184-21		63.3		74.4		90.6	
004/5-SS1036-000.6	SG8184-22		62.7		73.0		83.9	
004/5-SS-DUP02-1013	SG8184-23		59.4		73.0		88.5	
004/5-SS1034-000.6	SG8184-24		64.1		68.3		77.6	
004/5-SS1035-0001	SG8184-25		43.5		56.0		60.9	
004/5-SS1033-000.8	SG8184-26		62.4		63.7		61.8	
004/5-SS1049-000.9	SG8184-27		76.4		66.8		81.7	
004/5-SS1048-000.8	SG8184-28		70.5		68.5		75.9	
004/5-SS1047-000.8	SG8184-29		69.9		67.9		79.5	
004/5-SS1047-000.8	SG8184-29DL		33.4		72.2		74.9	
004/5-SS1025-000.8	SG8184-2DL		40.4		79.4		73.6	
004/5-SS1026-000.8	SG8184-3		57.3		73.8		83.8	
004/5-SS1046-000.5	SG8184-30		46.8		65.6		80.6	
004/5-SS1045-000.5	SG8184-31		49.8		71.8		84.1	
004/5-SS1044-000.5	SG8184-32		43.6		66.6		59.3	
004/5-SS1042-000.5	SG8184-33		57.2		68.7		71.5	
004/5-SS1041-000.7	SG8184-34		43.4		60.5		73.6	
004/5-SS-DUP03-1013	SG8184-35		46.4		64.3		64.8	
004/5-SS1026-000.8	SG8184-3DL		52.5		72.5		92.6	
004/5-SS1024-000.6	SG8184-4		63.2		82.6		64.1	
004/5-SS1023-000.8	SG8184-5		78.4		81.6		88.6	
004/5-SS1023-000.8	SG8184-5DL		48.2		74.6		84.7	
004/5-SS1022-000.9	SG8184-6		53.1		63.8		67.8	
004/5-SS1021-000.7	SG8184-7		72.8		80.6		94.5	
004/5-SS1021-000.7	SG8184-7DL		0.00	D	0.00	D	0.00	D
004/5-SS1020-0001	SG8184-8		52.8		72.6		79.5	

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8184

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
004/5-SS1032-000.9	SG8184-9		56.2		71.1		75.6	
Method Blank Sample	WG133048-1		58.4		59.5		76.9	
Laboratory Control S	WG133048-2		60.8		70.9		98.4	
Laboratory Control S	WG133048-3		49.4		63.0		82.6	
Matrix Spike	WG133048-4		62.6		62.1		67.6	
Matrix Spike Duplica	WG133048-5		49.5		63.8		62.7	
Method Blank Sample	WG133115-1		54.7		59.3		87.9	
Laboratory Control S	WG133115-2		40.8		51.8		74.1	
Laboratory Control S	WG133115-3		54.4		60.2		86.7	

		QC Limits
PYR	PYRENE-D10	31-128
FLO	FLUORENE-D10	20-96
2MN	2-METHYLNAPHTHALENE-D10	19-94

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services **SDG :** SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Date Analyzed :** 28-OCT-13
Lab File ID : GD307.D **Time Analyzed :** 12:46
Instrument ID : GCMS-G

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	37.3		
68	Less than 2.0% of mass 69	0.0	0.0	1
69	Less than 100.0% of mass 198	38.8		
70	Less than 2.0% of mass 69	0.2	0.50	1
127	40.0 - 60.0% of mass 198	50.3		
197	Less than 1.0% of mass 198	0.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.8		
275	10.0 - 30.0% of mass 198	24.1		
365	1.0 - 100.0% of mass 198	2.5		
441	0.0 - 100.0% of mass 443	9.5	72.29	2
442	40.0 - 100.0% of mass 198	68.0		
443	17.0 - 23.0% of mass 442	13.1	19.22	3

1-Value is % mass 69 2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG133386-4	G0105.D	10/28/13	13:07
Initial Calibration	WG133386-2	G0106.D	10/28/13	13:50
Initial Calibration	WG133386-3	G0107.D	10/28/13	14:33
Initial Calibration	WG133386-5	G0108.D	10/28/13	15:16
Initial Calibration	WG133386-6	G0109.D	10/28/13	16:00
Initial Calibration	WG133386-7	G0110.D	10/28/13	16:42
Independent Source	WG133386-8	G0111.D	10/28/13	17:25
Method Blank Sample	WG133115-1	G0112.D	10/28/13	18:08
004/5-SS1037-000.7	SG8184-21	G0113.D	10/28/13	18:50
004/5-SS1036-000.6	SG8184-22	G0114.D	10/28/13	19:32
004/5-SS-DUP02-1013	SG8184-23	G0115.D	10/28/13	20:15
004/5-SS1034-000.6	SG8184-24	G0116.D	10/28/13	20:57
004/5-SS1035-0001	SG8184-25	G0117.D	10/28/13	21:39
004/5-SS1033-000.8	SG8184-26	G0118.D	10/28/13	22:21
004/5-SS1049-000.9	SG8184-27	G0119.D	10/28/13	23:03
004/5-SS1048-000.8	SG8184-28	G0120.D	10/28/13	23:45
004/5-SS1047-000.8	SG8184-29	G0121.D	10/29/13	00:27

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GCMS-G
Lab File IDs : G0106.D G0107.D G0105.D **Column ID:**
G0108.D G0109.D G0110.D **Calibration Date(s):** 28-OCT-13 13:07
28-OCT-13 16:42

	0.200000(Level 1	0.500000(Level 2	1.0000 Level 3	3.0000 Level 4	7.0000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	1.06497	1.05566	1.19864	1.09481	0.85155	0.90595	AVG		1.02860		12.4306(	15.00000	O
2-Methylnaphthalene	0.50725	0.58686	0.70583	0.69956	0.51244	0.55802	AVG		0.59500		14.8747(	15.00000	O
Acenaphthylene	2.18443	2.23185	2.24262	2.13638	2.23732	2.23329	AVG		2.21098		1.90810	15.00000	O
Acenaphthene	1.47393	1.44211	1.41547	1.33600	1.34785	1.33838	AVG		1.39229		4.27751	15.00000	O
Fluorene	1.59872	1.58935	1.51820	1.44938	1.53554	1.51762	AVG		1.53480		3.56044	15.00000	O
Phenanthrene	1.06198	1.03384	1.17339	1.05325	1.02417	1.05783	AVG		1.06741		5.05382	15.00000	O
Anthracene	1.36663	1.31081	1.35033	1.19054	1.13441	1.18380	AVG		1.25609		7.83451	15.00000	O
Fluoranthene	1.06162	1.04573	1.08621	1.05145	0.96763	1.01737	AVG		1.03834		3.97087	15.00000	O
Pyrene	1.82799	1.71427	1.86844	1.64473	1.57012	1.54056	AVG		1.69435		7.92314	15.00000	O
Benzo(a)anthracene	1.19313	1.02825	1.05644	1.05937	1.02407	1.03368	AVG		1.06582		6.01148	15.00000	O
Chrysene	1.34886	1.24251	1.13624	1.05330	1.04604	1.03555	AVG		1.14375		11.1500(	15.00000	O
Benzo(b)fluoranthene	1.35574	1.09744	1.17286	1.09956	1.14184	1.17872	AVG		1.17436		8.12220	15.00000	O
Benzo(k)fluoranthene	1.64368	1.62986	1.38504	1.51815	1.33245	1.28684	AVG		1.46600		10.4625(	15.00000	O
Benzo(a)pyrene	1.21353	1.09190	1.07422	1.01939	1.04871	1.05514	AVG		1.08382		6.28354	15.00000	O
Indeno(1,2,3-cd)pyrene	8941	23925	43985	130954	271256	392082	LNR	-0.28153	0.71747		0.99765	0.99000	O
Dibenzo(a,h)anthracene	0.82772	0.77092	0.81515	0.64588	0.74345	0.76936	AVG		0.76208		8.52510	15.00000	O
Benzo(g,h,i)perylene	1.00978	0.89881	0.95292	0.74769	0.83538	0.85334	AVG		0.88299		10.4621(	15.00000	O
2-Methylnaphthalene-D10	14211	34811	61708	187383	456539	593417	QUA	-0.13775	2.04958	0.05747	0.99590	0.99000	
Fluorene-D10	0.95505	0.96730	0.94487	0.90081	0.93389	0.94066	AVG		0.94043		2.40969	15.00000	
Pyrene-D10	1.15733	1.19936	1.10313	1.00993	0.99593	0.97395	AVG		1.07327		8.71196	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : GD308.D
Instrument ID : GCMS-G

SDG : SG8184
Date Analyzed : 29-OCT-13
Time Analyzed : 11:37

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	39.4		
68	Less than 2.0% of mass 69	0.0	0.0	1
69	Less than 100.0% of mass 198	40.7		
70	Less than 2.0% of mass 69	0.3	0.77	1
127	40.0 - 60.0% of mass 198	50.4		
197	Less than 1.0% of mass 198	0.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.5		
275	10.0 - 30.0% of mass 198	25.3		
365	1.0 - 100.0% of mass 198	2.7		
441	0.0 - 100.0% of mass 443	9.7	72.34	2
442	40.0 - 100.0% of mass 198	68.4		
443	17.0 - 23.0% of mass 442	13.4	19.60	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG133427-2	G0122.D	10/29/13	11:56
Method Blank Sample	WG133048-1	G0123.D	10/29/13	12:39
Laboratory Control S	WG133048-2	G0124.D	10/29/13	13:22
Laboratory Control S	WG133048-3	G0125.D	10/29/13	14:05
Laboratory Control S	WG133115-2	G0126.D	10/29/13	14:48
Laboratory Control S	WG133115-3	G0127.D	10/29/13	15:31
TF2-SS-RB01-1013	SG8184-18RE	G0128.D	10/29/13	16:15
004/5-SS1041-000.7	SG8184-34	G0130.D	10/29/13	17:39
004/5-SS1045-000.5	SG8184-31	G0132.D	10/29/13	19:03
004/5-SS1044-000.5	SG8184-32	G0133.D	10/29/13	19:45
004/5-SS1042-000.5	SG8184-33	G0134.D	10/29/13	20:27
004/5-SS1046-000.5	SG8184-30	G0135.D	10/29/13	21:09
004/5-SS1025-000.8	SG8184-2	G0136.D	10/29/13	21:51
004/5-SS1026-000.8	SG8184-3	G0137.D	10/29/13	22:33
004/5-SS1024-000.6	SG8184-4	G0138.D	10/29/13	23:15

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG133427-2 **Analytical Date:** 10/29/13 11:56
Lab File ID : G0122.D **Instrument ID:** GCMS-G
Initial Calibration Date(s): 10/28/13 13:07 10/28/13 16:42 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
21 Naphthalene	1.02860	1.00582	1.00582	0.010	-2.21397	20.00000	Averaged	
27 2-Methylnaphthalene	0.59500	0.57488	0.57488	0.010	-3.38010	20.00000	Averaged	
39 Acenaphthylene	2.21098	2.19187	2.19187	0.010	-0.86462	20.00000	Averaged	
42 Acenaphthene	1.39229	1.38379	1.38379	0.010	-0.61016	20.01000	Averaged	
50 Fluorene	1.53480	1.49356	1.49356	0.010	-2.68706	20.00000	Averaged	
60 Phenanthrene	1.06741	1.00351	1.00351	0.010	-5.98659	20.00000	Averaged	
61 Anthracene	1.25609	1.31010	1.31010	0.010	4.30003	20.00000	Averaged	
64 Fluoranthene	1.03834	0.88682	0.88682	0.010	-14.59211	20.01000	Averaged	
66 Pyrene	1.69435	2.01873	2.01873	0.010	19.14478	20.00000	Averaged	
68 Benzo(a)anthracene	1.06582	0.91970	0.91970	0.010	-13.70992	20.00000	Averaged	
70 Chrysene	1.14375	1.24577	1.24577	0.010	8.91996	20.00000	Averaged	
74 Benzo(b)fluoranthene	1.17436	1.00749	1.00749	0.010	-14.20943	20.00000	Averaged	
75 Benzo(k)fluoranthene	1.46600	1.57387	1.57387	0.010	7.35755	20.00000	Averaged	
76 Benzo(a)pyrene	1.08382	1.04935	1.04935	0.010	-3.17975	20.01000	Averaged	
78 Indeno(1,2,3-cd)pyrene	1.00000	1.31280	1.10349	0.010	31.28034	20.00000	Linear	*
79 Dibenzo(a,h)anthracene	0.76208	0.87887	0.87887	0.010	15.32536	20.00000	Averaged	
80 Benzo(g,h,i)perylene	0.88299	0.98910	0.98910	0.010	12.01794	20.00000	Averaged	
26 2-Methylnaphthalene-D10	1.00000	0.96933	0.51733	0.010	-3.06705	20.00000	Quadratic	
48 Fluorene-D10	0.94043	0.90850	0.90850	0.010	-3.39538	20.00000	Averaged	
65 Pyrene-D10	1.07327	1.29687	1.29687	0.010	20.83371	20.00000	Averaged	*

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services **SDG :** SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Date Analyzed :** 30-OCT-13
Lab File ID : GD309.D **Time Analyzed :** 09:57
Instrument ID : GCMS-G

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	42.9		
68	Less than 2.0% of mass 69	0.2	0.45	1
69	Less than 100.0% of mass 198	45.1		
70	Less than 2.0% of mass 69	0.3	0.64	1
127	40.0 - 60.0% of mass 198	56.3		
197	Less than 1.0% of mass 198	0.9		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.9		
275	10.0 - 30.0% of mass 198	24.0		
365	1.0 - 100.0% of mass 198	2.3		
441	0.0 - 100.0% of mass 443	8.9	74.68	2
442	40.0 - 100.0% of mass 198	59.9		
443	17.0 - 23.0% of mass 442	11.9	19.81	3

1-Value is % mass 69 2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG133479-2	G0144.D	10/30/13	10:25
Laboratory Control S	WG133367-2	G0146.D	10/30/13	11:51
Laboratory Control S	WG133367-3	G0147.D	10/30/13	12:35
TF2-SS-RB01-1013	SG8184-18	G0148.D	10/30/13	13:18
TF2-SS-RB02-1013	SG8184-36RERA	G0150.D	10/30/13	14:44
004/5-SS1025-000.8	SG8184-2DL	G0152.D	10/30/13	16:10
004/5-SS1026-000.8	SG8184-3DL	G0153.D	10/30/13	16:52
004/5-SS1022-000.9	SG8184-6	G0154.D	10/30/13	17:34
004/5-SS1020-0001	SG8184-8	G0155.D	10/30/13	18:16
004/5-SS1031-000.8	SG8184-10	G0156.D	10/30/13	18:58
004/5-SS-DUP01-1013	SG8184-11	G0157.D	10/30/13	19:40
004/5-SS1032-000.9	SG8184-9	G0158.D	10/30/13	20:22
004/5-SS1038-000.7	SG8184-20	G0159.D	10/30/13	21:04
004/5-SS1023-000.8	SG8184-5	G0160.D	10/30/13	21:46

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG133479-2 **Analytical Date:** 10/30/13 10:25
Lab File ID : G0144.D **Instrument ID:** GCMS-G
Initial Calibration Date(s): 10/28/13 13:07 10/28/13 16:42 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
21 Naphthalene	1.02860	1.06066	1.06066	0.010	3.11707	20.00000	Averaged	
27 2-Methylnaphthalene	0.59500	0.55953	0.55953	0.010	-5.96095	20.00000	Averaged	
39 Acenaphthylene	2.21098	2.20278	2.20278	0.010	-0.37106	20.00000	Averaged	
42 Acenaphthene	1.39229	1.42283	1.42283	0.010	2.19374	20.01000	Averaged	
50 Fluorene	1.53480	1.53401	1.53401	0.010	-0.05131	20.00000	Averaged	
60 Phenanthrene	1.06741	0.99085	0.99085	0.010	-7.17226	20.00000	Averaged	
61 Anthracene	1.25609	1.36270	1.36270	0.010	8.48736	20.00000	Averaged	
64 Fluoranthene	1.03834	0.97579	0.97579	0.010	-6.02404	20.01000	Averaged	
66 Pyrene	1.69435	1.89912	1.89912	0.010	12.08520	20.00000	Averaged	
68 Benzo(a)anthracene	1.06582	1.00931	1.00931	0.010	-5.30272	20.00000	Averaged	
70 Chrysene	1.14375	1.38315	1.38315	0.010	20.93133	20.00000	Averaged	*
74 Benzo(b)fluoranthene	1.17436	0.99557	0.99557	0.010	-15.22476	20.00000	Averaged	
75 Benzo(k)fluoranthene	1.46600	1.73530	1.73530	0.010	18.36935	20.00000	Averaged	
76 Benzo(a)pyrene	1.08382	1.04666	1.04666	0.010	-3.42849	20.01000	Averaged	
78 Indeno(1,2,3-cd)pyrene	1.00000	0.95480	0.84663	0.010	-4.51973	20.00000	Linear	
79 Dibenzo(a,h)anthracene	0.76208	0.67629	0.67629	0.010	-11.25784	20.00000	Averaged	
80 Benzo(g,h,i)perylene	0.88299	0.77704	0.77704	0.010	-11.99869	20.00000	Averaged	
26 2-Methylnaphthalene-D10	1.00000	0.95976	0.51282	0.010	-4.02381	20.00000	Quadratic	
48 Fluorene-D10	0.94043	0.92922	0.92922	0.010	-1.19191	20.00000	Averaged	
65 Pyrene-D10	1.07327	1.18107	1.18107	0.010	10.04346	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : GD310.D
Instrument ID : GCMS-G

SDG : SG8184
Date Analyzed : 31-OCT-13
Time Analyzed : 09:42

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	39.6		
68	Less than 2.0% of mass 69	0.0	0.0	1
69	Less than 100.0% of mass 198	41.5		
70	Less than 2.0% of mass 69	0.1	0.14	1
127	40.0 - 60.0% of mass 198	52.8		
197	Less than 1.0% of mass 198	0.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.7		
275	10.0 - 30.0% of mass 198	22.9		
365	1.0 - 100.0% of mass 198	2.6		
441	0.0 - 100.0% of mass 443	9.5	71.13	2
442	40.0 - 100.0% of mass 198	64.8		
443	17.0 - 23.0% of mass 442	13.4	20.63	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG133544-2	G0161.D	10/31/13	10:03
Method Blank Sample	WG133367-1RA	G0162.D	10/31/13	10:47
004/5-SS1027-0001	SG8184-15	G0165.D	10/31/13	12:56
Matrix Spike	WG133048-4	G0166.D	10/31/13	13:39
Matrix Spike Duplica	WG133048-5	G0167.D	10/31/13	14:22
004/5-SS-DUP03-1013	SG8184-35	G0168.D	10/31/13	15:05
004/5-SS1023-000.8	SG8184-5DL	G0169.D	10/31/13	15:48
004/5-SS1047-000.8	SG8184-29DL	G0170.D	10/31/13	16:31
004/5-SS1028-000.8	SG8184-14	G0171.D	10/31/13	17:13
004/5-SS1039-000.9	SG8184-17	G0173.D	10/31/13	18:38
004/5-SS1040-000.9	SG8184-16	G0174.D	10/31/13	19:21
004/5-SS1029-000.6	SG8184-13	G0175.D	10/31/13	20:03
004/5-SS1030-000.6	SG8184-12	G0176.D	10/31/13	20:46
004/5-SS1021-000.7	SG8184-7	G0177.D	10/31/13	21:28

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG133544-2 **Analytical Date:** 10/31/13 10:03
Lab File ID : G0161.D **Instrument ID:** GCMS-G
Initial Calibration Date(s): 10/28/13 13:07 10/28/13 16:42 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
21 Naphthalene	1.02860	1.06424	1.06424	0.010	3.46509	20.00000	Averaged
27 2-Methylnaphthalene	0.59500	0.58665	0.58665	0.010	-1.40176	20.00000	Averaged
39 Acenaphthylene	2.21098	2.18212	2.18212	0.010	-1.30552	20.00000	Averaged
42 Acenaphthene	1.39229	1.38209	1.38209	0.010	-0.73225	20.01000	Averaged
50 Fluorene	1.53480	1.44434	1.44434	0.010	-5.89398	20.00000	Averaged
60 Phenanthrene	1.06741	1.01829	1.01829	0.010	-4.60158	20.00000	Averaged
61 Anthracene	1.25609	1.30910	1.30910	0.010	4.22053	20.00000	Averaged
64 Fluoranthene	1.03834	1.04742	1.04742	0.010	0.87539	20.01000	Averaged
66 Pyrene	1.69435	1.75254	1.75254	0.010	3.43426	20.00000	Averaged
68 Benzo(a)anthracene	1.06582	0.96911	0.96911	0.010	-9.07450	20.00000	Averaged
70 Chrysene	1.14375	1.21815	1.21815	0.010	6.50462	20.00000	Averaged
74 Benzo(b)fluoranthene	1.17436	1.11680	1.11680	0.010	-4.90141	20.00000	Averaged
75 Benzo(k)fluoranthene	1.46600	1.37971	1.37971	0.010	-5.88658	20.00000	Averaged
76 Benzo(a)pyrene	1.08382	1.09115	1.09115	0.010	0.67702	20.01000	Averaged
78 Indeno(1,2,3-cd)pyrene	1.00000	1.15303	0.98886	0.010	15.30326	20.00000	Linear
79 Dibenzo(a,h)anthracene	0.76208	0.79365	0.79365	0.010	4.14251	20.00000	Averaged
80 Benzo(g,h,i)perylene	0.88299	0.87544	0.87544	0.010	-0.85446	20.00000	Averaged
26 2-Methylnaphthalene-D10	1.00000	0.94225	0.50457	0.010	-5.77499	20.00000	Quadratic
48 Fluorene-D10	0.94043	0.94441	0.94441	0.010	0.42310	20.00000	Averaged
65 Pyrene-D10	1.07327	1.03034	1.03034	0.010	-4.00009	20.00000	Averaged

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : GD312.D
Instrument ID : GCMS-G

SDG : SG8184
Date Analyzed : 01-NOV-13
Time Analyzed : 13:11

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	40.1		
68	Less than 2.0% of mass 69	0.0	0.0	1
69	Less than 100.0% of mass 198	40.9		
70	Less than 2.0% of mass 69	0.2	0.58	1
127	40.0 - 60.0% of mass 198	53.1		
197	Less than 1.0% of mass 198	0.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.8		
275	10.0 - 30.0% of mass 198	22.7		
365	1.0 - 100.0% of mass 198	2.5		
441	0.0 - 100.0% of mass 443	9.1	78.96	2
442	40.0 - 100.0% of mass 198	65.5		
443	17.0 - 23.0% of mass 442	11.5	17.54	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG133627-2	G0181.D	11/01/13	13:30
004/5-SS1021-000.7	SG8184-7DL	G0182.D	11/01/13	14:13

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG133627-2 **Analytical Date:** 11/01/13 13:30
Lab File ID : G0181.D **Instrument ID:** GCMS-G
Initial Calibration Date(s): 10/28/13 13:07 10/28/13 16:42 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
21 Naphthalene	1.02860	1.26042	1.26042	0.010	22.53799	20.00000	Averaged	*
27 2-Methylnaphthalene	0.59500	0.64766	0.64766	0.010	8.85200	20.00000	Averaged	
39 Acenaphthylene	2.21098	2.24748	2.24748	0.010	1.65068	20.00000	Averaged	
42 Acenaphthene	1.39229	1.39373	1.39373	0.010	0.10332	20.01000	Averaged	
50 Fluorene	1.53480	1.42387	1.42387	0.010	-7.22758	20.00000	Averaged	
60 Phenanthrene	1.06741	1.02479	1.02479	0.010	-3.99256	20.00000	Averaged	
61 Anthracene	1.25609	1.33569	1.33569	0.010	6.33736	20.00000	Averaged	
64 Fluoranthene	1.03834	0.91186	0.91186	0.010	-12.18081	20.01000	Averaged	
66 Pyrene	1.69435	1.91539	1.91539	0.010	13.04546	20.00000	Averaged	
68 Benzo(a)anthracene	1.06582	0.93204	0.93204	0.010	-12.55223	20.00000	Averaged	
70 Chrysene	1.14375	1.29603	1.29603	0.010	13.31401	20.00000	Averaged	
74 Benzo(b)fluoranthene	1.17436	1.02291	1.02291	0.010	-12.89612	20.00000	Averaged	
75 Benzo(k)fluoranthene	1.46600	1.52971	1.52971	0.010	4.34563	20.00000	Averaged	
76 Benzo(a)pyrene	1.08382	1.01883	1.01883	0.010	-5.99640	20.01000	Averaged	
78 Indeno(1,2,3-cd)pyrene	1.00000	1.16545	0.99777	0.010	16.54528	20.00000	Linear	
79 Dibenzo(a,h)anthracene	0.76208	0.79675	0.79675	0.010	4.54911	20.00000	Averaged	
80 Benzo(g,h,i)perylene	0.88299	0.86220	0.86220	0.010	-2.35393	20.00000	Averaged	
26 2-Methylnaphthalene-D10	1.00000	1.07498	0.56699	0.010	7.49838	20.00000	Quadratic	
48 Fluorene-D10	0.94043	0.87612	0.87612	0.010	-6.83799	20.00000	Averaged	
65 Pyrene-D10	1.07327	1.20463	1.20463	0.010	12.23924	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : GD318.D
Instrument ID : GCMS-G

SDG : SG8184
Date Analyzed : 11-NOV-13
Time Analyzed : 13:06

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	40.4		
68	Less than 2.0% of mass 69	0.1	0.29	1
69	Less than 100.0% of mass 198	41.9		
70	Less than 2.0% of mass 69	0.1	0.23	1
127	40.0 - 60.0% of mass 198	53.8		
197	Less than 1.0% of mass 198	0.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.7		
275	10.0 - 30.0% of mass 198	23.4		
365	1.0 - 100.0% of mass 198	2.2		
441	0.0 - 100.0% of mass 443	9.6	78.88	2
442	40.0 - 100.0% of mass 198	62.9		
443	17.0 - 23.0% of mass 442	12.2	19.43	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG134246-2	G0263.D	11/11/13	14:07
Initial Calibration	WG134246-3	G0264.D	11/11/13	14:50
Initial Calibration	WG134246-4	G0265.D	11/11/13	15:32
Initial Calibration	WG134246-5	G0266.D	11/11/13	16:16
Initial Calibration	WG134246-6	G0267.D	11/11/13	16:58
Initial Calibration	WG134246-7	G0268.D	11/11/13	17:41
Independent Source	WG134246-8	G0269.D	11/11/13	18:23
Method Blank Sample	WG133040-1RA	G0271.D	11/11/13	19:48
Laboratory Control S	WG133040-2RA	G0272.D	11/11/13	20:30
Laboratory Control S	WG133040-3RA	G0273.D	11/11/13	21:12

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GCMS-G
Lab File IDs : G0263.D G0264.D G0265.D G0266.D G0267.D G0268.D **Column ID:**
Calibration Date(s): 11-NOV-13 14:07 11-NOV-13 17:41

	0.200000(Level 1	0.500000(Level 2	1.0000 Level 3	3.0000 Level 4	7.0000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.97914	1.11006	1.18207	1.19809	1.05172	1.09587	AVG		1.10282		7.40742	15.00000	O
2-Methylnaphthalene	0.67783	0.78988	0.82942	0.76511	0.68557	0.71277	AVG		0.74343		8.20718	15.00000	O
Acenaphthylene	1.91326	2.13692	2.10400	2.14361	1.98768	2.23355	AVG		2.08650		5.56919	15.00000	O
Acenaphthene	1.34269	1.39000	1.33634	1.31487	1.23527	1.43754	AVG		1.34278		5.11511	15.00000	O
Fluorene	1.34639	1.39542	1.38180	1.33846	1.34672	1.56835	AVG		1.39619		6.25263	15.00000	O
Phenanthrene	1.02250	1.09031	1.10491	1.03396	1.00634	1.19404	AVG		1.07534		6.50312	15.00000	O
Anthracene	0.89770	1.02287	1.05953	1.03018	0.99798	1.11009	AVG		1.01973		6.96625	15.00000	O
Fluoranthene	0.93882	1.04013	1.03455	1.03103	1.05042	1.13360	AVG		1.03809		5.96884	15.00000	O
Pyrene	9878	28726	49178	162992	446284	591744	LNR	-0.16529	1.29277		0.99553	0.99000	O
Benzo(a)anthracene	0.78211	0.93743	0.92230	0.83191	0.84731	0.92819	AVG		0.87487		7.26783	15.00000	O
Chrysene	0.80970	1.33255	1.05052	0.87711	0.76558	0.83283	AVG		0.94471		22.6540-	15.00000	W(
Benzo(b)fluoranthene	1.01599	1.11645	1.16807	0.97026	1.08451	1.01810	AVG		1.06223		6.94139	15.00000	O
Benzo(k)fluoranthene	1.37002	1.44529	1.48687	1.16983	1.27102	1.25123	AVG		1.33237		9.18022	15.00000	O
Benzo(a)pyrene	0.73962	0.86393	1.01904	0.85988	1.05576	0.99054	AVG		0.92146		13.0679:	15.00000	O
Indeno(1,2,3-cd)pyrene	1704	4581	8607	44962	153481	205531	LNR	0.26524	0.59663		0.99667	0.99000	O
Dibenzo(a,h)anthracene	2040	6057	11447	53321	179843	222315	LNR	0.14356	0.65676		0.99635	0.99000	O
Benzo(g,h,i)perylene	0.79942	0.87726	0.89846	0.75971	0.82801	0.76797	AVG		0.82181		6.93612	15.00000	O
2-Methylnaphthalene-D10	0.50786	0.56912	0.56751	0.50031	0.45020	0.46876	AVG		0.51063		9.66406	15.00000	
Fluorene-D10	0.84895	0.83010	0.82312	0.78971	0.81012	0.93386	AVG		0.83931		6.00271	15.00000	
Pyrene-D10	0.79883	0.98599	0.99383	0.81593	0.75323	0.82639	AVG		0.86237		11.8214:	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Method Blank Summary

Lab Name : Katahdin Analytical Services **SDG :** SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133115-1
Lab File ID : G0112.D **Date Extracted :** 24-OCT-13
Instrument ID : GCMS-G **Date Analyzed :** 28-OCT-13
Matrix : SL **Time Analyzed :** 18:08

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
004/5-SS1037-000.7	SG8184-21	G0113.D	10/28/13	18:50
004/5-SS1036-000.6	SG8184-22	G0114.D	10/28/13	19:32
004/5-SS-DUP02-1013	SG8184-23	G0115.D	10/28/13	20:15
004/5-SS1034-000.6	SG8184-24	G0116.D	10/28/13	20:57
004/5-SS1035-0001	SG8184-25	G0117.D	10/28/13	21:39
004/5-SS1033-000.8	SG8184-26	G0118.D	10/28/13	22:21
004/5-SS1049-000.9	SG8184-27	G0119.D	10/28/13	23:03
004/5-SS1048-000.8	SG8184-28	G0120.D	10/28/13	23:45
004/5-SS1047-000.8	SG8184-29	G0121.D	10/29/13	00:27
Laboratory Control S	WG133115-2	G0126.D	10/29/13	14:48
Laboratory Control S	WG133115-3	G0127.D	10/29/13	15:31
004/5-SS1041-000.7	SG8184-34	G0130.D	10/29/13	17:39
004/5-SS1045-000.5	SG8184-31	G0132.D	10/29/13	19:03
004/5-SS1044-000.5	SG8184-32	G0133.D	10/29/13	19:45
004/5-SS1042-000.5	SG8184-33	G0134.D	10/29/13	20:27
004/5-SS1046-000.5	SG8184-30	G0135.D	10/29/13	21:09
004/5-SS1038-000.7	SG8184-20	G0159.D	10/30/13	21:04
004/5-SS-DUP03-1013	SG8184-35	G0168.D	10/31/13	15:05
004/5-SS1047-000.8	SG8184-29DL	G0170.D	10/31/13	16:31

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ANALYTICAL SERVICES

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Report of Analytical Results

Client:
Lab ID: WG133115-1
Client ID: Method Blank Sample
Project:
SDG: SG8184
Lab File ID: G0112.D

Sample Date:
Received Date:
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115

Analysis Date: 28-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		54.7	%					
Fluorene-D10		59.3	%					
Pyrene-D10		87.9	%					

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LCS/LCSD Recovery Report

LCS ID: WG133115-2
LCSD ID: WG133115-3
Project:
SDG: SG8184
Report Date: 12-NOV-13
LCS File ID: G0126.D

Received Date:
Extract Date: 24-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133115
LCSD File ID: G0127.D

Analysis Date: 29-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	35.2	52.8	36.8	55.2	ug/Kgdrywt	4	30	10-129
2-Methylnaphthalene	66.7	39.2	58.8	45.0	67.5	ug/Kgdrywt	14	30	10-152
Acenaphthylene	66.7	30.4	45.6	30.5	45.7	ug/Kgdrywt	0	30	25-94
Acenaphthene	66.7	33.6	50.4	33.6	50.4	ug/Kgdrywt	0	30	33-98
Fluorene	66.7	34.5	51.7	35.8	53.7	ug/Kgdrywt	4	30	40-92
Phenanthrene	66.7	45.9	68.8	47.6	71.4	ug/Kgdrywt	4	30	46-96
Anthracene	66.7	47.4	71.1	49.1	73.6	ug/Kgdrywt	4	30	34-96
Fluoranthene	66.7	48.4	72.6	49.3	73.9	ug/Kgdrywt	2	30	38-116
Pyrene	66.7	54.0	81.0	57.2	85.8	ug/Kgdrywt	6	30	35-111
Benzo(a)anthracene	66.7	44.9	67.3	43.4	65.1	ug/Kgdrywt	3	30	48-100
Chrysene	66.7	50.6	75.9	50.6	75.9	ug/Kgdrywt	0	30	46-101
Benzo(b)Fluoranthene	66.7	41.8	62.7	41.7	62.5	ug/Kgdrywt	0	30	53-100
Benzo(k)fluoranthene	66.7	51.0	76.5	51.9	77.8	ug/Kgdrywt	2	30	49-96
Benzo(a)pyrene	66.7	42.7	64.0	40.7	61.0	ug/Kgdrywt	5	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	60.2	90.2	57.3	85.9	ug/Kgdrywt	5	30	50-105
Dibenzo(a,h)anthracene	66.7	50.0	75.0	51.8	77.7	ug/Kgdrywt	4	30	55-105
Benzo(g,h,i)perylene	66.7	37.5	56.2	34.6	51.9*	ug/Kgdrywt	8	30	53-103
2-Methylnaphthalene-D10			40.8		54.4				19-94
Fluorene-D10			51.8		60.2				20-96
Pyrene-D10			74.1		86.7				31-128

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Method Blank Summary

Lab Name : Katahdin Analytical Services **SDG :** SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133048-1
Lab File ID : G0123.D **Date Extracted :** 23-OCT-13
Instrument ID : GCMS-G **Date Analyzed :** 29-OCT-13
Matrix : SL **Time Analyzed :** 12:39

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133048-2	G0124.D	10/29/13	13:22
Laboratory Control S	WG133048-3	G0125.D	10/29/13	14:05
004/5-SS1025-000.8	SG8184-2	G0136.D	10/29/13	21:51
004/5-SS1026-000.8	SG8184-3	G0137.D	10/29/13	22:33
004/5-SS1024-000.6	SG8184-4	G0138.D	10/29/13	23:15
004/5-SS1025-000.8	SG8184-2DL	G0152.D	10/30/13	16:10
004/5-SS1026-000.8	SG8184-3DL	G0153.D	10/30/13	16:52
004/5-SS1022-000.9	SG8184-6	G0154.D	10/30/13	17:34
004/5-SS1020-0001	SG8184-8	G0155.D	10/30/13	18:16
004/5-SS1031-000.8	SG8184-10	G0156.D	10/30/13	18:58
004/5-SS-DUP01-1013	SG8184-11	G0157.D	10/30/13	19:40
004/5-SS1032-000.9	SG8184-9	G0158.D	10/30/13	20:22
004/5-SS1023-000.8	SG8184-5	G0160.D	10/30/13	21:46
004/5-SS1027-0001	SG8184-15	G0165.D	10/31/13	12:56
Matrix Spike	WG133048-4	G0166.D	10/31/13	13:39
Matrix Spike Duplica	WG133048-5	G0167.D	10/31/13	14:22
004/5-SS1023-000.8	SG8184-5DL	G0169.D	10/31/13	15:48
004/5-SS1028-000.8	SG8184-14	G0171.D	10/31/13	17:13
004/5-SS1039-000.9	SG8184-17	G0173.D	10/31/13	18:38
004/5-SS1040-000.9	SG8184-16	G0174.D	10/31/13	19:21
004/5-SS1029-000.6	SG8184-13	G0175.D	10/31/13	20:03
004/5-SS1030-000.6	SG8184-12	G0176.D	10/31/13	20:46
004/5-SS1021-000.7	SG8184-7	G0177.D	10/31/13	21:28
004/5-SS1021-000.7	SG8184-7DL	G0182.D	11/01/13	14:13

Report of Analytical Results

Client:
Lab ID: WG133048-1
Client ID: Method Blank Sample
Project:
SDG: SG8184
Lab File ID: G0123.D

Sample Date:
Received Date:
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 29-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		58.4	%					
Fluorene-D10		59.5	%					
Pyrene-D10		76.9	%					

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LCS/LCSD Recovery Report

LCS ID: WG133048-2
LCSD ID: WG133048-3
Project:
SDG: SG8184
Report Date: 12-NOV-13
LCS File ID: G0124.D

Received Date:
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048
LCSD File ID: G0125.D

Analysis Date: 29-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	46.5	69.7	39.7	59.5	ug/Kgdrywt	16	30	10-129
2-Methylnaphthalene	66.7	50.9	76.3	42.8	64.2	ug/Kgdrywt	17	30	10-152
Acenaphthylene	66.7	38.7	58.0	34.2	51.3	ug/Kgdrywt	12	30	25-94
Acenaphthene	66.7	42.2	63.3	37.3	55.9	ug/Kgdrywt	12	30	33-98
Fluorene	66.7	43.8	65.7	38.6	57.9	ug/Kgdrywt	13	30	40-92
Phenanthrene	66.7	56.1	84.1	51.8	77.7	ug/Kgdrywt	8	30	46-96
Anthracene	66.7	54.7	82.0	52.3	78.4	ug/Kgdrywt	4	30	34-96
Fluoranthene	66.7	56.3	84.4	54.4	81.6	ug/Kgdrywt	3	30	38-116
Pyrene	66.7	66.4	99.6	51.2	76.8	ug/Kgdrywt	26	30	35-111
Benzo(a)anthracene	66.7	50.1	75.1	44.0	66.0	ug/Kgdrywt	13	30	48-100
Chrysene	66.7	57.8	86.6	45.4	68.1	ug/Kgdrywt	24	30	46-101
Benzo(b)Fluoranthene	66.7	58.8	88.2	48.2	72.3	ug/Kgdrywt	20	30	53-100
Benzo(k)fluoranthene	66.7	53.1	79.6	43.0	64.5	ug/Kgdrywt	21	30	49-96
Benzo(a)pyrene	66.7	49.5	74.2	41.0	61.5	ug/Kgdrywt	19	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	68.2	102.	58.9	88.3	ug/Kgdrywt	15	30	50-105
Dibenzo(a,h)anthracene	66.7	56.8	85.2	52.7	79.0	ug/Kgdrywt	7	30	55-105
Benzo(g,h,i)perylene	66.7	38.0	57.0	34.6	51.9*	ug/Kgdrywt	9	30	53-103
2-Methylnaphthalene-D10			60.8		49.4				19-94
Fluorene-D10			70.9		63.0				20-96
Pyrene-D10			98.4		82.6				31-128

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ANALYTICAL SERVICES

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MS/MSD Recovery Report

MS ID: WG133048-4
MSD ID: WG133048-5
Sample ID: SG8184-15
Client ID: 004/5-SS1027-0001
Project:
SDG: SG8184
MS File ID: G0166.D

Received Date:
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048
Report Date: 12-NOV-13
MSD File ID: G0167.D

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	62.0	68.7	ug/Kgdrywt	U10.	38.	44.	61.2	63.9	14	30	10-129
2-Methylnaphthalene	62.0	68.7	ug/Kgdrywt	U10.	40.	46.	63.8	67.7	16	30	10-152
Acenaphthylene	62.0	68.7	ug/Kgdrywt	U10.	32.	36.	50.8	53.1	15	30	25-94
Acenaphthene	62.0	68.7	ug/Kgdrywt	U10.	33.	39.	53.8	57.4	16	30	33-98
Fluorene	62.0	68.7	ug/Kgdrywt	U10.	35.	42.	56.4	60.4	17	30	40-92
Phenanthrene	62.0	68.7	ug/Kgdrywt	J3.4	46.	55.	68.9	74.9	17	30	46-96
Anthracene	62.0	68.7	ug/Kgdrywt	U10.	43.	49.	68.7	71.3	14	30	34-96
Fluoranthene	62.0	68.7	ug/Kgdrywt	J8.2	51.	63.	69.2	79.3	20	30	38-116
Pyrene	62.0	68.7	ug/Kgdrywt	J6.5	45.	48.	62.6	61.0	7	30	35-111
Benzo(a)anthracene	62.0	68.7	ug/Kgdrywt	J2.9	39.	45.	57.5	61.5	16	30	48-100
Chrysene	62.0	68.7	ug/Kgdrywt	J4.4	43.	46.	61.7	61.0	8	30	46-101
Benzo(b)Fluoranthene	62.0	68.7	ug/Kgdrywt	J5.2	39.	45.	53.9	57.8	15	30	53-100
Benzo(k)fluoranthene	62.0	68.7	ug/Kgdrywt	U10.	37.	40.	60.0	57.6	6	30	49-96
Benzo(a)pyrene	62.0	68.7	ug/KgdrywtUMM	10.	32.	35.	51.7*	51.4*	9	30	61-101
ndeno(1,2,3-cd)pyrene	62.0	68.7	ug/Kgdrywt	U10.	36.	36.	57.4	53.1	2	30	50-105
Dibenzo(a,h)anthracene	62.0	68.7	ug/KgdrywtUMM	10.	31.	34.	50.4*	48.9*	7	30	55-105
Benzo(g,h,i)perylene	62.0	68.7	ug/KgdrywtUMM	10.	21.	22.	33.8*	31.4*	3	30	53-103
-Methylnaphthalene-D10							62.6	49.5			19-94
Fluorene-D10							62.1	63.8			20-96
Pyrene-D10							67.6	62.7			31-128

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Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133367-1RA
Lab File ID : G0162.D
Date Extracted : 28-OCT-13
Instrument ID : GCMS-G
Date Analyzed : 31-OCT-13
Matrix : AQ
Time Analyzed : 10:47

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
TF2-SS-RB01-1013	SG8184-18RE	G0128.D	10/29/13	16:15
Laboratory Control S	WG133367-2	G0146.D	10/30/13	11:51
Laboratory Control S	WG133367-3	G0147.D	10/30/13	12:35
TF2-SS-RB02-1013	SG8184-36RERA	G0150.D	10/30/13	14:44

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG133367-1RA
Client ID: Method Blank Sample
Project:
SDG: SG8184
Lab File ID: G0162.D

Sample Date:
Received Date:
Extract Date: 28-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133367

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		62.1	%					
Fluorene-D10		68.7	%					
pyrene-d10		85.0	%					

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ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG133367-2
LCSD ID: WG133367-3
Project:
SDG: SG8184
Report Date: 12-NOV-13
LCS File ID: G0146.D

Received Date:
Extract Date: 28-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133367
LCSD File ID: G0147.D

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	2.00	1.36	68.0	1.42	71.0	ug/L	4	20	46-84
2-Methylnaphthalene	2.00	1.44	72.0	1.49	74.5	ug/L	3	20	51-114
Acenaphthylene	2.00	1.17	58.5	1.21	60.5	ug/L	3	20	55-105
Acenaphthene	2.00	1.26	63.0	1.30	65.0	ug/L	3	20	53-90
Fluorene	2.00	1.33	66.5	1.34	67.0	ug/L	1	20	53-95
Phenanthrene	2.00	1.70	85.0	1.66	83.0	ug/L	2	20	73-100
Anthracene	2.00	1.85	92.5	1.77	88.5	ug/L	4	20	70-95
Fluoranthene	2.00	1.81	90.5	1.79	89.5	ug/L	1	20	81-109
Pyrene	2.00	1.82	91.0	1.62	81.0	ug/L	12	20	71-104
Benzo(a)anthracene	2.00	1.56	78.0	1.55	77.5	ug/L	1	20	70-110
Chrysene	2.00	1.73	86.5	1.65	82.5	ug/L	5	20	70-95
Benzo(b)Fluoranthene	2.00	1.52	76.0	1.54	77.0	ug/L	1	20	67-102
Benzo(k)fluoranthene	2.00	1.79	89.5	1.74	87.0	ug/L	3	20	68-103
Benzo(a)pyrene	2.00	1.54	77.0	1.50	75.0	ug/L	3	20	63-98
ndeno(1,2,3-cd)pyrene	2.00	1.72	86.0	1.44	72.0	ug/L	18	20	61-112
Dibenzo(a,h)anthracene	2.00	1.44	72.0	1.23	61.5*	ug/L	16	20	66-108
Benzo(g,h,i)perylene	2.00	1.40	70.0	1.20	60.0*	ug/L	15	20	62-106
-Methylnaphthalene-D10			74.8		73.4				43-92
Fluorene-D10			71.4		74.7				29-101
yrene-d10			91.8		85.2				53-166

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Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133040-1RA
Lab File ID : G0271.D
Date Extracted : 23-OCT-13
Instrument ID : GCMS-G
Date Analyzed : 11-NOV-13
Matrix : AQ
Time Analyzed : 19:48

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
TF2-SS-RB01-1013	SG8184-18	G0148.D	10/30/13	13:18
Laboratory Control S	WG133040-2RA	G0272.D	11/11/13	20:30
Laboratory Control S	WG133040-3RA	G0273.D	11/11/13	21:12

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG133040-1RA
Client ID: Method Blank Sample
Project:
SDG: SG8184
Lab File ID: G0271.D

Sample Date:
Received Date:
Extract Date: 23-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133040

Analysis Date: 11-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		60.3	%					
Fluorene-D10		79.4	%					
pyrene-d10		101.	%					

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ANALYTICAL SERVICES

Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG133040-2RA
LCSD ID: WG133040-3RA
Project:
SDG: SG8184
Report Date: 12-NOV-13
LCS File ID: G0272.D

Received Date:
Extract Date: 23-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133040
LCSD File ID: G0273.D

Analysis Date: 11-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	2.00	0.842	42.1*	1.10	55.0	ug/L	26*	20	46-84
2-Methylnaphthalene	2.00	0.954	47.7*	1.21	60.5	ug/L	24*	20	51-114
Acenaphthylene	2.00	0.793	39.6*	1.07	53.5*	ug/L	30*	20	55-105
Acenaphthene	2.00	0.844	42.2*	1.10	55.0	ug/L	26*	20	53-90
Fluorene	2.00	0.923	46.2*	1.14	57.0	ug/L	21*	20	53-95
Phenanthrene	2.00	1.10	55.0*	1.35	67.5*	ug/L	20*	20	73-100
Anthracene	2.00	1.11	55.5*	1.38	69.0*	ug/L	22*	20	70-95
Fluoranthene	2.00	1.24	62.0*	1.33	66.5*	ug/L	7	20	81-109
Pyrene	2.00	1.19	59.5*	1.56	78.0	ug/L	27*	20	71-104
Benzo(a)anthracene	2.00	1.29	64.5*	1.30	65.0*	ug/L	1	20	70-110
Chrysene	2.00	1.21	60.5*	1.58	79.0	ug/L	26*	20	70-95
Benzo(b)Fluoranthene	2.00	1.19	59.5*	1.31	65.5*	ug/L	10	20	67-102
Benzo(k)fluoranthene	2.00	1.10	55.0*	1.23	61.5*	ug/L	11	20	68-103
Benzo(a)pyrene	2.00	1.32	66.0	1.56	78.0	ug/L	17	20	63-98
ndeno(1,2,3-cd)pyrene	2.00	1.26	63.0	2.02	101.	ug/L	46*	20	61-112
Dibenzo(a,h)anthracene	2.00	1.37	68.5	1.33	66.5	ug/L	3	20	66-108
Benzo(g,h,i)perylene	2.00	1.24	62.0*	1.31	65.5	ug/L	5	20	62-106
-Methylnaphthalene-D10			41.0*		56.3				43-92
Fluorene-D10			46.7		60.7				29-101
yrene-d10			61.3		78.7				53-166

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133386-4
Lab File ID : G0105.D

SDG: SG8184
Analytical Date: 10/28/13 13:07
Instrument ID: GCMS-G

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	34728		8.83		80466		11.64		40692		15.70	
	Upper Limit	69456		9.33		160932		12.14		81384		16.20	
	Lower Limit	17364		8.33		40233		11.14		20346		15.20	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG133115-1	29466		8.83		76022		11.66		38947		15.72	
004/5-SS1037-000.7	SG8184-21	28438		8.83		86373		11.66		42641		15.70	
004/5-SS1036-000.6	SG8184-22	26406		8.83		82771		11.64		41119		15.70	
004/5-SS-DUP02-1013	SG8184-23	28646		8.83		89679		11.64		43381		15.70	
004/5-SS1034-000.6	SG8184-24	26301		8.83		74080		11.64		41020		15.70	
004/5-SS1035-0001	SG8184-25	25327		8.83		79098		11.66		37120		15.72	
004/5-SS1033-000.8	SG8184-26	29100		8.83		71735		11.64		41138		15.70	
004/5-SS1049-000.9	SG8184-27	28931		8.83		74553		11.64		44977		15.70	
004/5-SS1048-000.8	SG8184-28	26234		8.83		73568		11.64		39380		15.70	
004/5-SS1047-000.8	SG8184-29	25588		8.83		72547		11.64		40399		15.70	
Continuing Calibrati	WG133427-2	30633		8.85		86661		11.66		37272		15.72	
Method Blank Sample	WG133048-1	26713		8.83		73960		11.66		39192		15.74	
Laboratory Control S	WG133048-2	25731		8.83		70499		11.64		37808		15.72	
Laboratory Control S	WG133048-3	25617		8.83		72189		11.64		36050		15.72	
Laboratory Control S	WG133115-2	25084		8.83		72716		11.64		37565		15.72	
Laboratory Control S	WG133115-3	23764		8.83		61966		11.64		36042		15.72	
TF2-SS-RB01-1013	SG8184-18RE	25832		8.85		52539		11.68		33846		15.74	
004/5-SS1041-000.7	SG8184-34	23248		8.85		77084		11.66		36349		15.72	
004/5-SS1045-000.5	SG8184-31	23595		8.83		77975		11.66		35704		15.72	
004/5-SS1044-000.5	SG8184-32	22222		8.83		64487		11.66		31861		15.70	
004/5-SS1042-000.5	SG8184-33	19269		8.83		55126		11.66		28201		15.70	
004/5-SS1046-000.5	SG8184-30	20113		8.83		68303		11.68		30087		15.72	
004/5-SS1025-000.8	SG8184-2	19760		8.83		66206		11.66		29650		15.70	
004/5-SS1026-000.8	SG8184-3	22405		8.83		74792		11.66		32631		15.72	
004/5-SS1024-000.6	SG8184-4	19743		8.83		65395		11.66		29791		15.72	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133386-4
Lab File ID : G0105.D

SDG: SG8184
Analytical Date: 10/28/13 13:07
Instrument ID: GCMS-G

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	59841		19.20		38656		25.49		33643		28.65	
	Upper Limit	119682		19.70		77312		25.99		67286		29.15	
	Lower Limit	29920.5		18.70		19328		24.99		16821.5		28.15	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG133115-1	53338		19.20		28093		25.49		22245		28.65	
004/5-SS1037-000.7	SG8184-21	68098		19.20		36583		25.47		25768		28.63	
004/5-SS1036-000.6	SG8184-22	71833		19.18		40073		25.47		26248		28.63	
004/5-SS-DUP02-1013	SG8184-23	74235		19.18		41230		25.47		25765		28.63	
004/5-SS1034-000.6	SG8184-24	67042		19.18		44064		25.47		28546		28.63	
004/5-SS1035-0001	SG8184-25	60946		19.20		40419		25.47		27688		28.63	
004/5-SS1033-000.8	SG8184-26	70327		19.20		50896		25.47		33567		28.63	
004/5-SS1049-000.9	SG8184-27	70237		19.20		37916		25.49		24777		28.65	
004/5-SS1048-000.8	SG8184-28	64841		19.20		34779		25.49		22064		28.65	
004/5-SS1047-000.8	SG8184-29	65785		19.20		31651		25.51		21250		28.66	
Continuing Calibrati	WG133427-2	54402		19.25		23639		25.53		17142		28.68	
Method Blank Sample	WG133048-1	73975		19.25		37082		25.51		27762		28.66	
Laboratory Control S	WG133048-2	58921		19.22		32090		25.49		23107		28.66	
Laboratory Control S	WG133048-3	49564		19.22		31895		25.51		24225		28.67	
Laboratory Control S	WG133115-2	56641		19.22		31550		25.51		23010		28.66	
Laboratory Control S	WG133115-3	54624		19.22		29199		25.51		20656		28.67	
TF2-SS-RB01-1013	SG8184-18RE	45504		19.24		25782		25.55		18318		28.68	
004/5-SS1041-000.7	SG8184-34	55301		19.20		28817		25.49		20436		28.65	
004/5-SS1045-000.5	SG8184-31	58112		19.20		33837		25.49		22804		28.63	
004/5-SS1044-000.5	SG8184-32	56150		19.20		32838		25.49		24151		28.65	
004/5-SS1042-000.5	SG8184-33	44784		19.20		27308		25.49		19110		28.65	
004/5-SS1046-000.5	SG8184-30	45434		19.20		23915		25.49		16359	*	28.65	
004/5-SS1025-000.8	SG8184-2	47395		19.20		24105		25.49		15981	*	28.65	
004/5-SS1026-000.8	SG8184-3	50227		19.20		26259		25.49		17757		28.65	
004/5-SS1024-000.6	SG8184-4	47529		19.20		32661		25.51		17018		28.68	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133386-4
Lab File ID : G0105.D

SDG: SG8184
Analytical Date: 10/28/13 13:07
Instrument ID: GCMS-G

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133386-4
Lab File ID : G0105.D

SDG: SG8184
Analytical Date: 10/28/13 13:07
Instrument ID: GCMS-G

		1,4-DICHLOROBENZENE-D4		NAPHTHALENE-D8		ACENAPHTHENE-D10	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	34728	8.83	80466	11.64	40692	15.70
	Upper Limit	69456	9.33	160932	12.14	81384	16.20
	Lower Limit	17364	8.33	40233	11.14	20346	15.20
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG133479-2	34033	8.87	98606	11.68	42482	15.74
Laboratory Control S	WG133367-2	29333	8.83	82263	11.66	41616	15.72
Laboratory Control S	WG133367-3	35435	8.83	90602	11.66	45490	15.72
TF2-SS-RB01-1013	SG8184-18	34365	8.87	70824	11.68	41036	15.74
TF2-SS-RB02-1013	SG8184-36RERA	36032	8.85	80235	11.70	46139	15.76
004/5-SS1025-000.8	SG8184-2DL	18590	8.85	71889	11.81	34281	15.76
004/5-SS1026-000.8	SG8184-3DL	30572	8.83	87191	11.77	43029	15.74
004/5-SS1022-000.9	SG8184-6	26308	8.83	85073	11.66	40839	15.72
004/5-SS1020-0001	SG8184-8	26843	8.83	87477	11.66	40949	15.72
004/5-SS1031-000.8	SG8184-10	26222	8.83	84331	11.66	39803	15.72
004/5-SS-DUP01-1013	SG8184-11	25554	8.83	83609	11.66	37914	15.74
004/5-SS1032-000.9	SG8184-9	24808	8.83	81805	11.66	38121	15.72
004/5-SS1038-000.7	SG8184-20	23361	8.83	76364	11.66	36718	15.70
004/5-SS1023-000.8	SG8184-5	21803	8.83	63483	11.64	35716	15.70
Continuing Calibrati	WG133544-2	25239	8.82	76507	11.61	36269	15.68
Method Blank Sample	WG133367-1RA	24725	8.85	77803	11.66	33862	15.70
004/5-SS1027-0001	SG8184-15	24145	8.81	66439	11.64	33707	15.70
Matrix Spike	WG133048-4	20411	8.82	58059	11.62	29490	15.68
Matrix Spike Duplica	WG133048-5	22261	8.82	65287	11.61	33057	15.68
004/5-SS-DUP03-1013	SG8184-35	20265	8.83	68331	11.64	31226	15.68
004/5-SS1023-000.8	SG8184-5DL	21297	8.82	62685	11.66	29055	15.68
004/5-SS1047-000.8	SG8184-29DL	20769	8.85	61299	11.66	26882	15.68
004/5-SS1028-000.8	SG8184-14	20163	8.81	66046	11.64	30038	15.68
004/5-SS1039-000.9	SG8184-17	20922	8.82	60149	11.64	30080	15.68
004/5-SS1040-000.9	SG8184-16	19688	8.82	64375	11.64	29214	15.68
004/5-SS1029-000.6	SG8184-13	19948	8.82	65971	11.64	30003	15.68
004/5-SS1030-000.6	SG8184-12	20347	8.81	57491	11.61	30977	15.68
004/5-SS1021-000.7	SG8184-7	21389	8.82	62661	11.61	30878	15.68
Continuing Calibrati	WG133627-2	32216	8.82	75948	11.62	35111	15.68
004/5-SS1021-000.7	SG8184-7DL	32688	8.85	88742	11.72	38942	15.70

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133386-4
Lab File ID : G0105.D

SDG: SG8184
Analytical Date: 10/28/13 13:07
Instrument ID: GCMS-G

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	59841	19.20	38656	25.49	33643	28.65
	Upper Limit	119682	19.70	77312	25.99	67286	29.15
	Lower Limit	29920.5	18.70	19328	24.99	16821.5	28.15
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG133479-2	66217	19.27	34793	25.53	26933	28.70
Laboratory Control S	WG133367-2	63985	19.24	40702	25.53	28560	28.68
Laboratory Control S	WG133367-3	72670	19.22	50700	25.53	34304	28.68
TF2-SS-RB01-1013	SG8184-18	57261	19.27	22749	25.55	18785	28.70
TF2-SS-RB02-1013	SG8184-36RERA	64626	19.24	44916	25.57	28382	28.72
004/5-SS1025-000.8	SG8184-2DL	62529	19.22	33328	25.51	22663	28.65
004/5-SS1026-000.8	SG8184-3DL	80908	19.22	40336	25.49	27126	28.65
004/5-SS1022-000.9	SG8184-6	61650	19.22	46108	25.49	32781	28.65
004/5-SS1020-0001	SG8184-8	66326	19.22	45446	25.49	28662	28.65
004/5-SS1031-000.8	SG8184-10	67166	19.22	44981	25.49	28372	28.65
004/5-SS-DUP01-1013	SG8184-11	59963	19.22	43655	25.49	30635	28.65
004/5-SS1032-000.9	SG8184-9	62594	19.20	39599	25.49	25688	28.65
004/5-SS1038-000.7	SG8184-20	60909	19.20	35728	25.49	21832	28.65
004/5-SS1023-000.8	SG8184-5	59971	19.20	33652	25.49	22714	28.65
Continuing Calibrati	WG133544-2	61976	19.18	38972	25.47	29851	28.63
Method Blank Sample	WG133367-1RA	59069	19.20	29763	25.49	22876	28.63
004/5-SS1027-0001	SG8184-15	52180	19.18	39464	25.47	32809	28.61
Matrix Spike	WG133048-4	45637	19.18	32178	25.45	25354	28.61
Matrix Spike Duplica	WG133048-5	52757	19.18	43161	25.45	35082	28.61
004/5-SS-DUP03-1013	SG8184-35	50040	19.18	37274	25.45	27288	28.61
004/5-SS1023-000.8	SG8184-5DL	45788	19.18	29424	25.45	20315	28.61
004/5-SS1047-000.8	SG8184-29DL	48674	19.16	27860	25.45	19888	28.61
004/5-SS1028-000.8	SG8184-14	50451	19.18	35202	25.45	23997	28.61
004/5-SS1039-000.9	SG8184-17	47640	19.18	32870	25.45	23104	28.61
004/5-SS1040-000.9	SG8184-16	48163	19.18	29037	25.45	18649	28.61
004/5-SS1029-000.6	SG8184-13	50065	19.18	28370	25.45	19797	28.61
004/5-SS1030-000.6	SG8184-12	49364	19.18	26248	25.47	19019	28.61
004/5-SS1021-000.7	SG8184-7	52181	19.16	26535	25.47	23431	28.63
Continuing Calibrati	WG133627-2	49799	19.20	24526	25.47	18199	28.63
004/5-SS1021-000.7	SG8184-7DL	62258	19.18	32823	25.45	25037	28.61

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133386-4
Lab File ID : G0105.D

SDG: SG8184
Analytical Date: 10/28/13 13:07
Instrument ID: GCMS-G

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG134246-4
Lab File ID : G0265.D

SDG: SG8184
Analytical Date: 11/11/13 15:32
Instrument ID: GCMS-G

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	16089		9.37		40514		12.20		21349		16.34	
	Upper Limit	32178		9.87		81028		12.70		42698		16.84	
	Lower Limit	8044.5		8.87		20257		11.70		10674.5		15.84	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG133040-1RA	17820		9.39		52638		12.23		24172		16.34	
Laboratory Control S	WG133040-2RA	17922		9.39		47161		12.23		26708		16.34	
Laboratory Control S	WG133040-3RA	16224		9.39		39352		12.23		20781		16.34	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG134246-4
Lab File ID : G0265.D

SDG: SG8184
Analytical Date: 11/11/13 15:32
Instrument ID: GCMS-G

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	31679		19.80		20971		26.15		15486		29.31	
	Upper Limit	63358		20.30		41942		26.65		30972		29.81	
	Lower Limit	15839.5		19.30		10485.5		25.65		7743		28.81	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG133040-1RA	39410		19.80		29148		26.15		24328		29.31	
Laboratory Control S	WG133040-2RA	42681		19.80		34337		26.15		31769	*	29.31	
Laboratory Control S	WG133040-3RA	32087		19.80		21422		26.15		15666		29.31	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Not used

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Data File: \\target_server\GG\chem\gcms-g.i\G102813.b\G0105.D
Report Date: 12-Nov-2013 13:59

IS Associations

Katahdin Analytical Services

Data file : \\target_server\GG\chem\gcms-g.i\G102813.b\G0105.D
Lab Smp Id: WG133386-4
Inj Date : 28-OCT-2013 13:07
Operator : JCG Inst ID: gcms-g.i
Smp Info : WG133386-4
Misc Info :
Comment :
Method : \\target_server\GG\chem\gcms-g.i\G102813.b\gspsim88.m
Meth Date : 01-Nov-2013 15:24 cgomez Quant Type: ISTD
Cal Date : 15-AUG-2013 18:07 Cal File: G9258.D
Als bottle: 2 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
$ 1	1,4-Dioxane-d8	96	3.129	3.110	(0.269)	13823	1.00000	1.12(Q)	
2	1,4-Dioxane	88	3.182	3.146	(0.360)	18636	1.00000	1.04	
3	Benzaldehyde	77	7.963	7.930	(0.902)	24472	1.00000	1.02	
4	Phenol	94	8.797	8.711	(0.996)	166422	3.00000	3.12	
5	Bis(2-Chloroethyl)ether	93	8.397	8.347	(0.951)	45307	1.00000	0.952	
6	2-Chlorophenol	128	8.658	8.607	(0.980)	163144	3.00000	2.93	
* 7	1,4-Dichlorobenzene-D4	152	8.832	8.816	(1.000)	34728	0.80000	(aQ)	
8	2-Methylphenol	108	9.866	9.810	(1.117)	103912	3.00000	2.92	
9	2,2'-Oxybis(1-chloropropane)	45	9.526	9.507	(1.079)	46918	1.00000	0.970	
10	Acetophenone	105	9.772	9.734	(0.840)	61073	1.00000	1.16(Q)	
11	N-Nitroso-di-n-propylamine	70	9.829	9.791	(1.113)	29980	1.00000	0.932	
12	3&4-Methylphenol	108	10.245	10.226	(1.160)	106417	3.00000	2.84(Q)	
13	Hexachloroethane	117	9.866	9.848	(1.117)	18956	1.00000	0.991	
14	Nitrobenzene	77	10.112	10.075	(0.869)	37443	1.00000	1.17	
15	Isophorone	82	10.686	10.663	(0.918)	77068	1.00000	1.22	
16	2-Nitrophenol	139	10.863	10.818	(0.933)	73616	3.00000	3.53	
17	2,4-Dimethylphenol	107	11.305	11.260	(0.971)	121181	3.00000	3.50	
18	bis(2-Chloroethoxy)methane	93	11.283	11.238	(0.970)	55848	1.00000	1.20	
19	2,4-Dichlorophenol	162	11.792	11.725	(1.013)	106908	3.00000	3.43	
* 20	Naphthalene-D8	136	11.637	11.615	(1.000)	80466	0.80000	(a)	
21	Naphthalene	128	11.682	11.659	(1.004)	120562	1.00000	1.16	

Data File: \\target_server\GG\chem\gcms-g.i\G102813.b\G0105.D
Report Date: 12-Nov-2013 13:59

							AMOUNTS		
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ug/ml)	ON-COL (ug/ml)	REVIEW CODE
	22 4-Chloroaniline	127	11.992	11.947	(1.030)	48391	1.00000	1.44	
	23 Hexachlorobutadiene	225	12.036	12.035	(1.034)	19524	1.00000	1.12	
	24 Caprolactam	113	12.810	12.721	(1.101)	8677	1.00000	1.07	
	25 4-Chloro-3-Methylphenol	107	13.562	13.495	(1.165)	103961	3.00000	3.53(Q)	
$	26 2-Methylnaphthalene-D10	152	13.230	13.208	(1.137)	61708	1.00000	1.17	
	27 2-Methylnaphthalene	142	13.319	13.296	(1.144)	70994	1.00000	1.19	
	28 1-Methylnaphthalene	142	13.518	13.495	(1.162)	60520	1.00000	0.835(QH)	
	29 1,2,4,5-Tetrachlorobenzene	216	13.739	13.717	(0.875)	33221	1.00000	1.03	
	30 Hexachlorocyclopentadiene	237	13.717	13.695	(0.874)	10631	1.00000	0.969	
$	31 2,4-Dibromophenol	252	14.226	14.160	(0.906)	18388	1.00000	0.938(aQ)	
	32 2,4,6-Trichlorophenol	196	14.204	14.160	(0.905)	72063	3.00000	3.11	
	33 2,4,5-Trichlorophenol	196	14.603	14.536	(0.930)	81004	3.00000	3.03	
	34 2-Chloronaphthalene	164	14.448	14.425	(0.920)	28584	1.00000	1.03	
	35 1,1'-Biphenyl	154	14.448	14.425	(0.920)	95366	1.00000	1.06	
	36 2-Nitroaniline	65	14.824	14.779	(0.944)	19963	1.00000	0.982	
	37 Dimethyl Phthalate	163	15.265	15.245	(0.972)	258480	3.00000	3.07	
	38 2,6-Dinitrotoluene	165	15.384	15.364	(0.980)	20290	1.00000	1.03	
	39 Acenaphthylene	152	15.364	15.344	(0.979)	114071	1.00000	1.01	
	40 3-Nitroaniline	138	15.857	15.818	(1.010)	10320	1.00000	1.35	
*	41 Acenaphthene-D10	164	15.699	15.699	(1.000)	40692	0.80000	(a)	
	42 Acenaphthene	153	15.778	15.758	(1.005)	71998	1.00000	1.02	
	43 2,4-Dinitrophenol	184	16.153	16.094	(1.029)	13237	3.00000	2.78	
	44 Dibenzofuran	168	16.212	16.192	(1.033)	97799	1.00000	0.986	
	45 4-Nitrophenol	109	17.196	17.113	(1.095)	25687	3.00000	3.23(Q)	
	46 2,4-Dinitrotoluene	165	17.011	16.990	(1.084)	69789	1.00000	0.950	
	47 2,3,4,6-Tetrachlorophenol	232	16.726	16.686	(1.065)	50779	3.00000	2.82	
$	48 Fluorene-D10	174	16.929	16.929	(1.078)	48061	1.00000	1.00	
	49 Diethylphthalate	149	16.949	16.949	(1.080)	273638	3.00000	3.01(Q)	
	50 Fluorene	166	17.011	16.990	(1.084)	77223	1.00000	0.989	
	51 4-Chlorophenyl-Phenylether	204	17.093	17.093	(1.089)	40776	1.00000	1.02	
	52 4-Nitroaniline	138	17.360	17.340	(1.106)	11712	1.00000	1.06(Q)	
	53 4,6-Dinitro-2-Methylphenol	198	17.360	17.319	(0.904)	27256	3.00000	3.17	
	54 N-Nitrosodiphenylamine	169	17.422	17.401	(0.907)	58314	1.00000	1.07	
	55 4-Bromophenyl-phenylether	248	18.239	18.217	(0.950)	23033	1.00000	1.07	
	56 Hexachlorobenzene	284	18.325	18.324	(0.954)	25379	1.00000	1.12	
	57 Atrazine	200	18.817	18.795	(0.980)	16509	1.00000	1.12	
	58 Pentachlorophenol	266	19.010	18.966	(0.990)	25260	3.00000	3.87	
*	59 Phenanthrene-D10	188	19.202	19.180	(1.000)	59841	0.80000	(a)	
	60 Phenanthrene	178	19.245	19.245	(1.002)	87771	1.00000	1.10	
	61 Anthracene	178	19.395	19.373	(1.010)	101006	1.00000	1.08	
	62 Carbazole	167	19.914	19.871	(1.037)	66250	1.00000	1.09	
	63 Di-n-butylphthalate	149	20.882	20.861	(1.087)	404474	3.00000	3.28	
	64 Fluoranthene	202	22.068	22.052	(1.149)	81250	1.00000	1.05	
$	65 Pyrene-D10	212	22.541	22.524	(0.884)	53303	1.00000	1.03	
	66 Pyrene	202	22.588	22.572	(0.886)	90283	1.00000	1.10	
	67 Butylbenzylphthalate	149	24.400	24.400	(0.957)	156342	3.00000	3.12	
	68 Benzo(a)anthracene	228	25.471	25.451	(0.999)	51047	1.00000	0.991	
*	69 Chrysene-D12	240	25.490	25.470	(1.000)	38656	0.80000	(a)	
	70 Chrysene	228	25.548	25.528	(1.002)	54903	1.00000	0.993	
	71 3,3'-Dichlorobenzidine	252	25.567	25.566	(1.003)	11608	1.00000	1.11	
	72 bis(2-Ethylhexyl)phthalate	149	25.874	25.873	(1.015)	221854	3.00000	3.27	
	73 Di-n-octylphthalate	149	27.337	27.337	(1.072)	337221	3.00000	3.21	
	74 Benzo(b)fluoranthene	252	27.861	27.843	(0.973)	49323	1.00000	0.999	
	75 Benzo(k)fluoranthene	252	27.913	27.913	(0.974)	58246	1.00000	0.945(H)	

Data File: \\target_server\GG\chem\gcms-g.i\G102813.b\G0105.D
Report Date: 12-Nov-2013 13:59

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
	76 Benzo(a)pyrene	252	28.524	28.507	(0.996)	45175	1.00000	0.991	
*	77 Perylene-D12	264	28.646	28.629	(1.000)	33643	0.80000	(a)	
	78 Indeno(1,2,3-cd)pyrene	276	30.732	30.717	(1.073)	43985	1.00000	1.23	
	79 Dibenzo(a,h)anthracene	278	30.803	30.789	(1.075)	34280	1.00000	1.07	
	80 Benzo(g,h,i)perylene	276	31.306	31.277	(1.093)	40074	1.00000	1.08	
M	81 Total PAHs	100				1266534	1.00000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.

SAMPLE ID TF2-004/5-SS1021-000.7

SAMPLE CALC IS AREA	DILUTION	COMPOUND OF INTEREST AREA	IS AMOUNT (NG)	Final Extract Volume (UL)	AVE RRF	CONCENTRATION PPB
62258	25	372073	0.8	1000	1.0383	3743.31
		% Solids		**Sample Volume (Grams)**		
		0.964		31.9		

Fluoroanthene = 3,700 ug/kg

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-7DL
Client ID: 004/5-SS1021-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: G0182.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 23-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133048

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	240	ug/Kgdrywt	25	20	490	63.	240
2-Methylnaphthalene	U	240	ug/Kgdrywt	25	20	490	54.	240
Acenaphthylene	U	240	ug/Kgdrywt	25	20	490	29.	240
Acenaphthene	J	290	ug/Kgdrywt	25	20	490	36.	240
Fluorene	J	240	ug/Kgdrywt	25	20	490	78.	240
Phenanthrene		2800	ug/Kgdrywt	25	20	490	44.	240
Anthracene		650	ug/Kgdrywt	25	20	490	29.	240
Fluoranthene		3700	ug/Kgdrywt	25	20	490	44.	240
Pyrene		3400	ug/Kgdrywt	25	20	490	51.	240
Benzo(a)anthracene		1500	ug/Kgdrywt	25	20	490	46.	240
Chrysene		1800	ug/Kgdrywt	25	20	490	41.	240
Benzo(b)Fluoranthene		2000	ug/Kgdrywt	25	20	490	58.	240
Benzo(k)fluoranthene		660	ug/Kgdrywt	25	20	490	76.	240
Benzo(a)pyrene		1200	ug/Kgdrywt	25	20	490	80.	240
Indeno(1,2,3-cd)pyrene		830	ug/Kgdrywt	25	20	490	46.	240
Dibenzo(a,h)anthracene	J	260	ug/Kgdrywt	25	20	490	44.	240
Benzo(g,h,i)perylene		540	ug/Kgdrywt	25	20	490	49.	240
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Data File: \\target_server\GG\chem\gcms-g.i\G110113B.b\G0182.D
Report Date: 12-Nov-2013 14:04

Katahdin Analytical Services

Data file : \\target_server\GG\chem\gcms-g.i\G110113B.b\G0182.D
Lab Smp Id: SG8184-7DL Client Smp ID: 004/5-SS1021-000.7
Inj Date : 01-NOV-2013 14:13
Operator : JCG Inst ID: gcms-g.i
Smp Info : SG8184-7DL
Misc Info : WG133627,WG133048,WG133386-4
Comment :
Method : \\target_server\GG\chem\gcms-g.i\G110113B.b\gspsim88.m
Meth Date : 01-Nov-2013 14:03 cgomez Quant Type: ISTD
Cal Date : 28-OCT-2013 16:42 Cal File: G0110.D
Als bottle: 3
Dil Factor: 25.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	25.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03190	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	3.601	% Moisture
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW C
* 7 1,4-Dichlorobenzene-D4	152	8.849	8.816	(1.000)	32688	0.80000		
* 20 Naphthalene-D8	136	11.724	11.615	(1.000)	88742	0.80000		
* 41 Acenaphthene-D10	164	15.698	15.679	(1.000)	38942	0.80000		
42 Acenaphthene	153	15.777	15.739	(1.005)	24467	0.36101	293(a)	
50 Fluorene	166	17.012	16.990	(1.084)	21588	0.28896	235(a)	
* 59 Phenanthrene-D10	188	19.180	19.202	(1.000)	62258	0.80000		
60 Phenanthrene	178	19.222	19.245	(1.002)	287685	3.46323	2820	
61 Anthracene	178	19.372	19.373	(1.010)	78439	0.80243	652	
64 Fluoranthene	202	22.036	22.068	(1.149)	372073	4.60453	3740	
66 Pyrene	202	22.555	22.572	(0.886)	290330	4.17638	3400	
68 Benzo(a)anthracene	228	25.432	25.451	(0.999)	82844	1.89447	1540	
* 69 Chrysene-D12	240	25.452	25.471	(1.000)	32823	0.80000		
70 Chrysene	228	25.509	25.528	(1.002)	104114	2.21866	1800	
74 Benzo(b)fluoranthene	252	27.844	27.861	(0.973)	88018	2.39485	1950(M)	M3
75 Benzo(k)fluoranthene	252	27.896	27.913	(0.975)	37315	0.81331	661(MH)	M6
76 Benzo(a)pyrene	252	28.490	28.507	(0.996)	52124	1.53670	1250	
* 77 Perylene-D12	264	28.612	28.629	(1.000)	25037	0.80000		
78 Indeno(1,2,3-cd)pyrene	276	30.703	30.731	(1.073)	28090	1.02577	834	
79 Dibenzo(a,h)anthracene	278	30.775	30.789	(1.076)	7682	0.32209	262(a)	
80 Benzo(g,h,i)perylene	276	31.278	31.292	(1.093)	18232	0.65976	536	

12:23 pm, Nov 13,

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8184

Client Sample ID	Lab Sample ID	Col. ID	NTD	#	OTP	#
004/5-SS-DUP01-1013	SG8184-11	A	98.0		83.8	
004/5-SS1027-0001	SG8184-15	A	97.3		82.5	
004/5-SS1039-000.9	SG8184-17	A	58.4	*	47.9	*
004/5-SS1039-000.9	SG8184-17RE	A	94.3		83.8	
004/5-SS1049-000.9	SG8184-27	A	18.0	*	14.8	*
004/5-SS1049-000.9	SG8184-27RE	A	92.1		81.8	
004/5-SS1020-0001	SG8184-8	A	81.4		68.2	
Method Blank Sample	WG133426-1	A	100.		93.9	
Laboratory Control S	WG133426-2	A	79.0		63.6	
Laboratory Control S	WG133426-3	A	100.		90.9	
Matrix Spike	WG133426-4	A	104.		94.9	
Matrix Spike Duplica	WG133426-5	A	101.		89.2	
Method Blank Sample	WG134245-1	A	100.		87.9	
Laboratory Control S	WG134245-2	A	94.0		81.8	
Laboratory Control S	WG134245-3	A	94.0		84.8	

		QC Limits
OTP	O-TERPHENYL	62-109
NTD	N-TRIACONTANE-D62	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG8184

Client Sample ID	Lab Sample ID	Col. ID	NTD	#	OTP	#
TF2-SS-RB01-1013	SG8184-18	A	95.4		79.5	*
Method Blank Sample	WG133105-1	A	110.		96.0	
Laboratory Control S	WG133105-2	A	93.3		81.0	*
Laboratory Control S	WG133105-3	A	100.		86.0	

		QC Limits
OTP	O-TERPHENYL	82-142
NTD	N-TRIACONTANE-D62	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133105-1
Lab File ID : AGK20041.D
Date Extracted : 25-OCT-13
Instrument ID : GC10
Date Analyzed : 05-NOV-13
Matrix : AQ
Time Analyzed : 14:10

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133105-2	AGK20042	11/05/13	14:49
Laboratory Control S	WG133105-3	AGK20043	11/05/13	15:18
TF2-SS-RB01-1013	SG8184-18	AGK20047	11/05/13	17:54

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Report of Analytical Results

Client:
Lab ID: WG133105-1
Client ID: Method Blank Sample
Project:
SDG: SG8184
Lab File ID: AGK20041.D

Sample Date:
Received Date:
Extract Date: 25-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133105

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: AQ
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	250	ug/L	1	500	500	150	250
o-Terphenyl		96.0	%					
n-Triacontane-D62		110.	%					

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LCS/LCSD Recovery Report

LCS ID: WG133105-2
LCSD ID: WG133105-3
Project:
SDG: SG8184
Report Date: 12-NOV-13
LCS File ID: AGK20042.D

Received Date:
Extract Date: 25-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133105
LCSD File ID: AGK20043.D

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	1800	1200	66.7	1300	72.2	ug/L	8	30	55-118
o-Terphenyl			81.0*		86.0				82-142
n-Triacontane-D62			93.3		100.				70-130

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Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133426-1
Lab File ID : AGK20044.D
Date Extracted : 30-OCT-13
Instrument ID : GC10
Date Analyzed : 05-NOV-13
Matrix : SL
Time Analyzed : 15:57

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133426-2	AGK20045	11/05/13	16:36
Laboratory Control S	WG133426-3	AGK20046	11/05/13	17:15
Matrix Spike	WG133426-4	AGK20048	11/05/13	18:32
Matrix Spike Duplica	WG133426-5	AGK20049	11/05/13	19:11
004/5-SS1027-0001	SG8184-15	AGK20050	11/05/13	19:50
004/5-SS1020-0001	SG8184-8	AGK20053	11/05/13	21:46
004/5-SS-DUP01-1013	SG8184-11	AGK20054	11/05/13	22:25
004/5-SS1039-000.9	SG8184-17	AGK20055	11/05/13	23:03
004/5-SS1049-000.9	SG8184-27	AGK20060	11/06/13	02:17

Report of Analytical Results

Client:
Lab ID: WG133426-1
Client ID: Method Blank Sample
Project:
SDG: SG8184
Lab File ID: AGK20044.D

Sample Date:
Received Date:
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		93.9	%					
n-Triacontane-D62		100.	%					

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LCS/LCSD Recovery Report

LCS ID: WG133426-2
LCSD ID: WG133426-3
Project:
SDG: SG8184
Report Date: 12-NOV-13
LCS File ID: AGK20045.D

Received Date:
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426
LCSD File ID: AGK20046.D

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	60.3	34.0	56.4*	48.0	79.6	mg/Kgdrywt	34*	30	63-153
o-Terphenyl			63.6		90.9				62-109
n-Triacontane-D62			79.0		100.				70-130

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MS/MSD Recovery Report

MS ID: WG133426-4
MSD ID: WG133426-5
Sample ID: SG8184-15
Client ID: 004/5-SS1027-0001
Project:
SDG: SG8184
MS File ID: AGK20048.D

Received Date:
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426
Report Date: 12-NOV-13
MSD File ID: AGK20049.D

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 94.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	57.8	57.5	mg/Kgdryw	JL15.	59.	51.	76.1	62.6*	14	30	63-153
o-Terphenyl							94.9	89.2			62-109
n-Triacontane-D62							104.	101.			70-130

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Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG134245-1
Lab File ID : AGK20116.D
Date Extracted : 11-NOV-13
Instrument ID : GC10
Date Analyzed : 11-NOV-13
Matrix : SL
Time Analyzed : 17:53

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134245-2	AGK20117	11/11/13	18:32
Laboratory Control S	WG134245-3	AGK20118	11/11/13	19:11
004/5-SS1039-000.9	SG8184-17RE	AGK20119	11/11/13	19:50
004/5-SS1049-000.9	SG8184-27RE	AGK20120	11/11/13	20:28

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Report of Analytical Results

Client:
Lab ID: WG134245-1
Client ID: Method Blank Sample
Project:
SDG: SG8184
Lab File ID: AGK20116.D

Sample Date:
Received Date:
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		87.9	%					
n-Triacontane-D62		100.	%					

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LCS/LCSD Recovery Report

LCS ID: WG134245-2
LCSD ID: WG134245-3
Project:
SDG: SG8184
Report Date: 12-NOV-13
LCS File ID: AGK20117.D

Received Date:
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245
LCSD File ID: AGK20118.D

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	60.3	43.0	71.3	48.0	79.6	mg/Kgdrywt	11	30	63-153
o-Terphenyl			81.8		84.8				62-109
n-Triacontane-D62			94.0		94.0				70-130

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GC10
Lab File IDs : AGG20231.EAGG20230.EAGG20232.E **Column ID:** A
AGG20229.EAGG20228.E **Calibration Date(s):** 26-JUL-13 10:34
26-JUL-13 13:49

	5.0000 Level 1	20.0000 Level 2	50.0000 Level 3	100.0000 Level 4	200.0000 Level 5		New Crv	b	m1	m2	%RSD	Max %RSD	
Petroleum Range Organic	3089102	12636617	29064611	60208084	122271060		LNR	7.40184	35900		0.99976	0.99000	M (
C-8	181933	731463	1715023	3597538	7399389		LNR	1.05675	36959		0.99955	0.99000	O
C-10	179016	749462	1739250	3724105	7629535		LNR	1.27141	38167		0.99946	0.99000	O
C-12	175693	743553	1750024	3747522	7665333		LNR	1.33539	38372		0.99950	0.99000	O
C-14	180367	756314	1748066	3765084	7677765		LNR	1.22555	38427		0.99947	0.99000	O
C-16	182823	754185	1751923	3777081	7684649		LNR	1.19425	38470		0.99949	0.99000	O
C-18	188749	776459	1784336	3853299	7821892		LNR	1.09221	39150		0.99949	0.99000	O
C-20	190254	769795	1772595	2897952	5891299		LNR	-3.67435	29019		0.99674	0.99000	O
C-22	189757	766624	1814396	3037617	6260195		LNR	-2.63046	30883		0.99764	0.99000	O
C-24	188458	749611	1697810	3194570	6695340		LNR	-0.48887	33143		0.99917	0.99000	O
C-26	194578	747032	1690170	3581426	6950490		LNR	-0.53461	34805		0.99962	0.99000	O
C-28	218772	778314	1732495	3663153	7147609		LNR	-0.68229	35718		0.99964	0.99000	O
C-30	192475	795453	1747341	3679252	7257458		LNR	-0.32754	36269		0.99971	0.99000	O
C-32	182906	746924	1714008	3693105	7412365		LNR	0.75824	37115		0.99961	0.99000	O
C-34	172985	732428	1684206	3667824	7401790		LNR	1.12303	37091		0.99949	0.99000	O
C-36	169313	721822	1658556	3607947	7516848		LNR	1.89380	37605		0.99896	0.99000	O
C-38	156767	682840	1580679	3457880	7142775		LNR	1.84020	35776		0.99912	0.99000	O
C-40	144249	634331	1483724	3262729	6716319		LNR	1.90824	33672		0.99915	0.99000	O
O-Terphenyl	10302658	10032499	9941055	10236461	10225858		LNR	0.22789	40635		0.99891	0.99000	
n-Triacontane-D62	9023242	8760852	8483761	8952633	8598295		LNR	0.81290	29308		0.99675	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG134295-1 **Analytical Date:** 11/05/13 13:20
Lab File ID : AGK20040.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	811	33781	0.010	-4.61735	25.00000	Linear
2 C-8	50.00000	46.40302	33519	0.010	-7.19397	25.00000	Linear
3 C-10	50.00000	45.17185	33511	0.010	-9.65630	25.00000	Linear
4 C-12	50.00000	45.75424	34089	0.010	-8.49153	25.00000	Linear
5 C-14	50.00000	45.17248	33775	0.010	-9.65504	25.00000	Linear
6 C-16	50.00000	45.21239	33868	0.010	-9.57522	25.00000	Linear
8 C-18	50.00000	44.93013	34325	0.010	-10.13974	25.00000	Linear
10 C-20	50.00000	55.20021	34170	0.010	10.40042	25.00000	Linear
11 C-22	50.00000	51.87405	33665	0.010	3.74810	25.00000	Linear
12 C-24	50.00000	50.26329	33641	0.010	0.52659	25.00000	Linear
13 C-26	50.00000	47.68628	33567	0.010	-4.62743	25.00000	Linear
14 C-28	50.00000	46.82572	33938	0.010	-6.34857	25.00000	Linear
16 C-30	50.00000	46.45576	33935	0.010	-7.08848	25.00000	Linear
17 C-32	50.00000	46.93059	34274	0.010	-6.13883	25.00000	Linear
18 C-34	50.00000	47.02578	34052	0.010	-5.94845	25.00000	Linear
19 C-36	50.00000	47.35013	34187	0.010	-5.29973	25.00000	Linear
20 C-38	50.00000	48.46532	33361	0.010	-3.06936	25.00000	Linear
21 C-40	50.00000	50.03132	32408	0.010	0.06263	25.00000	Linear
9 O-Terphenyl	250	230	37411	0.010	-7.84302	25.00000	Linear
15 n-Triacontane-D62	300	276	26915	0.010	-7.89385	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG134295-2 **Analytical Date:** 11/05/13 21:07
Lab File ID : AGK20052.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	359	37058	0.010	5.62592	25.00000	Linear
2 C-8	20.00000	19.20595	33539	0.010	-3.97027	25.00000	Linear
3 C-10	20.00000	21.32254	38264	0.010	6.61272	25.00000	Linear
4 C-12	20.00000	21.75634	39180	0.010	8.78172	25.00000	Linear
5 C-14	20.00000	20.49575	37025	0.010	2.47876	25.00000	Linear
6 C-16	20.00000	20.50801	37150	0.010	2.54005	25.00000	Linear
8 C-18	20.00000	19.81225	36645	0.010	-0.93875	25.00000	Linear
10 C-20	20.00000	21.84610	37029	0.010	9.23052	25.00000	Linear
11 C-22	20.00000	21.17258	36756	0.010	5.86289	25.00000	Linear
12 C-24	20.00000	21.69020	36754	0.010	8.45102	25.00000	Linear
13 C-26	20.00000	20.71165	36974	0.010	3.55823	25.00000	Linear
14 C-28	20.00000	20.21538	37321	0.010	1.07690	25.00000	Linear
16 C-30	20.00000	21.46283	39515	0.010	7.31416	25.00000	Linear
17 C-32	20.00000	22.95457	41191	0.010	14.77287	25.00000	Linear
18 C-34	20.00000	20.87009	36622	0.010	4.35046	25.00000	Linear
19 C-36	20.00000	21.37132	36622	0.010	6.85658	25.00000	Linear
20 C-38	20.00000	21.69560	35517	0.010	8.47799	25.00000	Linear
21 C-40	20.00000	22.03694	33888	0.010	10.18472	25.00000	Linear
9 O-Terphenyl	250	242	39238	0.010	-3.34627	25.00000	Linear
15 n-Triacontane-D62	300	298	28992	0.010	-0.80590	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG134295-3 **Analytical Date:** 11/06/13 03:34
Lab File ID : AGK20062.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	870	36284	0.010	2.35364	25.00000	Linear
2 C-8	50.00000	49.19740	35585	0.010	-1.60520	25.00000	Linear
3 C-10	50.00000	47.82550	35536	0.010	-4.34900	25.00000	Linear
4 C-12	50.00000	48.29941	36042	0.010	-3.40118	25.00000	Linear
5 C-14	50.00000	47.99127	35941	0.010	-4.01746	25.00000	Linear
6 C-16	50.00000	47.71446	35793	0.010	-4.57108	25.00000	Linear
8 C-18	50.00000	47.90248	36653	0.010	-4.19503	25.00000	Linear
10 C-20	50.00000	58.85995	36294	0.010	17.71989	25.00000	Linear
11 C-22	50.00000	55.32289	35796	0.010	10.64578	25.00000	Linear
12 C-24	50.00000	53.84832	36018	0.010	7.69664	25.00000	Linear
13 C-26	50.00000	51.01045	35881	0.010	2.02089	25.00000	Linear
14 C-28	50.00000	50.28974	36412	0.010	0.57949	25.00000	Linear
16 C-30	50.00000	50.18042	36637	0.010	0.36084	25.00000	Linear
17 C-32	50.00000	51.44497	37625	0.010	2.88995	25.00000	Linear
18 C-34	50.00000	53.88330	39139	0.010	7.76660	25.00000	Linear
19 C-36	50.00000	52.02630	37704	0.010	4.05259	25.00000	Linear
20 C-38	50.00000	52.08390	35950	0.010	4.16781	25.00000	Linear
21 C-40	50.00000	52.12518	33818	0.010	4.25037	25.00000	Linear
9 O-Terphenyl	250	247	40109	0.010	-1.20304	25.00000	Linear
15 n-Triacontane-D62	300	297	28921	0.010	-1.04734	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG134299-1 **Analytical Date:** 11/11/13 12:25
Lab File ID : AGK20109.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	819	34117	0.010	-3.69844	25.00000	Linear
2 C-8	50.00000	47.72770	34498	0.010	-4.54461	25.00000	Linear
3 C-10	50.00000	46.77047	34731	0.010	-6.45906	25.00000	Linear
4 C-12	50.00000	47.36809	35328	0.010	-5.26383	25.00000	Linear
5 C-14	50.00000	46.71933	34964	0.010	-6.56134	25.00000	Linear
6 C-16	50.00000	46.58439	34923	0.010	-6.83122	25.00000	Linear
8 C-18	50.00000	46.16504	35292	0.010	-7.66991	25.00000	Linear
10 C-20	50.00000	56.80471	35101	0.010	13.60942	25.00000	Linear
11 C-22	50.00000	53.48571	34661	0.010	6.97141	25.00000	Linear
12 C-24	50.00000	51.41356	34404	0.010	2.82711	25.00000	Linear
13 C-26	50.00000	48.54583	34165	0.010	-2.90833	25.00000	Linear
14 C-28	50.00000	47.41775	34360	0.010	-5.16451	25.00000	Linear
16 C-30	50.00000	48.05723	35097	0.010	-3.88554	25.00000	Linear
17 C-32	50.00000	46.92264	34268	0.010	-6.15473	25.00000	Linear
18 C-34	50.00000	46.56758	33712	0.010	-6.86484	25.00000	Linear
19 C-36	50.00000	46.06843	33224	0.010	-7.86313	25.00000	Linear
20 C-38	50.00000	46.08371	31657	0.010	-7.83257	25.00000	Linear
21 C-40	50.00000	45.86113	29599	0.010	-8.27774	25.00000	Linear
9 O-Terphenyl	250	238	38674	0.010	-4.73576	25.00000	Linear
15 n-Triacontane-D62	300	277	27012	0.010	-7.56233	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG134299-2 **Analytical Date:** 11/11/13 21:46
Lab File ID : AGK20122.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	349	36006	0.010	2.66964	25.00000	Linear
2 C-8	20.00000	20.41452	35772	0.010	2.07261	25.00000	Linear
3 C-10	20.00000	19.21791	34248	0.010	-3.91045	25.00000	Linear
4 C-12	20.00000	20.07995	35964	0.010	0.39974	25.00000	Linear
5 C-14	20.00000	19.18020	34497	0.010	-4.09902	25.00000	Linear
6 C-16	20.00000	19.01714	34283	0.010	-4.91430	25.00000	Linear
8 C-18	20.00000	18.79501	34653	0.010	-6.02494	25.00000	Linear
10 C-20	20.00000	20.21676	34665	0.010	1.08380	25.00000	Linear
11 C-22	20.00000	19.93740	34848	0.010	-0.31298	25.00000	Linear
12 C-24	20.00000	20.53892	34846	0.010	2.69458	25.00000	Linear
13 C-26	20.00000	19.70255	35218	0.010	-1.48724	25.00000	Linear
14 C-28	20.00000	19.47972	36007	0.010	-2.60139	25.00000	Linear
16 C-30	20.00000	22.12313	40713	0.010	10.61565	25.00000	Linear
17 C-32	20.00000	22.36468	40096	0.010	11.82340	25.00000	Linear
18 C-34	20.00000	21.45624	37709	0.010	7.28121	25.00000	Linear
19 C-36	20.00000	21.98097	37769	0.010	9.90486	25.00000	Linear
20 C-38	20.00000	21.66644	35465	0.010	8.33222	25.00000	Linear
21 C-40	20.00000	22.90521	35350	0.010	14.52605	25.00000	Linear
9 O-Terphenyl	250	235	38105	0.010	-6.13602	25.00000	Linear
15 n-Triacontane-D62	300	286	27857	0.010	-4.67829	25.00000	Linear

*** = Compound out of QC criteria**

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Column ID :** A
Instrument ID : GC10

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	OTP	NTD	
Initial Calibration	WG128015-5	07/26/13	11:13	10.44	15.29	
Initial Calibration	WG128015-4	07/26/13	11:52	10.44	15.29	
Initial Calibration	WG128015-2	07/26/13	12:31	10.44	15.29	
Initial Calibration	WG128015-1	07/26/13	13:10	10.44	15.29	
Initial Calibration	WG128015-3	07/26/13	13:49	10.44	15.29	
Independent Source	WG128015-6	07/26/13	14:39	10.44	15.29	
Continuing Calibrati	WG134295-1	11/05/13	13:20	10.28	15.12	
Method Blank Sample	WG133105-1	11/05/13	14:10	10.26	15.12	
Laboratory Control S	WG133105-2	11/05/13	14:49	10.26	15.11	
Laboratory Control S	WG133105-3	11/05/13	15:18	10.27	15.12	
Method Blank Sample	WG133426-1	11/05/13	15:57	10.27	15.11	
Laboratory Control S	WG133426-2	11/05/13	16:36	10.26	15.11	
Laboratory Control S	WG133426-3	11/05/13	17:15	10.27	15.11	
TF2-SS-RB01-1013	SG8184-18	11/05/13	17:54	10.26	15.11	
Matrix Spike	WG133426-4	11/05/13	18:32	10.26	15.11	
Matrix Spike Duplica	WG133426-5	11/05/13	19:11	10.26	15.11	
004/5-SS1027-0001	SG8184-15	11/05/13	19:50	10.26	15.11	
Continuing Calibrati	WG134295-2	11/05/13	21:07	10.28	15.12	
004/5-SS1020-0001	SG8184-8	11/05/13	21:46	10.26	15.11	
004/5-SS-DUP01-1013	SG8184-11	11/05/13	22:25	10.26	15.12	
004/5-SS1039-000.9	SG8184-17	11/05/13	23:03	10.26	15.11	
004/5-SS1049-000.9	SG8184-27	11/06/13	02:17	10.26	15.1	
Continuing Calibrati	WG134295-3	11/06/13	03:34	10.28	15.12	
Continuing Calibrati	WG134299-1	11/11/13	12:25	10.28	15.12	
Method Blank Sample	WG134245-1	11/11/13	17:53	10.26	15.11	
Laboratory Control S	WG134245-2	11/11/13	18:32	10.26	15.11	
Laboratory Control S	WG134245-3	11/11/13	19:11	10.26	15.11	
004/5-SS1039-000.9	SG8184-17RE	11/11/13	19:50	10.26	15.11	
004/5-SS1049-000.9	SG8184-27RE	11/11/13	20:28	10.26	15.12	
Continuing Calibrati	WG134299-2	11/11/13	21:46	10.28	15.12	

SDG SG8184
SAMPLE ID TF2-004/5-SS1049-000.9

SAMPLE CALC

INITIAL CF	DILUTION	COMPOUND OF INTEREST	Final Extract Volume (UL)	CONCENTRATION PPB
33781	1	86422006	2000	170.46257
		% Solids	**Sample Volume (KG)**	
		0.938	32	

TRPH = 170 mg/kg

Katahdin
ANALYTICAL SERVICES

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-27RE
Client ID: 004/5-SS1049-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: AGK20120.D

Sample Date: 21-OCT-13
Received Date: 21-OCT-13
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 94.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		160	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		81.8	%					
n-Triacontane-D62		92.1	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
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Data File: \\target_server\gg\chem\gc10.i\GC10GK11.b\AGK20120.D
Report Date: 12-Nov-2013 13:09

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc10.i\GC10GK11.b\AGK20120.D
Lab Smp Id: SG8184-27RE Client Smp ID: 004/5-SS1049-000.9
Inj Date : 11-NOV-2013 20:28
Operator : AC Inst ID: gc10.i
Smp Info : SG8184-27RE
Misc Info : WG134299,WG134245,WG128015-3
Comment :
Method : \\target_server\gg\chem\gc10.i\GC10GK11.b\flp01b.m
Meth Date : 12-Nov-2013 13:06 gc10.i Quant Type: ESTD
Cal Date : 26-JUL-2013 11:13 Cal File: AGG20228.D
Als bottle: 51
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: SW8015M-FLPRO.sub
Subtraction File: \\target_server\gg\chem\gc10.i\GC10GK11.b\AGK20111.D
Target Version: 4.12

Concentration Formula: Amt * DF * (Vt/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00200	Final Volume (L)
Ws	0.03200	Weight of Sample (Kg)
M	6.146	Moisture (%)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS		
					ON-COLUMN	FINAL	
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/ml)	(mg/Kgdrywt)	
$ 9 O-Terphenyl	10.258	10.288	-0.030	1661639	41.1194	2.7(M)	M2
$ 15 n-Triacontane-D62	15.115	15.128	-0.013	4036503	138.541	9.2(RM)	
S 7 Petroleum Range Organics	1.780-24.281			86422006	2405.50	160(M)	AC

2:04 pm, Nov 13, 2013

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG8184

Client Sample ID	Lab Sample ID	Col. ID	BFB	#
TF2-W-TB01-1013	SG8184-1	A	92.8	
TF2-SS-RB01-1013	SG8184-18RA	A	95.5	
TF2-W-TB02-1013	SG8184-19RA	A	92.0	
Method Blank Sample	WG133172-1	A	90.5	
Laboratory Control S	WG133172-2	A	96.0	
Laboratory Control S	WG133172-3	A	90.0	

		QC Limits
BFB	P-BROMOFLUOROBENZENE	79-121

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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http://katahdinlab.com
sales@katahdinlab.com

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8184

Client Sample ID	Lab Sample ID	Col. ID	BFB	#
TF2-W-TB01-1013	SG8184-1	A	92.8	
004/5-SS-DUP01-1013	SG8184-11	A	92.0	
004/5-SS1027-0001	SG8184-15	A	90.1	
004/5-SS1039-000.9	SG8184-17	A	89.3	
004/5-SS1049-000.9	SG8184-27	A	98.3	
004/5-SS1020-0001	SG8184-8	A	92.5	
Method Blank Sample	WG133099-1	A	89.2	
Laboratory Control S	WG133099-2	A	93.6	
Laboratory Control S	WG133099-3	A	98.0	
Matrix Spike	WG133099-4	A	88.0	
Matrix Spike Duplica	WG133099-5	A	92.0	

		QC Limits
BFB	P-BROMOFLUOROBENZENE	81-119

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GC09
Lab File IDs : 9GG2130.d 9GG2123.d 9GG2124.d **Column ID:** A
9GG2125.d 9GG2126.d 9GG2127.d **Calibration Date(s):** 26-JUL-13 09:58
26-JUL-13 17:56

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	10.0000	100.0000	250.0000	500.0000	1000.0000	2000.0000	New	b	m1	m2	%RSD	%RSD	
Gasoline Range Organic	12176	12675	12913	12768	12910	13282	AVG		12787		2.84495	20.00000	M
Methyl tert-butyl ether	6010	8181	8380	7569	7477	8149	AVG		7628		11.40841	20.00000	O
Benzene	15826	15860	16448	16739	17015	17326	AVG		16536		3.69285	20.00000	O
Toluene	15470	16041	16286	16166	16555	16718	AVG		16206		2.70556	20.00000	O
Ethylbenzene	14185	14823	15058	15019	15114	15298	AVG		14916		2.61143	20.00000	O
m+p-Xylenes	14785	15435	15552	15559	15638	15874	AVG		15474		2.37846	20.00000	O
o-Xylene	16358	14889	14896	15443	15410	15788	AVG		15464		3.61301	20.00000	O
1,2,4-trimethylbenzene	11095	12102	12347	12071	12262	12757	AVG		12106		4.56871	20.00000	O
1,3,5-trimethylbenzene	9784	10620	10743	10552	10765	11352	AVG		10636		4.74665	20.00000	O
Naphthalene	3461	3359	3870	3000	3223	3680	AVG		3432		9.12376	20.00000	O
p-Bromofluorobenzene	6432	6935	7300	7023	6937	7145	AVG		6962		4.23260	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG133099-6 **Analytical Date:** 10/24/13 07:56
Lab File ID : 9GJ4039.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11814	11814	0.100	-7.61469	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7832	7832	0.100	2.67943	20.00000	Averaged
4 Benzene	16536	14848	14848	0.100	-10.20652	20.00000	Averaged
5 Toluene	16206	14339	14339	0.100	-11.52139	20.00000	Averaged
7 Ethylbenzene	14916	13568	13568	0.100	-9.04104	20.00000	Averaged
8 m+p-Xylenes	15474	14098	14098	0.100	-8.89417	20.00000	Averaged
9 o-Xylene	15464	14757	14757	0.100	-4.57110	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11343	11343	0.100	-6.30380	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	9911	9911	0.100	-6.81599	20.00000	Averaged
13 Naphthalene	3432	3342	3342	0.100	-2.62136	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6394	6394	0.100	-8.16387	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG133099-7 **Analytical Date:** 10/24/13 20:25
Lab File ID : 9GJ4051.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	12036	12036	0.100	-5.87398	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7892	7892	0.100	3.46394	20.00000	Averaged
4 Benzene	16536	15589	15589	0.100	-5.72337	20.00000	Averaged
5 Toluene	16206	15159	15159	0.100	-6.46027	20.00000	Averaged
7 Ethylbenzene	14916	13954	13954	0.100	-6.44842	20.00000	Averaged
8 m+p-Xylenes	15474	14243	14243	0.100	-7.95116	20.00000	Averaged
9 o-Xylene	15464	14151	14151	0.100	-8.49323	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11541	11541	0.100	-4.66605	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	9975	9975	0.100	-6.21934	20.00000	Averaged
13 Naphthalene	3432	3613	3613	0.100	5.27418	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6447	6447	0.100	-7.39612	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG133099-8 **Analytical Date:** 10/25/13 03:42
Lab File ID : 9GJ4059.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	$\overline{RRF}$/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11621	11621	0.100	-9.11629	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7728	7728	0.100	1.31727	20.00000	Averaged
4 Benzene	16536	15068	15068	0.100	-8.87727	20.00000	Averaged
5 Toluene	16206	14732	14732	0.100	-9.09641	20.00000	Averaged
7 Ethylbenzene	14916	13664	13664	0.100	-8.39678	20.00000	Averaged
8 m+p-Xylenes	15474	13927	13927	0.100	-9.99604	20.00000	Averaged
9 o-Xylene	15464	13888	13888	0.100	-10.19123	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	10956	10956	0.100	-9.49489	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	9568	9568	0.100	-10.04087	20.00000	Averaged
13 Naphthalene	3432	2756	2756	0.100	-19.68687	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6229	6229	0.100	-10.53247	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG133172-4 **Analytical Date:** 10/25/13 07:42
Lab File ID : 9GJ4060.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1 Gasoline Range Organic	12787	11612	11612	0.100	-9.19398	20.00000	Averaged	
3 Methyl tert-butyl ether	7628	7033	7033	0.100	-7.79828	20.00000	Averaged	
4 Benzene	16536	14595	14595	0.100	-11.73412	20.00000	Averaged	
5 Toluene	16206	14035	14035	0.100	-13.39782	20.00000	Averaged	
7 Ethylbenzene	14916	13366	13366	0.100	-10.39327	20.00000	Averaged	
8 m+p-Xylenes	15474	14444	14444	0.100	-6.65231	20.00000	Averaged	
9 o-Xylene	15464	14992	14992	0.100	-3.05469	20.00000	Averaged	
11 1,2,4-trimethylbenzene	12106	11076	11076	0.100	-8.50857	20.00000	Averaged	
12 1,3,5-trimethylbenzene	10636	9444	9444	0.100	-11.21048	20.00000	Averaged	
13 Naphthalene	3432	2686	2686	0.100	-21.73520	20.00000	Averaged	*
10 p-Bromofluorobenzene	6962	6057	6057	0.100	-13.00090	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8184
Lab ID : WG133172-5 **Analytical Date:** 10/25/13 23:46
Lab File ID : 9GJ4074.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	12038	12038	0.100	-5.85670	20.00000	Averaged
3 Methyl tert-butyl ether	7628	8213	8213	0.100	7.67967	20.00000	Averaged
4 Benzene	16536	15374	15374	0.100	-7.02383	20.00000	Averaged
5 Toluene	16206	14867	14867	0.100	-8.26352	20.00000	Averaged
7 Ethylbenzene	14916	14020	14020	0.100	-6.00568	20.00000	Averaged
8 m+p-Xylenes	15474	14495	14495	0.100	-6.32427	20.00000	Averaged
9 o-Xylene	15464	13902	13902	0.100	-10.10367	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11245	11245	0.100	-7.10888	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10458	10458	0.100	-1.67104	20.00000	Averaged
13 Naphthalene	3432	3312	3312	0.100	-3.48672	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6158	6158	0.100	-11.54441	20.00000	Averaged

*** = Compound out of QC criteria**

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133099-1
Lab File ID : 9GJ4041.D
Date Analyzed : 24-OCT-13
Instrument ID : GC09
Time Analyzed : 09:57
Heated Purge : No

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133099-2	9GJ4042.D	10/24/13	10:51
Laboratory Control S	WG133099-3	9GJ4043.D	10/24/13	11:45
TF2-W-TB01-1013	SG8184-1	9GJ4050.D	10/24/13	19:30
004/5-SS1020-0001	SG8184-8	9GJ4052.D	10/24/13	21:19
004/5-SS-DUP01-1013	SG8184-11	9GJ4053.D	10/24/13	22:14
004/5-SS1027-0001	SG8184-15	9GJ4054.D	10/24/13	23:09
004/5-SS1039-000.9	SG8184-17	9GJ4055.D	10/25/13	00:03
004/5-SS1049-000.9	SG8184-27	9GJ4056.D	10/25/13	00:58
Matrix Spike	WG133099-4	9GJ4057.D	10/25/13	01:53
Matrix Spike Duplica	WG133099-5	9GJ4058.D	10/25/13	02:47

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Report of Analytical Results

Client:
Lab ID: WG133099-1
Client ID: Method Blank Sample
Project:
SDG: SG8184
Lab File ID: 9GJ4041.D

Sample Date:
Received Date:
Extract Date: 24-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133099

Analysis Date: 24-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		89.2	%					

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LCS/LCSD Recovery Report

LCS ID: WG133099-2
LCSD ID: WG133099-3
Project:
SDG: SG8184
Report Date: 14-NOV-13
LCS File ID: 9GJ4042.D

Received Date:
Extract Date: 24-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133099
LCSD File ID: 9GJ4043.d

Analysis Date: 24-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	25.0	24.6	98.4	23.1	92.4	mg/Kgdrywt	6	30	67-137
-Bromofluorobenzene			93.6		98.0				81-119

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MS/MSD Recovery Report

MS ID: WG133099-4
MSD ID: WG133099-5
Sample ID: SG8184-15
Client ID: 004/5-SS1027-0001
Project:
SDG: SG8184
MS File ID: 9GJ4057.D

Received Date:
Extract Date: 24-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133099
Report Date: 14-NOV-13
MSD File ID: 9GJ4058.d

Analysis Date: 25-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 94.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	28.3	27.9	mg/Kgdryw	U2.0	25.	24.	89.0	86.0	5	30	67-137
-Bromofluorobenzene							88.0	92.0			81-119

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133172-1
Lab File ID : 9GJ4062.D
Date Analyzed : 25-OCT-13
Instrument ID : GC09
Time Analyzed : 09:48
Heated Purge : No

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133172-2	9GJ4063.D	10/25/13	10:42
Laboratory Control S	WG133172-3	9GJ4064.D	10/25/13	11:35
TF2-SS-RB01-1013	SG8184-18RA	9GJ4072.D	10/25/13	21:57
TF2-W-TB02-1013	SG8184-19RA	9GJ4073.D	10/25/13	22:52

Report of Analytical Results

Client:
Lab ID: WG133172-1
Client ID: Method Blank Sample
Project:
SDG: SG8184
Lab File ID: 9GJ4062.D

Sample Date:
Received Date:
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133172

Analysis Date: 25-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	8.0	ug/l	1	10	10.	6.7	8.0
p-Bromofluorobenzene		90.5	%					

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LCS/LCSD Recovery Report

LCS ID: WG133172-2
LCSD ID: WG133172-3
Project:
SDG: SG8184
Report Date: 15-NOV-13
LCS File ID: 9GJ4063.D

Received Date:
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 M8015B
Lab Prep Batch: WG133172
LCSD File ID: 9GJ4064.d

Analysis Date: 25-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	100.	91.6	91.6	95.1	95.1	ug/l	4	30	73-126
-Bromofluorobenzene			96.0		90.0				79-121

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8184
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Column ID :** A
Instrument ID : GC09

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	BFB	BFB
Initial Calibration	WG127983-2	07/26/13	10:52	31.92	
Initial Calibration	WG127983-3	07/26/13	11:46	31.84	
Initial Calibration	WG127983-4	07/26/13	12:39	31.82	
Initial Calibration	WG127983-5	07/26/13	13:32	31.84	
Initial Calibration	WG127983-6	07/26/13	14:25	31.85	
Initial Calibration	WG127983-1	07/26/13	17:56	31.89	
INDEPENDENT SOURCE	WG127983-7	07/26/13	18:50	31.91	
Continuing Calibrati	WG133099-6	10/24/13	07:56	31.73	
Method Blank Sample	WG133099-1	10/24/13	09:57	31.73	
Laboratory Control S	WG133099-2	10/24/13	10:51	31.73	
Laboratory Control S	WG133099-3	10/24/13	11:45	31.73	
TF2-W-TB01-1013	SG8184-1	10/24/13	19:30	31.72	
Continuing Calibrati	WG133099-7	10/24/13	20:25	31.72	
004/5-SS1020-0001	SG8184-8	10/24/13	21:19	31.72	
004/5-SS-DUP01-1013	SG8184-11	10/24/13	22:14	31.72	
004/5-SS1027-0001	SG8184-15	10/24/13	23:09	31.72	
004/5-SS1039-000.9	SG8184-17	10/25/13	00:03	31.72	
004/5-SS1049-000.9	SG8184-27	10/25/13	00:58	31.72	
Matrix Spike	WG133099-4	10/25/13	01:53	31.72	
Matrix Spike Duplica	WG133099-5	10/25/13	02:47	31.72	
Continuing Calibrati	WG133099-8	10/25/13	03:42	31.72	
Continuing Calibrati	WG133172-4	10/25/13	07:42	31.70	
Method Blank Sample	WG133172-1	10/25/13	09:48	31.71	
Laboratory Control S	WG133172-2	10/25/13	10:42	31.71	
Laboratory Control S	WG133172-3	10/25/13	11:35	31.71	
TF2-SS-RB01-1013	SG8184-18RA	10/25/13	21:57	31.70	
TF2-W-TB02-1013	SG8184-19RA	10/25/13	22:52	31.70	
Continuing Calibrati	WG133172-5	10/25/13	23:46	31.70	

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8184-11
Client ID: 004/5-SS-DUP01-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8184
Lab File ID: 9GJ4053.D

Sample Date: 18-OCT-13
Received Date: 21-OCT-13
Extract Date: 24-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133099

Analysis Date: 24-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 97.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics		9.4	mg/Kgdrywt	1	2.5	3.2	2.3	2.5
p-Bromofluorobenzene		92.0	%					

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Data File: \\target_server\GG\chem\gc09.i\GC09GJ24A1.b\9GJ4053.d
Report Date: 14-Nov-2013 07:39

Katahdin Analytical Services

Data file : \\target_server\GG\chem\gc09.i\GC09GJ24A1.b\9GJ4053.d
Lab Smp Id: SG8184-11 Client Smp ID: 004/5-SS-DUP01-1013
Inj Date : 24-OCT-2013 22:14
Operator : JLP Inst ID: gc09.i
Smp Info : SG8184-11
Misc Info : WG133099,WG127983-2
Comment : SW846 5030B
Method : \\target_server\GG\chem\gc09.i\GC09GJ24A1.b\GROB017C.m
Meth Date : 14-Nov-2013 07:21 jprescott Quant Type: ESTD
Cal Date : 26-JUL-2013 17:56 Cal File: 9GG2130.d
Als bottle: 1
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: SW8015M-GRO.sub
Target Version: 4.12

Concentration Formula:
Amt * DF * (((Vt+((M/100)*Ws))*0.005)/(Ws*0.00002))*(100/(100-M))*(1/1000)

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.01000	Volume of MeOH (L)
M	2.883	Moisture (%)
Ws	0.00829	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (mg/Kgdrywt)	REVIEW CODE
S 6 Gasoline Range Organics	5.879-43.006			379944	29.7128	9.45(M)	M2
$ 10 p-Bromofluorobenzene	31.720	31.745	-0.025	128059	18.3942	5.85	

JLP
7:54 am, Nov 14, 2013

379944/12787 = 29.7128

QC Flag Legend

M - Compound response manually integrated.

29.7128 x 1 x [(0.01 + ((2.883/100) x 0.00829)) x 0.005)/0.00829 x 0.00002)) x 100/(100-2.883)] x (1/1,000) = 9.44 mg/Kg

Tetra Tech, Inc. **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 7, 2013**

FROM: **MICHELLE L. ALLEN** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – METALS**
CTO WE30, NAVSTA NEWPORT
SDG SG8184

SAMPLES: 32/Soil/Metals

TF2-004/5-SS-DUP01-1013	TF2-004/5-SS-DUP02-1013
TF2-004/5-SS-DUP03-1013	TF2-004/5-SS1020-0001
TF2-004/5-SS1021-000.7	TF2-004/5-SS1022-000.9
TF2-004/5-SS1023-000.8	TF2-004/5-SS1024-000.6
TF2-004/5-SS1025-000.8	TF2-004/5-SS1026-000.8
TF2-004/5-SS1027-0001	TF2-004/5-SS1028-000.8
TF2-004/5-SS1029-000.6	TF2-004/5-SS1030-000.6
TF2-004/5-SS1031-000.8	TF2-004/5-SS1032-000.9
TF2-004/5-SS1033-000.8	TF2-004/5-SS1034-000.6
TF2-004/5-SS1035-0001	TF2-004/5-SS1036-000.6
TF2-004/5-SS1037-000.7	TF2-004/5-SS1038-000.7
TF2-004/5-SS1039-000.9	TF2-004/5-SS1040-000.9
TF2-004/5-SS1041-000.7	TF2-004/5-SS1042-000.5
TF2-004/5-SS1044-000.5	TF2-004/5-SS1045-000.5
TF2-004/5-SS1046-000.5	TF2-004/5-SS1047-000.8
TF2-004/5-SS1048-000.8	TF2-004/5-SS1049-000.9

2/Aqueous/Metals

TF2-SS-RB01-1013	TF2-SS-RB02-1013

Overview

The sample set for NAVSTA Newport, CTO WE30, SDG SG8184 consisted of thirty-two (32) soil environmental samples and two (2) rinsate blanks. All thirty-four (34) samples were analyzed for total metals. Three field duplicate pairs were included in this sample delivery group (SDG): TF2-004/5-SS-DUP01-1013/TF2-004/5-SS1020-0001, TF2-004/5-SS-DUP02-1013/TF2-004/5-SS1035-0001, and TF2-004/5-SS-DUP03-1013/TF2-004/5-SS1041-000.7.

The samples were collected by Tetra Tech, Inc. on October 18 and 21, 2013 and analyzed by Katahdin Analytical Services. All analyses were conducted in accordance with SW846 Method 6020A, 7471B, and 7470A analytical and reporting protocols. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Initial and Continuing Calibration Verification Results
• Laboratory Method/Preparation Blank Analyses
* • ICP Interference Results
* • Laboratory Duplicate Results

* • Laboratory Control Sample Results
• Matrix Spike Recoveries
* • Internal Standard Recoveries
• Field Duplicate Precision
* • ICP Serial Dilution
* • Detection Limits
* • Analyte Quantitation

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report. An EPA Region 1 tier II validation was performed on the data in this SDG. The text of this report has been formulated to address only those areas affecting data quality.

LABORATORY METHOD/PREPARATION BLANK ANALYSES

The following analytes were detected in the laboratory method and preparation blanks the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum [1]	1.515 mg/Kg	7.575 mg/Kg
Calcium [1]	12.935 mg/Kg	64.675 mg/Kg
Chromium [1]	0.05 mg/Kg	0.25 mg/Kg
Lead [1]	0.018 mg/Kg	0.09 mg/Kg
Manganese [1]	0.183 mg/Kg	0.915 mg/Kg
Nickel [1]	0.03 mg/Kg	0.15 mg/Kg
Potassium [1]	12.26 mg/Kg	61.3 mg/Kg
Selenium [1]	0.088 mg/Kg	0.44 mg/Kg
Vanadium [1]	0.127 mg/Kg	0.635 mg/Kg
Zinc [1]	0.323 mg/Kg	1.615 mg/Kg
Aluminum [2]	1.385 mg/Kg	6.925 mg/Kg
Calcium [2]	11.235 mg/Kg	56.175 mg/Kg
Chromium [2]	0.05 mg/Kg	0.25 mg/Kg
Iron [2]	2.4 mg/Kg	12 mg/Kg
Lead [2]	0.01 mg/Kg	0.05 mg/Kg
Manganese [2]	0.179 mg/Kg	0.895 mg/Kg
Selenium [2]	0.04 mg/Kg	0.2 mg/Kg
Sodium [2]	2.56 mg/Kg	12.8 mg/Kg
Antimony [3]	0.038 µg/L	0.19 µg/L, 0.019 mg/Kg
Barium [3]	0.023 µg/L	0.115 µg/L, 0.0115 mg/Kg
Cadmium [3]	0.006 µg/L	0.03 µg/L, 0.003 mg/Kg
Cobalt [3]	0.019 µg/L	0.095 µg/L, 0.0095 mg/Kg
Silver [3]	0.012 µg/L	0.06 µg/L, 0.006 mg/Kg
Thallium [3]	0.042 µg/L	0.21 µg/L, 0.021 mg/Kg
Antimony [4]	0.017 µg/L	0.085 µg/L, 0.0085 mg/Kg
Cadmium [4]	0.012 µg/L	0.06 µg/L, 0.006 mg/Kg
Sodium [4]	99.97 µg/L	499.85 µg/L, 49.985 mg/Kg
Thallium [4]	0.006 µg/L	0.03 µg/L, 0.003 mg/Kg
Mercury [5]	0.005 mg/Kg	0.025 mg/Kg
Mercury [5]	0.005 mg/Kg	0.025 mg/Kg

[1] Maximum concentration detected in the soil preparation blank associated with preparation batch

#GK05IMS1 affecting the soil samples associated with this preparation batch.

(2) Maximum concentration detected in the soil preparation blank associated with preparation batch #GK05IMS2 affecting the soil samples associated with this preparation batch.

(3) Maximum concentration found initial and/or continuing calibration blanks affecting all samples analyzed for these analytes on 11/08/13.

(4) Maximum concentration found initial and/or continuing calibration blanks affecting all samples analyzed for these analytes on 11/11/13.

(5) Maximum concentration detected in the soil preparation blank associated with preparation batch #GK05HGS1 affecting the soil samples associated with this preparation batch.

(6) Maximum concentration detected in the soil preparation blank associated with preparation batch #GK07HGS1 affecting the soil samples associated with this preparation batch.

An action level of 5X the maximum contaminant concentration was established to evaluate blank contamination. Percent moisture, dilution factor, and sample aliquot were taken into consideration during the application of the action level. Detected results reported for selenium, sodium, thallium, and mercury below the established action levels were qualified as non-detected, (U). Results reported greater than the Method Detection Limit (MDL) but less than the Limit of Detection (LOD) were raised to the LOD.

MATRIX SPIKE RECOVERY

The Matrix Spike (MS) sample associated with preparation batch #GK05IMS1 had Percent Recoveries (%Rs) for antimony below 80% and for calcium above 120% quality control limits. The post digestion spike yielded acceptable %Rs. Samples associated with preparation batch #GK05IMS1 were affected. Only detected results were reported for these analytes in the affected samples and these analytes were qualified as estimated, (J).

The MS sample associated with preparation batch #GK05IMS2 had a %R for antimony below the 80% quality control limit. In addition, the %Rs for calcium, chromium, lead, and zinc were above 120% quality control limit. The post digestion spike yielded acceptable %Rs. Samples associated with preparation batch #GK05IMS2 were affected. Only detected results were reported for these analytes in the affected samples and these analytes were qualified as estimated, (J).

ICP SERIAL DILUTION

The ICP serial dilution associated with preparation batch #GK05IMS1 had Percent Differences (%Ds) for barium, cobalt, magnesium, and manganese above the 10% quality control limit. These results were reported 50X greater than the Limit of Quantitation (LOQ) in the initial analysis. Samples associated with preparation batch #GK05IMS1 were affected. The detected results reported for these analytes in the affected samples were qualified as estimated, (J).

The ICP serial dilution associated with preparation batch #GK05IMS2 had %Ds for magnesium, and manganese above the 10% quality control limit. These results were reported 50X greater than the LOQ in the initial analysis. Samples associated with preparation batch #GK05IMS2 were affected. The detected results reported for these analytes in the affected samples were qualified as estimated, (J).

FIELD DUPLICATE PRECISION

The Relative Percent Difference (RPD) for calcium exceeded the 50% quality control limit in the field duplicate pair, TF2-004/5-SS-DUP02-1013/TF2-004/5-SS1035-0001. The RPDs for calcium in the other two field duplicate sample pairs for this site in this SDG were acceptable. The detected results reported for calcium in the field duplicate pair were qualified as estimated, (J).

NOTES

Several contaminants were detected in the laboratory preparation blanks associated with rinsate blanks. No action was taken because field quality control blanks are not qualified for laboratory blank contamination.

All samples and laboratory preparation blanks were analyzed at a 5X dilution.

Detected results reported above the MDL but below the LOQ were qualified as estimated, (J). Non-detected results are reported to the LOD.

EXECUTIVE SUMMARY

Laboratory Performance: Blank contamination was noted in the laboratory method and preparation blanks. ICP serial dilutions had %Ds above 10% for some analytes.

Other Factors Affecting Data Quality: The MS samples had noncompliant %Rs. Field duplicate imprecision was noted for calcium in one field duplicate pair.

The data for these analyses were accomplished with reference to the criteria for the "USEPA National Functional Guidelines for Inorganic Data Validation" (January 2010), and the Department of Defense (DOD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

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Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-SS-RB01-1013			TF2-SS-RB02-1013		
SDG: SG8184	LAB_ID	SG8184-018			SG8184-036		
FRACTION: M	SAMP_DATE	10/18/2013			10/21/2013		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		13.2	J	P	11.5	J	P
ANTIMONY		0.16	J	P	0.15	J	P
ARSENIC		4	U		2.4	J	P
BARIUM		0.44	J	P	0.27	J	P
BERYLLIUM		0.2	U		0.2	U	
CADMIUM		0.05	J	P	0.05	J	P
CALCIUM		100			111		
CHROMIUM		2.2	J	P	2.3	J	P
COBALT		0.08	J	P	0.08	J	P
COPPER		0.45	J	P	0.56	J	P
IRON		60	U		60	U	
LEAD		0.09	J	P	0.14	J	P
MAGNESIUM		80	U		80	U	
MANGANESE		0.99	J	P	1	J	P
MERCURY		0.04	J	P	0.03	J	P
NICKEL		1.2	U		1.2	U	
POTASSIUM		100	J	P	87.3	J	P
SELENIUM		0.94	J	P	0.23	J	P
SILVER		0.4	U		0.4	U	
SODIUM		400	U		400	U	
THALLIUM		0.4	U		0.4	U	
VANADIUM		1.9	J	P	0.64	J	P
ZINC		8	U		8	U	

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1020-0001			TF2-004/5-SS1021-000.7			TF2-004/5-SS1022-000.9			TF2-004/5-SS1023-000.8		
SDG: SG8184	LAB_ID	SG8184-008			SG8184-007			SG8184-006			SG8184-005		
FRACTION: M	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	98.0			96.4			94.8			94.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		10100			16000			11600			12600		
ANTIMONY		0.14	J	D	0.13	J	D	0.16	J	D	0.17	J	D
ARSENIC		7.6			8.1			6.8			7.2		
BARIUM		14.9	J	I	20.2	J	I	17.8	J	I	16.3	J	I
BERYLLIUM		0.35			0.51			0.4			0.34		
CADMIUM		0.06	J	P	0.08	J	P	0.07	J	P	0.06	J	P
CALCIUM		551	J	D	748	J	D	484	J	D	810	J	D
CHROMIUM		12.6			20.8			15.2			17.8		
COBALT		13.4	D	I	5.2	D	I	12	D	I	8.4	D	I
COPPER		16.3			22.5			20.4			17.3		
IRON		21100			28500			23900			25300		
LEAD		12.4			26			11.4			25.1		
MAGNESIUM		3150	J	I	1970	J	I	3440	J	I	3820	J	I
MANGANESE		345	J	I	156	J	I	498	J	I	227	J	I
MERCURY		0.02	U	A	0.04			0.01	U	A	0.03		
NICKEL		17.6			9.8			24.8			18.8		
POTASSIUM		447			439			476			418		
SELENIUM		0.25	U	A	0.25	U	A	0.34	U	A	0.42	U	A
SILVER		0.02	J	P	0.04	J	P	0.03	J	P	0.04	J	P
SODIUM		45.9	U	A	54.8	U	A	51.8	U	A	56.8	U	A
THALLIUM		0.04	U	A	0.05	U	A	0.05	U	A	0.04	U	A
VANADIUM		16.2			25.9			17.1			28.1		
ZINC		39			57.2			50.5			45		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1024-000.6			TF2-004/5-SS1025-000.8			TF2-004/5-SS1026-000.8			TF2-004/5-SS1027-0001		
SDG: SG8184	LAB_ID	SG8184-004			SG8184-002			SG8184-003			SG8184-015		
FRACTION: M	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	95.1			93.5			96.7			94.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		11200			11600			4950			10900		
ANTIMONY		2.5	J	D	0.17	J	D	0.05	J	DP	0.11	J	D
ARSENIC		6.2			6.4			2.2			6.2		
BARIUM		19.8	J	I	17.5	J	I	11.3	J	I	15.4	J	I
BERYLLIUM		0.35			0.33			0.23			0.37		
CADMIUM		0.08	J	P	0.09			0.07	J	P	0.06	J	P
CALCIUM		765	J	D	956	J	D	564	J	D	388	J	D
CHROMIUM		15.3			18.3			7.1			13.6		
COBALT		7.6	D	I	8.6	D	I	3.3	D	I	8.5	D	I
COPPER		18.1			19.4			7.8			14.2		
IRON		19200			22600			9760			20300		
LEAD		66.3			31.9			7.6			9.2		
MAGNESIUM		2750	J	I	3570	J	I	1520	J	I	3080	J	I
MANGANESE		216	J	I	230	J	I	155	J	I	271	J	I
MERCURY		0.03			0.04			0.015	U	A	0.02	U	A
NICKEL		14.9			17.9			9.2			15.1		
POTASSIUM		470			344			390			445		
SELENIUM		0.48	U	A	0.41	U	A	0.23	U	A	0.24	U	A
SILVER		0.05	J	P	0.06	J	P	0.02	J	P	0.02	J	P
SODIUM		70.2	U	A	59.4	U	A	44.5	U	A	42.1	U	A
THALLIUM		0.06	U	A	0.05	U	A	0.04	U	A	0.05	J	P
VANADIUM		24.8			26.1			9			16.5		
ZINC		41.7			44.9			21.7			38		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1028-000.8			TF2-004/5-SS1029-000.6			TF2-004/5-SS1030-000.6			TF2-004/5-SS1031-000.8		
SDG: SG8184	LAB_ID	SG8184-014			SG8184-013			SG8184-012			SG8184-010		
FRACTION: M	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	95.1			96.9			95.3			93.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		15200			14500			14900			8920		
ANTIMONY		0.14	J	D	0.46	J	D	0.29	J	D	0.13	J	D
ARSENIC		6.6			8.3			7.7			7.2		
BARIUM		11.6	J	I	21.5	J	I	17.3	J	I	17.4	J	I
BERYLLIUM		0.37			0.44			0.87			0.32		
CADMIUM		0.06			0.08	J	P	0.09	J	P	0.08		
CALCIUM		766	J	D	624	J	D	694	J	D	400	J	D
CHROMIUM		21.1			19.1			18.9			11.8		
COBALT		11.2	D	I	9.2	D	I	13.8	D	I	10.1	D	I
COPPER		20.1			23.7			22.2			16.7		
IRON		30600			26500			30600			19200		
LEAD		18.7			37.9			25.2			18.1		
MAGNESIUM		4800	J	I	3920	J	I	4410	J	I	3700	J	I
MANGANESE		251	J	I	243	J	I	320	J	I	247	J	I
MERCURY		0.04			0.04			0.05			0.04		
NICKEL		22.7			20.6			24			19		
POTASSIUM		313			448			332			323		
SELENIUM		0.2	U	A	0.32	U	A	0.37	U	A	0.37	U	A
SILVER		0.04	J	P	0.11			0.04	J	P	0.05	J	P
SODIUM		37.7	U	A	53.3	U	A	45.5	U	A	37	U	A
THALLIUM		0.04	J	P	0.07	U	A	0.05	J	P	0.06	U	A
VANADIUM		25			34.7			22.7			14.2		
ZINC		53.7			52.9			59.7			46.5		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1032-000.9			TF2-004/5-SS1033-000.8			TF2-004/5-SS1034-000.6			TF2-004/5-SS1035-0001		
SDG: SG8184	LAB_ID	SG8184-009			SG8184-026			SG8184-024			SG8184-025		
FRACTION: M	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	92.4			95.5			95.2			94.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		8540			11200			14100			18200		
ANTIMONY		0.15	J	D	0.12	J	D	0.18	J	D	0.18	J	D
ARSENIC		5.2			6.4			8.5			9.5		
BARIUM		19.1	J	I	15.1			16.2			14.2		
BERYLLIUM		0.34			0.34			0.42			0.44		
CADMIUM		0.09	J	P	0.09			0.07	J	P	0.09		
CALCIUM		739	J	D	600	J	D	594	J	D	1140	J	DG
CHROMIUM		12.2			14.5	J	D	20.7	J	D	24.4	J	D
COBALT		8.8	D	I	11.7			13			13.2		
COPPER		15.6			17.6			22.4			31.5		
IRON		15200			23000			29800			37800		
LEAD		19.4			12.3	J	D	28.9	J	D	33.5	J	D
MAGNESIUM		3670	J	I	3560	J	I	4300	J	I	5850	J	I
MANGANESE		230	J	I	385	J	I	282	J	I	266	J	I
MERCURY		0.07			0.015	U	A	0.03	J	P	0.04		
NICKEL		18.5			19.1			23.6			32.4		
POTASSIUM		504			445			482			308		
SELENIUM		0.46	U	A	0.24	U	A	0.28	U	A	0.33	J	P
SILVER		0.06	J	P	0.03	J	P	0.06	J	P	0.07	J	P
SODIUM		59.2	U	A	35	U	A	42.2	U	A	34.6	U	A
THALLIUM		0.06	U	A	0.05	J	P	0.05	J	P	0.05	J	P
VANADIUM		18.9			17.3			28.8			35.2		
ZINC		50.2			43.4	J	D	58.2	J	D	71.9	J	D

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1036-000.6			TF2-004/5-SS1037-000.7			TF2-004/5-SS1038-000.7			TF2-004/5-SS1039-000.9		
SDG: SG8184	LAB_ID	SG8184-022			SG8184-021			SG8184-020			SG8184-017		
FRACTION: M	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	96.9			97.4			93.7			93.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		15100			13900			14400			13700		
ANTIMONY		0.22	J	D	0.28	J	D	0.15	J	D	0.31	J	D
ARSENIC		10.4			7			8			7.3		
BARIUM		16.4	J	I	20	J	I	18.4	J	I	169	J	I
BERYLLIUM		0.37			0.46			0.42			0.36		
CADMIUM		0.08	J	P	0.08	J	P	0.08	J	P	0.1		
CALCIUM		549	J	D	843	J	D	681	J	D	726	J	D
CHROMIUM		20.8			19.2			21			18.2		
COBALT		11.2	D	I	10.7	D	I	8.3	D	I	10.9	D	I
COPPER		23.4			19.2			21.7			19.1		
IRON		29600			27300			28900			24700		
LEAD		29.7			28.6			25.4			18.4		
MAGNESIUM		4240	J	I	4100	J	I	3260	J	I	3680	J	I
MANGANESE		265	J	I	278	J	I	206	J	I	334	J	I
MERCURY		0.05			0.03			0.04			0.04		
NICKEL		22.3			20.3			15.7			53		
POTASSIUM		392			404			333			404		
SELENIUM		0.33	U	A	0.27	U	A	0.29	U	A	0.23	U	A
SILVER		0.06	J	P	0.04	J	P	0.04	J	P	0.05	J	P
SODIUM		45.2	U	A	50.4	U	A	43.6	U	A	45.2	U	A
THALLIUM		0.06	U	A	0.05	J	P	0.05	J	P	0.06	J	P
VANADIUM		29.9			23.2			26.2			25		
ZINC		54.3			52.4			44.5			51.8		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1040-000.9			TF2-004/5-SS1041-000.7			TF2-004/5-SS1042-000.5			TF2-004/5-SS1044-000.5		
SDG: SG8184	LAB_ID	SG8184-016			SG8184-034			SG8184-033			SG8184-032		
FRACTION: M	SAMP_DATE	10/18/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	90.3			95.5			94.1			96.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		13500			8900			15000			13400		
ANTIMONY		0.2	J	D	0.13	J	D	0.17	J	D	0.22	J	D
ARSENIC		6.3			5.8			8.5			11.4		
BARIUM		15.7	J	I	15.9			14.7			14.9		
BERYLLIUM		0.34			0.36			0.46			0.52		
CADMIUM		0.07	J	P	0.08	J	P	0.06	J	P	0.09		
CALCIUM		740	J	D	393	J	D	536	J	D	789	J	D
CHROMIUM		17			13.4	J	D	21.2	J	D	19.1	J	D
COBALT		10.1	D	I	11			11.5			12.7		
COPPER		18.7			17.5			28.7			24.2		
IRON		24100			19600			33400			28900		
LEAD		28.5			11.5	J	D	30.7	J	D	22.5	J	D
MAGNESIUM		3990	J	I	2950	J	I	4950	J	I	4070	J	I
MANGANESE		256	J	I	313	J	I	259	J	I	284	J	I
MERCURY		0.06			0.005	J	P	0.04			0.04		
NICKEL		20.9			16.7			25.9			24.5		
POTASSIUM		393			483			374			429		
SELENIUM		0.35	U	A	0.24	U	A	0.31	J	P	0.35	J	P
SILVER		0.04	J	P	0.02	J	P	0.05	J	P	0.22		
SODIUM		52.1	U	A	33	U	A	35.1	U	A	41.4	U	A
THALLIUM		0.04	U	A	0.04	J	P	0.04	J	P	0.06	J	P
VANADIUM		23.4			15.4			33.2			25.8		
ZINC		52.1			39.3	J	D	64.4	J	D	56.8	J	D

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1045-000.5			TF2-004/5-SS1046-000.5			TF2-004/5-SS1047-000.8			TF2-004/5-SS1048-000.8		
SDG: SG8184	LAB_ID	SG8184-031			SG8184-030			SG8184-029			SG8184-028		
FRACTION: M	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	96.0			97.2			92.9			93.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		16200			14700			12500			13400		
ANTIMONY		0.17	J	D	0.43	J	D	0.66	J	D	0.59	J	D
ARSENIC		8.4			5.8			7.1			8.2		
BARIUM		15.3			13.9			20.2			18.5		
BERYLLIUM		0.34			0.36			0.38			0.38		
CADMIUM		0.1			0.09			0.1			0.1		
CALCIUM		740	J	D	790	J	D	660	J	D	673	J	D
CHROMIUM		22	J	D	20.8	J	D	16.6	J	D	18.6	J	D
COBALT		11.8			12.6			8.1			8.9		
COPPER		23			19.6			19.1			19.8		
IRON		31000			28600			21500			25800		
LEAD		31.3	J	D	26.9	J	D	47.1	J	D	47.1	J	D
MAGNESIUM		5160	J	I	4540	J	I	3280	J	I	3830	J	I
MANGANESE		261	J	I	270	J	I	196	J	I	206	J	I
MERCURY		0.05			0.02	U	A	0.04			0.04		
NICKEL		27.6			25.6			18.2			21.1		
POTASSIUM		368			372			440			338		
SELENIUM		0.26	U	A	0.24	U	A	0.32	J	P	0.28	J	P
SILVER		0.05	J	P	0.04	J	P	0.07	J	P	0.07	J	P
SODIUM		34.2	U	A	38	U	A	42.7	U	A	38.5	U	A
THALLIUM		0.05	J	P	0.04	J	P	0.08			0.06	J	P
VANADIUM		32.4			21.8			30.4			30.6		
ZINC		63.4	J	D	62.4	J	D	49.2	J	D	53.7	J	D

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1049-000.9			TF2-004/5-SS-DUP01-1013			TF2-004/5-SS-DUP02-1013			TF2-004/5-SS-DUP03-1013		
SDG: SG8184	LAB_ID	SG8184-027			SG8184-011			SG8184-023			SG8184-035		
FRACTION: M	SAMP_DATE	10/21/2013			10/18/2013			10/18/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	93.9			97.1			95.3			96.0		
	DUP_OF				TF2-004/5-SS1020-0001			TF2-004/5-SS1035-0001			TF2-004/5-SS1041-000.7		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		12800			12700			17200			8490		
ANTIMONY		0.28	J	D	0.14	J	D	0.22	J	D	0.11	J	D
ARSENIC		5.6			6.6			8.5			5.5		
BARIUM		13.8			16.9	J	I	15.4	J	I	14.5		
BERYLLIUM		0.33			0.31			0.47			0.31		
CADMIUM		0.1			0.06	J	P	0.07	J	P	0.08		
CALCIUM		742	J	D	668	J	D	582	J	DG	307	J	D
CHROMIUM		16.7	J	D	16			24.2			10.8	J	DI
COBALT		10.8			10.3	D	I	14.7	D	I	12		
COPPER		16.7			15.7			36.1			16.6		
IRON		23800			21900			34700			19500		
LEAD		25.4	J	D	12.5			34.2			10.3	J	D
MAGNESIUM		4360	J	I	3150	J	I	5270	J	I	3020	J	I
MANGANESE		223	J	I	286	J	I	273	J	I	350	J	I
MERCURY		0.04			0.014	U	A	0.05			0.005	J	P
NICKEL		22.4			16.7			29			16.9		
POTASSIUM		309			366			325			447		
SELENIUM		0.25	U	A	0.28	U	A	0.34	U	A	0.3	J	P
SILVER		0.04	J	P	0.02	J	P	0.08	J	P	0.02	J	P
SODIUM		38.8	U	A	49	U	A	38.4	U	A	32.7	U	A
THALLIUM		0.04	J	P	0.05	U	P	0.06	J	P	0.04	J	P
VANADIUM		22.2			19.5			32.7			14.4		
ZINC		52	J	D	42.7			67.6			37.2	J	D

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SS-RB01-1013

Matrix: WATER **SDG Name:** SG8184

Percent Solids: 0.00 **Lab Sample ID:** SG8184-018

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13.2	J		MS	5	300	4.40	40
7440-36-0	ANTIMONY, TOTAL	0.16	J		MS	5	1.0	0.05	0.50
7440-38-2	ARSENIC, TOTAL	4.0	U		MS	5	5.0	2.25	4.0
7440-39-3	BARIUM, TOTAL	0.44	J		MS	5	2.0	0.25	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	U		MS	5	1.0	0.04	0.20
7440-43-9	CADMIUM, TOTAL	0.05	J		MS	5	1.0	0.03	0.20
7440-70-2	CALCIUM, TOTAL	100			MS	5	100	20.45	80
7440-47-3	CHROMIUM, TOTAL	2.2	J		MS	5	5.0	0.20	4.0
7440-48-4	COBALT, TOTAL	0.08	J		MS	5	1.0	0.05	0.30
7440-50-8	COPPER, TOTAL	0.45	J		MS	5	3.0	0.20	2.0
7439-89-6	IRON, TOTAL	60	U		MS	5	100	12.75	60
7439-92-1	LEAD, TOTAL	0.09	J		MS	5	1.0	0.05	0.50
7439-95-4	MAGNESIUM, TOTAL	80	U		MS	5	100	7.80	80
7439-96-5	MANGANESE, TOTAL	0.99	J		MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.04	J		CV	1	0.20	0.01	0.10
7440-02-0	NICKEL, TOTAL	1.2	U		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	100	J		MS	5	1000	30.70	400
7782-49-2	SELENIUM, TOTAL	0.94	J		MS	5	5.0	0.20	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-23-5	SODIUM, TOTAL	400	U		MS	5	1000	18.50	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-62-2	VANADIUM, TOTAL	1.9	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	8.0	U		MS	5	10	3.90	8.0

Comments:

Katahdin Analytical Services A0000148

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SS-RB02-1013

Matrix: WATER **SDG Name:** SG8184

Percent Solids: 0.00 **Lab Sample ID:** SG8184-036

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11.5	J		MS	5	300	4.40	40
7440-36-0	ANTIMONY, TOTAL	0.15	J		MS	5	1.0	0.05	0.50
7440-38-2	ARSENIC, TOTAL	2.4	J		MS	5	5.0	2.25	4.0
7440-39-3	BARIUM, TOTAL	0.27	J		MS	5	2.0	0.25	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	U		MS	5	1.0	0.04	0.20
7440-43-9	CADMIUM, TOTAL	0.05	J		MS	5	1.0	0.03	0.20
7440-70-2	CALCIUM, TOTAL	111			MS	5	100	20.45	80
7440-47-3	CHROMIUM, TOTAL	2.3	J		MS	5	5.0	0.20	4.0
7440-48-4	COBALT, TOTAL	0.08	J		MS	5	1.0	0.05	0.30
7440-50-8	COPPER, TOTAL	0.56	J		MS	5	3.0	0.20	2.0
7439-89-6	IRON, TOTAL	60	U		MS	5	100	12.75	60
7439-92-1	LEAD, TOTAL	0.14	J		MS	5	1.0	0.05	0.50
7439-95-4	MAGNESIUM, TOTAL	80	U		MS	5	100	7.80	80
7439-96-5	MANGANESE, TOTAL	1.0	J		MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.03	J		CV	1	0.20	0.01	0.10
7440-02-0	NICKEL, TOTAL	1.2	U		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	87.3	J		MS	5	1000	30.70	400
7782-49-2	SELENIUM, TOTAL	0.23	J		MS	5	5.0	0.20	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-23-5	SODIUM, TOTAL	400	U		MS	5	1000	18.50	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-62-2	VANADIUM, TOTAL	0.64	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	8.0	U		MS	5	10	3.90	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS-DUP01-1013

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 97.1 **Lab Sample ID:** SG8184-011

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12700			MS	5	26	0.44	3.5
7440-36-0	ANTIMONY, TOTAL	0.14		N	MS	5	0.086	0.02	0.043
7440-38-2	ARSENIC, TOTAL	6.6			MS	5	0.43	0.13	0.35
7440-39-3	BARIUM, TOTAL	16.9		E	MS	5	0.17	0.03	0.086
7440-41-7	BERYLLIUM, TOTAL	0.31			MS	5	0.086	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.086	0.009	0.017
7440-70-2	CALCIUM, TOTAL	668		N	MS	5	8.6	3.31	6.9
7440-47-3	CHROMIUM, TOTAL	16.0		N	MS	5	0.43	0.04	0.35
7440-48-4	COBALT, TOTAL	10.3		E	MS	5	0.086	0.004	0.026
7440-50-8	COPPER, TOTAL	15.7			MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	21900			MS	5	8.6	2.08	5.2
7439-92-1	LEAD, TOTAL	12.5		N	MS	5	0.086	0.004	0.043
7439-95-4	MAGNESIUM, TOTAL	3150		E	MS	5	8.6	1.18	6.9
7439-96-5	MANGANESE, TOTAL	286		E	MS	5	0.17	0.03	0.086
7439-97-6	MERCURY, TOTAL	0.01	J		CV	1	0.029	0.004	0.014
7440-02-0	NICKEL, TOTAL	16.7			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	366		*	MS	5	86	3.95	35
7782-49-2	SELENIUM, TOTAL	0.28	J		MS	5	0.43	0.03	0.26
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.086	0.004	0.035
7440-23-5	SODIUM, TOTAL	49.0	J		MS	5	86	2.22	35
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.086	0.009	0.035
7440-62-2	VANADIUM, TOTAL	19.5			MS	5	0.43	0.10	0.35
7440-66-6	ZINC, TOTAL	42.7		N	MS	5	0.86	0.11	0.69

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS-DUP02-1013

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 95.3 **Lab Sample ID:** SG8184-023

Concentration Units : mg/Kgdrywt

							ADJUSTED		
CAS No.	**Analyte**	**Concentration**	**C**	**Q**	**M**	**DF**	**LOQ**	**MDL**	**LOD**
7429-90-5	ALUMINUM, TOTAL	17200			MS	5	27	0.47	3.6
7440-36-0	ANTIMONY, TOTAL	0.22		N	MS	5	0.091	0.02	0.046
7440-38-2	ARSENIC, TOTAL	8.5			MS	5	0.46	0.14	0.36
7440-39-3	BARIUM, TOTAL	15.4		E	MS	5	0.18	0.03	0.091
7440-41-7	BERYLLIUM, TOTAL	0.47			MS	5	0.091	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.091	0.009	0.018
7440-70-2	CALCIUM, TOTAL	582		N	MS	5	9.1	3.49	7.3
7440-47-3	CHROMIUM, TOTAL	24.2		N	MS	5	0.46	0.05	0.36
7440-48-4	COBALT, TOTAL	14.7		E	MS	5	0.091	0.005	0.027
7440-50-8	COPPER, TOTAL	36.1			MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	34700			MS	5	9.1	2.19	5.5
7439-92-1	LEAD, TOTAL	34.2		N	MS	5	0.091	0.005	0.046
7439-95-4	MAGNESIUM, TOTAL	5270		E	MS	5	9.1	1.25	7.3
7439-96-5	MANGANESE, TOTAL	273		E	MS	5	0.18	0.04	0.091
7439-97-6	MERCURY, TOTAL	0.05			CV	1	0.027	0.004	0.014
7440-02-0	NICKEL, TOTAL	29.0			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	325		*	MS	5	91	4.16	36
7782-49-2	SELENIUM, TOTAL	0.34	J		MS	5	0.46	0.04	0.27
7440-22-4	SILVER, TOTAL	0.08	J		MS	5	0.091	0.005	0.036
7440-23-5	SODIUM, TOTAL	38.4	J		MS	5	91	2.34	36
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.091	0.009	0.036
7440-62-2	VANADIUM, TOTAL	32.7			MS	5	0.46	0.10	0.36
7440-66-6	ZINC, TOTAL	67.6		N	MS	5	0.91	0.12	0.73

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS-DUP03-1013

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 96.0 **Lab Sample ID:** SG8184-035

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	8490			MS	5	21	0.36	2.8
7440-36-0	ANTIMONY, TOTAL	0.11		N	MS	5	0.070	0.01	0.035
7440-38-2	ARSENIC, TOTAL	5.5			MS	5	0.35	0.11	0.28
7440-39-3	BARIUM, TOTAL	14.5		E	MS	5	0.14	0.02	0.070
7440-41-7	BERYLLIUM, TOTAL	0.31			MS	5	0.070	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.08			MS	5	0.070	0.007	0.014
7440-70-2	CALCIUM, TOTAL	307		N	MS	5	7.0	2.69	5.6
7440-47-3	CHROMIUM, TOTAL	10.8		N	MS	5	0.35	0.04	0.28
7440-48-4	COBALT, TOTAL	12.0		E	MS	5	0.070	0.004	0.021
7440-50-8	COPPER, TOTAL	16.6			MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	19500			MS	5	7.0	1.69	4.2
7439-92-1	LEAD, TOTAL	10.3		N	MS	5	0.070	0.004	0.035
7439-95-4	MAGNESIUM, TOTAL	3020		E	MS	5	7.0	0.96	5.6
7439-96-5	MANGANESE, TOTAL	350		E	MS	5	0.14	0.03	0.070
7439-97-6	MERCURY, TOTAL	0.005	J		CV	1	0.030	0.004	0.015
7440-02-0	NICKEL, TOTAL	16.9			MS	5	0.14	0.02	0.084
7440-09-7	POTASSIUM, TOTAL	447		*	MS	5	70	3.21	28
7782-49-2	SELENIUM, TOTAL	0.30	J		MS	5	0.35	0.03	0.21
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.070	0.004	0.028
7440-23-5	SODIUM, TOTAL	32.7	J		MS	5	70	1.81	28
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.070	0.007	0.028
7440-62-2	VANADIUM, TOTAL	14.4			MS	5	0.35	0.08	0.28
7440-66-6	ZINC, TOTAL	37.2		N	MS	5	0.70	0.09	0.56

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1020-0001

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 98.0 **Lab Sample ID:** SG8184-008

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	10100			MS	5	25	0.42	3.3
7440-36-0	ANTIMONY, TOTAL	0.14		N	MS	5	0.082	0.02	0.041
7440-38-2	ARSENIC, TOTAL	7.6			MS	5	0.41	0.12	0.33
7440-39-3	BARIUM, TOTAL	14.9		E	MS	5	0.16	0.03	0.082
7440-41-7	BERYLLIUM, TOTAL	0.35			MS	5	0.082	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.082	0.008	0.016
7440-70-2	CALCIUM, TOTAL	551		N	MS	5	8.2	3.15	6.6
7440-47-3	CHROMIUM, TOTAL	12.6		N	MS	5	0.41	0.04	0.33
7440-48-4	COBALT, TOTAL	13.4		E	MS	5	0.082	0.004	0.025
7440-50-8	COPPER, TOTAL	16.3			MS	5	0.25	0.06	0.16
7439-89-6	IRON, TOTAL	21100			MS	5	8.2	1.98	4.9
7439-92-1	LEAD, TOTAL	12.4		N	MS	5	0.082	0.004	0.041
7439-95-4	MAGNESIUM, TOTAL	3150		E	MS	5	8.2	1.12	6.6
7439-96-5	MANGANESE, TOTAL	345		E	MS	5	0.16	0.03	0.082
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.029	0.004	0.015
7440-02-0	NICKEL, TOTAL	17.6			MS	5	0.16	0.02	0.099
7440-09-7	POTASSIUM, TOTAL	447		*	MS	5	82	3.75	33
7782-49-2	SELENIUM, TOTAL	0.24	J		MS	5	0.41	0.03	0.25
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.082	0.004	0.033
7440-23-5	SODIUM, TOTAL	45.9	J		MS	5	82	2.11	33
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.082	0.008	0.033
7440-62-2	VANADIUM, TOTAL	16.2			MS	5	0.41	0.09	0.33
7440-66-6	ZINC, TOTAL	39.0		N	MS	5	0.82	0.11	0.66

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1021-000.7

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 96.4 **Lab Sample ID:** SG8184-007

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	16000			MS	5	25	0.42	3.3
7440-36-0	ANTIMONY, TOTAL	0.13		N	MS	5	0.083	0.02	0.041
7440-38-2	ARSENIC, TOTAL	8.1			MS	5	0.41	0.12	0.33
7440-39-3	BARIUM, TOTAL	20.2		E	MS	5	0.16	0.03	0.083
7440-41-7	BERYLLIUM, TOTAL	0.51			MS	5	0.083	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.083	0.008	0.016
7440-70-2	CALCIUM, TOTAL	748		N	MS	5	8.3	3.17	6.6
7440-47-3	CHROMIUM, TOTAL	20.8		N	MS	5	0.41	0.04	0.33
7440-48-4	COBALT, TOTAL	5.2		E	MS	5	0.083	0.004	0.025
7440-50-8	COPPER, TOTAL	22.5			MS	5	0.25	0.06	0.16
7439-89-6	IRON, TOTAL	28500			MS	5	8.3	1.99	5.0
7439-92-1	LEAD, TOTAL	26.0		N	MS	5	0.083	0.004	0.041
7439-95-4	MAGNESIUM, TOTAL	1970		E	MS	5	8.3	1.13	6.6
7439-96-5	MANGANESE, TOTAL	156		E	MS	5	0.16	0.03	0.083
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.027	0.004	0.014
7440-02-0	NICKEL, TOTAL	9.8			MS	5	0.16	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	439		*	MS	5	83	3.78	33
7782-49-2	SELENIUM, TOTAL	0.19	J		MS	5	0.41	0.03	0.25
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.083	0.004	0.033
7440-23-5	SODIUM, TOTAL	54.8	J		MS	5	83	2.13	33
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.083	0.008	0.033
7440-62-2	VANADIUM, TOTAL	25.9			MS	5	0.41	0.09	0.33
7440-66-6	ZINC, TOTAL	57.2		N	MS	5	0.83	0.11	0.66

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1022-000.9

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 94.8 **Lab Sample ID:** SG8184-006

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11600			MS	5	24	0.41	3.2
7440-36-0	ANTIMONY, TOTAL	0.16		N	MS	5	0.080	0.02	0.040
7440-38-2	ARSENIC, TOTAL	6.8			MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	17.8		E	MS	5	0.16	0.03	0.080
7440-41-7	BERYLLIUM, TOTAL	0.40			MS	5	0.080	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.080	0.008	0.016
7440-70-2	CALCIUM, TOTAL	484		N	MS	5	8.0	3.08	6.4
7440-47-3	CHROMIUM, TOTAL	15.2		N	MS	5	0.40	0.04	0.32
7440-48-4	COBALT, TOTAL	12.0		E	MS	5	0.080	0.004	0.024
7440-50-8	COPPER, TOTAL	20.4			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	23900			MS	5	8.0	1.93	4.8
7439-92-1	LEAD, TOTAL	11.4		N	MS	5	0.080	0.004	0.040
7439-95-4	MAGNESIUM, TOTAL	3440		E	MS	5	8.0	1.10	6.4
7439-96-5	MANGANESE, TOTAL	498		E	MS	10	0.32	0.06	0.16
7439-97-6	MERCURY, TOTAL	0.01	J		CV	1	0.030	0.005	0.015
7440-02-0	NICKEL, TOTAL	24.8			MS	5	0.16	0.02	0.097
7440-09-7	POTASSIUM, TOTAL	476		*	MS	5	80	3.67	32
7782-49-2	SELENIUM, TOTAL	0.34	J		MS	5	0.40	0.03	0.24
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.080	0.004	0.032
7440-23-5	SODIUM, TOTAL	51.8	J		MS	5	80	2.07	32
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.080	0.008	0.032
7440-62-2	VANADIUM, TOTAL	17.1			MS	5	0.40	0.09	0.32
7440-66-6	ZINC, TOTAL	50.5		N	MS	5	0.80	0.10	0.64

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1023-000.8

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 94.2 **Lab Sample ID:** SG8184-005

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	12600			MS	5	24	0.41	3.2
7440-36-0	ANTIMONY, TOTAL	0.17		N	MS	5	0.080	0.02	0.040
7440-38-2	ARSENIC, TOTAL	7.2			MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	16.3		E	MS	5	0.16	0.03	0.080
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.080	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.080	0.008	0.016
7440-70-2	CALCIUM, TOTAL	810		N	MS	5	8.0	3.05	6.4
7440-47-3	CHROMIUM, TOTAL	17.8		N	MS	5	0.40	0.04	0.32
7440-48-4	COBALT, TOTAL	8.4		E	MS	5	0.080	0.004	0.024
7440-50-8	COPPER, TOTAL	17.3			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	25300			MS	5	8.0	1.92	4.8
7439-92-1	LEAD, TOTAL	25.1		N	MS	5	0.080	0.004	0.040
7439-95-4	MAGNESIUM, TOTAL	3820		E	MS	5	8.0	1.09	6.4
7439-96-5	MANGANESE, TOTAL	227		E	MS	5	0.16	0.03	0.080
7439-97-6	MERCURY, TOTAL	0.03			CV	1	0.030	0.005	0.015
7440-02-0	NICKEL, TOTAL	18.8			MS	5	0.16	0.02	0.096
7440-09-7	POTASSIUM, TOTAL	418		*	MS	5	80	3.64	32
7782-49-2	SELENIUM, TOTAL	0.42			MS	5	0.40	0.03	0.24
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.080	0.004	0.032
7440-23-5	SODIUM, TOTAL	56.8	J		MS	5	80	2.05	32
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.080	0.008	0.032
7440-62-2	VANADIUM, TOTAL	28.1			MS	5	0.40	0.09	0.32
7440-66-6	ZINC, TOTAL	45.0		N	MS	5	0.80	0.10	0.64

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1024-000.6

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 95.1 **Lab Sample ID:** SG8184-004

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11200			MS	5	28	0.47	3.7
7440-36-0	ANTIMONY, TOTAL	2.5		N	MS	5	0.093	0.02	0.046
7440-38-2	ARSENIC, TOTAL	6.2			MS	5	0.46	0.14	0.37
7440-39-3	BARIUM, TOTAL	19.8		E	MS	5	0.19	0.03	0.093
7440-41-7	BERYLLIUM, TOTAL	0.35			MS	5	0.093	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.093	0.009	0.019
7440-70-2	CALCIUM, TOTAL	765		N	MS	5	9.3	3.56	7.4
7440-47-3	CHROMIUM, TOTAL	15.3		N	MS	5	0.46	0.05	0.37
7440-48-4	COBALT, TOTAL	7.6		E	MS	5	0.093	0.005	0.028
7440-50-8	COPPER, TOTAL	18.1			MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	19200			MS	5	9.3	2.23	5.6
7439-92-1	LEAD, TOTAL	66.3		N	MS	5	0.093	0.005	0.046
7439-95-4	MAGNESIUM, TOTAL	2750		E	MS	5	9.3	1.27	7.4
7439-96-5	MANGANESE, TOTAL	216		E	MS	5	0.19	0.04	0.093
7439-97-6	MERCURY, TOTAL	0.03			CV	1	0.030	0.004	0.015
7440-02-0	NICKEL, TOTAL	14.9			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	470		*	MS	5	93	4.24	37
7782-49-2	SELENIUM, TOTAL	0.48			MS	5	0.46	0.04	0.28
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.093	0.005	0.037
7440-23-5	SODIUM, TOTAL	70.2	J		MS	5	93	2.39	37
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.093	0.009	0.037
7440-62-2	VANADIUM, TOTAL	24.8			MS	5	0.46	0.10	0.37
7440-66-6	ZINC, TOTAL	41.7		N	MS	5	0.93	0.12	0.74

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1025-000.8

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 93.5 **Lab Sample ID:** SG8184-002

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11600			MS	5	25	0.43	3.3
7440-36-0	ANTIMONY, TOTAL	0.17		N	MS	5	0.084	0.02	0.042
7440-38-2	ARSENIC, TOTAL	6.4			MS	5	0.42	0.13	0.33
7440-39-3	BARIUM, TOTAL	17.5		E	MS	5	0.17	0.03	0.084
7440-41-7	BERYLLIUM, TOTAL	0.33			MS	5	0.084	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.09			MS	5	0.084	0.008	0.017
7440-70-2	CALCIUM, TOTAL	956		N	MS	5	8.4	3.20	6.7
7440-47-3	CHROMIUM, TOTAL	18.3		N	MS	5	0.42	0.04	0.33
7440-48-4	COBALT, TOTAL	8.6		E	MS	5	0.084	0.004	0.025
7440-50-8	COPPER, TOTAL	19.4			MS	5	0.25	0.06	0.17
7439-89-6	IRON, TOTAL	22600			MS	5	8.4	2.00	5.0
7439-92-1	LEAD, TOTAL	31.9		N	MS	5	0.084	0.004	0.042
7439-95-4	MAGNESIUM, TOTAL	3570		E	MS	5	8.4	1.14	6.7
7439-96-5	MANGANESE, TOTAL	230		E	MS	5	0.17	0.03	0.084
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.030	0.005	0.015
7440-02-0	NICKEL, TOTAL	17.9			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	344		*	MS	5	84	3.81	33
7782-49-2	SELENIUM, TOTAL	0.41	J		MS	5	0.42	0.03	0.25
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.084	0.004	0.033
7440-23-5	SODIUM, TOTAL	59.4	J		MS	5	84	2.14	33
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.084	0.008	0.033
7440-62-2	VANADIUM, TOTAL	26.1			MS	5	0.42	0.09	0.33
7440-66-6	ZINC, TOTAL	44.9		N	MS	5	0.84	0.11	0.67

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1026-000.8

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 96.7 **Lab Sample ID:** SG8184-003

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	4950			MS	5	23	0.39	3.0
7440-36-0	ANTIMONY, TOTAL	0.05	J	N	MS	5	0.076	0.02	0.038
7440-38-2	ARSENIC, TOTAL	2.2			MS	5	0.38	0.11	0.30
7440-39-3	BARIUM, TOTAL	11.3		E	MS	5	0.15	0.03	0.076
7440-41-7	BERYLLIUM, TOTAL	0.23			MS	5	0.076	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.076	0.008	0.015
7440-70-2	CALCIUM, TOTAL	564		N	MS	5	7.6	2.91	6.1
7440-47-3	CHROMIUM, TOTAL	7.1		N	MS	5	0.38	0.04	0.30
7440-48-4	COBALT, TOTAL	3.3		E	MS	5	0.076	0.004	0.023
7440-50-8	COPPER, TOTAL	7.8			MS	5	0.23	0.05	0.15
7439-89-6	IRON, TOTAL	9760			MS	5	7.6	1.83	4.6
7439-92-1	LEAD, TOTAL	7.6		N	MS	5	0.076	0.004	0.038
7439-95-4	MAGNESIUM, TOTAL	1520		E	MS	5	7.6	1.04	6.1
7439-96-5	MANGANESE, TOTAL	155		E	MS	5	0.15	0.03	0.076
7439-97-6	MERCURY, TOTAL	0.01	J		CV	1	0.030	0.004	0.015
7440-02-0	NICKEL, TOTAL	9.2			MS	5	0.15	0.02	0.091
7440-09-7	POTASSIUM, TOTAL	390		*	MS	5	76	3.47	30
7782-49-2	SELENIUM, TOTAL	0.21	J		MS	5	0.38	0.03	0.23
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.076	0.004	0.030
7440-23-5	SODIUM, TOTAL	44.5	J		MS	5	76	1.95	30
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.076	0.008	0.030
7440-62-2	VANADIUM, TOTAL	9.0			MS	5	0.38	0.08	0.30
7440-66-6	ZINC, TOTAL	21.7		N	MS	5	0.76	0.10	0.61

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1027-0001

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 94.5 **Lab Sample ID:** SG8184-015

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	10900			MS	5	24	0.41	3.2
7440-36-0	ANTIMONY, TOTAL	0.11		N	MS	5	0.080	0.02	0.040
7440-38-2	ARSENIC, TOTAL	6.2			MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	15.4		E	MS	5	0.16	0.03	0.080
7440-41-7	BERYLLIUM, TOTAL	0.37			MS	5	0.080	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.080	0.008	0.016
7440-70-2	CALCIUM, TOTAL	388		N	MS	5	8.0	3.07	6.4
7440-47-3	CHROMIUM, TOTAL	13.6		N	MS	5	0.40	0.04	0.32
7440-48-4	COBALT, TOTAL	8.5		E	MS	5	0.080	0.004	0.024
7440-50-8	COPPER, TOTAL	14.2			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	20300			MS	5	8.0	1.92	4.8
7439-92-1	LEAD, TOTAL	9.2		N	MS	5	0.080	0.004	0.040
7439-95-4	MAGNESIUM, TOTAL	3080		E	MS	5	8.0	1.09	6.4
7439-96-5	MANGANESE, TOTAL	271		E	MS	5	0.16	0.03	0.080
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.029	0.004	0.015
7440-02-0	NICKEL, TOTAL	15.1			MS	5	0.16	0.02	0.096
7440-09-7	POTASSIUM, TOTAL	445		*	MS	5	80	3.65	32
7782-49-2	SELENIUM, TOTAL	0.15	J		MS	5	0.40	0.03	0.24
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.080	0.004	0.032
7440-23-5	SODIUM, TOTAL	42.1	J		MS	5	80	2.06	32
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.080	0.008	0.032
7440-62-2	VANADIUM, TOTAL	16.5			MS	5	0.40	0.09	0.32
7440-66-6	ZINC, TOTAL	38.0		N	MS	5	0.80	0.10	0.64

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1028-000.8

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 95.0 **Lab Sample ID:** SG8184-014

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15200			MS	5	20	0.33	2.6
7440-36-0	ANTIMONY, TOTAL	0.14		N	MS	5	0.065	0.01	0.033
7440-38-2	ARSENIC, TOTAL	6.6			MS	5	0.33	0.10	0.26
7440-39-3	BARIUM, TOTAL	11.6		E	MS	5	0.13	0.02	0.065
7440-41-7	BERYLLIUM, TOTAL	0.37			MS	5	0.065	0.003	0.013
7440-43-9	CADMIUM, TOTAL	0.06			MS	5	0.065	0.007	0.013
7440-70-2	CALCIUM, TOTAL	766		N	MS	5	6.5	2.50	5.2
7440-47-3	CHROMIUM, TOTAL	21.1		N	MS	5	0.33	0.03	0.26
7440-48-4	COBALT, TOTAL	11.2		E	MS	5	0.065	0.003	0.020
7440-50-8	COPPER, TOTAL	20.1			MS	5	0.20	0.05	0.13
7439-89-6	IRON, TOTAL	30600			MS	5	6.5	1.57	3.9
7439-92-1	LEAD, TOTAL	18.7		N	MS	5	0.065	0.003	0.033
7439-95-4	MAGNESIUM, TOTAL	4800		E	MS	5	6.5	0.89	5.2
7439-96-5	MANGANESE, TOTAL	251		E	MS	5	0.13	0.03	0.065
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.030	0.005	0.015
7440-02-0	NICKEL, TOTAL	22.7			MS	5	0.13	0.02	0.078
7440-09-7	POTASSIUM, TOTAL	313		*	MS	5	65	2.98	26
7782-49-2	SELENIUM, TOTAL	0.20	J		MS	5	0.33	0.03	0.20
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.065	0.003	0.026
7440-23-5	SODIUM, TOTAL	37.7	J		MS	5	65	1.68	26
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.065	0.007	0.026
7440-62-2	VANADIUM, TOTAL	25.0			MS	5	0.33	0.07	0.26
7440-66-6	ZINC, TOTAL	53.7		N	MS	5	0.65	0.08	0.52

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1029-000.6

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 96.9 **Lab Sample ID:** SG8184-013

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14500			MS	5	24	0.41	3.2
7440-36-0	ANTIMONY, TOTAL	0.46		N	MS	5	0.081	0.02	0.041
7440-38-2	ARSENIC, TOTAL	8.3			MS	5	0.41	0.12	0.32
7440-39-3	BARIUM, TOTAL	21.5		E	MS	5	0.16	0.03	0.081
7440-41-7	BERYLLIUM, TOTAL	0.44			MS	5	0.081	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.081	0.008	0.016
7440-70-2	CALCIUM, TOTAL	624		N	MS	5	8.1	3.11	6.5
7440-47-3	CHROMIUM, TOTAL	19.1		N	MS	5	0.41	0.04	0.32
7440-48-4	COBALT, TOTAL	9.2		E	MS	5	0.081	0.004	0.024
7440-50-8	COPPER, TOTAL	23.7			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	26500			MS	5	8.1	1.95	4.9
7439-92-1	LEAD, TOTAL	37.9		N	MS	5	0.081	0.004	0.041
7439-95-4	MAGNESIUM, TOTAL	3920		E	MS	5	8.1	1.11	6.5
7439-96-5	MANGANESE, TOTAL	243		E	MS	5	0.16	0.03	0.081
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.029	0.004	0.015
7440-02-0	NICKEL, TOTAL	20.6			MS	5	0.16	0.02	0.098
7440-09-7	POTASSIUM, TOTAL	448		*	MS	5	81	3.71	32
7782-49-2	SELENIUM, TOTAL	0.32	J		MS	5	0.41	0.03	0.24
7440-22-4	SILVER, TOTAL	0.11			MS	5	0.081	0.004	0.032
7440-23-5	SODIUM, TOTAL	53.3	J		MS	5	81	2.08	32
7440-28-0	THALLIUM, TOTAL	0.07	J		MS	5	0.081	0.008	0.032
7440-62-2	VANADIUM, TOTAL	34.7			MS	5	0.41	0.09	0.32
7440-66-6	ZINC, TOTAL	52.9		N	MS	5	0.81	0.11	0.65

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1030-000.6

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 95.3 **Lab Sample ID:** SG8184-012

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14900			MS	5	27	0.46	3.6
7440-36-0	ANTIMONY, TOTAL	0.29		N	MS	5	0.090	0.02	0.045
7440-38-2	ARSENIC, TOTAL	7.7			MS	5	0.45	0.13	0.36
7440-39-3	BARIUM, TOTAL	17.3		E	MS	5	0.18	0.03	0.090
7440-41-7	BERYLLIUM, TOTAL	0.87			MS	5	0.090	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.09	J		MS	5	0.090	0.009	0.018
7440-70-2	CALCIUM, TOTAL	694		N	MS	5	9.0	3.43	7.2
7440-47-3	CHROMIUM, TOTAL	18.9		N	MS	5	0.45	0.04	0.36
7440-48-4	COBALT, TOTAL	13.8		E	MS	5	0.090	0.004	0.027
7440-50-8	COPPER, TOTAL	22.2			MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	30600			MS	5	9.0	2.15	5.4
7439-92-1	LEAD, TOTAL	25.2		N	MS	5	0.090	0.004	0.045
7439-95-4	MAGNESIUM, TOTAL	4410		E	MS	5	9.0	1.22	7.2
7439-96-5	MANGANESE, TOTAL	320		E	MS	5	0.18	0.04	0.090
7439-97-6	MERCURY, TOTAL	0.05			CV	1	0.030	0.004	0.015
7440-02-0	NICKEL, TOTAL	24.0			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	332		*	MS	5	90	4.09	36
7782-49-2	SELENIUM, TOTAL	0.37	J		MS	5	0.45	0.04	0.27
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.090	0.004	0.036
7440-23-5	SODIUM, TOTAL	45.5	J		MS	5	90	2.30	36
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.090	0.009	0.036
7440-62-2	VANADIUM, TOTAL	22.7			MS	5	0.45	0.10	0.36
7440-66-6	ZINC, TOTAL	59.7		N	MS	5	0.90	0.12	0.72

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1031-000.8

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 93.1 **Lab Sample ID:** SG8184-010

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	8920			MS	5	21	0.36	2.8
7440-36-0	ANTIMONY, TOTAL	0.13		N	MS	5	0.071	0.01	0.036
7440-38-2	ARSENIC, TOTAL	7.2			MS	5	0.36	0.11	0.28
7440-39-3	BARIUM, TOTAL	17.4		E	MS	5	0.14	0.02	0.071
7440-41-7	BERYLLIUM, TOTAL	0.32			MS	5	0.071	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.08			MS	5	0.071	0.007	0.014
7440-70-2	CALCIUM, TOTAL	400		N	MS	5	7.1	2.72	5.7
7440-47-3	CHROMIUM, TOTAL	11.8		N	MS	5	0.36	0.04	0.28
7440-48-4	COBALT, TOTAL	10.1		E	MS	5	0.071	0.004	0.021
7440-50-8	COPPER, TOTAL	16.7			MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	19200			MS	5	7.1	1.71	4.3
7439-92-1	LEAD, TOTAL	18.1		N	MS	5	0.071	0.004	0.036
7439-95-4	MAGNESIUM, TOTAL	3700		E	MS	5	7.1	0.97	5.7
7439-96-5	MANGANESE, TOTAL	247		E	MS	5	0.14	0.03	0.071
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.029	0.004	0.015
7440-02-0	NICKEL, TOTAL	19.0			MS	5	0.14	0.02	0.085
7440-09-7	POTASSIUM, TOTAL	323		*	MS	5	71	3.24	28
7782-49-2	SELENIUM, TOTAL	0.37			MS	5	0.36	0.03	0.21
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.071	0.004	0.028
7440-23-5	SODIUM, TOTAL	37.0	J		MS	5	71	1.82	28
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.071	0.007	0.028
7440-62-2	VANADIUM, TOTAL	14.2			MS	5	0.36	0.08	0.28
7440-66-6	ZINC, TOTAL	46.5		N	MS	5	0.71	0.09	0.57

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1032-000.9

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 92.4 **Lab Sample ID:** SG8184-009

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	8540			MS	5	28	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.15		N	MS	5	0.094	0.02	0.047
7440-38-2	ARSENIC, TOTAL	5.2			MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	19.1		E	MS	5	0.19	0.03	0.094
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.094	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.09	J		MS	5	0.094	0.009	0.019
7440-70-2	CALCIUM, TOTAL	739		N	MS	5	9.4	3.60	7.5
7440-47-3	CHROMIUM, TOTAL	12.2		N	MS	5	0.47	0.05	0.38
7440-48-4	COBALT, TOTAL	8.8		E	MS	5	0.094	0.005	0.028
7440-50-8	COPPER, TOTAL	15.6			MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	15200			MS	5	9.4	2.26	5.6
7439-92-1	LEAD, TOTAL	19.4		N	MS	5	0.094	0.005	0.047
7439-95-4	MAGNESIUM, TOTAL	3670		E	MS	5	9.4	1.28	7.5
7439-96-5	MANGANESE, TOTAL	230		E	MS	5	0.19	0.04	0.094
7439-97-6	MERCURY, TOTAL	0.07			CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	18.5			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	504		*	MS	5	94	4.29	38
7782-49-2	SELENIUM, TOTAL	0.46	J		MS	5	0.47	0.04	0.28
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.094	0.005	0.038
7440-23-5	SODIUM, TOTAL	59.2	J		MS	5	94	2.41	38
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.094	0.009	0.038
7440-62-2	VANADIUM, TOTAL	18.9			MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	50.2		N	MS	5	0.94	0.12	0.75

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1033-000.8

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 95.4 **Lab Sample ID:** SG8184-026

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11200			MS	5	24	0.41	3.2
7440-36-0	ANTIMONY, TOTAL	0.12		N	MS	5	0.081	0.02	0.041
7440-38-2	ARSENIC, TOTAL	6.4			MS	5	0.41	0.12	0.32
7440-39-3	BARIUM, TOTAL	15.1		E	MS	5	0.16	0.03	0.081
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.081	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.09			MS	5	0.081	0.008	0.016
7440-70-2	CALCIUM, TOTAL	600		N	MS	5	8.1	3.11	6.5
7440-47-3	CHROMIUM, TOTAL	14.5		N	MS	5	0.41	0.04	0.32
7440-48-4	COBALT, TOTAL	11.7		E	MS	5	0.081	0.004	0.024
7440-50-8	COPPER, TOTAL	17.6			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	23000			MS	5	8.1	1.95	4.9
7439-92-1	LEAD, TOTAL	12.3		N	MS	5	0.081	0.004	0.041
7439-95-4	MAGNESIUM, TOTAL	3560		E	MS	5	8.1	1.11	6.5
7439-96-5	MANGANESE, TOTAL	385		E	MS	5	0.16	0.03	0.081
7439-97-6	MERCURY, TOTAL	0.01	J		CV	1	0.030	0.004	0.015
7440-02-0	NICKEL, TOTAL	19.1			MS	5	0.16	0.02	0.097
7440-09-7	POTASSIUM, TOTAL	445		*	MS	5	81	3.70	32
7782-49-2	SELENIUM, TOTAL	0.19	J		MS	5	0.41	0.03	0.24
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.081	0.004	0.032
7440-23-5	SODIUM, TOTAL	35.0	J		MS	5	81	2.08	32
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.081	0.008	0.032
7440-62-2	VANADIUM, TOTAL	17.3			MS	5	0.41	0.09	0.32
7440-66-6	ZINC, TOTAL	43.4		N	MS	5	0.81	0.11	0.65

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1034-000.6

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 95.2 **Lab Sample ID:** SG8184-024

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14100			MS	5	28	0.47	3.7
7440-36-0	ANTIMONY, TOTAL	0.18		N	MS	5	0.093	0.02	0.046
7440-38-2	ARSENIC, TOTAL	8.5			MS	5	0.46	0.14	0.37
7440-39-3	BARIUM, TOTAL	16.2		E	MS	5	0.18	0.03	0.093
7440-41-7	BERYLLIUM, TOTAL	0.42			MS	5	0.093	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.093	0.009	0.018
7440-70-2	CALCIUM, TOTAL	594		N	MS	5	9.3	3.56	7.4
7440-47-3	CHROMIUM, TOTAL	20.7		N	MS	5	0.46	0.05	0.37
7440-48-4	COBALT, TOTAL	13.0		E	MS	5	0.093	0.005	0.028
7440-50-8	COPPER, TOTAL	22.4			MS	5	0.28	0.07	0.18
7439-89-6	IRON, TOTAL	29800			MS	5	9.3	2.23	5.6
7439-92-1	LEAD, TOTAL	28.9		N	MS	5	0.093	0.005	0.046
7439-95-4	MAGNESIUM, TOTAL	4300		E	MS	5	9.3	1.27	7.4
7439-96-5	MANGANESE, TOTAL	282		E	MS	5	0.18	0.04	0.093
7439-97-6	MERCURY, TOTAL	0.03	J		CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	23.6			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	482		*	MS	5	93	4.24	37
7782-49-2	SELENIUM, TOTAL	0.21	J		MS	5	0.46	0.04	0.28
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.093	0.005	0.037
7440-23-5	SODIUM, TOTAL	42.2	J		MS	5	93	2.38	37
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.093	0.009	0.037
7440-62-2	VANADIUM, TOTAL	28.8			MS	5	0.46	0.10	0.37
7440-66-6	ZINC, TOTAL	58.2		N	MS	5	0.93	0.12	0.74

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1035-0001

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 94.6 **Lab Sample ID:** SG8184-025

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	18200			MS	5	23	0.39	3.1
7440-36-0	ANTIMONY, TOTAL	0.18		N	MS	5	0.077	0.02	0.038
7440-38-2	ARSENIC, TOTAL	9.5			MS	5	0.38	0.12	0.31
7440-39-3	BARIUM, TOTAL	14.2		E	MS	5	0.15	0.03	0.077
7440-41-7	BERYLLIUM, TOTAL	0.44			MS	5	0.077	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.09			MS	5	0.077	0.008	0.015
7440-70-2	CALCIUM, TOTAL	1140		N	MS	5	7.7	2.95	6.2
7440-47-3	CHROMIUM, TOTAL	24.4		N	MS	5	0.38	0.04	0.31
7440-48-4	COBALT, TOTAL	13.2		E	MS	5	0.077	0.004	0.023
7440-50-8	COPPER, TOTAL	31.5			MS	5	0.23	0.05	0.15
7439-89-6	IRON, TOTAL	37800			MS	5	7.7	1.85	4.6
7439-92-1	LEAD, TOTAL	33.5		N	MS	5	0.077	0.004	0.038
7439-95-4	MAGNESIUM, TOTAL	5850		E	MS	5	7.7	1.05	6.2
7439-96-5	MANGANESE, TOTAL	266		E	MS	5	0.15	0.03	0.077
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	32.4			MS	5	0.15	0.02	0.092
7440-09-7	POTASSIUM, TOTAL	308		*	MS	5	77	3.52	31
7782-49-2	SELENIUM, TOTAL	0.33	J		MS	5	0.38	0.03	0.23
7440-22-4	SILVER, TOTAL	0.07	J		MS	5	0.077	0.004	0.031
7440-23-5	SODIUM, TOTAL	34.6	J		MS	5	77	1.98	31
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.077	0.008	0.031
7440-62-2	VANADIUM, TOTAL	35.2			MS	5	0.38	0.08	0.31
7440-66-6	ZINC, TOTAL	71.9		N	MS	5	0.77	0.10	0.62

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1036-000.6

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 96.9 **Lab Sample ID:** SG8184-022

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	15100			MS	5	27	0.47	3.6
7440-36-0	ANTIMONY, TOTAL	0.22		N	MS	5	0.091	0.02	0.046
7440-38-2	ARSENIC, TOTAL	10.4			MS	5	0.46	0.14	0.36
7440-39-3	BARIUM, TOTAL	16.4		E	MS	5	0.18	0.03	0.091
7440-41-7	BERYLLIUM, TOTAL	0.37			MS	5	0.091	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.091	0.009	0.018
7440-70-2	CALCIUM, TOTAL	549		N	MS	5	9.1	3.49	7.3
7440-47-3	CHROMIUM, TOTAL	20.8		N	MS	5	0.46	0.05	0.36
7440-48-4	COBALT, TOTAL	11.2		E	MS	5	0.091	0.005	0.027
7440-50-8	COPPER, TOTAL	23.4			MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	29600			MS	5	9.1	2.19	5.5
7439-92-1	LEAD, TOTAL	29.7		N	MS	5	0.091	0.005	0.046
7439-95-4	MAGNESIUM, TOTAL	4240		E	MS	5	9.1	1.25	7.3
7439-96-5	MANGANESE, TOTAL	265		E	MS	5	0.18	0.04	0.091
7439-97-6	MERCURY, TOTAL	0.05			CV	1	0.022	0.003	0.011
7440-02-0	NICKEL, TOTAL	22.3			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	392		*	MS	5	91	4.16	36
7782-49-2	SELENIUM, TOTAL	0.33	J		MS	5	0.46	0.04	0.27
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.091	0.005	0.036
7440-23-5	SODIUM, TOTAL	45.2	J		MS	5	91	2.34	36
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.091	0.009	0.036
7440-62-2	VANADIUM, TOTAL	29.9			MS	5	0.46	0.10	0.36
7440-66-6	ZINC, TOTAL	54.3		N	MS	5	0.91	0.12	0.73

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1037-000.7

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 97.4 **Lab Sample ID:** SG8184-021

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13900			MS	5	26	0.45	3.5
7440-36-0	ANTIMONY, TOTAL	0.28		N	MS	5	0.088	0.02	0.044
7440-38-2	ARSENIC, TOTAL	7.0			MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	20.0		E	MS	5	0.18	0.03	0.088
7440-41-7	BERYLLIUM, TOTAL	0.46			MS	5	0.088	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.088	0.009	0.018
7440-70-2	CALCIUM, TOTAL	843		N	MS	5	8.8	3.36	7.0
7440-47-3	CHROMIUM, TOTAL	19.2		N	MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	10.7		E	MS	5	0.088	0.004	0.026
7440-50-8	COPPER, TOTAL	19.2			MS	5	0.26	0.06	0.18
7439-89-6	IRON, TOTAL	27300			MS	5	8.8	2.11	5.3
7439-92-1	LEAD, TOTAL	28.6		N	MS	5	0.088	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	4100		E	MS	5	8.8	1.20	7.0
7439-96-5	MANGANESE, TOTAL	278		E	MS	5	0.18	0.04	0.088
7439-97-6	MERCURY, TOTAL	0.03			CV	1	0.026	0.004	0.013
7440-02-0	NICKEL, TOTAL	20.3			MS	5	0.18	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	404		*	MS	5	88	4.00	35
7782-49-2	SELENIUM, TOTAL	0.27	J		MS	5	0.44	0.04	0.26
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.088	0.004	0.035
7440-23-5	SODIUM, TOTAL	50.4	J		MS	5	88	2.25	35
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.088	0.009	0.035
7440-62-2	VANADIUM, TOTAL	23.2			MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	52.4		N	MS	5	0.88	0.11	0.70

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1038-000.7

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 93.7 **Lab Sample ID:** SG8184-020

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14400			MS	5	24	0.40	3.2
7440-36-0	ANTIMONY, TOTAL	0.15		N	MS	5	0.079	0.02	0.040
7440-38-2	ARSENIC, TOTAL	8.0			MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	18.4		E	MS	5	0.16	0.03	0.079
7440-41-7	BERYLLIUM, TOTAL	0.42			MS	5	0.079	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.079	0.008	0.016
7440-70-2	CALCIUM, TOTAL	681		N	MS	5	7.9	3.02	6.3
7440-47-3	CHROMIUM, TOTAL	21.0		N	MS	5	0.40	0.04	0.32
7440-48-4	COBALT, TOTAL	8.3		E	MS	5	0.079	0.004	0.024
7440-50-8	COPPER, TOTAL	21.7			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	28900			MS	5	7.9	1.90	4.7
7439-92-1	LEAD, TOTAL	25.4		N	MS	5	0.079	0.004	0.040
7439-95-4	MAGNESIUM, TOTAL	3260		E	MS	5	7.9	1.08	6.3
7439-96-5	MANGANESE, TOTAL	206		E	MS	5	0.16	0.03	0.079
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.025	0.004	0.013
7440-02-0	NICKEL, TOTAL	15.7			MS	5	0.16	0.02	0.095
7440-09-7	POTASSIUM, TOTAL	333		*	MS	5	79	3.60	32
7782-49-2	SELENIUM, TOTAL	0.29	J		MS	5	0.40	0.03	0.24
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.079	0.004	0.032
7440-23-5	SODIUM, TOTAL	43.6	J		MS	5	79	2.03	32
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.079	0.008	0.032
7440-62-2	VANADIUM, TOTAL	26.2			MS	5	0.40	0.09	0.32
7440-66-6	ZINC, TOTAL	44.5		N	MS	5	0.79	0.10	0.63

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1039-000.9

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 93.0 **Lab Sample ID:** SG8184-017

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13700			MS	5	24	0.40	3.2
7440-36-0	ANTIMONY, TOTAL	0.31		N	MS	5	0.079	0.02	0.040
7440-38-2	ARSENIC, TOTAL	7.3			MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	169		E	MS	5	0.16	0.03	0.079
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.079	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.10			MS	5	0.079	0.008	0.016
7440-70-2	CALCIUM, TOTAL	726		N	MS	5	7.9	3.02	6.3
7440-47-3	CHROMIUM, TOTAL	18.2		N	MS	5	0.40	0.04	0.32
7440-48-4	COBALT, TOTAL	10.9		E	MS	5	0.079	0.004	0.024
7440-50-8	COPPER, TOTAL	19.1			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	24700			MS	5	7.9	1.90	4.7
7439-92-1	LEAD, TOTAL	18.4		N	MS	5	0.079	0.004	0.040
7439-95-4	MAGNESIUM, TOTAL	3680		E	MS	5	7.9	1.08	6.3
7439-96-5	MANGANESE, TOTAL	334		E	MS	5	0.16	0.03	0.079
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.030	0.005	0.015
7440-02-0	NICKEL, TOTAL	53.0			MS	5	0.16	0.02	0.095
7440-09-7	POTASSIUM, TOTAL	404		*	MS	5	79	3.60	32
7782-49-2	SELENIUM, TOTAL	0.23	J		MS	5	0.40	0.03	0.24
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.079	0.004	0.032
7440-23-5	SODIUM, TOTAL	45.2	J		MS	5	79	2.03	32
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.079	0.008	0.032
7440-62-2	VANADIUM, TOTAL	25.0			MS	5	0.40	0.09	0.32
7440-66-6	ZINC, TOTAL	51.8		N	MS	5	0.79	0.10	0.63

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1040-000.9

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 90.3 **Lab Sample ID:** SG8184-016

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13500			MS	5	26	0.44	3.5
7440-36-0	ANTIMONY, TOTAL	0.20		N	MS	5	0.087	0.02	0.044
7440-38-2	ARSENIC, TOTAL	6.3			MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	15.7		E	MS	5	0.17	0.03	0.087
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.087	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.087	0.009	0.017
7440-70-2	CALCIUM, TOTAL	740		N	MS	5	8.7	3.33	7.0
7440-47-3	CHROMIUM, TOTAL	17.0		N	MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	10.1		E	MS	5	0.087	0.004	0.026
7440-50-8	COPPER, TOTAL	18.7			MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	24100			MS	5	8.7	2.09	5.2
7439-92-1	LEAD, TOTAL	28.5		N	MS	5	0.087	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	3990		E	MS	5	8.7	1.19	7.0
7439-96-5	MANGANESE, TOTAL	256		E	MS	5	0.17	0.03	0.087
7439-97-6	MERCURY, TOTAL	0.06			CV	1	0.026	0.004	0.013
7440-02-0	NICKEL, TOTAL	20.9			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	393		*	MS	5	87	3.98	35
7782-49-2	SELENIUM, TOTAL	0.35	J		MS	5	0.44	0.03	0.26
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.087	0.004	0.035
7440-23-5	SODIUM, TOTAL	52.1	J		MS	5	87	2.24	35
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.087	0.009	0.035
7440-62-2	VANADIUM, TOTAL	23.4			MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	52.1		N	MS	5	0.87	0.11	0.70

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1041-000.7

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 95.5 **Lab Sample ID:** SG8184-034

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	8900			MS	5	24	0.41	3.2
7440-36-0	ANTIMONY, TOTAL	0.13		N	MS	5	0.081	0.02	0.040
7440-38-2	ARSENIC, TOTAL	5.8			MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	15.9		E	MS	5	0.16	0.03	0.081
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.081	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.081	0.008	0.016
7440-70-2	CALCIUM, TOTAL	393		N	MS	5	8.1	3.10	6.5
7440-47-3	CHROMIUM, TOTAL	13.4		N	MS	5	0.40	0.04	0.32
7440-48-4	COBALT, TOTAL	11.0		E	MS	5	0.081	0.004	0.024
7440-50-8	COPPER, TOTAL	17.5			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	19600			MS	5	8.1	1.95	4.9
7439-92-1	LEAD, TOTAL	11.5		N	MS	5	0.081	0.004	0.040
7439-95-4	MAGNESIUM, TOTAL	2950		E	MS	5	8.1	1.11	6.5
7439-96-5	MANGANESE, TOTAL	313		E	MS	5	0.16	0.03	0.081
7439-97-6	MERCURY, TOTAL	0.005	J		CV	1	0.029	0.004	0.015
7440-02-0	NICKEL, TOTAL	16.7			MS	5	0.16	0.02	0.097
7440-09-7	POTASSIUM, TOTAL	483		*	MS	5	81	3.70	32
7782-49-2	SELENIUM, TOTAL	0.15	J		MS	5	0.40	0.03	0.24
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.081	0.004	0.032
7440-23-5	SODIUM, TOTAL	33.0	J		MS	5	81	2.08	32
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.081	0.008	0.032
7440-62-2	VANADIUM, TOTAL	15.4			MS	5	0.40	0.09	0.32
7440-66-6	ZINC, TOTAL	39.3		N	MS	5	0.81	0.11	0.65

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1042-000.5

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 94.1 **Lab Sample ID:** SG8184-033

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15000			MS	5	22	0.38	3.0
7440-36-0	ANTIMONY, TOTAL	0.17		N	MS	5	0.074	0.01	0.037
7440-38-2	ARSENIC, TOTAL	8.5			MS	5	0.37	0.11	0.30
7440-39-3	BARIUM, TOTAL	14.7		E	MS	5	0.15	0.03	0.074
7440-41-7	BERYLLIUM, TOTAL	0.46			MS	5	0.074	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.074	0.007	0.015
7440-70-2	CALCIUM, TOTAL	536		N	MS	5	7.4	2.84	5.9
7440-47-3	CHROMIUM, TOTAL	21.2		N	MS	5	0.37	0.04	0.30
7440-48-4	COBALT, TOTAL	11.5		E	MS	5	0.074	0.004	0.022
7440-50-8	COPPER, TOTAL	28.7			MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	33400			MS	5	7.4	1.78	4.4
7439-92-1	LEAD, TOTAL	30.7		N	MS	5	0.074	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	4950		E	MS	5	7.4	1.01	5.9
7439-96-5	MANGANESE, TOTAL	259		E	MS	5	0.15	0.03	0.074
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.035	0.005	0.018
7440-02-0	NICKEL, TOTAL	25.9			MS	5	0.15	0.02	0.089
7440-09-7	POTASSIUM, TOTAL	374		*	MS	5	74	3.39	30
7782-49-2	SELENIUM, TOTAL	0.31	J		MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.074	0.004	0.030
7440-23-5	SODIUM, TOTAL	35.1	J		MS	5	74	1.91	30
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.074	0.007	0.030
7440-62-2	VANADIUM, TOTAL	33.2			MS	5	0.37	0.08	0.30
7440-66-6	ZINC, TOTAL	64.4		N	MS	5	0.74	0.10	0.59

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1044-000.5

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 96.1 **Lab Sample ID:** SG8184-032

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13400			MS	5	26	0.45	3.5
7440-36-0	ANTIMONY, TOTAL	0.22		N	MS	5	0.088	0.02	0.044
7440-38-2	ARSENIC, TOTAL	11.4			MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	14.9		E	MS	5	0.18	0.03	0.088
7440-41-7	BERYLLIUM, TOTAL	0.52			MS	5	0.088	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.09			MS	5	0.088	0.009	0.018
7440-70-2	CALCIUM, TOTAL	789		N	MS	5	8.8	3.37	7.0
7440-47-3	CHROMIUM, TOTAL	19.1		N	MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	12.7		E	MS	5	0.088	0.004	0.026
7440-50-8	COPPER, TOTAL	24.2			MS	5	0.26	0.06	0.18
7439-89-6	IRON, TOTAL	28900			MS	5	8.8	2.12	5.3
7439-92-1	LEAD, TOTAL	22.5		N	MS	5	0.088	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	4070		E	MS	5	8.8	1.20	7.0
7439-96-5	MANGANESE, TOTAL	284		E	MS	5	0.18	0.04	0.088
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	24.5			MS	5	0.18	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	429		*	MS	5	88	4.02	35
7782-49-2	SELENIUM, TOTAL	0.35	J		MS	5	0.44	0.04	0.26
7440-22-4	SILVER, TOTAL	0.22			MS	5	0.088	0.004	0.035
7440-23-5	SODIUM, TOTAL	41.4	J		MS	5	88	2.26	35
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.088	0.009	0.035
7440-62-2	VANADIUM, TOTAL	25.8			MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	56.8		N	MS	5	0.88	0.11	0.70

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1045-000.5

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 96.0 **Lab Sample ID:** SG8184-031

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16200			MS	5	20	0.33	2.6
7440-36-0	ANTIMONY, TOTAL	0.17		N	MS	5	0.065	0.01	0.033
7440-38-2	ARSENIC, TOTAL	8.4			MS	5	0.33	0.10	0.26
7440-39-3	BARIUM, TOTAL	15.3		E	MS	5	0.13	0.02	0.065
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.065	0.003	0.013
7440-43-9	CADMIUM, TOTAL	0.10			MS	5	0.065	0.007	0.013
7440-70-2	CALCIUM, TOTAL	740		N	MS	5	6.5	2.50	5.2
7440-47-3	CHROMIUM, TOTAL	22.0		N	MS	5	0.33	0.03	0.26
7440-48-4	COBALT, TOTAL	11.8		E	MS	5	0.065	0.003	0.020
7440-50-8	COPPER, TOTAL	23.0			MS	5	0.20	0.05	0.13
7439-89-6	IRON, TOTAL	31000			MS	5	6.5	1.57	3.9
7439-92-1	LEAD, TOTAL	31.3		N	MS	5	0.065	0.003	0.033
7439-95-4	MAGNESIUM, TOTAL	5160		E	MS	5	6.5	0.89	5.2
7439-96-5	MANGANESE, TOTAL	261		E	MS	5	0.13	0.03	0.065
7439-97-6	MERCURY, TOTAL	0.05			CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	27.6			MS	5	0.13	0.02	0.078
7440-09-7	POTASSIUM, TOTAL	368		*	MS	5	65	2.99	26
7782-49-2	SELENIUM, TOTAL	0.26	J		MS	5	0.33	0.03	0.20
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.065	0.003	0.026
7440-23-5	SODIUM, TOTAL	34.2	J		MS	5	65	1.68	26
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.065	0.007	0.026
7440-62-2	VANADIUM, TOTAL	32.4			MS	5	0.33	0.07	0.26
7440-66-6	ZINC, TOTAL	63.4		N	MS	5	0.65	0.09	0.52

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1046-000.5

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 97.2 **Lab Sample ID:** SG8184-030

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14700			MS	5	24	0.40	3.1
7440-36-0	ANTIMONY, TOTAL	0.43		N	MS	5	0.078	0.02	0.039
7440-38-2	ARSENIC, TOTAL	5.8			MS	5	0.39	0.12	0.31
7440-39-3	BARIUM, TOTAL	13.9		E	MS	5	0.16	0.03	0.078
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.078	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.09			MS	5	0.078	0.008	0.016
7440-70-2	CALCIUM, TOTAL	790		N	MS	5	7.8	3.01	6.3
7440-47-3	CHROMIUM, TOTAL	20.8		N	MS	5	0.39	0.04	0.31
7440-48-4	COBALT, TOTAL	12.6		E	MS	5	0.078	0.004	0.024
7440-50-8	COPPER, TOTAL	19.6			MS	5	0.24	0.05	0.16
7439-89-6	IRON, TOTAL	28600			MS	5	7.8	1.89	4.7
7439-92-1	LEAD, TOTAL	26.9		N	MS	5	0.078	0.004	0.039
7439-95-4	MAGNESIUM, TOTAL	4540		E	MS	5	7.8	1.07	6.3
7439-96-5	MANGANESE, TOTAL	270		E	MS	5	0.16	0.03	0.078
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	25.6			MS	5	0.16	0.02	0.094
7440-09-7	POTASSIUM, TOTAL	372		*	MS	5	78	3.58	31
7782-49-2	SELENIUM, TOTAL	0.16	J		MS	5	0.39	0.03	0.24
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.078	0.004	0.031
7440-23-5	SODIUM, TOTAL	38.0	J		MS	5	78	2.02	31
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.078	0.008	0.031
7440-62-2	VANADIUM, TOTAL	21.8			MS	5	0.39	0.09	0.31
7440-66-6	ZINC, TOTAL	62.4		N	MS	5	0.78	0.10	0.63

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1047-000.8

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 92.9 **Lab Sample ID:** SG8184-029

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12500			MS	5	23	0.39	3.0
7440-36-0	ANTIMONY, TOTAL	0.66		N	MS	5	0.076	0.02	0.038
7440-38-2	ARSENIC, TOTAL	7.1			MS	5	0.38	0.11	0.30
7440-39-3	BARIUM, TOTAL	20.2		E	MS	5	0.15	0.03	0.076
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.076	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.1			MS	5	0.076	0.008	0.015
7440-70-2	CALCIUM, TOTAL	660		N	MS	5	7.6	2.90	6.1
7440-47-3	CHROMIUM, TOTAL	16.6		N	MS	5	0.38	0.04	0.30
7440-48-4	COBALT, TOTAL	8.1		E	MS	5	0.076	0.004	0.023
7440-50-8	COPPER, TOTAL	19.1			MS	5	0.23	0.05	0.15
7439-89-6	IRON, TOTAL	21500			MS	5	7.6	1.82	4.5
7439-92-1	LEAD, TOTAL	47.1		N	MS	5	0.076	0.004	0.038
7439-95-4	MAGNESIUM, TOTAL	3280		E	MS	5	7.6	1.03	6.1
7439-96-5	MANGANESE, TOTAL	196		E	MS	5	0.15	0.03	0.076
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.034	0.005	0.017
7440-02-0	NICKEL, TOTAL	18.2			MS	5	0.15	0.02	0.091
7440-09-7	POTASSIUM, TOTAL	440		*	MS	5	76	3.46	30
7782-49-2	SELENIUM, TOTAL	0.32	J		MS	5	0.38	0.03	0.23
7440-22-4	SILVER, TOTAL	0.07	J		MS	5	0.076	0.004	0.030
7440-23-5	SODIUM, TOTAL	42.7	J		MS	5	76	1.94	30
7440-28-0	THALLIUM, TOTAL	0.08			MS	5	0.076	0.008	0.030
7440-62-2	VANADIUM, TOTAL	30.4			MS	5	0.38	0.08	0.30
7440-66-6	ZINC, TOTAL	49.2		N	MS	5	0.76	0.10	0.61

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1048-000.8

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 93.5 **Lab Sample ID:** SG8184-028

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13400			MS	5	24	0.41	3.2
7440-36-0	ANTIMONY, TOTAL	0.59		N	MS	5	0.081	0.02	0.040
7440-38-2	ARSENIC, TOTAL	8.2			MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	18.5		E	MS	5	0.16	0.03	0.081
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.081	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.1			MS	5	0.081	0.008	0.016
7440-70-2	CALCIUM, TOTAL	673		N	MS	5	8.1	3.10	6.5
7440-47-3	CHROMIUM, TOTAL	18.6		N	MS	5	0.40	0.04	0.32
7440-48-4	COBALT, TOTAL	8.9		E	MS	5	0.081	0.004	0.024
7440-50-8	COPPER, TOTAL	19.8			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	25800			MS	5	8.1	1.94	4.8
7439-92-1	LEAD, TOTAL	47.1		N	MS	5	0.081	0.004	0.040
7439-95-4	MAGNESIUM, TOTAL	3830		E	MS	5	8.1	1.11	6.5
7439-96-5	MANGANESE, TOTAL	206		E	MS	5	0.16	0.03	0.081
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	21.1			MS	5	0.16	0.02	0.097
7440-09-7	POTASSIUM, TOTAL	338		*	MS	5	81	3.69	32
7782-49-2	SELENIUM, TOTAL	0.28	J		MS	5	0.40	0.03	0.24
7440-22-4	SILVER, TOTAL	0.07	J		MS	5	0.081	0.004	0.032
7440-23-5	SODIUM, TOTAL	38.5	J		MS	5	81	2.08	32
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.081	0.008	0.032
7440-62-2	VANADIUM, TOTAL	30.6			MS	5	0.40	0.09	0.32
7440-66-6	ZINC, TOTAL	53.7		N	MS	5	0.81	0.11	0.65

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1049-000.9

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 93.8 **Lab Sample ID:** SG8184-027

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	12800			MS	5	25	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	0.28		N	MS	5	0.084	0.02	0.042
7440-38-2	ARSENIC, TOTAL	5.6			MS	5	0.42	0.13	0.34
7440-39-3	BARIUM, TOTAL	13.8		E	MS	5	0.17	0.03	0.084
7440-41-7	BERYLLIUM, TOTAL	0.33			MS	5	0.084	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.10			MS	5	0.084	0.008	0.017
7440-70-2	CALCIUM, TOTAL	742		N	MS	5	8.4	3.21	6.7
7440-47-3	CHROMIUM, TOTAL	16.7		N	MS	5	0.42	0.04	0.34
7440-48-4	COBALT, TOTAL	10.8		E	MS	5	0.084	0.004	0.025
7440-50-8	COPPER, TOTAL	16.7			MS	5	0.25	0.06	0.17
7439-89-6	IRON, TOTAL	23800			MS	5	8.4	2.01	5.0
7439-92-1	LEAD, TOTAL	25.4		N	MS	5	0.084	0.004	0.042
7439-95-4	MAGNESIUM, TOTAL	4360		E	MS	5	8.4	1.15	6.7
7439-96-5	MANGANESE, TOTAL	223		E	MS	5	0.17	0.03	0.084
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	22.4			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	309		*	MS	5	84	3.83	34
7782-49-2	SELENIUM, TOTAL	0.17	J		MS	5	0.42	0.03	0.25
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.084	0.004	0.034
7440-23-5	SODIUM, TOTAL	38.8	J		MS	5	84	2.15	34
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.084	0.008	0.034
7440-62-2	VANADIUM, TOTAL	22.2			MS	5	0.42	0.09	0.34
7440-66-6	ZINC, TOTAL	52.0		N	MS	5	0.84	0.11	0.67

Comments:

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet
INORG
Case: CTO WE 30 SDG: SG 8184

COMPLETE SDG FILE (CSF) AUDIT

Inorganic Parameters:_____

Missing Information	Date Lab Contacted	Date Received
N/A		

Validator: Michelle Allen Date: 11/27/13

EPA-NE - Data Validation Worksheet
INORG-1
Case: _____ SDG: see DV letter

I. PRESERVATION AND HOLDING TIMES

Circle sample numbers with exceeded technical holding times or omitted preservation.
Circle all exceeded technical holding times.

Sample No.	Matrix	Pres. Code		Date Sampled	Metals		Hg		CN		Action
		Metals	CN		Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	

Preservation Code:
1. Cool (≤ 6°C)
2. pH < 2 with HNO_3
3. pH > 12 with NaOH
4. Room Temperature
5. Freeze
6. Reducing agent (for oxidants)
7. Treated for sulfides
8. Other - _____

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Sampler: _____ Company: _____ Contacted: Y N Date: _____

Validator: M. Allen Date: 11/27/13

EPA-NE - Data Validation Worksheet
INORG-II
Case: _____ SDG: _____

II. ICP-MS TUNE

List all Tunes that are outside method QC acceptance criteria. Use a separate sheet if more than one instrument was used for sample analysis.

Method:_____Instrument ID: _____

Method QC acceptance criteria for mass calibration:_____

Method QC acceptance criteria for resolution check/peak width:_____ at_____% peak height.

Method QC acceptance criteria for % RSD:_____

see DV letter

Analysis Date and Time	Analyte	Mass Calibration			Mass Resolution		% RSD of Absolute Signals	Analyte/Samples Affected	Action
		True Mass (amu)	Measured Mass (amu)	Absolute Difference of Masses (amu)	Peak Width (amu)	% Peak Height			

Comments:

Validator: M. Allen Date: 11/27/13

EPA-NE - Data Validation Worksheet
INORG-III-C/D
Case: _____ SDG: _____

III. CALIBRATIONS

see DV letter

C. Initial and Continuing Calibration Verifications - List all ICV and CCV analyte recoveries that are outside the method QC acceptance criteria.

ICV method QC acceptance criteria: _____ CCV method QC acceptance criteria: _____

Date/Time	Instrument ID	Analyte	ICV/CCV #	% R	Samples Affected	Action

D. Quantitation Limit Check Standard - List all QL Check Standard analytes that are outside method QC acceptance criteria (for non-CLP methods).

QL Check Standard method QC acceptance criteria: _____

Date	Instr.	Analyte	QL Check Std. #	% R	Affected Range	Samples Affected	Action

Comments: _____

EPA-NE - Data Validation Worksheet
INORG-III-A/B
Case: _____ SDG: _____

III. CALIBRATIONS

see DV letter

A. Initial Calibration - List all calibration correlation coefficients that are outside the method QC acceptance criteria and/or the y-intercept of the calibration curve that is >CRQL.

Calibration correlation QC acceptance criteria: _____ Calibration Type: _____

Date/Time	Instrument ID	Analyte	Correlation Coefficient.	y-Intercept	CRQL	Samples Affected	Action

B. Initial Calibration Standard Concentration Verifications – Review CLP Form 16-IN and list all calculated %Ds that are >30 of the true value of any non-zero standard.

Date/time	Instrument ID	Analyte	True Conc.	Found Conc.	%D	Samples Affected	Action

Comments: _____

Validator: M. Allen Date: 11/27/13

EPA-NE - Data Validation Worksheet
INORG-IV-C.2
Case: _____ SDG: _____

IV. BLANKS see DV letter

C.2 Blank Actions - List the maximum concentrations of each analyte among all blanks associated with each sample.

Analyte	Type of Blank	Date Blank Originated	Max. Conc. (units)	MDL or (-MDL) (units)	CRQL or (-CRQL) (units)	10xCRQL	Samples Affected	Action

Comments:

Refer to EPA New England Data Review Program Supplemental guidance for blank contamination actions (Section 2.6).

Validator: M. Allen Date: 11/27/13

EPA-NE - Data Validation Worksheet
INORG-IV-A/B
Case: _____ SDG: _____

IV. BLANKS - List the blank contamination and negative blank results below. see DV letter

Sampler: _____ Company: _____ Contacted: Y N Date: _____

A. Laboratory: Preparation (Method) and Calibration (Instrument) Blanks

Date Prepared	Date Analyzed	Blank Type (ICB/CCB#/Prep Blank)	Matrix	Instrument	Analyte	Concentration	Units

B. Field: Equipment (Rinsate) and Bottle Blanks

Date Sampled	Date Analyzed	Sample No. (Blank Type)	Matrix	Instrument	Analyte	Concentration	Units

Were the proper number of blanks analyzed at the proper frequency? Y N

For ICP MS - Are internal standard responses in all blanks within method QC acceptance criteria? Y N

Comments: _____

_____

Validator: M. Allen Date: 11/27/13

EPA-NE - Data Validation Worksheet
INORG-IV-C.1
Case: _____ SDG: _____
IV. BLANKS **C.1 Blank Contamination Worksheet**

Circle or list the highest concentration of each contaminant. see DV letter

Analyte	Date Analyzed	ICB	CCB							PBW	PBS	EB	BB	Max. Conc.	CRQL
			1	2	3	4	5	6	7						
Aluminum															
Antimony															
Arsenic															
Barium															
Beryllium															
Cadmium															
Calcium															
Chromium															
Cobalt															
Copper															
Iron															
Lead															
Magnesium															
Manganese															
Mercury															
Nickel															
Potassium															
Selenium															
Silver															
Sodium															
Thallium															
Vanadium															
Zinc															
Cyanide															

Validator: M. Allen Date: 11/27/15

EPA NE - Data Validation Worksheet
INORG-V-A
Case: _____ SDG: _____

V. A. ICP-AES INTERFERENCE CHECK SAMPLE - ICSAB

See DV letter

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen

Date: 11/27/13

EPA NE - Data Validation Worksheet
INORG-V-B
Case: _____ SDG: _____

V. B. ICP-AES INTERFERENCE CHECK SAMPLE - ICSA

See DV. Ltr

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen Date: 11/27/13

EPA NE - Data Validation Worksheet
INORG-VI-A
Case: _____ SDG: _____

VI. A. ICP-MS INTERFERENCE CHECK SAMPLE - ICSAB see DV letter

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen Date: 11/27/13

EPA NE - Data Validation Worksheet
INORG-VI-B
Case: _____ SDG: _____

VI. B. ICP-MS INTERFERENCE CHECK SAMPLE - ICSA see DV letter

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± 2xCRQL. whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allon Date: 11/27/13

EPA-NE - Data Validation Worksheet
INORG-VII
Case: _____ SDG: _____

VII. ICP-MS INTERNAL STANDARDS

List all internal standards that are outside method QC acceptance criteria.

Method: _____ Method QC acceptance criteria: see DV letter

Sample Number	Date and Time Analyzed	IS, amu	% RI	Analytes Affected (amu)	Action

Comments:

Validator: M. Allen Date: 11/21/13

EPA-NE - Data Validation Worksheet
INORG-VIII
Case: _____ SDG: _____

VIII. MATRIX SPIKES - List all matrix spike analytes that are outside method QC acceptance criteria.

Use a separate worksheet for each matrix spike sample.

Sample No.: _____ Matrix: _____ See DV letter

Method	Analyte	Spiked Sample Result	Sample Result	Amount of Spike Added	MS % Recovery	Method QC Limits % Recovery	Post-Digest Spike % Recovery	Action
Comments:								

Refer to EPA New England Data Review Program Supplemental guidance for additional matrix spike actions (Section 2.12).

Validator: M. Allen Date: 11/27/13

EPA-NE - Data Validation Worksheet
INORG-IX
Case: _____ SDG: _____

IX. LABORATORY DUPLICATE SAMPLES - List all analytes that are outside method QC acceptance criteria for the specific matrix.

Use a separate worksheet for each laboratory duplicate sample.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Laboratory duplicate sample method QC acceptance criteria: see DV letter

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the field duplicate sample data indicate acceptable field precision? Y N

Comments:_____

Validator: M. Allen Date: 11/27/13

EPA-NE - Data Validation Worksheet
INORG-X
Case: _____ SDG: _____

X. FIELD DUPLICATES - List all field duplicate analytes that are outside criteria.

Use a separate worksheet for each field duplicate pair.

Sample No.: _____ Duplicate Sample No.: See DV letter Matrix: _____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the laboratory duplicate sample data indicate acceptable laboratory precision? Y N
Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.9).

Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for contact and resolution obtained: _____

Validator: M. Allen Date: 11/27/13

EPA-NE - Data Validation Worksheet
INORG-XI
Case: _____ SDG: _____

XI. ICP SERIAL DILUTIONS

Use a separate worksheet for each serial dilution sample.

Sample No.:_____ Matrix:_____ Method:_____

List all serial dilution analytes that are outside method QC acceptance criteria.

% Difference method QC acceptance criteria: see DV letter
Minimum concentration required to apply the % D criteria (e.g., 50x MDL): _____

Analyte	MDL	Min. Conc. Required	Sample Result	Serial Dilution Sample Result (corrected for dilution)	% D	Action

Comments:

Validator: M. Allen Date: 11/27/13

EPA-NE - Data Validation Worksheet

INORG-XII

Case: _____ SDG: _____

XII. LABORATORY CONTROL SAMPLES

List all analytes that are outside criteria.

SDG No.:_____ Case:_____ see DV letter

Are more than one-half of the LCS analytes within criteria for each parameter and method? **Y** **N**

Date Prepared	Date Analyzed	Parameter/ Method	Matrix	Analyte	% Recovery (or Observed Conc.)	Method QC Acceptance Criteria	Samples Affected	Action

Comments:

Validator: M. Allen

Date: 11/27/13

EPA-NE - Data Validation Worksheet

INORG-XIII

Case: _____ SDG: _____

XIII. PERFORMANCE EVALUATION SAMPLES

List all analytes that are outside criteria.

Indicate the source of the PES: Region 1 EPA PES Non-EPA PES See DV letter

Are more than one-half of the PES analytes within criteria for each parameter and method? **Y** **N**

PE Sample Number	Ampule Number	Parameter/ Method	Type of PES	Matrix	Analyte	Conc.	PES Score*	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High, Action Low, Analyte Missed, Contaminant.
For Non-EPA PESs indicate the Non-EPA PES Score: PES Analyte Missed; PES Analyte Contaminant; PES Analyte Hit (% Recovery Limits).
Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Comments: _____

Validator: M. Allen Date: 11/27/13

EPA-NE - Data Validation Worksheet

INORG-XIV

Case: _____ SDG: _____

XIV. ANALYTE QUANTITATION, REPORTED QUANTITATION LIMITS AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per analytical method

Do all soil/sediment samples have % solids greater than 30%? **Y** **N**

- If no, were any steps employed to address the high moisture content? See DV letter
- Indicate the action and list the affected sample nos.: _____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Method		Calculation
ICP-AES		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
ICP-MS		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
Mercury		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		
Cyanide		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		

Validator: M. Allen Date: 11/27/13

APPENDIX D

SUPPORT DOCUMENTATION

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGK11A.B\098SMPL.D\098SMPL.D#
Date Acquired: Nov 11 2013 09:52 pm
Acq. Method: K2008ESW.M
Operator: HHM
Sample Name: SG8184-025
Misc Info: DILUTION 1.6/8
Vial Number: 3103
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Nov 11 2013 05:13 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

TF2-004 / S-SS1035-0001

1.37g / 0.1L

% solids = 94.6

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.735	1.147	ppb	3.63	100.	
11 B	7.74	1.548	ppb	6.00	1000.	
23 Na	448.8	89.76	ppb	3.17	200000.	
25 Mg	73,500.	14,700.	ppb	1.10	200000.	
27 Al	236,050.	47,210.	ppb	1.55	200000.	
28 Si	2,842.	568.4	ppb	8.26	#VALUE!	
29 Si	3,028.5	605.7	ppb	21.94	10000.	
39 K	3,995.5	799.1	ppb	0.94	200000.	
43 Ca	15,695.	3,139.	ppb	0.95	200000.	
44 Ca	14,730.	2,946.	ppb	0.71	200000.	
51 V	456.3	91.26	ppb	1.55	1000.	
52 Cr	316.05	63.21	ppb	1.09	1000.	
53 Cr	359.1	71.82	ppb	3.16	1000.	
55 Mn	3,961.5	792.3	ppb	2.39	1000.	
56 Fe	511,000.	102,200.	ppb	1.84	200000.	
→ 57 Fe	489,600.	97,920.	ppb	1.87	100000.	
59 Co	171.75	34.35	ppb	1.95	1000.	
60 Ni	419.65	83.93	ppb	0.81	500.	
63 Cu	413.75	82.75	ppb	1.38	1000.	
65 Cu	408.65	81.73	ppb	0.47	500.	
66 Zn	932.5	186.5	ppb	1.36	500.	
68 Zn	941.	188.2	ppb	2.91	1000.	
75 As	122.65	24.53	ppb	3.61	1000.	
82 Se	4.2945	0.8589	ppb	18.50	500.	
88 Sr	116.15	23.23	ppb	1.73	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.825	2.165	ppb	0.63	1000.	
107 Ag	0.926	0.1852	ppb	8.96	250.	
109 Ag	0.9365	0.1873	ppb	4.14	100.	
111 Cd	0.7135	0.1427	ppb	26.92	500.	
114 Cd	1.1155	0.2231	ppb	6.66	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	46.145	9.229	ppb	2.77	500.	
120 Sn	46.605	9.321	ppb	2.01	1000.	
121 Sb	2.477	0.4954	ppb	4.88	1000.	
123 Sb	2.408	0.4816	ppb	2.76	1000.	
135 Ba	195.65	39.13	ppb	0.13	1000.	
137 Ba	202.15	40.43	ppb	1.40	#VALUE!	
182 W	1.394	0.2788	ppb ---		#VALUE!	
203 Tl	0.622	0.1244	ppb	3.01	1000.	
205 Tl	0.5795	0.1159	ppb	7.21	#VALUE!	
208 Pb	434.5	86.9	ppb	1.44	1000.	
232 Th	38.245	7.649	ppb	3.00	1000.	
238 U	9.69	1.938	ppb	0.98	1000.	

$$\frac{489{,}600\,\mu g}{1L} \times \frac{0.1L}{1.37g} \times \frac{1}{.946} \times \frac{1000g}{1Kg} \times \frac{1mg}{1000\mu g}$$

$$= 37777.2\ mg/Kg$$

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3838387.80	0.32	3533580.80	108.6	69.5 - 130	
45 Sc	2445590.30	1.38	2041988.10	119.8	69.5 - 130	
72 Ge	506009.56	1.08	417262.97	121.3	69.5 - 130	
159 Tb	4049178.80	0.92	3452984.00	117.3	69.5 - 130	
209 Bi	2372945.80	1.67	2250503.00	105.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGK11A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000491

NAVSTA NEWPORT
SOIL DATA
SG8184

FRACTION	CHEMICAL	TF2-004/5-SS1020-0001	UNITS	F2-004/5-SS-DUP01-101	RPD	D
M	ALUMINUM	10100	MG/KG	12700	22.81	2600.00
M	ANTIMONY	0.14 J	MG/KG	0.14 J	0.00	0.00
M	ARSENIC	7.6	MG/KG	6.6	14.08	1.00
M	BARIUM	14.9 J	MG/KG	16.9 J	12.58	2.00
M	BERYLLIUM	0.35	MG/KG	0.31	12.12	0.04
M	CADMIUM	0.06 J	MG/KG	0.06 J	0.00	0.00
M	CALCIUM	551 J	MG/KG	668 J	19.20	117.00
M	CHROMIUM	12.6 J	MG/KG	16 J	23.78	3.40
M	COBALT	13.4 D	MG/KG	10.3 D	26.16	3.10
M	COPPER	16.3	MG/KG	15.7	3.75	0.60
M	IRON	21100	MG/KG	21900	3.72	800.00
M	LEAD	12.4	MG/KG	12.5	0.80	0.10
M	MAGNESIUM	3150 J	MG/KG	3150 J	0.00	0.00
M	MANGANESE	345 J	MG/KG	286 J	18.70	59.00
M	MERCURY	0.02 J	MG/KG	0.01 J	66.67	0.01
M	NICKEL	17.6	MG/KG	16.7	5.25	0.90
M	POTASSIUM	447	MG/KG	366	19.93	81.00
M	SILVER	0.02 J	MG/KG	0.02 J	0.00	0.00
M	THALLIUM	0.04 J	MG/KG	0.05 J	22.22	0.01
M	VANADIUM	16.2	MG/KG	19.5	18.49	3.30
M	ZINC	39 J	MG/KG	42.7 J	9.06	3.70

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8184

FRACTION	CHEMICAL	TF2-004/5-SS1035-0001	UNITS	F2-004/5-SS-DUP02-101	RPD	D
M	ALUMINUM	18200	MG/KG	17200	5.65	1000.00
M	ANTIMONY	0.18 J	MG/KG	0.22 J	20.00	0.04
M	ARSENIC	9.5	MG/KG	8.5	11.11	1.00
M	BARIUM	14.2	MG/KG	15.4 J	8.11	1.20
M	BERYLLIUM	0.44	MG/KG	0.47	6.59	0.03
M	CADMIUM	0.09	MG/KG	0.07 J	25.00	0.02
M	CALCIUM	1140 J	MG/KG	582 J	64.81	558.00
M	CHROMIUM	24.4 J	MG/KG	24.2 J	0.82	0.20
M	COBALT	13.2	MG/KG	14.7 D	10.75	1.50
M	COPPER	31.5	MG/KG	36.1	13.61	4.60
M	IRON	37800	MG/KG	34700	8.55	3100.00
M	LEAD	33.5 J	MG/KG	34.2	2.07	0.70
M	MAGNESIUM	5850 J	MG/KG	5270 J	10.43	580.00
M	MANGANESE	266 J	MG/KG	273 J	2.60	7.00
M	MERCURY	0.04	MG/KG	0.05	22.22	0.01
M	NICKEL	32.4	MG/KG	29	11.07	3.40
M	POTASSIUM	308	MG/KG	325	5.37	17.00
M	SELENIUM	0.33 J	MG/KG	ND	200.00	0.33
M	SILVER	0.07 J	MG/KG	0.08 J	13.33	0.01
M	THALLIUM	0.05 J	MG/KG	0.06 J	18.18	0.01
M	VANADIUM	35.2	MG/KG	32.7	7.36	2.50
M	ZINC	71.9 J	MG/KG	67.6 J	6.16	4.30

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8184

FRACTION	CHEMICAL	TF2-004/5-SS1041-000.7	UNITS	F2-004/5-SS-DUP03-101	RPD	D
M	ALUMINUM	8900	MG/KG	8490	4.72	410.00
M	ANTIMONY	0.13 J	MG/KG	0.11 J	16.67	0.02
M	ARSENIC	5.8	MG/KG	5.5	5.31	0.30
M	BARIUM	15.9	MG/KG	14.5	9.21	1.40
M	BERYLLIUM	0.36	MG/KG	0.31	14.93	0.05
M	CADMIUM	0.08 J	MG/KG	0.08	0.00	0.00
M	CALCIUM	393 J	MG/KG	307 J	24.57	86.00
M	CHROMIUM	13.4 J	MG/KG	10.8 J	21.49	2.60
M	COBALT	11	MG/KG	12	8.70	1.00
M	COPPER	17.5	MG/KG	16.6	5.28	0.90
M	IRON	19600	MG/KG	19500	0.51	100.00
M	LEAD	11.5 J	MG/KG	10.3 J	11.01	1.20
M	MAGNESIUM	2950 J	MG/KG	3020 J	2.35	70.00
M	MANGANESE	313 J	MG/KG	350 J	11.16	37.00
M	MERCURY	0.005 J	MG/KG	0.005 J	0.00	0.00
M	NICKEL	16.7	MG/KG	16.9	1.19	0.20
M	POTASSIUM	483	MG/KG	447	7.74	36.00
M	SELENIUM	ND	MG/KG	0.3 J	200.00	0.30 ✓
M	SILVER	0.02 J	MG/KG	0.02 J	0.00	0.00
M	THALLIUM	0.04 J	MG/KG	0.04 J	0.00	0.00
M	VANADIUM	15.4	MG/KG	14.4	6.71	1.00
M	ZINC	39.3 J	MG/KG	37.2 J	5.49	2.10

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SDG SG8184

Soil ICP Interference

Affected Analyte	Sample	Reported Result mg/Kg	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Cr	TF2-004/5-SS-DUP01-1013	16		Al	88930	0.217	12700	0.03	na	na
Cr	TF2-004/5-SS-DUP02-1013	24.2		Al	111000	0.217	17200	0.03	na	na
Cr	TF2-004/5-SS1020-0001	12.6		Al	111000	0.217	10100	0.02	na	na
Cr	TF2-004/5-SS1021-000.7	20.8		Al	111000	0.217	16000	0.03	na	na
Zn		57.2		Al	111000	3.269	16000	0.47	na	na
Cr	TF2-004/5-SS1022-000.9	15.2		Al	111000	0.217	11600	0.02	na	na
Cr	TF2-004/5-SS1023-000.8	17.8		Al	111000	0.217	12600	0.02	na	na
Cr	TF2-004/5-SS1024-000.6	15.3		Al	111000	0.217	11200	0.02	na	na
Cr	TF2-004/5-SS1025-000.8	18.3		Al	111000	0.217	11600	0.02	na	na
Cr	TF2-004/5-SS1027-0001	13.6		Al	111000	0.217	10900	0.02	na	na
Cr	TF2-004/5-SS1028-000.8	21.1		Al	111000	0.217	15200	0.03	na	na
Cr	TF2-004/5-SS1029-000.6	19.1		Al	111000	0.217	14500	0.03	na	na
Cr	TF2-004/5-SS1030-000.6	18.9		Al	111000	0.217	14900	0.03	na	na
Cr	TF2-004/5-SS1033-000.8	14.5		Al	111000	0.217	11200	0.02	na	na
Zn		43.4		Al	111000	3.269	11200	0.33	na	na
Cr	TF2-004/5-SS1034-000.6	20.7		Al	111000	0.217	14100	0.03	na	na
Zn		58.2		Al	111000	3.269	14100	0.42	na	na

NAVSTA NEWPORT
SDG SG8184

Soil ICP Interference

Affected Analyte	Sample	Reported Result mg/Kg	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Cr	TF2-004/5-SS1035-0001	24.4		Al	111000	0.217	18200	0.04	na	na
Zn		71.9		Al	111000	3.269	18200	0.54	na	na
Cr	TF2-004/5-SS1036-000.6	20.8		Al	111000	0.217	15100	0.03	na	na
Cr	TF2-004/5-SS1037-000.7	19.2		Al	111000	0.217	13900	0.03	na	na
Cr	TF2-004/5-SS1038-000.7	21		Al	111000	0.217	14400	0.03	na	na
Cr	TF2-004/5-SS1039-000.9	18.2		Al	111000	0.217	13700	0.03	na	na
Zn		51.8		Al	111000	3.269	13700	0.40	na	na
Cr	TF2-004/5-SS1040-000.9	17		Al	111000	0.217	13500	0.03	na	na
Zn		52.1		Al	111000	3.269	13500	0.40	na	na
Cr	TF2-004/5-SS1042-000.5	21.2		Al	111000	0.217	15000	0.03	na	na
Zn		64.4		Al	111000	3.269	15000	0.44	na	na
Cr	TF2-004/5-SS1044-000.5	19.1		Al	111000	0.217	13400	0.03	na	na
Zn		56.8		Al	111000	3.269	13400	0.39	na	na
Cr	TF2-004/5-SS1045-000.5	22		Al	111000	0.217	16200	0.03	na	na
Zn		63.4		Al	111000	3.269	16200	0.48	na	na
Cr	TF2-004/5-SS1046-000.5	20.8		Al	111000	0.217	14700	0.03	na	na
Zn		62.4		Al	111000	3.269	14700	0.43	na	na
Cr	TF2-004/5-SS1047-000.8	16.6		Al	111000	0.217	12500	0.02	na	na
Zn		49.2		Al	111000	3.269	12500	0.37	na	na
Cr	TF2-004/5-SS1048-000.8	18.6		Al	111000	0.217	13400	0.03	na	na
Zn		53.7		Al	111000	3.269	13400	0.39	na	na
Cr	TF2-004/5-SS-DUP01-1013	16		Fe	88930	0.217	12700	0.03	na	na
Cr	TF2-004/5-SS-DUP02-1013	24.2		Fe	111000	0.217	17200	0.03	na	na
Cr	TF2-004/5-SS-DUP03-1013	10.8		Fe	111000	0.217	16000	0.03	na	na
Zn		37.2		Fe	111000	3.269	16000	0.47	na	na

NAVSTA NEWPORT
SDG SG8184

Soil ICP Interference

Affected Analyte	Sample	Reported Result mg/Kg	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Cr	TF2-004/5-SS1020-0001	12.6		Fe	111000	0.217	10100	0.02	na	na
Cr	TF2-004/5-SS1021-000.7	20.8		Fe	111000	0.217	16000	0.03	na	na
Zn		57.2		Fe	111000	3.269	16000	0.47	na	na
Cr	TF2-004/5-SS1022-000.9	15.2		Fe	111000	0.217	11600	0.02	na	na
Cr	TF2-004/5-SS1023-000.8	17.8		Fe	111000	0.217	12600	0.02	na	na
Cr	TF2-004/5-SS1024-000.6	15.3		Fe	111000	0.217	11200	0.02	na	na
Cr	TF2-004/5-SS1025-000.8	18.3		Fe	111000	0.217	11600	0.02	na	na
Cr	TF2-004/5-SS1027-0001	13.6		Fe	111000	0.217	10900	0.02	na	na
Cr	TF2-004/5-SS1028-000.8	21.1		Fe	111000	0.217	15200	0.03	na	na
Cr	TF2-004/5-SS1029-000.6	19.1		Fe	111000	0.217	14500	0.03	na	na
Cr	TF2-004/5-SS1030-000.6	18.9		Fe	111000	0.217	14900	0.03	na	na
Cr	TF2-004/5-SS1031-000.8	11.8		Fe	111000	0.217	14900	0.03	na	na
Cr	TF2-004/5-SS1032-000.9	12.2		Fe	111000	0.217	14900	0.03	na	na
Cr	TF2-004/5-SS1033-000.8	14.5		Fe	111000	0.217	11200	0.02	na	na
Zn		43.4		Fe	111000	3.269	11200	0.33	na	na
Cr	TF2-004/5-SS1034-000.6	20.7		Fe	111000	0.217	14100	0.03	na	na
Zn		58.2		Fe	111000	3.269	14100	0.42	na	na
Cr	TF2-004/5-SS1035-0001	24.4		Fe	111000	0.217	18200	0.04	na	na
Zn		71.9		Fe	111000	3.269	18200	0.54	na	na
Cr	TF2-004/5-SS1036-000.6	20.8		Fe	111000	0.217	15100	0.03	na	na
Cr	TF2-004/5-SS1037-000.7	19.2		Fe	111000	0.217	13900	0.03	na	na

NAVSTA NEWPORT
SDG SG8184

Soil ICP Interference

Affected Analyte	Sample	Reported Result mg/Kg	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Cr	TF2-004/5-SS1038-000.7	21		Fe	111000	0.217	14400	0.03	na	na
Cr	TF2-004/5-SS1039-000.9	18.2		Fe	111000	0.217	13700	0.03	na	na
Zn		51.8		Fe	111000	3.269	13700	0.40	na	na
Cr	TF2-004/5-SS1040-000.9	17		Fe	111000	0.217	13500	0.03	na	na
Zn		52.1		Fe	111000	3.269	13500	0.40	na	na
Cr	TF2-004/5-SS1041-000.7	13.4		Fe	111000	0.217	13500	0.03	na	na
Zn		39.3		Fe	111000	3.269	13500	0.40	na	na
Cr	TF2-004/5-SS1042-000.5	21.2		Fe	111000	0.217	15000	0.03	na	na
Zn		64.4		Fe	111000	3.269	15000	0.44	na	na
Cr	TF2-004/5-SS1044-000.5	19.1		Fe	111000	0.217	13400	0.03	na	na
Zn		56.8		Fe	111000	3.269	13400	0.39	na	na
Cr	TF2-004/5-SS1045-000.5	22		Fe	111000	0.217	16200	0.03	na	na
Zn		63.4		Fe	111000	3.269	16200	0.48	na	na
Cr	TF2-004/5-SS1046-000.5	20.8		Fe	111000	0.217	14700	0.03	na	na
Zn		62.4		Fe	111000	3.269	14700	0.43	na	na
Cr	TF2-004/5-SS1047-000.8	16.6		Fe	111000	0.217	12500	0.02	na	na
Zn		49.2		Fe	111000	3.269	12500	0.37	na	na
Cr	TF2-004/5-SS1048-000.8	18.6		Fe	111000	0.217	13400	0.03	na	na
Zn		53.7		Fe	111000	3.269	13400	0.39	na	na
Cr	TF2-004/5-SS1049-000.9	16.7		Fe	111000	0.217	13400	0.03	na	na
Zn		52		Fe	111000	3.269	13400	0.39	na	na

SG8184

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER No. 027651 | PAGE 1 OF 3

PROJECT NO: 112603019 CTO WE30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Selken	PHONE NUMBER: 978 474 8445
SAMPLERS (SIGNATURE): Kjalkut, Peter Lloyd		FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781 801 0457
		CARRIER/WAYBILL NUMBER: Courier p/u - hand delivery	

LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J. Dunn
ADDRESS: 600 Technology Way
CITY, STATE: Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
									G	G	G	G					
									PRESERVATIVE USED								
									MeOH, ≤6°C	≤6°C	MeOH ≤6°C	≤6°C					
		TYPE OF ANALYSIS							40ml vials w/ 10ml MeOH only	8oz Jar - PAH, metals, total solids	40ml vials w/ soil and MeOH (10ml) GRO	4oz Jar - EXTPH, total solids					
10/18	1030	TF2-W-TB01-1013	—	—	—	QC	G	2	2	—	—	—					
10/18	1045	TF2-004/5-SS1025-000.8	SS1025	0	0.8	SO	G	1	—	1	—	—					
10/18	1055	TF2-004/5-SS1026-000.8	SS1026	0	0.8	SO	G	1	—	1	—	—					
10/18	1105	TF2-004/5-SS1024-000.6	SS1024	0	0.6	SO	G	1	—	1	—	—					
10/18	1110	TF2-004/5-SS1023-000.8	SS1023	0	0.8	SO	G	1	—	1	—	—					
10/18	1118	TF2-004/5-SS1022-000.9	SS1022	0	0.9	SO	G	1	—	1	—	—					
10/18	1130	TF2-004/5-SS1021-000.7	SS1021	0	0.7	SO	G	1	—	1	—	—					
10/18	1140	TF2-004/5-SS1020-0001	SS1020	0	1	SO	G	4	—	1	2	1					
10/18	1155	TF2-004/5-SS1032-000.9	SS1032	0	0.9	SO	G	1	—	1	—	—					
10/18	1205	TF2-004/5-SS1031-000.8	SS1031	0	0.8	SO	G	1	—	1	—	—					
10/18	0000	TF2-004/5-SS-DUP01-1013	—	—	—	SO	G	4	—	1	2	1					
10/18	1320	TF2-004/5-SS1030-000.6	SS1030	0	0.6	SO	G	1	—	1	—	—					
10/18	1330	TF2-004/5-SS1029-000.6	SS1029	0	0.6	SO	G	1	—	1	—	—					

KJ 10/21/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: Kjalkut	10/21/13	1300	1. RECEIVED BY:		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

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FORM NO. TtNUS-001

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TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER No. 027653 | PAGE 2 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019 CB WE30	Wilmington, MA	Debra Seiken	978 474 8445	Katahdin Analytical Services / J. Obrin
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
K Jalkut, Peter Lord, [illegible]		Kayleen Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		CITY, STATE
		Carrier plu-hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	G	G	G	G	G	P	G	COMMENTS
									PRESERVATIVE USED	≤6°C	10 ml MeOH ≤6°C	≤6°C	≤6°C	HCl ≤6°C	HNO3 ≤6°C	HCl ≤6°C	
									TYPE OF ANALYSIS	8oz jar - PAH, metals, total solids	40 ml vial w/ soil and MeOH - GRO	4oz jar - EXTPH, total solids	2 1L amber bottles - PAH	1L amber bottles w/ HCl - EXTPH	250 ml HDPE plastic w/ HNO3 - metals	40 ml vials w/ HCl - GRO	
10/18	1335	TF2-004/5-SS1028-000.8	SS1028	0	0.8	SO	G	1		1	—	—	—	—	—	—	
10/18	1345	TF2-004/5-SS1027-0001	SS1027	0	1	SO	G	11		2	6	3	—	—	—	—	Lab QC
10/18	1350	TF2-004/5-SS1040-000.9	SS1040	0	0.9	SO	G	1		1	—	—	—	—	—	—	
10/18	1400	TF2-004/5-SS1039-000.9	SS1039	0	0.9	SO	G	4		1	2	1	—	—	—	—	
10/18	1400	TF2-SS-RB01-1013	—	—	—	QC	G	7		—	—	—	2	2	1	2	
10/18	1405	TF2-W-TB02-1013	—	—	—	QC	G	2		—	—	—	—	—	—	2	
10/18	1410	TF2-004/5-SS1038-000.7	SS1038	0	0.9	SO	G	1		1	—	—	—	—	—	—	
10/18	1415	TF2-004/5-SS1037-000.7	SS1037	0	0.7	SO	G	1		1	—	—	—	—	—	—	
10/18	1425	TF2-004/5-SS1036-000.6	SS1036	0	0.6	SO	G	1		1	—	—	—	—	—	—	
10/18	0000	TF2-004/5-SS-DUP02-1013	—	—	—	SO	G	4		1	2	1	—	—	—	—	
10/18	1445	TF2-004/5-SS1034-000.6	SS1034	0	0.6	SO	G	1		1	—	—	—	—	—	—	
10/18	1435	TF2-004/5-SS1035-0001	SS1035	0	1	SO	G	4		1	2	1	—	—	—	—	
10/18	1455	TF2-004/5-SS1033-000.8	SS1033	0	0.8	SO	G	1		1	—	—	—	—	—	—	

RJ 10/21/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY K Jalkut	10/21/13	1300	1. RECEIVED BY	10/21/13	1300
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

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FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26580 | PAGE 3 OF 3

PROJECT NO: 112G0301.9 CTO WE30	FACILITY: Wilmington MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445	LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J. Obrin
SAMPLERS (SIGNATURE): K Jalkut		FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781 801 0457	ADDRESS: 600 Technology Way
		CARRIER/WAYBILL NUMBER: Courier p/u - hand delivery		CITY, STATE: Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)						PRESERVATIVE USED						COMMENTS
									G	G	G	G	P								
									TYPE OF ANALYSIS						≤ 6°C	MeOH ≤ 6°C	≤ 6°C	≤ 6°C	HNO3 ≤ 6°C		
									8oz glass jar - PAH, metals total solids	40ml vials w/ soil + MeOH - GRO	4oz glass jar - EXTPH, total solids	1L amber glass - PAHs	250ml HDPE - metals w/HNO3								
10/21	0920	TF2-004/5-SS1049-000.9	SS1049	0	0.9	SO	G	4	1	2	1	—	—								
10/21	0930	TF2-004/5-SS1048-000.8	SS1048	0	0.8	SO	G	1	1	—	—	—	—								
10/21	0940	TF2-004/5-SS1047-000.8	SS1047	0	0.8	SO	G	1	1	—	—	—	—								
10/21	0950	TF2-004/5-SS1046-000.5	SS1046	0	0.5	SO	G	1	1	—	—	—	—								
10/21	1000	TF2-004/5-SS1045-000.5	SS1045	0	0.5	SO	G	1	1	—	—	—	—								
10/21	1010	TF2-004/5-SS1044-000.5	SS1044	0	0.5	SO	G	1	1	—	—	—	—								
10/21	1020	TF2-004/5-SS1042-000.5	SS1042	0	0.5	SO	G	1	1	—	—	—	—								
10/21	1035	TF2-004/5-SS1041-000.7	SS1041	0	0.7	SO	G	4	1	2	1	—	—								
10/21	0000	TF2-004/5-SS-DUP03-1013	—	—	—	SO	G	4	1	2	1	—	—								
10/21	1150	TF2-SS-RB02-1013	—	—	—	QC	G	3	—	—	—	2	1								

KJ 10/21/13

KJ 10/21/13

1. RELINQUISHED BY: K Jalkut	DATE: 10/21/13	TIME: 1300	1. RECEIVED BY:
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY

DATE	TIME
10/21/13	1300
DATE	TIME
DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

00028

Katahdin Analytical Services, Inc. **Sample Receipt Condition Report**

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: ~~Client~~ KAS
KAS Work Order#: SG8184	KIMS Review By: JO	Received By: DM
SDG #:	Cooler: 1 of 3	Date/Time Rec.: 10-21-13 16:20

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 1.3
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:				✓	
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:				✓	
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

1 jar SS1035-0001 mssng.

RB02; 2 Dioxin bottles, DUP03, SS1041-0007 Dioxin jars in Cooler.

0000013

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: ~~Etc~~ KAS
KAS Work Order#: SG8184	KIMS Review By: JO	Received By: DM
SDG #:	Cooler: 2 of 3	Date/Time Rec.: 10-21-13 16:20

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 2.4
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

0000014

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: ~~Client~~ KAS
KAS Work Order#: SG8184	KIMS Review By: JO	Received By: DM
SDG #:	Cooler: 3 of 3	Date/Time Rec.: 10-21-13 16:20

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 2.0
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?	✓				
Soil/Sediment:					
Received in airtight container?	✓				
Received in methanol?	✓				
Methanol covering soil?	✓			✓	
D.I. Water - Received within 48 hour HT?	✓			✓	GW
7. Trip Blank present in cooler?	✓				#
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	Spiked sample recovery not within control limits.
*	Duplicate sample analysis not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS
(Refer to BOD Qualifiers Page for BOD footnotes)

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1	pH
H2	DO
H3	sulfite
H4	residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT TANK FARM 2 CTO WE30
SG8184

Sample Receipt

The following sample was received on October 21, 2013 and was logged in under Katahdin Analytical Services work order number SG8184 for a hardcopy due date of November 08, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG8184-1	TF2-W-TB01-1016
SG8184-2	TF2-004/5-SS1025-000.8
SG8184-3	TF2-004/5-SS1026-000.8
SG8184-4	TF2-004/5-SS1024-000.6
SG8184-5	TF2-004/5-SS1023-000.8
SG8184-6	TF2-004/5-SS1022-000.9
SG8184-7	TF2-004/5-SS1021-000.7
SG8184-8	TF2-004/5-SS1020-0001
SG8184-9	TF2-004/5-SS1032-000.9
SG8184-10	TF2-004/5-SS1031-000.8
SG8184-11	TF2-004/5-SS-DUP01-1013
SG8184-12	TF2-004/5-SS1030-000.6
SG8184-13	TF2-004/5-SS1029-000.6
SG8184-14	TF2-004/5-SS1028-000.8
SG8184-15	TF2-004/5-SS1027-0001
SG8184-16	TF2-004/5-SS1040-000.9
SG8184-17	TF2-004/5-SS1039-000.9
SG8184-18	TF2-SS-RB01-1013
SG8184-19	TF2-W-TB02-1013
SG8184-20	TF2-004/5-SS1038-000.7
SG8184-21	TF2-004/5-SS1037-000.7
SG8184-22	TF2-004/5-SS1036-000.6
SG8184-23	TF2-004/5-SS-DUP02-1013
SG8184-24	TF2-004/5-SS1034-000.6
SG8184-25	TF2-004/5-SS1035-0001
SG8184-26	TF2-004/5-SS1033-000.8
SG8184-27	TF2-004/5-SS1049-000.9
SG8184-28	TF2-004/5-SS1048-000.8
SG8184-29	TF2-004/5-SS1047-000.8
SG8184-30	TF2-004/5-SS1046-000.5
SG8184-31	TF2-004/5-SS1045-000.5
SG8184-32	TF2-004/5-SS1044-000.5
SG8184-33	TF2-004/5-SS1042-000.5
SG8184-34	TF2-004/5-SS1041-000.7
SG8184-35	TF2-004/5-SS-DUP03-1013
SG8184-36	TF2-SS-RB02-1013

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Some of the client IDs on the Chain of Custody exceeds the 19-character limit of the Katahdin Analytical Information Management System. Therefore, the first characters "TF2-" in the client ID all samples with the exception of samples SG8184-1, 18, 19 and 36 were omitted on all forms.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG8184 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

Sample SG8184-15 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as requested by the client.

8270D SIM Analysis

All soil samples and associated QC were subjected to the GPC sample clean-up process.

All soil samples were manually integrated for the analytes acenaphthylene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene and/or the surrogate fluorene-d10. The specific reason for the manual integration is indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Samples SG8184-2, 30 and the LCS WG133040-2RA had low responses for the internal standard perylene-d12 that resulted in %D's which were outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the ICAL midpoint standard.

The independent check standard (file G0111) associated with the initial calibration on the G instrument on 10/28/2013 had a low concentration for the target analyte benzo(a)anthracene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The initial calibration analyzed on the G instrument on 11/11/2013 had %RSD values for a few

analytes that exceeded the method acceptance limit of 15%. For these analytes, either a linear or quadratic model was used for quantitation instead of an average response factor. The target analyte chrysene failed for both the linear and quadratic models in the initial calibration curve due to the correlation coefficient and the coefficient of determination being less than the method acceptance criteria of 0.995 and 0.990 respectively. This compound was calibrated using the average model.

The CV (file G0122) had high responses for the target analyte indeno(1,2,3-cd)pyrene and the surrogate pyrene-d10. The CV (file G0144) had a high response for the target analyte chrysene. The CV (file G0181) had a high response for the target analyte naphthalene. These responses resulted in %D's that were greater than the acceptance limit of 20% from DoD QSM.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are statistically derived limits for the full list of spiked compounds and are statistically derived limits for the surrogates. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these statistical acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

The LCS WG133040-2RA had a low recovery for one surrogate and had low recoveries for 13 spiked target analytes, which were outside of the laboratory established acceptance limits. The LCSD WG133040-3RA had low recoveries for five spiked target analytes. The DoD QSM allowable number of exceedances for 17 target analytes is one analyte. The associated sample SG8184-18 had low recoveries for all three surrogates and was reextracted three days out of hold time and analyzed. The results for both analyses are reported.

8015M-FLPRO Analysis

Samples SG8184-8, 11, 17, 17RE, 27, and 27RE were manually integrated for the extraction surrogates o-terphenyl and N-Triacontane-d62, and Petroleum Range Organics The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Samples SG 8184-17 and 27 had low recoveries for the extraction surrogates o-terphenyl and N-Triacontane-d62 that were outside the method acceptance limits. The samples were reextracted seven days outside of hold time. The results of both analyses are reported.

Sample SG8184-18 had a low recovery for the extraction surrogate o-terphenyl that was outside of the method acceptance limits. Since there was no additional sample aliquot, no further action was taken.

The LCS WG133105-2 had a low recovery for the extraction surrogate o-terphenyl that was outside of the method acceptance limits. Since the spike recovery was acceptable, no further action was taken.

The LCS WG133426-2 had a low recovery for Petroleum Range Organics that was outside of method acceptance limits. Since the associated LCSD had acceptable recoveries, no further action was taken.

Note: The Form VII has a column for %D that is set to 25%. The DoD QSM criterion for a CV is 20%D. All of the compounds in the CV's were evaluated to 20% criteria.

8015B GRO Analysis

Samples SG8184-8, 11 and 17 were manually integrated for Gasoline Range Organics. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG8184 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Aqueous-matrix Katahdin Sample Nos. SG8184-(18, 36) were originally digested for ICP-MS analysis on 11/01/13 (QC Batch GK01IMW2) in accordance with USEPA Method 3010A. Because the method blank that was prepared in this batch was contaminated with several elements, these samples were redigested for ICP-MS analysis on 11/07/13 (QC Batch GK07IMW1). Redigestates of client samples are identified on the sample preparation logs and analysis run logs by the suffix "R" appended to the Katahdin Sample Number, e.g. "SG8184-018R" The measured calcium concentration (240 ug/L) of the preparation blank that was prepared in the redigestion batch is greater than the laboratory's Limit of Quantitation (LOQ). However, because the preparation blanks from both digestion batches for Katahdin Sample Nos. SG8184-(18,36) were contaminated with calcium, and because the measured concentrations of calcium (a common laboratory contaminant) in these samples are low, no further corrective action was taken.

Soil-matrix Katahdin Sample Nos. SG8184-(2-17, 20-23) were digested for ICP-MS analysis on 11/05/13 (QC Batch GK05IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8184-15 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentration of calcium (12.9 mg/kg) in the preparation blank from this batch is greater than the laboratory's LOQ, and the measured manganese concentration (0.183 mg/kg) is more than one half the laboratory's LOQ. However, because the measured concentrations of calcium and manganese in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

Soil-matrix Katahdin Sample Nos. SG8184-(24-35) were digested for ICP-MS analysis on

11/05/13 (QC Batch GK05IMS2) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8184-35 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentration of calcium (11.2 mg/kg) in the preparation blank from this batch is greater than the laboratory's LOQ, and the measured manganese concentration (0.179 mg/kg) is more than one half the laboratory's LOQ. However, because the measured concentrations of calcium and manganese in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

ICP-MS analyses of Work Order SG8184 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	**Associated Analytes**
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Solid-matrix Katahdin Sample Numbers SG8184-(2-17, 20-23) were digested for mercury analysis on 11/05/13 (QC Batch GK05HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Number SG8184-15 was prepared in duplicate and with a matrix spike in this digestion batch.

Solid-matrix Katahdin Sample Numbers SG8184-(24-35) were digested for mercury analysis on 11/07/13 (QC Batch GK0HGS1) in accordance with USEPA Method 7471B.

Aqueous-matrix Katahdin Sample Numbers SG8184-(18, 36) were digested for mercury analysis on 11/06/13 (QC Batch GK06HGW2) in accordance with USEPA Method 7471B.

Mercury analysis of the Katahdin Work Order SG8184 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG1884-15 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for potassium (24.9% RPD).

The laboratory duplicate analysis of Katahdin Sample No. SG8184-35 is within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for all analytes.

The measured recoveries of antimony (46.2%) and calcium (173.3%) in the matrix-spiked aliquot of Katahdin Sample No. SG8184-15 are outside the laboratory's acceptance criteria criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The measured recoveries of antimony (47.3%), calcium (168.2%), chromium (130.9%), lead (135.3%), and zinc (126.4%) in the matrix-spiked aliquot of Katahdin Sample No. SG8184-35 are outside the laboratory's acceptance criteria criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The serial dilution analysis of Katahdin Sample Number SG8184-15 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for barium (12.1% difference), cobalt (12.0%), magnesium (15.0%), and manganese (17.8%).

The serial dilution analysis of Katahdin Sample Number SG8184-35 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for magnesium (14.5%), and manganese (16.8%).

The measured recoveries of aluminum, calcium, copper, iron, magnesium, and manganese in the post-digestion matrix-spiked aliquot of Katahdin Sample Number SG8184-15 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

The measured recoveries of aluminum, iron, magnesium, and manganese in the post-digestion matrix-spiked aliquot of Katahdin Sample Number SG8184-35 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's method detection limit (MDL). All results were

evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the MDL is listed in the concentration column. These LOQs and MDLs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG8184 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
11.18.13

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Jennifer Obrin

From: Jalkut, Kayleen [Kayleen.Jalkut@tetratech.com]
Sent: Thursday, October 24, 2013 11:08 AM
To: Jennifer Obrin (jobrin@katahdinlab.com)
Subject: TF2, CTO WE 30, need you to discard some samples

Jen,
Please discard the GRO and ExTPH samples with the following identifiers:

TF2-004/5-SS1035-0001 SG 8184 -25
TF2-004/5-SS1041-000.7 -34
TF2-004/5-SS-DUP02-1013 -23
TF2-004/5-SS-DUP03-1013 -35

However, please analyze the PAH, metals, and total solids sample from each of the above locations

Kayleen

Kayleen Jalkut, P.G. | Geologist, Site Manager
Direct: 978.474.8417 | Main: 978.474.8400 | Fax: 978.474.8499
kayleen.jalkut@tetratech.com

Tetra Tech, Inc. | Complex World, Clear Solutions™
250 Andover Street, Suite 200 | Wilmington, MA 01887 | www.tetratech.com

PLEASE NOTE: This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

No virus found in this message.
Checked by AVG - www.avg.com
Version: 2014.0.4158 / Virus Database: 3614/6775 - Release Date: 10/23/13

000011

Jennifer Obrin

From: Seiken, Dabra [Dabra.Seiken@tetratech.com]
Sent: Friday, November 08, 2013 10:02 AM
To: Jennifer Obrin; Jalkut, Kayleen
Cc: Carper, Kelly; Samchuck, Joseph
Subject: RE: Newport non-conformance

Please re-prepare and re-analyze the samples.

Dabra I. Seiken, CG, PG

From: Jennifer Obrin [mailto:jobrin@katahdinlab.com]
Sent: Thursday, November 07, 2013 4:04 PM
To: Seiken, Dabra; Jalkut, Kayleen
Subject: Newport non-conformance

The GC lab has come to me with a non-conformance regarding the FI-PRO analysis for 4 samples from the Newport project.

SG8254-3 (TF2-004/5-SS1056-000.6) had low surrogate OTP recovery at 60%, the window is 62-109
SG8184-17 (TF2-004/5-SS1039-000.9) had low surrogate OTP recovery at 49%, the window is 62-109
SG8184-18 (TF2-SS-RB01-1013) had low surrogate OTP recovery at 80%, the window is 82-142
SG8184-27 (TF2-004/5-SS1049-000.9) had low surrogate OTP recovery at 15%, the window is 62-109

Please let me know how you would like to have the lab proceed. Hold times were 11/1 and 11/4.

Thank you,

Jennifer Obrin
Federal Programs Project Manager
Katahdin Analytical Services
A Woman-Owned Small Business Enterprise
DoD ELAP Accredited
600 Technology Way
Scarborough, Maine 04074
Direct - 207.874.2400 x17
Cell - 207.333.7469
Fax - 207.775.4029

OC0002

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/30/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
MERCURY	0.20	0.03	CV

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 6/11/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
ALUMINUM	60	0.34	MS
ANTIMONY	0.20	0.006	MS
ARSENIC	1.0	0.41	MS
BARIUM	0.40	0.02	MS
BERYLLIUM	0.20	0.003	MS
CADMIUM	0.20	0.004	MS
CALCIUM	20	4.10	MS
CHROMIUM	1.0	0.03	MS
COBALT	0.20	0.006	MS
COPPER	0.60	0.03	MS
IRON	20	4.70	MS
LEAD	0.20	0.009	MS
MAGNESIUM	20	0.69	MS
MANGANESE	0.40	0.02	MS
MOLYBDENUM	1.0	0.12	MS
NICKEL	0.40	0.02	MS
POTASSIUM	200	8.20	MS
SELENIUM	1.0	0.64	MS
SILVER	0.20	0.004	MS
SODIUM	200	3.90	MS
THALLIUM	0.20	0.003	MS
VANADIUM	1.0	0.15	MS
ZINC	2.0	0.13	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/7/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.02	mg/Kg	CV	SW846 7471A / 7471

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 2/9/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.10	ug/L	CV	SW846 7470A / 7470

Katahdin Analytical Services A0000239

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	8.00	ug/L	MS	
ANTIMONY	0.10	ug/L	MS	
ARSENIC	0.80	ug/L	MS	
BARIUM	0.20	ug/L	MS	
BERYLLIUM	0.04	ug/L	MS	
CADMIUM	0.04	ug/L	MS	
CALCIUM	16.00	ug/L	MS	
CHROMIUM	0.80	ug/L	MS	
COBALT	0.06	ug/L	MS	
COPPER	0.40	ug/L	MS	
IRON	12.00	ug/L	MS	
LEAD	0.10	ug/L	MS	
MAGNESIUM	16.00	ug/L	MS	
MANGANESE	0.20	ug/L	MS	
NICKEL	0.24	ug/L	MS	
POTASSIUM	80.00	ug/L	MS	
SELENIUM	0.60	ug/L	MS	
SILVER	0.08	ug/L	MS	
SODIUM	80.00	ug/L	MS	
THALLIUM	0.08	ug/L	MS	
VANADIUM	0.80	ug/L	MS	
ZINC	1.60	ug/L	MS	

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.80	mg/kg	MS	SW846 3050B / 6010/200.7
ANTIMONY	0.01	mg/kg	MS	SW846 3050B / 6010/200.7
ARSENIC	0.08	mg/kg	MS	SW846 3050B / 6010/200.7
BARIUM	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
BERYLLIUM	0.004	mg/Kg	MS	SW846 3050B / 6010/200.7
CADMIUM	0.004	mg/kg	MS	SW846 3050B / 6010/200.7
CALCIUM	1.60	mg/kg	MS	SW846 3050B / 6010/200.7
CHROMIUM	0.08	mg/kg	MS	SW846 3050B / 6010/200.7
COBALT	0.006	mg/kg	MS	SW846 3050B / 6010/200.7
COPPER	0.04	mg/kg	MS	SW846 3050B / 6010/200.7
IRON	1.20	mg/kg	MS	SW846 3050B / 6010/200.7
LEAD	0.01	mg/Kg	MS	SW846 3050B / 6010/200.7
MAGNESIUM	1.60	mg/kg	MS	SW846 3050B / 6010/200.7
MANGANESE	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
NICKEL	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
POTASSIUM	8.00	mg/Kg	MS	SW846 3050B / 6010/200.7
SELENIUM	0.06	mg/kg	MS	SW846 3050B / 6010/200.7
SILVER	0.008	mg/kg	MS	SW846 3050B / 6010/200.7
SODIUM	8.00	mg/kg	MS	SW846 3050B / 6010/200.7
THALLIUM	0.008	mg/kg	MS	SW846 3050B / 6010/200.7
VANADIUM	0.08	mg/Kg	MS	SW846 3050B / 6010/200.7
ZINC	0.16	mg/kg	MS	SW846 3050B / 6010/200.7

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/7/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.005	mg/Kg	CV	SW846 7471A / SW846 7471A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 2/9/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.01	ug/L	CV	SW846 7470A / SW846 7470A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.88	ug/L	MS	SW846 3010A / SW846 6020
ANTIMONY	0.01	ug/L	MS	SW846 3010A / SW846 6020
ARSENIC	0.45	ug/L	MS	SW846 3010A / SW846 6020
BARIUM	0.05	ug/L	MS	SW846 3010A / SW846 6020
BERYLLIUM	0.007	ug/L	MS	SW846 3010A / SW846 6020
CADMIUM	0.006	ug/L	MS	SW846 3010A / SW846 6020
CALCIUM	4.09	ug/L	MS	3010-MS / SW846 6020
CHROMIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020
COBALT	0.01	ug/L	MS	SW846 3010A / SW846 6020
COPPER	0.04	ug/L	MS	3010-MS / SW846 6020
IRON	2.55	ug/L	MS	3010-MS / SW846 6020
LEAD	0.01	ug/L	MS	3010-MS / SW846 6020
MAGNESIUM	1.56	ug/L	MS	3010-MS / SW846 6020
MANGANESE	0.07	ug/L	MS	3010-MS / SW846 6020
NICKEL	0.03	ug/L	MS	3010-MS / SW846 6020
POTASSIUM	6.14	ug/L	MS	SW846 3010A / SW846 6020
SELENIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020
SILVER	0.01	ug/L	MS	SW846 3010A / SW846 6020
SODIUM	3.70	ug/L	MS	SW846 3010A / SW846 6020
THALLIUM	0.01	ug/L	MS	SW846 3010A / SW846 6020
VANADIUM	0.10	ug/L	MS	3010-MS / SW846 6020
ZINC	0.78	ug/L	MS	3010-MS / SW846 6020

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.10	mg/kg	MS	SW846 3050B / SW846 6020
ANTIMONY	0.004	mg/kg	MS	SW846 3050B / SW846 6020
ARSENIC	0.03	mg/kg	MS	SW846 3050B / SW846 6020
BARIUM	0.007	mg/kg	MS	SW846 3050B / SW846 6020
BERYLLIUM	0.0008	mg/kg	MS	SW846 3050B / SW846 6020
CADMIUM	0.002	mg/kg	MS	SW846 3050B / SW846 6020
CALCIUM	0.77	mg/kg	MS	SW846 3050B / SW846 6020
CHROMIUM	0.010	mg/kg	MS	SW846 3050B / SW846 6020
COBALT	0.001	mg/kg	MS	SW846 3050B / SW846 6020
COPPER	0.01	mg/kg	MS	SW846 3050B / SW846 6020
IRON	0.48	mg/kg	MS	SW846 3050B / SW846 6020
LEAD	0.001	mg/kg	MS	SW846 3050B / SW846 6020
MAGNESIUM	0.27	mg/kg	MS	SW846 3050B / SW846 6020
MANGANESE	0.008	mg/kg	MS	SW846 3050B / SW846 6020
NICKEL	0.005	mg/kg	MS	SW846 3050B / SW846 6020
POTASSIUM	0.91	mg/kg	MS	SW846 3050B / SW846 6020
SELENIUM	0.008	mg/kg	MS	SW846 3050B / SW846 6020
SILVER	0.001	mg/kg	MS	SW846 3050B / SW846 6020
SODIUM	0.51	mg/kg	MS	SW846 3050B / SW846 6020
THALLIUM	0.002	mg/kg	MS	SW846 3050B / SW846 6020
VANADIUM	0.02	mg/kg	MS	SW846 3050B / SW846 6020
ZINC	0.03	mg/kg	MS	SW846 3050B / SW846 6020

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 6/7/2013

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	0.01	200000	MS
ANTIMONY	0.10	1000	MS
ARSENIC	0.30	1000	MS
BARIUM	0.10	1000	MS
BERYLLIUM	0.30	100	MS
CADMIUM	0.10	500	MS
CALCIUM	0.03	200000	MS
CHROMIUM	0.10	1000	MS
COBALT	0.10	1000	MS
COPPER	0.10	500	MS
IRON	0.03	100000	MS
LEAD	0.10	1000	MS
MAGNESIUM	0.05	200000	MS
MANGANESE	0.10	1000	MS
MOLYBDENUM	0.10	1000	MS
NICKEL	0.10	500	MS
POTASSIUM	0.01	200000	MS
SELENIUM	0.30	500	MS
SILVER	0.10	250	MS
SODIUM	0.01	200000	MS
THALLIUM	0.10	1000	MS
VANADIUM	0.10	1000	MS
ZINC	0.10	500	MS

Katahdin Analytical Services A0000246

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK05IMS1

Matrix: SOIL **SDG Name:** SG8184

Method: MS **Prep Date:** 11/05/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK05IMS1	LCSOGK05IMS1	1	0.1	
PBSGK05IMS1	PBSGK05IMS1	1	0.1	
004/5-SS1025-000.8	SG8184-002	1.28	0.1	A
004/5-SS1026-000.8	SG8184-003	1.36	0.1	A
004/5-SS1024-000.6	SG8184-004	1.13	0.1	A
004/5-SS1023-000.8	SG8184-005	1.33	0.1	A
004/5-SS1022-000.9	SG8184-006	1.31	0.1	A
004/5-SS1021-000.7	SG8184-007	1.25	0.1	A
004/5-SS1020-0001	SG8184-008	1.24	0.1	B
004/5-SS1032-000.9	SG8184-009	1.15	0.1	A
004/5-SS1031-000.8	SG8184-010	1.51	0.1	A
004/5-SS-DUP01-1013	SG8184-011	1.19	0.1	B
004/5-SS1030-000.6	SG8184-012	1.17	0.1	A
004/5-SS1029-000.6	SG8184-013	1.27	0.1	A
004/5-SS1028-000.8	SG8184-014	1.61	0.1	A
004/5-SS1027-0001	SG8184-015	1.32	0.1	E
004/5-SS1027-0001D	SG8184-015D	1.35	0.1	E
004/5-SS1027-0001S	SG8184-015S	1.35	0.1	E
004/5-SS1040-000.9	SG8184-016	1.27	0.1	A
004/5-SS1039-000.9	SG8184-017	1.36	0.1	B
004/5-SS1038-000.7	SG8184-020	1.35	0.1	A
004/5-SS1037-000.7	SG8184-021	1.17	0.1	A
004/5-SS1036-000.6	SG8184-022	1.13	0.1	A
004/5-SS-DUP02-1013	SG8184-023	1.15	0.1	B

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK05IMS1

Matrix: SOIL **SDG Name:** SG8184

QC Batch ID: GK05IMS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	1.515	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.10	U
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	12.935	
CHROMIUM	0.050	J
COBALT	0.030	U
COPPER	0.20	U
IRON	6.0	U
LEAD	0.018	J
MAGNESIUM	8.0	U
MANGANESE	0.183	J
NICKEL	0.030	J
POTASSIUM	12.260	J
SELENIUM	0.088	J
SILVER	0.040	U
SODIUM	40	U
THALLIUM	0.040	U
VANADIUM	0.127	J
ZINC	0.323	J

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK05IMS1

Matrix: SOIL **SDG Name:** SG8184

QC Batch ID: GK05IMS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	205.20	102.6	80	120
ANTIMONY	10.00	9.81	98.1	80	120
ARSENIC	10.00	10.21	102.1	80	120
BARIUM	200.00	192.15	96.1	80	120
BERYLLIUM	5.00	4.66	93.2	80	120
CADMIUM	25.00	25.83	103.3	80	120
CALCIUM	250.00	252.40	101.0	80	120
CHROMIUM	20.00	19.72	98.6	80	120
COBALT	50.00	50.15	100.3	80	120
COPPER	25.00	24.77	99.1	80	120
IRON	100.00	98.70	98.7	80	120
LEAD	10.00	10.09	100.9	80	120
MAGNESIUM	500.00	487.55	97.5	80	120
MANGANESE	50.00	45.69	91.4	80	120
NICKEL	50.00	49.69	99.4	80	120
POTASSIUM	1000.00	1057.00	105.7	80	120
SELENIUM	10.00	9.95	99.5	80	120
SILVER	5.00	4.86	97.2	80	120
SODIUM	750.00	738.00	98.4	80	120
THALLIUM	10.00	10.11	101.1	80	120
VANADIUM	50.00	48.40	96.8	80	120
ZINC	50.00	49.28	98.6	80	120

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services | **Client Field ID:** 004/5-SS1027-0001S

Matrix: SOIL | **SDG Name:** SG8184

Percent Solids: 94.5 | **Lab Sample ID:** SG8184-015S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	10683.0826		10929.8863		156.7	-157.5		80	120	MS
ANTIMONY, TOTAL	3.7338		0.1107		7.84	46.2	N	80	120	MS
ARSENIC, TOTAL	13.0649		6.2582		7.84	86.8		80	120	MS
BARIUM, TOTAL	164.6534		15.3972		156.7	95.2		80	120	MS
BERYLLIUM, TOTAL	3.7432		0.3727		3.92	86.0		80	120	MS
CADMIUM, TOTAL	18.1891		0.0651	J	19.59	92.5		80	120	MS
CALCIUM, TOTAL	727.8756		388.3956		195.88	173.3	N	80	120	MS
CHROMIUM, TOTAL	26.6313		13.6303		15.67	83.0		80	120	MS
COBALT, TOTAL	45.0123		8.5420		39.18	93.1		80	120	MS
COPPER, TOTAL	30.0591		14.2313		19.59	80.8		80	120	MS
IRON, TOTAL	19266.3735		20341.2876		78.35	-1371.9		80	120	MS
LEAD, TOTAL	17.2293		9.1670		7.84	102.8		80	120	MS
MAGNESIUM, TOTAL	3176.3269		3084.6479		391.75	23.4		80	120	MS
MANGANESE, TOTAL	328.6801		270.9634		39.18	147.3		80	120	MS
MERCURY, TOTAL	0.1824		0.0216	J	0.14	114.9		80	120	CV
NICKEL, TOTAL	49.7134		15.0807		39.18	88.4		80	120	MS
POTASSIUM, TOTAL	1162.7205		444.7278		783.5	91.6		80	120	MS
SELENIUM, TOTAL	6.9536		0.1486	J	7.84	86.8		80	120	MS
SILVER, TOTAL	3.4509		0.0219	J	3.92	87.5		80	120	MS
SODIUM, TOTAL	535.5253		42.1490	J	587.63	84.0		80	120	MS
THALLIUM, TOTAL	7.7018		0.0532	J	7.84	97.6		80	120	MS
VANADIUM, TOTAL	53.2391		16.5351		39.18	93.7		80	120	MS
ZINC, TOTAL	70.3195		38.0222		39.18	82.4		80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1027-0001S

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 94.5 **Lab Sample ID:** SG8184-015A

Concentration Units : ug/L

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	25840.0000		27280.0000		600	-240.0		75	125	MS
ANTIMONY, TOTAL	2.6240		0.2764		2	117.4		75	125	MS
ARSENIC, TOTAL	25.3100		15.6200		10	96.9		75	125	MS
BARIUM, TOTAL	43.2000		38.4300		4	119.3		75	125	MS
BERYLLIUM, TOTAL	3.0530		0.9302		2	106.1		75	125	MS
CADMIUM, TOTAL	2.3370		0.1624	J	2	108.7		75	125	MS
CALCIUM, TOTAL	1111.0000		969.4000		200	70.8		75	125	MS
CHROMIUM, TOTAL	42.0800		34.0200		10	80.6		75	125	MS
COBALT, TOTAL	23.0000		21.3200		2	84.0		75	125	MS
COPPER, TOTAL	39.0100		35.5200		6	58.2		75	125	MS
IRON, TOTAL	47920.0000		50770.0000		200	-1425.0		75	125	MS
LEAD, TOTAL	24.9000		22.8800		2	101.0		75	125	MS
MAGNESIUM, TOTAL	7720.0000		7699.0000		200	10.5		75	125	MS
MANGANESE, TOTAL	668.0000		676.3000		4	-207.5		75	125	MS
MERCURY, TOTAL	1.2940		0.1470	J	1	114.7		75	125	CV
NICKEL, TOTAL	41.0500		37.6400		4	85.2		75	125	MS
POTASSIUM, TOTAL	3158.0000		1110.0000		2000	102.4		75	125	MS
SELENIUM, TOTAL	11.2900		0.3708	J	10	109.2		75	125	MS
SILVER, TOTAL	2.2330		0.0546	J	2	108.9		75	125	MS
SODIUM, TOTAL	2089.0000		105.2000	J	2000	99.2		75	125	MS
THALLIUM, TOTAL	2.4020		0.1327	J	2	113.5		75	125	MS
VANADIUM, TOTAL	49.3800		41.2700		10	81.1		75	125	MS
ZINC, TOTAL	115.0000		94.9000		20	100.5		75	125	MS

Comments:

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1027-0001D

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 94.5 **Lab Sample ID:** SG8184-015D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M
ALUMINUM, TOTAL		10929.8863		9233.5995		16.8		MS
ANTIMONY, TOTAL	0.078	0.1107		0.1073		3.1		MS
ARSENIC, TOTAL		6.2582		6.4051		2.3		MS
BARIUM, TOTAL		15.3972		13.5546		12.7		MS
BERYLLIUM, TOTAL	0.078	0.3727		0.3376		9.9		MS
CADMIUM, TOTAL		0.0651	J	0.0657	J	0.9		MS
CALCIUM, TOTAL		388.3956		333.2636		15.3		MS
CHROMIUM, TOTAL		13.6303		11.4039		17.8		MS
COBALT, TOTAL		8.5420		8.0035		6.5		MS
COPPER, TOTAL		14.2313		12.5948		12.2		MS
IRON, TOTAL		20341.2876		18929.4666		7.2		MS
LEAD, TOTAL		9.1670		8.6930		5.3		MS
MAGNESIUM, TOTAL		3084.6479		2751.6675		11.4		MS
MANGANESE, TOTAL		270.9634		237.4018		13.2		MS
MERCURY, TOTAL		0.0216	J	0.0222	J	2.7		CV
NICKEL, TOTAL		15.0807		14.0678		6.9		MS
POTASSIUM, TOTAL	78	444.7278		346.1914		24.9	*	MS
SELENIUM, TOTAL		0.1486	J	0.1617	J	8.4		MS
SILVER, TOTAL		0.0219	J	0.0226	J	3.1		MS
SODIUM, TOTAL		42.1490	J	37.1538	J	12.6		MS
THALLIUM, TOTAL		0.0532	J	0.0411	J	25.7		MS
VANADIUM, TOTAL		16.5351		14.4596		13.4		MS
ZINC, TOTAL		38.0222		37.2047		2.2		MS

Comments:

QC < 35%

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1027-0001L

Matrix: SOIL **SDG Name:** SG8184

Lab Sample ID: SG8184-015L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	27280.00		27940.00		2.4		MS
ANTIMONY, TOTAL	0.28		0.26	J	7.1		MS
ARSENIC, TOTAL	15.62		16.20		3.7		MS
BARIUM, TOTAL	38.43		43.08		12.1	E	MS
BERYLLIUM, TOTAL	0.93		0.90	J	3.2		MS
CADMIUM, TOTAL	0.16	J	0.11	J	31.3		MS
CALCIUM, TOTAL	969.40		1060.00		9.3		MS
CHROMIUM, TOTAL	34.02		28.91		15.0		MS
COBALT, TOTAL	21.32		23.88		12.0	E	MS
COPPER, TOTAL	35.52		36.85		3.7		MS
IRON, TOTAL	50770.00		53850.00		6.1		MS
LEAD, TOTAL	22.88		24.80		8.4		MS
MAGNESIUM, TOTAL	7699.00		8855.00		15.0	E	MS
MANGANESE, TOTAL	676.30		797.00		17.8	E	MS
MERCURY, TOTAL	0.15	J	-0.10	U	100.0		CV
NICKEL, TOTAL	37.64		40.89		8.6		MS
POTASSIUM, TOTAL	1110.00		1005.50		9.4		MS
SELENIUM, TOTAL	0.37	J	-0.49	U	100.0		MS
SILVER, TOTAL	0.05	J	0.05	J	0.0		MS
SODIUM, TOTAL	105.20	J	271.75	J	158.3		MS
THALLIUM, TOTAL	0.13	J	0.14	J	7.7		MS
VANADIUM, TOTAL	41.27		41.15		0.3		MS
ZINC, TOTAL	94.90		108.00		13.8		MS

> 50X LOQ

Katahdin Analytical Services A0000234

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK05IMS2

Matrix: SOIL **SDG Name:** SG8184

Method: MS **Prep Date:** 11/05/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK05IMS2	LCSOGK05IMS2	1	0.1	
PBSGK05IMS2	PBSGK05IMS2	1	0.1	
004/5-SS1034-000.6	SG8184-024	1.13	0.1	A
004/5-SS1035-0001	SG8184-025	1.37	0.1	A
004/5-SS1033-000.8	SG8184-026	1.29	0.1	A
004/5-SS1049-000.9	SG8184-027	1.27	0.1	B
004/5-SS1048-000.8	SG8184-028	1.32	0.1	A
004/5-SS1047-000.8	SG8184-029	1.42	0.1	A
004/5-SS1046-000.5	SG8184-030	1.31	0.1	A
004/5-SS1045-000.5	SG8184-031	1.59	0.1	A
004/5-SS1044-000.5	SG8184-032	1.18	0.1	A
004/5-SS1042-000.5	SG8184-033	1.43	0.1	A
004/5-SS1041-000.7	SG8184-034	1.29	0.1	A
004/5-SS-DUP03-1013	SG8184-035	1.48	0.1	B
004/5-SS-DUP03-1013D	SG8184-035D	1.46	0.1	B
004/5-SS-DUP03-1013S	SG8184-035S	1.44	0.1	B

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK05IMS2

Matrix: SOIL **SDG Name:** SG8184

QC Batch ID: GK05IMS2

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	1.385	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.10	U
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	11.235	
CHROMIUM	0.050	J
COBALT	0.030	U
COPPER	0.20	U
IRON	2.400	J
LEAD	0.010	J
MAGNESIUM	8.0	U
MANGANESE	0.179	J
NICKEL	0.12	U
POTASSIUM	40	U
SELENIUM	0.040	J
SILVER	0.040	U
SODIUM	2.560	J
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.80	U

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK05IMS2

Matrix: SOIL **SDG Name:** SG8184

QC Batch ID: GK05IMS2

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	188.75	94.4	80	120
ANTIMONY	10.00	9.31	93.1	80	120
ARSENIC	10.00	9.50	95.0	80	120
BARIUM	200.00	184.20	92.1	80	120
BERYLLIUM	5.00	4.93	98.6	80	120
CADMIUM	25.00	23.95	95.8	80	120
CALCIUM	250.00	237.40	95.0	80	120
CHROMIUM	20.00	19.06	95.3	80	120
COBALT	50.00	48.82	97.6	80	120
COPPER	25.00	24.08	96.3	80	120
IRON	100.00	92.30	92.3	80	120
LEAD	10.00	10.64	106.4	80	120
MAGNESIUM	500.00	461.95	92.4	80	120
MANGANESE	50.00	44.31	88.6	80	120
NICKEL	50.00	48.23	96.5	80	120
POTASSIUM	1000.00	918.00	91.8	80	120
SELENIUM	10.00	9.54	95.4	80	120
SILVER	5.00	4.78	95.6	80	120
SODIUM	750.00	708.50	94.5	80	120
THALLIUM	10.00	9.60	96.0	80	120
VANADIUM	50.00	45.73	91.5	80	120
ZINC	50.00	48.48	97.0	80	120

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services | **Client Field ID:** 004/5-SS-DUP03-1013S

Matrix: SOIL | **SDG Name:** SG8184

Percent Solids: 96.0 | **Lab Sample ID:** SG8184-035S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	12431.0198		8491.5180		144.67	2723.1		80	120	MS
ANTIMONY, TOTAL	3.5326		0.1106		7.23	47.3	N	80	120	MS
ARSENIC, TOTAL	12.5070		5.4968		7.23	97.0		80	120	MS
BARIUM, TOTAL	150.7853		14.4704		144.67	94.2		80	120	MS
BERYLLIUM, TOTAL	3.8628		0.3111		3.62	98.1		80	120	MS
CADMIUM, TOTAL	17.3571		0.0756		18.08	95.6		80	120	MS
CALCIUM, TOTAL	611.6047		307.4964		180.84	168.2	N	80	120	MS
CHROMIUM, TOTAL	29.7194		10.7824		14.47	130.9	N	80	120	MS
COBALT, TOTAL	47.3804		11.9930		36.17	97.8		80	120	MS
COPPER, TOTAL	37.0724		16.6417		18.08	113.0		80	120	MS
IRON, TOTAL	26428.1238		19527.3243		72.34	9539.4		80	120	MS
LEAD, TOTAL	20.0589		10.2757		7.23	135.3	N	80	120	MS
MAGNESIUM, TOTAL	4593.3649		3025.6971		361.68	433.4		80	120	MS
MANGANESE, TOTAL	316.1465		349.9364		36.17	-93.4		80	120	MS
NICKEL, TOTAL	53.5290		16.9338		36.17	101.2		80	120	MS
POTASSIUM, TOTAL	1147.2562		446.9220		723.36	96.8		80	120	MS
SELENIUM, TOTAL	6.6658		0.3020	J	7.23	88.0		80	120	MS
SILVER, TOTAL	3.5568		0.0203	J	3.62	97.7		80	120	MS
SODIUM, TOTAL	525.1627		32.6922	J	542.52	90.8		80	120	MS
THALLIUM, TOTAL	7.8594		0.0445	J	7.23	108.1		80	120	MS
VANADIUM, TOTAL	54.7949		14.4352		36.17	111.6		80	120	MS
ZINC, TOTAL	82.9337		37.2318		36.17	126.4	N	80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS-DUP03-1013S

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 96.0 **Lab Sample ID:** SG8184-035A

Concentration Units : ug/L

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	25220.0000		24130.0000		600	181.7		75	125	MS
ANTIMONY, TOTAL	2.5750		0.3144		2	113.0		75	125	MS
ARSENIC, TOTAL	25.7800		15.6200		10	101.6		75	125	MS
BARIUM, TOTAL	44.9700		41.1200		4	96.3		75	125	MS
BERYLLIUM, TOTAL	2.9590		0.8839		2	103.8		75	125	MS
CADMIUM, TOTAL	2.2400		0.2149		2	101.3		75	125	MS
CALCIUM, TOTAL	1092.0000		873.8000		200	109.1		75	125	MS
CHROMIUM, TOTAL	41.2000		30.6400		10	105.6		75	125	MS
COBALT, TOTAL	36.3800		34.0800		2	115.0		75	125	MS
COPPER, TOTAL	53.5400		47.2900		6	104.2		75	125	MS
IRON, TOTAL	54800.0000		55490.0000		200	-345.0		75	125	MS
LEAD, TOTAL	31.0900		29.2000		2	94.5		75	125	MS
MAGNESIUM, TOTAL	8608.0000		8598.0000		200	5.0		75	125	MS
MANGANESE, TOTAL	976.7000		994.4000		4	-442.5		75	125	MS
NICKEL, TOTAL	53.0700		48.1200		4	123.8		75	125	MS
POTASSIUM, TOTAL	3396.0000		1270.0000		2000	106.3		75	125	MS
SELENIUM, TOTAL	10.6300		0.8582	J	10	97.7		75	125	MS
SILVER, TOTAL	2.1260		0.0576	J	2	103.4		75	125	MS
SODIUM, TOTAL	1964.0000		92.9000	J	2000	93.6		75	125	MS
THALLIUM, TOTAL	2.3550		0.1264	J	2	111.4		75	125	MS
VANADIUM, TOTAL	51.6800		41.0200		10	106.6		75	125	MS
ZINC, TOTAL	127.9000		105.8000		20	110.5		75	125	MS

Comments:

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS-DUP03-1013D

Matrix: SOIL **SDG Name:** SG8184

Percent Solids: 96.0 **Lab Sample ID:** SG8184-035D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M
ALUMINUM, TOTAL		8491.5180		8846.8477		4.1		MS
ANTIMONY, TOTAL	0.071	0.1106		0.1311		17.0		MS
ARSENIC, TOTAL		5.4968		5.0798		7.9		MS
BARIUM, TOTAL		14.4704		12.6032		13.8		MS
BERYLLIUM, TOTAL	0.071	0.3111		0.3681		16.8		MS
CADMIUM, TOTAL	0.071	0.0756		0.0680	J	10.6		MS
CALCIUM, TOTAL		307.4964		320.9479		4.3		MS
CHROMIUM, TOTAL		10.7824		10.9836		1.8		MS
COBALT, TOTAL		11.9930		11.5437		3.8		MS
COPPER, TOTAL		16.6417		16.1063		3.3		MS
IRON, TOTAL		19527.3243		20419.0952		4.5		MS
LEAD, TOTAL		10.2757		9.5282		7.5		MS
MAGNESIUM, TOTAL		3025.6971		3177.7306		4.9		MS
MANGANESE, TOTAL		349.9364		343.3148		1.9		MS
NICKEL, TOTAL		16.9338		16.9624		0.2		MS
POTASSIUM, TOTAL		446.9220		390.6169		13.4		MS
SELENIUM, TOTAL		0.3020	J	0.2644	J	13.3		MS
SILVER, TOTAL		0.0203	J	0.0122	J	49.8	Diff=	MS
SODIUM, TOTAL		32.6922	J	27.0079	J	19.0	0.0081	MS
THALLIUM, TOTAL		0.0445	J	0.0366	J	19.5		MS
VANADIUM, TOTAL		14.4352		13.5628		6.2		MS
ZINC, TOTAL		37.2318		39.7395		6.5		MS

Comments:

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS-DUP03-1013L

Matrix: SOIL **SDG Name:** SG8184

Lab Sample ID: SG8184-035L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	24130.00		25405.00		5.3		MS
ANTIMONY, TOTAL	0.31		0.30	J	3.2		MS
ARSENIC, TOTAL	15.62		15.89		1.7		MS
BARIUM, TOTAL	41.12		43.56		5.9		MS
BERYLLIUM, TOTAL	0.88		0.90	J	2.3		MS
CADMIUM, TOTAL	0.21		0.22	J	4.8		MS
CALCIUM, TOTAL	873.80		947.00		8.4		MS
CHROMIUM, TOTAL	30.64		27.43		10.5		MS
COBALT, TOTAL	34.08		36.03		5.7		MS
COPPER, TOTAL	47.29		50.15		6.0		MS
IRON, TOTAL	55490.00		58800.00		6.0		MS
LEAD, TOTAL	29.20		28.65		1.9		MS
MAGNESIUM, TOTAL	8598.00		9845.00		14.5	E	MS
MANGANESE, TOTAL	994.40		1161.00		16.8	E	MS
NICKEL, TOTAL	48.12		50.45		4.8		MS
POTASSIUM, TOTAL	1270.00		1334.00		5.0		MS
SELENIUM, TOTAL	0.86	J	0.54	J	37.2		MS
SILVER, TOTAL	0.06	J	0.03	U	100.0		MS
SODIUM, TOTAL	92.90	J	158.20	J	70.3		MS
THALLIUM, TOTAL	0.13	J	0.14	J	7.7		MS
VANADIUM, TOTAL	41.02		40.33		1.7		MS
ZINC, TOTAL	105.80		113.70		7.5		MS

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK07IMW1

Matrix: WATER **SDG Name:** SG8184

Method: MS **Prep Date:** 11/07/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWGK07IMW1	LCSWGK07IMW1	0.05	0.05	
PBWGK07IMW1	PBWGK07IMW1	0.05	0.05	
TF2-SS-RB01-1013	SG8184-018R	0.05	0.05	C
TF2-SS-RB02-1013	SG8184-036R	0.05	0.05	C

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PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGK07IMW1

Matrix: WATER **SDG Name:** SG8184

QC Batch ID: GK07IMW1

Concentration Units : ug/L

Analyte	RESULT	C
CALCIUM	240.550	
COPPER	1.129	J
IRON	12.760	J
LEAD	0.174	J
MAGNESIUM	47.430	J
MANGANESE	0.759	J
NICKEL	0.150	J
VANADIUM	2.430	J
ZINC	8.0	U

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGK07IMW1

Matrix: WATER **SDG Name:** SG8184

QC Batch ID: GK07IMW1

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
CALCIUM	2500.00	2346.00	93.8	80	120
COPPER	250.00	260.85	104.3	80	120
IRON	1000.00	976.00	97.6	80	120
LEAD	100.00	103.75	103.8	80	120
MAGNESIUM	5000.00	4840.50	96.8	80	120
MANGANESE	500.00	481.75	96.4	80	120
NICKEL	500.00	524.00	104.8	80	120
VANADIUM	500.00	568.50	113.7	80	120
ZINC	500.00	524.50	104.9	80	120

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK01IMW2

Matrix: WATER **SDG Name:** SG8184

Method: MS **Prep Date:** 11/01/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWGK01IMW2	LCSWGK01IMW2	0.05	0.05	
PBWGK01IMW2	PBWGK01IMW2	0.05	0.05	
TF2-SS-RB01-1013	SG8184-018	0.05	0.05	C
TF2-SS-RB02-1013	SG8184-036	0.05	0.05	C

Katahdin Analytical Services A0000247

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGK01IMW2

Matrix: WATER **SDG Name:** SG8184

QC Batch ID: GK01IMW2

Concentration Units : ug/L

Analyte	RESULT	C
ALUMINUM	16.270	J
ANTIMONY	0.133	J
ARSENIC	4.0	U
BARIUM	0.799	J
BERYLLIUM	0.20	U
CADMIUM	0.20	U
CHROMIUM	2.129	J
COBALT	0.30	U
POTASSIUM	93.200	J
SELENIUM	0.190	J
SILVER	0.40	U
SODIUM	69.550	J
THALLIUM	0.40	U

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGK01IMW2

Matrix: WATER **SDG Name:** SG8184

QC Batch ID: GK01IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000.00	2002.00	100.1	80	120
ANTIMONY	100.00	102.55	102.6	80	120
ARSENIC	100.00	105.60	105.6	80	120
BARIUM	2000.00	2042.50	102.1	80	120
BERYLLIUM	50.00	49.99	100.0	80	120
CADMIUM	250.00	266.70	106.7	80	120
CHROMIUM	200.00	207.75	103.9	80	120
COBALT	500.00	532.00	106.4	80	120
POTASSIUM	10000.00	10015.00	100.2	80	120
SELENIUM	100.00	101.90	101.9	80	120
SILVER	50.00	51.45	102.9	80	120
SODIUM	7500.00	7610.00	101.5	80	120
THALLIUM	100.00	103.75	103.8	80	120

ANALYSIS RUN LOG

NO Samples

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK06B

Date: 11/6/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements							
ZZZZZZ		1	15:54								
ZZZZZZ		1	15:56								
Cal Blank		1	17:59	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
Cal Std 1		1	18:02	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
Cal Std 2		1	18:05	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
Cal Std 3		1	18:09	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
Cal Std 4		1	18:12	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
ICV		1	18:15	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
ICB		1	18:18	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
PQL		1	18:21	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
ICSA		1	18:25	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
ICSAB		1	18:28	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
PQL		1	18:32	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
CCV		1	18:35	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
CCB		1	18:38	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
ZZZZZZ		1	18:42								
ZZZZZZ		1	18:45								
ZZZZZZ		1	18:48								
ZZZZZZ		1	18:52								
ZZZZZZ		1	18:55								
ZZZZZZ		1	18:58								
ZZZZZZ		1	19:02								
ZZZZZZ		1	19:05								
ZZZZZZ		1	19:08								
CCV		1	19:12	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
CCB		1	19:15	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
ZZZZZZ		1	19:18								
ZZZZZZ		1	19:21								
ZZZZZZ		5	19:25								
ZZZZZZ		20	19:28								
ZZZZZZ		2	19:32								
ZZZZZZ		1	19:35								
ZZZZZZ		1	19:39								
ZZZZZZ		1	19:42								
ZZZZZZ		5	19:45								
ZZZZZZ		1	19:49								
CCV		1	19:52	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
CCB		1	19:55	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
ZZZZZZ		5	19:59								
ZZZZZZ		5	20:02								
ZZZZZZ		5	20:06								
ZZZZZZ		1	20:09								
ZZZZZZ		1	20:12								
ZZZZZZ		1	20:16								
ZZZZZZ		1	20:19								
ZZZZZZ		1	20:22								
ZZZZZZ		10	20:26								
ZZZZZZ		5	20:29								
CCV		1	20:33	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na
CCB		1	20:36	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK06B

Date: 11/6/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements								
ZZZZZZ		5	20:40									
ZZZZZZ		5	20:43									
ZZZZZZ		5	20:46									
ZZZZZZ		5	20:50									
ZZZZZZ		5	20:53									
ZZZZZZ		5	20:57									
ZZZZZZ		25	21:00									
ZZZZZZ		5	21:04									
ZZZZZZ		5	21:07									
ZZZZZZ		5	21:11									
CCV		1	21:14	Al	Ba	Ca	Fe	Mg	Mn	Mo	K	Na
CCB		1	21:17	Al	Ba	Ca	Fe	Mg	Mn	Mo	K	Na
ZZZZZZ		5	21:21									
ZZZZZZ		5	21:24									
ZZZZZZ		5	21:28									
ZZZZZZ		5	21:31									
ZZZZZZ		5	21:34									
ZZZZZZ		5	21:38									
ZZZZZZ		5	21:41									
ZZZZZZ		5	21:45									
ZZZZZZ		5	21:48									
ZZZZZZ		5	21:52									
CCV		1	21:55	Al	Ba	Ca	Fe	Mg	Mn	Mo	K	Na
CCB		1	21:58	Al	Ba	Ca	Fe	Mg	Mn	Mo	K	Na
ZZZZZZ		5	22:02									
ZZZZZZ		5	22:05									
ZZZZZZ		5	22:09									
ZZZZZZ		5	22:12									
ZZZZZZ		5	22:15									
ZZZZZZ		5	22:19									
ZZZZZZ		5	22:22									
ZZZZZZ		5	22:26									
ZZZZZZ		5	22:30									
ZZZZZZ		5	22:33									
CCV		1	22:37	Al	Ba	Ca	Fe	Mg	Mn	Mo	K	Na
CCB		1	22:40	Al	Ba	Ca	Fe	Mg	Mn	Mo	K	Na
ZZZZZZ		5	22:43									
ZZZZZZ		5	22:47									
ZZZZZZ		5	22:50									
ZZZZZZ		5	22:54									
ZZZZZZ		5	22:57									
ZZZZZZ		5	23:01									
ZZZZZZ		5	23:04									
ZZZZZZ		25	23:08									
ZZZZZZ		5	23:11									
ZZZZZZ		5	23:15									
CCV	not used	1	23:19	Al	Ba	Ca	Fe	Mg	Mn	Mo	K	Na
CCB		1	23:22	Al	Ba	Ca	Fe	Mg	Mn	Mo	K	Na
SG8184-015S	004/5-SS1027-0001S	5	23:25		Ba				Mn			
ZZZZZZ		5	23:29									
ZZZZZZ		5	23:33									

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK06B

Date: 11/6/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements								
ZZZZZZ		5	23:36									
ZZZZZZ		5	23:40									
ZZZZZZ		5	23:43									
ZZZZZZ		5	23:46									
ZZZZZZ		5	23:50									
ZZZZZZ		5	23:53									
ZZZZZZ		5	23:57									
CCV		1	0:00	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na	
CCB		1	0:04	Al	Ba	Ca	Fe	Mg Mn	Mo	K	Na	

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICV

File: JGK06B Nov 06, 2013 18:15

Analyte	True	Found	%R (1)
ALUMINUM	400.0	403.10	100.8
BARIUM	20.0	20.99	104.9
CALCIUM	4000.0	3741.00	93.5
IRON	4000.0	3775.00	94.4
MAGNESIUM	4000.0	3898.00	97.5
MANGANESE	20.0	19.70	98.5
MOLYBDENUM	40.0	42.85	107.1
POTASSIUM	4000.0	3817.00	95.4
SODIUM	4000.0	3805.00	95.1

SAMPLE: CCV

File: JGK06B Nov 06, 2013 18:35

Analyte	True	Found	%R (1)
ALUMINUM	500.0	501.70	100.3
BARIUM	25.0	26.55	106.2
CALCIUM	5000.0	5043.00	100.9
IRON	5000.0	5059.00	101.2
MAGNESIUM	5000.0	5004.00	100.1
MANGANESE	25.0	26.08	104.3
MOLYBDENUM	25.0	26.60	106.4
POTASSIUM	5000.0	4979.00	99.6
SODIUM	5000.0	4989.00	99.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: JGK06B Nov 06, 2013 19:12

Analyte	True	Found	%R (1)
ALUMINUM	500.0	521.20	104.2
BARIUM	25.0	27.75	111.0 •
CALCIUM	5000.0	5253.00	105.1
IRON	5000.0	5328.00	106.6
MAGNESIUM	5000.0	5198.00	104.0
MANGANESE	25.0	27.66	110.6 •
MOLYBDENUM	25.0	27.33	109.3
POTASSIUM	5000.0	5216.00	104.3
SODIUM	5000.0	5171.00	103.4

SAMPLE: CCV

File: JGK06B Nov 06, 2013 19:52

Analyte	True	Found	%R (1)
ALUMINUM	500.0	513.70	102.7
BARIUM	25.0	27.33	109.3
CALCIUM	5000.0	5195.00	103.9
IRON	5000.0	5239.00	104.8
MAGNESIUM	5000.0	5139.00	102.8
MANGANESE	25.0	27.24	109.0
MOLYBDENUM	25.0	27.33	109.3
POTASSIUM	5000.0	5214.00	104.3
SODIUM	5000.0	5142.00	102.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: JGK06B Nov 06, 2013 20:33

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.10	101.2
BARIUM	25.0	26.78	107.1
CALCIUM	5000.0	5153.00	103.1
IRON	5000.0	5191.00	103.8
MAGNESIUM	5000.0	5065.00	101.3
MANGANESE	25.0	27.26	109.0
MOLYBDENUM	25.0	27.15	108.6
POTASSIUM	5000.0	5118.00	102.4
SODIUM	5000.0	5090.00	101.8

SAMPLE: CCV

File: JGK06B Nov 06, 2013 21:14

Analyte	True	Found	%R (1)
ALUMINUM	500.0	518.20	103.6
BARIUM	25.0	27.50	110.0
CALCIUM	5000.0	5253.00	105.1
IRON	5000.0	5226.00	104.5
MAGNESIUM	5000.0	5192.00	103.8
MANGANESE	25.0	27.51	110.0
MOLYBDENUM	25.0	27.52	110.1
POTASSIUM	5000.0	5221.00	104.4
SODIUM	5000.0	5181.00	103.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: JGK06B Nov 06, 2013 21:55

Analyte	True	Found	%R (1)
ALUMINUM	500.0	535.60	107.1
BARIUM	25.0	28.25	113.0 •
CALCIUM	5000.0	5413.00	108.3
IRON	5000.0	5413.00	108.3
MAGNESIUM	5000.0	5322.00	106.4
MANGANESE	25.0	28.27	113.1 •
MOLYBDENUM	25.0	28.11	112.4 •
POTASSIUM	5000.0	5357.00	107.1
SODIUM	5000.0	5313.00	106.3

SAMPLE: CCV

File: JGK06B Nov 06, 2013 22:37

Analyte	True	Found	%R (1)
ALUMINUM	500.0	534.60	106.9
BARIUM	25.0	27.81	111.2 •
CALCIUM	5000.0	5348.00	107.0
IRON	5000.0	5468.00	109.4
MAGNESIUM	5000.0	5320.00	106.4
MANGANESE	25.0	28.36	113.4 •
MOLYBDENUM	25.0	28.33	113.3 •
POTASSIUM	5000.0	5373.00	107.5
SODIUM	5000.0	5294.00	105.9

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: JGK06B Nov 06, 2013 23:19

Analyte	True	Found	%R (1)
ALUMINUM	500.0	499.00	99.8
BARIUM	25.0	26.59	106.4
CALCIUM	5000.0	5019.00	100.4
IRON	5000.0	5065.00	101.3
MAGNESIUM	5000.0	4987.00	99.7
MANGANESE	25.0	26.29	105.2
MOLYBDENUM	25.0	26.23	104.9
POTASSIUM	5000.0	5009.00	100.2
SODIUM	5000.0	4974.00	99.5

SAMPLE: CCV

File: JGK06B Nov 07, 2013 0:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	500.20	100.0
BARIUM	25.0	25.84	103.4
CALCIUM	5000.0	5017.00	100.3
IRON	5000.0	4998.00	100.0
MAGNESIUM	5000.0	4996.00	99.9
MANGANESE	25.0	26.07	104.3
MOLYBDENUM	25.0	26.23	104.9
POTASSIUM	5000.0	5035.00	100.7
SODIUM	5000.0	4990.00	99.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: PQL

File: JGK06B Nov 06, 2013 18:21

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	60.58	101.0
BARIUM	0.4	0.36	90.0
CALCIUM	20.0	21.52	107.6
IRON	20.0	17.41	87.1
MAGNESIUM	20.0	19.19	96.0
MANGANESE	0.4	0.40	100.0
MOLYBDENUM	1.0	1.09	109.0
POTASSIUM	200.0	199.40	99.7
SODIUM	200.0	204.70	102.3

SAMPLE: PQL

File: JGK06B Nov 06, 2013 18:32

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	62.48	104.1
BARIUM	0.4	0.40	100.0
CALCIUM	20.0	26.28	131.4 •
IRON	20.0	8.89	44.5 •
MAGNESIUM	20.0	24.96	124.8 •
MANGANESE	0.4	0.35	87.5
MOLYBDENUM	1.0	2.19	219.0 •
POTASSIUM	200.0	176.50	88.3
SODIUM	200.0	217.60	108.8

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICB

File: JGK06B Nov 06, 2013 18:18

Analyte	Result	C
ALUMINUM	0.340	U
BARIUM	0.020	U
CALCIUM	4.100	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.121	J
POTASSIUM	8.200	U
SODIUM	3.900	U

SAMPLE: CCB

File: JGK06B Nov 06, 2013 18:38

Analyte	Result	C
ALUMINUM	0.649	J
BARIUM	0.020	U
CALCIUM	4.100	U
IRON	-12.320	U
MAGNESIUM	2.296	J
MANGANESE	0.020	U
MOLYBDENUM	0.257	J
POTASSIUM	-11.740	U
SODIUM	3.900	U

SAMPLE: CCB

File: JGK06B Nov 06, 2013 19:15

Analyte	Result	C
ALUMINUM	0.340	U
BARIUM	0.020	U
CALCIUM	6.768	J
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.043	J
MOLYBDENUM	0.120	U
POTASSIUM	8.557	J
SODIUM	-9.877	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCB
File: JGK06B Nov 06, 2013 19:55

Analyte	Result	C
ALUMINUM	0.340	U
BARIUM	0.020	U
CALCIUM	23.220	
IRON	-13.260	U
MAGNESIUM	-1.207	U
MANGANESE	0.066	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	-5.747	U

SAMPLE: CCB
File: JGK06B Nov 06, 2013 20:36

Analyte	Result	C
ALUMINUM	0.340	U
BARIUM	0.036	J
CALCIUM	16.710	J
IRON	-6.327	U
MAGNESIUM	0.795	J
MANGANESE	0.458	
MOLYBDENUM	0.120	U
POTASSIUM	8.820	J
SODIUM	5.885	J

SAMPLE: CCB
File: JGK06B Nov 06, 2013 21:17

Analyte	Result	C
ALUMINUM	0.513	J
BARIUM	0.049	J
CALCIUM	10.010	J
IRON	-4.743	U
MAGNESIUM	-1.310	U
MANGANESE	0.084	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	-16.670	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCB

File: JGK06B Nov 06, 2013 21:58

Analyte	Result	C
ALUMINUM	0.751	J
BARIUM	0.030	J
CALCIUM	8.800	J
IRON	4.700	U
MAGNESIUM	-0.983	U
MANGANESE	0.092	J
MOLYBDENUM	0.120	U
POTASSIUM	12.760	J
SODIUM	-24.470	U

SAMPLE: CCB

File: JGK06B Nov 06, 2013 22:40

Analyte	Result	C
ALUMINUM	0.340	U
BARIUM	0.020	U
CALCIUM	4.100	U
IRON	4.700	U
MAGNESIUM	-1.212	U
MANGANESE	0.090	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	-32.620	U

SAMPLE: CCB

File: JGK06B Nov 06, 2013 23:22

Analyte	Result	C
ALUMINUM	2.002	J
BARIUM	0.021	J
CALCIUM	4.100	U
IRON	-6.266	U
MAGNESIUM	0.690	U
MANGANESE	0.111	J
MOLYBDENUM	0.120	U
POTASSIUM	-10.630	U
SODIUM	-40.520	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCB

File: JGK06B Nov 07, 2013 0:04

Analyte	Result	C
ALUMINUM	0.730	J
BARIUM	0.020	U
CALCIUM	-10.520	U
IRON	-8.060	U
MAGNESIUM	0.690	U
MANGANESE	0.086	J
MOLYBDENUM	0.120	U
POTASSIUM	-14.320	U
SODIUM	-43.400	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICSA

File: JGK06B Nov 06, 2013 18:25

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	90500	90.5
BARIUM	0	0	
CALCIUM	100000	89990	90.0
IRON	100000	85370	85.4
MAGNESIUM	100000	90990	91.0
MANGANESE	0	0	
MOLYBDENUM	2000	1901	95.0
POTASSIUM	100000	93370	93.4
SODIUM	100000	92420	92.4

SAMPLE: ICSAB

File: JGK06B Nov 06, 2013 18:28

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	89810	89.8
BARIUM	21	21	100.0
CALCIUM	100000	90090	90.1
IRON	100000	86230	86.2
MAGNESIUM	100000	90540	90.5
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1946	97.3
POTASSIUM	100000	92750	92.8
SODIUM	100000	92370	92.4

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK08B

Date: 11/8/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	16:32	
ZZZZZZ		1	16:41	
Cal Blank		1	18:16	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 1		1	18:19	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 2		1	18:23	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 3		1	18:26	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 4		1	18:29	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	18:32	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	18:35	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	18:39	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSA		1	18:42	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	18:45	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCV		1	18:49	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:52	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSA		1	18:57	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	19:01	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCV		1	19:04	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:07	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	19:11	
ZZZZZZ		1	19:14	
ZZZZZZ		1	19:18	
ZZZZZZ		1	19:21	
ZZZZZZ		1	19:24	
ZZZZZZ		1	19:28	
ZZZZZZ		1	19:31	
ZZZZZZ		1	19:34	
ZZZZZZ		5	19:38	
ZZZZZZ		5	19:41	
CCV		1	19:45	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:48	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	19:51	
ZZZZZZ		5	19:55	
PBWGK01IMW2		5	19:58	Al Sb As Ba Be Cd Cr Co K Se Ag Na Tl
PBWGK07IMW1		5	20:02	Cu Pb Mg Mn Ni Zn
LCSWGK01IMW2		5	20:05	Al Sb As Ba Be Cd Cr Co K Se Ag Na Tl
LCSWGK07IMW1		5	20:08	Cu Pb Mg Mn Ni Zn
SG8184-018	TF2-SS-RB01-1013	5	20:12	Al Sb As Ba Be Cd Cr Co K Se Ag Na Tl
SG8184-036	TF2-SS-RB02-1013	5	20:15	Al Sb As Ba Be Cd Cr Co K Se Ag Na Tl
SG8184-018R	TF2-SS-RB01-1013R	5	20:18	Cu Pb Mg Mn Ni Zn
SG8184-036R	TF2-SS-RB02-1013R	5	20:22	Cu Pb Mg Mn Ni Zn
CCV		1	20:25	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:28	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PBSGK05IMS1		5	20:32	Al Sb Ba Be Cd Co Pb Mg Mn Ni K Se Ag Na Tl Zn
LCSOGK05IMS1		5	20:35	Sb As Ba Be Cd Cr Co Cu Pb Mg Mn Ni Se Ag Na Tl V Zn
SG8184-002	004/5-SS1025-000.8	5	20:39	Sb Ba Cd Co Pb Mg Mn Ni Se Ag Tl Zn
SG8184-003	004/5-SS1026-000.8	5	20:42	Sb Ba Cd Co Pb Mg Mn Ni Se Ag Tl Zn
SG8184-004	004/5-SS1024-000.6	5	20:45	Sb Ba Cd Co Pb Mg Mn Ni Se Ag Tl Zn
SG8184-005	004/5-SS1023-000.8	5	20:49	Sb Ba Cd Co Pb Mg Mn Ni Se Ag Tl Zn
SG8184-006	004/5-SS1022-000.9	10	20:52	Mn
SG8184-006	004/5-SS1022-000.9	5	20:56	Sb Ba Cd Co Pb Mg Ni Se Ag Tl Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK08B

Date: 11/8/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
SG8184-007	004/5-SS1021-000.7	5	20:59	Sb Ba Cd Co Pb Mg Mn Ni Se Ag Tl
SG8184-008	004/5-SS1020-0001	5	21:03	Sb Ba Cd Co Pb Mg Mn Ni Se Ag Tl Zn
CCV		1	21:06	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	21:10	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG8184-009	004/5-SS1032-000.9	5	21:13	Sb Ba Cd Co Pb Mg Mn Ni Se Ag Tl Zn
SG8184-010	004/5-SS1031-000.8	5	21:17	Sb Ba Cd Co Pb Mg Mn Ni Se Ag Tl Zn
SG8184-011	004/5-SS-DUP01-1013	5	21:20	Sb Ba Cd Co Pb Mg Mn Ni Se Ag Tl Zn
SG8184-012	004/5-SS1030-000.6	5	21:24	Sb Ba Pb Mg Mn Ni Se Ag Zn
SG8184-013	004/5-SS1029-000.6	5	21:27	Sb Ba Cd Co Pb Mg Mn Ni Ag Tl Zn
SG8184-014	004/5-SS1028-000.8	5	21:31	Ba Cd Co Pb Mg Mn Ni Zn
SG8184-015	004/5-SS1027-0001	5	21:34	Ba Cd Co Pb Mg Mn Ni Ag Zn
SG8184-015L	004/5-SS1027-0001L	25	21:38	Sb Ba Cd Co Pb Mg Mn Ni Ag Zn
SG8184-015D	004/5-SS1027-0001D	5	21:41	Sb Ba Co Pb Mg Mn Ni Ag Zn
SG8184-015A	004/5-SS1027-0001A	5	21:44	Ba Cd Co Pb Mg Mn Ni Se Ag Tl Zn
CCV		1	21:48	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	21:51	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	21:55	
SG8184-016	004/5-SS1040-000.9	5	21:58	Ba Cd Pb Mg Mn Ni Se Ag Tl
SG8184-017	004/5-SS1039-000.9	5	22:02	Ba Pb Mg Mn Ni
SG8184-020	004/5-SS1038-000.7	5	22:06	Sb Ba Cd Co Pb Mg Mn Ni Ag Zn
SG8184-021	004/5-SS1037-000.7	5	22:09	Sb Ba Cd Co Pb Mg Mn Ni Zn
SG8184-022	004/5-SS1036-000.6	5	22:13	Sb Ba Cd Co Pb Mg Mn Ni Ag Tl Zn
SG8184-023	004/5-SS-DUP02-1013	5	22:16	Ba Cd Co Pb Mg Mn Ni Ag Zn
PBSGK05IMS2		5	22:20	Ba Be Cd Mg Mn Se Na Zn
LCSOGK05IMS2		5	22:23	Al Sb As Ba Cd Cr Co Cu Mg Mn Ni K Se Ag Na Tl V Zn
SG8184-024	004/5-SS1034-000.6	5	22:27	Ba Mg Mn
CCV		1	22:30	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	22:34	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG8184-025	004/5-SS1035-0001	5	22:37	Ba Mg Mn
SG8184-026	004/5-SS1033-000.8	5	22:41	Ba Mg Mn
SG8184-027	004/5-SS1049-000.9	5	22:44	Ba Mg Mn
SG8184-028	004/5-SS1048-000.8	5	22:48	Ba Mg Mn
SG8184-029	004/5-SS1047-000.8	5	22:51	Ba Mg Mn
SG8184-030	004/5-SS1046-000.5	5	22:55	Ba Mg Mn
SG8184-031	004/5-SS1045-000.5	5	22:58	Ba Mg Mn
SG8184-032	004/5-SS1044-000.5	5	23:02	Ba Mg Mn
SG8184-033	004/5-SS1042-000.5	5	23:06	Ba Mn
SG8184-034	004/5-SS1041-000.7	5	23:09	Ba Mg Mn
CCV		1	23:13	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	23:16	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG8184-035	004/5-SS-DUP03-1013	5	23:20	Ba Mg Mn
SG8184-035L	004/5-SS-DUP03-1013L	25	23:23	Ba Mg Mn
SG8184-035D	004/5-SS-DUP03-1013D	5	23:27	Ba Mg Mn
SG8184-035A	004/5-SS-DUP03-1013A	5	23:30	Ba Mg Mn
SG8184-035S	004/5-SS-DUP03-1013S	5	23:34	Ba Mg Mn
ZZZZZZ		10	23:37	
ZZZZZZ		50	23:41	
ZZZZZZ		10	23:44	
ZZZZZZ		10	23:48	
ZZZZZZ		20	23:51	
CCV		1	23:55	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK08B

Date: 11/8/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCB		1	23:58	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICV

File: JGK08B Nov 08, 2013 18:32

Analyte	True	Found	%R (1)
ALUMINUM	400.0	405.30	101.3
ANTIMONY	20.0	20.69	103.5
ARSENIC	20.0	20.91	104.6
BARIUM	20.0	21.47	107.3
BERYLLIUM	20.0	20.80	104.0
CADMIUM	20.0	21.03	105.2
CALCIUM	4000.0	3754.00	93.8
CHROMIUM	20.0	21.00	105.0
COBALT	20.0	21.27	106.3
COPPER	20.0	20.97	104.8
IRON	4000.0	3767.00	94.2
LEAD	20.0	20.85	104.3
MAGNESIUM	4000.0	3893.00	97.3
MANGANESE	20.0	19.59	98.0
MOLYBDENUM	40.0	42.55	106.4
NICKEL	20.0	21.36	106.8
POTASSIUM	4000.0	3822.00	95.5
SELENIUM	20.0	21.37	106.8
SILVER	20.0	20.58	102.9
SODIUM	4000.0	3808.00	95.2
THALLIUM	20.0	22.01	110.1
VANADIUM	20.0	20.53	102.6
ZINC	20.0	21.73	108.7

SAMPLE: CCV

File: JGK08B Nov 08, 2013 18:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	501.20	100.2
ANTIMONY	25.0	26.18	104.7
ARSENIC	25.0	26.14	104.6
BARIUM	25.0	26.57	106.3
BERYLLIUM	10.0	10.34	103.4
CADMIUM	10.0	10.50	105.0
CALCIUM	5000.0	5037.00	100.7
CHROMIUM	25.0	26.02	104.1
COBALT	10.0	10.40	104.0
COPPER	25.0	26.28	105.1
IRON	5000.0	4939.00	98.8
LEAD	25.0	25.99	104.0
MAGNESIUM	5000.0	5026.00	100.5
MANGANESE	25.0	26.15	104.6
MOLYBDENUM	25.0	27.58	110.3
NICKEL	25.0	26.25	105.0
POTASSIUM	5000.0	5007.00	100.1
SELENIUM	25.0	26.05	104.2
SILVER	10.0	10.46	104.6
SODIUM	5000.0	5016.00	100.3
THALLIUM	10.0	10.30	103.0
VANADIUM	25.0	25.93	103.7
ZINC	25.0	26.28	105.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: JGK08B Nov 08, 2013 19:04

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.80	101.4
ANTIMONY	25.0	26.16	104.6
ARSENIC	25.0	26.04	104.2
BARIUM	25.0	26.05	104.2
BERYLLIUM	10.0	10.42	104.2
CADMIUM	10.0	10.58	105.8
CALCIUM	5000.0	5071.00	101.4
CHROMIUM	25.0	25.83	103.3
COBALT	10.0	10.40	104.0
COPPER	25.0	26.45	105.8
IRON	5000.0	4909.00	98.2
LEAD	25.0	25.84	103.4
MAGNESIUM	5000.0	5067.00	101.3
MANGANESE	25.0	25.90	103.6
MOLYBDENUM	25.0	27.63	110.5
NICKEL	25.0	26.11	104.4
POTASSIUM	5000.0	5024.00	100.5
SELENIUM	25.0	25.80	103.2
SILVER	10.0	10.57	105.7
SODIUM	5000.0	5089.00	101.8
THALLIUM	10.0	10.34	103.4
VANADIUM	25.0	26.01	104.0
ZINC	25.0	26.45	105.8

SAMPLE: CCV

File: JGK08B Nov 08, 2013 19:45

Analyte	True	Found	%R (1)
ALUMINUM	500.0	500.60	100.1
ANTIMONY	25.0	25.78	103.1
ARSENIC	25.0	26.29	105.2
BARIUM	25.0	25.92	103.7
BERYLLIUM	10.0	10.37	103.7
CADMIUM	10.0	10.50	105.0
CALCIUM	5000.0	5014.00	100.3
CHROMIUM	25.0	25.93	103.7
COBALT	10.0	10.41	104.1
COPPER	25.0	26.13	104.5
IRON	5000.0	4916.00	98.3
LEAD	25.0	25.86	103.4
MAGNESIUM	5000.0	5053.00	101.1
MANGANESE	25.0	25.93	103.7
MOLYBDENUM	25.0	26.06	104.2
NICKEL	25.0	26.08	104.3
POTASSIUM	5000.0	5012.00	100.2
SELENIUM	25.0	25.57	102.3
SILVER	10.0	10.52	105.2
SODIUM	5000.0	5071.00	101.4
THALLIUM	10.0	10.30	103.0
VANADIUM	25.0	25.86	103.4
ZINC	25.0	26.21	104.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: JGK08B Nov 08, 2013 20:25

Analyte	True	Found	%R (1)
ALUMINUM	500.0	500.00	100.0
ANTIMONY	25.0	25.78	103.1
ARSENIC	25.0	25.98	103.9
BARIUM	25.0	25.77	103.1
BERYLLIUM	10.0	10.41	104.1
CADMIUM	10.0	10.51	105.1
CALCIUM	5000.0	5036.00	100.7
CHROMIUM	25.0	25.92	103.7
COBALT	10.0	10.56	105.6
COPPER	25.0	26.28	105.1
IRON	5000.0	4909.00	98.2
LEAD	25.0	25.97	103.9
MAGNESIUM	5000.0	5060.00	101.2
MANGANESE	25.0	25.95	103.8
MOLYBDENUM	25.0	26.34	105.4
NICKEL	25.0	26.19	104.8
POTASSIUM	5000.0	5019.00	100.4
SELENIUM	25.0	25.48	101.9
SILVER	10.0	10.63	106.3
SODIUM	5000.0	5044.00	100.9
THALLIUM	10.0	10.29	102.9
VANADIUM	25.0	26.09	104.4
ZINC	25.0	26.60	106.4

SAMPLE: CCV

File: JGK08B Nov 08, 2013 21:06

Analyte	True	Found	%R (1)
ALUMINUM	500.0	501.60	100.3
ANTIMONY	25.0	26.04	104.2
ARSENIC	25.0	25.85	103.4
BARIUM	25.0	25.87	103.5
BERYLLIUM	10.0	10.70	107.0
CADMIUM	10.0	10.81	108.1
CALCIUM	5000.0	5040.00	100.8
CHROMIUM	25.0	25.54	102.2
COBALT	10.0	10.58	105.8
COPPER	25.0	26.18	104.7
IRON	5000.0	5024.00	100.5
LEAD	25.0	25.98	103.9
MAGNESIUM	5000.0	5056.00	101.1
MANGANESE	25.0	26.18	104.7
MOLYBDENUM	25.0	26.39	105.6
NICKEL	25.0	25.61	102.4
POTASSIUM	5000.0	5026.00	100.5
SELENIUM	25.0	25.54	102.2
SILVER	10.0	10.72	107.2
SODIUM	5000.0	5125.00	102.5
THALLIUM	10.0	10.40	104.0
VANADIUM	25.0	25.38	101.5
ZINC	25.0	26.52	106.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: JGK08B Nov 08, 2013 21:48

Analyte	True	Found	%R (1)
ALUMINUM	500.0	501.10	100.2
ANTIMONY	25.0	25.86	103.4
ARSENIC	25.0	25.44	101.8
BARIUM	25.0	25.76	103.0
BERYLLIUM	10.0	10.78	107.8
CADMIUM	10.0	10.78	107.8
CALCIUM	5000.0	5067.00	101.3
CHROMIUM	25.0	25.35	101.4
COBALT	10.0	10.37	103.7
COPPER	25.0	25.99	104.0
IRON	5000.0	4987.00	99.7
LEAD	25.0	25.94	103.8
MAGNESIUM	5000.0	5094.00	101.9
MANGANESE	25.0	25.99	104.0
MOLYBDENUM	25.0	26.55	106.2
NICKEL	25.0	25.60	102.4
POTASSIUM	5000.0	5016.00	100.3
SELENIUM	25.0	25.49	102.0
SILVER	10.0	10.79	107.9
SODIUM	5000.0	5150.00	103.0
THALLIUM	10.0	10.34	103.4
VANADIUM	25.0	24.96	99.8
ZINC	25.0	26.51	106.0

SAMPLE: CCV

File: JGK08B Nov 08, 2013 22:30

Analyte	True	Found	%R (1)
ALUMINUM	500.0	510.00	102.0
ANTIMONY	25.0	26.28	105.1
ARSENIC	25.0	26.34	105.4
BARIUM	25.0	26.13	104.5
BERYLLIUM	10.0	10.94	109.4
CADMIUM	10.0	10.81	108.1
CALCIUM	5000.0	5017.00	100.3
CHROMIUM	25.0	25.68	102.7
COBALT	10.0	10.52	105.2
COPPER	25.0	26.26	105.0
IRON	5000.0	4866.00	97.3
LEAD	25.0	26.07	104.3
MAGNESIUM	5000.0	5199.00	104.0
MANGANESE	25.0	26.31	105.2
MOLYBDENUM	25.0	26.82	107.3
NICKEL	25.0	25.70	102.8
POTASSIUM	5000.0	5061.00	101.2
SELENIUM	25.0	25.67	102.7
SILVER	10.0	10.79	107.9
SODIUM	5000.0	5252.00	105.0
THALLIUM	10.0	10.47	104.7
VANADIUM	25.0	25.51	102.0
ZINC	25.0	27.07	108.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: JGK08B Nov 08, 2013 23:13

Analyte	True	Found	%R (1)
ALUMINUM	500.0	512.80	102.6
ANTIMONY	25.0	25.68	102.7
ARSENIC	25.0	25.82	103.3
BARIUM	25.0	25.60	102.4
BERYLLIUM	10.0	10.81	108.1
CADMIUM	10.0	10.86	108.6
CALCIUM	5000.0	4911.00	98.2
CHROMIUM	25.0	25.83	103.3
COBALT	10.0	10.40	104.0
COPPER	25.0	26.02	104.1
IRON	5000.0	4878.00	97.6
LEAD	25.0	25.88	103.5
MAGNESIUM	5000.0	5155.00	103.1
MANGANESE	25.0	26.34	105.4
MOLYBDENUM	25.0	26.47	105.9
NICKEL	25.0	25.82	103.3
POTASSIUM	5000.0	5098.00	102.0
SELENIUM	25.0	25.73	102.9
SILVER	10.0	10.75	107.5
SODIUM	5000.0	5238.00	104.8
THALLIUM	10.0	10.35	103.5
VANADIUM	25.0	25.34	101.4
ZINC	25.0	26.52	106.1

SAMPLE: CCV

File: JGK08B Nov 08, 2013 23:55

Analyte	True	Found	%R (1)
ALUMINUM	500.0	523.70	104.7
ANTIMONY	25.0	26.38	105.5
ARSENIC	25.0	26.21	104.8
BARIUM	25.0	26.12	104.5
BERYLLIUM	10.0	10.69	106.9
CADMIUM	10.0	10.98	109.8
CALCIUM	5000.0	5141.00	102.8
CHROMIUM	25.0	25.88	103.5
COBALT	10.0	10.64	106.4
COPPER	25.0	26.63	106.5
IRON	5000.0	4943.00	98.9
LEAD	25.0	26.57	106.3
MAGNESIUM	5000.0	5253.00	105.1
MANGANESE	25.0	26.70	106.8
MOLYBDENUM	25.0	27.03	108.1
NICKEL	25.0	26.01	104.0
POTASSIUM	5000.0	5185.00	103.7
SELENIUM	25.0	26.42	105.7
SILVER	10.0	10.89	108.9
SODIUM	5000.0	5283.00	105.7
THALLIUM	10.0	10.47	104.7
VANADIUM	25.0	25.65	102.6
ZINC	25.0	27.05	108.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: PQL

File: JGK08B Nov 08, 2013 18:39

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	60.32	100.5
ANTIMONY	0.2	0.23	115.0
ARSENIC	1.0	0.99	99.0
BARIUM	0.4	0.41	102.5
BERYLLIUM	0.2	0.22	110.0
CADMIUM	0.2	0.21	105.0
CALCIUM	20.0	14.95	74.8
CHROMIUM	1.0	1.12	112.0
COBALT	0.2	0.22	110.0
COPPER	0.6	0.61	101.7
IRON	20.0	27.59	137.9
LEAD	0.2	0.21	105.0
MAGNESIUM	20.0	20.19	101.0
MANGANESE	0.4	0.44	110.0
MOLYBDENUM	1.0	1.01	101.0
NICKEL	0.4	0.41	102.5
POTASSIUM	200.0	209.20	104.6
SELENIUM	1.0	1.02	102.0
SILVER	0.2	0.21	105.0
SODIUM	200.0	211.20	105.6
THALLIUM	0.2	0.22	110.0
VANADIUM	1.0	1.13	113.0
ZINC	2.0	2.32	116.0

NA
no samples

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICB File: JGK08B Nov 08, 2013 18:35			**SAMPLE: CCB** File: JGK08B Nov 08, 2013 18:52			**SAMPLE: CCB** File: JGK08B Nov 08, 2013 19:07		
Analyte	**Result**	**C**	**Analyte**	**Result**	**C**	**Analyte**	**Result**	**C**
ALUMINUM	0.340	U	ALUMINUM	2.099	J	ALUMINUM	1.425	J
ANTIMONY	0.015	J	ANTIMONY	0.020	J	ANTIMONY	0.014	J
ARSENIC	0.410	U	ARSENIC	0.410	U	ARSENIC	0.410	U
BARIUM	0.020	U	BARIUM	0.020	U	BARIUM	0.020	U
BERYLLIUM	0.016	J	BERYLLIUM	0.011	J	BERYLLIUM	0.009	J
CADMIUM	0.004	J	CADMIUM	0.011	J	CADMIUM	0.004	J
CALCIUM	-4.132	U	CALCIUM	4.100	U	CALCIUM	-4.428	U
CHROMIUM	0.030	U	CHROMIUM	0.030	U	CHROMIUM	-0.054	U
COBALT	0.007	J	COBALT	-0.006	U	COBALT	-0.017	U
COPPER	0.030	U	COPPER	0.056	J	COPPER	0.077	J
IRON	8.769	J	IRON	4.700	U	IRON	-6.124	U
LEAD	0.009	U	LEAD	0.011	J	LEAD	0.009	U
MAGNESIUM	0.690	U	MAGNESIUM	4.007	J	MAGNESIUM	4.432	J
MANGANESE	0.020	U	MANGANESE	-0.031	U	MANGANESE	-0.047	U
MOLYBDENUM	0.121	J	MOLYBDENUM	0.432	J	MOLYBDENUM	0.414	J
NICKEL	0.020	U	NICKEL	-0.109	U	NICKEL	-0.217	U
POTASSIUM	12.240	J	POTASSIUM	11.360	J	POTASSIUM	13.060	J
SELENIUM	0.640	U	SELENIUM	0.640	U	SELENIUM	0.640	U
SILVER	0.004	U	SILVER	0.004	U	SILVER	0.004	U
SODIUM	3.900	U	SODIUM	9.958	J	SODIUM	20.920	J
THALLIUM	0.009	J	THALLIUM	0.007	J	THALLIUM	0.008	J
VANADIUM	0.150	U	VANADIUM	0.150	U	VANADIUM	-0.183	U
ZINC	0.130	U	ZINC	0.130	U	ZINC	0.130	U

not T.A.

✓-mat

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCB
File: JGK08B Nov 08, 2013 19:48

Analyte	Result	C
ALUMINUM	0.782	J
ANTIMONY	0.021	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.004	J
CADMIUM	0.006	J
CALCIUM	-9.858	U
CHROMIUM	-0.055	U
COBALT	0.008	J
COPPER	0.030	U
IRON	-6.481	U
LEAD	0.009	U
MAGNESIUM	1.909	J
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	-0.237	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	-4.506	U
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK08B Nov 08, 2013 20:28

Analyte	Result	C
ALUMINUM	0.417	J
ANTIMONY	0.022	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.004	J
CADMIUM	0.004	J
CALCIUM	-7.326	U
CHROMIUM	-0.032	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-5.895	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	-0.388	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	-9.154	U
THALLIUM	0.005	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK08B Nov 08, 2013 21:10

Analyte	Result	C
ALUMINUM	1.670	J
ANTIMONY	0.009	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-12.540	U
CHROMIUM	-0.070	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-16.970	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.108	J
MOLYBDENUM	0.120	U
NICKEL	-0.483	U
POTASSIUM	11.580	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	-9.323	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCB
File: JGK08B Nov 08, 2013 21:51

Analyte	Result	C
ALUMINUM	0.655	J
ANTIMONY	0.014	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-16.700	U
CHROMIUM	-0.082	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-20.200	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.149	J
MOLYBDENUM	0.120	U
NICKEL	-0.414	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	-12.140	U
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK08B Nov 08, 2013 22:34

Analyte	Result	C
ALUMINUM	1.299	J
ANTIMONY	0.015	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	J
CADMIUM	0.004	U
CALCIUM	-18.360	U
CHROMIUM	-0.079	U
COBALT	0.019	J
COPPER	0.030	U
IRON	-22.630	U
LEAD	0.009	U
MAGNESIUM	-1.003	U
MANGANESE	0.183	J
MOLYBDENUM	0.120	U
NICKEL	-0.476	U
POTASSIUM	10.880	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	-15.160	U
THALLIUM	0.004	J
VANADIUM	-0.185	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK08B Nov 08, 2013 23:16

Analyte	Result	C
ALUMINUM	1.832	J
ANTIMONY	0.029	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-16.840	U
CHROMIUM	-0.062	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-15.020	U
LEAD	0.009	J
MAGNESIUM	0.690	U
MANGANESE	0.217	J
MOLYBDENUM	0.120	U
NICKEL	-0.487	U
POTASSIUM	17.730	J
SELENIUM	0.640	U
SILVER	0.012	J
SODIUM	-19.290	U
THALLIUM	0.016	J
VANADIUM	-0.151	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCB

File: JGK08B Nov 08, 2013 23:58

Analyte	Result	C
ALUMINUM	5.596	J
ANTIMONY	0.038	J
ARSENIC	0.410	U
BARIUM	0.023	J
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-19.070	U
CHROMIUM	-0.067	U
COBALT	0.010	J
COPPER	0.030	U
IRON	-10.310	U
LEAD	0.024	J
MAGNESIUM	1.063	J
MANGANESE	0.368	J
MOLYBDENUM	0.120	U
NICKEL	-0.574	U
POTASSIUM	16.060	J
SELENIUM	0.640	U
SILVER	0.009	J
SODIUM	-21.860	U
THALLIUM	0.042	J
VANADIUM	-0.178	U
ZINC	0.130	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICSA

File: JGK08B Nov 08, 2013 18:42

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	91120	91.1
ANTIMONY	0	0	
ARSENIC	0	1	
BARIUM	0	0	
BERYLLIUM	0	0	
CADMIUM	0	1	
CALCIUM	100000	90600	90.6
CHROMIUM	0	1	
COBALT	0	0	
COPPER	0	1	
IRON	100000	82880	82.9
LEAD	0	0	
MAGNESIUM	100000	91850	91.8
MANGANESE	0	0	
MOLYBDENUM	2000	1857	92.8
NICKEL	0	1	
POTASSIUM	100000	93910	93.9
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	93010	93.0
THALLIUM	0	0	
VANADIUM	0	0	
ZINC	0	3	

NA

SAMPLE: ICSAB

File: JGK08B Nov 08, 2013 18:45

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	89600	89.6
ANTIMONY	20	21	105.0
ARSENIC	20	21	105.0
BARIUM	21	21	100.0
BERYLLIUM	20	21	105.0
CADMIUM	20	20	100.0
CALCIUM	100000	89570	89.6
CHROMIUM	20	20	100.0
COBALT	20	19	95.0
COPPER	20	20	100.0
IRON	100000	82360	82.4
LEAD	20	21	105.0
MAGNESIUM	100000	90310	90.3
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1873	93.7
NICKEL	20	20	100.0
POTASSIUM	100000	92310	92.3
SELENIUM	20	19	95.0
SILVER	20	18	90.0
SODIUM	100000	91860	91.9
THALLIUM	20	21	105.0
VANADIUM	20	20	100.0
ZINC	20	21	105.0

NO Samples

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICSA

File: JGK08B Nov 08, 2013 18:57

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	90880	90.9
ANTIMONY	0	0	
ARSENIC	0	1	
BARIUM	0	0	
BERYLLIUM	0	0	
CADMIUM	0	1	
CALCIUM	100000	91310	91.3
CHROMIUM	0	1	
COBALT	0	0	
COPPER	0	1	
IRON	100000	82910	82.9
LEAD	0	0	
MAGNESIUM	100000	91720	91.7
MANGANESE	0	0	
MOLYBDENUM	2000	1869	93.5
NICKEL	0	1	
POTASSIUM	100000	93500	93.5
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	93790	93.8
THALLIUM	0	0	
VANADIUM	0	0	
ZINC	0	3	

SAMPLE: ICSAB

File: JGK08B Nov 08, 2013 19:01

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	90090	90.1
ANTIMONY	20	21	105.0
ARSENIC	20	21	105.0
BARIUM	21	21	100.0
BERYLLIUM	20	21	105.0
CADMIUM	20	20	100.0
CALCIUM	100000	89890	89.9
CHROMIUM	20	20	100.0
COBALT	20	19	95.0
COPPER	20	20	100.0
IRON	100000	82130	82.1
LEAD	20	21	105.0
MAGNESIUM	100000	91080	91.1
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1891	94.5
NICKEL	20	20	100.0
POTASSIUM	100000	93240	93.2
SELENIUM	20	20	100.0
SILVER	20	19	95.0
SODIUM	100000	93380	93.4
THALLIUM	20	21	105.0
VANADIUM	20	19	95.0
ZINC	20	21	105.0

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK11A

Date: 11/11/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	16:30	
ZZZZZZ		1	16:33	
Cal Blank		1	16:58	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
Cal Std 1		1	17:01	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
Cal Std 2		1	17:04	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
Cal Std 3		1	17:07	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
Cal Std 4		1	17:11	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
ICV		1	17:14	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
ICB		1	17:17	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
PQL		1	17:20	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
ICSA		1	17:23	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	17:26	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
CCV		1	17:30	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
CCB		1	17:33	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	17:36	
ZZZZZZ		1	17:40	
ZZZZZZ		1	17:43	
ZZZZZZ		5	17:46	
ZZZZZZ		1	17:49	
ZZZZZZ		5	17:53	
ZZZZZZ		5	17:56	
ZZZZZZ		5	17:59	
ZZZZZZ		5	18:02	
ZZZZZZ		5	18:06	
CCV		1	18:10	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:13	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	18:16	
ZZZZZZ		5	18:19	
ZZZZZZ		5	18:23	
ZZZZZZ		5	18:26	
ZZZZZZ		5	18:29	
ZZZZZZ		5	18:32	
ZZZZZZ		5	18:36	
ZZZZZZ		5	18:39	
ZZZZZZ		5	18:43	
ZZZZZZ		5	18:46	
CCV		1	18:49	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:53	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	18:56	
ZZZZZZ		5	18:59	
ZZZZZZ		5	19:03	
ZZZZZZ		5	19:06	
ZZZZZZ		5	19:10	
ZZZZZZ		25	19:13	
ZZZZZZ		5	19:17	
ZZZZZZ		5	19:20	
PBWGK07IMW1		5	19:23	Ca Fe V
LCSWGK07IMW1		5	19:27	Ca Fe V
CCV		1	19:30	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:33	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK11A

Date: 11/11/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
SG8184-018R	TF2-SS-RB01-1013R	5	19:37	Ca Fe V
SG8184-036R	TF2-SS-RB02-1013R	5	19:40	Ca Fe V
ZZZZZZ		5	19:44	
PBSGK05IMS1		5	19:47	As Ca Cr Cu Fe V
LCSOGK05IMS1		5	19:51	Al Ca Fe K
SG8184-002	004/5-SS1025-000.8	5	19:54	Al As Be Ca Cr Cu Fe K Na V
SG8184-003	004/5-SS1026-000.8	5	19:58	Al As Be Ca Cr Cu Fe K Na V
SG8184-004	004/5-SS1024-000.6	5	20:01	Al As Be Ca Cr Cu Fe K Na V
SG8184-005	004/5-SS1023-000.8	5	20:05	Al As Be Ca Cr Cu Fe K Na V
SG8184-006	004/5-SS1022-000.9	5	20:08	Al As Be Ca Cr Cu Fe K Na V
CCV		1	20:12	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:15	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
SG8184-007	004/5-SS1021-000.7	5	20:19	Al As Be Ca Cr Cu Fe K Na V Zn
SG8184-008	004/5-SS1020-0001	5	20:22	Al As Be Ca Cr Cu Fe K Na V
SG8184-009	004/5-SS1032-000.9	5	20:26	Al As Be Ca Cr Cu Fe K Na V
SG8184-010	004/5-SS1031-000.8	5	20:30	Al As Be Ca Cr Cu Fe K Na V
SG8184-011	004/5-SS-DUP01-1013	5	20:33	Al As Be Ca Cr Cu Fe K Na V
SG8184-012	004/5-SS1030-000.6	5	20:37	Al As Be Cd Ca Cr Co Cu Fe K Na Tl V
SG8184-013	004/5-SS1029-000.6	5	20:40	Al As Be Ca Cr Cu Fe K Se Na V
SG8184-014	004/5-SS1028-000.8	5	20:44	Al Sb As Be Ca Cr Cu Fe K Se Ag Na Tl V
SG8184-015	004/5-SS1027-0001	5	20:47	Al Sb As Be Ca Cr Cu Fe K Se Na Tl V
SG8184-015L	004/5-SS1027-0001L	25	20:51	Al As Be Ca Cr Cu Fe K Se Na Tl V
CCV		1	20:54	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
CCB		1	20:58	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
SG8184-015D	004/5-SS1027-0001D	5	21:01	Al As Be Cd Ca Cr Cu Fe K Se Na Tl V
SG8184-015A	004/5-SS1027-0001A	5	21:05	Al Sb As Be Ca Cr Cu Fe K Na V
SG8184-015S	004/5-SS1027-0001S	5	21:09	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
SG8184-016	004/5-SS1040-000.9	5	21:12	Al Sb As Be Ca Cr Co Cu Fe K Na V Zn
SG8184-017	004/5-SS1039-000.9	5	21:16	Al Sb As Be Cd Ca Cr Co Cu Fe K Se Ag Na Tl V Zn
SG8184-020	004/5-SS1038-000.7	5	21:20	Al As Be Ca Cr Cu Fe K Se Na Tl V
SG8184-021	004/5-SS1037-000.7	5	21:23	Al As Be Ca Cr Cu Fe K Se Ag Na Tl V
SG8184-022	004/5-SS1036-000.6	5	21:27	Al As Be Ca Cr Cu Fe K Se Na V
SG8184-023	004/5-SS-DUP02-1013	5	21:31	Al Sb As Be Ca Cr Cu Fe K Se Na Tl V
PBSGK05IMS2		5	21:34	Al Sb As Ca Cr Co Cu Fe Pb Ni K Ag Tl V
CCV		1	21:38	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
CCB		1	21:41	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
LCSOGK05IMS2		5	21:45	Be Ca Fe Pb
SG8184-024	004/5-SS1034-000.6	5	21:48	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
SG8184-025	004/5-SS1035-0001	5	21:52	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
SG8184-026	004/5-SS1033-000.8	5	21:55	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
SG8184-027	004/5-SS1049-000.9	5	21:59	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
SG8184-028	004/5-SS1048-000.8	5	22:03	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
SG8184-029	004/5-SS1047-000.8	5	22:06	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
SG8184-030	004/5-SS1046-000.5	5	22:10	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
SG8184-031	004/5-SS1045-000.5	5	22:13	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
SG8184-032	004/5-SS1044-000.5	5	22:17	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
CCV		1	22:20	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
CCB		1	22:24	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
SG8184-033	004/5-SS1042-000.5	5	22:27	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
SG8184-034	004/5-SS1041-000.7	5	22:31	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
SG8184-035	004/5-SS-DUP03-1013	5	22:35	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK11A

Date: 11/11/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
SG8184-035L	004/5-SS-DUP03-1013L	25	22:38	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
SG8184-035D	004/5-SS-DUP03-1013D	5	22:42	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
SG8184-035A	004/5-SS-DUP03-1013A	5	22:45	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
SG8184-035S	004/5-SS-DUP03-1013S	5	22:49	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Ni K Se Ag Na Tl V Zn
ZZZZZZ		10	22:53	
ZZZZZZ		20	22:56	
ZZZZZZ		20	23:00	
CCV		1	23:03	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn
CCB		1	23:07	Al Sb As Be Cd Ca Cr Co Cu Fe Pb Mg Mo Ni K Se Ag Na Tl V Zn

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICV

File: JGK11A Nov 11, 2013 17:14

Analyte	True	Found	%R (1)
ALUMINUM	400.0	408.70	102.2
ANTIMONY	20.0	20.49	102.5
ARSENIC	20.0	21.36	106.8
BERYLLIUM	20.0	21.12	105.6
CADMIUM	20.0	21.09	105.5
CALCIUM	4000.0	3713.00	92.8
CHROMIUM	20.0	20.98	104.9
COBALT	20.0	21.18	105.9
COPPER	20.0	20.95	104.7
IRON	4000.0	3744.00	93.6
LEAD	20.0	21.13	105.7
MAGNESIUM	4000.0	3914.00	97.9
MOLYBDENUM	40.0	42.49	106.2
NICKEL	20.0	21.28	106.4
POTASSIUM	4000.0	3821.00	95.5
SELENIUM	20.0	21.12	105.6
SILVER	20.0	20.71	103.6
SODIUM	4000.0	3860.00	96.5
THALLIUM	20.0	21.96	109.8
VANADIUM	20.0	20.78	103.9
ZINC	20.0	21.42	107.1

SAMPLE: CCV

File: JGK11A Nov 11, 2013 17:30

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.60	101.3
ANTIMONY	25.0	26.25	105.0
ARSENIC	25.0	25.99	104.0
BERYLLIUM	10.0	10.48	104.8
CADMIUM	10.0	10.56	105.6
CALCIUM	5000.0	5173.00	103.5
CHROMIUM	25.0	26.47	105.9
COBALT	10.0	10.35	103.5
COPPER	25.0	26.18	104.7
IRON	5000.0	5107.00	102.1
LEAD	25.0	26.44	105.8
MAGNESIUM	5000.0	4938.00	98.8
MOLYBDENUM	25.0	28.12	112.5 *
NICKEL	25.0	26.13	104.5
POTASSIUM	5000.0	5045.00	100.9
SELENIUM	25.0	25.28	101.1
SILVER	10.0	10.73	107.3
SODIUM	5000.0	4958.00	99.2
THALLIUM	10.0	10.60	106.0
VANADIUM	25.0	26.23	104.9
ZINC	25.0	26.31	105.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: JGK11A Nov 11, 2013 18:10

Analyte	True	Found	%R (1)
ALUMINUM	500.0	507.00	101.4
ANTIMONY	25.0	26.98	107.9
ARSENIC	25.0	25.80	103.2
BERYLLIUM	10.0	10.93	109.3
CADMIUM	10.0	10.56	105.6
CALCIUM	5000.0	5122.00	102.4
CHROMIUM	25.0	26.38	105.5
COBALT	10.0	10.50	105.0
COPPER	25.0	26.56	106.2
IRON	5000.0	5203.00	104.1
LEAD	25.0	26.66	106.6
MAGNESIUM	5000.0	4833.00	96.7
MOLYBDENUM	25.0	26.01	104.0
NICKEL	25.0	25.44	101.8
POTASSIUM	5000.0	5233.00	104.7
SELENIUM	25.0	25.07	100.3
SILVER	10.0	10.23	102.3
SODIUM	5000.0	4984.00	99.7
THALLIUM	10.0	10.83	108.3
VANADIUM	25.0	25.74	103.0
ZINC	25.0	26.00	104.0

SAMPLE: CCV

File: JGK11A Nov 11, 2013 18:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.20	101.0
ANTIMONY	25.0	26.16	104.6
ARSENIC	25.0	25.95	103.8
BERYLLIUM	10.0	11.09	110.9
CADMIUM	10.0	10.83	108.3
CALCIUM	5000.0	5114.00	102.3
CHROMIUM	25.0	25.97	103.9
COBALT	10.0	10.29	102.9
COPPER	25.0	26.06	104.2
IRON	5000.0	5090.00	101.8
LEAD	25.0	26.93	107.7
MAGNESIUM	5000.0	4764.00	95.3
MOLYBDENUM	25.0	26.92	107.7
NICKEL	25.0	25.63	102.5
POTASSIUM	5000.0	4962.00	99.2
SELENIUM	25.0	23.78	95.1
SILVER	10.0	10.59	105.9
SODIUM	5000.0	5052.00	101.0
THALLIUM	10.0	10.89	108.9
VANADIUM	25.0	26.07	104.3
ZINC	25.0	26.17	104.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: JGK11A Nov 11, 2013 19:30

Analyte	True	Found	%R (1)
ALUMINUM	500.0	508.30	101.7
ANTIMONY	25.0	26.46	105.8
ARSENIC	25.0	25.47	101.9
BERYLLIUM	10.0	10.11	101.1
CADMIUM	10.0	10.57	105.7
CALCIUM	5000.0	5068.00	101.4
CHROMIUM	25.0	25.69	102.8
COBALT	10.0	10.33	103.3
COPPER	25.0	25.64	102.6
IRON	5000.0	5092.00	101.8
LEAD	25.0	25.96	103.8
MAGNESIUM	5000.0	4919.00	98.4
MOLYBDENUM	25.0	26.65	106.6
NICKEL	25.0	26.38	105.5
POTASSIUM	5000.0	5124.00	102.5
SELENIUM	25.0	24.62	98.5
SILVER	10.0	10.75	107.5
SODIUM	5000.0	4922.00	98.4
THALLIUM	10.0	10.41	104.1
VANADIUM	25.0	26.87	107.5
ZINC	25.0	25.73	102.9

SAMPLE: CCV

File: JGK11A Nov 11, 2013 20:12

Analyte	True	Found	%R (1)
ALUMINUM	500.0	496.50	99.3
ANTIMONY	25.0	26.33	105.3
ARSENIC	25.0	25.33	101.3
BERYLLIUM	10.0	10.22	102.2
CADMIUM	10.0	10.59	105.9
CALCIUM	5000.0	5088.00	101.8
CHROMIUM	25.0	25.27	101.1
COBALT	10.0	10.49	104.9
COPPER	25.0	26.11	104.4
IRON	5000.0	5165.00	103.3
LEAD	25.0	26.47	105.9
MAGNESIUM	5000.0	4895.00	97.9
MOLYBDENUM	25.0	26.49	106.0
NICKEL	25.0	25.65	102.6
POTASSIUM	5000.0	5127.00	102.5
SELENIUM	25.0	24.80	99.2
SILVER	10.0	10.69	106.9
SODIUM	5000.0	4987.00	99.7
THALLIUM	10.0	10.73	107.3
VANADIUM	25.0	25.95	103.8
ZINC	25.0	26.14	104.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: JGK11A Nov 11, 2013 20:54

Analyte	True	Found	%R (1)
ALUMINUM	500.0	508.00	101.6
ANTIMONY	25.0	26.88	107.5
ARSENIC	25.0	26.05	104.2
BERYLLIUM	10.0	10.54	105.4
CADMIUM	10.0	10.71	107.1
CALCIUM	5000.0	5207.00	104.1
CHROMIUM	25.0	25.45	101.8
COBALT	10.0	10.32	103.2
COPPER	25.0	25.21	100.8
IRON	5000.0	5211.00	104.2
LEAD	25.0	26.66	106.6
MAGNESIUM	5000.0	4906.00	98.1
MOLYBDENUM	25.0	26.73	106.9
NICKEL	25.0	26.24	105.0
POTASSIUM	5000.0	5112.00	102.2
SELENIUM	25.0	25.01	100.0
SILVER	10.0	10.55	105.5
SODIUM	5000.0	4831.00	96.6
THALLIUM	10.0	10.70	107.0
VANADIUM	25.0	27.00	108.0
ZINC	25.0	25.95	103.8

SAMPLE: CCV

File: JGK11A Nov 11, 2013 21:38

Analyte	True	Found	%R (1)
ALUMINUM	500.0	502.30	100.5
ANTIMONY	25.0	27.43	109.7
ARSENIC	25.0	25.58	102.3
BERYLLIUM	10.0	9.98	99.8
CADMIUM	10.0	10.45	104.5
CALCIUM	5000.0	5157.00	103.1
CHROMIUM	25.0	25.33	101.3
COBALT	10.0	10.45	104.5
COPPER	25.0	25.48	101.9
IRON	5000.0	5152.00	103.0
LEAD	25.0	26.64	106.6
MAGNESIUM	5000.0	4836.00	96.7
MOLYBDENUM	25.0	26.67	106.7
NICKEL	25.0	26.19	104.8
POTASSIUM	5000.0	5195.00	103.9
SELENIUM	25.0	24.95	99.8
SILVER	10.0	10.53	105.3
SODIUM	5000.0	4883.00	97.7
THALLIUM	10.0	10.73	107.3
VANADIUM	25.0	26.51	106.0
ZINC	25.0	25.68	102.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: JGK11A Nov 11, 2013 22:20

Analyte	True	Found	%R (1)
ALUMINUM	500.0	501.90	100.4
ANTIMONY	25.0	26.25	105.0
ARSENIC	25.0	25.68	102.7
BERYLLIUM	10.0	10.15	101.5
CADMIUM	10.0	10.35	103.5
CALCIUM	5000.0	5205.00	104.1
CHROMIUM	25.0	25.15	100.6
COBALT	10.0	10.38	103.8
COPPER	25.0	25.54	102.2
IRON	5000.0	5081.00	101.6
LEAD	25.0	26.29	105.2
MAGNESIUM	5000.0	4902.00	98.0
MOLYBDENUM	25.0	26.61	106.4
NICKEL	25.0	25.74	103.0
POTASSIUM	5000.0	5172.00	103.4
SELENIUM	25.0	24.94	99.8
SILVER	10.0	10.38	103.8
SODIUM	5000.0	4894.00	97.9
THALLIUM	10.0	10.51	105.1
VANADIUM	25.0	25.45	101.8
ZINC	25.0	25.88	103.5

SAMPLE: CCV

File: JGK11A Nov 11, 2013 23:03

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.70	101.1
ANTIMONY	25.0	27.15	108.6
ARSENIC	25.0	25.44	101.8
BERYLLIUM	10.0	9.90	99.0
CADMIUM	10.0	10.32	103.2
CALCIUM	5000.0	5119.00	102.4
CHROMIUM	25.0	25.19	100.8
COBALT	10.0	10.26	102.6
COPPER	25.0	25.45	101.8
IRON	5000.0	5102.00	102.0
LEAD	25.0	25.77	103.1
MAGNESIUM	5000.0	4769.00	95.4
MOLYBDENUM	25.0	25.99	104.0
NICKEL	25.0	25.56	102.2
POTASSIUM	5000.0	5128.00	102.6
SELENIUM	25.0	24.97	99.9
SILVER	10.0	10.06	100.6
SODIUM	5000.0	4772.00	95.4
THALLIUM	10.0	10.39	103.9
VANADIUM	25.0	25.59	102.4
ZINC	25.0	26.62	106.5

(1) Control Limits: Mercury 80-120; Other Metals 90-110

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: PQL

File: JGK11A Nov 11, 2013 17:20

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	60.55	100.9
ANTIMONY	0.2	0.22	110.0
ARSENIC	1.0	0.98	98.0
BERYLLIUM	0.2	0.20	100.0
CADMIUM	0.2	0.21	105.0
CALCIUM	20.0	19.26	96.3
CHROMIUM	1.0	0.97	97.0
COBALT	0.2	0.22	110.0
COPPER	0.6	0.68	113.3
IRON	20.0	19.14	95.7
LEAD	0.2	0.22	110.0
MAGNESIUM	20.0	20.39	102.0
MOLYBDENUM	1.0	1.09	109.0
NICKEL	0.4	0.36	90.0
POTASSIUM	200.0	213.60	106.8
SELENIUM	1.0	1.00	100.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	215.80	107.9
THALLIUM	0.2	0.20	100.0
VANADIUM	1.0	1.12	112.0
ZINC	2.0	2.25	112.5

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICB
File: JGK11A Nov 11, 2013 17:17

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.017	J
ARSENIC	0.410	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.165	J
NICKEL	-0.089	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	7.392	J
THALLIUM	0.006	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK11A Nov 11, 2013 17:33

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.015	J
ARSENIC	0.410	U
BERYLLIUM	0.003	U
CADMIUM	0.008	J
CALCIUM	13.800	J
CHROMIUM	-0.236	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-13.200	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.479	J
NICKEL	-0.126	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	16.230	J
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK11A Nov 11, 2013 18:13

Analyte	Result	C
ALUMINUM	-0.480	U
ANTIMONY	0.013	J
ARSENIC	0.410	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	9.499	J
CHROMIUM	-0.189	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	2.402	J
MOLYBDENUM	0.120	U
NICKEL	-0.098	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	125.100	J
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

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INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCB
File: JGK11A Nov 11, 2013 18:53

Analyte	Result	C
ALUMINUM	-0.460	U
ANTIMONY	0.011	J
ARSENIC	0.410	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	16.510	J
CHROMIUM	-0.383	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-7.911	U
LEAD	0.009	U
MAGNESIUM	7.642	J
MOLYBDENUM	0.120	U
NICKEL	-0.083	U
POTASSIUM	-13.040	U
SELENIUM	-0.998	U
SILVER	0.004	U
SODIUM	259.700	
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.264	J

SAMPLE: CCB
File: JGK11A Nov 11, 2013 19:33

Analyte	Result	C
ALUMINUM	-0.486	U
ANTIMONY	0.013	J
ARSENIC	0.410	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.970	U
COBALT	0.006	U
COPPER	-0.052	U
IRON	-6.788	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
NICKEL	-0.124	U
POTASSIUM	-8.956	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	99.970	J
THALLIUM	0.003	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK11A Nov 11, 2013 20:15

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.008	J
ARSENIC	0.410	U
BERYLLIUM	0.003	U
CADMIUM	0.007	J
CALCIUM	8.446	J
CHROMIUM	-1.032	U
COBALT	0.006	U
COPPER	-0.063	U
IRON	-8.743	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
NICKEL	-0.101	U
POTASSIUM	-8.465	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	68.440	J
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCB
File: JGK11A Nov 11, 2013 20:58

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.009	J
ARSENIC	0.410	U
BERYLLIUM	0.003	U
CADMIUM	0.006	J
CALCIUM	13.890	J
CHROMIUM	-0.869	U
COBALT	-0.007	U
COPPER	-0.066	U
IRON	-8.152	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
NICKEL	-0.124	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	-0.004	U
SODIUM	53.700	J
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK11A Nov 11, 2013 21:41

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.011	J
ARSENIC	0.410	U
BERYLLIUM	0.003	U
CADMIUM	0.006	J
CALCIUM	8.610	J
CHROMIUM	-0.947	U
COBALT	0.006	U
COPPER	-0.075	U
IRON	-9.619	U
LEAD	0.011	J
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
NICKEL	-0.110	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	-0.006	U
SODIUM	33.090	J
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK11A Nov 11, 2013 22:24

Analyte	Result	C
ALUMINUM	0.677	J
ANTIMONY	0.009	J
ARSENIC	0.410	U
BERYLLIUM	0.003	U
CADMIUM	0.012	J
CALCIUM	4.100	U
CHROMIUM	-0.757	U
COBALT	0.006	U
COPPER	-0.060	U
IRON	-11.410	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
NICKEL	-0.109	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	-0.005	U
SODIUM	27.230	J
THALLIUM	0.005	J
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCB

File: JGK11A Nov 11, 2013 23:07

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.012	J
ARSENIC	0.410	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	7.578	J
CHROMIUM	-0.675	U
COBALT	-0.009	U
COPPER	-0.064	U
IRON	-9.979	U
LEAD	0.010	J
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
NICKEL	-0.121	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	27.330	J
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICSA

File: JGK11A Nov 11, 2013 17:23

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	88930	88.9
ANTIMONY	0	0	
ARSENIC	0	0	
BERYLLIUM	0	0	
CADMIUM	0	0	
CALCIUM	100000	90010	90.0
CHROMIUM	0	(1)	
COBALT	0	0	
COPPER	0	0	
IRON	100000	84950	85.0
LEAD	0	0	
MAGNESIUM	100000	88380	88.4
MOLYBDENUM	2000	1917	95.9
NICKEL	0	0	
POTASSIUM	100000	92850	92.8
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	90010	90.0
THALLIUM	0	0	
VANADIUM	0	0	
ZINC	0	(2)	

SAMPLE: ICSAB

File: JGK11A Nov 11, 2013 17:26

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	86830	86.8
ANTIMONY	20	21	105.0
ARSENIC	20	20	100.0
BERYLLIUM	20	21	105.0
CADMIUM	20	20	100.0
CALCIUM	100000	86440	86.4
CHROMIUM	20	21	105.0
COBALT	20	19	95.0
COPPER	20	19	95.0
IRON	100000	84660	84.7
LEAD	20	21	105.0
MAGNESIUM	100000	85340	85.3
MOLYBDENUM	2000	1968	98.4
NICKEL	20	19	95.0
POTASSIUM	100000	88800	88.8
SELENIUM	20	20	100.0
SILVER	20	18	90.0
SODIUM	100000	86130	86.1
THALLIUM	20	22	110.0
VANADIUM	20	20	100.0
ZINC	20	21	105.0

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK06HGW2

Matrix: WATER **SDG Name:** SG8184

Method: CV **Prep Date:** 11/06/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWGK06HGW2	LCSWGK06HGW2	0.025	0.025	
PBWGK06HGW2	PBWGK06HGW2	0.025	0.025	
TF2-SS-RB01-1013	SG8184-018	0.025	0.025	C
TF2-SS-RB02-1013	SG8184-036	0.025	0.025	C

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGK06HGW2

Matrix: WATER **SDG Name:** SG8184

QC Batch ID: GK06HGW2

Concentration Units : ug/L

Analyte	RESULT	C
MERCURY	0.014	J

RB1 - NA

Katahdin Analytical Services A0000214

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGK06HGW2

Matrix: WATER **SDG Name:** SG8184

QC Batch ID: GK06HGW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	5.00	5.29	105.8	80	120

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK05HGS1

Matrix: SOIL **SDG Name:** SG8184

Method: CV **Prep Date:** 11/05/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK05HGS1	LCSOGK05HGS1	0.6	0.1	
PBSGK05HGS1	PBSGK05HGS1	0.6	0.1	
004/5-SS1025-000.8	SG8184-002	0.71	0.1	A
004/5-SS1026-000.8	SG8184-003	0.69	0.1	A
004/5-SS1024-000.6	SG8184-004	0.71	0.1	A
004/5-SS1023-000.8	SG8184-005	0.7	0.1	A
004/5-SS1022-000.9	SG8184-006	0.7	0.1	A
004/5-SS1021-000.7	SG8184-007	0.77	0.1	A
004/5-SS1020-0001	SG8184-008	0.71	0.1	B
004/5-SS1032-000.9	SG8184-009	0.7	0.1	A
004/5-SS1031-000.8	SG8184-010	0.74	0.1	A
004/5-SS-DUP01-1013	SG8184-011	0.72	0.1	B
004/5-SS1030-000.6	SG8184-012	0.7	0.1	A
004/5-SS1029-000.6	SG8184-013	0.72	0.1	A
004/5-SS1028-000.8	SG8184-014	0.7	0.1	A
004/5-SS1027-0001	SG8184-015	0.72	0.1	E
004/5-SS1027-0001D	SG8184-015D	0.74	0.1	E
004/5-SS1027-0001S	SG8184-015S	0.73	0.1	E
004/5-SS1040-000.9	SG8184-016	0.84	0.1	A
004/5-SS1039-000.9	SG8184-017	0.71	0.1	B
004/5-SS1038-000.7	SG8184-020	0.85	0.1	A
004/5-SS1037-000.7	SG8184-021	0.79	0.1	A
004/5-SS1036-000.6	SG8184-022	0.95	0.1	A
004/5-SS-DUP02-1013	SG8184-023	0.78	0.1	B

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK05HGS1

Matrix: SOIL **SDG Name:** SG8184

QC Batch ID: GK05HGS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.005	J

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK05HGS1

Matrix: SOIL **SDG Name:** SG8184

QC Batch ID: GK05HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.95	114.5	80	120

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK07HGS1

Matrix: SOIL **SDG Name:** SG8184

Method: CV **Prep Date:** 11/07/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK07HGS1	LCSOGK07HGS1	0.6	0.1	
PBSGK07HGS1	PBSGK07HGS1	0.6	0.1	
004/5-SS1034-000.6	SG8184-024	0.64	0.1	A
004/5-SS1035-0001	SG8184-025	0.65	0.1	A
004/5-SS1033-000.8	SG8184-026	0.71	0.1	A
004/5-SS1049-000.9	SG8184-027	0.67	0.1	B
004/5-SS1048-000.8	SG8184-028	0.66	0.1	A
004/5-SS1047-000.8	SG8184-029	0.63	0.1	A
004/5-SS1046-000.5	SG8184-030	0.63	0.1	A
004/5-SS1045-000.5	SG8184-031	0.63	0.1	A
004/5-SS1044-000.5	SG8184-032	0.67	0.1	A
004/5-SS1042-000.5	SG8184-033	0.61	0.1	A
004/5-SS1041-000.7	SG8184-034	0.71	0.1	A
004/5-SS-DUP03-1013	SG8184-035	0.7	0.1	B

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK07HGS1

Matrix: SOIL **SDG Name:** SG8184

QC Batch ID: GK07HGS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.005	J

Katahdin Analytical Services A0000215

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK07HGS1

Matrix: SOIL **SDG Name:** SG8184

QC Batch ID: GK07HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.81	97.6	80	120

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Instrument ID: CETAC M6100 **File Name:** HGK06A

Date: 11/6/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	17:30	Hg
Standard #1 (0.2 p		1	17:33	Hg
Standard #2 (0.5 p		1	17:35	Hg
Standard #3 (1.0 p		1	17:37	Hg
Standard #4 (5.0 p		1	17:39	Hg
Standard #5 (10.0		1	17:41	Hg
ICV		1	17:43	HG
Replacement: Stan		1	17:47	Hg
ICV		1	17:49	HG
ICB		1	17:51	HG
PQL		1	17:53	HG
CCV		1	18:00	HG
CCB		1	18:02	HG
ZZZZZZ		1	18:11	
ZZZZZZ		1	18:13	
ZZZZZZ		1	18:16	
ZZZZZZ		1	18:18	
ZZZZZZ		1	18:20	
ZZZZZZ		1	18:22	
LCSWGK06HGW2		1	18:24	HG
PBWGK06HGW2		1	18:26	HG
ZZZZZZ		1	18:28	
CCV		1	18:30	HG
CCB		1	18:33	HG
ZZZZZZ		1	18:36	
SG8184-018	TF2-SS-RB01-1013	1	18:38	HG
SG8184-036	TF2-SS-RB02-1013	1	18:40	HG
ZZZZZZ		1	18:42	
ZZZZZZ		1	18:44	
ZZZZZZ		1	18:47	
ZZZZZZ		1	18:49	
ZZZZZZ		1	18:51	
ZZZZZZ		1	18:53	
ZZZZZZ		1	18:55	
CCV		1	18:57	HG
CCB		1	18:59	HG

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICV

File: HGK06A Nov 06, 2013 17:43

Analyte	True	Found	%R (1)
MERCURY	6.0	5.63	93.8

SAMPLE: ICV

File: HGK06A Nov 06, 2013 17:49

Analyte	True	Found	%R (1)
MERCURY	6.0	6.09	101.5

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: HGK06A Nov 06, 2013 18:00

Analyte	True	Found	%R (1)
MERCURY	5.0	5.06	101.2

SAMPLE: CCV

File: HGK06A Nov 06, 2013 18:30

Analyte	True	Found	%R (1)
MERCURY	5.0	5.15	103.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: HGK06A Nov 06, 2013 18:57

Analyte	True	Found	%R (1)
MERCURY	5.0	5.24	104.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: PQL

File: HGK06A Nov 06, 2013 17:53

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.22	110.0

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICB

File: HGK06A Nov 06, 2013 17:51

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGK06A Nov 06, 2013 18:02

Analyte	Result	C
MERCURY	0.040	J

SAMPLE: CCB

File: HGK06A Nov 06, 2013 18:33

Analyte	Result	C
MERCURY	0.030	U

= 0.0067 mg/kg

NA

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCB

File: HGK06A Nov 06, 2013 18:59

Analyte	Result	C
MERCURY	0.030	U

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Instrument ID: CETAC M6100 **File Name:** HGK08A

Date: 11/8/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	14:12	Hg
Standard #1 (0.2 p		1	14:14	Hg
Standard #2 (0.5 p		1	14:16	Hg
Standard #3 (1.0 p		1	14:18	Hg
Standard #4 (5.0 p		1	14:20	Hg
Standard #5 (10.0		1	14:23	Hg
ICV		1	14:25	HG
ICB		1	14:27	HG
PQL		1	14:29	HG
LCSOGK05HGS1		1	14:33	HG
PBSGK05HGS1		1	14:35	HG
SG8184-002	004/5-SS1025-000.8	1	14:37	HG
SG8184-003	004/5-SS1026-000.8	1	14:39	HG
SG8184-004	004/5-SS1024-000.6	1	14:42	HG
SG8184-005	004/5-SS1023-000.8	1	14:44	HG
SG8184-006	004/5-SS1022-000.9	1	14:46	HG
SG8184-007	004/5-SS1021-000.7	1	14:48	HG
SG8184-008	004/5-SS1020-0001	1	14:50	HG
CCV		1	14:52	HG
CCB		1	14:54	HG
SG8184-009	004/5-SS1032-000.9	1	14:56	HG
SG8184-010	004/5-SS1031-000.8	1	14:58	HG
SG8184-011	004/5-SS-DUP01-1013	1	15:01	HG
SG8184-012	004/5-SS1030-000.6	1	15:03	HG
SG8184-013	004/5-SS1029-000.6	1	15:05	HG
SG8184-014	004/5-SS1028-000.8	1	15:07	HG
SG8184-015	004/5-SS1027-0001	1	15:09	HG
SG8184-015L	004/5-SS1027-0001L	5	15:11	HG
SG8184-015A	004/5-SS1027-0001A	1	15:13	HG
SG8184-015D	004/5-SS1027-0001D	1	15:16	HG
CCV		1	15:18	HG
CCB		1	15:20	HG
SG8184-015S	004/5-SS1027-0001S	1	15:22	HG
SG8184-016	004/5-SS1040-000.9	1	15:24	HG
SG8184-017	004/5-SS1039-000.9	1	15:26	HG
SG8184-020	004/5-SS1038-000.7	1	15:28	HG
SG8184-021	004/5-SS1037-000.7	1	15:30	HG
SG8184-022	004/5-SS1036-000.6	1	15:33	HG
SG8184-023	004/5-SS-DUP02-1013	1	15:35	HG
ZZZZZZ		1	15:37	
PBSGK07HGS1		1	15:39	HG
SG8184-024	004/5-SS1034-000.6	1	15:41	HG
CCV		1	15:43	HG
CCB		1	15:45	HG
SG8184-025	004/5-SS1035-0001	1	15:48	HG
SG8184-026	004/5-SS1033-000.8	1	15:50	HG
SG8184-027	004/5-SS1049-000.9	1	15:52	HG
SG8184-028	004/5-SS1048-000.8	1	15:54	HG
SG8184-029	004/5-SS1047-000.8	1	15:57	HG
SG8184-030	004/5-SS1046-000.5	1	15:59	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Instrument ID: CETAC M6100 **File Name:** HGK08A

Date: 11/8/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
SG8184-031	004/5-SS1045-000.5	1	16:01	HG
SG8184-032	004/5-SS1044-000.5	1	16:03	HG
SG8184-033	004/5-SS1042-000.5	1	16:05	HG
SG8184-034	004/5-SS1041-000.7	1	16:07	HG
CCV		1	16:09	HG
CCB		1	16:12	HG
SG8184-035	004/5-SS-DUP03-1013	1	16:14	HG
ZZZZZZ		1	16:16	
ZZZZZZ		1	16:18	
ZZZZZZ		1	16:20	
ZZZZZZ		1	16:22	
ZZZZZZ		5	16:25	
ZZZZZZ		1	16:27	
ZZZZZZ		1	16:29	
ZZZZZZ		1	16:31	
ZZZZZZ		1	16:33	
CCV		1	16:35	HG
CCB		1	16:37	HG
ZZZZZZ		1	16:40	
ZZZZZZ		1	16:42	
ZZZZZZ		1	16:44	
LCSOGK07HGS1		1	16:50	HG
ZZZZZZ		1	17:26	
ZZZZZZ		1	17:28	
ZZZZZZ		1	17:30	
ZZZZZZ		1	17:33	
ZZZZZZ		1	17:35	
ZZZZZZ		1	17:37	
CCV		1	17:39	HG
CCB		1	17:41	HG

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICV

File: HGK08A Nov 08, 2013 14:25

Analyte	True	Found	%R (1)
MERCURY	6.0	6.04	100.7

SAMPLE: CCV

File: HGK08A Nov 08, 2013 14:52

Analyte	True	Found	%R (1)
MERCURY	5.0	5.81	116.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: HGK08A Nov 08, 2013 15:18

Analyte	True	Found	%R (1)
MERCURY	5.0	4.97	99.4

SAMPLE: CCV

File: HGK08A Nov 08, 2013 15:43

Analyte	True	Found	%R (1)
MERCURY	5.0	5.00	100.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: HGK08A Nov 08, 2013 16:09

Analyte	True	Found	%R (1)
MERCURY	5.0	5.91	118.2

SAMPLE: CCV

File: HGK08A Nov 08, 2013 16:35

Analyte	True	Found	%R (1)
MERCURY	5.0	5.07	101.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCV

File: HGK08A Nov 08, 2013 17:39

Analyte	True	Found	%R (1)
MERCURY	5.0	5.94	118.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: PQL

File: HGK08A Nov 08, 2013 14:29

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.16	80.0

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: ICB

File: HGK08A Nov 08, 2013 14:27

Analyte	Result	C
MERCURY	-0.071	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 14:54

Analyte	Result	C
MERCURY	-0.064	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 15:20

Analyte	Result	C
MERCURY	-0.044	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCB

File: HGK08A Nov 08, 2013 15:45

Analyte	Result	C
MERCURY	-0.068	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 16:12

Analyte	Result	C
MERCURY	-0.045	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 16:37

Analyte	Result	C
MERCURY	-0.062	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8184

Concentration Units: ug/L

SAMPLE: CCB

File: HGK08A Nov 08, 2013 17:41

Analyte	Result	C
MERCURY	-0.046	U

Katahdin Analytical Services A0000197

Tetra Tech **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 7, 2014**

FROM: **EDWARD SEDLMYER** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PAH / GRO / EPH**
NAVSTA NEWPORT, CTO WE30
SDG SG8999

SAMPLES:

2/Aqueous/PAH/GRO/TPH

TF2-SB-RB03-1113	TF2-W-TB03-1113

24/Soil/PAH

TF2-004/5-SB1031-0204	TF2-004/5-SB1031-0810	TF2-004/5-SB1038-0204
TF2-004/5-SB1038-0810	TF2-004/5-SB1039-0406	TF2-004/5-SB1040-0204
TF2-004/5-SB1040-0810	TF2-004/5-SB1041-022.5	TF2-004/5-SB1047-0204
TF2-004/5-SB1047-0608	TF2-004/5-SB1049-0204	TF2-004/5-SB1049-0810
TF2-004/5-SB1057-0304	TF2-004/5-SB1057-0608	TF2-004/5-SB1058-0204
TF2-004/5-SB1064-0204	TF2-004/5-SB1064-0406	TF2-004/5-SB1065-0204
TF2-004/5-SB1065-0608	TF2-004/5-SB1066-0203	TF2-004/5-SB1068-0204
TF2-004/5-SS1043-0.10.5	TF2-SB-DUP05-1113	TF2-SB-DUP06-1113

5/Soil/GRO/TPH

TF2-004/5-SB1040-0810	TF2-004/5-SB1058-0204	TF2-004/5-SB1065-0608
TF2-SB-DUP07-1113	TF2-W-TB02-1113	

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG SG8999 consisted of twenty-five (25) soil samples, one (1) rinse blank, and two (2) trip blanks. The samples were analyzed as listed above for polynuclear aromatic hydrocarbons (PAH), gasoline range organics (GRO), and extractable petroleum hydrocarbons (EPH). Three (3) field duplicate sample pairs were included in this sample delivery group (SDG): TF2-004/5-SB1057-0608 / TF2-SB-DUP05-1113, TF2-004/5-SB1068-0204 / TF2-SB-DUP06-1113, and TF2-004/5-SB1040-0810 / TF2-SB-DUP07-1113.

The samples were collected by Tetra Tech on November 13 and 14, 2013 and analyzed by Katahdin Analytical Services for all fractions. All analyses were conducted in accordance with EPA SW-846 Methods 8270D SIM and 8015B, and Florida-PRO analytical and reporting protocols. A Tier II validation was conducted on the referenced samples. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • GC/MS Instrument Tuning
• Blank Results
• Initial and Continuing Calibration
* • Surrogate Spike Recoveries
* • Internal Standard Recoveries

- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Results
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
- * Field Duplicate Precision
- * Detection Limits
- * Compound Identification and Quantification

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

LABORATORY BLANKS

The following contaminants were detected in the laboratory preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Naphthalene[1]	4.9 ug/kg	24.5 ug/kg
Acenaphthene[1]	1.8 ug/kg	9.0 ug/kg
Phenanthrene[1]	4.0 ug/kg	20.0 ug/kg
Anthracene[1]	1.5 ug/kg	7.5 ug/kg
Fluoranthene[1]	2.2 ug/kg	11 ug/kg
Pyrene[1]	2.9 ug/kg	14.5 ug/kg
GRO[2]	1.8 ug/kg	9.0 ug/kg

(1) Maximum concentration present in blank associated with batch WG134819 affecting samples TF2-004/5-SS1043-0.10.5, TF2-004/5-SB1041-022.5, TF2-004/5-SB1058-0204, TF2-004/5-SB1064-0204, TF2-004/5-SB1064-0406, TF2-004/5-SB1057-0304, TF2-004/5-SB1057-0608, TF2-004/5-SB1047-0204, TF2-004/5-SB1047-0608, TF2-004/5-SB1049-0204, TF2-004/5-SB1049-0810, and TF2-004/5-SB1066-0203.

(2) Maximum concentration present in blank associated with batch WG134904 analyzed on 11/25/13 affecting samples TF2-004/5-SB1058-0204, TF2-004/5-SB1065-0608, TF2-SB-DUP07-1113, and TF2-W-TB02-1113.

An action level of 5X the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the blank action level and greater than the LOD were qualified "U" as a result of laboratory blank contamination.

INITIAL AND CONTINUING CALIBRATION

The PAH continuing calibration verification analyzed on 11/25/13 @11:12 on instrument GCMS-N had a percent difference (%D) greater than the 20% quality control limit for benzo(b)fluoranthene. The detected result for sample TF2-SB-RB03-1113 was qualified as estimated (J).

The PAH continuing calibration verification analyzed on 11/29/13 @12:10 on instrument GCMS-N had a %D greater than the 20% quality control limit for fluoranthene. The detected result for sample TF2-004/5-SS1043-0.10.5 was qualified as estimated (J).

The PAH continuing calibration verification analyzed on 11/30/13 @12:43 on instrument GCMS-N had %Ds greater than the 20% quality control limit for indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene.

The detected and nondetected results for samples TF2-004/5-SB1064-0204, TF2-004/5-SB1064-0406, TF2-004/5-SB1057-0304, TF2-004/5-SB1057-0608, TF2-004/5-SB1047-0204, TF2-004/5-SB1047-0608, TF2-SB-DUP05-1113, TF2-004/5-SB1049-0204, TF2-004/5-SB1049-0810, and TF2-004/5-SB1066-0203 were qualified as estimated (J) and (UJ), respectively.

MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

The PAH MS/MSD performed on sample TF2-004/5-SB1058-0204 had several percent recoveries outside the quality control limit. In addition, relative percent differences (RPDs) exceeded the quality control limit. The sample results were qualified as listed below.

Analyte	%MS	%MSD	RPD	Qualifier for sample result
Fluoranthene	Ok	Ok	37	None
Pyrene	Ok	Ok	40	None
Benzo(a)anthracene	39.4	Ok	39	None
Chrysene	40.3	Ok	31	None
Benzo(b)fluoranthene	19.0	29.0	Ok	J
Benzo(k)fluoranthene	25.5	29.0	Ok	UJ
Benzo(a)pyrene	18.9	31.2	51	UJ
Indeno(1,2,3-cd)pyrene	16.0	39.5	86	UJ
Dibenzo(a,h)anthracene	23.3	23.0	Ok	UJ
Benzo(g,h,i)perylene	17.0	12.6	Ok	UJ

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE (LCS/LCSD)

The PAH LCS/LCSD associated with batch WG134603 had percent recoveries outside the quality control limit. In addition, a RPD exceeded the quality control limit. The affected sample results were qualified as listed below.

Analyte	%LCS	%LCSD	RPD	Qualifier for sample result
2-Methylnaphthalene	Ok	Ok	20	None
Anthracene	Ok	96	Ok	None
Chrysene	Ok	98.5	Ok	None

The PAH LCS/LCSD associated with batch WG134819 had percent recoveries outside the quality control limit. In addition, RPDs exceeded the quality control limit. The affected sample results were qualified as listed below.

Analyte	%LCS	%LCSD	RPD	Qualifier for sample result
Phenanthrene	102	Ok	Ok	None
Fluoranthene	144	Ok	59	None
Benzo(a)anthracene	111	Ok	43	None
Chrysene	106	Ok	31	None
Benzo(b)fluoranthene	125	Ok	46	None
Benzo(a)pyrene	122	Ok	60.4	None
Indeno(1,2,3-cd)pyrene	127	Ok	36	None

The EPH LCS/LCSD associated with batch WG134896 had a percent recovery outside the quality control limit. The detected results for the affected samples were qualified as listed below.

Analyte	%LCS	%LCSD	RPD	Qualifier for sample result
EPH	Ok	61.7	Ok	None

ADDITIONAL COMMENTS

Positive results reported below the quantitation limit but above the method detection limit (MDL) were qualified as estimated, (J).

Gasoline range organic results were reported as TPH C5-C12 and petroleum range organic results were reported as EPH C8 – C44.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: Laboratory blank contamination resulted in qualification of data in the PAH fraction. Continuing calibration noncompliances resulted in the qualification of data in the PAH fraction. MS/MSD recovery noncompliances resulted in the qualification of data in the PAH fraction.

Other Factors Affecting Data Quality: Positive results reported below the limit of quantitation (LOQ) but above the MDL were qualified.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (June 2008), and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
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Tetra Tech
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Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1031-0204			TF2-004/5-SB1031-0810			TF2-004/5-SB1038-0204			TF2-004/5-SB1038-0810		
SDG: SG8999	LAB_ID	SG8999-19			SG8999-21			SG8999-17			SG8999-18		
FRACTION: PAH	SAMP_DATE	11/14/2013			11/14/2013			11/14/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	89.8			93.6			91.7			91.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	U		10	U		10	U		11	U	
ACENAPHTHENE		10	U		4.6	J	P	10	U		1.6	U	
ACENAPHTHYLENE		10	U		10	U		10	U		11	U	
ANTHRACENE		10	U		6.3	J	P	10	U		2.6	J	P
BENZO(A)ANTHRACENE		10	U		6.2	J	P	10	U		5.3	J	P
BENZO(A)PYRENE		10	U		4.3	J	P	10	U		4.4	J	P
BENZO(B)FLUORANTHENE		8.8	J	P	9.7	J	P	8.7	J	P	12	J	P
BENZO(G,H,I)PERYLENE		10	U		10	U		10	U		2.4	J	P
BENZO(K)FLUORANTHENE		10	U		10	U		10	U		4.2	J	P
CHRYSENE		10	U		5.7	J	P	2.2	J	P	5.9	J	P
DIBENZO(A,H)ANTHRACENE		10	U		8	J	P	10	U		10	J	P
FLUORANTHENE		2.1	J	P	11	J	P	4	J	P	9.3	J	P
FLUORENE		10	U		10	U		10	U		11	U	
INDENO(1,2,3-CD)PYRENE		4.7	J	P	5.8	J	P	10	U		7.6	J	P
NAPHTHALENE		10	U		10	U		10	U		11	U	
PHENANTHRENE		10	U		22			2.6	J	P	5.8	J	P
PYRENE		10	U		12	J	P	3.2	J	P	8.3	J	P

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1039-0406			TF2-004/5-SB1040-0204			TF2-004/5-SB1040-0810			TF2-004/5-SB1041-022.5		
SDG: SG8999	LAB_ID	SG8999-20			SG8999-22			SG8999-23			SG8999-3		
FRACTION: PAH	SAMP_DATE	11/14/2013			11/14/2013			11/14/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	89.7			93.3			86.3			94.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		11	U		9.2	U		10	U		10	U	
ACENAPHTHENE		11	U		9.2	U		10	U		10	U	A
ACENAPHTHYLENE		11	U		9.2	U		10	U		10	U	
ANTHRACENE		11	U		9.2	U		10	U		10	U	A
BENZO(A)ANTHRACENE		4.8	J	P	2	J	P	4.1	J	P	3.9	J	P
BENZO(A)PYRENE		11	U		9.2	U		4.9	J	P	10	U	
BENZO(B)FLUORANTHENE		12	J	P	8.1	J	P	12	J	P	9.5	J	P
BENZO(G,H,I)PERYLENE		11	U		9.2	U		3	J	P	10	U	
BENZO(K)FLUORANTHENE		11	U		9.2	U		3.5	J	P	10	U	
CHRYSENE		5.7	J	P	2.2	J	P	6.2	J	P	3.9	J	P
DIBENZO(A,H)ANTHRACENE		11	U		7.1	J	P	8.3	J	P	7.9	J	P
FLUORANTHENE		9.4	J	P	3.8	J	P	7.5	J	P	12	U	A
FLUORENE		11	U		9.2	U		10	U		10	U	
INDENO(1,2,3-CD)PYRENE		7.1	J	P	4	J	P	8.7	J	P	4.8	J	P
NAPHTHALENE		11	U		9.2	U		10	U		10	U	
PHENANTHRENE		6.6	J	P	2.2	J	P	3.8	J	P	10	U	A
PYRENE		11	J	P	3.5	J	P	8	J	P	10	U	A

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1047-0204			TF2-004/5-SB1047-0608			TF2-004/5-SB1049-0204			TF2-004/5-SB1049-0810		
SDG: SG8999	LAB_ID	SG8999-10			SG8999-11			SG8999-15			SG8999-16		
FRACTION: PAH	SAMP_DATE	11/14/2013			11/14/2013			11/14/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.4			87.8			90.8			88.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		11	U		11	U		10	U		11	U	
ACENAPHTHENE		11	U	A	11	U		10	U		11	U	
ACENAPHTHYLENE		11	U		11	U		10	U		11	U	
ANTHRACENE		11	U	A	11	U		10	U		11	U	
BENZO(A)ANTHRACENE		8	J	P	2.8	J	P	10	U		2.2	J	P
BENZO(A)PYRENE		5.3	J	P	11	U		10	U		11	U	
BENZO(B)FLUORANTHENE		14	J	P	11	J	P	8.5	J	P	9.4	J	P
BENZO(G,H,I)PERYLENE		2.8	J	P	11	U		10	U		11	U	
BENZO(K)FLUORANTHENE		3.3	U		11	U		10	U		11	U	
CHRYSENE		8.2	J	P	3.6	J	P	1.8	U		2.4	J	P
DIBENZO(A,H)ANTHRACENE		11	UJ	C	11	UJ	C	10	UJ	C	11	UJ	C
FLUORANTHENE		24			11	U	A	10	U	A	11	U	A
FLUORENE		11	U		11	U		10	U		11	U	
INDENO(1,2,3-CD)PYRENE		8.5	J	CP	6.8	J	CP	10	UJ	C	11	UJ	C
NAPHTHALENE		11	U	A	11	U		10	U		11	U	
PHENANTHRENE		11	U	A	11	U	A	10	U	A	11	U	A
PYRENE		19	J	P	11	U	A	10	U		11	U	A

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1057-0304			TF2-004/5-SB1057-0608			TF2-004/5-SB1058-0204			TF2-004/5-SB1064-0204		
SDG: SG8999	LAB_ID	SG8999-8			SG8999-9			SG8999-4			SG8999-5		
FRACTION: PAH	SAMP_DATE	11/14/2013			11/14/2013			11/13/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.1			90.9			94.2			92.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	U		10	U		10	U		9.8	U	
ACENAPHTHENE		10	U		10	U		10	U		9.8	U	
ACENAPHTHYLENE		10	U		10	U		10	U		9.8	U	
ANTHRACENE		10	U	A	10	U		10	U		9.8	U	
BENZO(A)ANTHRACENE		2.2	J	P	5.2	J	P	10	U		2.6	J	P
BENZO(A)PYRENE		10	U		4.8	J	P	10	UJ	D	9.8	U	
BENZO(B)FLUORANTHENE		10	U		12	J	P	8.3	J	DP	9.8	U	
BENZO(G,H,I)PERYLENE		10	U		2.8	J	P	10	UJ	D	9.8	U	
BENZO(K)FLUORANTHENE		10	U		10	U		10	UJ	D	9.8	U	
CHRYSENE		2.4	J	P	6.2	J	P	1.9	J	P	3.2	J	P
DIBENZO(A,H)ANTHRACENE		10	UJ	C	10	UJ	C	10	UJ	D	9.8	UJ	C
FLUORANTHENE		10	U	A	10	U	A	10	U	A	9.8	U	A
FLUORENE		10	U		10	U		10	U		9.8	U	
INDENO(1,2,3-CD)PYRENE		10	UJ	C	7.7	J	CP	10	UJ	D	9.8	UJ	C
NAPHTHALENE		10	U		10	U		10	U		9.8	U	
PHENANTHRENE		10	U	A	10	U	A	10	U	A	9.8	U	A
PYRENE		10	U	A	10	U	A	10	U		9.8	U	A

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1064-0406			TF2-004/5-SB1065-0204			TF2-004/5-SB1065-0608			TF2-004/5-SB1066-0203		
SDG: SG8999	LAB_ID	SG8999-6			SG8999-26			SG8999-27			SG8999-7		
FRACTION: PAH	SAMP_DATE	11/13/2013			11/14/2013			11/14/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.4			94.6			95.7			96.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	U		10	U		9.6	U		3.3	J	P
ACENAPHTHENE		10	U		32			9.6	U		15	J	P
ACENAPHTHYLENE		10	U		3.1	J	P	9.6	U		6.3	J	P
ANTHRACENE		10	U	A	32			9.6	U		35		
BENZO(A)ANTHRACENE		4.7	J	P	44			2.4	J	P	170		
BENZO(A)PYRENE		3.6	J	P	28			9.6	U		140		
BENZO(B)FLUORANTHENE		11	J	P	28			7.1	J	P	210		
BENZO(G,H,I)PERYLENE		10	U		6.7	J	P	4.7	J	P	66		
BENZO(K)FLUORANTHENE		3.1	U		12	J	P	9.6	U		62		
CHRYSENE		5.6	J	P	36			9.6	U		160		
DIBENZO(A,H)ANTHRACENE		10	UJ	C	10	J	P	9.6	U		33	J	C
FLUORANTHENE		10	U	A	89			9.6	U		300		
FLUORENE		10	U		7.3	J	P	9.6	U		15	J	P
INDENO(1,2,3-CD)PYRENE		6.2	J	CP	20	J	P	9.6	U		160	J	C
NAPHTHALENE		10	U		10	U		9.6	U		9.9	U	A
PHENANTHRENE		10	U	A	53			9.6	U		170		
PYRENE		10	U	A	110			9.6	U		240		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1068-0204			TF2-004/5-SS1043-0.10.5			TF2-SB-DUP05-1113			TF2-SB-DUP06-1113		
SDG: SG8999	LAB_ID	SG8999-24			SG8999-2			SG8999-14			SG8999-25		
FRACTION: PAH	SAMP_DATE	11/14/2013			11/13/2013			11/14/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.9			93.7			90.7			89.3		
	DUP_OF							TF2-004/5-SB1057-0608			TF2-004/5-SB1068-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		11	U		10	U		11	U		10	U	
ACENAPHTHENE		11	U		10	U	A	11	U		1.8	J	P
ACENAPHTHYLENE		11	U		10	U		11	U		10	U	
ANTHRACENE		11	U		10	U	A	11	U		1.3	U	
BENZO(A)ANTHRACENE		11	U		19	J	P	2.1	J	P	2.7	J	P
BENZO(A)PYRENE		11	U		14	J	P	11	U		10	U	
BENZO(B)FLUORANTHENE		11	U		30			9.5	J	P	9.6	J	P
BENZO(G,H,I)PERYLENE		11	U		6.9	J	P	11	U		10	U	
BENZO(K)FLUORANTHENE		11	U		9.8	J	P	11	U		10	U	
CHRYSENE		11	U		23			2.6	J	P	2.7	J	P
DIBENZO(A,H)ANTHRACENE		11	U		9.4	J	P	11	UJ	C	8.2	J	P
FLUORANTHENE		11	U		40	J	C	11	U	A	4.5	J	P
FLUORENE		11	U		10	U		11	U		10	U	
INDENO(1,2,3-CD)PYRENE		11	U		18	J	P	11	UJ	C	5.2	J	P
NAPHTHALENE		11	U		10	U		11	U		10	U	
PHENANTHRENE		11	U		10	U	A	11	U	A	4.4	J	P
PYRENE		11	U		30			11	U	A	4.9	J	P

PROJ_NO: 03019	NSAMPLE	TF2-SB-RB03-1113
SDG: SG8999	LAB_ID	SG8999-12
FRACTION: PAH	SAMP_DATE	11/14/2013
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE	0.097	U	
ACENAPHTHENE	0.097	U	
ACENAPHTHYLENE	0.097	U	
ANTHRACENE	0.097	U	
BENZO(A)ANTHRACENE	0.097	U	
BENZO(A)PYRENE	0.097	U	
BENZO(B)FLUORANTHENE	0.23	J	C
BENZO(G,H,I)PERYLENE	0.097	U	
BENZO(K)FLUORANTHENE	0.097	U	
CHRYSENE	0.097	U	
DIBENZO(A,H)ANTHRACENE	0.097	U	
FLUORANTHENE	0.097	U	
FLUORENE	0.097	U	
INDENO(1,2,3-CD)PYRENE	0.097	U	
NAPHTHALENE	0.097	U	
PHENANTHRENE	0.097	U	
PYRENE	0.097	U	

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1040-0810			TF2-004/5-SB1058-0204			TF2-004/5-SB1065-0608			TF2-SB-DUP07-1113		
SDG: SG8999	LAB_ID	SG8999-23			SG8999-4			SG8999-27			SG8999-28		
FRACTION: PET	SAMP_DATE	11/14/2013			11/13/2013			11/14/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	86.3			94.2			95.7			87.8		
	DUP_OF										TF2-004/5-SB1040-0810		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
EPH (C08-C44)		7.8	J	P	10	U		15	J	P	11	U	
TPH (C05-C12)		2.2	U		4.1	U		2.3	U		2.1	U	

PROJ_NO: 03019	NSAMPLE	TF2-W-TB02-1113		
SDG: SG8999	LAB_ID	SG8999-1RA		
FRACTION: PET	SAMP_DATE	11/13/2013		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	MG/KG		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
EPH (C08-C44)				
TPH (C05-C12)		2	U	

PROJ_NO: 03019	NSAMPLE	TF2-SB-RB03-1113			TF2-W-TB03-1113		
SDG: SG8999	LAB_ID	SG8999-12			SG8999-13		
FRACTION: PET	SAMP_DATE	11/14/2013			11/14/2013		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
EPH (C08-C44)		240	U				
TPH (C05-C12)		11			8	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-19
Client ID: 004/5-SB1031-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0995.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134897

Analysis Date: 01-DEC-13
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 90.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.3	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.3	10.
Fluoranthene	J	2.1	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	U	10.	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	J	8.8	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	21.	3.5	10.
Indeno(1,2,3-cd)pyrene	J	4.7	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		45.5	%					
Fluorene-D10		41.6	%					
Pyrene-D10		47.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-21
Client ID: 004/5-SB1031-0810
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0997.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134897

Analysis Date: 01-DEC-13
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	4.6	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		22.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	6.3	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	J	11.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	J	12.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	6.2	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	J	5.7	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	J	9.7	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	J	4.3	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	J	5.8	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	8.0	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		51.5	%					
Fluorene-D10		47.1	%					
Pyrene-D10		46.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-17
Client ID: 004/5-SB1038-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0993.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134897

Analysis Date: 01-DEC-13
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.8	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.3	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Phenanthrene	J	2.6	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.3	10.
Fluoranthene	J	4.0	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	J	3.2	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	U	10.	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	J	2.2	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	J	8.7	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	21.	3.5	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		53.7	%					
Fluorene-D10		48.0	%					
Pyrene-D10		49.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-18
Client ID: 004/5-SB1038-0810
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0994.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134897

Analysis Date: 01-DEC-13
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.3	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	U	1.6	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene	J	5.8	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene	J	2.6	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene	J	9.3	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene	J	8.3	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene	J	5.3	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene	J	5.9	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene	J	12.	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene	J	4.2	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	J	4.4	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene	J	7.6	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	J	10.	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	J	2.4	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		64.3	%					
Fluorene-D10		58.9	%					
Pyrene-D10		71.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-20
Client ID: 004/5-SB1039-0406
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0996.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134897

Analysis Date: 01-DEC-13
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 90.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.7	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Phenanthrene	J	6.6	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	J	9.4	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	J	11.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	J	4.8	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	5.7	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	J	12.	ug/Kgdrywt	1	20	22.	2.7	11.
Benzo(k)fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	U	11.	ug/Kgdrywt	1	20	22.	3.7	11.
Indeno(1,2,3-cd)pyrene	J	7.1	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	U	11.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		62.3	%					
Fluorene-D10		55.3	%					
Pyrene-D10		64.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-22
Client ID: 004/5-SB1040-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0998.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134897

Analysis Date: 01-DEC-13
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.2	ug/Kgdrywt	1	20	18.	2.4	9.2
2-Methylnaphthalene	U	9.2	ug/Kgdrywt	1	20	18.	2.0	9.2
Acenaphthylene	U	9.2	ug/Kgdrywt	1	20	18.	1.1	9.2
Acenaphthene	U	9.2	ug/Kgdrywt	1	20	18.	1.4	9.2
Fluorene	U	9.2	ug/Kgdrywt	1	20	18.	3.0	9.2
Phenanthrene	J	2.2	ug/Kgdrywt	1	20	18.	1.7	9.2
Anthracene	U	9.2	ug/Kgdrywt	1	20	18.	1.1	9.2
Fluoranthene	J	3.8	ug/Kgdrywt	1	20	18.	1.7	9.2
Pyrene	J	3.5	ug/Kgdrywt	1	20	18.	1.9	9.2
Benzo(a)anthracene	J	2.0	ug/Kgdrywt	1	20	18.	1.8	9.2
Chrysene	J	2.2	ug/Kgdrywt	1	20	18.	1.6	9.2
Benzo(b)Fluoranthene	J	8.1	ug/Kgdrywt	1	20	18.	2.2	9.2
Benzo(k)fluoranthene	U	9.2	ug/Kgdrywt	1	20	18.	2.9	9.2
Benzo(a)pyrene	U	9.2	ug/Kgdrywt	1	20	18.	3.0	9.2
Indeno(1,2,3-cd)pyrene	J	4.0	ug/Kgdrywt	1	20	18.	1.8	9.2
Dibenzo(a,h)anthracene	J	7.1	ug/Kgdrywt	1	20	18.	1.7	9.2
Benzo(g,h,i)perylene	U	9.2	ug/Kgdrywt	1	20	18.	1.8	9.2
2-Methylnaphthalene-D10		70.3	%					
Fluorene-D10		62.2	%					
Pyrene-D10		59.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-23
Client ID: 004/5-SB1040-0810
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0999.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134897

Analysis Date: 01-DEC-13
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 86.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Phenanthrene	J	3.8	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	J	7.5	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	J	8.0	ug/Kgdrywt	1	20	20.	2.2	10.
Benzo(a)anthracene	J	4.1	ug/Kgdrywt	1	20	20.	2.0	10.
Chrysene	J	6.2	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	J	12.	ug/Kgdrywt	1	20	20.	2.5	10.
Benzo(k)fluoranthene	J	3.5	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene	J	4.9	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene	J	8.7	ug/Kgdrywt	1	20	20.	2.0	10.
Dibenzo(a,h)anthracene	J	8.3	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	J	3.0	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		58.0	%					
Fluorene-D10		54.5	%					
Pyrene-D10		65.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-3
Client ID: 004/5-SB1041-022.5
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0969.D

Sample Date: 13-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	J	3.0	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	JL	9.5	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	J	2.8	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	JL	12.	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	J	9.8	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	JL	3.9	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	JL	3.9	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	JL	9.5	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	ULL	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene	JL	4.8	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	J	7.9	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		69.6	%					
Fluorene-D10		66.2	%					
Pyrene-D10		68.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-10
Client ID: 004/5-SB1047-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0982.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 30-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 90.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	2.9	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	J	4.0	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene	JL	14.	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene	J	3.9	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene	L	24.	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene	J	19.	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene	JL	8.0	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene	JL	8.2	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene	JL	14.	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene	U	3.3	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	JLL	5.3	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene	JL	8.5	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	J	2.8	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		70.8	%					
Fluorene-D10		66.8	%					
Pyrene-D10		74.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-11
Client ID: 004/5-SB1047-0608
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0983.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 30-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 88.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.5	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.7	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Phenanthrene	JL	3.7	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	JL	4.6	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	J	4.2	ug/Kgdrywt	1	20	22.	2.4	11.
Benzo(a)anthracene	JL	2.8	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	JL	3.6	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	JL	11.	ug/Kgdrywt	1	20	22.	2.7	11.
Benzo(k)fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Benzo(a)pyrene	ULL	11.	ug/Kgdrywt	1	20	22.	3.7	11.
Indeno(1,2,3-cd)pyrene	JL	6.8	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	U	11.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		55.3	%					
Fluorene-D10		53.3	%					
Pyrene-D10		65.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-15
Client ID: 004/5-SB1049-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0985.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 30-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	JL	2.4	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	JL	2.6	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	U	2.2	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	UL	10.	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	UL	1.8	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	JL	8.5	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	ULL	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene	UL	10.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		67.8	%					
Fluorene-D10		57.6	%					
Pyrene-D10		57.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-16
Client ID: 004/5-SB1049-0810
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0986.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 30-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 88.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.3	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene	JL	3.9	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene	JL	3.3	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene	J	3.1	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene	JL	2.2	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene	JL	2.4	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene	JL	9.4	ug/Kgdrywt	1	20	21.	2.5	11.
Benzo(k)fluoranthene	U	11.	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	ULL	11.	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene	UL	11.	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	U	11.	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		56.0	%					
Fluorene-D10		52.5	%					
Pyrene-D10		55.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-8
Client ID: 004/5-SB1057-0304
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0980.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 30-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	JL	4.4	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	J	1.3	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	JL	4.4	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	J	3.7	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	JL	2.2	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	JL	2.4	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	UL	10.	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	ULL	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene	UL	10.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		64.0	%					
Fluorene-D10		58.2	%					
Pyrene-D10		66.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-9
Client ID: 004/5-SB1057-0608
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0981.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 30-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	JL	3.2	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	JL	7.4	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	J	8.8	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	JL	5.2	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	JL	6.2	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	JL	12.	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	JLL	4.8	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene	JL	7.7	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	J	2.8	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		43.9	%					
Fluorene-D10		43.4	%					
Pyrene-D10		52.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-4
Client ID: 004/5-SB1058-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0975.D

Sample Date: 13-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 30-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	JL	2.5	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	JL	2.7	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	ULM	10.	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	JLM	1.9	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	JLMM	8.3	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	UMM	10.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	ULLMM	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene	ULMM	10.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	UMM	10.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	UMM	10.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		75.8	%					
Fluorene-D10		64.6	%					
Pyrene-D10		58.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-5
Client ID: 004/5-SB1064-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0978.D

Sample Date: 13-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 30-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.5	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	U	9.8	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	U	9.8	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	U	9.8	ug/Kgdrywt	1	20	20.	3.1	9.8
Phenanthrene	JL	3.7	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	U	9.8	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene	JL	6.1	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene	J	5.0	ug/Kgdrywt	1	20	20.	2.0	9.8
Benzo(a)anthracene	JL	2.6	ug/Kgdrywt	1	20	20.	1.9	9.8
Chrysene	JL	3.2	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene	UL	9.8	ug/Kgdrywt	1	20	20.	2.4	9.8
Benzo(k)fluoranthene	U	9.8	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	ULL	9.8	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene	UL	9.8	ug/Kgdrywt	1	20	20.	1.9	9.8
Dibenzo(a,h)anthracene	U	9.8	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	U	9.8	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		63.7	%					
Fluorene-D10		57.0	%					
Pyrene-D10		55.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-6
Client ID: 004/5-SB1064-0406
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0979.D

Sample Date: 13-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 30-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	JL	7.9	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	1.5	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	JL	12.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	J	8.4	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	JL	4.7	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	JL	5.6	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	JL	11.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	3.1	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	JLL	3.6	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	JL	6.2	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		69.5	%					
Fluorene-D10		62.9	%					
Pyrene-D10		65.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-26
Client ID: 004/5-SB1065-0204
Project: NAVSTA Newport CTO WE.
SDG: SG8999
Lab File ID: N1002.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134897

Analysis Date: 01-DEC-13
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	3.1	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene		32.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	7.3	ug/Kgdrywt	1	20	20.	3.3	10.
Phenanthrene		53.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		32.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		89.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		110	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		44.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		36.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		28.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	J	12.	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene		28.	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene	J	20.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	J	6.7	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		54.4	%					
Fluorene-D10		52.4	%					
Pyrene-D10		47.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-27
Client ID: 004/5-SB1065-0608
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N1003.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134897

Analysis Date: 01-DEC-13
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.6	ug/Kgdrywt	1	20	19.	2.5	9.6
2-Methylnaphthalene	U	9.6	ug/Kgdrywt	1	20	19.	2.1	9.6
Acenaphthylene	U	9.6	ug/Kgdrywt	1	20	19.	1.2	9.6
Acenaphthene	U	9.6	ug/Kgdrywt	1	20	19.	1.4	9.6
Fluorene	U	9.6	ug/Kgdrywt	1	20	19.	3.1	9.6
Phenanthrene	U	9.6	ug/Kgdrywt	1	20	19.	1.7	9.6
Anthracene	U	9.6	ug/Kgdrywt	1	20	19.	1.2	9.6
Fluoranthene	U	9.6	ug/Kgdrywt	1	20	19.	1.7	9.6
Pyrene	U	9.6	ug/Kgdrywt	1	20	19.	2.0	9.6
Benzo(a)anthracene	J	2.4	ug/Kgdrywt	1	20	19.	1.8	9.6
Chrysene	U	9.6	ug/Kgdrywt	1	20	19.	1.6	9.6
Benzo(b)Fluoranthene	J	7.1	ug/Kgdrywt	1	20	19.	2.3	9.6
Benzo(k)fluoranthene	U	9.6	ug/Kgdrywt	1	20	19.	3.0	9.6
Benzo(a)pyrene	U	9.6	ug/Kgdrywt	1	20	19.	3.2	9.6
Indeno(1,2,3-cd)pyrene	U	9.6	ug/Kgdrywt	1	20	19.	1.8	9.6
Dibenzo(a,h)anthracene	U	9.6	ug/Kgdrywt	1	20	19.	1.7	9.6
Benzo(g,h,i)perylene	J	4.7	ug/Kgdrywt	1	20	19.	1.9	9.6
2-Methylnaphthalene-D10		51.2	%					
Fluorene-D10		47.1	%					
Pyrene-D10		40.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-7
Client ID: 004/5-SB1066-0203
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0987.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 01-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	4.3	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene	J	3.3	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	6.3	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene	J	15.	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene	J	15.	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene	L	170	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene		35.	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene	L	300	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene		240	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene	L	170	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene	L	160	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene	L	210	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene		62.	ug/Kgdrywt	1	20	20.	3.1	9.9
Benzo(a)pyrene	LL	140	ug/Kgdrywt	1	20	20.	3.3	9.9
Indeno(1,2,3-cd)pyrene	L	160	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene		33.	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene		66.	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		79.5	%					
Fluorene-D10		73.6	%					
Pyrene-D10		70.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-24
Client ID: 004/5-SB1068-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N1000.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134897

Analysis Date: 01-DEC-13
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene	U	11.	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene	U	11.	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene	U	11.	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene	U	11.	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene	U	11.	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene	U	11.	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene	U	11.	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	U	11.	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene	U	11.	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	U	11.	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		55.6	%					
Fluorene-D10		49.0	%					
Pyrene-D10		54.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-2
Client ID: 004/5-SS1043-0.10.5
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0968.D

Sample Date: 13-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	1.9	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	JL	15.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	3.3	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	L	40.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		30.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	JL	19.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	L	23.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	L	30.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	J	9.8	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	JLL	14.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	JL	18.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	9.4	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	J	6.9	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		71.6	%					
Fluorene-D10		67.8	%					
Pyrene-D10		75.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-14
Client ID: TF2-SB-DUP05-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0984.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 30-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene	JL	2.3	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene	JL	4.0	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene	J	3.6	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene	JL	2.1	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene	JL	2.6	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene	JL	9.5	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene	U	11.	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	ULL	11.	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene	UL	11.	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	U	11.	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		65.7	%					
Fluorene-D10		59.9	%					
Pyrene-D10		56.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-25
Client ID: TF2-SB-DUP06-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N1001.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134897

Analysis Date: 01-DEC-13
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.3	10.
Acenaphthene	J	1.8	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Phenanthrene	J	4.4	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	U	1.3	ug/Kgdrywt	1	20	21.	1.3	10.
Fluoranthene	J	4.5	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	J	4.9	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	J	2.7	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	J	2.7	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	J	9.6	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	21.	3.5	10.
Indeno(1,2,3-cd)pyrene	J	5.2	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	J	8.2	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		50.8	%					
Fluorene-D10		51.4	%					
Pyrene-D10		60.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-12
Client ID: TF2-SB-RB03-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: N0930.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 18-NOV-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG134603

Analysis Date: 25-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
2-Methylnaphthalene	U	0.097	ug/L	1	.2	0.19	0.075	0.097
Acenaphthylene	U	0.097	ug/L	1	.2	0.19	0.052	0.097
Acenaphthene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
Fluorene	U	0.097	ug/L	1	.2	0.19	0.059	0.097
Phenanthrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Anthracene	UL	0.097	ug/L	1	.2	0.19	0.043	0.097
Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.071	0.097
Pyrene	U	0.097	ug/L	1	.2	0.19	0.057	0.097
Benzo(a)anthracene	U	0.097	ug/L	1	.2	0.19	0.045	0.097
Chrysene	UL	0.097	ug/L	1	.2	0.19	0.035	0.097
Benzo(b)Fluoranthene		0.23	ug/L	1	.2	0.19	0.086	0.097
Benzo(k)fluoranthene	U	0.097	ug/L	1	.2	0.19	0.048	0.097
Benzo(a)pyrene	U	0.097	ug/L	1	.2	0.19	0.064	0.097
Indeno(1,2,3-cd)pyrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Dibenzo(a,h)anthracene	U	0.097	ug/L	1	.2	0.19	0.068	0.097
Benzo(g,h,i)perylene	U	0.097	ug/L	1	.2	0.19	0.063	0.097
2-Methylnaphthalene-D10		67.7	%					
Fluorene-D10		86.4	%					
pyrene-d10		104.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-23
Client ID: 004/5-SB1040-0810
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: AGL10040.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896

Analysis Date: 04-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 86.
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	J	7.8	mg/Kgdrywt	1	20	19.	5.5	9.7
o-Terphenyl		90.6	%					
n-Triacontane-D62		98.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-4
Client ID: 004/5-SB1058-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: AGK10419.D

Sample Date: 13-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896

Analysis Date: 28-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 94.
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.8	10.
o-Terphenyl		89.8	%					
n-Triacontane-D62		91.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-27
Client ID: 004/5-SB1065-0608
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: AGL10041.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896

Analysis Date: 04-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	J	15.	mg/Kgdrywt	1	20	20.	5.8	10.
o-Terphenyl		101.	%					
n-Triacontane-D62		98.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-28
Client ID: TF2-SB-DUP07-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: AGL10042.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896

Analysis Date: 04-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 88.
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	11.	mg/Kgdrywt	1	20	22.	6.2	11.
o-Terphenyl		89.4	%					
n-Triacontane-D62		102.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-12
Client ID: TF2-SB-RB03-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: AGK10418.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 19-NOV-13
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG134676

Analysis Date: 28-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: AQ
% Solids: NA
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	240	ug/L	1	500	470	140	240
o-Terphenyl		97.6	%					
n-Triacontane-D62		102.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-23
Client ID: 004/5-SB1040-0810
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: 9GK4018.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904

Analysis Date: 24-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 86.
Report Date: 03-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.2	mg/Kgdrywt	1	2.5	2.7	2.0	2.2
p-Bromofluorobenzene		88.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-4
Client ID: 004/5-SB1058-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: 9GK4025.D

Sample Date: 13-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904

Analysis Date: 25-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 94.
Report Date: 03-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	4.1	mg/Kgdrywt	1	2.5	5.1	3.8	4.1
p-Bromofluorobenzene		85.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-27
Client ID: 004/5-SB1065-0608
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: 9GK4026.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904

Analysis Date: 25-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 96.
Report Date: 03-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.3	mg/Kgdrywt	1	2.5	2.9	2.1	2.3
p-Bromofluorobenzene		95.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-28
Client ID: TF2-SB-DUP07-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: 9GK4027.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904

Analysis Date: 25-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 88.
Report Date: 03-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.1	mg/Kgdrywt	1	2.5	2.6	1.9	2.1
p-Bromofluorobenzene		94.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-1RA
Client ID: TF2-W-TB02-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: 9GK4024.D

Sample Date: 13-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904

Analysis Date: 25-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 100
Report Date: 03-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		96.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-13
Client ID: TF2-W-TB03-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: 9GK4055.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 26-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135144

Analysis Date: 26-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA
Report Date: 03-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	8.0	ug/l	1	10	10.	6.7	8.0
p-Bromofluorobenzene		88.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-12
Client ID: TF2-SB-RB03-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: 9GK4054.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 26-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135144

Analysis Date: 26-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA
Report Date: 03-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics		11	ug/l	1	10	10.	6.7	8.0
p-Bromofluorobenzene		91.5	%					

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APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8999

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: _____

Missing Information	Date Lab Contacted	Date Received

Validator: Edward Leedberg Date: 1/8/14

See DV Report

EPA-NE - Data Validation
VOA/SV/Pest/PCB-1

Case: NAVSTA Newport SDG: SG8999

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: Edward Sedlazo Date: 1/8/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8999

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: Edward Sullivan Date: 1/8/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8999

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: Edward Sullivan Date: 1/8/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8999

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: Edward Sedlazo Date: 1/8/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8999

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Edward Sedlayao Date: 1/8/14

NA

EPA NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8999

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Edward Sudlow Date: 1/8/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8999

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Edward Sedlazo Date: 1/8/14

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: JG8999

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator: Edward Sedlazo Date: 11/8/14

See QV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8999

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)

Comments:

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: Edward Sedlmyer Date: 1/8/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8799

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: Edward Reallyn

Date: 1/8/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8999

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: Edward Kelly

Date: 1/8/14

EPA-NE - Data Validation Worksheet See DV Report

Case: NAVSTA Newport SDG: SG8999

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)
Comments:									

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. Y N

Validator: Edward Sadlowe Date: 1/8/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8999

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: Edward Hedlund Date: 1/8/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: VALSTA Newport SDG: SG8999

VOA/SV/Pest/PCB-V-B

V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: Edward Sullivan Date: 1/8/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8999

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methyhlphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: Edward Ludlum

Date: 1/8/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8999

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sadlyar Date: 1/8/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8999

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery			% Recovery		
			Fluoranthene			Naphthalene	
			Pyrene			2-Methylnaphthalene	
			Benzo(a)anthracene			Acenaphthylene	
			Chrysene			Acenaphthene	
			Benzo(b)fluoranthene			Fluorene	
			Benzo(k)fluoranthene			Pentachlorophenol	
			Benzo(a)pyrene			Phenanthrene	
			Indeno(1,2,3-cd)pyrene			Anthracene	
			Dibenzo(a,h)anthracene				
			Benzo(g,h,i)perylene				

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedlazo Date: 1/8/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8999

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1,2-Dichloroethane-d_4

Validator: Edward Sadlon Date: 1/8/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8999

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1.1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Kelly Date: 1/8/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SS 8999

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Edward Ledlow Date: 1/8/14

N N

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8999

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. Y N

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? Y N

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: Edward Sedlmyer Date: 1/8/14

NA

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 56 8999

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sedlmyer Date: 1/8/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8999

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: Edward Sedlazo Date: 1/8/14

NA

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: SG8999

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Lodge Date: 1/8/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8999

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: Edward Sedlmayer Date: 1/8/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: SG8999

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: Edward Sedlmyer Date: 11/8/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG 8999

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: Edward Ladlow Date: 1/8/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: SG 8999

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: Edward Sullivan Date: 1/8/14

EPA-NE - Data Validation Worksheet See DV Report

Case: NAVSTA Newport SDG: SG8999

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: Edward Kedinger Date: 1/8/14

NA

EPA NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: SG 8999

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? Y N

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? Y N

Validator: Edward Radzinski Date: 1/8/14

EPA-NE - Data Validation Worksheet See DV Report

Case: NAVSTA Newport SDG: SG8999

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: Edward Sedlyn Date: 11/8/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SB 8999

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Ledbetter Date: 1/8/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: SG8799

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Ladlyn Date: 1/8/04

NA

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: SG8999

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: Edward Redinger

Date: 1/8/14

APPENDIX D

SUPPORT DOCUMENTATION

HOLDTIME

SDG SG8999

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-004/5-SB1065-0204	SG8999-026	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-SB-DUP06-1113	SG8999-025	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-SB-DUP05-1113	SG8999-014	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SS1043-0.10.5	SG8999-002	NM	11/13/2013	12/02/2013	12/03/2013	19	1	20
HG	MG/KG	TF2-004/5-SB1068-0204	SG8999-024	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1065-0608	SG8999-027	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1064-0406	SG8999-006	NM	11/13/2013	12/02/2013	12/03/2013	19	1	20
HG	MG/KG	TF2-004/5-SB1064-0204	SG8999-005	NM	11/13/2013	12/02/2013	12/03/2013	19	1	20
HG	MG/KG	TF2-004/5-SB1058-0204	SG8999-004	NM	11/13/2013	12/02/2013	12/03/2013	19	1	20
HG	MG/KG	TF2-004/5-SB1057-0608	SG8999-009	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1057-0304	SG8999-008	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1049-0810	SG8999-016	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1038-0810	SG8999-018	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1066-0203	SG8999-007	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1049-0204	SG8999-015	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-004/5-SB1031-0810	SG8999-021	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1038-0204	SG8999-017	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1031-0204	SG8999-019	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1039-0406	SG8999-020	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1040-0204	SG8999-022	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1040-0810	SG8999-023	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1041-022.5	SG8999-003	NM	11/13/2013	12/02/2013	12/03/2013	19	1	20
HG	MG/KG	TF2-004/5-SB1047-0204	SG8999-010	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1047-0608	SG8999-011	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	UG/L	TF2-SB-RB03-1113	SG8999-012	NM	11/14/2013	12/04/2013	12/04/2013	20	0	20
M	MG/KG	TF2-004/5-SB1065-0204	SG8999-026	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1058-0204	SG8999-004	NM	11/13/2013	12/03/2013	12/06/2013	20	3	23
M	MG/KG	TF2-004/5-SB1064-0204	SG8999-005	NM	11/13/2013	12/03/2013	12/06/2013	20	3	23
M	MG/KG	TF2-004/5-SB1064-0204	SG8999-005	NM	11/13/2013	12/03/2013	12/09/2013	20	6	26
M	MG/KG	TF2-004/5-SB1064-0406	SG8999-006	NM	11/13/2013	12/03/2013	12/06/2013	20	3	23
M	MG/KG	TF2-004/5-SB1057-0608	SG8999-009	NM	11/14/2013	12/03/2013	12/06/2013	19	3	22
M	MG/KG	TF2-004/5-SB1065-0204	SG8999-026	NM	11/14/2013	12/04/2013	12/09/2013	20	5	25
M	MG/KG	TF2-004/5-SB1065-0608	SG8999-027	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SB1065-0608	SG8999-027	NM	11/14/2013	12/04/2013	12/09/2013	20	5	25
M	MG/KG	TF2-004/5-SB1066-0203	SG8999-007	NM	11/14/2013	12/03/2013	12/06/2013	19	3	22
M	MG/KG	TF2-004/5-SS1043-0.10.5	SG8999-002	NM	11/13/2013	12/03/2013	12/06/2013	20	3	23
M	MG/KG	TF2-004/5-SB1057-0608	SG8999-009	NM	11/14/2013	12/03/2013	12/04/2013	19	1	20
M	MG/KG	TF2-004/5-SB1068-0204	SG8999-024	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1057-0304	SG8999-008	NM	11/14/2013	12/03/2013	12/04/2013	19	1	20
M	MG/KG	TF2-004/5-SB1049-0810	SG8999-016	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1049-0204	SG8999-015	NM	11/14/2013	12/03/2013	12/04/2013	19	1	20
M	MG/KG	TF2-004/5-SB1047-0608	SG8999-011	NM	11/14/2013	12/03/2013	12/06/2013	19	3	22
M	MG/KG	TF2-004/5-SB1047-0608	SG8999-011	NM	11/14/2013	12/03/2013	12/04/2013	19	1	20
M	MG/KG	TF2-004/5-SB1047-0204	SG8999-010	NM	11/14/2013	12/03/2013	12/04/2013	19	1	20
M	MG/KG	TF2-004/5-SB1041-022.5	SG8999-003	NM	11/13/2013	12/03/2013	12/06/2013	20	3	23
M	MG/KG	TF2-004/5-SB1040-0810	SG8999-023	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1040-0204	SG8999-022	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1039-0406	SG8999-020	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1038-0204	SG8999-017	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-SB-DUP05-1113	SG8999-014	NM	11/14/2013	12/03/2013	12/04/2013	19	1	20
M	MG/KG	TF2-004/5-SB1031-0204	SG8999-019	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SB1038-0810	SG8999-018	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1031-0810	SG8999-021	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1031-0810	SG8999-021	NM	11/14/2013	12/04/2013	12/09/2013	20	5	25
M	MG/KG	TF2-SB-DUP06-1113	SG8999-025	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	UG/L	TF2-SB-RB03-1113	SG8999-012	NM	11/14/2013	11/27/2013	12/02/2013	13	5	18
M	UG/L	TF2-SB-RB03-1113	SG8999-012	NM	11/14/2013	11/27/2013	12/04/2013	13	7	20
	%	TF2-004/5-SB1039-0406	SG8999-20	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1049-0204	SG8999-15	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1047-0608	SG8999-11	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1047-0204	SG8999-10	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1041-022.5	SG8999-3	NM	11/13/2013	11/19/2013	11/20/2013	6	1	7
	%	TF2-004/5-SB1040-0810	SG8999-23	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1031-0810	SG8999-21	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1049-0810	SG8999-16	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1031-0204	SG8999-19	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1064-0204	SG8999-5	NM	11/13/2013	11/19/2013	11/20/2013	6	1	7
	%	TF2-004/5-SB1038-0810	SG8999-18	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-W-TB02-1113	SG8999-1	NM	11/13/2013	11/19/2013	11/20/2013	6	1	7

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-004/5-SB1040-0204	SG8999-22	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1057-0304	SG8999-8	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1038-0204	SG8999-17	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1058-0204	SG8999-4	NM	11/13/2013	11/19/2013	11/20/2013	6	1	7
	%	TF2-004/5-SB1064-0406	SG8999-6	NM	11/13/2013	11/19/2013	11/20/2013	6	1	7
	%	TF2-004/5-SB1065-0204	SG8999-26	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1065-0608	SG8999-27	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1066-0203	SG8999-7	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1068-0204	SG8999-24	NM	11/14/2013	11/20/2013	11/21/2013	6	1	7
	%	TF2-004/5-SS1043-0.10.5	SG8999-2	NM	11/13/2013	11/19/2013	11/20/2013	6	1	7
	%	TF2-SB-DUP05-1113	SG8999-14	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-SB-DUP06-1113	SG8999-25	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-SB-DUP07-1113	SG8999-28	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1057-0608	SG8999-9	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
SIM	%	TF2-SB-DUP05-1113	SG8999-14	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	%	TF2-004/5-SB1057-0304	SG8999-8	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	%	TF2-004/5-SB1031-0204	SG8999-19	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	%	TF2-004/5-SB1031-0810	SG8999-21	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	%	TF2-004/5-SB1038-0204	SG8999-17	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	%	TF2-004/5-SB1038-0810	SG8999-18	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	%	TF2-004/5-SB1039-0406	SG8999-20	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	%	TF2-004/5-SB1040-0204	SG8999-22	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	%	TF2-004/5-SB1040-0810	SG8999-23	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	%	TF2-004/5-SB1041-022.5	SG8999-3	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	%	TF2-004/5-SB1047-0204	SG8999-10	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	%	TF2-004/5-SB1047-0608	SG8999-11	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	%	TF2-SB-RB03-1113	SG8999-12	NM	11/14/2013	11/18/2013	11/25/2013	4	7	11
SIM	%	TF2-004/5-SB1049-0810	SG8999-16	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	%	TF2-SB-DUP06-1113	SG8999-25	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	%	TF2-004/5-SB1057-0608	SG8999-9	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	%	TF2-004/5-SB1058-0204	SG8999-4	NM	11/13/2013	11/21/2013	11/30/2013	8	9	17
SIM	%	TF2-004/5-SB1064-0204	SG8999-5	NM	11/13/2013	11/21/2013	11/30/2013	8	9	17
SIM	%	TF2-004/5-SB1064-0406	SG8999-6	NM	11/13/2013	11/21/2013	11/30/2013	8	9	17
SIM	%	TF2-004/5-SB1065-0204	SG8999-26	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	%	TF2-004/5-SB1065-0608	SG8999-27	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	%	TF2-004/5-SB1066-0203	SG8999-7	NM	11/14/2013	11/21/2013	12/01/2013	7	10	17

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	%	TF2-004/5-SB1068-0204	SG8999-24	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	%	TF2-004/5-SS1043-0.10.5	SG8999-2	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	%	TF2-004/5-SB1049-0204	SG8999-15	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	UG/KG DRY	TF2-004/5-SS1043-0.10.5	SG8999-2	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	UG/KG DRY	TF2-004/5-SB1047-0608	SG8999-11	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	UG/KG DRY	TF2-004/5-SB1064-0204	SG8999-5	NM	11/13/2013	11/21/2013	11/30/2013	8	9	17
SIM	UG/KG DRY	TF2-SB-DUP06-1113	SG8999-25	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	UG/KG DRY	TF2-004/5-SB1057-0608	SG8999-9	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	UG/KG DRY	TF2-004/5-SB1065-0204	SG8999-26	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	UG/KG DRY	TF2-004/5-SB1065-0608	SG8999-27	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	UG/KG DRY	TF2-004/5-SB1066-0203	SG8999-7	NM	11/14/2013	11/21/2013	12/01/2013	7	10	17
SIM	UG/KG DRY	TF2-004/5-SB1068-0204	SG8999-24	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	UG/KG DRY	TF2-SB-DUP05-1113	SG8999-14	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	UG/KG DRY	TF2-004/5-SB1057-0304	SG8999-8	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	UG/KG DRY	TF2-004/5-SB1058-0204	SG8999-4	NM	11/13/2013	11/21/2013	11/30/2013	8	9	17
SIM	UG/KG DRY	TF2-004/5-SB1049-0204	SG8999-15	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	UG/KG DRY	TF2-004/5-SB1064-0406	SG8999-6	NM	11/13/2013	11/21/2013	11/30/2013	8	9	17
SIM	UG/KG DRY	TF2-004/5-SB1047-0204	SG8999-10	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/KG DRY	TF2-004/5-SB1041-022.5	SG8999-3	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	UG/KG DRY	TF2-004/5-SB1040-0810	SG8999-23	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	UG/KG DRY	TF2-004/5-SB1040-0204	SG8999-22	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	UG/KG DRY	TF2-004/5-SB1039-0406	SG8999-20	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	UG/KG DRY	TF2-004/5-SB1038-0810	SG8999-18	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	UG/KG DRY	TF2-004/5-SB1038-0204	SG8999-17	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	UG/KG DRY	TF2-004/5-SB1031-0810	SG8999-21	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	UG/KG DRY	TF2-004/5-SB1031-0204	SG8999-19	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	UG/KG DRY	TF2-004/5-SB1049-0810	SG8999-16	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	UG/L	TF2-SB-RB03-1113	SG8999-12	NM	11/14/2013	11/18/2013	11/25/2013	4	7	11
	%	TF2-004/5-SB1058-0204	SG8999-4	NM	11/13/2013	11/22/2013	11/25/2013	9	3	12
	%	TF2-004/5-SB1040-0810	SG8999-23	NM	11/14/2013	11/22/2013	12/04/2013	8	12	20
	%	TF2-004/5-SB1040-0810	SG8999-23	NM	11/14/2013	11/22/2013	11/24/2013	8	2	10
	%	TF2-004/5-SB1058-0204	SG8999-4	NM	11/13/2013	11/22/2013	11/28/2013	9	6	15
	%	TF2-W-TB03-1113	SG8999-13	NM	11/14/2013	11/26/2013	11/26/2013	12	0	12
	%	TF2-SB-DUP07-1113	SG8999-28	NM	11/14/2013	11/22/2013	11/25/2013	8	3	11
	%	TF2-SB-DUP07-1113	SG8999-28	NM	11/14/2013	11/22/2013	12/04/2013	8	12	20
	%	TF2-SB-RB03-1113	SG8999-12	NM	11/14/2013	11/19/2013	11/28/2013	5	9	14

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-SB-RB03-1113	SG8999-12	NM	11/14/2013	11/26/2013	11/26/2013	12	0	12
	%	TF2-W-TB02-1113	SG8999-1RA	NM	11/13/2013	11/22/2013	11/25/2013	9	3	12
	%	TF2-004/5-SB1065-0608	SG8999-27	NM	11/14/2013	11/22/2013	12/04/2013	8	12	20
	%	TF2-004/5-SB1065-0608	SG8999-27	NM	11/14/2013	11/22/2013	11/25/2013	8	3	11
	MG/KG DRY	TF2-W-TB02-1113	SG8999-1RA	NM	11/13/2013	11/22/2013	11/25/2013	9	3	12
	MG/KG DRY	TF2-SB-DUP07-1113	SG8999-28	NM	11/14/2013	11/22/2013	12/04/2013	8	12	20
	MG/KG DRY	TF2-SB-DUP07-1113	SG8999-28	NM	11/14/2013	11/22/2013	11/25/2013	8	3	11
	MG/KG DRY	TF2-004/5-SB1065-0608	SG8999-27	NM	11/14/2013	11/22/2013	12/04/2013	8	12	20
	MG/KG DRY	TF2-004/5-SB1065-0608	SG8999-27	NM	11/14/2013	11/22/2013	11/25/2013	8	3	11
	MG/KG DRY	TF2-004/5-SB1058-0204	SG8999-4	NM	11/13/2013	11/22/2013	11/28/2013	9	6	15
	MG/KG DRY	TF2-004/5-SB1058-0204	SG8999-4	NM	11/13/2013	11/22/2013	11/25/2013	9	3	12
	MG/KG DRY	TF2-004/5-SB1040-0810	SG8999-23	NM	11/14/2013	11/22/2013	11/24/2013	8	2	10
	MG/KG DRY	TF2-004/5-SB1040-0810	SG8999-23	NM	11/14/2013	11/22/2013	12/04/2013	8	12	20
	UG/L	TF2-SB-RB03-1113	SG8999-12	NM	11/14/2013	11/26/2013	11/26/2013	12	0	12
	UG/L	TF2-W-TB03-1113	SG8999-13	NM	11/14/2013	11/26/2013	11/26/2013	12	0	12
	UG/L	TF2-SB-RB03-1113	SG8999-12	NM	11/14/2013	11/19/2013	11/28/2013	5	9	14

NAVSTA NEWPORT
SOIL DATA
SG8999

FRACTION	CHEMICAL	TF2-004/5-SB1057-0608	UNITS	TF2-SB-DUP05-1113	RPD	D	
PAH	BENZO(A)ANTHRACENE	5.2 J	UG/KG	2.1 J	84.93	3.10	O.K. < 2 x RL
PAH	BENZO(A)PYRENE	4.8 J	UG/KG	ND	200.00	4.80	⊥
PAH	BENZO(B)FLUORANTHENE	12 J	UG/KG	9.5 J	23.26	2.50	
PAH	BENZO(G,H,I)PERYLENE	2.8 J	UG/KG	ND	200.00	2.80	O.K. < 2 x RL
PAH	CHRYSENE	6.2 J	UG/KG	2.6 J	81.82	3.60	⊥
PAH	INDENO(1,2,3-CD)PYRENE	7.7 J	UG/KG	ND	200.00	7.70	

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8999

FRACTION	CHEMICAL	TF2-004/5-SB1068-0204	UNITS	TF2-SB-DUP06-1113	RPD	D
PAH	ACENAPHTHENE	ND	UG/KG	1.8 J	200.00	1.80
PAH	BENZO(A)ANTHRACENE	ND	UG/KG	2.7 J	200.00	2.70
PAH	BENZO(B)FLUORANTHENE	ND	UG/KG	9.6 J	200.00	9.60
PAH	CHRYSENE	ND	UG/KG	2.7 J	200.00	2.70
PAH	DIBENZO(A,H)ANTHRACENE	ND	UG/KG	8.2 J	200.00	8.20
PAH	FLUORANTHENE	ND	UG/KG	4.5 J	200.00	4.50
PAH	INDENO(1,2,3-CD)PYRENE	ND	UG/KG	5.2 J	200.00	5.20
PAH	PHENANTHRENE	ND	UG/KG	4.4 J	200.00	4.40
PAH	PYRENE	ND	UG/KG	4.9 J	200.00	4.90

O.R. L2 & RL

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8999

FRACTION	CHEMICAL	TF2-004/5-SB1040-0810	UNITS	TF2-SB-DUP07-1113	RPD	D
PET	EPH (C08-C44)	7.8 J	MG/KG	ND	200.00	7.80

0.K.L 2xRL.

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

TETRA TECH NUS, INC.
NAVSTA NEWPORT CTO WE30
SG8999

KATAHDIN ANALYTICAL SERVICES, INC.
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT CTO WE30
SG8999

Sample Receipt

The following samples were received on November 15, 2013 and were logged in under Katahdin Analytical Services work order number SG8999 for a hardcopy due date of December 04, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG8999-1	TF2-W-TB02-1113
SG8999-2	TF2-004/5-SS1043-0.10.5
SG8999-3	TF2-004/5-SB1041-022.5
SG8999-4	TF2-004/5-SB1058-0204
SG8999-5	TF2-004/5-SB1064-0204
SG8999-6	TF2-004/5-SB1064-0406
SG8999-7	TF2-004/5-SB1066-0203
SG8999-8	TF2-004/5-SB1057-0304
SG8999-9	TF2-004/5-SB1057-0608
SG8999-10	TF2-004/5-SB1047-0204
SG8999-11	TF2-004/5-SB1047-0608
SG8999-12	TF2-SB-RB03-1113
SG8999-13	TF2-W-TB03-1113
SG8999-14	TF2-SB-DUP05-1113
SG8999-15	TF2-004/5-SB1049-0204
SG8999-16	TF2-004/5-SB1049-0810
SG8999-17	TF2-004/5-SB1038-0204
SG8999-18	TF2-004/5-SB1038-0810
SG8999-19	TF2-004/5-SB1031-0204
SG8999-20	TF2-004/5-SB1039-0406
SG8999-21	TF2-004/5-SB1031-0810
SG8999-22	TF2-004/5-SB1040-0204
SG8999-23	TF2-004/5-SB1040-0810
SG8999-24	TF2-004/5-SB1068-0204
SG8999-25	TF2-SB-DUP06-1113
SG8999-26	TF2-004/5-SB1065-0204
SG8999-27	TF2-004/5-SB1065-0608
SG8999-28	TF2-SB-DUP07-1113

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Some of the client IDs on the Chain of Custody exceeds the 19-character limit of the Katahdin Analytical Information Management System. Therefore, the first characters "TF2-" in the client ID for samples SG8999-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26 and 27 were omitted on all forms.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG8999 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

Sample SG8999-4 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

8015B GRO Analysis

Sample SG8999-12 was manually integrated for the GRO range. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The GRO range was detected above the MDL, but below the LOQ, in the method blank WG134904-1RA. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since the range was not detected above the MDL in the associated samples, no further action was taken.

The opening/closing CV's (files 9GK4015 and 9GK4019) had high responses for naphthalene, which were greater than 20%. Since the method requirement applies to only the GRO range response, which was acceptable, the associated samples were not reanalyzed.

The closing CV (files 9GK4060) had high responses for methyl tert-butyl ether and naphthalene, which were greater than 20%. Since the method requirement applies to only the GRO range response, which was acceptable, the associated samples were not reanalyzed.

8270D SIM Analysis

Samples SG8999-2, 3, 4, 6, 7, 9, 10, 11, 12, 15, 16, 18, 20, 21, 22, 23, 25, 26 and 27 was manually integrated for the target analytes benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene and/or acenaphthylene. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The target analytes naphthalene, acenaphthene, phenanthrene, anthracene, fluoranthene and pyrene were detected below ½ the reporting limit in the method blank WG134819-1. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since the method blank was acceptable, no further action was taken.

Although DoD QSM acceptance limits were requested for this project, laboratory established acceptance limits were used because the DoD QSM does not list acceptance limits for 8270SIM. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these statistical acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

The LCSD WG134603-3 had two spiked target analytes with recoveries that were high and outside of the laboratory established acceptance limits. The DoD QSM allowable number of exceedances for 17 target analytes is one analyte. Since the LCS WG134603-2 was acceptable, no further action was taken.

The LCS WG134819-2 had seven spiked target analytes with recoveries that were high and outside of the laboratory established acceptance limits. The DoD QSM allowable number of exceedances for 17 target analytes is one analyte. Five of these analytes also exceed the marginal exceedance limits. Since the LCSD WG134819-3 was acceptable, after factoring in the allowed number of exceedances, no further action was taken.

The independent check standard (file N0808) associated with the initial calibration on the N instrument on 11/19/2013 had a low concentration for the target analyte benzo(k)fluoranthene , which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The CV (file N0914) had a high response for the target analyte benzo(b)fluoranthene. The CV (file N0954) had a high response for the target analyte fluoranthene. The CV (file N0971) had a high response for the target analyte dibenzo(a,h)anthracene. These response resulted in %D's that were greater than the acceptance limit of 20% from DoD QSM Version 4.1.

FLPRO Analysis

The LCS WG134676-2 had a recovery for the surrogate o-terphenyl that was low and outside of the method acceptance limits. Since the LCSD had acceptable surrogate recovery and the LCS/LCSD had acceptable spike recoveries, no further action was taken.

The LCSD WG134896-3 had a recovery for petroleum range organics that was low and outside of the method acceptance limits. Since the LCS had an acceptable recovery, no further action was taken.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG8999 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Aqueous-matrix Katahdin Sample No. SG8999-12 was digested for ICP-MS analysis on 11/27/13 (QC Batch GK27IMW2) in accordance with USEPA Method 3010A. Duplicate laboratory control samples were prepared in this batch. The measured manganese concentration (8.79 ug/L) of the preparation blank that was digested in this batch is greater than the laboratory's reporting limit. However, because the measured manganese concentration of Katahdin Sample No. SG8999-12 is less than the laboratory's Method Detection Limit for manganese, no corrective action was required.

Soil-matrix Katahdin Sample Nos. SG8999-(2-11, 14, 15) were digested for ICP-MS analysis on 12/03/13 (QC Batch GLO3IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8999-4 was prepared in duplicate and with a matrix spike in this digestion batch. The measured manganese concentration (0.990 mg/kg) of the preparation blank that was digested in this batch is greater than the laboratory's reporting limit. However, because the measured manganese concentrations of all associated samples are more than ten times that of the preparation blank, no corrective action was required.

Soil-matrix Katahdin Sample Nos. SG8999-(16-27) were digested for ICP-MS analysis on 12/04/13 (QC Batch GLO4IMS1) in accordance with USEPA Method 3050B. The measured manganese (0.167 mg/kg) and iron (11.5 mg/kg) concentrations of the preparation blank that was digested in this batch are greater than the laboratory's Limit of Detection. However, because the measured manganese and iron concentrations of all associated samples are more than ten times those of the preparation blank, no corrective action was required.

ICP-MS analyses of Work Order SG8999 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	Associated Analytes
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Solid-matrix Katahdin Sample Numbers SG8999-(2-11, 14-17) were digested for mercury analysis on 12/02/13 (QC Batch GL02HGS1) in accordance with USEPA Method 7471B. Duplicate laboratory control samples were prepared in this batch. Katahdin Sample No. SG8999-4 was prepared in duplicate and with a matrix spike in this digestion batch.

Solid-matrix Katahdin Sample Numbers SG8999-(18-27) were digested for mercury analysis on 12/02/13 (QC Batch GL02HGS3) in accordance with USEPA Method 7471B.

Aqueous-matrix Katahdin Sample Number SG8999-12 was digested for mercury analysis on 12/04/13 (QC Batch GL04HGW2) in accordance with USEPA Method 7470A..

Mercury analysis of the Katahdin Work Order SG8999 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG8999-4 is within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for all analytes.

The measured recoveries of antimony, calcium, and chromium in the matrix-spiked aliquot of Katahdin Sample No. SG8999-4 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The serial dilution analysis of Katahdin Sample No. SG8999-4 is within the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for all analytes.

The measured recoveries of all analytes in a post-digestion matrix spike aliquot of Katahdin Sample No. SG8999-4 are within the laboratory's acceptance limits (75% - 125% recovery of the added element, if the native concentration is less than four times the amount added).

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the laboratory's limits of quantitation (LOQ) are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQ's, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG8999 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
121113

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc. **Sample Receipt Condition Report**

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SG8999 + SG9000	KIMS Review By:	Received By: DM
SDG #:	Cooler: 1 of 2	Date/Time Rec.: 11/5/13 1700

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?		✓			
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 1.4
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?	✓				
Soil/Sediment:					
Received in airtight container?	✓				
Received in methanol?	✓				
Methanol covering soil?	✓				
D.I. Water - Received within 48 hour HT?	✓				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

000040

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SG8999 + SG9002	KIMS Review By:	Received By: DM
SDG #:	Cooler: 2 of 2	Date/Time Rec.: 11-15-13 1700

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?		✓			
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 2.0
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?				✓	
Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

extra jars (not on chain) provided for TF2-003-SB102-0204 (3 total) + TF2-003-SB1011-0204 (2 total).

000001

SG8447 – SG8460'2

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1902 | PAGE 1 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington, MA	D Seiken	978 474 8445	Katahdin Analytical Services/ J. Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Kjalkut		Kayleen Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier p/u in RI - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	G	G	G	G	G	G	P	COMMENTS
									PRESERVATIVE USED	ICE/ Mech	≤6°C	≤6°C	HCL ≤6°C	≤6°C	HCL ≤6°C	HNO3 ≤6°C	
									TYPE OF ANALYSIS	GRO 8x 40 ml vials	PAH, metals total 4oz jar	EXTPH 4oz jar	GRO - 40 ml vials	1L Amber glass - PAHs	1L Amber glass - EXTPH	250 ml poly bottle - Metals	
11/13	1200	TF2-W-TB02-1113	—	1	1	QC	G	2		X							
11/13	1250	TF2-004/5-SS1043-0.10.5	SS 1043	0.1	0.5	SO	G	1			X						
11/13	1320	TF2-004/5-SB1041-0202.5	SB 1041	2	2.5	SO	G	1			X						
11/13	1405	TF2-004/5-SB1058-0204	SB 1058	2	4	SO	G	10		X	X	X					Lab QC
11/13	1440	TF2-004/5-SB1064-0204	SB 1064	2	4	SO	G	1			X						
11/13	1445	TF2-004/5-SB1064-0406	SB 1064	4	6	SO	G	1			X						
11/14	0945	TF2-004/5-SB1066-0203	SB 1066	2	3	SO	G	1			X						
11/14	1015	TF2-004/5-SB1057-~~0203~~ 0304	SB 1057	3	~~3~~ 4	SO	G	1			X						
11/14	1025	TF2-004/5-SB1057-0608	SB 1057	6	8	SO	G	1			X						
11/14	1050	TF2-004/5-SB1047-0204	SB 1047	2	4	SO	G	1			X						
11/14	1102	TF2-004/5-SB1047-0608	SB 1047	6	8	SO	G	1			X						
11/14	1200	TF2-SB-RB03-1113	—	—	—	QC	G	7		—	—	—	X	X	X	X	
11/14	1205	TF2-W-TB03-1113	—	—	—	QC	G	2		—	—	—	X	—	—	—	

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-15-13	1345	1. RECEIVED BY	11-15-13	1345
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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FORM NO. TINUS-001

CCC002

TETRA TECH NUS, INC. SG8999 CHAIN OF CUSTODY | NUMBER Nº 1903 | PAGE 1 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington MA	D Seiken	978 474 8445	Katahdin Analytical Services / J Obrin
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
K Jalkut		Kayleen Jalkut	7818010457	600 Technology Way
		CARRIER/WAYBILL NUMBER		CITY, STATE
		Courier pick up in RI - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: PAH, metals, total solids 4oz jar	GRO 40ml vials	EXTPH 4oz jar	COMMENTS
									G	≤ 6°C		10ml MeOH or ≤ 6°C		
11/14	0000	TF2-SB-DUP05-1113	—	—	—	SO	G	1			X	-	-	
11/14	1240	TF2-SB004/5-SB1049-0204	SB1049	2	4	SO	G	1			X	-	-	
11/14	1255	TF2-004/5-SB1049-0810	SB1049	8	10	SO	G	1			X	-	-	
11/14	1315	TF2-004/5-SB1038-0204	SB1038	2	4	SO	G	1			X	-	-	
11/14	1325	TF2-004/5-SB1038-0810	SB1038	8	10	SO	G	1			X	-	-	
11/14	1340	TF2-004/5-SB1031-0204	SB1031	2	4	SO	G	1			X	-	-	
11/14	1345	TF2-004/5-SB1039-0406	SB1039	4	6	SO	G	1			X	-	-	
11/14	1355	TF2-004/5-SB1031-0810	SB1031	8	10	SO	G	1			X	-	-	
11/14	1415	TF2-004/5-SB1040-0204	SB1040	2	4	SO	G	1			X	-	-	
11/14	1430	TF2-004/5-SB1040-0810	SB1040	8	10	SO	G	4			X	X	X	
11/14	1500	TF2-004/5-SB1068-0204	SB1068	2	4	SO	G	1			X	-	-	
11/14	0000	TF2-SB-DUP06-1113	—	—	—	SO	G	1			X	-	-	
11/14	1445	TF2-SB-004/5-SB1065-0204	SB1065	2	4	SO	G	1			X	-	-	

pg 11/15/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY:	11-15-13	1345	1. RECEIVED BY	11-15-13	1345
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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FORM NO. TtNUS-001

00003

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1904 | PAGE 3 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03019	Wilmington MA	Debra Seiken	978 4748445	Katahdin Analytical Services / J. Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Hyatkut		Kayleen Jatkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier p/u in RI - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
									PRESERVATIVE USED	≤6°C		≤6°C					
									TYPE OF ANALYSIS	PAH, METALS, TOTAL SOLIDS 4oz jar	GRO 40 ml vials	EXTPH 4oz jar					
11/14	1455	TF2-004/5-SB1005-0608	SB 1005	6	8	SO	G	4		X	X	X					
11/14	0000	TF2-SB-DUP07-1113	—	—	—	SO	G	3		—	X	X					
11/15	0915	TF2-003-SB1017-011.6	SB 1017	1	1.6	SO	G	4		X	X	X					
11/15	~~0920~~ 1025	TF2-003-SB1017-0204	SB 1017	2	4	SO	G	1		X	—	—					
11/15	0940	TF2-003-SB1017-0810	SB 1017	8	10	SO	G	1		X	—	—					
11/15	1160	TF2-003-SB1012-0204	SB 1012	2	4	SO	G	2		X	—	—					LAB QC
11/15	1145	TF2-003-SB1012-0810	SB 1012	8	10	SO	G	1		X	—	—					
11/15	1025	TF2-003-SB1011-0204	SB 1011	2	4	SO	G	1		X	—	—					
11/15	1145	TF2-003-SB1014-0204	SB 1014	2	4	SO	G	1		X	—	—					
11/15	1200	TF2-003-SB1014-0810	SB 1014	8	10	SO	G	1		X	—	—					
11/15	1100	TF2-003-SB1015-0204	SB 1015	2	4	SO	G	1		X	—	—					
11/15	0000	TF2-~~003~~ SB - DUP08-1113	—	—	—	SO	G	1		X	—	—					
11/15	1120	TF2-003-SB1015-0810	SB 1015	8	10	SO	G	1		X	—	—					

J. Hyatkut 11-15-13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-15-13	1345	1. RECEIVED BY	11-15-13	1345
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

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4/02R
FORM NO. TtNUS-001

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG8999

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
TF2-SB-RB03-1113	SG8999-12		67.7		86.4		104.	
Method Blank Sample	WG134603-1		76.4		83.6		106.	
Laboratory Control S	WG134603-2		65.5		67.9		90.1	
Laboratory Control S	WG134603-3		56.9		71.6		81.8	

		QC Limits
2MN	2-METHYLNAPHTHALENE-D10	43-92
FLO	FLUORENE-D10	29-101
PYR	PYRENE-D10	53-166

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://katahdinlab.com
sales@katahdinlab.com

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8999

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
004/5-SB1047-0204	SG8999-10		70.8		66.8		74.6	
004/5-SB1047-0608	SG8999-11		55.3		53.3		65.3	
TF2-SB-DUP05-1113	SG8999-14		65.7		59.9		56.4	
004/5-SB1049-0204	SG8999-15		67.8		57.6		57.1	
004/5-SB1049-0810	SG8999-16		56.0		52.5		55.3	
004/5-SB1038-0204	SG8999-17		53.7		48.0		49.6	
004/5-SB1038-0810	SG8999-18		64.3		58.9		71.2	
004/5-SB1031-0204	SG8999-19		45.5		41.6		47.6	
004/5-SS1043-0.10.5	SG8999-2		71.6		67.8		75.3	
004/5-SB1039-0406	SG8999-20		62.3		55.3		64.2	
004/5-SB1031-0810	SG8999-21		51.5		47.1		46.5	
004/5-SB1040-0204	SG8999-22		70.3		62.2		59.2	
004/5-SB1040-0810	SG8999-23		58.0		54.5		65.6	
004/5-SB1068-0204	SG8999-24		55.6		49.0		54.5	
TF2-SB-DUP06-1113	SG8999-25		50.8		51.4		60.5	
004/5-SB1065-0204	SG8999-26		54.4		52.4		47.9	
004/5-SB1065-0608	SG8999-27		51.2		47.1		40.4	
004/5-SB1041-022.5	SG8999-3		69.6		66.2		68.3	
004/5-SB1058-0204	SG8999-4		75.8		64.6		58.1	
004/5-SB1064-0204	SG8999-5		63.7		57.0		55.7	
004/5-SB1064-0406	SG8999-6		69.5		62.9		65.0	
004/5-SB1066-0203	SG8999-7		79.5		73.6		70.3	
004/5-SB1057-0304	SG8999-8		64.0		58.2		66.3	
004/5-SB1057-0608	SG8999-9		43.9		43.4		52.4	
Method Blank Sample	WG134819-1		64.1		64.2		81.6	
Laboratory Control S	WG134819-2		67.7		67.3		73.0	
Laboratory Control S	WG134819-3		67.9		66.2		74.6	
Matrix Spike	WG134819-4		65.4		56.5		54.4	
Matrix Spike Duplica	WG134819-5		68.9		62.2		65.9	
Method Blank Sample	WG134897-1RA		33.0		30.2		42.6	
Laboratory Control S	WG134897-2		60.8		59.1		73.5	
Laboratory Control S	WG134897-3		60.6		55.3		68.2	

600 Technology Way
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Tel:(207) 874-2400 Fax:(207) 775-4029

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8999

		QC Limits
PYR	PYRENE-D10	31-128
FLO	FLUORENE-D10	20-96
2MN	2-METHYLNAPHTHALENE-D10	19-94

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : ND640.D
Instrument ID : GCMS-N

SDG : SG8999
Date Analyzed : 19-NOV-13
Time Analyzed : 08:29

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	35.9		
68	Less than 2.0% of mass 69	0.7	1.42	1
69	Less than 100.0% of mass 198	49.1		
70	Less than 2.0% of mass 69	0.2	0.43	1
127	40.0 - 60.0% of mass 198	59.7		
197	Less than 1.0% of mass 198	0.6		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.4		
275	10.0 - 30.0% of mass 198	20.9		
365	1.0 - 100.0% of mass 198	2.6		
441	0.0 - 100.0% of mass 443	8.0	72.23	2
442	40.0 - 100.0% of mass 198	55.2		
443	17.0 - 23.0% of mass 442	11.1	20.09	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG134654-4	N0799.D	11/19/13	09:18
Initial Calibration	WG134654-2	N0800.D	11/19/13	10:02
Initial Calibration	WG134654-3	N0801.D	11/19/13	10:45
Initial Calibration	WG134654-5	N0805.D	11/19/13	13:41
Initial Calibration	WG134654-6	N0806.D	11/19/13	14:25
Initial Calibration	WG134654-7	N0807.D	11/19/13	15:09
Independent Source	WG134654-8	N0808.D	11/19/13	15:54

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8999
Project : NAVSTA Newport CTO WE30 **Instrument ID:** GCMS-N
Lab File IDs : N0800.D N0801.D N0799.D **Column ID:**
N0805.D N0806.D N0807.D **Calibration Date(s):** 19-NOV-13 09:18
19-NOV-13 15:09

	0.200000(Level 1	0.500000(Level 2	1.0000 Level 3	3.0000 Level 4	7.0000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.97773	0.98289	0.98535	0.97168	0.98919	0.95511	AVG		0.97699		1.26271	15.00000	O
2-Methylnaphthalene	0.66933	0.69987	0.63442	0.62910	0.58835	0.57197	AVG		0.63217		7.59365	15.00000	O
Acenaphthylene	1.95357	2.10140	2.22526	2.07543	2.30450	2.38188	AVG		2.17367		7.31605	15.00000	O
Acenaphthene	1.26421	1.32992	1.33838	1.30431	1.42186	1.45294	AVG		1.35194		5.30555	15.00000	O
Fluorene	1.26808	1.27226	1.32524	1.33670	1.51952	1.55085	AVG		1.37877		9.03869	15.00000	O
Phenanthrene	1.13837	1.20920	1.24817	1.21552	1.31497	1.33922	AVG		1.24424		5.93887	15.00000	O
Anthracene	1.05711	1.22999	1.26973	1.22753	1.33986	1.37728	AVG		1.25025		8.96203	15.00000	O
Fluoranthene	0.94398	0.96933	1.07254	1.05949	1.13367	1.13623	AVG		1.05254		7.68859	15.00000	O
Pyrene	2.68252	2.53019	2.21937	2.12973	2.36990	2.32656	AVG		2.37638		8.52883	15.00000	O
Benzo(a)anthracene	1.14259	1.13994	1.27906	1.13571	1.29209	1.33338	AVG		1.22046		7.42369	15.00000	O
Chrysene	1.57750	1.52247	1.48308	1.37164	1.43466	1.41445	AVG		1.46730		5.14060	15.00000	O
Benzo(b)fluoranthene	2649	6889	25358	57673	158719	225272	LNR	0.24464	1.40779		0.99783	0.99000	O
Benzo(k)fluoranthene	2.13696	1.91831	1.75092	1.75653	1.83417	1.83678	AVG		1.87228		7.66652	15.00000	O
Benzo(a)pyrene	1.24255	1.18713	1.19834	1.18148	1.31406	1.34505	AVG		1.24477		5.60583	15.00000	O
Indeno(1,2,3-cd)pyrene	1260	3203	13355	24317	73776	109771	QUA	0.10476	1.87762	-0.05034	0.99795	0.99000	O
Dibenzo(a,h)anthracene	1347	3418	14921	27665	79946	117418	LNR	0.27329	0.72711		0.99566	0.99000	O
Benzo(g,h,i)perylene	0.67017	0.78524	0.91171	0.85671	0.95818	0.96821	AVG		0.85837		13.34841	15.00000	O
2-Methylnaphthalene-D10	1.08489	1.18658	1.16058	1.07917	1.16348	1.19944	AVG		1.14569		4.48829	15.00000	
Fluorene-D10	0.94534	0.81224	0.78076	0.78150	0.88428	0.89501	AVG		0.84986		8.01587	15.00000	
Pyrene-D10	1.30797	1.44867	1.29046	1.23317	1.37769	1.36406	AVG		1.33700		5.66149	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : ND646.D
Instrument ID : GCMS-N

SDG : SG8999
Date Analyzed : 25-NOV-13
Time Analyzed : 10:48

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	31.6		
68	Less than 2.0% of mass 69	0.7	1.61	1
69	Less than 100.0% of mass 198	42.9		
70	Less than 2.0% of mass 69	0.4	0.89	1
127	40.0 - 60.0% of mass 198	56.6		
197	Less than 1.0% of mass 198	0.8		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.2		
275	10.0 - 30.0% of mass 198	20.4		
365	1.0 - 100.0% of mass 198	2.4		
441	0.0 - 100.0% of mass 443	8.4	68.88	2
442	40.0 - 100.0% of mass 198	60.3		
443	17.0 - 23.0% of mass 442	12.2	20.16	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG135106-2	N0914.D	11/25/13	11:12
Method Blank Sample	WG134603-1	N0915.D	11/25/13	11:56
Laboratory Control S	WG134603-2	N0916.D	11/25/13	12:40
Laboratory Control S	WG134603-3	N0917.D	11/25/13	13:24
TF2-SB-RB03-1113	SG8999-12	N0930.D	11/25/13	22:46

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG135106-2 **Analytical Date:** 11/25/13 11:12
Lab File ID : N0914.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 11/19/13 09:18 11/19/13 15:09 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.97699	1.14015	1.14015	0.010	16.70036	20.00000	Averaged	
31 2-Methylnaphthalene	0.63217	0.71175	0.71175	0.010	12.58864	20.00000	Averaged	
42 Acenaphthylene	2.17367	2.42839	2.42839	0.010	11.71817	20.00000	Averaged	
45 Acenaphthene	1.35194	1.47476	1.47476	0.010	9.08490	20.01000	Averaged	
54 Fluorene	1.37877	1.50883	1.50883	0.010	9.43239	20.00000	Averaged	
64 Phenanthrene	1.24424	1.37950	1.37950	0.010	10.87110	20.00000	Averaged	
65 Anthracene	1.25025	1.41462	1.41462	0.010	13.14677	20.00000	Averaged	
68 Fluoranthene	1.05254	1.20030	1.20030	0.010	14.03822	20.01000	Averaged	
70 Pyrene	2.37638	2.44911	2.44911	0.010	3.06051	20.00000	Averaged	
72 Benzo(a)anthracene	1.22046	1.37874	1.37874	0.010	12.96899	20.00000	Averaged	
74 Chrysene	1.46730	1.74771	1.74771	0.010	19.11050	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.00000	1.28491	1.53336	0.010	28.49099	20.00000	Linear	*
79 Benzo(k)fluoranthene	1.87228	2.08900	2.08900	0.010	11.57534	20.00000	Averaged	
80 Benzo(a)pyrene	1.24477	1.34071	1.34071	0.010	7.70769	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	1.00000	0.95662	0.47233	0.010	-4.33759	20.00000	Quadratic	
83 Dibenzo(a,h)anthracene	1.00000	1.00358	0.57074	0.010	0.35817	20.00000	Linear	
84 Benzo(g,h,i)perylene	0.85837	0.95343	0.95343	0.010	11.07450	20.00000	Averaged	
30 2-Methylnaphthalene-D10	1.14569	1.31584	1.31584	0.010	14.85088	20.00000	Averaged	
52 Fluorene-D10	0.84986	0.87947	0.87947	0.010	3.48466	20.00000	Averaged	
69 Pyrene-D10	1.33700	1.42296	1.42296	0.010	6.42869	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : ND648.D
Instrument ID : GCMS-N

SDG : SG8999
Date Analyzed : 29-NOV-13
Time Analyzed : 11:52

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	34.1		
68	Less than 2.0% of mass 69	0.6	1.34	1
69	Less than 100.0% of mass 198	43.4		
70	Less than 2.0% of mass 69	0.4	0.88	1
127	40.0 - 60.0% of mass 198	58.3		
197	Less than 1.0% of mass 198	0.5		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.8		
275	10.0 - 30.0% of mass 198	20.8		
365	1.0 - 100.0% of mass 198	2.1		
441	0.0 - 100.0% of mass 443	8.7	79.94	2
442	40.0 - 100.0% of mass 198	57.1		
443	17.0 - 23.0% of mass 442	10.9	19.06	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG135356-2	N0954.D	11/29/13	12:10
Method Blank Sample	WG134819-1	N0955.D	11/29/13	12:54
Laboratory Control S	WG134819-2	N0957.D	11/29/13	14:20
Laboratory Control S	WG134819-3	N0958.D	11/29/13	15:04
004/5-SS1043-0.10.5	SG8999-2	N0968.D	11/29/13	22:11
004/5-SB1041-022.5	SG8999-3	N0969.D	11/29/13	22:53

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG135356-2 **Analytical Date:** 11/29/13 12:10
Lab File ID : N0954.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 11/19/13 09:18 11/19/13 15:09 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.97699	1.07470	1.07470	0.010	10.00149	20.00000	Averaged	
31 2-Methylnaphthalene	0.63217	0.75021	0.75021	0.010	18.67174	20.00000	Averaged	
42 Acenaphthylene	2.17367	2.12487	2.12487	0.010	-2.24536	20.00000	Averaged	
45 Acenaphthene	1.35194	1.34022	1.34022	0.010	-0.86653	20.01000	Averaged	
54 Fluorene	1.37877	1.38636	1.38636	0.010	0.54998	20.00000	Averaged	
64 Phenanthrene	1.24424	1.25432	1.25432	0.010	0.81018	20.00000	Averaged	
65 Anthracene	1.25025	1.31720	1.31720	0.010	5.35512	20.00000	Averaged	
68 Fluoranthene	1.05254	1.39384	1.39384	0.010	32.42606	20.01000	Averaged	*
70 Pyrene	2.37638	2.05097	2.05097	0.010	-13.69355	20.00000	Averaged	
72 Benzo(a)anthracene	1.22046	1.22499	1.22499	0.010	0.37131	20.00000	Averaged	
74 Chrysene	1.46730	1.59467	1.59467	0.010	8.68060	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.00000	1.09530	1.26642	0.010	9.52965	20.00000	Linear	
79 Benzo(k)fluoranthene	1.87228	1.69560	1.69560	0.010	-9.43680	20.00000	Averaged	
80 Benzo(a)pyrene	1.24477	1.23453	1.23453	0.010	-0.82248	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	1.00000	1.11234	0.55823	0.010	11.23440	20.00000	Quadratic	
83 Dibenzo(a,h)anthracene	1.00000	1.12018	0.65552	0.010	12.01752	20.00000	Linear	
84 Benzo(g,h,i)perylene	0.85837	0.91142	0.91142	0.010	6.18035	20.00000	Averaged	
30 2-Methylnaphthalene-D10	1.14569	1.23246	1.23246	0.010	7.57389	20.00000	Averaged	
52 Fluorene-D10	0.84986	0.88198	0.88198	0.010	3.77992	20.00000	Averaged	
69 Pyrene-D10	1.33700	1.19954	1.19954	0.010	-10.28174	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : ND649.D
Instrument ID : GCMS-N

SDG : SG8999
Date Analyzed : 30-NOV-13
Time Analyzed : 12:24

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	32.7		
68	Less than 2.0% of mass 69	0.6	1.43	1
69	Less than 100.0% of mass 198	42.4		
70	Less than 2.0% of mass 69	0.4	0.83	1
127	40.0 - 60.0% of mass 198	57.7		
197	Less than 1.0% of mass 198	1.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.1		
275	10.0 - 30.0% of mass 198	18.8		
365	1.0 - 100.0% of mass 198	2.2		
441	0.0 - 100.0% of mass 443	8.1	73.78	2
442	40.0 - 100.0% of mass 198	57.9		
443	17.0 - 23.0% of mass 442	11.0	18.96	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG135373-2	N0971.D	11/30/13	12:43
Laboratory Control S	WG134897-2	N0973.D	11/30/13	14:11
Laboratory Control S	WG134897-3	N0974.D	11/30/13	14:53
004/5-SB1058-0204	SG8999-4	N0975.D	11/30/13	15:37
Matrix Spike	WG134819-4	N0976.D	11/30/13	16:20
Matrix Spike Duplica	WG134819-5	N0977.D	11/30/13	17:03
004/5-SB1064-0204	SG8999-5	N0978.D	11/30/13	17:46
004/5-SB1064-0406	SG8999-6	N0979.D	11/30/13	18:29
004/5-SB1057-0304	SG8999-8	N0980.D	11/30/13	19:12
004/5-SB1057-0608	SG8999-9	N0981.D	11/30/13	19:55
004/5-SB1047-0204	SG8999-10	N0982.D	11/30/13	20:38
004/5-SB1047-0608	SG8999-11	N0983.D	11/30/13	21:21
TF2-SB-DUP05-1113	SG8999-14	N0984.D	11/30/13	22:04
004/5-SB1049-0204	SG8999-15	N0985.D	11/30/13	22:47
004/5-SB1049-0810	SG8999-16	N0986.D	11/30/13	23:29
004/5-SB1066-0203	SG8999-7	N0987.D	12/01/13	00:12

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG135373-2 **Analytical Date:** 11/30/13 12:43
Lab File ID : N0971.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 11/19/13 09:18 11/19/13 15:09 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.97699	1.06482	1.06482	0.010	8.98946	20.00000	Averaged	
31 2-Methylnaphthalene	0.63217	0.74752	0.74752	0.010	18.24676	20.00000	Averaged	
42 Acenaphthylene	2.17367	2.14523	2.14523	0.010	-1.30872	20.00000	Averaged	
45 Acenaphthene	1.35194	1.34905	1.34905	0.010	-0.21345	20.01000	Averaged	
54 Fluorene	1.37877	1.37724	1.37724	0.010	-0.11134	20.00000	Averaged	
64 Phenanthrene	1.24424	1.25303	1.25303	0.010	0.70650	20.00000	Averaged	
65 Anthracene	1.25025	1.29116	1.29116	0.010	3.27234	20.00000	Averaged	
68 Fluoranthene	1.05254	1.09221	1.09221	0.010	3.76915	20.01000	Averaged	
70 Pyrene	2.37638	2.05805	2.05805	0.010	-13.39560	20.00000	Averaged	
72 Benzo(a)anthracene	1.22046	1.22428	1.22428	0.010	0.31275	20.00000	Averaged	
74 Chrysene	1.46730	1.52910	1.52910	0.010	4.21184	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.00000	0.96396	1.08152	0.010	-3.60442	20.00000	Linear	
79 Benzo(k)fluoranthene	1.87228	1.70687	1.70687	0.010	-8.83484	20.00000	Averaged	
80 Benzo(a)pyrene	1.24477	1.20985	1.20985	0.010	-2.80507	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	1.00000	1.20438	0.60925	0.010	20.43821	20.00000	Quadratic	*
83 Dibenzo(a,h)anthracene	1.00000	1.21145	0.72189	0.010	21.14533	20.00000	Linear	*
84 Benzo(g,h,i)perylene	0.85837	0.97220	0.97220	0.010	13.26087	20.00000	Averaged	
30 2-Methylnaphthalene-D10	1.14569	1.30139	1.30139	0.010	13.59014	20.00000	Averaged	
52 Fluorene-D10	0.84986	0.86881	0.86881	0.010	2.22999	20.00000	Averaged	
69 Pyrene-D10	1.33700	1.27757	1.27757	0.010	-4.44569	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : ND650.D
Instrument ID : GCMS-N

SDG : SG8999
Date Analyzed : 01-DEC-13
Time Analyzed : 09:10

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	33.1		
68	Less than 2.0% of mass 69	0.8	1.92	1
69	Less than 100.0% of mass 198	41.9		
70	Less than 2.0% of mass 69	0.1	0.35	1
127	40.0 - 60.0% of mass 198	56.9		
197	Less than 1.0% of mass 198	0.5		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.4		
275	10.0 - 30.0% of mass 198	21.1		
365	1.0 - 100.0% of mass 198	2.1		
441	0.0 - 100.0% of mass 443	9.2	77.43	2
442	40.0 - 100.0% of mass 198	62.3		
443	17.0 - 23.0% of mass 442	11.9	19.07	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG135382-2	N0988.D	12/01/13	09:28
004/5-SB1038-0204	SG8999-17	N0993.D	12/01/13	13:01
004/5-SB1038-0810	SG8999-18	N0994.D	12/01/13	13:44
004/5-SB1031-0204	SG8999-19	N0995.D	12/01/13	14:26
004/5-SB1039-0406	SG8999-20	N0996.D	12/01/13	15:09
004/5-SB1031-0810	SG8999-21	N0997.D	12/01/13	15:52
004/5-SB1040-0204	SG8999-22	N0998.D	12/01/13	16:34
004/5-SB1040-0810	SG8999-23	N0999.D	12/01/13	17:17
004/5-SB1068-0204	SG8999-24	N1000.D	12/01/13	18:00
TF2-SB-DUP06-1113	SG8999-25	N1001.D	12/01/13	18:42
004/5-SB1065-0204	SG8999-26	N1002.D	12/01/13	19:25
004/5-SB1065-0608	SG8999-27	N1003.D	12/01/13	20:08

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG135382-2 **Analytical Date:** 12/01/13 09:28
Lab File ID : N0988.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 11/19/13 09:18 11/19/13 15:09 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
25 Naphthalene	0.97699	1.03954	1.03954	0.010	6.40227	20.00000	Averaged
31 2-Methylnaphthalene	0.63217	0.71581	0.71581	0.010	13.23072	20.00000	Averaged
42 Acenaphthylene	2.17367	2.15432	2.15432	0.010	-0.89028	20.00000	Averaged
45 Acenaphthene	1.35194	1.34223	1.34223	0.010	-0.71770	20.01000	Averaged
54 Fluorene	1.37877	1.44120	1.44120	0.010	4.52779	20.00000	Averaged
64 Phenanthrene	1.24424	1.24415	1.24415	0.010	-0.00770	20.00000	Averaged
65 Anthracene	1.25025	1.28368	1.28368	0.010	2.67354	20.00000	Averaged
68 Fluoranthene	1.05254	1.14777	1.14777	0.010	9.04796	20.01000	Averaged
70 Pyrene	2.37638	2.04252	2.04252	0.010	-14.04914	20.00000	Averaged
72 Benzo(a)anthracene	1.22046	1.30861	1.30861	0.010	7.22227	20.00000	Averaged
74 Chrysene	1.46730	1.44292	1.44292	0.010	-1.66168	20.00000	Averaged
78 Benzo(b)fluoranthene	1.00000	1.07472	1.23746	0.010	7.47244	20.00000	Linear
79 Benzo(k)fluoranthene	1.87228	1.64854	1.64854	0.010	-11.95001	20.00000	Averaged
80 Benzo(a)pyrene	1.24477	1.18045	1.18045	0.010	-5.16715	20.01000	Averaged
82 Indeno(1,2,3-cd)pyrene	1.00000	1.06949	0.53454	0.010	6.94944	20.00000	Quadratic
83 Dibenzo(a,h)anthracene	1.00000	1.02997	0.58993	0.010	2.99703	20.00000	Linear
84 Benzo(g,h,i)perylene	0.85837	0.75336	0.75336	0.010	-12.23370	20.00000	Averaged
30 2-Methylnaphthalene-D10	1.14569	1.21749	1.21749	0.010	6.26717	20.00000	Averaged
52 Fluorene-D10	0.84986	0.89265	0.89265	0.010	5.03589	20.00000	Averaged
69 Pyrene-D10	1.33700	1.26685	1.26685	0.010	-5.24743	20.00000	Averaged

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : ND652.D
Instrument ID : GCMS-N

SDG : SG8999
Date Analyzed : 02-DEC-13
Time Analyzed : 11:39

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	36.3		
68	Less than 2.0% of mass 69	0.6	1.25	1
69	Less than 100.0% of mass 198	45.9		
70	Less than 2.0% of mass 69	0.6	1.36	1
127	40.0 - 60.0% of mass 198	57.2		
197	Less than 1.0% of mass 198	1.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.3		
275	10.0 - 30.0% of mass 198	19.3		
365	1.0 - 100.0% of mass 198	2.3		
441	0.0 - 100.0% of mass 443	6.6	68.62	2
442	40.0 - 100.0% of mass 198	49.3		
443	17.0 - 23.0% of mass 442	9.6	19.54	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG135427-2	N1007.D	12/02/13	12:02
Method Blank Sample	WG134897-1RA2	N1008.D	12/02/13	12:46

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG135427-2 **Analytical Date:** 12/02/13 12:02
Lab File ID : N1007.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 11/19/13 09:18 11/19/13 15:09 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
25 Naphthalene	0.97699	1.06944	1.06944	0.010	9.46260	20.00000	Averaged
31 2-Methylnaphthalene	0.63217	0.70438	0.70438	0.010	11.42274	20.00000	Averaged
42 Acenaphthylene	2.17367	2.16828	2.16828	0.010	-0.24810	20.00000	Averaged
45 Acenaphthene	1.35194	1.35575	1.35575	0.010	0.28167	20.01000	Averaged
54 Fluorene	1.37877	1.38990	1.38990	0.010	0.80661	20.00000	Averaged
64 Phenanthrene	1.24424	1.30738	1.30738	0.010	5.07429	20.00000	Averaged
65 Anthracene	1.25025	1.32167	1.32167	0.010	5.71222	20.00000	Averaged
68 Fluoranthene	1.05254	1.13152	1.13152	0.010	7.50380	20.01000	Averaged
70 Pyrene	2.37638	2.34317	2.34317	0.010	-1.39747	20.00000	Averaged
72 Benzo(a)anthracene	1.22046	1.30111	1.30111	0.010	6.60781	20.00000	Averaged
74 Chrysene	1.46730	1.53960	1.53960	0.010	4.92757	20.00000	Averaged
78 Benzo(b)fluoranthene	1.00000	1.16327	1.36211	0.010	16.32664	20.00000	Linear
79 Benzo(k)fluoranthene	1.87228	1.72687	1.72687	0.010	-7.76663	20.00000	Averaged
80 Benzo(a)pyrene	1.24477	1.25195	1.25195	0.010	0.57714	20.01000	Averaged
82 Indeno(1,2,3-cd)pyrene	1.00000	1.11060	0.55727	0.010	11.06048	20.00000	Quadratic
83 Dibenzo(a,h)anthracene	1.00000	1.02806	0.58854	0.010	2.80600	20.00000	Linear
84 Benzo(g,h,i)perylene	0.85837	0.84949	0.84949	0.010	-1.03501	20.00000	Averaged
30 2-Methylnaphthalene-D10	1.14569	1.22220	1.22220	0.010	6.67820	20.00000	Averaged
52 Fluorene-D10	0.84986	0.84336	0.84336	0.010	-0.76400	20.00000	Averaged
69 Pyrene-D10	1.33700	1.39592	1.39592	0.010	4.40675	20.00000	Averaged

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : N0915.D
Instrument ID : GCMS-N
Matrix : AQ

SDG : SG8999
Lab Sample ID : WG134603-1
Date Extracted : 18-NOV-13
Date Analyzed : 25-NOV-13
Time Analyzed : 11:56

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134603-2	N0916.D	11/25/13	12:40
Laboratory Control S	WG134603-3	N0917.D	11/25/13	13:24
TF2-SB-RB03-1113	SG8999-12	N0930.D	11/25/13	22:46

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Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG134603-1
Client ID: Method Blank Sample
Project:
SDG: SG8999
Lab File ID: N0915.D

Sample Date:
Received Date:
Extract Date: 18-NOV-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG134603

Analysis Date: 25-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		76.4	%					
Fluorene-D10		83.6	%					
pyrene-d10		106.	%					

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LCS/LCSD Recovery Report

LCS ID: WG134603-2
LCSD ID: WG134603-3
Project:
SDG: SG8999
Report Date: 04-DEC-13
LCS File ID: N0916.D

Received Date:
Extract Date: 18-NOV-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG134603
LCSD File ID: N0917.D

Analysis Date: 25-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	2.00	1.27	63.5	1.39	69.5	ug/L	9	20	46-84
2-Methylnaphthalene	2.00	1.54	77.0	1.26	63.0	ug/L	20*	20	51-114
Acenaphthylene	2.00	1.26	63.0	1.28	64.0	ug/L	2	20	55-105
Acenaphthene	2.00	1.33	66.5	1.34	67.0	ug/L	1	20	53-90
Fluorene	2.00	1.31	65.5	1.35	67.5	ug/L	3	20	53-95
Phenanthrene	2.00	1.68	84.0	1.87	93.5	ug/L	11	20	73-100
Anthracene	2.00	1.79	89.5	1.92	96.0*	ug/L	7	20	70-95
Fluoranthene	2.00	1.86	93.0	2.15	108.	ug/L	14	20	81-109
Pyrene	2.00	1.62	81.0	1.48	74.0	ug/L	9	20	71-104
Benzo(a)anthracene	2.00	1.56	78.0	1.63	81.5	ug/L	4	20	70-110
Chrysene	2.00	1.89	94.5	1.97	98.5*	ug/L	4	20	70-95
Benzo(b)Fluoranthene	2.00	1.72	86.0	1.46	73.0	ug/L	16	20	67-102
Benzo(k)fluoranthene	2.00	1.64	82.0	1.82	91.0	ug/L	10	20	68-103
Benzo(a)pyrene	2.00	1.62	81.0	1.64	82.0	ug/L	1	20	63-98
Indeno(1,2,3-cd)pyrene	2.00	1.66	83.0	1.75	87.5	ug/L	5	20	61-112
Dibenzo(a,h)anthracene	2.00	1.68	84.0	1.70	85.0	ug/L	1	20	66-108
Benzo(g,h,i)perylene	2.00	1.94	97.0	1.94	97.0	ug/L	0	20	62-106
2-Methylnaphthalene-D10			65.5		56.9				43-92
Fluorene-D10			67.9		71.6				29-101
Pyrene-d10			90.1		81.8				53-166

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : N0955.D
Instrument ID : GCMS-N
Matrix : SL

SDG : SG8999
Lab Sample ID : WG134819-1
Date Extracted : 21-NOV-13
Date Analyzed : 29-NOV-13
Time Analyzed : 12:54

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134819-2	N0957.D	11/29/13	14:20
Laboratory Control S	WG134819-3	N0958.D	11/29/13	15:04
004/5-SS1043-0.10.5	SG8999-2	N0968.D	11/29/13	22:11
004/5-SB1041-022.5	SG8999-3	N0969.D	11/29/13	22:53
004/5-SB1058-0204	SG8999-4	N0975.D	11/30/13	15:37
Matrix Spike	WG134819-4	N0976.D	11/30/13	16:20
Matrix Spike Duplica	WG134819-5	N0977.D	11/30/13	17:03
004/5-SB1064-0204	SG8999-5	N0978.D	11/30/13	17:46
004/5-SB1064-0406	SG8999-6	N0979.D	11/30/13	18:29
004/5-SB1057-0304	SG8999-8	N0980.D	11/30/13	19:12
004/5-SB1057-0608	SG8999-9	N0981.D	11/30/13	19:55
004/5-SB1047-0204	SG8999-10	N0982.D	11/30/13	20:38
004/5-SB1047-0608	SG8999-11	N0983.D	11/30/13	21:21
TF2-SB-DUP05-1113	SG8999-14	N0984.D	11/30/13	22:04
004/5-SB1049-0204	SG8999-15	N0985.D	11/30/13	22:47
004/5-SB1049-0810	SG8999-16	N0986.D	11/30/13	23:29
004/5-SB1066-0203	SG8999-7	N0987.D	12/01/13	00:12

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG134819-1
Client ID: Method Blank Sample
Project:
SDG: SG8999
Lab File ID: N0955.D

Sample Date:
Received Date:
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	4.9	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	1.8	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	J	4.0	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	1.5	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	J	2.2	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	J	2.9	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		64.1	%					
Fluorene-D10		64.2	%					
Pyrene-D10		81.6	%					

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LCS/LCSD Recovery Report

LCS ID: WG134819-2
LCSD ID: WG134819-3
Project:
SDG: SG8999
Report Date: 04-DEC-13
LCS File ID: N0957.D

Received Date:
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819
LCSD File ID: N0958.D

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	41.9	62.8	40.6	60.9	ug/Kgdrywt	3	30	10-129
2-Methylnaphthalene	66.7	37.6	56.4	42.2	63.3	ug/Kgdrywt	12	30	10-152
Acenaphthylene	66.7	39.5	59.2	33.6	50.4	ug/Kgdrywt	16	30	25-94
Acenaphthene	66.7	39.7	59.5	36.7	55.0	ug/Kgdrywt	8	30	33-98
Fluorene	66.7	44.8	67.2	40.6	60.9	ug/Kgdrywt	10	30	40-92
Phenanthrene	66.7	68.3	102.*	55.0	82.4	ug/Kgdrywt	22	30	46-96
Anthracene	66.7	51.6	77.4	50.7	76.0	ug/Kgdrywt	2	30	34-96
Fluoranthene	66.7	96.3	144.*	52.3	78.4	ug/Kgdrywt	59*	30	38-116
Pyrene	66.7	61.8	92.6	48.8	73.2	ug/Kgdrywt	24	30	35-111
Benzo(a)anthracene	66.7	74.3	111.*	48.2	72.3	ug/Kgdrywt	43*	30	48-100
Chrysene	66.7	70.8	106.*	51.9	77.8	ug/Kgdrywt	31*	30	46-101
Benzo(b)Fluoranthene	66.7	83.3	125.*	51.9	77.8	ug/Kgdrywt	46*	30	53-100
Benzo(k)fluoranthene	66.7	51.6	77.4	42.6	63.9	ug/Kgdrywt	19	30	49-96
Benzo(a)pyrene	66.7	81.3	122.*	40.3	60.4*	ug/Kgdrywt	67*	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	85.0	127.*	59.0	88.4	ug/Kgdrywt	36*	30	50-105
Dibenzo(a,h)anthracene	66.7	50.7	76.0	56.9	85.3	ug/Kgdrywt	12	30	55-105
Benzo(g,h,i)perylene	66.7	38.0	57.0	39.3	58.9	ug/Kgdrywt	3	30	53-103
2-Methylnaphthalene-D10			67.7		67.9				19-94
Fluorene-D10			67.3		66.2				20-96
Pyrene-D10			73.0		74.6				31-128

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MS/MSD Recovery Report

MS ID: WG134819-4
MSD ID: WG134819-5
Sample ID: SG8999-4
Client ID: 004/5-SB1058-0204
Project:
SDG: SG8999
MS File ID: N0976.D

Received Date:
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819
Report Date: 04-DEC-13
MSD File ID: N0977.D

Analysis Date: 30-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	68.7	70.1	ug/Kgdrywt	U10.	40.	43.	58.2	61.5	7	30	10-129
2-Methylnaphthalene	68.7	70.1	ug/Kgdrywt	U10.	36.	40.	53.1	56.6	8	30	10-152
Acenaphthylene	68.7	70.1	ug/Kgdrywt	U10.	32.	38.	47.1	54.1	16	30	25-94
Acenaphthene	68.7	70.1	ug/Kgdrywt	U10.	37.	40.	53.2	57.5	10	30	33-98
Fluorene	68.7	70.1	ug/Kgdrywt	U10.	36.	42.	53.1	59.5	13	30	40-92
Phenanthrene	68.7	70.1	ug/Kgdrywt	JL2.5	43.	53.	59.4	71.9	20	30	46-96
Anthracene	68.7	70.1	ug/Kgdrywt	U10.	39.	46.	56.3	65.6	17	30	34-96
Fluoranthene	68.7	70.1	ug/Kgdrywt	JL2.7	40.	59.	54.9	80.1	37*	30	38-116
Pyrene	68.7	70.1	ug/Kgdrywt	U10.	35.	52.	50.9	74.6	40*	30	35-111
Benzo(a)anthracene	68.7	70.1	ug/Kgdrywt	ULM10.	27.	40.	39.4*	57.2	39*	30	48-100
Chrysene	68.7	70.1	ug/Kgdrywt	JLM1.9	30.	40.	40.3*	55.0	31*	30	46-101
Benzo(b)Fluoranthene	68.7	70.1	ug/KgdrywtJ	LMM8.3	21.	29.	19.0*	29.0*	29	30	53-100
Benzo(k)fluoranthene	68.7	70.1	ug/KgdrywtU	MM10.	18.	20.	25.5*	29.0*	15	30	49-96
Benzo(a)pyrene	68.7	70.1	ug/KgdrywtJ	LLMM1	13.	22.	18.9*	31.2*	51*	30	61-101
Indeno(1,2,3-cd)pyrene	68.7	70.1	ug/KgdrywtU	LMM1C	11.	28.	16.0*	39.5*	86*	30	50-105
Dibenzo(a,h)anthracene	68.7	70.1	ug/KgdrywtU	MM10.	16.	16.	23.3*	23.0*	1	30	55-105
Benzo(g,h,i)perylene	68.7	70.1	ug/KgdrywtU	MM10.	12.	8.8	17.0*	12.6*	28	30	53-103
2-Methylnaphthalene-D10							65.4	68.9			19-94
Fluorene-D10							56.5	62.2			20-96
Pyrene-D10							54.4	65.9			31-128

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : N1008.D
Instrument ID : GCMS-N
Matrix : SL

SDG : SG8999
Lab Sample ID : WG134897-1RA2
Date Extracted : 22-NOV-13
Date Analyzed : 02-DEC-13
Time Analyzed : 12:46

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134897-2	N0973.D	11/30/13	14:11
Laboratory Control S	WG134897-3	N0974.D	11/30/13	14:53
004/5-SB1038-0204	SG8999-17	N0993.D	12/01/13	13:01
004/5-SB1038-0810	SG8999-18	N0994.D	12/01/13	13:44
004/5-SB1031-0204	SG8999-19	N0995.D	12/01/13	14:26
004/5-SB1039-0406	SG8999-20	N0996.D	12/01/13	15:09
004/5-SB1031-0810	SG8999-21	N0997.D	12/01/13	15:52
004/5-SB1040-0204	SG8999-22	N0998.D	12/01/13	16:34
004/5-SB1040-0810	SG8999-23	N0999.D	12/01/13	17:17
004/5-SB1068-0204	SG8999-24	N1000.D	12/01/13	18:00
TF2-SB-DUP06-1113	SG8999-25	N1001.D	12/01/13	18:42
004/5-SB1065-0204	SG8999-26	N1002.D	12/01/13	19:25
004/5-SB1065-0608	SG8999-27	N1003.D	12/01/13	20:08

Report of Analytical Results

Client:
Lab ID: WG134897-1RA2
Client ID: Method Blank Sample
Project:
SDG: SG8999
Lab File ID: N1008.D

Sample Date:
Received Date:
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134897

Analysis Date: 02-DEC-13
Analyst: jJCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		33.0	%					
Fluorene-D10		30.2	%					
Pyrene-D10		42.6	%					

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG134897-2
LCSD ID: WG134897-3
Project:
SDG: SG8999
Report Date: 04-DEC-13
LCS File ID: N0973.D

Received Date:
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134897
LCSD File ID: N0974.D

Analysis Date: 30-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	32.3	48.4	34.3	51.4	ug/Kgdrywt	6	30	10-129
2-Methylnaphthalene	66.7	35.7	53.5	31.8	47.7	ug/Kgdrywt	12	30	10-152
Acenaphthylene	66.7	29.7	44.5	30.1	45.1	ug/Kgdrywt	1	30	25-94
Acenaphthene	66.7	32.2	48.3	32.8	49.2	ug/Kgdrywt	2	30	33-98
Fluorene	66.7	36.4	54.6	36.6	54.9	ug/Kgdrywt	0	30	40-92
Phenanthrene	66.7	44.0	66.0	43.0	64.5	ug/Kgdrywt	2	30	46-96
Anthracene	66.7	46.5	69.7	44.3	66.4	ug/Kgdrywt	5	30	34-96
Fluoranthene	66.7	48.4	72.6	45.2	67.8	ug/Kgdrywt	7	30	38-116
Pyrene	66.7	41.9	62.8	38.5	57.7	ug/Kgdrywt	8	30	35-111
Benzo(a)anthracene	66.7	44.2	66.3	42.6	63.9	ug/Kgdrywt	4	30	48-100
Chrysene	66.7	49.2	73.8	46.5	69.7	ug/Kgdrywt	6	30	46-101
Benzo(b)Fluoranthene	66.7	42.2	63.3	41.7	62.5	ug/Kgdrywt	1	30	53-100
Benzo(k)fluoranthene	66.7	43.4	65.1	40.7	61.0	ug/Kgdrywt	6	30	49-96
Benzo(a)pyrene	66.7	42.7	64.0	41.2	61.8	ug/Kgdrywt	4	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	52.2	78.3	51.5	77.2	ug/Kgdrywt	1	30	50-105
Dibenzo(a,h)anthracene	66.7	52.1	78.1	49.0	73.5	ug/Kgdrywt	6	30	55-105
Benzo(g,h,i)perylene	66.7	36.9	55.3	33.9	50.8*	ug/Kgdrywt	8	30	53-103
2-Methylnaphthalene-D10			60.8		60.6				19-94
Fluorene-D10			59.1		55.3				20-96
Pyrene-D10			73.5		68.2				31-128

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG134654-4
Lab File ID : N0799.D

SDG: SG8999
Analytical Date: 11/19/13 09:18
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4		NAPHTHALENE-D8		ACENAPHTHENE-D10	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	32791	9.04	97502	11.82	38165	15.92
	Upper Limit	65582	9.54	195004	12.32	76330	16.42
	Lower Limit	16395.5	8.54	48751	11.32	19082.5	15.42
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG135106-2	35665	9.02	117769	11.81	48189	15.90
Method Blank Sample	WG134603-1	31210	9.04	96618	11.84	31211	15.92
Laboratory Control S	WG134603-2	30499	9.02	98190	11.81	40888	15.90
Laboratory Control S	WG134603-3	31440	9.02	106017	11.81	49482	15.90
TF2-SB-RB03-1113	SG8999-12	21179	9.02	70410	11.82	31963	15.90
Continuing Calibrati	WG135356-2	20999	9.01	76350	11.81	35843	15.89
Method Blank Sample	WG134819-1	20621	9.01	74881	11.81	35541	15.89
Laboratory Control S	WG134819-2	20344	9.01	73312	11.79	36278	15.89
Laboratory Control S	WG134819-3	19495	9.01	68913	11.81	32707	15.89
004/5-SS1043-0.10.5	SG8999-2	20592	9.01	73758	11.81	36289	15.89
004/5-SB1041-022.5	SG8999-3	21817	9.01	82210	11.81	38443	15.89
Continuing Calibrati	WG135373-2	18871	9.01	66999	11.79	30113	15.89
Laboratory Control S	WG134897-2	18044	9.01	63854	11.79	29454	15.89
Laboratory Control S	WG134897-3	20787	9.01	74927	11.79	34258	15.88
004/5-SB1058-0204	SG8999-4	20525	9.01	73237	11.81	33484	15.89
Matrix Spike	WG134819-4	20623	9.00	72940	11.79	34068	15.88
Matrix Spike Duplica	WG134819-5	17428	9.00	62614	11.79	29323	15.88
004/5-SB1064-0204	SG8999-5	21383	9.01	74130	11.81	35837	15.89
004/5-SB1064-0406	SG8999-6	19901	9.01	71608	11.81	33898	15.89
004/5-SB1057-0304	SG8999-8	20687	9.00	74346	11.81	34197	15.89
004/5-SB1057-0608	SG8999-9	19879	9.01	72690	11.81	34949	15.89
004/5-SB1047-0204	SG8999-10	20999	9.01	74779	11.81	35248	15.89
004/5-SB1047-0608	SG8999-11	19545	9.01	68334	11.81	32467	15.89
TF2-SB-DUP05-1113	SG8999-14	19588	9.01	69311	11.81	33303	15.89
004/5-SB1049-0204	SG8999-15	21396	9.01	78595	11.81	36159	15.89
004/5-SB1049-0810	SG8999-16	21435	9.01	73838	11.81	34665	15.89
004/5-SB1066-0203	SG8999-7	18844	9.01	69377	11.81	34108	15.89

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG134654-4
Lab File ID : N0799.D

SDG: SG8999
Analytical Date: 11/19/13 09:18
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	50068	19.40	24899	25.68	19035	28.83
	Upper Limit	100136	19.90	49798	26.18	38070	29.33
	Lower Limit	25034	18.90	12449.5	25.18	9517.5	28.33
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG135106-2	61654	19.39	32697	25.66	19339	28.80
Method Blank Sample	WG134603-1	40052	19.39	25928	25.66	14110	28.80
Laboratory Control S	WG134603-2	45174	19.39	25119	25.66	23486	28.80
Laboratory Control S	WG134603-3	59522	19.39	37636	25.66	18723	28.80
TF2-SB-RB03-1113	SG8999-12	43698	19.38	24046	25.66	15646	28.80
Continuing Calibrati	WG135356-2	50535	19.38	38873	25.65	19867	28.78
Method Blank Sample	WG134819-1	49938	19.38	25467	25.65	18026	28.78
Laboratory Control S	WG134819-2	54006	19.38	44443	25.65	31344	28.78
Laboratory Control S	WG134819-3	46688	19.38	24486	25.65	17723	28.78
004/5-SS1043-0.10.5	SG8999-2	51323	19.36	26793	25.63	18311	28.76
004/5-SB1041-022.5	SG8999-3	54612	19.36	28682	25.63	20660	28.78
Continuing Calibrati	WG135373-2	40179	19.38	23526	25.63	19531	28.78
Laboratory Control S	WG134897-2	40251	19.36	22132	25.63	16675	28.76
Laboratory Control S	WG134897-3	46979	19.36	26405	25.63	20134	28.76
004/5-SB1058-0204	SG8999-4	45179	19.38	25580	25.63	19448	28.76
Matrix Spike	WG134819-4	48357	19.36	25973	25.63	18989	28.76
Matrix Spike Duplica	WG134819-5	42872	19.36	23569	25.63	17226	28.76
004/5-SB1064-0204	SG8999-5	49713	19.36	26667	25.63	19801	28.76
004/5-SB1064-0406	SG8999-6	47341	19.36	26699	25.63	18193	28.76
004/5-SB1057-0304	SG8999-8	48679	19.36	26416	25.63	18668	28.76
004/5-SB1057-0608	SG8999-9	47984	19.38	23812	25.63	17613	28.76
004/5-SB1047-0204	SG8999-10	49906	19.36	27165	25.64	20540	28.76
004/5-SB1047-0608	SG8999-11	45532	19.38	24115	25.63	17630	28.76
TF2-SB-DUP05-1113	SG8999-14	46628	19.36	24940	25.63	17733	28.76
004/5-SB1049-0204	SG8999-15	51360	19.36	26456	25.63	19961	28.76
004/5-SB1049-0810	SG8999-16	48107	19.36	26563	25.63	19313	28.76
004/5-SB1066-0203	SG8999-7	47737	19.36	23302	25.63	16427	28.76

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG134654-4
Lab File ID : N0799.D

SDG: SG8999
Analytical Date: 11/19/13 09:18
Instrument ID: GCMS-N

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG134654-4
Lab File ID : N0799.D

SDG: SG8999
Analytical Date: 11/19/13 09:18
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	32791		9.04		97502		11.82		38165		15.92	
	Upper Limit	65582		9.54		195004		12.32		76330		16.42	
	Lower Limit	16395.5		8.54		48751		11.32		19082.5		15.42	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG135382-2	22894		9.01		83527		11.79		36998		15.88	
004/5-SB1038-0204	SG8999-17	25988		9.01		91109		11.81		44944		15.89	
004/5-SB1038-0810	SG8999-18	24189		9.01		88135		11.81		42817		15.88	
004/5-SB1031-0204	SG8999-19	25002		9.01		89185		11.81		40976		15.89	
004/5-SB1039-0406	SG8999-20	24194		9.01		89745		11.81		41810		15.89	
004/5-SB1031-0810	SG8999-21	26574		9.01		93583		11.81		43068		15.89	
004/5-SB1040-0204	SG8999-22	25480		9.01		90964		11.81		41562		15.89	
004/5-SB1040-0810	SG8999-23	25165		9.01		92917		11.81		44684		15.89	
004/5-SB1068-0204	SG8999-24	26679		9.01		97945		11.81		45764		15.89	
TF2-SB-DUP06-1113	SG8999-25	28463		9.01		104127		11.81		49131		15.89	
004/5-SB1065-0204	SG8999-26	26756		9.01		98366		11.81		46727		15.88	
004/5-SB1065-0608	SG8999-27	28127		9.01		106561		11.81		49909		15.89	
Continuing Calibrati	WG135427-2	25053		9.00		84662		11.79		36123		15.88	
Method Blank Sample	WG134897-1RA2	41648		9.00		138367		11.79		58450		15.88	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG134654-4
Lab File ID : N0799.D

SDG: SG8999
Analytical Date: 11/19/13 09:18
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area	# RT #	Area	# RT #	Area	# RT #
	Std .	50068	19.40	24899	25.68	19035	28.83
	Upper Limit	100136	19.90	49798	26.18	38070	29.33
	Lower Limit	25034	18.90	12449.5	25.18	9517.5	28.33
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG135382-2	53368	19.36	32355	25.63	23139	28.76
004/5-SB1038-0204	SG8999-17	62653	19.36	34419	25.63	20937	28.76
004/5-SB1038-0810	SG8999-18	58436	19.36	28330	25.64	17376	28.76
004/5-SB1031-0204	SG8999-19	59867	19.36	29497	25.63	18176	28.76
004/5-SB1039-0406	SG8999-20	57604	19.36	28888	25.63	18354	28.76
004/5-SB1031-0810	SG8999-21	60976	19.36	36058	25.63	24734	28.76
004/5-SB1040-0204	SG8999-22	58895	19.36	33042	25.63	20554	28.76
004/5-SB1040-0810	SG8999-23	64597	19.36	29695	25.63	18088	28.76
004/5-SB1068-0204	SG8999-24	67202	19.36	33995	25.63	21625	28.76
TF2-SB-DUP06-1113	SG8999-25	70807	19.36	35155	25.63	22360	28.76
004/5-SB1065-0204	SG8999-26	69530	19.36	36642	25.63	22715	28.76
004/5-SB1065-0608	SG8999-27	73048	19.36	38019	25.63	21144	28.76
Continuing Calibrati	WG135427-2	49440	19.36	25802	25.62	17524	28.76
Method Blank Sample	WG134897-1RA2	76377	19.36	35669	25.62	21651	28.76

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

SAMPLE ID TF2-004/5-SB1066-0203

SAMPLE CALC IS AREA	DILUTION	COMPOUND OF INTEREST / IS AMOUNT (NG)	Final Extract Volume (UL)	AVE RRF	CONCENTRATION PPB
47737	1	566913 / 0.8	1000	1.0525	299.13
		% Solids	**Sample Volume (Grams)**		
		0.961	31.4		

Fluoranthene = 300 ug/kg

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-7
Client ID: 004/5-SB1066-0203
Project: NAVSTA Newport CTO WE.
SDG: SG8999
Lab File ID: N0987.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 01-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	4.3	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene	J	3.3	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	6.3	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene	J	15.	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene	J	15.	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene	L	170	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene		35.	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene	L	300	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene		240	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene	L	170	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene	L	160	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene	L	210	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene		62.	ug/Kgdrywt	1	20	20.	3.1	9.9
Benzo(a)pyrene	LL	140	ug/Kgdrywt	1	20	20.	3.3	9.9
Indeno(1,2,3-cd)pyrene	L	160	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene		33.	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene		66.	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		79.5	%					
Fluorene-D10		73.6	%					
Pyrene-D10		70.3	%					

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Data File: \\target_server\GG\chem\gcms-n.i\N113013.b\N0987.D
Report Date: 04-Dec-2013 08:32

Katahdin Analytical Services

Data file : \\target_server\GG\chem\gcms-n.i\N113013.b\N0987.D
Lab Smp Id: SG8999-7 Client Smp ID: 004/5-SB1066-0203
Inj Date : 01-DEC-2013 00:12
Operator : JCG Inst ID: gcms-n.i
Smp Info : SG8999-7
Misc Info : WG135373,WG134819,WG134654-4
Comment :
Method : \\target_server\gg\chem\gcms-n.i\N113013.b\NSPSIM80.m
Meth Date : 30-Nov-2013 13:19 cgomez Quant Type: ISTD
Cal Date : 19-NOV-2013 15:09 Cal File: N0807.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12
Processing Host: V200T1

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03140	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	3.892	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW C
* 8	1,4-Dichlorobenzene-D4	152	9.010	9.010	(1.000)	18844	0.80000		
* 24	Naphthalene-D8	136	11.807	11.790	(1.000)	69377	0.80000		
25	Naphthalene	128	11.841	11.841	(1.003)	11050	0.13042	4.32(a)	
$ 30	2-Methylnaphthalene-D10	152	13.398	13.398	(0.843)	77630	1.58926	52.7	
31	2-Methylnaphthalene	142	13.473	13.473	(1.141)	5389	0.09830	3.26(a)	
42	Acenaphthylene	152	15.532	15.532	(0.978)	17580	0.18970	6.28(a)	
* 44	Acenaphthene-D10	164	15.888	15.888	(1.000)	34108	0.80000		
45	Acenaphthene	153	15.954	15.954	(1.004)	25446	0.44147	14.6(a)	
$ 52	Fluorene-D10	174	17.120	17.120	(1.078)	53345	1.47225	48.8(Q)	
54	Fluorene	166	17.183	17.183	(1.082)	27089	0.46082	15.3(a)	
* 63	Phenanthrene-D10	188	19.360	19.375	(1.000)	47737	0.80000		
64	Phenanthrene	178	19.405	19.420	(1.002)	379641	5.11332	169	
65	Anthracene	178	19.540	19.540	(1.009)	78188	1.04804	34.7	
68	Fluoranthene	202	22.220	22.233	(1.148)	566913	9.02636	299	
$ 69	Pyrene-D10	212	22.688	22.701	(0.885)	54834	1.40804	46.6	
70	Pyrene	202	22.726	22.739	(0.887)	500877	7.23624	240	JP 9:08 am, Dec 04, 2013
72	Benzo(a)anthracene	228	25.607	25.621	(0.999)	183448	5.16042	171	
* 73	Chrysene-D12	240	25.634	25.634	(1.000)	23302	0.80000		
74	Chrysene	228	25.688	25.688	(1.002)	208492	4.87829	162	
78	Benzo(b)fluoranthene	252	28.008	28.008	(0.974)	174712	6.23961	207(M)	M3

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG8999

Client Sample ID	Lab Sample ID	Col. ID	NTD	#	OTP	#
TF2-SB-RB03-1113	SG8999-12	A	102.		97.6	
Method Blank Sample	WG134676-1	A	107.		90.0	
Laboratory Control S	WG134676-2	A	90.0		78.0	*
Laboratory Control S	WG134676-3	A	96.7		84.0	

		QC Limits
OTP	O-TERPHENYL	82-142
NTD	N-TRIACONTANE-D62	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8999

Client Sample ID	Lab Sample ID	Col. ID	NTD	#	OTP	#
004/5-SB1040-0810	SG8999-23	A	98.9		90.6	
004/5-SB1065-0608	SG8999-27	A	98.0		101.	
TF2-SB-DUP07-1113	SG8999-28	A	102.		89.4	
004/5-SB1058-0204	SG8999-4	A	91.1		89.8	
Method Blank Sample	WG134896-1	A	95.0		84.8	
Laboratory Control S	WG134896-2	A	92.0		81.8	
Laboratory Control S	WG134896-3	A	79.0		72.7	
Matrix Spike	WG134896-4	A	89.2		83.3	
Matrix Spike Duplica	WG134896-5	A	96.2		89.8	

		QC Limits
OTP	O-TERPHENYL	62-109
NTD	N-TRIACONTANE-D62	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Instrument ID : GC10

SDG : SG8999
Column ID : A

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	OTP	NTD	
Initial Calibration	WG135417-3	11/27/13	18:47	9.82	14.72	
Initial Calibration	WG135417-5	11/27/13	19:26	9.819	14.72	
Initial Calibration	WG135417-4	11/27/13	20:05	9.82	14.72	
Initial Calibration	WG135417-2	11/27/13	20:44	9.821	14.72	
Initial Calibration	WG135417-1	11/27/13	21:23	9.822	14.72	
Independent Source	WG135417-6	11/27/13	22:02	9.819	14.72	
Method Blank Sample	WG134676-1	11/27/13	22:41	9.8	14.71	
Laboratory Control S	WG134676-2	11/27/13	23:20	9.8	14.71	
Laboratory Control S	WG134676-3	11/27/13	23:59	9.8	14.71	
Method Blank Sample	WG134896-1	11/28/13	00:38	9.799	14.71	
Laboratory Control S	WG134896-2	11/28/13	01:17	9.799	14.71	
Laboratory Control S	WG134896-3	11/28/13	01:56	9.799	14.71	
TF2-SB-RB03-1113	SG8999-12	11/28/13	03:14	9.799	14.71	
004/5-SB1058-0204	SG8999-4	11/28/13	03:53	9.799	14.71	
Continuing Calibrati	WG135417-7	11/28/13	05:49	9.817	14.72	
Continuing Calibrati	WG135417-8	12/04/13	11:58	9.814	14.71	
004/5-SB1040-0810	SG8999-23	12/04/13	13:17	9.793	14.70	
004/5-SB1065-0608	SG8999-27	12/04/13	13:57	9.793	14.70	
TF2-SB-DUP07-1113	SG8999-28	12/04/13	14:37	9.793	14.70	
Matrix Spike	WG134896-4	12/04/13	15:16	9.792	14.70	
Matrix Spike Duplica	WG134896-5	12/04/13	15:56	9.793	14.70	
Continuing Calibrati	WG135417-9	12/04/13	20:31	9.812	14.71	

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File IDs : AGK10409.D AGK10408.D AGK10405.D AGK10407.D AGK10406.D

SDG: SG8999
Instrument ID: GC10
Column ID: A
Calibration Date(s): 27-NOV-13 18:47, 27-NOV-13 21:23

	Level 1	Level 2	Level 3	Level 4	Level 5		Crv					Max	
	5.0000	20.0000	50.0000	100.0000	200.0000		New	b	m1	m2	%RSD	%RSD	
Petroleum Range Organic	3207401	11948369	27679023	57859927	111741030		LNR	-13.04539	32919		0.99964	0.99000	M
C-8	121120	558480	1472757	3322274	6528682		LNR	1.93175	33030		0.99918	0.99000	O
C-10	160678	683433	1634466	3407465	6722680		LNR	0.13169	33694		0.99987	0.99000	O
C-12	162526	706230	1651958	3437478	6748957		LNR	-0.13544	33812		0.99983	0.99000	O
C-14	166896	693775	1638710	3428968	6710379		LNR	-0.12142	33638		0.99980	0.99000	O
C-16	172145	697117	1644337	3433083	6683547		LNR	-0.33321	33502		0.99976	0.99000	O
C-18	195302	718285	1686904	3509892	6811160		LNR	-0.65127	34102		0.99973	0.99000	O
C-20	195203	730680	1695812	3514886	6760313		LNR	-0.99214	33854		0.99960	0.99000	O
C-22	203588	720719	1703069	3537520	6793044		LNR	-0.96059	34031		0.99957	0.99000	O
C-24	209421	709959	1579161	3570011	6734469		LNR	-0.46183	33891		0.99855	0.99000	O
C-26	210392	712774	1577799	3275178	6197846		LNR	-1.90914	30984		0.99919	0.99000	O
C-28	220739	741653	1627095	3348042	6342775		LNR	-2.12681	31670		0.99922	0.99000	O
C-30	204421	711161	1590346	3361671	6370018		LNR	-1.42418	31907		0.99919	0.99000	O
C-32	177802	705436	1616693	3364549	6473168		LNR	-0.91008	32428		0.99957	0.99000	O
C-34	191630	711417	1644515	3384457	6565358		LNR	-0.94350	32831		0.99974	0.99000	O
C-36	212813	744703	1719951	3434607	6645531		LNR	-1.64403	33148		0.99970	0.99000	O
C-38	183763	691910	1617310	3318770	6418918		LNR	-0.96332	32120		0.99971	0.99000	O
C-40	218956	710628	1578140	3211069	6234178		LNR	-1.67468	31043		0.99970	0.99000	O
O-Terphenyl	9478875	9480027	9159104	9354207	8933467		LNR	0.63587	37238		0.99695	0.99000	
n-Triacontane-D62	8469343	8548927	7964650	8243019	7927193		LNR	1.41469	27592		0.99434	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG135417-7 **Analytical Date:** 11/28/13 05:49
Lab File ID : AGK10422.D **Instrument ID:** GC10
Initial Calibration Date(s): 11/27/13 18:47 11/27/13 21:23 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	878	34524	0.010	3.34593	25.00000	Linear
2 C-8	50.00000	50.79563	32279	0.010	1.59125	25.00000	Linear
3 C-10	50.00000	51.10112	34348	0.010	2.20225	25.00000	Linear
4 C-12	50.00000	51.17435	34698	0.010	2.34869	25.00000	Linear
5 C-14	50.00000	51.47712	34713	0.010	2.95425	25.00000	Linear
6 C-16	50.00000	51.34084	34624	0.010	2.68168	25.00000	Linear
8 C-18	50.00000	51.80017	35774	0.010	3.60035	25.00000	Linear
10 C-20	50.00000	52.85735	36461	0.010	5.71469	25.00000	Linear
11 C-22	50.00000	53.17476	36846	0.010	6.34951	25.00000	Linear
12 C-24	50.00000	49.82075	34083	0.010	-0.35849	25.00000	Linear
13 C-26	50.00000	52.69358	33836	0.010	5.38717	25.00000	Linear
14 C-28	50.00000	52.66203	34703	0.010	5.32406	25.00000	Linear
16 C-30	50.00000	51.43649	33732	0.010	2.87298	25.00000	Linear
17 C-32	50.00000	51.92998	34270	0.010	3.85996	25.00000	Linear
18 C-34	50.00000	51.58385	34490	0.010	3.16770	25.00000	Linear
19 C-36	50.00000	51.46142	35207	0.010	2.92284	25.00000	Linear
20 C-38	50.00000	53.62177	35066	0.010	7.24354	25.00000	Linear
21 C-40	50.00000	49.50917	31778	0.010	-0.98167	25.00000	Linear
9 O-Terphenyl	250	260	38627	0.010	3.98443	25.00000	Linear
15 n-Triacontane-D62	300	307	28120	0.010	2.38563	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG135417-8 **Analytical Date:** 12/04/13 11:58
Lab File ID : AGL10038.D **Instrument ID:** GC10
Initial Calibration Date(s): 11/27/13 18:47 11/27/13 21:23 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	886	34837	0.010	4.27615	25.00000	Linear
2 C-8	50.00000	52.16436	33183	0.010	4.32873	25.00000	Linear
3 C-10	50.00000	52.66967	35405	0.010	5.33934	25.00000	Linear
4 C-12	50.00000	52.91373	35874	0.010	5.82747	25.00000	Linear
5 C-14	50.00000	52.92267	35686	0.010	5.84533	25.00000	Linear
6 C-16	50.00000	53.14300	35831	0.010	6.28600	25.00000	Linear
8 C-18	50.00000	53.17314	36711	0.010	6.34628	25.00000	Linear
10 C-20	50.00000	53.10506	36628	0.010	6.21011	25.00000	Linear
11 C-22	50.00000	52.93845	36685	0.010	5.87689	25.00000	Linear
12 C-24	50.00000	49.57437	33916	0.010	-0.85125	25.00000	Linear
13 C-26	50.00000	52.57665	33764	0.010	5.15331	25.00000	Linear
14 C-28	50.00000	52.61628	34674	0.010	5.23256	25.00000	Linear
16 C-30	50.00000	51.51137	33780	0.010	3.02273	25.00000	Linear
17 C-32	50.00000	52.64948	34737	0.010	5.29896	25.00000	Linear
18 C-34	50.00000	52.04981	34796	0.010	4.09963	25.00000	Linear
19 C-36	50.00000	50.21900	34383	0.010	0.43801	25.00000	Linear
20 C-38	50.00000	51.37121	33620	0.010	2.74243	25.00000	Linear
21 C-40	50.00000	50.74904	32548	0.010	1.49807	25.00000	Linear
9 O-Terphenyl	250	268	39892	0.010	7.38134	25.00000	Linear
15 n-Triacontane-D62	300	310	28412	0.010	3.44501	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG135417-9 **Analytical Date:** 12/04/13 20:31
Lab File ID : AGL10051.D **Instrument ID:** GC10
Initial Calibration Date(s): 11/27/13 18:47 11/27/13 21:23 **Column ID:** A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	376	37676	0.010	10.59625	25.00000	Linear
2 C-8	20.00000	20.50599	30675	0.010	2.52996	25.00000	Linear
3 C-10	20.00000	22.74703	38100	0.010	13.73516	25.00000	Linear
4 C-12	20.00000	23.06340	39221	0.010	15.31702	25.00000	Linear
5 C-14	20.00000	22.72279	38422	0.010	13.61397	25.00000	Linear
6 C-16	20.00000	22.79374	38740	0.010	13.96871	25.00000	Linear
8 C-18	20.00000	22.43814	39370	0.010	12.19068	25.00000	Linear
10 C-20	20.00000	21.98571	38895	0.010	9.92854	25.00000	Linear
11 C-22	20.00000	22.88499	40575	0.010	14.42496	25.00000	Linear
12 C-24	20.00000	21.79874	37722	0.010	8.99369	25.00000	Linear
13 C-26	20.00000	22.25880	37441	0.010	11.29402	25.00000	Linear
14 C-28	20.00000	22.58621	39133	0.010	12.93103	25.00000	Linear
16 C-30	20.00000	22.28885	37830	0.010	11.44424	25.00000	Linear
17 C-32	20.00000	22.56769	38067	0.010	12.83847	25.00000	Linear
18 C-34	20.00000	22.15407	37916	0.010	10.77034	25.00000	Linear
19 C-36	20.00000	20.93880	37429	0.010	4.69399	25.00000	Linear
20 C-38	20.00000	21.55831	36170	0.010	7.79155	25.00000	Linear
21 C-40	20.00000	20.73399	34781	0.010	3.66996	25.00000	Linear
9 O-Terphenyl	250	285	42310	0.010	13.87450	25.00000	Linear
15 n-Triacontane-D62	300	339	31080	0.010	13.11485	25.00000	Linear

*** = Compound out of QC criteria**

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG134676-1
Client ID: Method Blank Sample
Project:
SDG: SG8999
Lab File ID: AGK10411.D

Sample Date:
Received Date:
Extract Date: 19-NOV-13
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG134676

Analysis Date: 27-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: AQ
% Solids: NA
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	250	ug/L	1	500	500	150	250
o-Terphenyl		90.0	%					
n-Triacontane-D62		107.	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG134676-2
LCSD ID: WG134676-3
Project:
SDG: SG8999
Report Date: 05-DEC-13
LCS File ID: AGK10412.D

Received Date:
Extract Date: 19-NOV-13
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG134676
LCSD File ID: AGK10413.D

Analysis Date: 27-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	1800	1300	72.2	1400	77.8	ug/L	7	30	55-118
o-Terphenyl			78.0*		84.0				82-142
n-Triacontane-D62			90.0		96.7				70-130

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ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG134896-1
Client ID: Method Blank Sample
Project:
SDG: SG8999
Lab File ID: AGK10414.D

Sample Date:
Received Date:
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896

Analysis Date: 28-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		84.8	%					
n-Triacontane-D62		95.0	%					

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LCS/LCSD Recovery Report

LCS ID: WG134896-2
LCSD ID: WG134896-3
Project:
SDG: SG8999
Report Date: 05-DEC-13
LCS File ID: AGK10415.D

Received Date:
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896
LCSD File ID: AGK10416.D

Analysis Date: 28-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	60.0	42.0	70.0	37.0	61.7*	mg/Kgdrywt	13	30	63-153
o-Terphenyl			81.8		72.7				62-109
n-Triacontane-D62			92.0		79.0				70-130

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Cert No E87604

MS/MSD Recovery Report

MS ID: WG134896-4
MSD ID: WG134896-5
Sample ID: SG8999-4
Client ID: 004/5-SB1058-0204
Project:
SDG: SG8999
MS File ID: AGL10043.D

Received Date:
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896
Report Date: 05-DEC-13
MSD File ID: AGL10044.D

Analysis Date: 04-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 94.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	61.1	62.7	mg/Kgdryw	U10.	44.	46.	72.0	73.4	4	30	63-153
o-Terphenyl							83.3	89.8			62-109
n-Triacontane-D62							89.2	96.2			70-130

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SDG SG8999
SAMPLE ID TF2-004/5-SB1065-0608

SAMPLE CALC

INITIAL CF	DILUTION	COMPOUND OF INTEREST	Final Extract Volume (UL)	CONCENTRATION PPB
34837	1	7536591	2000	14.67917
		% Solids	**Sample Volume (KG)**	
		0.957	30.8	

TRPH = 15 mg/kg

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8999-27
Client ID: 004/5-SB1065-0608
Project: NAVSTA Newport CTO WE:
SDG: SG8999
Lab File ID: AGL10041.D

Sample Date: 14-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896

Analysis Date: 04-DEC-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	J	15.	mg/Kgdrywt	1	20	20.	5.8	10.
o-Terphenyl		101.	%					
n-Triacontane-D62		98.0	%					

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Data File: \\target_server\gg\chem\gc10.i\GC10GL04A.b\AGL10041.D
Report Date: 05-Dec-2013 12:56

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc10.i\GC10GL04A.b\AGL10041.D
Lab Smp Id: SG8999-27 Client Smp ID: 004/5-SB1065-0608
Inj Date : 04-DEC-2013 13:57
Operator : AC Inst ID: gc10.i
Smp Info : SG8999-27
Misc Info : WG135417,WG134896,WG
Comment :
Method : \\target_server\gg\chem\gc10.i\GC10GL04A.b\flp01a.m
Meth Date : 05-Dec-2013 11:46 acronin Quant Type: ESTD
Cal Date : 27-NOV-2013 21:23 Cal File: AGK10409.D
Als bottle: 51
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: SW8015M-FLPRO.sub
Subtraction File: \\target_server\gg\chem\gc10.i\GC10GL04A.b\AGL10039.D
Target Version: 4.12
Processing Host: T8-D4700

Concentration Formula: Amt * DF * (Vt/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00200	Final Volume (L)
Ws	0.03080	Weight of Sample (Kg)
M	4.278	Moisture (%)
Cpnd Variable		Local Compound Variable

					CONCENTRATIONS	
					ON-COLUMN	FINAL
Compounds	RT	EXP RT	DLT RT	RESPONSE	(ug/ml)	(mg/Kgdrywt)
$ 9 O-Terphenyl	9.793	9.821	-0.028	1838366	50.0036	3.4
$ 15 n-Triacontane-D62	14.698	14.721	-0.023	4142742	151.560	10(R)
S 7 Petroleum Range Organics	1.336-22.569			7536591	215.898	15(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8999

Client Sample ID	Lab Sample ID	Col. ID	BFB	#
TF2-W-TB02-1113	SG8999-1RA	A	96.6	
004/5-SB1040-0810	SG8999-23	A	88.4	
004/5-SB1065-0608	SG8999-27	A	95.4	
TF2-SB-DUP07-1113	SG8999-28	A	94.6	
004/5-SB1058-0204	SG8999-4	A	85.4	
Method Blank Sample	WG134904-1	A	95.0	
Method Blank Sample	WG134904-1RA	A	87.2	
Laboratory Control S	WG134904-2	A	93.8	
Laboratory Control S	WG134904-3	A	94.6	
Matrix Spike	WG134904-4	A	90.8	
Matrix Spike Duplica	WG134904-5	A	93.6	

		QC Limits
BFB	P-BROMOFLUOROBENZENE	81-119

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG8999

Client Sample ID	Lab Sample ID	Col. ID	BFB	#
TF2-SB-RB03-1113	SG8999-12	A	91.5	
TF2-W-TB03-1113	SG8999-13	A	88.5	
Method Blank Sample	WG135144-1	A	94.0	
Laboratory Control S	WG135144-2	A	83.0	
Laboratory Control S	WG135144-3	A	92.0	

		QC Limits
BFB	P-BROMOFLUOROBENZENE	79-121

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
SDG: SG8999
Project : NAVSTA Newport CTO WE30
Instrument ID: GC09
Lab File IDs : 9GG2130.d 9GG2123.d 9GG2124.d 9GG2125.d 9GG2126.d 9GG2127.d
Column ID: A
Calibration Date(s): 26-JUL-13 09:58 26-JUL-13 17:56

	Level 1 10.0000	Level 2 100.0000	Level 3 250.0000	Level 4 500.0000	Level 5 1000.0000	Level 6 2000.0000	Crv New	b	m1	m2	%RSD	Max %RSD	
Gasoline Range Organic	12176	12675	12913	12768	12910	13282	AVG		12787		2.84495	20.00000	M
Methyl tert-butyl ether	6010	8181	8380	7569	7477	8149	AVG		7628		11.40841	20.00000	O
Benzene	15826	15860	16448	16739	17015	17326	AVG		16536		3.69285	20.00000	O
Toluene	15470	16041	16286	16166	16555	16718	AVG		16206		2.70556	20.00000	O
Ethylbenzene	14185	14823	15058	15019	15114	15298	AVG		14916		2.61143	20.00000	O
m+p-Xylenes	14785	15435	15552	15559	15638	15874	AVG		15474		2.37846	20.00000	O
o-Xylene	16358	14889	14896	15443	15410	15788	AVG		15464		3.61301	20.00000	O
1,2,4-trimethylbenzene	11095	12102	12347	12071	12262	12757	AVG		12106		4.56871	20.00000	O
1,3,5-trimethylbenzene	9784	10620	10743	10552	10765	11352	AVG		10636		4.74665	20.00000	O
Naphthalene	3461	3359	3870	3000	3223	3680	AVG		3432		9.12376	20.00000	O
p-Bromofluorobenzene	6432	6935	7300	7023	6937	7145	AVG		6962		4.23260	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG134904-6 **Analytical Date:** 11/23/13 10:15
Lab File ID : 9GK4001.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	12161	12161	0.100	-4.89459	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7523	7523	0.100	-1.37164	20.00000	Averaged
4 Benzene	16536	15133	15133	0.100	-8.48600	20.00000	Averaged
5 Toluene	16206	14609	14609	0.100	-9.85537	20.00000	Averaged
7 Ethylbenzene	14916	13823	13823	0.100	-7.33015	20.00000	Averaged
8 m+p-Xylenes	15474	14442	14442	0.100	-6.67008	20.00000	Averaged
9 o-Xylene	15464	15063	15063	0.100	-2.59297	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11809	11809	0.100	-2.45352	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10969	10969	0.100	3.12661	20.00000	Averaged
13 Naphthalene	3432	3802	3802	0.100	10.78747	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6230	6230	0.100	-10.51954	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG134904-7 **Analytical Date:** 11/23/13 23:45
Lab File ID : 9GK4015.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1 Gasoline Range Organic	12787	11625	11625	0.100	-9.09249	20.00000	Averaged	
3 Methyl tert-butyl ether	7628	8033	8033	0.100	5.30882	20.00000	Averaged	
4 Benzene	16536	14109	14109	0.100	-14.67345	20.00000	Averaged	
5 Toluene	16206	13716	13716	0.100	-15.36669	20.00000	Averaged	
7 Ethylbenzene	14916	12920	12920	0.100	-13.38130	20.00000	Averaged	
8 m+p-Xylenes	15474	13271	13271	0.100	-14.23702	20.00000	Averaged	
9 o-Xylene	15464	13513	13513	0.100	-12.61892	20.00000	Averaged	
11 1,2,4-trimethylbenzene	12106	11144	11144	0.100	-7.94123	20.00000	Averaged	
12 1,3,5-trimethylbenzene	10636	9926	9926	0.100	-6.67402	20.00000	Averaged	
13 Naphthalene	3432	6342	6342	0.100	84.79944	20.00000	Averaged	*
10 p-Bromofluorobenzene	6962	5854	5854	0.100	-15.91074	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG134904-8 **Analytical Date:** 11/24/13 03:24
Lab File ID : 9GK4019.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1 Gasoline Range Organic	12787	12683	12683	0.100	-0.81123	20.00000	Averaged	
3 Methyl tert-butyl ether	7628	8438	8438	0.100	10.62948	20.00000	Averaged	
4 Benzene	16536	16046	16046	0.100	-2.96462	20.00000	Averaged	
5 Toluene	16206	15353	15353	0.100	-5.26641	20.00000	Averaged	
7 Ethylbenzene	14916	14528	14528	0.100	-2.60508	20.00000	Averaged	
8 m+p-Xylenes	15474	14996	14996	0.100	-3.08466	20.00000	Averaged	
9 o-Xylene	15464	15097	15097	0.100	-2.37117	20.00000	Averaged	
11 1,2,4-trimethylbenzene	12106	12111	12111	0.100	0.04366	20.00000	Averaged	
12 1,3,5-trimethylbenzene	10636	10609	10609	0.100	-0.25623	20.00000	Averaged	
13 Naphthalene	3432	4660	4660	0.100	35.78116	20.00000	Averaged	*
10 p-Bromofluorobenzene	6962	6704	6704	0.100	-3.70604	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG134904-9 **Analytical Date:** 11/25/13 08:06
Lab File ID : 9GK4020.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	13055	13055	0.100	2.09200	20.00000	Averaged
3 Methyl tert-butyl ether	7628	8000	8000	0.100	4.87802	20.00000	Averaged
4 Benzene	16536	16560	16560	0.100	0.14622	20.00000	Averaged
5 Toluene	16206	16044	16044	0.100	-1.00325	20.00000	Averaged
7 Ethylbenzene	14916	15136	15136	0.100	1.47639	20.00000	Averaged
8 m+p-Xylenes	15474	15932	15932	0.100	2.96009	20.00000	Averaged
9 o-Xylene	15464	15285	15285	0.100	-1.15674	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	12929	12929	0.100	6.79921	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	11167	11167	0.100	4.99008	20.00000	Averaged
13 Naphthalene	3432	3563	3563	0.100	3.80626	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6689	6689	0.100	-3.91934	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG134904-10 **Analytical Date:** 11/25/13 20:43
Lab File ID : 9GK4032.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11925	11925	0.100	-6.74642	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7528	7528	0.100	-1.30766	20.00000	Averaged
4 Benzene	16536	14997	14997	0.100	-9.30495	20.00000	Averaged
5 Toluene	16206	14857	14857	0.100	-8.32473	20.00000	Averaged
7 Ethylbenzene	14916	13771	13771	0.100	-7.67742	20.00000	Averaged
8 m+p-Xylenes	15474	14302	14302	0.100	-7.57323	20.00000	Averaged
9 o-Xylene	15464	13774	13774	0.100	-10.92829	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11513	11513	0.100	-4.89371	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10114	10114	0.100	-4.90645	20.00000	Averaged
13 Naphthalene	3432	4087	4087	0.100	19.07927	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6239	6239	0.100	-10.38754	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG135144-6 **Analytical Date:** 11/26/13 08:35
Lab File ID : 9GK4041.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11600	11600	0.100	-9.28802	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7341	7341	0.100	-3.75770	20.00000	Averaged
4 Benzene	16536	14616	14616	0.100	-11.60893	20.00000	Averaged
5 Toluene	16206	14286	14286	0.100	-11.85028	20.00000	Averaged
7 Ethylbenzene	14916	13217	13217	0.100	-11.39419	20.00000	Averaged
8 m+p-Xylenes	15474	14046	14046	0.100	-9.22990	20.00000	Averaged
9 o-Xylene	15464	13892	13892	0.100	-10.16924	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11178	11178	0.100	-7.66433	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10050	10050	0.100	-5.51382	20.00000	Averaged
13 Naphthalene	3432	3325	3325	0.100	-3.10794	20.00000	Averaged
10 p-Bromofluorobenzene	6962	5856	5856	0.100	-15.88517	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG135144-7 **Analytical Date:** 11/26/13 21:38
Lab File ID : 9GK4053.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11667	11667	0.100	-8.76323	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7848	7848	0.100	2.88395	20.00000	Averaged
4 Benzene	16536	15088	15088	0.100	-8.75245	20.00000	Averaged
5 Toluene	16206	14405	14405	0.100	-11.11229	20.00000	Averaged
7 Ethylbenzene	14916	13452	13452	0.100	-9.81470	20.00000	Averaged
8 m+p-Xylenes	15474	13983	13983	0.100	-9.63284	20.00000	Averaged
9 o-Xylene	15464	13639	13639	0.100	-11.79999	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11083	11083	0.100	-8.45107	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	9544	9544	0.100	-10.27047	20.00000	Averaged
13 Naphthalene	3432	3641	3641	0.100	6.07603	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6019	6019	0.100	-13.54673	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 **SDG:** SG8999
Lab ID : WG135144-8 **Analytical Date:** 11/27/13 04:01
Lab File ID : 9GK4060.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1 Gasoline Range Organic	12787	12806	12806	0.100	0.14970	20.00000	Averaged	
3 Methyl tert-butyl ether	7628	9233	9233	0.100	21.05212	20.00000	Averaged	*
4 Benzene	16536	16290	16290	0.100	-1.48781	20.00000	Averaged	
5 Toluene	16206	15631	15631	0.100	-3.54918	20.00000	Averaged	
7 Ethylbenzene	14916	14749	14749	0.100	-1.11810	20.00000	Averaged	
8 m+p-Xylenes	15474	15259	15259	0.100	-1.38565	20.00000	Averaged	
9 o-Xylene	15464	14789	14789	0.100	-4.36353	20.00000	Averaged	
11 1,2,4-trimethylbenzene	12106	12209	12209	0.100	0.85734	20.00000	Averaged	
12 1,3,5-trimethylbenzene	10636	10498	10498	0.100	-1.29703	20.00000	Averaged	
13 Naphthalene	3432	4144	4144	0.100	20.74358	20.00000	Averaged	*
10 p-Bromofluorobenzene	6962	6740	6740	0.100	-3.19253	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Instrument ID : GC09

SDG : SG8999
Column ID : A

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	BFB	BFB
Initial Calibration	WG127983-2	07/26/13	10:52	31.92	
Initial Calibration	WG127983-3	07/26/13	11:46	31.84	
Initial Calibration	WG127983-4	07/26/13	12:39	31.82	
Initial Calibration	WG127983-5	07/26/13	13:32	31.84	
Initial Calibration	WG127983-6	07/26/13	14:25	31.85	
Initial Calibration	WG127983-1	07/26/13	17:56	31.89	
INDEPENDENT SOURCE	WG127983-7	07/26/13	18:50	31.91	
Continuing Calibrati	WG134904-6	11/23/13	10:15	31.68	
Method Blank Sample	WG134904-1	11/23/13	13:43	31.68	
Laboratory Control S	WG134904-2	11/23/13	14:38	31.67	
Laboratory Control S	WG134904-3	11/23/13	15:32	31.67	
Continuing Calibrati	WG134904-7	11/23/13	23:45	31.68	
004/5-SB1040-0810	SG8999-23	11/24/13	02:30	31.67	
Continuing Calibrati	WG134904-8	11/24/13	03:24	31.67	
Continuing Calibrati	WG134904-9	11/25/13	08:06	31.61	
Method Blank Sample	WG134904-1RA	11/25/13	10:08	31.61	
TF2-W-TB02-1113	SG8999-1RA	11/25/13	11:55	31.61	
004/5-SB1058-0204	SG8999-4	11/25/13	14:24	31.61	
004/5-SB1065-0608	SG8999-27	11/25/13	15:18	31.61	
TF2-SB-DUP07-1113	SG8999-28	11/25/13	16:11	31.61	
Matrix Spike	WG134904-4	11/25/13	17:05	31.61	
Matrix Spike Duplica	WG134904-5	11/25/13	17:59	31.61	
Continuing Calibrati	WG134904-10	11/25/13	20:43	31.63	
Continuing Calibrati	WG135144-6	11/26/13	08:35	31.62	
Method Blank Sample	WG135144-1	11/26/13	11:24	31.63	
Laboratory Control S	WG135144-2	11/26/13	14:25	31.63	
Laboratory Control S	WG135144-3	11/26/13	15:19	31.63	
Continuing Calibrati	WG135144-7	11/26/13	21:38	31.66	
TF2-SB-RB03-1113	SG8999-12	11/26/13	22:33	31.66	
TF2-W-TB03-1113	SG8999-13	11/26/13	23:27	31.67	
Continuing Calibrati	WG135144-8	11/27/13	04:01	31.68	

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : 9GK4004.D
Instrument ID : GC09
Heated Purge : No

SDG : SG8999
Lab Sample ID : WG134904-1
Date Analyzed : 23-NOV-13
Time Analyzed : 13:43

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134904-2	9GK4005.D	11/23/13	14:38
Laboratory Control S	WG134904-3	9GK4006.D	11/23/13	15:32
004/5-SB1040-0810	SG8999-23	9GK4018.D	11/24/13	02:30

Report of Analytical Results

Client:
Lab ID: WG134904-1
Client ID: Method Blank Sample
Project:
SDG: SG8999
Lab File ID: 9GK4004.D

Sample Date:
Received Date:
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904

Analysis Date: 23-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA
Report Date: 03-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		95.0	%					

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LCS/LCSD Recovery Report

LCS ID: WG134904-2
LCSD ID: WG134904-3
Project:
SDG: SG8999
Report Date: 03-DEC-13
LCS File ID: 9GK4005.D

Received Date:
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904
LCSD File ID: 9GK4006.d

Analysis Date: 23-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	25.0	26.3	105.	24.0	96.0	mg/Kgdrywt	9	30	67-137
-Bromofluorobenzene			93.8		94.6				81-119

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : 9GK4022.D
Instrument ID : GC09
Heated Purge : No

SDG : SG8999
Lab Sample ID : WG134904-1RA
Date Analyzed : 25-NOV-13
Time Analyzed : 10:08

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
TF2-W-TB02-1113	SG8999-1RA	9GK4024.D	11/25/13	11:55
004/5-SB1058-0204	SG8999-4	9GK4025.D	11/25/13	14:24
004/5-SB1065-0608	SG8999-27	9GK4026.D	11/25/13	15:18
TF2-SB-DUP07-1113	SG8999-28	9GK4027.D	11/25/13	16:11
Matrix Spike	WG134904-4	9GK4028.D	11/25/13	17:05
Matrix Spike Duplica	WG134904-5	9GK4029.D	11/25/13	17:59

Report of Analytical Results

Client:
Lab ID: WG134904-1RA
Client ID: Method Blank Sample
Project:
SDG: SG8999
Lab File ID: 9GK4022.D

Sample Date:
Received Date:
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904

Analysis Date: 25-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA
Report Date: 03-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	J	1.8	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		87.2	%					

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MS/MSD Recovery Report

MS ID: WG134904-4
MSD ID: WG134904-5
Sample ID: SG8999-4
Client ID: 004/5-SB1058-0204
Project:
SDG: SG8999
MS File ID: 9GK4028.D

Received Date:
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904
Report Date: 03-DEC-13
MSD File ID: 9GK4029.d

Analysis Date: 25-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 94.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	29.1	29.0	mg/Kgdryw	U4.1	26.	26.	88.6	90.7	2	30	67-137
-Bromofluorobenzene							90.8	93.6			81-119

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab File ID : 9GK4044.D
Instrument ID : GC09
Heated Purge : No

SDG : SG8999
Lab Sample ID : WG135144-1
Date Analyzed : 26-NOV-13
Time Analyzed : 11:24

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135144-2	9GK4045.D	11/26/13	14:25
Laboratory Control S	WG135144-3	9GK4046.D	11/26/13	15:19
TF2-SB-RB03-1113	SG8999-12	9GK4054.D	11/26/13	22:33
TF2-W-TB03-1113	SG8999-13	9GK4055.D	11/26/13	23:27

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG135144-1
Client ID: Method Blank Sample
Project:
SDG: SG8999
Lab File ID: 9GK4044.D

Sample Date:
Received Date:
Extract Date: 26-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135144

Analysis Date: 26-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA
Report Date: 03-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	8.0	ug/l	1	10	10.	6.7	8.0
p-Bromofluorobenzene		94.0	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG135144-2
LCSD ID: WG135144-3
Project:
SDG: SG8999
Report Date: 03-DEC-13
LCS File ID: 9GK4045.D

Received Date:
Extract Date: 26-NOV-13
Extracted By: JLP
Extraction Method: SW846 M8015B
Lab Prep Batch: WG135144
LCSD File ID: 9GK4046.d

Analysis Date: 26-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	100.	90.1	90.1	103.	103.	ug/l	13	30	73-126
a-Bromofluorobenzene			83.0		92.0				79-121

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Tetra Tech **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 29, 2014**

FROM: **TERRI L. SOLOMON** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS, TOTAL SOLIDS**
CTO WE30 NAVSTA NEWPORT
SAMPLE DELIVERY GROUP (SDG) – SG8999

SAMPLES: 25/Soil/

TF2-004/5-SB1031-0204	TF2-004/5-SB1031-0810
TF2-004/5-SB1038-0204	TF2-004/5-SB1038-0810
TF2-004/5-SB1039-0406	TF2-004/5-SB1040-0204
TF2-004/5-SB1040-0204	TF2-004/5-SB1041-022.5
TF2-004/5-SB1047-0204	TF2-004/5-SB1047-0608
TF2-004/5-SB1049-0204	TF2-004/5-SB1049-0810
TF2-004/5-SB1057-0304	TF2-004/5-SB1057-0608
TF2-004/5-SB1058-0204	TF2-004/5-SB1064-0204
TF2-004/5-SB1064-0406	TF2-004/5-SB1065-0204
TF2-004/5-SB1065-0608	TF2-004/5-SB1066-0203
TF2-004/5-SB1068-0204	TF2-004/5-SS1043-0.10.5
TF2-SB-DUP05-1113	TF2-SB-DUP06-1113
TF2-SB-DUP07-1113	

2/Aqueous/

TF2-SB-RB03-1113	TF2-W-TB02-1113

Overview

The sample set for NAVSTA Newport, CTO WE30, SDG SG8999, consists of twenty-five (25) soil environmental samples, one (1) rinsate blank and one (1) trip blank. Three (3) field duplicate pairs (TF2-004/5-SB1057-0608 / TF2-SB-DUP05-1113, TF2-004/5-SB1068-0204 / TF2-SB-DUP06-1113 and TF2-004/5-SB1040-0810 / TF2-SB-DUP07-1113) were included within this SDG.

All soil samples, with the exception of TF2-SB-DUP07-1113 were analyzed for target analyte list (TAL) metals. All soil samples were analyzed for total solids. Sample TF2-SB-RB03-1113 was analyzed for TAL metals. Sample TF2-W-TB02-1113 was analyzed for total solids. The samples were collected by Tetra Tech on November 13 and 14, 2013 and analyzed by Katahdin Analytical Services under Naval Facilities Engineering Service Center (NFESC) Quality Assurance / Quality Control (QA/QC) criteria. Metals analyses were conducted using SW-846 method 6020A. Mercury analyses were conducted using SW-846 methods 7470A and 7471B. Total solids analyses were conducted using Standard Method 2540G.

These data were evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • ICP/MS Tune
* • Initial and Continuing Calibrations
• Laboratory Method / Preparation Blanks
* • ICP Interference Analysis
* • Laboratory Control Sample Results
• Matrix Spike Recoveries
* • Laboratory Duplicate Precision
* • Serial Dilution Results
* • Internal Standard Recoveries
• Field Duplicate Results
* • Detection Limits

* - All quality control criteria were met for this parameter.

Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets. Appendix D contains the documentation to support the findings as discussed in this validation report.

Laboratory Method / Preparation Blanks

The following contaminants were detected in laboratory method / preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Mercury[1]	0.037 ug/L	0.0308 mg/kg

[1] Maximum concentration present in a method blank (12/06/2013) affecting samples TF2-004/5-SB1031-0204, TF2-004/5-SB1039-0406, TF2-004/5-SB1031-0810, TF2-004/5-SB1040-0204, TF2-004/5-SB1040-0810, TF2-004/5-SB1068-0204, TF2-SB-DUP06-1113, TF2-004/5-SB1065-0204 and TF2-004/5-SB1065-00608.

Analyte	Maximum Concentration	Action Level
Antimony[2]	0.022 ug/L	0.011 mg/kg
Cadmium[2]	0.005 ug/L	0.0025 mg/kg
Cobalt[2]	0.007 ug/L	0.0035 mg/kg
Iron[3]	9.124 ug/L	4.562 mg/kg
Lead[2]	0.120 ug/L	0.06 mg/kg
Silver[2]	0.145 ug/L	0.0725 mg/kg
Thallium[2]	0.004 ug/L	0.002 mg/kg

[2] Maximum concentration present in a method blank (12/04/2013) affecting samples TF2-004/5-SB1057-0304, TF2-004/5-SB1057-0608, TF2-004/5-SB1047-0204, TF2-004/5-SB1047-0608, TF2-SB-DUP05-1113 and TF2-004/5-SB1049-0204.

[3] Maximum concentration present in a method blank (12/04/2013) affecting samples TF2-004/5-SB1057-0304, TF2-004/5-SB1047-0204, TF2-004/5-SB1047-0608, TF2-SB-DUP05-1113 and TF2-004/5-SB1049-0204.

	Maximum	Action

Analyte	Concentration	Level
Antimony[4]	0.118 ug/L	0.059 mg/kg
Cadmium[4]	0.006 ug/L	0.003 mg/kg
Cobalt[4]	0.023 ug/L	0.0115 mg/kg
Iron[5]	16.69 ug/L	8.345 mg/kg
Iron[6]	10.630 ug/L	5.315 mg/kg
Lead[4]	0.018 ug/L	0.09 mg/kg
Potassium[4]	25.4 ug/L	12.7 mg/kg
Thallium[4]	0.021 ug/L	0.0105 mg/kg

[4] Maximum concentration present in a method blank (12/06/2013) affecting samples TF2-004/5-SS1043-0.10.5, TF2-004/5-SB1041-022.5, TF2-004/5-SB1058-0204, TF2-004/5-SB1064-0204, TF2-004/5-SB1064-0406, TF2-004/5-SB1066-0203, TF2-004/5-SB1049-0810, TF2-004/5-SB1038-0204, TF2-004/5-SB1038-0810, TF2-004/5-SB1031-0204, TF2-004/5-SB1039-0406, TF2-004/5-SB1031-0810, TF2-004/5-SB1040-0204, TF2-004/5-SB1040-0810, TF2-004/5-SB1068-0204, TF2-SB-DUP06-1113, TF2-004/5-SB1065-0204 and TF2-004/5-SB1065-0608.

[5] Maximum concentration present in a method blank (12/06/2013) affecting samples TF2-004/5-SS1043-0.10.5, TF2-004/5-SB1041-022.5, TF2-004/5-SB1058-0204, TF2-004/5-SB1064-0406, TF2-004/5-SB1066-0203, TF2-004/5-SB1049-0810, TF2-004/5-SB1038-0204, TF2-004/5-SB1038-0810, TF2-004/5-SB1031-0204, TF2-004/5-SB1039-0406, TF2-004/5-SB1040-0204, TF2-004/5-SB1040-0810, TF2-004/5-SB1068-0204 and TF2-SB-DUP06-1113.

[6] Maximum concentration present in a method blank (12/09/2013) affecting samples TF2-004/5-SB1064-0204, TF2-004/5-SB1031-0810, TF2-004/5-SB1065-0204 and TF2-004/5-SB1065-0608.

Analyte	Maximum Concentration	Action Level
Aluminum[7]	1.489 mg/kg	7.445 mg/kg
Barium[7]	0.069 mg/kg	0.345 mg/kg
Calcium[7]	6.805 mg/kg	34.025 mg/kg
Chromium[7]	0.156 mg/kg	0.78 mg/kg
Copper[7]	0.094 mg/kg	0.47 mg/kg
Magnesium[7]	1.474 mg/kg	7.37 mg/kg
Manganese[7]	0.990 mg/kg	4.95 mg/kg
Nickel[7]	0.038 mg/kg	0.19 mg/kg
Selenium[7]	0.075 mg/kg	0.375 mg/kg
Sodium[7]	6.100 mg/kg	30.5 mg/kg
Vanadium[7]	0.130 mg/kg	0.65 mg/kg
Zinc[7]	0.204 mg/kg	1.02 mg/kg

[7] Maximum concentration present in a preparation blank (batch GL03IMS1) affecting samples TF2-004/5-SS1043-0.10.5, TF2-004/5-SB1041-022.5, TF2-004/5-SB1058-0204, TF2-004/5-SB1064-0204, TF2-004/5-SB1064-0406, TF2-004/5-SB1066-0203, TF2-004/5-SB1057-0304, TF2-004/5-SB1057-0608, TF2-004/5-SB1047-0204, TF2-004/5-SB1047-0608, TF2-SB-DUP05-1113 and TF2-004/5-SB1049-0204.

Analyte	Maximum Concentration	Action Level
Aluminum[8]	4.060 mg/kg	20.3 mg/kg
Barium[8]	0.060 mg/kg	0.3 mg/kg
Calcium[8]	4.115 mg/kg	20.575 mg/kg
Copper[8]	0.092 mg/kg	0.46 mg/kg
Iron[8]	11.510 mg/kg	57.55 mg/kg

Magnesium[8]	3.594 mg/kg	17.97 mg/kg
Manganese[8]	0.167 mg/kg	0.835 mg/kg
Nickel[8]	0.060 mg/kg	0.3 mg/kg
Potassium[8]	12.89 mg/kg	64.45 mg/kg
Sodium[8]	8.835 mg/kg	44.175 mg/kg
Zinc[8]	0.376 mg/kg	1.88 mg/kg

[8] Maximum concentration present in a preparation blank (batch GL04IMS1) affecting samples TF2-004/5-SB1049-0810, TF2-004/5-SB1038-0204, TF2-004/5-SB1038-0810, TF2-004/5-SB1031-0204, TF2-004/5-SB1039-0406, TF2-004/5-SB1031-0810, TF2-004/5-SB1040-0204, TF2-004/5-SB1040-0810, TF2-004/5-SB1068-0204, TF2-SB-DUP06-1113, TF2-004/5-SB1065-0204 and TF2-004/5-SB1065-0608.

An action level of 5X the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the blank action level and less than the limit of detection (LOD) were qualified "U" as a result of laboratory blank contamination and raised to the LOD. Positive results less than the blank action level and greater than the LOD were qualified "U" as a result of laboratory blank contamination.

For the ICP/MS analyses all samples were analyzed at either a 5X, 10X or 25X dilution, all method blanks were analyzed at a 1X dilution and all preparation blanks were analyzed at a 5X dilution.

Matrix Spike Recoveries

The matrix spike percent recoveries for antimony, calcium and chromium were < 80% quality control limit affecting all samples. The positive results reported for antimony, calcium and chromium were qualified as estimated, "J".

Field Duplicate Precision

The field duplicate relative percent difference was > 50% quality control limit for beryllium and cobalt for sample pair TF2-004/5-SB1057-0608 / TF2-SB-DUP05-1113. The positive results reported for beryllium and cobalt for samples TF2-004/5-SB1057-0608 and TF2-SB-DUP05-1113 were qualified as estimated, "J".

Notes

Positive results reported below the limit of quantitation (LOQ) but above the method detection limit (MDL) were qualified as estimated, "J".

Nondetected results are reported to the limit of detection (LOD).

Internal standard recoveries were not summarized from the laboratory. The raw data was used for validation. All internal standard recoveries were within quality control limits.

Executive Summary

Laboratory Performance: Several contaminants were present in the laboratory method / preparation blanks.

Other Factors Affecting Data Quality: Positive results reported below the LOQ but above the MDL were qualified as estimated. The matrix spike percent recoveries for antimony, calcium and chromium were < 80% quality control limit.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", January 2010, and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories", July 2013.

The text of this report has been formulated to address only those problem areas affecting data quality.

For Tetra Tech
Terri L. Solomon
Environmental Scientist

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C – Region I Worksheets
4. Appendix D – Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed

PROJ_NO: 03019	NSAMPLE	TF2-SB-RB03-1113
SDG: SG8999	LAB_ID	SG8999-012
FRACTION: M	SAMP_DATE	11/14/2013
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
ALUMINUM	11.2	J	P
ANTIMONY	0.08	J	P
ARSENIC	4	U	
BARIUM	0.3	J	P
BERYLLIUM	0.2	U	
CADMIUM	0.2	U	
CALCIUM	26.8	J	P
CHROMIUM	0.72	J	P
COBALT	0.3	U	
COPPER	0.32	J	P
IRON	60	U	
LEAD	0.5	U	
MAGNESIUM	80	U	
MANGANESE	0.4	J	P
MERCURY	0.1	U	
NICKEL	1.2	U	
POTASSIUM	400	U	
SELENIUM	3	U	
SILVER	0.4	U	
SODIUM	400	U	
THALLIUM	0.4	U	
VANADIUM	4	U	
ZINC	8	U	

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1031-0204			TF2-004/5-SB1031-0810			TF2-004/5-SB1038-0204			TF2-004/5-SB1038-0810		
SDG: SG8999	LAB_ID	SG8999-019			SG8999-021			SG8999-017			SG8999-018		
FRACTION: M	SAMP_DATE	11/14/2013			11/14/2013			11/14/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	89.8			93.6			91.7			91.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		12300			17200			15800			16800		
ANTIMONY		0.08	U	A	0.04	U	A	0.07	U	A	0.1	U	A
ARSENIC		4.8			2.8			6.6			5.7		
BARIUM		16.1			7.7			16			12.5		
BERYLLIUM		0.36			0.25			0.4			0.34		
CADMIUM		0.05	J	P	0.1			0.06	J	P	0.06	J	P
CALCIUM		607	J	D	782	J	D	863	J	D	690	J	D
CHROMIUM		13.9	J	D	17.5	J	D	21.9	J	D	22	J	D
COBALT		8.5			11.3			10.5			12.2		
COPPER		15.9			10.9			19.5			20.2		
IRON		19700			37600			31700			32600		
LEAD		10			6.3			11.6			14.4		
MAGNESIUM		3260			5200			4900			5330		
MANGANESE		225			244			250			265		
MERCURY		0.04			0.02	U	A	0.03			0.03	J	P
NICKEL		15			17.8			22.3			23.7		
POTASSIUM		431			184			403			363		
SELENIUM		0.16	J	P	0.05	J	P	0.22	J	P	0.27	J	P
SILVER		0.02	J	P	0.01	J	P	0.03	J	P	0.02	J	P
SODIUM		47.6	U	A	29	U	A	47.7	U	A	46	U	A
THALLIUM		0.06	U	A	0.028	U	A	0.04	U	A	0.03	U	A
VANADIUM		15.9			29.1			18.5			20.6		
ZINC		40			58.1			52.8			54.9		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1039-0406			TF2-004/5-SB1040-0204			TF2-004/5-SB1040-0810			TF2-004/5-SB1041-022.5		
SDG: SG8999	LAB_ID	SG8999-020			SG8999-022			SG8999-023			SG8999-003		
FRACTION: M	SAMP_DATE	11/14/2013			11/14/2013			11/14/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	89.7			93.3			86.3			94.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		12900			13300			13800			15600		
ANTIMONY		0.07	U	A	0.07	U	A	0.1	U	A	0.06	U	A
ARSENIC		5.4			5			4.7			6.1		
BARIUM		14.2			13.1			15.3			14		
BERYLLIUM		0.35			0.34			0.36			0.44		
CADMIUM		0.06	J	P	0.06	J	P	0.05	J	P	0.07	J	P
CALCIUM		716	J	D	587	J	D	822	J	D	534	J	D
CHROMIUM		16	J	D	15.9	J	D	17.7	J	D	19.9	J	D
COBALT		8.3			13.2			9			11.2		
COPPER		15.6			19.3			15.7			16.5		
IRON		20900			24800			23200			27600		
LEAD		9			11.6			11.8			14.8		
MAGNESIUM		3490			4470			4020			4660		
MANGANESE		219			300			236			254		
MERCURY		0.07			0.02	U	A	0.05			0.03	J	P
NICKEL		17.2			20.6			17.5			23.1		
POTASSIUM		328			334			394			371		
SELENIUM		0.19	J	P	0.09	J	P	0.22	J	P	0.28	U	A
SILVER		0.02	J	P	0.02	J	P	0.03	J	P	0.02	J	P
SODIUM		51.7	U	A	34.3	U	A	37.5	U	A	34	U	A
THALLIUM		0.05	U	A	0.03	U	A	0.05	U	A	0.05	U	A
VANADIUM		17.2			13.6			16.3			18.8		
ZINC		36.9			44.9			40.4			47.1		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1047-0204			TF2-004/5-SB1047-0608			TF2-004/5-SB1049-0204			TF2-004/5-SB1049-0810		
SDG: SG8999	LAB_ID	SG8999-010			SG8999-011			SG8999-015			SG8999-016		
FRACTION: M	SAMP_DATE	11/14/2013			11/14/2013			11/14/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	90.4			87.8			90.8			88.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		13200			15600			12000			14600		
ANTIMONY		0.08	U	A	0.07	U	A	0.07	U	A	0.08	U	A
ARSENIC		6.6			7.8			4.4			8.3		
BARIUM		18.1			15.8			15.3			18.4		
BERYLLIUM		0.4			0.35			0.36			0.38		
CADMIUM		0.06	J	P	0.07			0.05	J	P	0.07	J	P
CALCIUM		674	J	D	770	J	D	611	J	D	827	J	D
CHROMIUM		16	J	D	18.6	J	D	14.2	J	D	17.8	J	D
COBALT		8.7			15.4			7.4			13.7		
COPPER		13			22			11.8			15.7		
IRON		20300			26600			18900			24300		
LEAD		11.7			11.4			8.6			11.6		
MAGNESIUM		3340			4720			3160			4220		
MANGANESE		240			345			216			326		
MERCURY		0.02	J	P	0.02	J	P	0.02	J	P	0.07		
NICKEL		15.8			22.9			13.3			21.1		
POTASSIUM		427			397			412			480		
SELENIUM		0.24	U	A	0.18	U		0.24	U	A	0.29	J	P
SILVER		0.032	U	A	0.024	U	A	0.031	U	A	0.04	J	P
SODIUM		37.1	U	A	31.4	U	A	34.1	U	A	45.4	U	A
THALLIUM		0.2			0.05	J	P	0.05	J	P	0.06	U	A
VANADIUM		18.6			17.1			16.2			17.9		
ZINC		36.2			50			34.8			46.9		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1057-0304			TF2-004/5-SB1057-0608			TF2-004/5-SB1058-0204			TF2-004/5-SB1064-0204		
SDG: SG8999	LAB_ID	SG8999-008			SG8999-009			SG8999-004			SG8999-005		
FRACTION: M	SAMP_DATE	11/14/2013			11/14/2013			11/13/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	91.1			90.9			94.2			92.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		12200			17400			20000			16100		
ANTIMONY		0.09	J	D	0.1	J	D	0.06	U	A	0.09	U	A
ARSENIC		5.3			8.9			7.4			7.7		
BARIUM		14.2			12.9			10.8			10.2		
BERYLLIUM		0.38			1.3	J	G	0.46			0.51		
CADMIUM		0.14			0.05	J	P	0.05	J	P	0.07	J	P
CALCIUM		545	J	D	746	J	D	554	J	D	637	J	D
CHROMIUM		15.1	J	D	23	J	D	27	J	D	22.1	J	D
COBALT		8.3			23.5	J	G	15.2			12.4		
COPPER		13			23.3			26.4			26.6		
IRON		21600			41200			43500			38600		
LEAD		8.4			15.4			15.1			14.6		
MAGNESIUM		3500			5660			7150			5720		
MANGANESE		223			322			364			293		
MERCURY		0.02	J	P	0.02	J	P	0.016	U		0.004	J	P
NICKEL		15.8			31			32.8			29.1		
POTASSIUM		588			324			310			282		
SELENIUM		0.86			0.2	U		0.33	U	A	0.24	U	A
SILVER		0.03	U	A	0.027	U	A	0.01	J	P	0.01	J	P
SODIUM		34.7	U	A	28.3	U	A	29	U	A	29	U	A
THALLIUM		0.25			0.04	J	P	0.06	U	A	0.029	U	A
VANADIUM		14			18.3			19.1			17.4		
ZINC		33.5			60.5			75.1			64.5		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1064-0406			TF2-004/5-SB1065-0204			TF2-004/5-SB1065-0608			TF2-004/5-SB1066-0203		
SDG: SG8999	LAB_ID	SG8999-006			SG8999-026			SG8999-027			SG8999-007		
FRACTION: M	SAMP_DATE	11/13/2013			11/14/2013			11/14/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	95.4			94.6			95.7			96.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		16600			16200			20200			12900		
ANTIMONY		0.05	U	A	0.06	U	A	0.08	U	A	0.12	U	A
ARSENIC		6.6			6.9			7.7			12.1		
BARIUM		10.8			11.4			10.1			20.9		
BERYLLIUM		0.34			0.58			0.44			0.36		
CADMIUM		0.06	J	P	0.05	J	P	0.07			0.17		
CALCIUM		408	J	D	520	J	D	101	J	D	870	J	D
CHROMIUM		22.1	J	D	20.8	J	D	26.5	J	D	15.8	J	D
COBALT		16.3			14.7			26.3			11.2		
COPPER		27.7			22			41.5			18.5		
IRON		35400			35000			42000			25500		
LEAD		20.2			13.6			20.4			39.5		
MAGNESIUM		5840			5500			6880			3740		
MANGANESE		338			299			467			307		
MERCURY		0.016	U		0.018	U	A	0.016	U	A	0.04		
NICKEL		27.4			25.7			35.6			21		
POTASSIUM		295			306			279			428		
SELENIUM		0.24	U	A	0.09	J	P	0.21	U		0.3	U	A
SILVER		0.02	J	P	0.02	J	P	0.02	J	P	0.05	J	P
SODIUM		32	U	A	43.6	U	A	44	U	A	34.5	U	A
THALLIUM		0.032	U	A	0.03	U	A	0.028	U	A	0.05	U	A
VANADIUM		16.9			15.8			16.8			18.6		
ZINC		60.7			54.8			70.8			61.5		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1068-0204			TF2-004/5-SS1043-0.10.5			TF2-SB-DUP05-1113			TF2-SB-DUP06-1113		
SDG: SG8999	LAB_ID	SG8999-024			SG8999-002			SG8999-014			SG8999-025		
FRACTION: M	SAMP_DATE	11/14/2013			11/13/2013			11/14/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	90.9			93.7			90.7			89.3		
	DUP_OF							TF2-004/5-SB1057-0608			TF2-004/5-SB1068-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		10600			18200			15800			9450		
ANTIMONY		0.06	U	A	0.07	U	A	0.1	J	D	0.05	U	A
ARSENIC		4.3			5.4			6.6			3.3		
BARIUM		12.9			11.5			13.1			11.7		
BERYLLIUM		0.33			0.38			0.5	J	G	0.28		
CADMIUM		0.06	J	P	0.07	J	P	0.06	J	P	0.05	J	P
CALCIUM		773	J	D	908	J	D	697	J	D	652	J	D
CHROMIUM		13.3	J	D	24.2	J	D	19.6	J	D	11.7	J	D
COBALT		7			14.8			13.6	J	G	6.5		
COPPER		10.6			19.5			19.2			8.8		
IRON		17700			34500			29600			15200		
LEAD		8			14.9			12.4			6.8		
MAGNESIUM		3050			6180			5080			2700		
MANGANESE		200			294			299			199		
MERCURY		0.03	U	A	0.02	J	P	0.03			0.03	U	A
NICKEL		13.6			28.8			25.1			11.5		
POTASSIUM		427			282			348			390		
SELENIUM		0.22	U		0.25	U	A	0.25	U		0.1	J	P
SILVER		0.02	J	P	0.03	J	P	0.034	U	A	0.02	J	P
SODIUM		45.4	U	A	33	U	A	34	U	A	37.5	U	A
THALLIUM		0.05	U	A	0.033	U	A	0.04	U	A	0.04	J	P
VANADIUM		15.2			19.6			17.9			14		
ZINC		29			61.2			51.4			25.1		

PROJ_NO: 03019	NSAMPLE	TF2-W-TB02-1113		
SDG: SG8999	LAB_ID	SG8999-1		
FRACTION: MISC	SAMP_DATE	11/13/2013		
MEDIA: WATER	QC_TYPE	NM		
	UNITS	%		
	PCT_SOLIDS	100.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
TOTAL SOLIDS		100		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1031-0204			TF2-004/5-SB1031-0810			TF2-004/5-SB1038-0204			TF2-004/5-SB1038-0810		
SDG: SG8999	LAB_ID	SG8999-19			SG8999-21			SG8999-17			SG8999-18		
FRACTION: MISC	SAMP_DATE	11/14/2013			11/14/2013			11/14/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	%			%			%			%		
	PCT_SOLIDS	89.8			93.6			91.7			91.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL SOLIDS		90			94			92			92		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1039-0406			TF2-004/5-SB1040-0204			TF2-004/5-SB1040-0810			TF2-004/5-SB1041-022.5		
SDG: SG8999	LAB_ID	SG8999-20			SG8999-22			SG8999-23			SG8999-3		
FRACTION: MISC	SAMP_DATE	11/14/2013			11/14/2013			11/14/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	%			%			%			%		
	PCT_SOLIDS	89.7			93.3			86.3			94.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL SOLIDS		90			93			86			94		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1047-0204			TF2-004/5-SB1047-0608			TF2-004/5-SB1049-0204			TF2-004/5-SB1049-0810		
SDG: SG8999	LAB_ID	SG8999-10			SG8999-11			SG8999-15			SG8999-16		
FRACTION: MISC	SAMP_DATE	11/14/2013			11/14/2013			11/14/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	%			%			%			%		
	PCT_SOLIDS	90.4			87.8			90.8			88.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL SOLIDS		90			88			91			88		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1057-0304			TF2-004/5-SB1057-0608			TF2-004/5-SB1058-0204			TF2-004/5-SB1064-0204		
SDG: SG8999	LAB_ID	SG8999-8			SG8999-9			SG8999-4			SG8999-5		
FRACTION: MISC	SAMP_DATE	11/14/2013			11/14/2013			11/13/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	%			%			%			%		
	PCT_SOLIDS	91.1			90.9			94.2			92.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL SOLIDS		91			91			94			93		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1064-0406			TF2-004/5-SB1065-0204			TF2-004/5-SB1065-0608			TF2-004/5-SB1066-0203		
SDG: SG8999	LAB_ID	SG8999-6			SG8999-26			SG8999-27			SG8999-7		
FRACTION: MISC	SAMP_DATE	11/13/2013			11/14/2013			11/14/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	%			%			%			%		
	PCT_SOLIDS	95.4			94.6			95.7			96.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL SOLIDS		95			94			96			96		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1068-0204			TF2-004/5-SS1043-0.10.5			TF2-SB-DUP05-1113			TF2-SB-DUP06-1113		
SDG: SG8999	LAB_ID	SG8999-24			SG8999-2			SG8999-14			SG8999-25		
FRACTION: MISC	SAMP_DATE	11/14/2013			11/13/2013			11/14/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	%			%			%			%		
	PCT_SOLIDS	90.9			93.7			90.7			89.3		
	DUP_OF							TF2-004/5-SB1057-0608			TF2-004/5-SB1068-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL SOLIDS		91			94			91			89		

PROJ_NO: 03019	NSAMPLE	TF2-SB-DUP07-1113		
SDG: SG8999	LAB_ID	SG8999-28		
FRACTION: MISC	SAMP_DATE	11/14/2013		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	%		
	PCT_SOLIDS	87.8		
	DUP_OF	TF2-004/5-SB1040-0810		
PARAMETER		RESULT	VQL	QLCD
TOTAL SOLIDS		88		

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SB-RB03-1113

Matrix: WATER **SDG Name:** SG8999

Percent Solids: 0.00 **Lab Sample ID:** SG8999-012

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	LOQ	ADJUSTED MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11.2	J		MS	5	300	4.40	40
7440-36-0	ANTIMONY, TOTAL	0.08	J		MS	5	1.0	0.05	0.50
7440-38-2	ARSENIC, TOTAL	4.0	U		MS	5	5.0	2.25	4.0
7440-39-3	BARIUM, TOTAL	0.30	J		MS	5	2.0	0.25	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	U		MS	5	1.0	0.04	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.03	0.20
7440-70-2	CALCIUM, TOTAL	26.8	J		MS	5	100	20.45	80
7440-47-3	CHROMIUM, TOTAL	0.72	J		MS	5	5.0	0.20	4.0
7440-48-4	COBALT, TOTAL	0.30	U		MS	5	1.0	0.05	0.30
7440-50-8	COPPER, TOTAL	0.32	J		MS	5	3.0	0.20	2.0
7439-89-6	IRON, TOTAL	60	U		MS	5	100	12.75	60
7439-92-1	LEAD, TOTAL	0.50	U		MS	5	1.0	0.05	0.50
7439-95-4	MAGNESIUM, TOTAL	80	U		MS	5	100	7.80	80
7439-96-5	MANGANESE, TOTAL	0.40	J		MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.01	0.10
7440-02-0	NICKEL, TOTAL	1.2	U		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	400	U		MS	5	1000	30.70	400
7782-49-2	SELENIUM, TOTAL	3.0	U		MS	5	5.0	0.20	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-23-5	SODIUM, TOTAL	400	U		MS	5	1000	18.50	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-62-2	VANADIUM, TOTAL	4.0	U		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	8.0	U		MS	5	10	3.90	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1031-0204

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 89.8 **Lab Sample ID:** SG8999-019

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12300			MS	5	28	0.47	3.7
7440-36-0	ANTIMONY, TOTAL	0.08	J	N	MS	5	0.092	0.02	0.046
7440-38-2	ARSENIC, TOTAL	4.8			MS	5	0.46	0.14	0.37
7440-39-3	BARIUM, TOTAL	16.1			MS	5	0.18	0.03	0.092
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.092	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.05	J		MS	5	0.092	0.009	0.018
7440-70-2	CALCIUM, TOTAL	607		N	MS	5	9.2	3.52	7.4
7440-47-3	CHROMIUM, TOTAL	13.9		N	MS	5	0.46	0.05	0.37
7440-48-4	COBALT, TOTAL	8.5			MS	5	0.092	0.005	0.028
7440-50-8	COPPER, TOTAL	15.9			MS	5	0.28	0.06	0.18
7439-89-6	IRON, TOTAL	19700			MS	5	9.2	2.21	5.5
7439-92-1	LEAD, TOTAL	10.0			MS	5	0.092	0.005	0.046
7439-95-4	MAGNESIUM, TOTAL	3260			MS	5	9.2	1.26	7.4
7439-96-5	MANGANESE, TOTAL	225			MS	5	0.18	0.04	0.092
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.034	0.005	0.017
7440-02-0	NICKEL, TOTAL	15.0			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	431			MS	5	92	4.20	37
7782-49-2	SELENIUM, TOTAL	0.16	J		MS	5	0.46	0.04	0.28
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.092	0.005	0.037
7440-23-5	SODIUM, TOTAL	47.6	J		MS	5	92	2.36	37
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.092	0.009	0.037
7440-62-2	VANADIUM, TOTAL	15.9			MS	5	0.46	0.10	0.37
7440-66-6	ZINC, TOTAL	40.0			MS	5	0.92	0.12	0.74

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1031-0810

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 93.6 **Lab Sample ID:** SG8999-021

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	17200			MS	5	21	0.35	2.8
7440-36-0	ANTIMONY, TOTAL	0.04	J	N	MS	5	0.069	0.01	0.034
7440-38-2	ARSENIC, TOTAL	2.8			MS	5	0.34	0.10	0.28
7440-39-3	BARIUM, TOTAL	7.7			MS	5	0.14	0.02	0.069
7440-41-7	BERYLLIUM, TOTAL	0.25			MS	5	0.069	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.1			MS	5	0.069	0.007	0.014
7440-70-2	CALCIUM, TOTAL	782		N	MS	5	6.9	2.64	5.5
7440-47-3	CHROMIUM, TOTAL	17.5		N	MS	5	0.34	0.03	0.28
7440-48-4	COBALT, TOTAL	11.3			MS	5	0.069	0.003	0.021
7440-50-8	COPPER, TOTAL	10.9			MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	37600			MS	10	14	3.31	8.3
7439-92-1	LEAD, TOTAL	6.3			MS	5	0.069	0.003	0.034
7439-95-4	MAGNESIUM, TOTAL	5200			MS	5	6.9	0.94	5.5
7439-96-5	MANGANESE, TOTAL	244			MS	5	0.14	0.03	0.069
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	17.8			MS	5	0.14	0.02	0.083
7440-09-7	POTASSIUM, TOTAL	184			MS	5	69	3.14	28
7782-49-2	SELENIUM, TOTAL	0.05	J		MS	5	0.34	0.03	0.21
7440-22-4	SILVER, TOTAL	0.01	J		MS	5	0.069	0.003	0.028
7440-23-5	SODIUM, TOTAL	29.0	J		MS	5	69	1.77	28
7440-28-0	THALLIUM, TOTAL	0.02	J		MS	5	0.069	0.007	0.028
7440-62-2	VANADIUM, TOTAL	29.1			MS	5	0.34	0.08	0.28
7440-66-6	ZINC, TOTAL	58.1			MS	5	0.69	0.09	0.55

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1038-0204

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 91.7 **Lab Sample ID:** SG8999-017

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15800			MS	5	26	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	0.07	J	N	MS	5	0.085	0.02	0.042
7440-38-2	ARSENIC, TOTAL	6.6			MS	5	0.42	0.13	0.34
7440-39-3	BARIUM, TOTAL	16.0			MS	5	0.17	0.03	0.085
7440-41-7	BERYLLIUM, TOTAL	0.40			MS	5	0.085	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.085	0.009	0.017
7440-70-2	CALCIUM, TOTAL	863		N	MS	5	8.5	3.26	6.8
7440-47-3	CHROMIUM, TOTAL	21.9		N	MS	5	0.42	0.04	0.34
7440-48-4	COBALT, TOTAL	10.5			MS	5	0.085	0.004	0.026
7440-50-8	COPPER, TOTAL	19.5			MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	31700			MS	5	8.5	2.04	5.1
7439-92-1	LEAD, TOTAL	11.6			MS	5	0.085	0.004	0.042
7439-95-4	MAGNESIUM, TOTAL	4900			MS	5	8.5	1.16	6.8
7439-96-5	MANGANESE, TOTAL	250			MS	5	0.17	0.03	0.085
7439-97-6	MERCURY, TOTAL	0.03			CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	22.3			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	403			MS	5	85	3.88	34
7782-49-2	SELENIUM, TOTAL	0.22	J		MS	5	0.42	0.03	0.26
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.085	0.004	0.034
7440-23-5	SODIUM, TOTAL	47.7	J		MS	5	85	2.18	34
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.085	0.009	0.034
7440-62-2	VANADIUM, TOTAL	18.5			MS	5	0.42	0.09	0.34
7440-66-6	ZINC, TOTAL	52.8			MS	5	0.85	0.11	0.68

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1038-0810

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 91.6 **Lab Sample ID:** SG8999-018

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16800			MS	5	23	0.39	3.0
7440-36-0	ANTIMONY, TOTAL	0.1		N	MS	5	0.076	0.02	0.038
7440-38-2	ARSENIC, TOTAL	5.7			MS	5	0.38	0.11	0.30
7440-39-3	BARIUM, TOTAL	12.5			MS	5	0.15	0.03	0.076
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.076	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.076	0.008	0.015
7440-70-2	CALCIUM, TOTAL	690		N	MS	5	7.6	2.90	6.1
7440-47-3	CHROMIUM, TOTAL	22.0		N	MS	5	0.38	0.04	0.30
7440-48-4	COBALT, TOTAL	12.2			MS	5	0.076	0.004	0.023
7440-50-8	COPPER, TOTAL	20.2			MS	5	0.23	0.05	0.15
7439-89-6	IRON, TOTAL	32600			MS	5	7.6	1.82	4.5
7439-92-1	LEAD, TOTAL	14.4			MS	5	0.076	0.004	0.038
7439-95-4	MAGNESIUM, TOTAL	5330			MS	5	7.6	1.04	6.1
7439-96-5	MANGANESE, TOTAL	265			MS	5	0.15	0.03	0.076
7439-97-6	MERCURY, TOTAL	0.03	J		CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	23.7			MS	5	0.15	0.02	0.091
7440-09-7	POTASSIUM, TOTAL	363			MS	5	76	3.46	30
7782-49-2	SELENIUM, TOTAL	0.27	J		MS	5	0.38	0.03	0.23
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.076	0.004	0.030
7440-23-5	SODIUM, TOTAL	46.0	J		MS	5	76	1.95	30
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.076	0.008	0.030
7440-62-2	VANADIUM, TOTAL	20.6			MS	5	0.38	0.08	0.30
7440-66-6	ZINC, TOTAL	54.9			MS	5	0.76	0.10	0.61

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1039-0406

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 89.7 **Lab Sample ID:** SG8999-020

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12900			MS	5	19	0.32	2.5
7440-36-0	ANTIMONY, TOTAL	0.07		N	MS	5	0.063	0.01	0.032
7440-38-2	ARSENIC, TOTAL	5.4			MS	5	0.32	0.10	0.25
7440-39-3	BARIUM, TOTAL	14.2			MS	5	0.13	0.02	0.063
7440-41-7	BERYLLIUM, TOTAL	0.35			MS	5	0.063	0.003	0.013
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.063	0.006	0.013
7440-70-2	CALCIUM, TOTAL	716		N	MS	5	6.3	2.42	5.1
7440-47-3	CHROMIUM, TOTAL	16.0		N	MS	5	0.32	0.03	0.25
7440-48-4	COBALT, TOTAL	8.3			MS	5	0.063	0.003	0.019
7440-50-8	COPPER, TOTAL	15.6			MS	5	0.19	0.04	0.13
7439-89-6	IRON, TOTAL	20900			MS	5	6.3	1.52	3.8
7439-92-1	LEAD, TOTAL	9.0			MS	5	0.063	0.003	0.032
7439-95-4	MAGNESIUM, TOTAL	3490			MS	5	6.3	0.86	5.1
7439-96-5	MANGANESE, TOTAL	219			MS	5	0.13	0.03	0.063
7439-97-6	MERCURY, TOTAL	0.07			CV	1	0.035	0.005	0.018
7440-02-0	NICKEL, TOTAL	17.2			MS	5	0.13	0.02	0.076
7440-09-7	POTASSIUM, TOTAL	328			MS	5	63	2.89	25
7782-49-2	SELENIUM, TOTAL	0.19	J		MS	5	0.32	0.03	0.19
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.063	0.003	0.025
7440-23-5	SODIUM, TOTAL	51.7	J		MS	5	63	1.62	25
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.063	0.006	0.025
7440-62-2	VANADIUM, TOTAL	17.2			MS	5	0.32	0.07	0.25
7440-66-6	ZINC, TOTAL	36.9			MS	5	0.63	0.08	0.51

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1040-0204

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 93.2 **Lab Sample ID:** SG8999-022

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13300			MS	5	22	0.38	3.0
7440-36-0	ANTIMONY, TOTAL	0.07	J	N	MS	5	0.074	0.01	0.037
7440-38-2	ARSENIC, TOTAL	5.0			MS	5	0.37	0.11	0.30
7440-39-3	BARIUM, TOTAL	13.1			MS	5	0.15	0.03	0.074
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.074	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.074	0.007	0.015
7440-70-2	CALCIUM, TOTAL	587		N	MS	5	7.4	2.83	5.9
7440-47-3	CHROMIUM, TOTAL	15.9		N	MS	5	0.37	0.04	0.30
7440-48-4	COBALT, TOTAL	13.2			MS	5	0.074	0.004	0.022
7440-50-8	COPPER, TOTAL	19.3			MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	24800			MS	5	7.4	1.77	4.4
7439-92-1	LEAD, TOTAL	11.6			MS	5	0.074	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	4470			MS	5	7.4	1.01	5.9
7439-96-5	MANGANESE, TOTAL	300			MS	5	0.15	0.03	0.074
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	20.6			MS	5	0.15	0.02	0.089
7440-09-7	POTASSIUM, TOTAL	334			MS	5	74	3.37	30
7782-49-2	SELENIUM, TOTAL	0.09	J		MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.074	0.004	0.030
7440-23-5	SODIUM, TOTAL	34.3	J		MS	5	74	1.90	30
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.074	0.007	0.030
7440-62-2	VANADIUM, TOTAL	13.6			MS	5	0.37	0.08	0.30
7440-66-6	ZINC, TOTAL	44.9			MS	5	0.74	0.10	0.59

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1040-0810

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 86.3 **Lab Sample ID:** SG8999-023

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13800			MS	5	26	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	0.1		N	MS	5	0.085	0.02	0.043
7440-38-2	ARSENIC, TOTAL	4.7			MS	5	0.43	0.13	0.34
7440-39-3	BARIUM, TOTAL	15.3			MS	5	0.17	0.03	0.085
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.085	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.05	J		MS	5	0.085	0.009	0.017
7440-70-2	CALCIUM, TOTAL	822		N	MS	5	8.5	3.26	6.8
7440-47-3	CHROMIUM, TOTAL	17.7		N	MS	5	0.43	0.04	0.34
7440-48-4	COBALT, TOTAL	9.0			MS	5	0.085	0.004	0.026
7440-50-8	COPPER, TOTAL	15.7			MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	23200			MS	5	8.5	2.04	5.1
7439-92-1	LEAD, TOTAL	11.8			MS	5	0.085	0.004	0.043
7439-95-4	MAGNESIUM, TOTAL	4020			MS	5	8.5	1.16	6.8
7439-96-5	MANGANESE, TOTAL	236			MS	5	0.17	0.03	0.085
7439-97-6	MERCURY, TOTAL	0.05			CV	1	0.039	0.006	0.020
7440-02-0	NICKEL, TOTAL	17.5			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	394			MS	5	85	3.89	34
7782-49-2	SELENIUM, TOTAL	0.22	J		MS	5	0.43	0.03	0.26
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.085	0.004	0.034
7440-23-5	SODIUM, TOTAL	37.5	J		MS	5	85	2.19	34
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.085	0.009	0.034
7440-62-2	VANADIUM, TOTAL	16.3			MS	5	0.43	0.09	0.34
7440-66-6	ZINC, TOTAL	40.4			MS	5	0.85	0.11	0.68

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1041-022.5

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 94.4 **Lab Sample ID:** SG8999-003

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15600			MS	5	25	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	0.06	J	N	MS	5	0.084	0.02	0.042
7440-38-2	ARSENIC, TOTAL	6.1			MS	5	0.42	0.13	0.34
7440-39-3	BARIUM, TOTAL	14.0			MS	5	0.17	0.03	0.084
7440-41-7	BERYLLIUM, TOTAL	0.44			MS	5	0.084	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.084	0.008	0.017
7440-70-2	CALCIUM, TOTAL	534		N	MS	5	8.4	3.22	6.7
7440-47-3	CHROMIUM, TOTAL	19.9		N	MS	5	0.42	0.04	0.34
7440-48-4	COBALT, TOTAL	11.2			MS	5	0.084	0.004	0.025
7440-50-8	COPPER, TOTAL	16.5			MS	5	0.25	0.06	0.17
7439-89-6	IRON, TOTAL	27600			MS	5	8.4	2.02	5.0
7439-92-1	LEAD, TOTAL	14.8			MS	5	0.084	0.004	0.042
7439-95-4	MAGNESIUM, TOTAL	4660			MS	5	8.4	1.15	6.7
7439-96-5	MANGANESE, TOTAL	254			MS	5	0.17	0.03	0.084
7439-97-6	MERCURY, TOTAL	0.03	J		CV	1	0.027	0.004	0.014
7440-02-0	NICKEL, TOTAL	23.1			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	371			MS	5	84	3.83	34
7782-49-2	SELENIUM, TOTAL	0.28	J		MS	5	0.42	0.03	0.25
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.084	0.004	0.034
7440-23-5	SODIUM, TOTAL	32.8	J		MS	5	84	2.16	34
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.084	0.008	0.034
7440-62-2	VANADIUM, TOTAL	18.8			MS	5	0.42	0.09	0.34
7440-66-6	ZINC, TOTAL	47.1			MS	5	0.84	0.11	0.67

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1047-0204

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 90.4 **Lab Sample ID:** SG8999-010

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13200			MS	5	24	0.41	3.2
7440-36-0	ANTIMONY, TOTAL	0.08	J	N	MS	5	0.081	0.02	0.041
7440-38-2	ARSENIC, TOTAL	6.6			MS	5	0.41	0.12	0.32
7440-39-3	BARIUM, TOTAL	18.1			MS	5	0.16	0.03	0.081
7440-41-7	BERYLLIUM, TOTAL	0.40			MS	5	0.081	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.081	0.008	0.016
7440-70-2	CALCIUM, TOTAL	674		N	MS	5	8.1	3.11	6.5
7440-47-3	CHROMIUM, TOTAL	16.0		N	MS	5	0.41	0.04	0.32
7440-48-4	COBALT, TOTAL	8.7			MS	5	0.081	0.004	0.024
7440-50-8	COPPER, TOTAL	13.0			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	20300			MS	5	8.1	1.95	4.9
7439-92-1	LEAD, TOTAL	11.7			MS	5	0.081	0.004	0.041
7439-95-4	MAGNESIUM, TOTAL	3340			MS	5	8.1	1.11	6.5
7439-96-5	MANGANESE, TOTAL	240			MS	5	0.16	0.03	0.081
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.026	0.004	0.013
7440-02-0	NICKEL, TOTAL	15.8			MS	5	0.16	0.02	0.098
7440-09-7	POTASSIUM, TOTAL	427			MS	5	81	3.71	32
7782-49-2	SELENIUM, TOTAL	0.04	J		MS	5	0.41	0.03	0.24
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.081	0.004	0.032
7440-23-5	SODIUM, TOTAL	37.1	J		MS	5	81	2.09	32
7440-28-0	THALLIUM, TOTAL	0.20			MS	5	0.081	0.008	0.032
7440-62-2	VANADIUM, TOTAL	18.6			MS	5	0.41	0.09	0.32
7440-66-6	ZINC, TOTAL	36.2			MS	5	0.81	0.11	0.65

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1047-0608

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 87.8 **Lab Sample ID:** SG8999-011

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15600			MS	5	18	0.31	2.4
7440-36-0	ANTIMONY, TOTAL	0.07		N	MS	5	0.060	0.01	0.030
7440-38-2	ARSENIC, TOTAL	7.8			MS	5	0.30	0.09	0.24
7440-39-3	BARIUM, TOTAL	15.8			MS	5	0.12	0.02	0.060
7440-41-7	BERYLLIUM, TOTAL	0.35			MS	5	0.060	0.002	0.012
7440-43-9	CADMIUM, TOTAL	0.07			MS	5	0.060	0.006	0.012
7440-70-2	CALCIUM, TOTAL	770		N	MS	5	6.0	2.31	4.8
7440-47-3	CHROMIUM, TOTAL	18.6		N	MS	5	0.30	0.03	0.24
7440-48-4	COBALT, TOTAL	15.4			MS	5	0.060	0.003	0.018
7440-50-8	COPPER, TOTAL	22.0			MS	5	0.18	0.04	0.12
7439-89-6	IRON, TOTAL	26600			MS	5	6.0	1.45	3.6
7439-92-1	LEAD, TOTAL	11.4			MS	5	0.060	0.003	0.030
7439-95-4	MAGNESIUM, TOTAL	4720			MS	5	6.0	0.82	4.8
7439-96-5	MANGANESE, TOTAL	345			MS	10	0.24	0.05	0.12
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	22.9			MS	5	0.12	0.02	0.072
7440-09-7	POTASSIUM, TOTAL	397			MS	5	60	2.75	24
7782-49-2	SELENIUM, TOTAL	0.18	U		MS	5	0.30	0.02	0.18
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.060	0.003	0.024
7440-23-5	SODIUM, TOTAL	31.4	J		MS	5	60	1.55	24
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.060	0.006	0.024
7440-62-2	VANADIUM, TOTAL	17.1			MS	5	0.30	0.07	0.24
7440-66-6	ZINC, TOTAL	50.0			MS	5	0.60	0.08	0.48

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1049-0204

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 90.8 **Lab Sample ID:** SG8999-015

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12000			MS	5	24	0.40	3.1
7440-36-0	ANTIMONY, TOTAL	0.07	J	N	MS	5	0.079	0.02	0.039
7440-38-2	ARSENIC, TOTAL	4.4			MS	5	0.39	0.12	0.31
7440-39-3	BARIUM, TOTAL	15.3			MS	5	0.16	0.03	0.079
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.079	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.05	J		MS	5	0.079	0.008	0.016
7440-70-2	CALCIUM, TOTAL	611		N	MS	5	7.9	3.01	6.3
7440-47-3	CHROMIUM, TOTAL	14.2		N	MS	5	0.39	0.04	0.31
7440-48-4	COBALT, TOTAL	7.4			MS	5	0.079	0.004	0.024
7440-50-8	COPPER, TOTAL	11.8			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	18900			MS	5	7.9	1.89	4.7
7439-92-1	LEAD, TOTAL	8.6			MS	5	0.079	0.004	0.039
7439-95-4	MAGNESIUM, TOTAL	3160			MS	5	7.9	1.07	6.3
7439-96-5	MANGANESE, TOTAL	216			MS	5	0.16	0.03	0.079
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.034	0.005	0.017
7440-02-0	NICKEL, TOTAL	13.3			MS	5	0.16	0.02	0.094
7440-09-7	POTASSIUM, TOTAL	412			MS	5	79	3.59	31
7782-49-2	SELENIUM, TOTAL	0.10	J		MS	5	0.39	0.03	0.24
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.079	0.004	0.031
7440-23-5	SODIUM, TOTAL	34.1	J		MS	5	79	2.02	31
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.079	0.008	0.031
7440-62-2	VANADIUM, TOTAL	16.2			MS	5	0.39	0.09	0.31
7440-66-6	ZINC, TOTAL	34.8			MS	5	0.79	0.10	0.63

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1049-0810

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 88.1 **Lab Sample ID:** SG8999-016

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14600			MS	5	26	0.44	3.5
7440-36-0	ANTIMONY, TOTAL	0.08	J	N	MS	5	0.087	0.02	0.043
7440-38-2	ARSENIC, TOTAL	8.3			MS	5	0.43	0.13	0.35
7440-39-3	BARIUM, TOTAL	18.4			MS	5	0.17	0.03	0.087
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.087	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.087	0.009	0.017
7440-70-2	CALCIUM, TOTAL	827		N	MS	5	8.7	3.31	6.9
7440-47-3	CHROMIUM, TOTAL	17.8		N	MS	5	0.43	0.04	0.35
7440-48-4	COBALT, TOTAL	13.7			MS	5	0.087	0.004	0.026
7440-50-8	COPPER, TOTAL	15.7			MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	24300			MS	5	8.7	2.08	5.2
7439-92-1	LEAD, TOTAL	11.6			MS	5	0.087	0.004	0.043
7439-95-4	MAGNESIUM, TOTAL	4220			MS	5	8.7	1.18	6.9
7439-96-5	MANGANESE, TOTAL	326			MS	5	0.17	0.03	0.087
7439-97-6	MERCURY, TOTAL	0.07			CV	1	0.034	0.005	0.018
7440-02-0	NICKEL, TOTAL	21.1			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	480			MS	5	87	3.95	35
7782-49-2	SELENIUM, TOTAL	0.29	J		MS	5	0.43	0.03	0.26
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.087	0.004	0.035
7440-23-5	SODIUM, TOTAL	45.4	J		MS	5	87	2.22	35
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.087	0.009	0.035
7440-62-2	VANADIUM, TOTAL	17.9			MS	5	0.43	0.10	0.35
7440-66-6	ZINC, TOTAL	46.9			MS	5	0.87	0.11	0.69

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1057-0304

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 91.1 **Lab Sample ID:** SG8999-008

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12200			MS	5	23	0.39	3.0
7440-36-0	ANTIMONY, TOTAL	0.09		N	MS	5	0.076	0.02	0.038
7440-38-2	ARSENIC, TOTAL	5.3			MS	5	0.38	0.11	0.30
7440-39-3	BARIUM, TOTAL	14.2			MS	5	0.15	0.03	0.076
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.076	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.14			MS	5	0.076	0.008	0.015
7440-70-2	CALCIUM, TOTAL	545		N	MS	5	7.6	2.92	6.1
7440-47-3	CHROMIUM, TOTAL	15.1		N	MS	5	0.38	0.04	0.30
7440-48-4	COBALT, TOTAL	8.3			MS	5	0.076	0.004	0.023
7440-50-8	COPPER, TOTAL	13.0			MS	5	0.23	0.05	0.15
7439-89-6	IRON, TOTAL	21600			MS	5	7.6	1.83	4.6
7439-92-1	LEAD, TOTAL	8.4			MS	5	0.076	0.004	0.038
7439-95-4	MAGNESIUM, TOTAL	3500			MS	5	7.6	1.04	6.1
7439-96-5	MANGANESE, TOTAL	223			MS	5	0.15	0.03	0.076
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.036	0.005	0.018
7440-02-0	NICKEL, TOTAL	15.8			MS	5	0.15	0.02	0.092
7440-09-7	POTASSIUM, TOTAL	588			MS	5	76	3.48	30
7782-49-2	SELENIUM, TOTAL	0.86			MS	5	0.38	0.03	0.23
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.076	0.004	0.030
7440-23-5	SODIUM, TOTAL	34.7	J		MS	5	76	1.96	30
7440-28-0	THALLIUM, TOTAL	0.25			MS	5	0.076	0.008	0.030
7440-62-2	VANADIUM, TOTAL	14.0			MS	5	0.38	0.08	0.30
7440-66-6	ZINC, TOTAL	33.5			MS	5	0.76	0.10	0.61

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1057-0608

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 90.9 **Lab Sample ID:** SG8999-009

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	17400			MS	5	20	0.34	2.7
7440-36-0	ANTIMONY, TOTAL	0.10		N	MS	5	0.068	0.01	0.034
7440-38-2	ARSENIC, TOTAL	8.9			MS	5	0.34	0.10	0.27
7440-39-3	BARIUM, TOTAL	12.9			MS	5	0.14	0.02	0.068
7440-41-7	BERYLLIUM, TOTAL	1.3			MS	5	0.068	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.05	J		MS	5	0.068	0.007	0.014
7440-70-2	CALCIUM, TOTAL	746		N	MS	5	6.8	2.58	5.4
7440-47-3	CHROMIUM, TOTAL	23.0		N	MS	5	0.34	0.03	0.27
7440-48-4	COBALT, TOTAL	23.5			MS	5	0.068	0.003	0.020
7440-50-8	COPPER, TOTAL	23.3			MS	5	0.20	0.05	0.14
7439-89-6	IRON, TOTAL	41200			MS	10	14	3.24	8.1
7439-92-1	LEAD, TOTAL	15.4			MS	5	0.068	0.003	0.034
7439-95-4	MAGNESIUM, TOTAL	5660			MS	5	6.8	0.92	5.4
7439-96-5	MANGANESE, TOTAL	322			MS	5	0.14	0.03	0.068
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.036	0.005	0.018
7440-02-0	NICKEL, TOTAL	31.0			MS	5	0.14	0.02	0.081
7440-09-7	POTASSIUM, TOTAL	324			MS	5	68	3.08	27
7782-49-2	SELENIUM, TOTAL	0.20	U		MS	5	0.34	0.03	0.20
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.068	0.003	0.027
7440-23-5	SODIUM, TOTAL	28.3	J		MS	5	68	1.73	27
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.068	0.007	0.027
7440-62-2	VANADIUM, TOTAL	18.3			MS	5	0.34	0.07	0.27
7440-66-6	ZINC, TOTAL	60.5			MS	5	0.68	0.09	0.54

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1058-0204

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 94.2 **Lab Sample ID:** SG8999-004

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	20000			MS	5	22	0.37	2.9
7440-36-0	ANTIMONY, TOTAL	0.06	J	N	MS	5	0.072	0.01	0.036
7440-38-2	ARSENIC, TOTAL	7.4			MS	5	0.36	0.11	0.29
7440-39-3	BARIUM, TOTAL	10.8			MS	5	0.14	0.03	0.072
7440-41-7	BERYLLIUM, TOTAL	0.46			MS	5	0.072	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.05	J		MS	5	0.072	0.007	0.014
7440-70-2	CALCIUM, TOTAL	554		N	MS	5	7.2	2.76	5.8
7440-47-3	CHROMIUM, TOTAL	27.0		N	MS	5	0.36	0.04	0.29
7440-48-4	COBALT, TOTAL	15.2			MS	5	0.072	0.004	0.022
7440-50-8	COPPER, TOTAL	26.4			MS	25	1.1	0.25	0.72
7439-89-6	IRON, TOTAL	43500			MS	25	36	8.67	22
7439-92-1	LEAD, TOTAL	15.1			MS	5	0.072	0.004	0.036
7439-95-4	MAGNESIUM, TOTAL	7150			MS	5	7.2	0.99	5.8
7439-96-5	MANGANESE, TOTAL	364			MS	25	0.72	0.14	0.36
7439-97-6	MERCURY, TOTAL	0.016	U		CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	32.8			MS	5	0.14	0.02	0.087
7440-09-7	POTASSIUM, TOTAL	310			MS	5	72	3.29	29
7782-49-2	SELENIUM, TOTAL	0.33	J		MS	5	0.36	0.03	0.22
7440-22-4	SILVER, TOTAL	0.01	J		MS	5	0.072	0.004	0.029
7440-23-5	SODIUM, TOTAL	21.8	J		MS	5	72	1.85	29
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.072	0.007	0.029
7440-62-2	VANADIUM, TOTAL	19.1			MS	5	0.36	0.08	0.29
7440-66-6	ZINC, TOTAL	75.1			MS	25	3.6	0.47	2.9

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1064-0204

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 92.8 **Lab Sample ID:** SG8999-005

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16100			MS	5	22	0.37	2.9
7440-36-0	ANTIMONY, TOTAL	0.09		N	MS	5	0.072	0.01	0.036
7440-38-2	ARSENIC, TOTAL	7.7			MS	5	0.36	0.11	0.29
7440-39-3	BARIUM, TOTAL	10.2			MS	5	0.14	0.03	0.072
7440-41-7	BERYLLIUM, TOTAL	0.51			MS	5	0.072	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.072	0.007	0.014
7440-70-2	CALCIUM, TOTAL	637		N	MS	5	7.2	2.75	5.7
7440-47-3	CHROMIUM, TOTAL	22.1		N	MS	5	0.36	0.04	0.29
7440-48-4	COBALT, TOTAL	12.4			MS	5	0.072	0.004	0.022
7440-50-8	COPPER, TOTAL	26.6			MS	5	0.22	0.05	0.14
7439-89-6	IRON, TOTAL	38600			MS	10	14	3.45	8.6
7439-92-1	LEAD, TOTAL	14.6			MS	5	0.072	0.004	0.036
7439-95-4	MAGNESIUM, TOTAL	5720			MS	5	7.2	0.98	5.7
7439-96-5	MANGANESE, TOTAL	293			MS	5	0.14	0.03	0.072
7439-97-6	MERCURY, TOTAL	0.004	J		CV	1	0.027	0.004	0.014
7440-02-0	NICKEL, TOTAL	29.1			MS	5	0.14	0.02	0.086
7440-09-7	POTASSIUM, TOTAL	282			MS	5	72	3.28	29
7782-49-2	SELENIUM, TOTAL	0.24	J		MS	5	0.36	0.03	0.22
7440-22-4	SILVER, TOTAL	0.01	J		MS	5	0.072	0.004	0.029
7440-23-5	SODIUM, TOTAL	21.8	J		MS	5	72	1.84	29
7440-28-0	THALLIUM, TOTAL	0.02	J		MS	5	0.072	0.007	0.029
7440-62-2	VANADIUM, TOTAL	17.4			MS	5	0.36	0.08	0.29
7440-66-6	ZINC, TOTAL	64.5			MS	5	0.72	0.09	0.57

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1064-0406

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 95.4 **Lab Sample ID:** SG8999-006

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16600			MS	5	24	0.40	3.2
7440-36-0	ANTIMONY, TOTAL	0.05	J	N	MS	5	0.079	0.02	0.039
7440-38-2	ARSENIC, TOTAL	6.6			MS	5	0.39	0.12	0.32
7440-39-3	BARIUM, TOTAL	10.8			MS	5	0.16	0.03	0.079
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.079	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.079	0.008	0.016
7440-70-2	CALCIUM, TOTAL	408		N	MS	5	7.9	3.02	6.3
7440-47-3	CHROMIUM, TOTAL	22.1		N	MS	5	0.39	0.04	0.32
7440-48-4	COBALT, TOTAL	16.3			MS	5	0.079	0.004	0.024
7440-50-8	COPPER, TOTAL	27.7			MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	35400			MS	5	7.9	1.89	4.7
7439-92-1	LEAD, TOTAL	20.2			MS	5	0.079	0.004	0.039
7439-95-4	MAGNESIUM, TOTAL	5840			MS	5	7.9	1.08	6.3
7439-96-5	MANGANESE, TOTAL	338			MS	5	0.16	0.03	0.079
7439-97-6	MERCURY, TOTAL	0.016	U		CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	27.4			MS	5	0.16	0.02	0.095
7440-09-7	POTASSIUM, TOTAL	295			MS	5	79	3.59	32
7782-49-2	SELENIUM, TOTAL	0.18	J		MS	5	0.39	0.03	0.24
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.079	0.004	0.032
7440-23-5	SODIUM, TOTAL	25.5	J		MS	5	79	2.02	32
7440-28-0	THALLIUM, TOTAL	0.02	J		MS	5	0.079	0.008	0.032
7440-62-2	VANADIUM, TOTAL	16.9			MS	5	0.39	0.09	0.32
7440-66-6	ZINC, TOTAL	60.7			MS	5	0.79	0.10	0.63

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1065-0204

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 94.6 **Lab Sample ID:** SG8999-026

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16200			MS	5	21	0.36	2.8
7440-36-0	ANTIMONY, TOTAL	0.06	J	N	MS	5	0.070	0.01	0.035
7440-38-2	ARSENIC, TOTAL	6.9			MS	5	0.35	0.11	0.28
7440-39-3	BARIUM, TOTAL	11.4			MS	5	0.14	0.02	0.070
7440-41-7	BERYLLIUM, TOTAL	0.58			MS	5	0.070	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.05	J		MS	5	0.070	0.007	0.014
7440-70-2	CALCIUM, TOTAL	520		N	MS	5	7.0	2.68	5.6
7440-47-3	CHROMIUM, TOTAL	20.8		N	MS	5	0.35	0.04	0.28
7440-48-4	COBALT, TOTAL	14.7			MS	5	0.070	0.004	0.021
7440-50-8	COPPER, TOTAL	22.0			MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	35000			MS	10	14	3.36	8.4
7439-92-1	LEAD, TOTAL	13.6			MS	5	0.070	0.004	0.035
7439-95-4	MAGNESIUM, TOTAL	5500			MS	5	7.0	0.96	5.6
7439-96-5	MANGANESE, TOTAL	299			MS	5	0.14	0.03	0.070
7439-97-6	MERCURY, TOTAL	0.01	J		CV	1	0.035	0.005	0.018
7440-02-0	NICKEL, TOTAL	25.7			MS	5	0.14	0.02	0.084
7440-09-7	POTASSIUM, TOTAL	306			MS	5	70	3.19	28
7782-49-2	SELENIUM, TOTAL	0.09	J		MS	5	0.35	0.03	0.21
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.070	0.004	0.028
7440-23-5	SODIUM, TOTAL	43.6	J		MS	5	70	1.80	28
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.070	0.007	0.028
7440-62-2	VANADIUM, TOTAL	15.8			MS	5	0.35	0.08	0.28
7440-66-6	ZINC, TOTAL	54.8			MS	5	0.70	0.09	0.56

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1065-0608

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 95.7 **Lab Sample ID:** SG8999-027

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	20200			MS	5	21	0.35	2.8
7440-36-0	ANTIMONY, TOTAL	0.08		N	MS	5	0.069	0.01	0.034
7440-38-2	ARSENIC, TOTAL	7.7			MS	5	0.34	0.10	0.28
7440-39-3	BARIUM, TOTAL	10.1			MS	5	0.14	0.02	0.069
7440-41-7	BERYLLIUM, TOTAL	0.44			MS	5	0.069	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.07			MS	5	0.069	0.007	0.014
7440-70-2	CALCIUM, TOTAL	101		N	MS	5	6.9	2.65	5.5
7440-47-3	CHROMIUM, TOTAL	26.5		N	MS	5	0.34	0.03	0.28
7440-48-4	COBALT, TOTAL	26.3			MS	5	0.069	0.003	0.021
7440-50-8	COPPER, TOTAL	41.5			MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	42000			MS	10	14	3.32	8.3
7439-92-1	LEAD, TOTAL	20.4			MS	5	0.069	0.003	0.034
7439-95-4	MAGNESIUM, TOTAL	6880			MS	5	6.9	0.94	5.5
7439-96-5	MANGANESE, TOTAL	467			MS	10	0.28	0.06	0.14
7439-97-6	MERCURY, TOTAL	0.007	J		CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	35.6			MS	5	0.14	0.02	0.083
7440-09-7	POTASSIUM, TOTAL	279			MS	5	69	3.15	28
7782-49-2	SELENIUM, TOTAL	0.21	U		MS	5	0.34	0.03	0.21
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.069	0.003	0.028
7440-23-5	SODIUM, TOTAL	44.0	J		MS	5	69	1.77	28
7440-28-0	THALLIUM, TOTAL	0.02	J		MS	5	0.069	0.007	0.028
7440-62-2	VANADIUM, TOTAL	16.8			MS	5	0.34	0.08	0.28
7440-66-6	ZINC, TOTAL	70.8			MS	5	0.69	0.09	0.55

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1066-0203

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 96.1 **Lab Sample ID:** SG8999-007

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12900			MS	5	21	0.35	2.8
7440-36-0	ANTIMONY, TOTAL	0.12		N	MS	5	0.069	0.01	0.035
7440-38-2	ARSENIC, TOTAL	12.1			MS	5	0.35	0.10	0.28
7440-39-3	BARIUM, TOTAL	20.9			MS	5	0.14	0.02	0.069
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.069	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.17			MS	5	0.069	0.007	0.014
7440-70-2	CALCIUM, TOTAL	870		N	MS	5	6.9	2.65	5.5
7440-47-3	CHROMIUM, TOTAL	15.8		N	MS	5	0.35	0.03	0.28
7440-48-4	COBALT, TOTAL	11.2			MS	5	0.069	0.003	0.021
7440-50-8	COPPER, TOTAL	18.5			MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	25500			MS	5	6.9	1.66	4.2
7439-92-1	LEAD, TOTAL	39.5			MS	5	0.069	0.003	0.035
7439-95-4	MAGNESIUM, TOTAL	3740			MS	5	6.9	0.95	5.5
7439-96-5	MANGANESE, TOTAL	307			MS	5	0.14	0.03	0.069
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	21.0			MS	5	0.14	0.02	0.083
7440-09-7	POTASSIUM, TOTAL	428			MS	5	69	3.16	28
7782-49-2	SELENIUM, TOTAL	0.30	J		MS	5	0.35	0.03	0.21
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.069	0.003	0.028
7440-23-5	SODIUM, TOTAL	34.5	J		MS	5	69	1.78	28
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.069	0.007	0.028
7440-62-2	VANADIUM, TOTAL	18.6			MS	5	0.35	0.08	0.28
7440-66-6	ZINC, TOTAL	61.5			MS	5	0.69	0.09	0.55

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1068-0204

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 90.9 **Lab Sample ID:** SG8999-024

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	10600			MS	5	22	0.38	3.0
7440-36-0	ANTIMONY, TOTAL	0.06	J	N	MS	5	0.074	0.01	0.037
7440-38-2	ARSENIC, TOTAL	4.3			MS	5	0.37	0.11	0.30
7440-39-3	BARIUM, TOTAL	12.9			MS	5	0.15	0.03	0.074
7440-41-7	BERYLLIUM, TOTAL	0.33			MS	5	0.074	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.074	0.007	0.015
7440-70-2	CALCIUM, TOTAL	773		N	MS	5	7.4	2.84	5.9
7440-47-3	CHROMIUM, TOTAL	13.3		N	MS	5	0.37	0.04	0.30
7440-48-4	COBALT, TOTAL	7.0			MS	5	0.074	0.004	0.022
7440-50-8	COPPER, TOTAL	10.6			MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	17700			MS	5	7.4	1.78	4.5
7439-92-1	LEAD, TOTAL	8.0			MS	5	0.074	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	3050			MS	5	7.4	1.01	5.9
7439-96-5	MANGANESE, TOTAL	200			MS	5	0.15	0.03	0.074
7439-97-6	MERCURY, TOTAL	0.03	J		CV	1	0.034	0.005	0.018
7440-02-0	NICKEL, TOTAL	13.6			MS	5	0.15	0.02	0.089
7440-09-7	POTASSIUM, TOTAL	427			MS	5	74	3.39	30
7782-49-2	SELENIUM, TOTAL	0.22	U		MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.074	0.004	0.030
7440-23-5	SODIUM, TOTAL	45.4	J		MS	5	74	1.91	30
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.074	0.007	0.030
7440-62-2	VANADIUM, TOTAL	15.2			MS	5	0.37	0.08	0.30
7440-66-6	ZINC, TOTAL	29.0			MS	5	0.74	0.10	0.59

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1043-0.10.5

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 93.7 **Lab Sample ID:** SG8999-002

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	18200			MS	5	25	0.42	3.3
7440-36-0	ANTIMONY, TOTAL	0.07	J	N	MS	5	0.082	0.02	0.041
7440-38-2	ARSENIC, TOTAL	5.4			MS	5	0.41	0.12	0.33
7440-39-3	BARIUM, TOTAL	11.5			MS	5	0.16	0.03	0.082
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.082	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.082	0.008	0.016
7440-70-2	CALCIUM, TOTAL	908		N	MS	5	8.2	3.14	6.6
7440-47-3	CHROMIUM, TOTAL	24.2		N	MS	5	0.41	0.04	0.33
7440-48-4	COBALT, TOTAL	14.8			MS	5	0.082	0.004	0.025
7440-50-8	COPPER, TOTAL	19.5			MS	5	0.25	0.06	0.16
7439-89-6	IRON, TOTAL	34500			MS	5	8.2	1.97	4.9
7439-92-1	LEAD, TOTAL	14.9			MS	5	0.082	0.004	0.041
7439-95-4	MAGNESIUM, TOTAL	6180			MS	5	8.2	1.12	6.6
7439-96-5	MANGANESE, TOTAL	294			MS	5	0.16	0.03	0.082
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	28.8			MS	5	0.16	0.02	0.098
7440-09-7	POTASSIUM, TOTAL	282			MS	5	82	3.74	33
7782-49-2	SELENIUM, TOTAL	0.20	J		MS	5	0.41	0.03	0.25
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.082	0.004	0.033
7440-23-5	SODIUM, TOTAL	27.0	J		MS	5	82	2.11	33
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.082	0.008	0.033
7440-62-2	VANADIUM, TOTAL	19.6			MS	5	0.41	0.09	0.33
7440-66-6	ZINC, TOTAL	61.2			MS	5	0.82	0.11	0.66

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SB-DUP05-1113

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 90.7 **Lab Sample ID:** SG8999-014

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15800			MS	5	25	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	0.1		N	MS	5	0.085	0.02	0.042
7440-38-2	ARSENIC, TOTAL	6.6			MS	5	0.42	0.13	0.34
7440-39-3	BARIUM, TOTAL	13.1			MS	5	0.17	0.03	0.085
7440-41-7	BERYLLIUM, TOTAL	0.50			MS	5	0.085	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.085	0.008	0.017
7440-70-2	CALCIUM, TOTAL	697		N	MS	5	8.5	3.24	6.8
7440-47-3	CHROMIUM, TOTAL	19.6		N	MS	5	0.42	0.04	0.34
7440-48-4	COBALT, TOTAL	13.6			MS	5	0.085	0.004	0.025
7440-50-8	COPPER, TOTAL	19.2			MS	5	0.25	0.06	0.17
7439-89-6	IRON, TOTAL	29600			MS	5	8.5	2.04	5.1
7439-92-1	LEAD, TOTAL	12.4			MS	5	0.085	0.004	0.042
7439-95-4	MAGNESIUM, TOTAL	5080			MS	5	8.5	1.16	6.8
7439-96-5	MANGANESE, TOTAL	299			MS	5	0.17	0.03	0.085
7439-97-6	MERCURY, TOTAL	0.03			CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	25.1			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	348			MS	5	85	3.87	34
7782-49-2	SELENIUM, TOTAL	0.25	U		MS	5	0.42	0.03	0.25
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.085	0.004	0.034
7440-23-5	SODIUM, TOTAL	24.0	J		MS	5	85	2.18	34
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.085	0.008	0.034
7440-62-2	VANADIUM, TOTAL	17.9			MS	5	0.42	0.09	0.34
7440-66-6	ZINC, TOTAL	51.4			MS	5	0.85	0.11	0.68

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SB-DUP06-1113

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 89.3 **Lab Sample ID:** SG8999-025

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9450			MS	5	21	0.36	2.8
7440-36-0	ANTIMONY, TOTAL	0.05	J	N	MS	5	0.071	0.01	0.036
7440-38-2	ARSENIC, TOTAL	3.3			MS	5	0.36	0.11	0.28
7440-39-3	BARIUM, TOTAL	11.7			MS	5	0.14	0.02	0.071
7440-41-7	BERYLLIUM, TOTAL	0.28			MS	5	0.071	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.05	J		MS	5	0.071	0.007	0.014
7440-70-2	CALCIUM, TOTAL	652		N	MS	5	7.1	2.73	5.7
7440-47-3	CHROMIUM, TOTAL	11.7		N	MS	5	0.36	0.04	0.28
7440-48-4	COBALT, TOTAL	6.5			MS	5	0.071	0.004	0.021
7440-50-8	COPPER, TOTAL	8.8			MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	15200			MS	5	7.1	1.71	4.3
7439-92-1	LEAD, TOTAL	6.8			MS	5	0.071	0.004	0.036
7439-95-4	MAGNESIUM, TOTAL	2700			MS	5	7.1	0.97	5.7
7439-96-5	MANGANESE, TOTAL	199			MS	5	0.14	0.03	0.071
7439-97-6	MERCURY, TOTAL	0.03	J		CV	1	0.034	0.005	0.017
7440-02-0	NICKEL, TOTAL	11.5			MS	5	0.14	0.02	0.086
7440-09-7	POTASSIUM, TOTAL	390			MS	5	71	3.25	28
7782-49-2	SELENIUM, TOTAL	0.1	J		MS	5	0.36	0.03	0.21
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.071	0.004	0.028
7440-23-5	SODIUM, TOTAL	37.5	J		MS	5	71	1.83	28
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.071	0.007	0.028
7440-62-2	VANADIUM, TOTAL	14.0			MS	5	0.36	0.08	0.28
7440-66-6	ZINC, TOTAL	25.1			MS	5	0.71	0.09	0.57

Comments:

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-1
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
TF2-W-TB02-1113	SL	13-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	100 %	1		N/A	SM2540G	WG134664	20-NOV-13 09:00:21	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000008

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-19
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1031-0204	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	90. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:05:34	SM2540G	19-NOV-13	

Katahdin Analytical Services 500024

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-21
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1031-0810	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	94. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:05:51	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000026

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-17
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1038-0204	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	92. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:05:15	SM2540G	19-NOV-13	

Katahdin Analytical Services 500022

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-18
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1038-0810	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	92. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:05:24	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000023

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-20
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1039-0406	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	90. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:05:42	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000025

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-22
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1040-0204	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	93. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:06:00	SM2540G	19-NOV-13	

Katahdin Analytical Services 500027

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-23
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1040-0810	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	86. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:06:08	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000028

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-3
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1041-022.5	SL	13-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	94. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:03:26	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000010

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-10
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1047-0204	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	90. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:04:30	SM2540G	19-NOV-13	

Katahdin Analytical Services 500017

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-11
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1047-0608	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	88. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:04:40	SM2540G	19-NOV-13	

Katahdin Analytical Services 500018

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-15
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1049-0204	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	91. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:04:58	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000020

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-16
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1049-0810	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	88. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:05:06	SM2540G	19-NOV-13	

Katahdin Analytical Services 500021

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-8
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1057-0304	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	91. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:04:12	SM2540G	19-NOV-13	

Katahdin Analytical Services 50000 15

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-9
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1057-0608	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	91. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:04:22	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000016

Katahdin
ANALYTICAL SERVICES

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-4
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1058-0204	SL	13-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	94. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:03:34	SM2540G	19-NOV-13	

Katahdin Analytical Services 500011

Katahdin
ANALYTICAL SERVICES

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-5
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1064-0204	SL	13-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	93. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:03:44	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000012

Katahdin
ANALYTICAL SERVICES

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-6
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1064-0406	SL	13-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	95. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:03:52	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000013

Katahdin
ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-26
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1065-0204	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	94. %	1		N/A	SM2540G	WG134681	20-NOV-13 13:40:48	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000031

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-27
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1065-0608	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	96. %	1		N/A	SM2540G	WG134681	20-NOV-13 13:40:57	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000032

Katahdin
ANALYTICAL SERVICES

Accredited in accordance with nelac
Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-7
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1066-0203	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	96. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:04:02	SM2540G	19-NOV-13	

Katahdin Analytical Services 500014

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-24
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1068-0204	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	91. %	1		N/A	SM2540G	WG134768	21-NOV-13 07:07:25	SM2540G	20-NOV-13	

Katahdin Analytical Services 5000029

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-2
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
004/5-SS1043-0.10.5	SL	13-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	94. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:03:15	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000009

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-14
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
TF2-SB-DUP05-1113	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	91. %	1		N/A	SM2540G	WG134667	20-NOV-13 09:04:48	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000019

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-25
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
TF2-SB-DUP06-1113	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	89. %	1		N/A	SM2540G	WG134681	20-NOV-13 13:40:37	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000030

Katahdin
ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8999-28
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8999

Sample Description	Matrix	Date Sampled	Date Received
TF2-SB-DUP07-1113	SL	14-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	88. %	1		N/A	SM2540G	WG134681	20-NOV-13 13:41:05	SM2540G	19-NOV-13	

Katahdin Analytical Services 5000033

APPENDIX C
REGION I WORKSHEETS

EPA-NE - Data Validation Worksheet
INORG-1
Case: _____ SDG: _____

see validation letter

I. PRESERVATION AND HOLDING TIMES

Circle sample numbers with exceeded technical holding times or omitted preservation.
Circle all exceeded technical holding times.

Sample No.	Matrix	Pres. Code		Date Sampled	Metals		Hg		CN		Action
		Metals	CN		Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	

Preservation Code:
1. Cool (≤ 6°C)
2. pH < 2 with HNO_3
3. pH > 12 with NaOH
4. Room Temperature
5. Freeze
6. Reducing agent (for oxidants)
7. Treated for sulfides
8. Other - _____

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Sampler: _____ Company: _____ Contacted: Y N Date: _____

Validator: Kim Solomon Date: 1/9/2014

EPA-NE - Data Validation Worksheet
INORG-II
Case: _____ SDG: _____

See validation letter

II. ICP-MS TUNE

List all Tunes that are outside method QC acceptance criteria. Use a separate sheet if more than one instrument was used for sample analysis.

Method:_____Instrument ID: _____

Method QC acceptance criteria for mass calibration:_____

Method QC acceptance criteria for resolution check/peak width:_____ at_____% peak height.

Method QC acceptance criteria for % RSD:_____

Analysis Date and Time	Analyte	Mass Calibration			Mass Resolution		% RSD of Absolute Signals	Analyte/Samples Affected	Action
		True Mass (amu)	Measured Mass (amu)	Absolute Difference of Masses (amu)	Peak Width (amu)	% Peak Height			

Comments:

Validator: Nadia Sotomayor

Date: 1/9/2014

EPA-NE - Data Validation Worksheet
INORG-III-C/D
Case: _____ SDG: _____

See Validation letter

III. CALIBRATIONS

C. Initial and Continuing Calibration Verifications - List all ICV and CCV analyte recoveries that are outside the method QC acceptance criteria.

ICV method QC acceptance criteria: _____ CCV method QC acceptance criteria: _____

Date/Time	Instrument ID	Analyte	ICV/CCV #	% R	Samples Affected	Action

D. Quantitation Limit Check Standard - List all QL Check Standard analytes that are outside method QC acceptance criteria (for non-CLP methods).

QL Check Standard method QC acceptance criteria: _____

Date	Instr.	Analyte	QL Check Std. #	% R	Affected Range	Samples Affected	Action

Comments: _____

EPA-NE - Data Validation Worksheet
INORG-III-A/B
Case: _____ SDG: _____

See validation letter

III. CALIBRATIONS

A. Initial Calibration - List all calibration correlation coefficients that are outside the method QC acceptance criteria and/or the y-intercept of the calibration curve that is >CRQL.

Calibration correlation QC acceptance criteria: _____ Calibration Type: _____

Date/Time	Instrument ID	Analyte	Correlation Coefficient.	y-Intercept	CRQL	Samples Affected	Action

B. Initial Calibration Standard Concentration Verifications – Review CLP Form 16-IN and list all calculated %Ds that are >30 of the true value of any non-zero standard.

Date/time	Instrument ID	Analyte	True Conc.	Found Conc.	%D	Samples Affected	Action

Comments: _____

Validator: Nelson Solomon Date: 1/9/2014

EPA-NE - Data Validation Worksheet
INORG-IV-C.2
Case: _____ SDG: _____

See validation letter

IV. BLANKS

C.2 Blank Actions - List the maximum concentrations of each analyte among all blanks associated with each sample.

Analyte	Type of Blank	Date Blank Originated	Max. Conc. (units)	MDL or (-MDL) (units)	CRQL or (-CRQL) (units)	10xCRQL	Samples Affected	Action

Comments:

Refer to EPA New England Data Review Program Supplemental guidance for blank contamination actions (Section 2.6).

Validator: Helen Solomon Date: 1/9/2014

EPA-NE - Data Validation Worksheet

INORG-IV-A/B

Case: _____ SDG: _____

See validation letter

IV. BLANKS - List the blank contamination and negative blank results below.

Sampler: _____ Company: _____ Contacted: Y N Date: _____

A. Laboratory: Preparation (Method) and Calibration (Instrument) Blanks

Date Prepared	Date Analyzed	Blank Type (ICB/CCB#/Prep Blank)	Matrix	Instrument	Analyte	Concentration	Units

B. Field: Equipment (Rinsate) and Bottle Blanks

Date Sampled	Date Analyzed	Sample No. (Blank Type)	Matrix	Instrument	Analyte	Concentration	Units

Were the proper number of blanks analyzed at the proper frequency? Y N

For ICP MS - Are internal standard responses in all blanks within method QC acceptance criteria? Y N

Comments: _____

Validator: Steven Solomon Date: 1/9/2014

EPA-NE - Data Validation Worksheet
INORG-IV-C.1
Case: _____ SDG: _____
IV. BLANKS **C.1 Blank Contamination Worksheet**

See Validation letter

Circle or list the highest concentration of each contaminant.

Analyte	Date Analyzed	ICB	CCB							PBW	PBS	EB	BB	Max. Conc.	CRQL
			1	2	3	4	5	6	7						
Aluminum															
Antimony															
Arsenic															
Barium															
Beryllium															
Cadmium															
Calcium															
Chromium															
Cobalt															
Copper															
Iron															
Lead															
Magnesium															
Manganese															
Mercury															
Nickel															
Potassium															
Selenium															
Silver															
Sodium															
Thallium															
Vanadium															
Zinc															
Cyanide															

Validator: Helen Solomon Date: 1/9/2014

EPA NE - Data Validation Worksheet
INORG-V-A
Case: _____ SDG: _____

N/A

V. A. ICP-AES INTERFERENCE CHECK SAMPLE - ICSAB

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: Kim Solomon

Date: 1/9/2014

EPA NE - Data Validation Worksheet
INORG-V-B
Case: _____ SDG: _____

N/A

V. B. ICP-AES INTERFERENCE CHECK SAMPLE - ICSA

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: Alan Sulman

Date: 1/9/2014

EPA NE - Data Validation Worksheet
INORG-VI-A
Case: _____ SDG: _____

SDG validation letter

VI. A. ICP-MS INTERFERENCE CHECK SAMPLE - ICSAB

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: Adam Solomon

Date: 1/9/2014

EPA NE - Data Validation Worksheet
INORG-VI-B
Case: _____ SDG: _____

See validation letter

VI. B. ICP-MS INTERFERENCE CHECK SAMPLE - ICSA

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± 2xCRQL. whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: Mary Solomon

Date: 1/9/2014

EPA-NE - Data Validation Worksheet
INORG-VII
Case: _____ SDG: _____

See validation letter

VII. ICP-MS INTERNAL STANDARDS

List all internal standards that are outside method QC acceptance criteria.

Method: _____ Method QC acceptance criteria: _____

Sample Number	Date and Time Analyzed	IS, amu	% RI	Analytes Affected (amu)	Action
Comments:					

Validator: Yelena Solomon

Date: 1/9/2014

EPA-NE - Data Validation Worksheet
INORG-VIII
Case: _____ SDG: _____

See validation letter

VIII. MATRIX SPIKES - List all matrix spike analytes that are outside method QC acceptance criteria.

Use a separate worksheet for each matrix spike sample.

Sample No.: _____ Matrix: _____

Method	Analyte	Spiked Sample Result	Sample Result	Amount of Spike Added	MS % Recovery	Method QC Limits % Recovery	Post-Digest Spike % Recovery	Action

Comments:

Refer to EPA New England Data Review Program Supplemental guidance for additional matrix spike actions (Section 2.12).

Validator: Ellen Solomon Date: 1/9/2014

EPA-NE - Data Validation Worksheet
INORG-IX
Case: _____ SDG: _____

See validation letter

IX. LABORATORY DUPLICATE SAMPLES - List all analytes that are outside method QC acceptance criteria for the specific matrix.

Use a separate worksheet for each laboratory duplicate sample.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Laboratory duplicate sample method QC acceptance criteria:_____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the field duplicate sample data indicate acceptable field precision? Y N

Comments:_____

Validator: Ellen Solomon

Date: 1/9/2014

EPA-NE - Data Validation Worksheet
INORG-X
Case: _____ SDG: _____

See Validation letter

X. FIELD DUPLICATES - List all field duplicate analytes that are outside criteria.

Use a separate worksheet for each field duplicate pair.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the laboratory duplicate sample data indicate acceptable laboratory precision? Y N
Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.9).

Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for contact and resolution obtained: _____

Validator: Helen Solomon Date: 1/9/2014

EPA-NE - Data Validation Worksheet
INORG-XI
Case: _____ SDG: _____

See validation letter

XI. ICP SERIAL DILUTIONS

Use a separate worksheet for each serial dilution sample.

Sample No.:_____ Matrix:_____ Method:_____

List all serial dilution analytes that are outside method QC acceptance criteria.

% Difference method QC acceptance criteria: _____
Minimum concentration required to apply the % D criteria (e.g., 50x MDL): _____

Analyte	MDL	Min. Conc. Required	Sample Result	Serial Dilution Sample Result (corrected for dilution)	% D	Action

Comments:

Validator: Ann Solomon Date: 1/9/2014

EPA-NE - Data Validation Worksheet
INORG-XII
Case: _____ SDG: _____

See validation letter

XII. LABORATORY CONTROL SAMPLES

List all analytes that are outside criteria.

SDG No.:_____ Case:_____

Are more than one-half of the LCS analytes within criteria for each parameter and method? **Y** **N**

Date Prepared	Date Analyzed	Parameter/ Method	Matrix	Analyte	% Recovery (or Observed Conc.)	Method QC Acceptance Criteria	Samples Affected	Action

Comments:

Validator: Alan Solomon

Date: 1/9/2014

EPA-NE - Data Validation Worksheet
INORG-XIII
Case: _____ SDG: _____

NA

XIII. PERFORMANCE EVALUATION SAMPLES

List all analytes that are outside criteria.

Indicate the source of the PES: Region 1 EPA PES Non-EPA PES

Are more than one-half of the PES analytes within criteria for each parameter and method? **Y** **N**

PE Sample Number	Ampule Number	Parameter/ Method	Type of PES	Matrix	Analyte	Conc.	PES Score*	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High, Action Low, Analyte Missed, Contaminant.
For Non-EPA PESs indicate the Non-EPA PES Score: PES Analyte Missed; PES Analyte Contaminant; PES Analyte Hit (% Recovery Limits).
Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Comments: _____

Validator: Mary Soleman Date: 1/9/2014

EPA-NE - Data Validation Worksheet

INORG-XIV

Case: _____ SDG: _____

See validation report

XIV. ANALYTE QUANTITATION, REPORTED QUANTITATION LIMITS AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per analytical method

Do all soil/sediment samples have % solids greater than 30%? **Y** **N**

- If no, were any steps employed to address the high moisture content? _____
- Indicate the action and list the affected sample nos.: _____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Method		Calculation
ICP-AES		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
ICP-MS		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
Mercury		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		
Cyanide		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		

Validator: Laura Solomon

Date: 1/9/2014

APPENDIX D
SUPPORT DOCUMENTATION

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT CTO WE30
SG8999

Sample Receipt

The following samples were received on November 15, 2013 and were logged in under Katahdin Analytical Services work order number SG8999 for a hardcopy due date of December 04, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG8999-1	TF2-W-TB02-1113
SG8999-2	TF2-004/5-SS1043-0.10.5
SG8999-3	TF2-004/5-SB1041-022.5
SG8999-4	TF2-004/5-SB1058-0204
SG8999-5	TF2-004/5-SB1064-0204
SG8999-6	TF2-004/5-SB1064-0406
SG8999-7	TF2-004/5-SB1066-0203
SG8999-8	TF2-004/5-SB1057-0304
SG8999-9	TF2-004/5-SB1057-0608
SG8999-10	TF2-004/5-SB1047-0204
SG8999-11	TF2-004/5-SB1047-0608
SG8999-12	TF2-SB-RB03-1113
SG8999-13	TF2-W-TB03-1113
SG8999-14	TF2-SB-DUP05-1113
SG8999-15	TF2-004/5-SB1049-0204
SG8999-16	TF2-004/5-SB1049-0810
SG8999-17	TF2-004/5-SB1038-0204
SG8999-18	TF2-004/5-SB1038-0810
SG8999-19	TF2-004/5-SB1031-0204
SG8999-20	TF2-004/5-SB1039-0406
SG8999-21	TF2-004/5-SB1031-0810
SG8999-22	TF2-004/5-SB1040-0204
SG8999-23	TF2-004/5-SB1040-0810
SG8999-24	TF2-004/5-SB1068-0204
SG8999-25	TF2-SB-DUP06-1113
SG8999-26	TF2-004/5-SB1065-0204
SG8999-27	TF2-004/5-SB1065-0608
SG8999-28	TF2-SB-DUP07-1113

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Some of the client IDs on the Chain of Custody exceeds the 19-character limit of the Katahdin Analytical Information Management System. Therefore, the first characters "TF2-" in the client ID for samples SG8999-2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26 and 27 were omitted on all forms.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG8999 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

Sample SG8999-4 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

8015B GRO Analysis

Sample SG8999-12 was manually integrated for the GRO range. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The GRO range was detected above the MDL, but below the LOQ, in the method blank WG134904-1RA. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since the range was not detected above the MDL in the associated samples, no further action was taken.

The opening/closing CV's (files 9GK4015 and 9GK4019) had high responses for naphthalene, which were greater than 20%. Since the method requirement applies to only the GRO range response, which was acceptable, the associated samples were not reanalyzed.

The closing CV (files 9GK4060) had high responses for methyl tert-butyl ether and naphthalene, which were greater than 20%. Since the method requirement applies to only the GRO range response, which was acceptable, the associated samples were not reanalyzed.

8270D SIM Analysis

Samples SG8999-2, 3, 4, 6, 7, 9, 10, 11, 12, 15, 16, 18, 20, 21, 22, 23, 25, 26 and 27 was manually integrated for the target analytes benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene and/or acenaphthylene. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The target analytes naphthalene, acenaphthene, phenanthrene, anthracene, fluoranthene and pyrene were detected below ½ the reporting limit in the method blank WG134819-1. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since the method blank was acceptable, no further action was taken.

Although DoD QSM acceptance limits were requested for this project, laboratory established acceptance limits were used because the DoD QSM does not list acceptance limits for 8270SIM. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these statistical acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

The LCSD WG134603-3 had two spiked target analytes with recoveries that were high and outside of the laboratory established acceptance limits. The DoD QSM allowable number of exceedances for 17 target analytes is one analyte. Since the LCS WG134603-2 was acceptable, no further action was taken.

The LCS WG134819-2 had seven spiked target analytes with recoveries that were high and outside of the laboratory established acceptance limits. The DoD QSM allowable number of exceedances for 17 target analytes is one analyte. Five of these analytes also exceed the marginal exceedance limits. Since the LCSD WG134819-3 was acceptable, after factoring in the allowed number of exceedances, no further action was taken.

The independent check standard (file N0808) associated with the initial calibration on the N instrument on 11/19/2013 had a low concentration for the target analyte benzo(k)fluoranthene , which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The CV (file N0914) had a high response for the target analyte benzo(b)fluoranthene. The CV (file N0954) had a high response for the target analyte fluoranthene. The CV (file N0971) had a high response for the target analyte dibenzo(a,h)anthracene. These response resulted in %D's that were greater than the acceptance limit of 20% from DoD QSM Version 4.1.

FLPRO Analysis

The LCS WG134676-2 had a recovery for the surrogate o-terphenyl that was low and outside of the method acceptance limits. Since the LCSD had acceptable surrogate recovery and the LCS/LCSD had acceptable spike recoveries, no further action was taken.

The LCSD WG134896-3 had a recovery for petroleum range organics that was low and outside of the method acceptance limits. Since the LCS had an acceptable recovery, no further action was taken.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG8999 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Aqueous-matrix Katahdin Sample No. SG8999-12 was digested for ICP-MS analysis on 11/27/13 (QC Batch GK27IMW2) in accordance with USEPA Method 3010A. Duplicate laboratory control samples were prepared in this batch. The measured manganese concentration (8.79 ug/L) of the preparation blank that was digested in this batch is greater than the laboratory's reporting limit. However, because the measured manganese concentration of Katahdin Sample No. SG8999-12 is less than the laboratory's Method Detection Limit for manganese, no corrective action was required.

Soil-matrix Katahdin Sample Nos. SG8999-(2-11, 14, 15) were digested for ICP-MS analysis on 12/03/13 (QC Batch GLO3IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8999-4 was prepared in duplicate and with a matrix spike in this digestion batch. The measured manganese concentration (0.990 mg/kg) of the preparation blank that was digested in this batch is greater than the laboratory's reporting limit. However, because the measured manganese concentrations of all associated samples are more than ten times that of the preparation blank, no corrective action was required.

Soil-matrix Katahdin Sample Nos. SG8999-(16-27) were digested for ICP-MS analysis on 12/04/13 (QC Batch GLO4IMS1) in accordance with USEPA Method 3050B. The measured manganese (0.167 mg/kg) and iron (11.5 mg/kg) concentrations of the preparation blank that was digested in this batch are greater than the laboratory's Limit of Detection. However, because the measured manganese and iron concentrations of all associated samples are more than ten times those of the preparation blank, no corrective action was required.

ICP-MS analyses of Work Order SG8999 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	Associated Analytes
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Solid-matrix Katahdin Sample Numbers SG8999-(2-11, 14-17) were digested for mercury analysis on 12/02/13 (QC Batch GL02HGS1) in accordance with USEPA Method 7471B. Duplicate laboratory control samples were prepared in this batch. Katahdin Sample No. SG8999-4 was prepared in duplicate and with a matrix spike in this digestion batch.

Solid-matrix Katahdin Sample Numbers SG8999-(18-27) were digested for mercury analysis on 12/02/13 (QC Batch GL02HGS3) in accordance with USEPA Method 7471B.

Aqueous-matrix Katahdin Sample Number SG8999-12 was digested for mercury analysis on 12/04/13 (QC Batch GL04HGW2) in accordance with USEPA Method 7470A..

Mercury analysis of the Katahdin Work Order SG8999 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG8999-4 is within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for all analytes.

The measured recoveries of antimony, calcium, and chromium in the matrix-spiked aliquot of Katahdin Sample No. SG8999-4 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The serial dilution analysis of Katahdin Sample No. SG8999-4 is within the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for all analytes.

The measured recoveries of all analytes in a post-digestion matrix spike aliquot of Katahdin Sample No. SG8999-4 are within the laboratory's acceptance limits (75% - 125% recovery of the added element, if the native concentration is less than four times the amount added).

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the laboratory's limits of quantitation (LOQ) are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQ's, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG8999 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
12/11/13

Leslie Dimond
Quality Assurance Officer

SG8444 – SG8460-2

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1902 | PAGE 1 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington, MA	D Seiken	978 474 8445	Katahdin Analytical Services/ J. O'Brien
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Kayleen Jalkut		Kayleen Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier pkg in RI- hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: CRC 8260	PAH, (low b/l) Total Soil 4oz G2 jar	EXTPH 4oz G2 jar	GAO - 40ml vials	1L Amber glass - PAHs	1L Amber glass - EXTPH	250ml poly bottle - Metals	COMMENTS
									G		1 cont HNO3 ≤6°C	≤6°C	≤6°C	HCl ≤6°C	≤6°C	HCl ≤6°C	HNO3 ≤6°C	
11/13	1200	TF2-W-TB02-1113	—	—	—	QC	G	2			X							
11/13	1250	TF2-004/5-SS1043-0.1-0.5	SS 1043	0.1	0.5	SO	G	1				X						
11/13	1320	TF2-004/5-SB1041-0.2-2.5	SB 1041	2	2.5	SO	G	1				X						
11/13	1405	TF2-004/5-SB1058-0204	SB 1058	2	4	SO	G	10			X	X	X					Lab QC
11/13	1440	TF2-004/5-SB1064-0204	SB 1064	2	4	SO	G	1				X						
11/13	1445	TF2-004/5-SB1064-0406	SB 1064	4	6	SO	G	1				X						
11/14	0945	TF2-004/5-SB1066-0203	SB 1066	2	3	SO	G	1				X						
11/14	1015	TF2-004/5-SB1057-~~0304~~ 0203	SB 1057	2	3	SO	G	1				X						
11/14	1025	TF2-004/5-SB1057-0608	SB 1057	6	8	SO	G	1				X						
11/14	1050	TF2-004/5-SB1047-0204	SB 1047	2	4	SO	G	1				X						
11/14	1102	TF2-004/5-SB1047-0608	SB 1047	6	8	SO	G	1				X						
11/14	1200	TF2-SB-RB03-1113	—	—	—	QC	G	7	—	—	—	X	X	X	X			
11/14	1205	TF2-W-TB03-1113	—	—	—	QC	G	2	—	—	—	X	—	—	—			

11/15/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY:	11-15-13	1345	1. RECEIVED BY	11-15-13	1345
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

CCC002

TETRA TECH NUS, INC. SG8999 CHAIN OF CUSTODY | NUMBER № 1903 | PAGE 1 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington MA	D Seiken	978 474 8445	Katahdin Analytical Services / J Obrin
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
Kjalkut		Kayleen Jalkut	7818010457	600 Technology Way
		CARRIER/WAYBILL NUMBER		CITY, STATE
		Courier pick up RI - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: PAH (4 weeks)	GRO 40ml vials	EXTPH 4oz jar	COMMENTS
									G	≤ 6°C	4oz jar, total solids	10ml MeOH ≤ 6°C		
11/14	0000	TF2-SB-DUP05-1113	—	—	—	SO	G	1			X	—	—	
11/14	1240	TF2-SB-004/5-SB1049-0204	SB1049	2	4	SO	G	1			X	—	—	
11/14	1255	TF2-004/5-SB1049-0810	SB1049	8	10	SO	G	1			X	—	—	
11/14	135	TF2-004/5-SB1038-0204	SB1038	2	4	SO	G	1			X	—	—	
11/14	1325	TF2-004/5-SB1038-0810	SB1038	8	10	SO	G	1			X	—	—	
11/14	1340	TF2-004/5-SB1031-0204	SB1031	2	4	SO	G	1			X	—	—	
11/14	1345	TF2-004/5-SB1039-0406	SB1039	4	6	SO	G	1			X	—	—	
11/14	1355	TF2-004/5-SB1031-0810	SB1031	8	10	SO	G	1			X	—	—	
11/14	1415	TF2-004/5-SB1040-0204	SB1040	2	4	SO	G	1			X	—	—	
11/14	1430	TF2-004/5-SB1040-0810	SB1040	8	10	SO	G	4			X	X	X	
11/14	1500	TF2-004/5-SB1068-0204	SB1068	2	4	SO	G	1			X	—	—	
11/14	0000	TF2-SB-DUP06-1113	—	—	—	SO	G	1			X	—	—	
11/14	1445	TF2-SB-004/5-SB1065-0204	SB1065	2	4	SO	G	1			X	—	—	

Rel by 11/15/13

1. RELINQUISHED BY	DATE 11-15-13	TIME 1345	1. RECEIVED BY	DATE 11-15-13	TIME 1345
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME
COMMENTS					

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

CR0003

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1904 | PAGE 3 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03019	Wilmington MA	Debra Seiken	978 4748445	Katahdin Analytical Services / J. Obrin
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
Kayleen Jalkut		Kayleen Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		CITY, STATE
		Courier p/u in RI - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	G	G	G					
									PRESERVATIVE USED			≤6°C	10 ml MeOH + ≤6°C					
									TYPE OF ANALYSIS			PAH, METALS	TOTAL SOLIDS 4oz jar	GRO 40 ml vials	EXTPH 4oz jar			
11/14	1455	TF2-004/5-SB1005-0608	SB 1005	6	8	SO	G	4		X	X	X						
11/14	0000	TF2-SB-DUP07-1113	—	—	—	SO	G	3		—	X	X	total solids					
11/15	0915	TF2-003-SB1017-011.6	SB 1017	1	1.6	SO	G	4		X	X	X						
11/15	~~0920~~ 1025	TF2-003-SB1017-0204	SB 1017	2	4	SO	G	1		X	—	—						
11/15	0940	TF2-003-SB1017-0810	SB 1017	8	10	SO	G	1		X	—	—						
11/15	1160	TF2-003-SB1012-0204	SB 1012	2	4	SO	G	2		X	—	—						LAB QC
11/15	1145	TF2-003-SB1012-0810	SB 1012	8	10	SO	G	1		X	—	—						
11/15	1025	TF2-003-SB1011-0204	SB 1011	2	4	SO	G	1		X	—	—						
11/15	1145	TF2-003-SB1014-0204	SB 1014	2	4	SO	G	1		X	—	—						
11/15	1200	TF2-003-SB1014-0810	SB 1014	8	10	SO	G	1		X	—	—						
11/15	1100	TF2-003-SB1015-0204	SB 1015	2	4	SO	G	1		X	—	—						
11/15	0000	TF2-~~SB~~ 003-DUP08-1113	—	—	—	SO	G	1		X	—	—						
11/15	1120	TF2-003-SB1015-0810	SB 1015	8	10	SO	G	1		X	—	—						

Kayleen Jalkut 11-15-13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-15-13	1345	1. RECEIVED BY	11-15-13	1345
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

HOLDTIME

SDG SG8999

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-004/5-SB1065-0204	SG8999-026	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-SB-DUP06-1113	SG8999-025	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-SB-DUP05-1113	SG8999-014	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SS1043-0.10.5	SG8999-002	NM	11/13/2013	12/02/2013	12/03/2013	19	1	20
HG	MG/KG	TF2-004/5-SB1068-0204	SG8999-024	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1065-0608	SG8999-027	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1064-0406	SG8999-006	NM	11/13/2013	12/02/2013	12/03/2013	19	1	20
HG	MG/KG	TF2-004/5-SB1064-0204	SG8999-005	NM	11/13/2013	12/02/2013	12/03/2013	19	1	20
HG	MG/KG	TF2-004/5-SB1058-0204	SG8999-004	NM	11/13/2013	12/02/2013	12/03/2013	19	1	20
HG	MG/KG	TF2-004/5-SB1057-0608	SG8999-009	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1057-0304	SG8999-008	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1049-0810	SG8999-016	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1038-0810	SG8999-018	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1066-0203	SG8999-007	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1049-0204	SG8999-015	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-004/5-SB1031-0810	SG8999-021	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1038-0204	SG8999-017	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1031-0204	SG8999-019	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1039-0406	SG8999-020	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1040-0204	SG8999-022	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1040-0810	SG8999-023	NM	11/14/2013	12/02/2013	12/06/2013	18	4	22
HG	MG/KG	TF2-004/5-SB1041-022.5	SG8999-003	NM	11/13/2013	12/02/2013	12/03/2013	19	1	20
HG	MG/KG	TF2-004/5-SB1047-0204	SG8999-010	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	MG/KG	TF2-004/5-SB1047-0608	SG8999-011	NM	11/14/2013	12/02/2013	12/03/2013	18	1	19
HG	UG/L	TF2-SB-RB03-1113	SG8999-012	NM	11/14/2013	12/04/2013	12/04/2013	20	0	20
M	MG/KG	TF2-004/5-SB1065-0204	SG8999-026	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1058-0204	SG8999-004	NM	11/13/2013	12/03/2013	12/06/2013	20	3	23
M	MG/KG	TF2-004/5-SB1064-0204	SG8999-005	NM	11/13/2013	12/03/2013	12/06/2013	20	3	23
M	MG/KG	TF2-004/5-SB1064-0204	SG8999-005	NM	11/13/2013	12/03/2013	12/09/2013	20	6	26
M	MG/KG	TF2-004/5-SB1064-0406	SG8999-006	NM	11/13/2013	12/03/2013	12/06/2013	20	3	23
M	MG/KG	TF2-004/5-SB1057-0608	SG8999-009	NM	11/14/2013	12/03/2013	12/06/2013	19	3	22
M	MG/KG	TF2-004/5-SB1065-0204	SG8999-026	NM	11/14/2013	12/04/2013	12/09/2013	20	5	25
M	MG/KG	TF2-004/5-SB1065-0608	SG8999-027	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SB1065-0608	SG8999-027	NM	11/14/2013	12/04/2013	12/09/2013	20	5	25
M	MG/KG	TF2-004/5-SB1066-0203	SG8999-007	NM	11/14/2013	12/03/2013	12/06/2013	19	3	22
M	MG/KG	TF2-004/5-SS1043-0.10.5	SG8999-002	NM	11/13/2013	12/03/2013	12/06/2013	20	3	23
M	MG/KG	TF2-004/5-SB1057-0608	SG8999-009	NM	11/14/2013	12/03/2013	12/04/2013	19	1	20
M	MG/KG	TF2-004/5-SB1068-0204	SG8999-024	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1057-0304	SG8999-008	NM	11/14/2013	12/03/2013	12/04/2013	19	1	20
M	MG/KG	TF2-004/5-SB1049-0810	SG8999-016	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1049-0204	SG8999-015	NM	11/14/2013	12/03/2013	12/04/2013	19	1	20
M	MG/KG	TF2-004/5-SB1047-0608	SG8999-011	NM	11/14/2013	12/03/2013	12/06/2013	19	3	22
M	MG/KG	TF2-004/5-SB1047-0608	SG8999-011	NM	11/14/2013	12/03/2013	12/04/2013	19	1	20
M	MG/KG	TF2-004/5-SB1047-0204	SG8999-010	NM	11/14/2013	12/03/2013	12/04/2013	19	1	20
M	MG/KG	TF2-004/5-SB1041-022.5	SG8999-003	NM	11/13/2013	12/03/2013	12/06/2013	20	3	23
M	MG/KG	TF2-004/5-SB1040-0810	SG8999-023	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1040-0204	SG8999-022	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1039-0406	SG8999-020	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1038-0204	SG8999-017	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-SB-DUP05-1113	SG8999-014	NM	11/14/2013	12/03/2013	12/04/2013	19	1	20
M	MG/KG	TF2-004/5-SB1031-0204	SG8999-019	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SB1038-0810	SG8999-018	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1031-0810	SG8999-021	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	MG/KG	TF2-004/5-SB1031-0810	SG8999-021	NM	11/14/2013	12/04/2013	12/09/2013	20	5	25
M	MG/KG	TF2-SB-DUP06-1113	SG8999-025	NM	11/14/2013	12/04/2013	12/06/2013	20	2	22
M	UG/L	TF2-SB-RB03-1113	SG8999-012	NM	11/14/2013	11/27/2013	12/02/2013	13	5	18
M	UG/L	TF2-SB-RB03-1113	SG8999-012	NM	11/14/2013	11/27/2013	12/04/2013	13	7	20
	%	TF2-004/5-SB1039-0406	SG8999-20	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1049-0204	SG8999-15	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1047-0608	SG8999-11	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1047-0204	SG8999-10	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1041-022.5	SG8999-3	NM	11/13/2013	11/19/2013	11/20/2013	6	1	7
	%	TF2-004/5-SB1040-0810	SG8999-23	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1031-0810	SG8999-21	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1049-0810	SG8999-16	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1031-0204	SG8999-19	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1064-0204	SG8999-5	NM	11/13/2013	11/19/2013	11/20/2013	6	1	7
	%	TF2-004/5-SB1038-0810	SG8999-18	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-W-TB02-1113	SG8999-1	NM	11/13/2013	11/19/2013	11/20/2013	6	1	7

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-004/5-SB1040-0204	SG8999-22	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1057-0304	SG8999-8	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1038-0204	SG8999-17	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1058-0204	SG8999-4	NM	11/13/2013	11/19/2013	11/20/2013	6	1	7
	%	TF2-004/5-SB1064-0406	SG8999-6	NM	11/13/2013	11/19/2013	11/20/2013	6	1	7
	%	TF2-004/5-SB1065-0204	SG8999-26	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1065-0608	SG8999-27	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1066-0203	SG8999-7	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1068-0204	SG8999-24	NM	11/14/2013	11/20/2013	11/21/2013	6	1	7
	%	TF2-004/5-SS1043-0.10.5	SG8999-2	NM	11/13/2013	11/19/2013	11/20/2013	6	1	7
	%	TF2-SB-DUP05-1113	SG8999-14	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-SB-DUP06-1113	SG8999-25	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-SB-DUP07-1113	SG8999-28	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
	%	TF2-004/5-SB1057-0608	SG8999-9	NM	11/14/2013	11/19/2013	11/20/2013	5	1	6
SIM	%	TF2-SB-DUP05-1113	SG8999-14	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	%	TF2-004/5-SB1057-0304	SG8999-8	NM	11/14/2013	11/21/2013	11/30/2013	7	9	16
SIM	%	TF2-004/5-SB1031-0204	SG8999-19	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17
SIM	%	TF2-004/5-SB1031-0810	SG8999-21	NM	11/14/2013	11/22/2013	12/01/2013	8	9	17

NAVSTA NEWPORT
SOIL DATA
SG8999

FRACTION	CHEMICAL	TF2-004/5-SB1057-0608	UNITS	TF2-SB-DUP05-1113	RPD	D
M	ALUMINUM	17400	MG/KG	15800	9.64	1600.00
M	ANTIMONY	0.1	MG/KG	0.1	0.00	0.00
M	ARSENIC	8.9	MG/KG	6.6	29.68	2.30
M	BARIUM	12.9	MG/KG	13.1	1.54	0.20
M	BERYLLIUM	1.3	MG/KG	0.5	88.89	0.80
M	CADMIUM	0.05 J	MG/KG	0.06 J	18.18	0.01
M	CALCIUM	746	MG/KG	697	6.79	49.00
M	CHROMIUM	23	MG/KG	19.6	15.96	3.40
M	COBALT	23.5	MG/KG	13.6	53.37	9.90
M	COPPER	23.3	MG/KG	19.2	19.29	4.10
M	IRON	41200	MG/KG	29600	32.77	11600.00
M	LEAD	15.4	MG/KG	12.4	21.58	3.00
M	MAGNESIUM	5660	MG/KG	5080	10.80	580.00
M	MANGANESE	322	MG/KG	299	7.41	23.00
M	MERCURY	0.02 J	MG/KG	0.03	40.00	0.01
M	NICKEL	31	MG/KG	25.1	21.03	5.90
M	POTASSIUM	324	MG/KG	348	7.14	24.00
M	SILVER	0.02 J	MG/KG	0.02 J	0.00	0.00
M	SODIUM	28.3 J	MG/KG	24 J	16.44	4.30
M	THALLIUM	0.04 J	MG/KG	0.04 J	0.00	0.00
M	VANADIUM	18.3	MG/KG	17.9	2.21	0.40
M	ZINC	60.5	MG/KG	51.4	16.26	9.10
MISC	TOTAL SOLIDS	91	%	91	0.00	0.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8999

FRACTION	CHEMICAL	TF2-004/5-SB1068-0204	UNITS	TF2-SB-DUP06-1113	RPD	D
M	ALUMINUM	10600	MG/KG	9450	11.47	1150.00
M	ANTIMONY	0.06 J	MG/KG	0.05 J	18.18	0.01
M	ARSENIC	4.3	MG/KG	3.3	26.32	1.00
M	BARIUM	12.9	MG/KG	11.7	9.76	1.20
M	BERYLLIUM	0.33	MG/KG	0.28	16.39	0.05
M	CADMIUM	0.06 J	MG/KG	0.05 J	18.18	0.01
M	CALCIUM	773	MG/KG	652	16.98	121.00
M	CHROMIUM	13.3	MG/KG	11.7	12.80	1.60
M	COBALT	7	MG/KG	6.5	7.41	0.50
M	COPPER	10.6	MG/KG	8.8	18.56	1.80
M	IRON	17700	MG/KG	15200	15.20	2500.00
M	LEAD	8	MG/KG	6.8	16.22	1.20
M	MAGNESIUM	3050	MG/KG	2700	12.17	350.00
M	MANGANESE	200	MG/KG	199	0.50	1.00
M	MERCURY	0.03 J	MG/KG	0.03 J	0.00	0.00
M	NICKEL	13.6	MG/KG	11.5	16.73	2.10
M	POTASSIUM	427	MG/KG	390	9.06	37.00
M	SELENIUM	ND	MG/KG	0.1 J	200.00	0.10
M	SILVER	0.02 J	MG/KG	0.02 J	0.00	0.00
M	SODIUM	45.4 J	MG/KG	37.5 J	19.06	7.90
M	THALLIUM	0.05 J	MG/KG	0.04 J	22.22	0.01
M	VANADIUM	15.2	MG/KG	14	8.22	1.20
M	ZINC	29	MG/KG	25.1	14.42	3.90
MISC	TOTAL SOLIDS	91	%	89	2.22	2.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8999

FRACTION	CHEMICAL	TF2-004/5-SB1040-0810	UNITS	TF2-SB-DUP07-1113	RPD	D
M	ALUMINUM	13800	MG/KG	ND	200.00	13800.00
M	ANTIMONY	0.1	MG/KG	ND	200.00	0.10
M	ARSENIC	4.7	MG/KG	ND	200.00	4.70
M	BARIUM	15.3	MG/KG	ND	200.00	15.30
M	BERYLLIUM	0.36	MG/KG	ND	200.00	0.36
M	CADMIUM	0.05 J	MG/KG	ND	200.00	0.05
M	CALCIUM	822	MG/KG	ND	200.00	822.00
M	CHROMIUM	17.7	MG/KG	ND	200.00	17.70
M	COBALT	9	MG/KG	ND	200.00	9.00
M	COPPER	15.7	MG/KG	ND	200.00	15.70
M	IRON	23200	MG/KG	ND	200.00	23200.00
M	LEAD	11.8	MG/KG	ND	200.00	11.80
M	MAGNESIUM	4020	MG/KG	ND	200.00	4020.00
M	MANGANESE	236	MG/KG	ND	200.00	236.00
M	MERCURY	0.05	MG/KG	ND	200.00	0.05
M	NICKEL	17.5	MG/KG	ND	200.00	17.50
M	POTASSIUM	394	MG/KG	ND	200.00	394.00
M	SELENIUM	0.22 J	MG/KG	ND	200.00	0.22
M	SILVER	0.03 J	MG/KG	ND	200.00	0.03
M	SODIUM	37.5 J	MG/KG	ND	200.00	37.50
M	THALLIUM	0.05 J	MG/KG	ND	200.00	0.05
M	VANADIUM	16.3	MG/KG	ND	200.00	16.30
M	ZINC	40.4	MG/KG	ND	200.00	40.40
MISC	TOTAL SOLIDS	86	%	88	2.30	2.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Instrument ID: CETAC M6100 **File Name:** HGL03A

Date: 12/3/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	14:52	Hg
Standard #1 (0.2 p		1	14:54	Hg
Standard #2 (0.5 p		1	14:59	Hg
Standard #3 (1.0 p		1	15:01	Hg
Standard #4 (5.0 p		1	15:03	Hg
Standard #5 (10.0		1	15:05	Hg
ICV		1	15:08	HG
ICV		1	15:24	HG
ICB		1	15:27	HG
PQL		1	15:29	HG
LCSOGL02HGS1		1	15:31	HG
PBSGL02HGS1		1	15:33	HG
LC2OGL02HGS1		1	15:35	HG
ZZZZZZ		1	15:37	
ZZZZZZ		1	15:39	
ZZZZZZ		1	15:41	
ZZZZZZ		1	15:43	
ZZZZZZ		1	15:46	
SG8999-002	004/5-SS1043-0.10.5	1	15:48	HG
CCV		1	15:50	HG
CCB		1	15:52	HG
SG8999-003	004/5-SB1041-022.5	1	15:54	HG
SG8999-004	004/5-SB1058-0204	1	15:56	HG
SG8999-004L	004/5-SB1058-0204L	5	16:08	HG
SG8999-004A	004/5-SB1058-0204A	1	16:10	HG
SG8999-004D	004/5-SB1058-0204D	1	16:12	HG
SG8999-004S	004/5-SB1058-0204S	1	16:14	HG
ZZZZZZ		1	16:16	
ZZZZZZ		1	16:19	
ZZZZZZ		1	16:21	
CCV		1	16:27	HG
CCB		1	16:29	HG
SG8999-005	004/5-SB1064-0204	1	16:31	HG
SG8999-006	004/5-SB1064-0406	1	16:33	HG
SG8999-007	004/5-SB1066-0203	1	16:35	HG
SG8999-008	004/5-SB1057-0304	1	16:37	HG
CCV		1	16:39	HG
CCB		1	16:42	HG
ZZZZZZ		1	16:44	
ZZZZZZ		1	16:46	
ZZZZZZ		1	16:48	
CCV		1	17:09	HG
CCB		1	17:11	HG
SG8999-009	004/5-SB1057-0608	1	17:13	HG
SG8999-010	004/5-SB1047-0204	1	17:15	HG
SG8999-011	004/5-SB1047-0608	1	17:17	HG
SG8999-014	TF2-SB-DUP05-1113	1	17:20	HG
SG8999-015	004/5-SB1049-0204	1	17:22	HG
SG8999-016	004/5-SB1049-0810	1	17:24	HG
SG8999-017	004/5-SB1038-0204	1	17:26	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Instrument ID: CETAC M6100 **File Name:** HGL03A

Date: 12/3/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
LCSOGL02HGS3		1	17:28	HG
PBSGL02HGS3		1	17:30	HG
SG8999-018	004/5-SB1038-0810	1	17:32	HG
CCV		1	17:35	HG
CCB		1	17:37	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Instrument ID: CETAC M6100 **File Name:** HGL04B

Date: 12/4/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	16:36	Hg
Standard #1 (0.2 p		1	16:38	Hg
Standard #2 (0.5 p		1	16:40	Hg
Standard #3 (1.0 p		1	16:43	Hg
Standard #4 (5.0 p		1	16:45	Hg
Standard #5 (10.0		1	16:47	Hg
ICV		1	16:49	HG
ICB		1	16:51	HG
PQL		1	16:53	HG
CCV		1	16:55	HG
CCB		1	16:57	HG
ZZZZZZ		1	16:59	
ZZZZZZ		1	17:02	
ZZZZZZ		1	17:04	
ZZZZZZ		1	17:06	
ZZZZZZ		1	17:08	
ZZZZZZ		1	17:10	
ZZZZZZ		1	17:12	
ZZZZZZ		1	17:14	
ZZZZZZ		1	17:16	
CCV		1	17:19	HG
CCB		1	17:21	HG
ZZZZZZ		1	17:23	
ZZZZZZ		1	17:25	
ZZZZZZ		1	17:27	
ZZZZZZ		1	17:29	
LCSWGL04HGW2		1	17:31	HG
PBWGL04HGW2		1	17:33	HG
ZZZZZZ		1	17:36	
SG8999-012	TF2-SB-RB03-1113	1	17:38	HG
ZZZZZZ		1	17:40	
ZZZZZZ		1	17:42	
CCV		1	17:44	HG
CCB		1	17:46	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Instrument ID: CETAC M6100 **File Name:** HGL06A

Date: 12/6/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	10:55	Hg
Standard #1 (0.2 p		1	10:57	Hg
Standard #2 (0.5 p		1	10:59	Hg
Standard #3 (1.0 p		1	11:01	Hg
Standard #4 (5.0 p		1	11:05	Hg
Standard #5 (10.0		1	11:10	Hg
ICV		1	11:14	HG
ICB		1	11:16	HG
PQL		1	11:18	HG
SG8999-019	004/5-SB1031-0204	1	11:20	HG
SG8999-020	004/5-SB1039-0406	1	11:22	HG
SG8999-021	004/5-SB1031-0810	1	11:24	HG
SG8999-022	004/5-SB1040-0204	1	11:26	HG
SG8999-023	004/5-SB1040-0810	1	11:29	HG
SG8999-024	004/5-SB1068-0204	1	11:31	HG
SG8999-025	TF2-SB-DUP06-1113	1	11:33	HG
SG8999-026	004/5-SB1065-0204	1	11:35	HG
SG8999-027	004/5-SB1065-0608	1	11:37	HG
CCV		1	11:41	HG
CCB		1	11:43	HG

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL02A

Date: 12/2/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements																				
ZZZZZZ		1	15:40																					
ZZZZZZ		1	15:43																					
Cal Blank		1	16:08	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
Cal Std 1		1	16:11	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
Cal Std 2		1	16:14	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
Cal Std 3		1	16:17	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
Cal Std 4		1	16:21	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
ICV		1	16:24	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
ICB		1	16:27	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
PQL		1	16:30	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
ICSA		1	16:33	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
ICSAB		1	16:37	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
CCV		1	16:40	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
CCB		1	16:43	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
ZZZZZZ		1	16:47																					
ZZZZZZ		5	16:50																					
ZZZZZZ		5	16:53																					
ZZZZZZ		5	16:57																					
ZZZZZZ		25	17:00																					
ZZZZZZ		5	17:03																					
ZZZZZZ		5	17:06																					
ZZZZZZ		5	17:10																					
ZZZZZZ		5	17:13																					
ZZZZZZ		5	17:16																					
CCV		1	17:20	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
CCB		1	17:23	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
ZZZZZZ		5	17:26																					
ZZZZZZ		25	17:30																					
ZZZZZZ		5	17:33																					
ZZZZZZ		5	17:36																					
ZZZZZZ		5	17:40																					
ZZZZZZ		5	17:43																					
ZZZZZZ		5	17:46																					
ZZZZZZ		5	17:50																					
ZZZZZZ		5	17:53																					
ZZZZZZ		5	17:57																					
CCV		1	18:00	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
CCB		1	18:03	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
ZZZZZZ		5	18:07																					
ZZZZZZ		5	18:10																					
ZZZZZZ		5	18:14																					
ZZZZZZ		5	18:17																					
ZZZZZZ		5	18:21																					
ZZZZZZ		1	18:24																					
ZZZZZZ		5	18:27																					
ZZZZZZ		50	18:31																					
PBWGK27IMW2		5	18:34	Al	Sb	As	Ba		Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn
LCSWGK27IMW2		5	18:38	Al	Sb	As	Ba		Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn		Ni	K	Se	Ag	Na	Tl	V	Zn
CCV		1	18:41	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn
CCB		1	18:45	Al	Sb	As	Ba	Be	Cd	Ca	Cr	Co	Cu	Fe	Pb	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	V	Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL02A

Date: 12/2/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
LC2WGK27IMW2		5	18:48	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-012	TF2-SB-RB03-1113	5	18:51	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	18:55	
ZZZZZZ		5	18:58	
CCV		1	19:01	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:05	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL04A

Date: 12/4/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	11:50	
ZZZZZZ		1	11:58	
Cal Blank		1	12:17	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 1		1	12:20	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 2		1	12:23	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 3		1	12:26	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 4		1	12:29	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	12:32	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	12:36	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	12:39	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSA		1	12:42	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	12:45	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCV		1	12:49	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	12:52	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	12:55	
ZZZZZZ		25	12:59	
ZZZZZZ		5	13:02	
PBSGL03IMS1		5	13:05	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
LCSOGL03IMS1		5	13:08	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	13:12	
ZZZZZZ		10	13:15	
ZZZZZZ		5	13:18	
ZZZZZZ		25	13:22	
ZZZZZZ		5	13:25	
CCV		1	13:28	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	13:32	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	13:35	
ZZZZZZ		5	13:38	
ZZZZZZ		5	13:42	
ZZZZZZ		5	13:45	
ZZZZZZ		5	13:48	
ZZZZZZ		5	13:52	
ZZZZZZ		5	13:55	
ZZZZZZ		5	13:59	
ZZZZZZ		5	14:02	
ZZZZZZ		5	14:05	
CCV		1	14:09	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	14:12	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	14:16	
ZZZZZZ		5	14:19	
PBWGK27IMW2		5	14:23	Be
LCSWGK27IMW2		5	14:26	Be
ZZZZZZ		5	14:29	
SG8999-012	TF2-SB-RB03-1113	5	14:33	Be
ZZZZZZ		5	14:36	
ZZZZZZ		5	14:39	
ZZZZZZ		1	14:43	
ZZZZZZ		1	14:46	
CCV		1	14:49	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	14:52	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL04A

Date: 12/4/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	14:56	
ZZZZZZ		5	14:59	
ZZZZZZ		5	15:03	
ZZZZZZ		5	15:06	
ZZZZZZ		25	15:10	
ZZZZZZ		5	15:13	
ZZZZZZ		5	15:17	
ZZZZZZ		5	15:20	
ZZZZZZ		5	15:24	
ZZZZZZ		5	15:27	
CCV		1	15:31	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	15:34	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	15:38	
CCV		1	15:41	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	15:44	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG8999-008	004/5-SB1057-0304	5	15:48	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-009	004/5-SB1057-0608	5	15:52	Al Sb As Ba Be Cd Ca Cr Co Cu Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-010	004/5-SB1047-0204	5	15:55	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-011	004/5-SB1047-0608	5	15:59	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
SG8999-014	TF2-SB-DUP05-1113	5	16:02	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-015	004/5-SB1049-0204	5	16:06	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	16:09	
ZZZZZZ		5	16:13	
ZZZZZZ		1	16:16	
CCV		1	16:19	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	16:23	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL06B

Date: 12/6/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	10:01	
ZZZZZZ		1	10:04	
Cal Blank		1	11:36	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 1		1	11:39	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 2		1	11:42	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 3		1	11:46	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 4		1	11:49	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	11:52	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	11:55	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	11:58	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSA		1	12:02	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	12:05	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCV		1	12:09	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	12:12	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG8999-002	004/5-SS1043-0.10.5	5	12:15	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-003	004/5-SB1041-022.5	5	12:19	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-004	004/5-SB1058-0204	5	12:22	Al Sb As Ba Be Cd Ca Cr Co Pb Mg Ni K Se Ag Na Tl V
SG8999-004L	004/5-SB1058-0204L	25	12:26	Al Sb As Ba Be Cd Ca Cr Co Pb Mg Ni K Se Ag Na Tl V
SG8999-004A	004/5-SB1058-0204A	5	12:29	Al Sb As Ba Be Cd Ca Cr Co Pb Mg Ni K Se Ag Na Tl V
SG8999-004D	004/5-SB1058-0204D	5	12:33	Al Sb As Ba Be Cd Ca Cr Pb Mg Ni K Se Ag Na Tl V
SG8999-004S	004/5-SB1058-0204S	5	12:36	Al As Ba Be Cd Ca Cr Co Pb Mg Ni K Se Ag Na Tl V
SG8999-004	004/5-SB1058-0204	25	12:39	Cu Fe Mn Zn
SG8999-004L	004/5-SB1058-0204L	125	12:43	Cu Fe Mn Zn
SG8999-004A	004/5-SB1058-0204A	25	12:46	Cu Fe Mn Zn
CCV		1	12:50	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	12:53	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG8999-004D	004/5-SB1058-0204D	25	12:56	Co Cu Fe Mn Zn
SG8999-004S	004/5-SB1058-0204S	25	13:00	Sb Cu Fe Mn Zn
SG8999-005	004/5-SB1064-0204	5	13:03	Al Sb As Ba Be Cd Ca Cr Co Cu Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-006	004/5-SB1064-0406	5	13:07	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-007	004/5-SB1066-0203	5	13:10	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-009	004/5-SB1057-0608	10	13:13	Fe
SG8999-011	004/5-SB1047-0608	10	13:17	Mn
ZZZZZZ		5	13:20	
PBSGL04IMS1		5	13:24	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
LCSOGL04IMS1		5	13:27	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
CCV		1	13:31	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	13:34	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG8999-016	004/5-SB1049-0810	5	13:37	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-017	004/5-SB1038-0204	5	13:41	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-018	004/5-SB1038-0810	5	13:44	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-019	004/5-SB1031-0204	5	13:48	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-020	004/5-SB1039-0406	5	13:51	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-021	004/5-SB1031-0810	5	13:55	Al Sb As Ba Be Cd Ca Cr Co Cu Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-022	004/5-SB1040-0204	5	13:59	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-023	004/5-SB1040-0810	5	14:02	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-024	004/5-SB1068-0204	5	14:06	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-025	TF2-SB-DUP06-1113	5	14:09	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
CCV		1	14:13	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	14:16	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL06B

Date: 12/6/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
SG8999-026	004/5-SB1065-0204	5	14:20	Al Sb As Ba Be Cd Ca Cr Co Cu Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8999-027	004/5-SB1065-0608	5	14:23	Al Sb As Ba Be Cd Ca Cr Co Cu Pb Mg Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	14:27	
ZZZZZZ		25	14:31	
ZZZZZZ		5	14:34	
ZZZZZZ		5	14:37	
ZZZZZZ		5	14:41	
ZZZZZZ		5	14:44	
ZZZZZZ		5	14:48	
ZZZZZZ		5	14:51	
CCV		1	14:55	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	14:58	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL09A

Date: 12/9/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
ZZZZZZ		1	11:32							
ZZZZZZ		1	11:35							
Cal Blank		1	12:00	Al	Ca	Fe	Mg	Mn	Mo	K	Na
Cal Std 1		1	12:03	Al	Ca	Fe	Mg	Mn	Mo	K	Na
Cal Std 2		1	12:06	Al	Ca	Fe	Mg	Mn	Mo	K	Na
Cal Std 3		1	12:09	Al	Ca	Fe	Mg	Mn	Mo	K	Na
Cal Std 4		1	12:12	Al	Ca	Fe	Mg	Mn	Mo	K	Na
ICV		1	12:15	Al	Ca	Fe	Mg	Mn	Mo	K	Na
ICB		1	12:18	Al	Ca	Fe	Mg	Mn	Mo	K	Na
PQL		1	12:22	Al	Ca	Fe	Mg	Mn	Mo	K	Na
ICSA		1	12:25	Al	Ca	Fe	Mg	Mn	Mo	K	Na
ICSAB		1	12:28	Al	Ca	Fe	Mg	Mn	Mo	K	Na
CCV		1	12:32	Al	Ca	Fe	Mg	Mn	Mo	K	Na
CCB		1	12:35	Al	Ca	Fe	Mg	Mn	Mo	K	Na
ZZZZZZ		1	12:38							
ZZZZZZ		5	12:42							
ZZZZZZ		1	12:45							
ZZZZZZ		1	12:48							
ZZZZZZ		1	12:51							
ZZZZZZ		25	12:55							
ZZZZZZ		25	12:58							
ZZZZZZ		1	13:01							
ZZZZZZ		1	13:04							
ZZZZZZ		1	13:08							
CCV		1	13:11	Al	Ca	Fe	Mg	Mn	Mo	K	Na
CCB		1	13:14	Al	Ca	Fe	Mg	Mn	Mo	K	Na
ZZZZZZ		1	13:18							
SG8999-005	004/5-SB1064-0204	10	13:21			Fe				
SG8999-021	004/5-SB1031-0810	10	13:24			Fe				
SG8999-026	004/5-SB1065-0204	10	13:28			Fe				
SG8999-027	004/5-SB1065-0608	10	13:31			Fe		Mn		
CCV		1	13:35	Al	Ca	Fe	Mg	Mn	Mo	K	Na
CCB		1	13:38	Al	Ca	Fe	Mg	Mn	Mo	K	Na

FORM XIV - IN

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK27IMW2

Matrix: WATER **SDG Name:** SG8999

Method: MS **Prep Date:** 11/27/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LC2WGK27IMW2	LC2WGK27IMW2	0.05	0.05	
LCSWGK27IMW2	LCSWGK27IMW2	0.05	0.05	
PBWGK27IMW2	PBWGK27IMW2	0.05	0.05	
TF2-SB-RB03-1113	SG8999-012	0.05	0.05	C

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL02HGS1

Matrix: SOIL **SDG Name:** SG8999

Method: CV **Prep Date:** 12/02/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LC2OGL02HGS1	LC2OGL02HGS1	0.6	0.1	
LCSOGL02HGS1	LCSOGL02HGS1	0.6	0.1	
PBSGL02HGS1	PBSGL02HGS1	0.6	0.1	
004/5-SS1043-0.10.5	SG8999-002	0.65	0.1	A
004/5-SB1041-022.5	SG8999-003	0.78	0.1	A
004/5-SB1058-0204	SG8999-004	0.67	0.1	G
004/5-SB1058-0204D	SG8999-004D	0.65	0.1	G
004/5-SB1058-0204S	SG8999-004S	0.66	0.1	G
004/5-SB1064-0204	SG8999-005	0.79	0.1	A
004/5-SB1064-0406	SG8999-006	0.66	0.1	A
004/5-SB1066-0203	SG8999-007	0.64	0.1	A
004/5-SB1057-0304	SG8999-008	0.61	0.1	A
004/5-SB1057-0608	SG8999-009	0.61	0.1	A
004/5-SB1047-0204	SG8999-010	0.85	0.1	A
004/5-SB1047-0608	SG8999-011	0.71	0.1	A
TF2-SB-DUP05-1113	SG8999-014	0.66	0.1	A
004/5-SB1049-0204	SG8999-015	0.65	0.1	A
004/5-SB1049-0810	SG8999-016	0.66	0.1	A
004/5-SB1038-0204	SG8999-017	0.71	0.1	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL02HGS3

Matrix: SOIL **SDG Name:** SG8999

Method: CV **Prep Date:** 12/02/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGL02HGS3	LCSOGL02HGS3	0.6	0.1	
PBSGL02HGS3	PBSGL02HGS3	0.6	0.1	
004/5-SB1038-0810	SG8999-018	0.68	0.1	A
004/5-SB1031-0204	SG8999-019	0.66	0.1	A
004/5-SB1039-0406	SG8999-020	0.63	0.1	A
004/5-SB1031-0810	SG8999-021	0.69	0.1	A
004/5-SB1040-0204	SG8999-022	0.68	0.1	A
004/5-SB1040-0810	SG8999-023	0.6	0.1	C
004/5-SB1068-0204	SG8999-024	0.64	0.1	A
TF2-SB-DUP06-1113	SG8999-025	0.66	0.1	A
004/5-SB1065-0204	SG8999-026	0.61	0.1	A
004/5-SB1065-0608	SG8999-027	0.65	0.1	C

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL03IMS1

Matrix: SOIL **SDG Name:** SG8999

Method: MS **Prep Date:** 12/03/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGL03IMS1	LCSOGL03IMS1	1	0.1	
PBSGL03IMS1	PBSGL03IMS1	1	0.1	
004/5-SS1043-0.10.5	SG8999-002	1.3	0.1	A
004/5-SB1041-022.5	SG8999-003	1.26	0.1	A
004/5-SB1058-0204	SG8999-004	1.47	0.1	G
004/5-SB1058-0204D	SG8999-004D	1.48	0.1	G
004/5-SB1058-0204S	SG8999-004S	1.58	0.1	G
004/5-SB1064-0204	SG8999-005	1.5	0.1	A
004/5-SB1064-0406	SG8999-006	1.33	0.1	A
004/5-SB1066-0203	SG8999-007	1.5	0.1	A
004/5-SB1057-0304	SG8999-008	1.44	0.1	A
004/5-SB1057-0608	SG8999-009	1.63	0.1	A
004/5-SB1047-0204	SG8999-010	1.36	0.1	A
004/5-SB1047-0608	SG8999-011	1.89	0.1	A
TF2-SB-DUP05-1113	SG8999-014	1.3	0.1	A
004/5-SB1049-0204	SG8999-015	1.4	0.1	A

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL04HGW2

Matrix: WATER **SDG Name:** SG8999

Method: CV **Prep Date:** 12/04/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWGL04HGW2	LCSWGL04HGW2	0.025	0.025	
PBWGL04HGW2	PBWGL04HGW2	0.025	0.025	
TF2-SB-RB03-1113	SG8999-012	0.025	0.025	C

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL04IMS1

Matrix: SOIL **SDG Name:** SG8999

Method: MS **Prep Date:** 12/04/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGL04IMS1	LCSOGL04IMS1	1	0.1	
PBSGL04IMS1	PBSGL04IMS1	1	0.1	
004/5-SB1049-0810	SG8999-016	1.31	0.1	A
004/5-SB1038-0204	SG8999-017	1.28	0.1	A
004/5-SB1038-0810	SG8999-018	1.44	0.1	A
004/5-SB1031-0204	SG8999-019	1.21	0.1	A
004/5-SB1039-0406	SG8999-020	1.76	0.1	A
004/5-SB1031-0810	SG8999-021	1.55	0.1	A
004/5-SB1040-0204	SG8999-022	1.45	0.1	A
004/5-SB1040-0810	SG8999-023	1.36	0.1	C
004/5-SB1068-0204	SG8999-024	1.48	0.1	A
TF2-SB-DUP06-1113	SG8999-025	1.57	0.1	A
004/5-SB1065-0204	SG8999-026	1.51	0.1	A
004/5-SB1065-0608	SG8999-027	1.51	0.1	C

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Lab Name Katahdin Analytical Services

SDG Name: SG8999 **SOW No.** SW846

Client Field ID	Lab Sample ID
004/5-SB1031-0204	SG8999-019
004/5-SB1031-0810	SG8999-021
004/5-SB1038-0204	SG8999-017
004/5-SB1038-0810	SG8999-018
004/5-SB1039-0406	SG8999-020
004/5-SB1040-0204	SG8999-022
004/5-SB1040-0810	SG8999-023
004/5-SB1041-022.5	SG8999-003
004/5-SB1047-0204	SG8999-010
004/5-SB1047-0608	SG8999-011
004/5-SB1049-0204	SG8999-015
004/5-SB1049-0810	SG8999-016
004/5-SB1057-0304	SG8999-008
004/5-SB1057-0608	SG8999-009
004/5-SB1058-0204	SG8999-004
004/5-SB1058-0204	SG8999-004D
004/5-SB1058-0204	SG8999-004S
004/5-SB1064-0204	SG8999-005
004/5-SB1064-0406	SG8999-006
004/5-SB1065-0204	SG8999-026
004/5-SB1065-0608	SG8999-027
004/5-SB1066-0203	SG8999-007
004/5-SB1068-0204	SG8999-024
004/5-SS1043-0.10.5	SG8999-002

Were ICP interelement corrections applied ?	Yes
Were ICP background corrections applied ?	Yes
If yes - were raw data generated before application of background corrections ?	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: George Brewer Name: George Brewer

Date: 12/11/13 Title: Inorganics Dept Mgr.

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name Katahdin Analytical Services

SDG Name: SG8999 **SOW No.** SW846

Client Field ID	Lab Sample ID
TF2-SB-DUP05-1113	SG8999-014
TF2-SB-DUP06-1113	SG8999-025
TF2-SB-RB03-1113	SG8999-012

Were ICP interelement corrections applied ?	Yes
Were ICP background corrections applied ?	Yes
If yes - were raw data generated before application of background corrections ?	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: George Brewer Name: George Brewer

Date: 12/11/13 Title: Inorganics Dept. Mgr

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICV

File: HGL03A Dec 03, 2013 15:08

Analyte	True	Found	%R (1)
MERCURY	6.0	5.29	88.2

SAMPLE: ICV

File: HGL03A Dec 03, 2013 15:24

Analyte	True	Found	%R (1)
MERCURY	6.0	5.65	94.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCV

File: HGL03A Dec 03, 2013 15:50

Analyte	True	Found	%R (1)
MERCURY	5.0	5.00	100.0

SAMPLE: CCV

File: HGL03A Dec 03, 2013 16:27

Analyte	True	Found	%R (1)
MERCURY	5.0	5.50	110.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCV

File: HGL03A Dec 03, 2013 16:39

Analyte	True	Found	%R (1)
MERCURY	5.0	4.44	88.8

SAMPLE: CCV

File: HGL03A Dec 03, 2013 17:09

Analyte	True	Found	%R (1)
MERCURY	5.0	4.58	91.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCV

File: HGL03A Dec 03, 2013 17:35

Analyte	True	Found	%R (1)
MERCURY	5.0	4.88	97.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICV

File: HGL04B Dec 04, 2013 16:49

Analyte	True	Found	%R (1)
MERCURY	6.0	5.40	90.0

SAMPLE: CCV

File: HGL04B Dec 04, 2013 16:55

Analyte	True	Found	%R (1)
MERCURY	5.0	5.02	100.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCV

File: HGL04B Dec 04, 2013 17:19

Analyte	True	Found	%R (1)
MERCURY	5.0	5.02	100.4

SAMPLE: CCV

File: HGL04B Dec 04, 2013 17:44

Analyte	True	Found	%R (1)
MERCURY	5.0	5.05	101.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICV

File: HGL06A Dec 06, 2013 11:14

Analyte	True	Found	%R (1)
MERCURY	6.0	5.42	90.3

SAMPLE: CCV

File: HGL06A Dec 06, 2013 11:41

Analyte	True	Found	%R (1)
MERCURY	5.0	5.49	109.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICV

File: JGL02A Dec 02, 2013 16:24

Analyte	True	Found	%R (1)
ALUMINUM	400.0	415.20	103.8
ANTIMONY	20.0	20.14	100.7
ARSENIC	20.0	20.61	103.1
BARIUM	20.0	20.76	103.8
BERYLLIUM	20.0	20.19	101.0
CADMIUM	20.0	21.03	105.2
CALCIUM	4000.0	3831.00	95.8
CHROMIUM	20.0	20.74	103.7
COBALT	20.0	21.42	107.1
COPPER	20.0	20.81	104.1
IRON	4000.0	3931.00	98.3
LEAD	20.0	20.60	103.0
MAGNESIUM	4000.0	3995.00	99.9
MANGANESE	20.0	19.33	96.6
MOLYBDENUM	40.0	42.20	105.5
NICKEL	20.0	20.97	104.8
POTASSIUM	4000.0	3939.00	98.5
SELENIUM	20.0	20.93	104.7
SILVER	20.0	21.52	107.6
SODIUM	4000.0	3857.00	96.4
THALLIUM	20.0	21.62	108.1
VANADIUM	20.0	20.37	101.8
ZINC	20.0	21.20	106.0

SAMPLE: CCV

File: JGL02A Dec 02, 2013 16:40

Analyte	True	Found	%R (1)
ALUMINUM	500.0	487.20	97.4
ANTIMONY	25.0	24.83	99.3
ARSENIC	25.0	24.89	99.6
BARIUM	25.0	24.52	98.1
BERYLLIUM	10.0	9.61	96.1
CADMIUM	10.0	9.90	99.0
CALCIUM	5000.0	4906.00	98.1
CHROMIUM	25.0	24.59	98.4
COBALT	10.0	10.00	100.0
COPPER	25.0	24.70	98.8
IRON	5000.0	4960.00	99.2
LEAD	25.0	24.51	98.0
MAGNESIUM	5000.0	4944.00	98.9
MANGANESE	25.0	24.83	99.3
MOLYBDENUM	25.0	26.04	104.2
NICKEL	25.0	24.72	98.9
POTASSIUM	5000.0	4796.00	95.9
SELENIUM	25.0	24.92	99.7
SILVER	10.0	9.69	96.9
SODIUM	5000.0	4888.00	97.8
THALLIUM	10.0	9.70	97.0
VANADIUM	25.0	24.67	98.7
ZINC	25.0	24.99	100.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCV

File: JGL02A Dec 02, 2013 17:20

Analyte	True	Found	%R (1)
ALUMINUM	500.0	496.40	99.3
ANTIMONY	25.0	24.91	99.6
ARSENIC	25.0	25.13	100.5
BARIUM	25.0	24.25	97.0
BERYLLIUM	10.0	10.05	100.5
CADMIUM	10.0	10.43	104.3
CALCIUM	5000.0	4981.00	99.6
CHROMIUM	25.0	24.51	98.0
COBALT	10.0	10.02	100.2
COPPER	25.0	25.14	100.6
IRON	5000.0	4983.00	99.7
LEAD	25.0	25.16	100.6
MAGNESIUM	5000.0	4893.00	97.9
MANGANESE	25.0	25.32	101.3
MOLYBDENUM	25.0	25.55	102.2
NICKEL	25.0	24.95	99.8
POTASSIUM	5000.0	4926.00	98.5
SELENIUM	25.0	24.86	99.4
SILVER	10.0	9.98	99.8
SODIUM	5000.0	4824.00	96.5
THALLIUM	10.0	9.99	99.9
VANADIUM	25.0	23.92	95.7
ZINC	25.0	25.78	103.1

SAMPLE: CCV

File: JGL02A Dec 02, 2013 18:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	500.40	100.1
ANTIMONY	25.0	24.52	98.1
ARSENIC	25.0	25.05	100.2
BARIUM	25.0	24.14	96.6
BERYLLIUM	10.0	10.89	108.9
CADMIUM	10.0	10.64	106.4
CALCIUM	5000.0	4773.00	95.5
CHROMIUM	25.0	24.66	98.6
COBALT	10.0	10.19	101.9
COPPER	25.0	25.11	100.4
IRON	5000.0	4868.00	97.4
LEAD	25.0	25.30	101.2
MAGNESIUM	5000.0	4898.00	98.0
MANGANESE	25.0	25.82	103.3
MOLYBDENUM	25.0	25.80	103.2
NICKEL	25.0	25.12	100.5
POTASSIUM	5000.0	4846.00	96.9
SELENIUM	25.0	25.03	100.1
SILVER	10.0	10.14	101.4
SODIUM	5000.0	4689.00	93.8
THALLIUM	10.0	10.09	100.9
VANADIUM	25.0	24.31	97.2
ZINC	25.0	25.96	103.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCV

File: JGL02A Dec 02, 2013 18:41

Analyte	True	Found	%R (1)
ALUMINUM	500.0	497.20	99.4
ANTIMONY	25.0	24.10	96.4
ARSENIC	25.0	25.01	100.0
BARIUM	25.0	23.73	94.9
BERYLLIUM	10.0	10.03	100.3
CADMIUM	10.0	10.76	107.6
CALCIUM	5000.0	4725.00	94.5
CHROMIUM	25.0	24.88	99.5
COBALT	10.0	10.27	102.7
COPPER	25.0	24.98	99.9
IRON	5000.0	4907.00	98.1
LEAD	25.0	25.13	100.5
MAGNESIUM	5000.0	4904.00	98.1
MANGANESE	25.0	25.50	102.0
MOLYBDENUM	25.0	26.05	104.2
NICKEL	25.0	25.02	100.1
POTASSIUM	5000.0	4940.00	98.8
SELENIUM	25.0	25.61	102.4
SILVER	10.0	10.24	102.4
SODIUM	5000.0	4768.00	95.4
THALLIUM	10.0	10.13	101.3
VANADIUM	25.0	24.42	97.7
ZINC	25.0	25.94	103.8

SAMPLE: CCV

File: JGL02A Dec 02, 2013 19:01

Analyte	True	Found	%R (1)
ALUMINUM	500.0	487.70	97.5
ANTIMONY	25.0	24.28	97.1
ARSENIC	25.0	24.85	99.4
BARIUM	25.0	23.63	94.5
BERYLLIUM	10.0	9.94	99.4
CADMIUM	10.0	10.56	105.6
CALCIUM	5000.0	4733.00	94.7
CHROMIUM	25.0	24.37	97.5
COBALT	10.0	10.15	101.5
COPPER	25.0	24.75	99.0
IRON	5000.0	4821.00	96.4
LEAD	25.0	24.71	98.8
MAGNESIUM	5000.0	4732.00	94.6
MANGANESE	25.0	25.38	101.5
MOLYBDENUM	25.0	25.83	103.3
NICKEL	25.0	24.96	99.8
POTASSIUM	5000.0	4936.00	98.7
SELENIUM	25.0	24.97	99.9
SILVER	10.0	10.10	101.0
SODIUM	5000.0	4659.00	93.2
THALLIUM	10.0	9.80	98.0
VANADIUM	25.0	23.80	95.2
ZINC	25.0	25.21	100.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICV

File: JGL04A Dec 04, 2013 12:32

Analyte	True	Found	%R (1)
ALUMINUM	400.0	414.00	103.5
ANTIMONY	20.0	20.54	102.7
ARSENIC	20.0	20.70	103.5
BARIUM	20.0	20.99	104.9
BERYLLIUM	20.0	21.31	106.5
CADMIUM	20.0	21.02	105.1
CALCIUM	4000.0	3817.00	95.4
CHROMIUM	20.0	20.91	104.6
COBALT	20.0	21.39	107.0
COPPER	20.0	21.20	106.0
IRON	4000.0	3896.00	97.4
LEAD	20.0	20.89	104.5
MAGNESIUM	4000.0	3895.00	97.4
MANGANESE	20.0	19.54	97.7
MOLYBDENUM	40.0	42.05	105.1
NICKEL	20.0	21.37	106.8
POTASSIUM	4000.0	3906.00	97.7
SELENIUM	20.0	20.96	104.8
SILVER	20.0	21.77	108.9
SODIUM	4000.0	3914.00	97.9
THALLIUM	20.0	21.70	108.5
VANADIUM	20.0	20.86	104.3
ZINC	20.0	21.52	107.6

SAMPLE: CCV

File: JGL04A Dec 04, 2013 12:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	499.00	99.8
ANTIMONY	25.0	25.86	103.4
ARSENIC	25.0	25.71	102.8
BARIUM	25.0	25.71	102.8
BERYLLIUM	10.0	10.34	103.4
CADMIUM	10.0	10.05	100.5
CALCIUM	5000.0	4988.00	99.8
CHROMIUM	25.0	25.53	102.1
COBALT	10.0	10.10	101.0
COPPER	25.0	25.69	102.8
IRON	5000.0	5024.00	100.5
LEAD	25.0	25.63	102.5
MAGNESIUM	5000.0	4908.00	98.2
MANGANESE	25.0	25.53	102.1
MOLYBDENUM	25.0	26.57	106.3
NICKEL	25.0	25.18	100.7
POTASSIUM	5000.0	4904.00	98.1
SELENIUM	25.0	25.21	100.8
SILVER	10.0	9.80	98.0
SODIUM	5000.0	4954.00	99.1
THALLIUM	10.0	10.04	100.4
VANADIUM	25.0	25.89	103.6
ZINC	25.0	25.11	100.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCV

File: JGL04A Dec 04, 2013 13:28

Analyte	True	Found	%R (1)
ALUMINUM	500.0	502.90	100.6
ANTIMONY	25.0	25.43	101.7
ARSENIC	25.0	24.87	99.5
BARIUM	25.0	24.83	99.3
BERYLLIUM	10.0	10.28	102.8
CADMIUM	10.0	9.85	98.5
CALCIUM	5000.0	4932.00	98.6
CHROMIUM	25.0	25.25	101.0
COBALT	10.0	9.98	99.8
COPPER	25.0	25.77	103.1
IRON	5000.0	4935.00	98.7
LEAD	25.0	25.38	101.5
MAGNESIUM	5000.0	4998.00	100.0
MANGANESE	25.0	25.08	100.3
MOLYBDENUM	25.0	24.93	99.7
NICKEL	25.0	24.55	98.2
POTASSIUM	5000.0	4986.00	99.7
SELENIUM	25.0	25.02	100.1
SILVER	10.0	9.63	96.3
SODIUM	5000.0	5006.00	100.1
THALLIUM	10.0	10.13	101.3
VANADIUM	25.0	24.99	100.0
ZINC	25.0	24.95	99.8

SAMPLE: CCV

File: JGL04A Dec 04, 2013 14:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	524.80	105.0
ANTIMONY	25.0	25.20	100.8
ARSENIC	25.0	25.01	100.0
BARIUM	25.0	24.92	99.7
BERYLLIUM	10.0	10.36	103.6
CADMIUM	10.0	10.19	101.9
CALCIUM	5000.0	4896.00	97.9
CHROMIUM	25.0	25.47	101.9
COBALT	10.0	10.00	100.0
COPPER	25.0	25.17	100.7
IRON	5000.0	4867.00	97.3
LEAD	25.0	25.35	101.4
MAGNESIUM	5000.0	5096.00	101.9
MANGANESE	25.0	25.55	102.2
MOLYBDENUM	25.0	24.81	99.2
NICKEL	25.0	24.78	99.1
POTASSIUM	5000.0	4944.00	98.9
SELENIUM	25.0	24.57	98.3
SILVER	10.0	9.87	98.7
SODIUM	5000.0	5039.00	100.8
THALLIUM	10.0	10.04	100.4
VANADIUM	25.0	25.51	102.0
ZINC	25.0	25.02	100.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCV

File: JGL04A Dec 04, 2013 14:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	508.90	101.8
ANTIMONY	25.0	25.70	102.8
ARSENIC	25.0	25.53	102.1
BARIUM	25.0	26.00	104.0
BERYLLIUM	10.0	9.98	99.8
CADMIUM	10.0	9.96	99.6
CALCIUM	5000.0	4949.00	99.0
CHROMIUM	25.0	25.86	103.4
COBALT	10.0	10.24	102.4
COPPER	25.0	25.82	103.3
IRON	5000.0	5027.00	100.5
LEAD	25.0	25.46	101.8
MAGNESIUM	5000.0	5079.00	101.6
MANGANESE	25.0	25.66	102.6
MOLYBDENUM	25.0	25.05	100.2
NICKEL	25.0	25.61	102.4
POTASSIUM	5000.0	4921.00	98.4
SELENIUM	25.0	26.07	104.3
SILVER	10.0	9.69	96.9
SODIUM	5000.0	5051.00	101.0
THALLIUM	10.0	10.11	101.1
VANADIUM	25.0	26.03	104.1
ZINC	25.0	25.26	101.0

SAMPLE: CCV

File: JGL04A Dec 04, 2013 15:31

Analyte	True	Found	%R (1)
ALUMINUM	500.0	532.20	106.4
ANTIMONY	25.0	27.12	108.5
ARSENIC	25.0	26.78	107.1
BARIUM	25.0	24.66	98.6
BERYLLIUM	10.0	9.06	90.6
CADMIUM	10.0	10.47	104.7
CALCIUM	5000.0	4681.00	93.6
CHROMIUM	25.0	23.73	94.9
COBALT	10.0	9.56	95.6
COPPER	25.0	22.39	89.6
IRON	5000.0	4386.00	87.7 •
LEAD	25.0	23.50	94.0
MAGNESIUM	5000.0	4769.00	95.4
MANGANESE	25.0	22.36	89.4 •
MOLYBDENUM	25.0	25.40	101.6
NICKEL	25.0	23.28	93.1
POTASSIUM	5000.0	5042.00	100.8
SELENIUM	25.0	21.96	87.8 •
SILVER	10.0	10.17	101.7
SODIUM	5000.0	4288.00	85.8 •
THALLIUM	10.0	9.22	92.2
VANADIUM	25.0	23.66	94.6
ZINC	25.0	24.58	98.3

NO samples affected

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCV

File: JGL04A Dec 04, 2013 15:41

Analyte	True	Found	%R (1)
ALUMINUM	500.0	496.60	99.3
ANTIMONY	25.0	25.40	101.6
ARSENIC	25.0	24.21	96.8
BARIUM	25.0	25.06	100.2
BERYLLIUM	10.0	9.76	97.6
CADMIUM	10.0	9.64	96.4
CALCIUM	5000.0	4936.00	98.7
CHROMIUM	25.0	24.13	96.5
COBALT	10.0	9.61	96.1
COPPER	25.0	23.96	95.8
IRON	5000.0	4772.00	95.4
LEAD	25.0	25.37	101.5
MAGNESIUM	5000.0	4969.00	99.4
MANGANESE	25.0	24.52	98.1
MOLYBDENUM	25.0	24.04	96.2
NICKEL	25.0	23.81	95.2
POTASSIUM	5000.0	4871.00	97.4
SELENIUM	25.0	23.43	93.7
SILVER	10.0	9.25	92.5
SODIUM	5000.0	4884.00	97.7
THALLIUM	10.0	10.01	100.1
VANADIUM	25.0	24.26	97.0
ZINC	25.0	23.80	95.2

SAMPLE: CCV

File: JGL04A Dec 04, 2013 16:19

Analyte	True	Found	%R (1)
ALUMINUM	500.0	500.70	100.1
ANTIMONY	25.0	25.38	101.5
ARSENIC	25.0	24.21	96.8
BARIUM	25.0	25.47	101.9
BERYLLIUM	10.0	9.82	98.2
CADMIUM	10.0	9.61	96.1
CALCIUM	5000.0	4982.00	99.6
CHROMIUM	25.0	23.98	95.9
COBALT	10.0	9.46	94.6
COPPER	25.0	23.72	94.9
IRON	5000.0	4715.00	94.3
LEAD	25.0	25.36	101.4
MAGNESIUM	5000.0	4913.00	98.3
MANGANESE	25.0	24.31	97.2
MOLYBDENUM	25.0	24.09	96.4
NICKEL	25.0	23.45	93.8
POTASSIUM	5000.0	4964.00	99.3
SELENIUM	25.0	23.25	93.0
SILVER	10.0	9.35	93.5
SODIUM	5000.0	4927.00	98.5
THALLIUM	10.0	9.93	99.3
VANADIUM	25.0	24.44	97.8
ZINC	25.0	23.42	93.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICV

File: JGL06B Dec 06, 2013 11:52

Analyte	True	Found	%R (1)
ALUMINUM	400.0	404.40	101.1
ANTIMONY	20.0	20.06	100.3
ARSENIC	20.0	20.39	102.0
BARIUM	20.0	20.59	103.0
BERYLLIUM	20.0	20.04	100.2
CADMIUM	20.0	20.06	100.3
CALCIUM	4000.0	3860.00	96.5
CHROMIUM	20.0	20.04	100.2
COBALT	20.0	20.50	102.5
COPPER	20.0	20.51	102.6
IRON	4000.0	3772.00	94.3
LEAD	20.0	20.29	101.4
MAGNESIUM	4000.0	3940.00	98.5
MANGANESE	20.0	18.97	94.8
MOLYBDENUM	40.0	40.46	101.2
NICKEL	20.0	20.48	102.4
POTASSIUM	4000.0	3924.00	98.1
SELENIUM	20.0	20.36	101.8
SILVER	20.0	21.38	106.9
SODIUM	4000.0	4005.00	100.1
THALLIUM	20.0	21.39	107.0
VANADIUM	20.0	19.89	99.5
ZINC	20.0	20.25	101.3

SAMPLE: CCV

File: JGL06B Dec 06, 2013 12:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	509.00	101.8
ANTIMONY	25.0	25.04	100.2
ARSENIC	25.0	24.89	99.6
BARIUM	25.0	25.07	100.3
BERYLLIUM	10.0	9.80	98.0
CADMIUM	10.0	9.79	97.9
CALCIUM	5000.0	4968.00	99.4
CHROMIUM	25.0	24.56	98.2
COBALT	10.0	9.88	98.8
COPPER	25.0	24.89	99.6
IRON	5000.0	4901.00	98.0
LEAD	25.0	24.82	99.3
MAGNESIUM	5000.0	5111.00	102.2
MANGANESE	25.0	24.93	99.7
MOLYBDENUM	25.0	26.05	104.2
NICKEL	25.0	24.86	99.4
POTASSIUM	5000.0	4851.00	97.0
SELENIUM	25.0	24.94	99.8
SILVER	10.0	10.03	100.3
SODIUM	5000.0	4950.00	99.0
THALLIUM	10.0	9.69	96.9
VANADIUM	25.0	24.50	98.0
ZINC	25.0	24.95	99.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCV

File: JGL06B Dec 06, 2013 12:50

Analyte	True	Found	%R (1)
ALUMINUM	500.0	492.70	98.5
ANTIMONY	25.0	23.59	94.4
ARSENIC	25.0	24.28	97.1
BARIUM	25.0	23.50	94.0
BERYLLIUM	10.0	9.60	96.0
CADMIUM	10.0	10.04	100.4
CALCIUM	5000.0	4681.00	93.6
CHROMIUM	25.0	24.38	97.5
COBALT	10.0	9.89	98.9
COPPER	25.0	24.59	98.4
IRON	5000.0	4744.00	94.9
LEAD	25.0	24.73	98.9
MAGNESIUM	5000.0	4985.00	99.7
MANGANESE	25.0	24.86	99.4
MOLYBDENUM	25.0	24.59	98.4
NICKEL	25.0	24.93	99.7
POTASSIUM	5000.0	4786.00	95.7
SELENIUM	25.0	24.76	99.0
SILVER	10.0	10.13	101.3
SODIUM	5000.0	4990.00	99.8
THALLIUM	10.0	9.77	97.7
VANADIUM	25.0	24.17	96.7
ZINC	25.0	25.12	100.5

SAMPLE: CCV

File: JGL06B Dec 06, 2013 13:31

Analyte	True	Found	%R (1)
ALUMINUM	500.0	508.80	101.8
ANTIMONY	25.0	23.84	95.4
ARSENIC	25.0	24.86	99.4
BARIUM	25.0	24.27	97.1
BERYLLIUM	10.0	9.89	98.9
CADMIUM	10.0	10.07	100.7
CALCIUM	5000.0	4739.00	94.8
CHROMIUM	25.0	24.76	99.0
COBALT	10.0	9.95	99.5
COPPER	25.0	24.93	99.7
IRON	5000.0	4814.00	96.3
LEAD	25.0	24.85	99.4
MAGNESIUM	5000.0	5203.00	104.1
MANGANESE	25.0	24.98	99.9
MOLYBDENUM	25.0	24.72	98.9
NICKEL	25.0	24.82	99.3
POTASSIUM	5000.0	4949.00	99.0
SELENIUM	25.0	24.59	98.4
SILVER	10.0	10.02	100.2
SODIUM	5000.0	5031.00	100.6
THALLIUM	10.0	9.69	96.9
VANADIUM	25.0	24.72	98.9
ZINC	25.0	25.32	101.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCV

File: JGL06B Dec 06, 2013 14:13

Analyte	True	Found	%R (1)
ALUMINUM	500.0	514.40	102.9
ANTIMONY	25.0	23.97	95.9
ARSENIC	25.0	24.29	97.2
BARIUM	25.0	24.47	97.9
BERYLLIUM	10.0	9.84	98.4
CADMIUM	10.0	9.91	99.1
CALCIUM	5000.0	4747.00	94.9
CHROMIUM	25.0	23.90	95.6
COBALT	10.0	9.61	96.1
COPPER	25.0	23.75	95.0
IRON	5000.0	4581.00	91.6
LEAD	25.0	24.76	99.0
MAGNESIUM	5000.0	5130.00	102.6
MANGANESE	25.0	24.40	97.6
MOLYBDENUM	25.0	23.70	94.8
NICKEL	25.0	24.08	96.3
POTASSIUM	5000.0	4698.00	94.0
SELENIUM	25.0	23.70	94.8
SILVER	10.0	9.67	96.7
SODIUM	5000.0	4958.00	99.2
THALLIUM	10.0	9.77	97.7
VANADIUM	25.0	23.61	94.4
ZINC	25.0	24.13	96.5

SAMPLE: CCV

File: JGL06B Dec 06, 2013 14:55

Analyte	True	Found	%R (1)
ALUMINUM	500.0	517.80	103.6
ANTIMONY	25.0	24.10	96.4
ARSENIC	25.0	23.36	93.4
BARIUM	25.0	24.37	97.5
BERYLLIUM	10.0	9.57	95.7
CADMIUM	10.0	9.31	93.1
CALCIUM	5000.0	4721.00	94.4
CHROMIUM	25.0	23.24	93.0
COBALT	10.0	9.29	92.9
COPPER	25.0	23.27	93.1
IRON	5000.0	4454.00	89.1 •
LEAD	25.0	24.57	98.3
MAGNESIUM	5000.0	5103.00	102.1
MANGANESE	25.0	23.94	95.8
MOLYBDENUM	25.0	23.14	92.6
NICKEL	25.0	23.16	92.6
POTASSIUM	5000.0	5016.00	100.3
SELENIUM	25.0	23.19	92.8
SILVER	10.0	9.36	93.6
SODIUM	5000.0	4984.00	99.7
THALLIUM	10.0	9.76	97.6
VANADIUM	25.0	23.09	92.4
ZINC	25.0	23.51	94.0

ND Samples Affected

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICV

File: JGL09A Dec 09, 2013 12:15

Analyte	True	Found	%R (1)
ALUMINUM	400.0	387.80	97.0
CALCIUM	4000.0	3762.00	94.0
IRON	4000.0	3857.00	96.4
MAGNESIUM	4000.0	3827.00	95.7
MANGANESE	20.0	18.80	94.0
MOLYBDENUM	40.0	40.18	100.4
POTASSIUM	4000.0	3868.00	96.7
SODIUM	4000.0	3882.00	97.0

SAMPLE: CCV

File: JGL09A Dec 09, 2013 12:32

Analyte	True	Found	%R (1)
ALUMINUM	500.0	484.20	96.8
CALCIUM	5000.0	4891.00	97.8
IRON	5000.0	4900.00	98.0
MAGNESIUM	5000.0	4910.00	98.2
MANGANESE	25.0	24.49	98.0
MOLYBDENUM	25.0	25.46	101.8
POTASSIUM	5000.0	4865.00	97.3
SODIUM	5000.0	4910.00	98.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCV

File: JGL09A Dec 09, 2013 13:11

Analyte	True	Found	%R (1)
ALUMINUM	500.0	495.20	99.0
CALCIUM	5000.0	4953.00	99.1
IRON	5000.0	4987.00	99.7
MAGNESIUM	5000.0	5086.00	101.7
MANGANESE	25.0	25.35	101.4
MOLYBDENUM	25.0	24.78	99.1
POTASSIUM	5000.0	4968.00	99.4
SODIUM	5000.0	5059.00	101.2

SAMPLE: CCV

File: JGL09A Dec 09, 2013 13:35

Analyte	True	Found	%R (1)
ALUMINUM	500.0	486.80	97.4
CALCIUM	5000.0	4992.00	99.8
IRON	5000.0	4956.00	99.1
MAGNESIUM	5000.0	4976.00	99.5
MANGANESE	25.0	24.69	98.8
MOLYBDENUM	25.0	24.74	99.0
POTASSIUM	5000.0	4885.00	97.7
SODIUM	5000.0	4882.00	97.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: PQL

File: HGL03A Dec 03, 2013 15:29

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.18	90.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: PQL

File: HGL04B Dec 04, 2013 16:53

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.20	100.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: PQL

File: HGL06A Dec 06, 2013 11:18

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.24	120.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: PQL

File: JGL02A Dec 02, 2013 16:30

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	61.38	102.3
ANTIMONY	0.2	0.17	85.0
ARSENIC	1.0	0.97	97.0
BARIUM	0.4	0.43	107.5
BERYLLIUM	0.2	0.18	90.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	21.24	106.2
CHROMIUM	1.0	0.98	98.0
COBALT	0.2	0.20	100.0
COPPER	0.6	0.58	96.7
IRON	20.0	19.30	96.5
LEAD	0.2	0.19	95.0
MAGNESIUM	20.0	20.85	104.3
MANGANESE	0.4	0.36	90.0
MOLYBDENUM	1.0	1.03	103.0
NICKEL	0.4	0.41	102.5
POTASSIUM	200.0	214.40	107.2
SELENIUM	1.0	1.02	102.0
SILVER	0.2	0.21	105.0
SODIUM	200.0	210.30	105.2
THALLIUM	0.2	0.18	90.0
VANADIUM	1.0	1.00	100.0
ZINC	2.0	2.30	115.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: PQL

File: JGL04A Dec 04, 2013 12:39

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	63.31	105.5
ANTIMONY	0.2	0.20	100.0
ARSENIC	1.0	1.00	100.0
BARIUM	0.4	0.42	105.0
BERYLLIUM	0.2	0.20	100.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	21.03	105.2
CHROMIUM	1.0	1.10	110.0
COBALT	0.2	0.20	100.0
COPPER	0.6	0.64	106.7
IRON	20.0	18.23	91.1
LEAD	0.2	0.19	95.0
MAGNESIUM	20.0	21.58	107.9
MANGANESE	0.4	0.36	90.0
MOLYBDENUM	1.0	1.05	105.0
NICKEL	0.4	0.41	102.5
POTASSIUM	200.0	207.90	104.0
SELENIUM	1.0	0.94	94.0
SILVER	0.2	0.21	105.0
SODIUM	200.0	212.50	106.3
THALLIUM	0.2	0.19	95.0
VANADIUM	1.0	1.18	118.0
ZINC	2.0	2.21	110.5

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: PQL

File: JGL06B Dec 06, 2013 11:58

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	59.96	99.9
ANTIMONY	0.2	0.19	95.0
ARSENIC	1.0	0.91	91.0
BARIUM	0.4	0.40	100.0
BERYLLIUM	0.2	0.18	90.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	20.34	101.7
CHROMIUM	1.0	0.94	94.0
COBALT	0.2	0.19	95.0
COPPER	0.6	0.59	98.3
IRON	20.0	16.34	81.7
LEAD	0.2	0.18	90.0
MAGNESIUM	20.0	19.60	98.0
MANGANESE	0.4	0.36	90.0
MOLYBDENUM	1.0	0.98	98.0
NICKEL	0.4	0.40	100.0
POTASSIUM	200.0	210.00	105.0
SELENIUM	1.0	1.03	103.0
SILVER	0.2	0.20	100.0
SODIUM	200.0	200.80	100.4
THALLIUM	0.2	0.17	85.0
VANADIUM	1.0	1.02	102.0
ZINC	2.0	2.04	102.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: PQL

File: JGL09A Dec 09, 2013 12:22

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	56.27	93.8
CALCIUM	20.0	11.24	56.2 •
IRON	20.0	19.13	95.6
MAGNESIUM	20.0	19.31	96.5
MANGANESE	0.4	0.36	90.0
MOLYBDENUM	1.0	0.99	99.0
POTASSIUM	200.0	194.10	97.0
SODIUM	200.0	198.50	99.3

No Samples Affected

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICB

File: HGL03A Dec 03, 2013 15:27

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL03A Dec 03, 2013 15:52

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL03A Dec 03, 2013 16:29

Analyte	Result	C
MERCURY	0.030	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCB

File: HGL03A Dec 03, 2013 16:42

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL03A Dec 03, 2013 17:11

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL03A Dec 03, 2013 17:37

Analyte	Result	C
MERCURY	0.030	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICB

File: HGL04B Dec 04, 2013 16:51

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL04B Dec 04, 2013 16:57

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL04B Dec 04, 2013 17:21

Analyte	Result	C
MERCURY	0.030	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCB

File: HGL04B Dec 04, 2013 17:46

Analyte	Result	C
MERCURY	0.030	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICB

File: HGL06A Dec 06, 2013 11:16

Analyte	Result	C
MERCURY	0.031	J

SAMPLE: CCB

File: HGL06A Dec 06, 2013 11:43

Analyte	Result	C
MERCURY	0.037	J

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICB

File: JGL02A Dec 02, 2013 16:27

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.014	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.055	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	-0.021	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.005	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB

File: JGL02A Dec 02, 2013 16:43

Analyte	Result	C
ALUMINUM	1.508	J
ANTIMONY	0.022	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.004	J
CADMIUM	0.014	J
CALCIUM	9.443	J
CHROMIUM	-0.062	U
COBALT	0.006	U
COPPER	-0.086	U
IRON	4.700	U
LEAD	0.042	J
MAGNESIUM	2.520	J
MANGANESE	0.020	U
MOLYBDENUM	0.505	J
NICKEL	0.280	J
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	7.723	J
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.162	J

SAMPLE: CCB

File: JGL02A Dec 02, 2013 17:23

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.023	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.011	J
CALCIUM	5.789	J
CHROMIUM	-0.073	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.051	J
MAGNESIUM	1.108	J
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.375	J
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

Affects RB only. no qual.

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCB
File: JGL02A Dec 02, 2013 18:03

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.015	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.013	J
CALCIUM	4.100	U
CHROMIUM	-0.071	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.934	J
LEAD	0.048	J
MAGNESIUM	1.051	J
MANGANESE	0.062	J
MOLYBDENUM	0.120	U
NICKEL	0.340	J
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL02A Dec 02, 2013 18:45

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.020	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.010	J
CALCIUM	4.100	U
CHROMIUM	-0.071	U
COBALT	0.006	U
COPPER	-0.093	U
IRON	4.700	U
LEAD	0.045	J
MAGNESIUM	0.937	J
MANGANESE	0.026	J
MOLYBDENUM	0.120	U
NICKEL	0.335	J
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL02A Dec 02, 2013 19:05

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.009	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.072	U
COBALT	0.006	U
COPPER	-0.169	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	-0.023	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	-0.147	U

Affects RB only no good.

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICB

File: JGL04A Dec 04, 2013 12:36

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.018	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	J
CADMIUM	0.005	J
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.123	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.005	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB

File: JGL04A Dec 04, 2013 12:52

Analyte	Result	C
ALUMINUM	0.441	J
ANTIMONY	0.013	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.006	J
CALCIUM	6.370	J
CHROMIUM	0.030	U
COBALT	-0.008	U
COPPER	0.030	U
IRON	-10.140	U
LEAD	0.009	U
MAGNESIUM	0.938	J
MANGANESE	-0.026	U
MOLYBDENUM	0.476	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	7.725	J
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB

File: JGL04A Dec 04, 2013 13:32

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.016	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.006	J
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	-0.039	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.039	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCB
File: JGL04A Dec 04, 2013 14:12

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.014	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	-0.050	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.105	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL04A Dec 04, 2013 14:52

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.020	J
ARSENIC	0.410	U
BARIUM	0.020	J
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL04A Dec 04, 2013 15:34

Analyte	Result	C
ALUMINUM	0.559	J
ANTIMONY	0.011	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.004	J
CADMIUM	0.004	U
CALCIUM	16.200	J
CHROMIUM	0.050	J
COBALT	0.007	J
COPPER	-0.059	U
IRON	7.548	J
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.174	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	17.120	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	9.840	J
THALLIUM	0.007	J
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCB

File: JGL04A Dec 04, 2013 15:44

Analyte	Result	C
ALUMINUM	1.997	J
ANTIMONY	0.022	J
ARSENIC	0.410	U
BARIUM	0.025	J
BERYLLIUM	0.003	U
CADMIUM	0.005	J
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.007	J
COPPER	-0.093	U
IRON	9.124	J
LEAD	0.120	J
MAGNESIUM	1.032	J
MANGANESE	0.169	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.145	J
SODIUM	3.900	U
THALLIUM	0.003	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB

File: JGL04A Dec 04, 2013 16:23

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.018	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.039	U
COBALT	0.006	U
COPPER	-0.102	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.164	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	4.984	J
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.130	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICB
File: JGL06B Dec 06, 2013 11:55

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.012	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	J
CALCIUM	4.100	U
CHROMIUM	-0.076	U
COBALT	0.007	J
COPPER	0.030	U
IRON	4.700	U
LEAD	0.012	J
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.461	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL06B Dec 06, 2013 12:12

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.012	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.006	J
CALCIUM	4.100	U
CHROMIUM	-0.060	U
COBALT	0.006	U
COPPER	0.038	J
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.881	J
MANGANESE	0.020	U
MOLYBDENUM	0.407	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	6.685	J
THALLIUM	0.003	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL06B Dec 06, 2013 12:53

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.012	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-5.396	U
CHROMIUM	-0.110	U
COBALT	0.007	J
COPPER	0.069	J
IRON	15.170	J
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.047	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	25.120	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCB
File: JGL06B Dec 06, 2013 13:34

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.070	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-5.313	U
CHROMIUM	-0.127	U
COBALT	0.008	J
COPPER	0.030	U
IRON	11.500	J
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.065	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	21.640	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.005	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL06B Dec 06, 2013 14:16

Analyte	Result	C
ALUMINUM	0.886	J
ANTIMONY	0.089	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	-13.050	U
CHROMIUM	-0.155	U
COBALT	0.006	J
COPPER	0.030	U
IRON	16.690	J
LEAD	0.018	J
MAGNESIUM	0.902	J
MANGANESE	0.219	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	25.400	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.011	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL06B Dec 06, 2013 14:58

Analyte	Result	C
ALUMINUM	0.752	J
ANTIMONY	0.118	J
ARSENIC	0.410	U
BARIUM	0.030	J
BERYLLIUM	0.003	U
CADMIUM	0.005	J
CALCIUM	-9.407	U
CHROMIUM	-0.134	U
COBALT	0.023	J
COPPER	0.030	U
IRON	15.200	J
LEAD	0.015	J
MAGNESIUM	1.556	J
MANGANESE	0.194	J
MOLYBDENUM	0.120	U
NICKEL	0.030	J
POTASSIUM	30.950	J
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.021	J
VANADIUM	0.150	U
ZINC	0.130	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICB

File: JGL09A Dec 09, 2013 12:18

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	-7.845	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U

SAMPLE: CCB

File: JGL09A Dec 09, 2013 12:35

Analyte	Result	C
ALUMINUM	0.491	J
CALCIUM	-6.738	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.441	J
POTASSIUM	8.200	U
SODIUM	3.900	U

SAMPLE: CCB

File: JGL09A Dec 09, 2013 13:14

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	4.100	U
IRON	7.231	J
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.133	J
POTASSIUM	20.540	J
SODIUM	8.901	J

Fe only

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: CCB

File: JGL09A Dec 09, 2013 13:38

Analyte	Result	C
ALUMINUM	0.509	J
CALCIUM	-11.040	U
IRON	10.630	J
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGK27IMW2

Matrix: WATER **SDG Name:** SG8999

QC Batch ID: GK27IMW2

Concentration Units : ug/L

Analyte	RESULT	C
ALUMINUM	11.950	J
ANTIMONY	0.50	U
ARSENIC	4.0	U
BARIUM	0.558	J
BERYLLIUM	0.20	U
CADMIUM	0.20	U
CALCIUM	25.360	J
CHROMIUM	0.541	J
COBALT	0.30	U
COPPER	0.686	J
IRON	60	U
LEAD	0.134	J
MAGNESIUM	80	U
MANGANESE	8.790	
NICKEL	1.2	U
POTASSIUM	37.675	J
SELENIUM	0.190	J
SILVER	0.40	U
SODIUM	21.745	J
THALLIUM	0.40	U
VANADIUM	4.0	U
ZINC	8.0	U

Affects RB only no qual

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL02HGS1

Matrix: SOIL **SDG Name:** SG8999

QC Batch ID: GL02HGS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.017	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL02HGS3

Matrix: SOIL **SDG Name:** SG8999

QC Batch ID: GL02HGS3

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.017	U

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL03IMS1

Matrix: SOIL **SDG Name:** SG8999

QC Batch ID: GL03IMS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	1.489	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.069	J
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	6.805	J
CHROMIUM	0.156	J
COBALT	0.030	U
COPPER	0.094	J
IRON	6.0	U
LEAD	0.014	J
MAGNESIUM	1.474	J
MANGANESE	0.990	
NICKEL	0.038	J
POTASSIUM	40	U
SELENIUM	0.075	J
SILVER	0.040	U
SODIUM	6.100	J
THALLIUM	0.040	U
VANADIUM	0.130	J
ZINC	0.204	J

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGL04HGW2

Matrix: WATER **SDG Name:** SG8999

QC Batch ID: GL04HGW2

Concentration Units : ug/L

Analyte	RESULT	C
MERCURY	0.010	J

Affects RB only no qual.

FORM III (Part 2) - IN

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL04IMS1

Matrix: SOIL **SDG Name:** SG8999

QC Batch ID: GL04IMS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	4.060	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.060	J
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	4.115	J
CHROMIUM	0.40	U
COBALT	0.030	U
COPPER	0.092	J
IRON	11.510	
LEAD	0.019	J
MAGNESIUM	3.594	J
MANGANESE	0.167	J
NICKEL	0.060	J
POTASSIUM	12.890	J
SELENIUM	0.30	U
SILVER	0.040	U
SODIUM	8.835	J
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.376	J

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL02A Dec 02, 2013 16:33

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	93510	93.5
ANTIMONY	0	0	
ARSENIC	0	0	
BARIUM	0	0	
BERYLLIUM	0	0	
CADMIUM	0	0	
CALCIUM	100000	93650	93.7
CHROMIUM	0	1	
COBALT	0	0	
COPPER	0	0	
IRON	100000	88830	88.8
LEAD	0	0	
MAGNESIUM	100000	91640	91.6
MANGANESE	0	0	
MOLYBDENUM	2000	1938	96.9
NICKEL	0	1	
POTASSIUM	100000	96590	96.6
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	94090	94.1
THALLIUM	0	0	
VANADIUM	0	0	
ZINC	0	2	

SAMPLE: ICSAB

File: JGL02A Dec 02, 2013 16:37

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	92980	93.0
ANTIMONY	20	20	100.0
ARSENIC	20	20	100.0
BARIUM	21	20	95.2
BERYLLIUM	20	21	105.0
CADMIUM	20	19	95.0
CALCIUM	100000	93010	93.0
CHROMIUM	20	20	100.0
COBALT	20	19	95.0
COPPER	20	18	90.0
IRON	100000	89430	89.4
LEAD	20	21	105.0
MAGNESIUM	100000	91960	92.0
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1969	98.5
NICKEL	20	19	95.0
POTASSIUM	100000	96260	96.3
SELENIUM	20	19	95.0
SILVER	20	18	90.0
SODIUM	100000	93500	93.5
THALLIUM	20	21	105.0
VANADIUM	20	20	100.0
ZINC	20	20	100.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL04A Dec 04, 2013 12:42

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	94810	94.8
ANTIMONY	0	0	
ARSENIC	0	0	
BARIUM	0	0	
BERYLLIUM	0	0	
CADMIUM	0	0	
CALCIUM	100000	93390	93.4
CHROMIUM	0	1	
COBALT	0	0	
COPPER	0	1	
IRON	100000	88780	88.8
LEAD	0	0	
MAGNESIUM	100000	93030	93.0
MANGANESE	0	0	
MOLYBDENUM	2000	1942	97.1
NICKEL	0	1	
POTASSIUM	100000	96530	96.5
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	98240	98.2
THALLIUM	0	0	
VANADIUM	0	0	
ZINC	0	2	

SAMPLE: ICSAB

File: JGL04A Dec 04, 2013 12:45

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	91670	91.7
ANTIMONY	20	20	100.0
ARSENIC	20	20	100.0
BARIUM	21	20	95.2
BERYLLIUM	20	20	100.0
CADMIUM	20	18	90.0
CALCIUM	100000	90660	90.7
CHROMIUM	20	20	100.0
COBALT	20	19	95.0
COPPER	20	19	95.0
IRON	100000	87290	87.3
LEAD	20	20	100.0
MAGNESIUM	100000	90880	90.9
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1919	96.0
NICKEL	20	19	95.0
POTASSIUM	100000	91890	91.9
SELENIUM	20	19	95.0
SILVER	20	18	90.0
SODIUM	100000	93860	93.9
THALLIUM	20	20	100.0
VANADIUM	20	20	100.0
ZINC	20	20	100.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL06B Dec 06, 2013 12:02

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	93990	94.0
ANTIMONY	0	0	
ARSENIC	0	0	
BARIUM	0	0	
BERYLLIUM	0	0	
CADMIUM	0	0	
CALCIUM	100000	92680	92.7
CHROMIUM	0	1	
COBALT	0	0	
COPPER	0	0	
IRON	100000	84920	84.9
LEAD	0	0	
MAGNESIUM	100000	96290	96.3
MANGANESE	0	0	
MOLYBDENUM	2000	1834	91.7
NICKEL	0	1	
POTASSIUM	100000	93950	94.0
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	96710	96.7
THALLIUM	0	0	
VANADIUM	0	0	
ZINC	0	2	

SAMPLE: ICSAB

File: JGL06B Dec 06, 2013 12:05

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	93690	93.7
ANTIMONY	20	19	95.0
ARSENIC	20	19	95.0
BARIUM	21	19	90.5
BERYLLIUM	20	20	100.0
CADMIUM	20	18	90.0
CALCIUM	100000	92110	92.1
CHROMIUM	20	20	100.0
COBALT	20	19	95.0
COPPER	20	18	90.0
IRON	100000	86140	86.1
LEAD	20	20	100.0
MAGNESIUM	100000	93910	93.9
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1857	92.8
NICKEL	20	18	90.0
POTASSIUM	100000	93640	93.6
SELENIUM	20	19	95.0
SILVER	20	18	90.0
SODIUM	100000	94490	94.5
THALLIUM	20	20	100.0
VANADIUM	20	19	95.0
ZINC	20	19	95.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8999

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL09A Dec 09, 2013 12:25

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	90290	90.3
CALCIUM	100000	91360	91.4
IRON	100000	88060	88.1
MAGNESIUM	100000	90730	90.7
MANGANESE	0	0	
MOLYBDENUM	2000	1885	94.3
POTASSIUM	100000	92650	92.7
SODIUM	100000	91870	91.9

SAMPLE: ICSAB

File: JGL09A Dec 09, 2013 12:28

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	90050	90.0
CALCIUM	100000	91400	91.4
IRON	100000	88250	88.3
MAGNESIUM	100000	90350	90.3
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1891	94.5
POTASSIUM	100000	93040	93.0
SODIUM	100000	92150	92.2

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services | **Client Field ID:** 004/5-SB1058-0204S

Matrix: SOIL | **SDG Name:** SG8999

Percent Solids: 94.2 | **Lab Sample ID:** SG8999-004S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	18386.5528		20008.0030		134.4	-1206.4		80	120	MS
ANTIMONY, TOTAL	2.6276		0.0555	J	6.72	38.3	N	80	120	MS
ARSENIC, TOTAL	13.8605		7.4073		6.72	96.0		80	120	MS
BARIUM, TOTAL	135.5135		10.7913		134.4	92.8		80	120	MS
BERYLLIUM, TOTAL	3.5550		0.4644		3.36	92.0		80	120	MS
CADMIUM, TOTAL	16.1319		0.0540	J	16.8	95.7		80	120	MS
CALCIUM, TOTAL	668.9990		554.0122		168.01	68.4	N	80	120	MS
CHROMIUM, TOTAL	37.1965		27.0469		13.44	75.5	N	80	120	MS
COBALT, TOTAL	48.9569		15.2119		33.6	100.4		80	120	MS
COPPER, TOTAL	44.2023		26.4366		16.8	105.7		80	120	MS
IRON, TOTAL	41010.2114		43483.0969		67.2	-3679.9		80	120	MS
LEAD, TOTAL	21.5518		15.0782		6.72	96.3		80	120	MS
MAGNESIUM, TOTAL	6760.5527		7150.8747		336.01	-116.2		80	120	MS
MANGANESE, TOTAL	384.5652		364.4057		33.6	60.0		80	120	MS
MERCURY, TOTAL	0.1493		0.0030	U	0.16	93.3		80	120	CV
NICKEL, TOTAL	61.4229		32.8290		33.6	85.1		80	120	MS
POTASSIUM, TOTAL	862.5417		310.3407		672.02	82.2		80	120	MS
SELENIUM, TOTAL	6.1188		0.3284	J	6.72	86.2		80	120	MS
SILVER, TOTAL	3.3836		0.0099	J	3.36	100.4		80	120	MS
SODIUM, TOTAL	509.7295		21.7668	J	504.02	96.8		80	120	MS
THALLIUM, TOTAL	6.7068		0.0637	J	6.72	98.9		80	120	MS
VANADIUM, TOTAL	50.2337		19.1268		33.6	92.6		80	120	MS
ZINC, TOTAL	103.2228		75.0661		33.6	83.8		80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1058-0204S

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 94.2 **Lab Sample ID:** SG8999-004A

Concentration Units : ug/L

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	56460.0000		55400.0000		600	176.7		75	125	MS
ANTIMONY, TOTAL	1.7740		0.1536	J	2	81.0		75	125	MS
ARSENIC, TOTAL	29.2300		20.5100		10	87.2		75	125	MS
BARIUM, TOTAL	32.7000		29.8800		4	70.5		75	125	MS
BERYLLIUM, TOTAL	3.0370		1.2860		2	87.5		75	125	MS
CADMIUM, TOTAL	1.8790		0.1496	J	2	86.5		75	125	MS
CALCIUM, TOTAL	1698.0000		1534.0000		200	82.0		75	125	MS
CHROMIUM, TOTAL	82.8600		74.8900		10	79.7		75	125	MS
COBALT, TOTAL	44.1300		42.1200		2	100.5		75	125	MS
COPPER, TOTAL	20.2400		14.6400		6	93.3		75	125	MS
IRON, TOTAL	24260.0000		24080.0000		200	90.0		75	125	MS
LEAD, TOTAL	42.8500		41.7500		2	55.0		75	125	MS
MAGNESIUM, TOTAL	19920.0000		19800.0000		200	60.0		75	125	MS
MANGANESE, TOTAL	204.6000		201.8000		4	70.0		75	125	MS
MERCURY, TOTAL	0.8000		0.0190	U	1	80.0		75	125	CV
NICKEL, TOTAL	92.3400		90.9000		4	36.0		75	125	MS
POTASSIUM, TOTAL	2801.0000		859.3000		2000	97.1		75	125	MS
SELENIUM, TOTAL	9.7720		0.9093	J	10	88.6		75	125	MS
SILVER, TOTAL	1.8490		0.0275	J	2	91.1		75	125	MS
SODIUM, TOTAL	2014.0000		60.2700	J	2000	97.7		75	125	MS
THALLIUM, TOTAL	1.8580		0.1764	J	2	84.1		75	125	MS
VANADIUM, TOTAL	61.8300		52.9600		10	88.7		75	125	MS
ZINC, TOTAL	60.2200		41.5700		20	93.3		75	125	MS

Comments:

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1058-0204D

Matrix: SOIL **SDG Name:** SG8999

Percent Solids: 94.2 **Lab Sample ID:** SG8999-004D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M
ALUMINUM, TOTAL		20008.0030		19768.7866		1.2		MS
ANTIMONY, TOTAL		0.0555	J	0.0550	J	0.9		MS
ARSENIC, TOTAL		7.4073		8.0101		7.8		MS
BARIUM, TOTAL		10.7913		11.3964		5.5		MS
BERYLLIUM, TOTAL		0.4644		0.4742		2.1		MS
CADMIUM, TOTAL		0.0540	J	0.0646	J	17.9		MS
CALCIUM, TOTAL		554.0122		580.7597		4.7		MS
CHROMIUM, TOTAL		27.0469		26.3010		2.8		MS
COBALT, TOTAL		15.2119		18.1869		17.8		MS
COPPER, TOTAL		26.4366		27.6390		4.4		MS
IRON, TOTAL		43483.0969		43494.2002		0.0		MS
LEAD, TOTAL		15.0782		15.0373		0.3		MS
MAGNESIUM, TOTAL		7150.8747		7059.5123		1.3		MS
MANGANESE, TOTAL		364.4057		392.7930		7.5		MS
MERCURY, TOTAL		0.0030	U	0.0011	U			CV
NICKEL, TOTAL		32.8290		33.3964		1.7		MS
POTASSIUM, TOTAL	72	310.3407		327.9373		5.5		MS
SELENIUM, TOTAL		0.3284	J	0.2539	J	25.6		MS
SILVER, TOTAL		0.0099	J	0.0134	J	30.0		MS
SODIUM, TOTAL		21.7668	J	22.4448	J	3.1		MS
THALLIUM, TOTAL		0.0637	J	0.0215	J	99.1	OK	MS
VANADIUM, TOTAL		19.1268		18.7787		1.8		MS
ZINC, TOTAL		75.0661		73.9850		1.5		MS

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LC2OGL02HGS1

Matrix: SOIL **SDG Name:** SG8999

QC Batch ID: GL02HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.87	104.8	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LC2WGK27IMW2

Matrix: WATER **SDG Name:** SG8999

QC Batch ID: GK27IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000.00	2070.50	103.5	80	120
ANTIMONY	100.00	96.50	96.5	80	120
ARSENIC	100.00	100.20	100.2	80	120
BARIUM	2000.00	1934.00	96.7	80	120
BERYLLIUM	50.00	48.86	97.7	80	120
CADMIUM	250.00	277.45	111.0	80	120
CALCIUM	2500.00	2218.00	88.7	80	120
CHROMIUM	200.00	208.60	104.3	80	120
COBALT	500.00	535.00	107.0	80	120
COPPER	250.00	258.60	103.4	80	120
IRON	1000.00	1045.00	104.5	80	120
LEAD	100.00	103.75	103.8	80	120
MAGNESIUM	5000.00	5055.00	101.1	80	120
MANGANESE	500.00	487.85	97.6	80	120
NICKEL	500.00	526.00	105.2	80	120
POTASSIUM	10000.00	10330.00	103.3	80	120
SELENIUM	100.00	98.45	98.5	80	120
SILVER	50.00	55.65	111.3	80	120
SODIUM	7500.00	7570.00	100.9	80	120
THALLIUM	100.00	102.45	102.5	80	120
VANADIUM	500.00	492.25	98.5	80	120
ZINC	500.00	521.00	104.2	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL02HGS1

Matrix: SOIL **SDG Name:** SG8999

QC Batch ID: GL02HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.74	89.2	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL02HGS3

Matrix: SOIL **SDG Name:** SG8999

QC Batch ID: GL02HGS3

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.89	107.2	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL03IMS1

Matrix: SOIL **SDG Name:** SG8999

QC Batch ID: GL03IMS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	210.05	105.0	80	120
ANTIMONY	10.00	9.96	99.6	80	120
ARSENIC	10.00	10.17	101.7	80	120
BARIUM	200.00	197.05	98.5	80	120
BERYLLIUM	5.00	4.97	99.4	80	120
CADMIUM	25.00	25.74	103.0	80	120
CALCIUM	250.00	221.60	88.6	80	120
CHROMIUM	20.00	20.57	102.8	80	120
COBALT	50.00	52.70	105.4	80	120
COPPER	25.00	25.67	102.7	80	120
IRON	100.00	95.80	95.8	80	120
LEAD	10.00	10.27	102.7	80	120
MAGNESIUM	500.00	510.50	102.1	80	120
MANGANESE	50.00	47.74	95.5	80	120
NICKEL	50.00	51.20	102.4	80	120
POTASSIUM	1000.00	1002.50	100.3	80	120
SELENIUM	10.00	9.96	99.6	80	120
SILVER	5.00	5.26	105.2	80	120
SODIUM	750.00	763.50	101.8	80	120
THALLIUM	10.00	10.12	101.2	80	120
VANADIUM	50.00	50.45	100.9	80	120
ZINC	50.00	50.15	100.3	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL04IMS1

Matrix: SOIL **SDG Name:** SG8999

QC Batch ID: GL04IMS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	214.95	107.5	80	120
ANTIMONY	10.00	9.49	94.9	80	120
ARSENIC	10.00	10.06	100.6	80	120
BARIUM	200.00	193.95	97.0	80	120
BERYLLIUM	5.00	4.76	95.2	80	120
CADMIUM	25.00	26.40	105.6	80	120
CALCIUM	250.00	219.60	87.8	80	120
CHROMIUM	20.00	20.34	101.7	80	120
COBALT	50.00	51.45	102.9	80	120
COPPER	25.00	24.99	100.0	80	120
IRON	100.00	102.95	103.0	80	120
LEAD	10.00	10.31	103.1	80	120
MAGNESIUM	500.00	520.00	104.0	80	120
MANGANESE	50.00	47.03	94.1	80	120
NICKEL	50.00	50.80	101.6	80	120
POTASSIUM	1000.00	1024.50	102.5	80	120
SELENIUM	10.00	9.74	97.4	80	120
SILVER	5.00	5.42	108.4	80	120
SODIUM	750.00	786.00	104.8	80	120
THALLIUM	10.00	10.09	100.9	80	120
VANADIUM	50.00	47.58	95.2	80	120
ZINC	50.00	50.30	100.6	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGK27IMW2

Matrix: WATER **SDG Name:** SG8999

QC Batch ID: GK27IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000.00	2127.50	106.4	80	120
ANTIMONY	100.00	101.00	101.0	80	120
ARSENIC	100.00	107.60	107.6	80	120
BARIUM	2000.00	1985.50	99.3	80	120
BERYLLIUM	50.00	51.70	103.4	80	120
CADMIUM	250.00	285.85	114.3	80	120
CALCIUM	2500.00	2332.00	93.3	80	120
CHROMIUM	200.00	213.65	106.8	80	120
COBALT	500.00	547.00	109.4	80	120
COPPER	250.00	268.10	107.2	80	120
IRON	1000.00	1056.50	105.7	80	120
LEAD	100.00	107.35	107.3	80	120
MAGNESIUM	5000.00	5190.00	103.8	80	120
MANGANESE	500.00	510.00	102.0	80	120
NICKEL	500.00	541.50	108.3	80	120
POTASSIUM	10000.00	10330.00	103.3	80	120
SELENIUM	100.00	102.15	102.2	80	120
SILVER	50.00	58.10	116.2	80	120
SODIUM	7500.00	7620.00	101.6	80	120
THALLIUM	100.00	105.35	105.3	80	120
VANADIUM	500.00	508.00	101.6	80	120
ZINC	500.00	535.00	107.0	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGL04HGW2

Matrix: WATER **SDG Name:** SG8999

QC Batch ID: GL04HGW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	5.00	5.13	102.6	80	120

7D

LABORATORY CONTROL SAMPLE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: WATER **SDG Name:** SG8999

QC Batch ID: GK27IMW2 **Lab Sample ID:** LCSWGK27IMW2

Concentration Units: ug/L

Analyte	Control Limit (%)	LCS Result	LCS Dup. Result	RPD(%)	Q
ALUMINUM	20.0	2127.50	2070.50	2.7	
ANTIMONY	20.0	101.00	96.50	4.6	
ARSENIC	20.0	107.60	100.20	7.1	
BARIUM	20.0	1985.50	1934.00	2.6	
BERYLLIUM	20.0	51.70	48.86	5.6	
CADMIUM	20.0	285.85	277.45	3.0	
CALCIUM	20.0	2332.00	2218.00	5.0	
CHROMIUM	20.0	213.65	208.60	2.4	
COBALT	20.0	547.00	535.00	2.2	
COPPER	20.0	268.10	258.60	3.6	
IRON	20.0	1056.50	1045.00	1.1	
LEAD	20.0	107.35	103.75	3.4	
MAGNESIUM	20.0	5190.00	5055.00	2.6	
MANGANESE	20.0	510.00	487.85	4.4	
NICKEL	20.0	541.50	526.00	2.9	
POTASSIUM	20.0	10330.00	10330.00	0.0	
SELENIUM	20.0	102.15	98.45	3.7	
SILVER	20.0	58.10	55.65	4.3	
SODIUM	20.0	7620.00	7570.00	0.7	
THALLIUM	20.0	105.35	102.45	2.8	
VANADIUM	20.0	508.00	492.25	3.1	
ZINC	20.0	535.00	521.00	2.7	

7D

LABORATORY CONTROL SAMPLE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: SOIL **SDG Name:** SG8999

QC Batch ID: GL02HGS1 **Lab Sample ID:** LCSOGL02HGS1

Concentration Units: mg/Kgdrywt

Analyte	Control Limit (%)	LCS Result	LCS Dup. Result	RPD(%)	Q
MERCURY	20.0	0.74	0.87	17.1	

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ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1058-0204L

Matrix: SOIL **SDG Name:** SG8999

Lab Sample ID: SG8999-004L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	55400.00		57400.00		3.6		MS
ANTIMONY, TOTAL	0.15	J	0.17	U	100.0		MS
ARSENIC, TOTAL	20.51		22.03		7.4		MS
BARIUM, TOTAL	29.88		30.36		1.6		MS
BERYLLIUM, TOTAL	1.29		1.35		4.7		MS
CADMIUM, TOTAL	0.15	J	0.21	J	40.0		MS
CALCIUM, TOTAL	1534.00		1558.50		1.6		MS
CHROMIUM, TOTAL	74.89		76.65		2.4		MS
COBALT, TOTAL	42.12		45.99		9.2		MS
COPPER, TOTAL	14.64		14.74		0.7		MS
IRON, TOTAL	24080.00		25125.00		4.3		MS
LEAD, TOTAL	41.75		41.71		0.1		MS
MAGNESIUM, TOTAL	19800.00		21340.00		7.8		MS
MANGANESE, TOTAL	201.80		205.55		1.9		MS
MERCURY, TOTAL	0.02	U	0.05	U			CV
NICKEL, TOTAL	90.90		98.10		7.9		MS
POTASSIUM, TOTAL	859.30		1028.50		19.7		MS
SELENIUM, TOTAL	0.91	J	1.19	J	30.8		MS
SILVER, TOTAL	0.03	J	0.02	U	100.0		MS
SODIUM, TOTAL	60.27	J	74.70	J	23.9		MS
THALLIUM, TOTAL	0.18	J	0.06	U	100.0		MS
VANADIUM, TOTAL	52.96		53.40		0.8		MS
ZINC, TOTAL	41.57		42.03		1.1		MS

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/30/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
MERCURY	0.20	0.03	CV

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 6/11/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
ALUMINUM	60	0.34	MS
ANTIMONY	0.20	0.006	MS
ARSENIC	1.0	0.41	MS
BARIUM	0.40	0.02	MS
BERYLLIUM	0.20	0.003	MS
CADMIUM	0.20	0.004	MS
CALCIUM	20	4.10	MS
CHROMIUM	1.0	0.03	MS
COBALT	0.20	0.006	MS
COPPER	0.60	0.03	MS
IRON	20	4.70	MS
LEAD	0.20	0.009	MS
MAGNESIUM	20	0.69	MS
MANGANESE	0.40	0.02	MS
MOLYBDENUM	1.0	0.12	MS
NICKEL	0.40	0.02	MS
POTASSIUM	200	8.20	MS
SELENIUM	1.0	0.64	MS
SILVER	0.20	0.004	MS
SODIUM	200	3.90	MS
THALLIUM	0.20	0.003	MS
VANADIUM	1.0	0.15	MS
ZINC	2.0	0.13	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/7/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.02	mg/Kg	CV	SW846 7471A / 7471

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 2/9/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.10	ug/L	CV	SW846 7470A / 7470

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	8.00	ug/L	MS	
ANTIMONY	0.10	ug/L	MS	
ARSENIC	0.80	ug/L	MS	
BARIUM	0.20	ug/L	MS	
BERYLLIUM	0.04	ug/L	MS	
CADMIUM	0.04	ug/L	MS	
CALCIUM	16.00	ug/L	MS	
CHROMIUM	0.80	ug/L	MS	
COBALT	0.06	ug/L	MS	
COPPER	0.40	ug/L	MS	
IRON	12.00	ug/L	MS	
LEAD	0.10	ug/L	MS	
MAGNESIUM	16.00	ug/L	MS	
MANGANESE	0.20	ug/L	MS	
NICKEL	0.24	ug/L	MS	
POTASSIUM	80.00	ug/L	MS	
SELENIUM	0.60	ug/L	MS	
SILVER	0.08	ug/L	MS	
SODIUM	80.00	ug/L	MS	
THALLIUM	0.08	ug/L	MS	
VANADIUM	0.80	ug/L	MS	
ZINC	1.60	ug/L	MS	

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.80	mg/kg	MS	SW846 3050B / 6010/200.7
ANTIMONY	0.01	mg/kg	MS	SW846 3050B / 6010/200.7
ARSENIC	0.08	mg/kg	MS	SW846 3050B / 6010/200.7
BARIUM	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
BERYLLIUM	0.004	mg/Kg	MS	SW846 3050B / 6010/200.7
CADMIUM	0.004	mg/kg	MS	SW846 3050B / 6010/200.7
CALCIUM	1.60	mg/kg	MS	SW846 3050B / 6010/200.7
CHROMIUM	0.08	mg/kg	MS	SW846 3050B / 6010/200.7
COBALT	0.006	mg/kg	MS	SW846 3050B / 6010/200.7
COPPER	0.04	mg/kg	MS	SW846 3050B / 6010/200.7
IRON	1.20	mg/kg	MS	SW846 3050B / 6010/200.7
LEAD	0.01	mg/Kg	MS	SW846 3050B / 6010/200.7
MAGNESIUM	1.60	mg/kg	MS	SW846 3050B / 6010/200.7
MANGANESE	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
NICKEL	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
POTASSIUM	8.00	mg/Kg	MS	SW846 3050B / 6010/200.7
SELENIUM	0.06	mg/kg	MS	SW846 3050B / 6010/200.7
SILVER	0.008	mg/kg	MS	SW846 3050B / 6010/200.7
SODIUM	8.00	mg/kg	MS	SW846 3050B / 6010/200.7
THALLIUM	0.008	mg/kg	MS	SW846 3050B / 6010/200.7
VANADIUM	0.08	mg/Kg	MS	SW846 3050B / 6010/200.7
ZINC	0.16	mg/kg	MS	SW846 3050B / 6010/200.7

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/7/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.005	mg/Kg	CV	SW846 7471A / SW846 7471A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 2/9/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.01	ug/L	CV	SW846 7470A / SW846 7470A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.88	ug/L	MS	SW846 3010A / SW846 6020
ANTIMONY	0.01	ug/L	MS	SW846 3010A / SW846 6020
ARSENIC	0.45	ug/L	MS	SW846 3010A / SW846 6020
BARIUM	0.05	ug/L	MS	SW846 3010A / SW846 6020
BERYLLIUM	0.007	ug/L	MS	SW846 3010A / SW846 6020
CADMIUM	0.006	ug/L	MS	SW846 3010A / SW846 6020
CALCIUM	4.09	ug/L	MS	SW846 3010A / SW846 6020
CHROMIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020
COBALT	0.01	ug/L	MS	SW846 3010A / SW846 6020
COPPER	0.04	ug/L	MS	SW846 3010A / SW846 6020
IRON	2.55	ug/L	MS	SW846 3010A / SW846 6020
LEAD	0.01	ug/L	MS	SW846 3010A / SW846 6020
MAGNESIUM	1.56	ug/L	MS	SW846 3010A / SW846 6020
MANGANESE	0.07	ug/L	MS	SW846 3010A / SW846 6020
NICKEL	0.03	ug/L	MS	SW846 3010A / SW846 6020
POTASSIUM	6.14	ug/L	MS	SW846 3010A / SW846 6020
SELENIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020
SILVER	0.01	ug/L	MS	SW846 3010A / SW846 6020
SODIUM	3.70	ug/L	MS	SW846 3010A / SW846 6020
THALLIUM	0.01	ug/L	MS	SW846 3010A / SW846 6020
VANADIUM	0.10	ug/L	MS	SW846 3010A / SW846 6020
ZINC	0.78	ug/L	MS	SW846 3010A / SW846 6020

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.10	mg/kg	MS	SW846 3050B / SW846 6020
ANTIMONY	0.004	mg/kg	MS	SW846 3050B / SW846 6020
ARSENIC	0.03	mg/kg	MS	SW846 3050B / SW846 6020
BARIUM	0.007	mg/kg	MS	SW846 3050B / SW846 6020
BERYLLIUM	0.0008	mg/kg	MS	SW846 3050B / SW846 6020
CADMIUM	0.002	mg/kg	MS	SW846 3050B / SW846 6020
CALCIUM	0.77	mg/kg	MS	SW846 3050B / SW846 6020
CHROMIUM	0.010	mg/kg	MS	SW846 3050B / SW846 6020
COBALT	0.001	mg/kg	MS	SW846 3050B / SW846 6020
COPPER	0.01	mg/kg	MS	SW846 3050B / SW846 6020
IRON	0.48	mg/kg	MS	SW846 3050B / SW846 6020
LEAD	0.001	mg/kg	MS	SW846 3050B / SW846 6020
MAGNESIUM	0.27	mg/kg	MS	SW846 3050B / SW846 6020
MANGANESE	0.008	mg/kg	MS	SW846 3050B / SW846 6020
NICKEL	0.005	mg/kg	MS	SW846 3050B / SW846 6020
POTASSIUM	0.91	mg/kg	MS	SW846 3050B / SW846 6020
SELENIUM	0.008	mg/kg	MS	SW846 3050B / SW846 6020
SILVER	0.001	mg/kg	MS	SW846 3050B / SW846 6020
SODIUM	0.51	mg/kg	MS	SW846 3050B / SW846 6020
THALLIUM	0.002	mg/kg	MS	SW846 3050B / SW846 6020
VANADIUM	0.02	mg/kg	MS	SW846 3050B / SW846 6020
ZINC	0.03	mg/kg	MS	SW846 3050B / SW846 6020

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL06B.B\016SMPL.D\016SMPL.D#
Date Acquired: Dec 6 2013 12:15 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG8999-002
Misc Info: DILUTION 1.6/8
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 06 2013 11:51 am
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

Sample
004/5 - SS1043 - 0.10.5
Co rep. result
14.8 mg/kg

$$\left(5\right)\left(\frac{1}{\text{Flag}}\right)\left(\frac{35.98\,ug}{L}\right)\left(\frac{0.1L}{1.3g}\right)\left(\frac{1mg}{1000ug}\right)\left(\frac{1000g}{1kg}\right)$$

$$= 14.769\ mg/kg$$

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit
9 Be	4.657	0.9314	ppb	5.35	100.
11 B	5.575	1.115	ppb	24.29	1000.
23 Na	328.55	65.71	ppb	4.71	200000.
25 Mg	75,250.	15,050.	ppb	0.85	200000.
27 Al	221,900.	44,380.	ppb	1.39	200000.
28 Si	6,940.	1,388.	ppb	4.45	#VALUE!
29 Si	11,935.	2,387.	ppb	4.97	10000.
39 K	3,434.5	686.9	ppb	4.14	200000.
43 Ca	12,080.	2,416.	ppb	1.68	200000.
44 Ca	11,060.	2,212.	ppb	1.19	200000.
51 V	238.9	47.78	ppb	1.07	1000.
52 Cr	294.8	58.96	ppb	1.86	1000.
53 Cr	351.45	70.29	ppb	3.59	1000.
55 Mn	3,577.5	715.5	ppb	1.48	1000.
56 Fe	438,000.	87,600.	ppb	1.78	200000.
57 Fe	420,400.	84,080.	ppb	2.09	100000.
59 Co	179.9	35.98	ppb	0.83	1000.
60 Ni	351.6	70.32	ppb	0.52	500.
63 Cu	236.7	47.34	ppb	1.76	1000.
65 Cu	238.1	47.62	ppb	1.06	500.
66 Zn	745.5	149.1	ppb	1.76	500.
68 Zn	709.	141.8	ppb	1.19	1000.
75 As	66.1	13.22	ppb	4.56	1000.
82 Se	2.4315	0.4863	ppb	33.17	500.
88 Sr	75.7	15.14	ppb	0.11	1000.
89 Y	----	--------	--- ---		#VALUE!
98 Mo	6.795	1.359	ppb	1.15	1000.
107 Ag	0.347	0.0694	ppb	9.67	250.
109 Ag	0.3375	0.0675	ppb	6.53	100.
111 Cd	1.0505	0.2101	ppb	10.87	500.
114 Cd	0.8425	0.1685	ppb	1.35	500.
115 In	----	--------	--- ---		#VALUE!
118 Sn	27.28	5.456	ppb	2.36	500.
120 Sn	27.68	5.536	ppb	0.63	1000.
121 Sb	0.861	0.1722	ppb	13.02	1000.
123 Sb	0.862	0.1724	ppb	5.21	1000.
135 Ba	139.8	27.96	ppb	1.18	1000.
137 Ba	138.7	27.74	ppb	2.27	#VALUE!
182 W	0.6425	0.1285	ppb ---		#VALUE!
203 Tl	0.3554	0.0711	ppb	8.94	1000.
205 Tl	0.3193	0.0639	ppb	0.84	#VALUE!
208 Pb	181.2	36.24	ppb	0.41	1000.
232 Th	77.9	15.58	ppb	1.77	1000.
238 U	9.37	1.874	ppb	2.38	1000.

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3411416.50	2.45	3103576.50	109.9	69.5 - 130	
45 Sc	2248091.80	1.91	2077558.30	108.2	69.5 - 130	
72 Ge	498903.00	1.27	448995.22	111.1	69.5 - 130	
159 Tb	5051185.00	0.15	4807501.00	105.1	69.5 - 130	
209 Bi	3042363.30	1.18	3030381.80	100.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL06B.B\004CALB.D\004CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Sample Name				Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB				ICB	12/03/13 03:27:04 pm	-0.010	-43	47.96		1.00
Replicates	-69.7	-46.8	-37.1	-19.8						
PQL				CRDL	12/03/13 03:29:09 pm	0.184	808	2.92		1.00
Replicates	837.5	782.8	814.8	797.0						
% Recovery	92.24									
LCSOGL02HGS1				LCS	12/03/13 03:31:15 pm	4.420	19365	1.71		1.00
Replicates	19644.2	19634.8	19213.1	18969.0						
% Recovery	88.41									
PBSGL02HGS1				PBK	12/03/13 03:33:22 pm	-0.001	-4	252.21		1.00
Replicates	-17.9	6.7	-8.9	2.4						
LC2OGL02HGS1				LCS	12/03/13 03:35:29 pm	5.245	22979	0.12		1.00
Replicates	22976.3	23008.0	22991.3	22941.7						
% Recovery	104.91									
SG8913-006				UNK	12/03/13 03:37:36 pm	7.457	32670	0.19		1.00
Replicates	32692.0	32741.2	32648.2	32598.4						
SG8913-007				UNK	12/03/13 03:39:44 pm	0.090	396	1.82		1.00
Replicates	404.3	399.3	390.5	389.3						
SG8913-008				UNK	12/03/13 03:41:51 pm	0.053	232	3.62		1.00
Replicates	240.0	238.6	223.4	226.4						
SG8913-009				UNK	12/03/13 03:43:58 pm	0.074	325	3.10		1.00
Replicates	332.2	310.6	323.8	331.6						
SG8913-011				UNK	12/03/13 03:46:05 pm	0.042	182	17.99		1.00
Replicates	225.1	183.8	174.0	146.0						

Sample 004/5-551043-0.10.5 rep result 0.02 mg/kg

SG8999-002				UNK	12/03/13 03:48:13 pm	0.134	585	3.00		1.00
Replicates	580.0	591.6	605.6	564.3						
CCV				CCV	12/03/13 03:50:20 pm	5.003	21919	0.30		1.00
Replicates	21885.3	21882.5	21889.6	22017.5						
% Recovery	100.07									

$$\left(\frac{0.134\,ug}{L}\right)\left(\frac{0.1\,L}{0.65g}\right)\left(\frac{1\,mg}{1000\,ug}\right)\left(\frac{1000g}{1kg}\right)\left(\frac{1}{.931}\right) = 0.022\ mg/kg$$

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Blank Sample Summary Report

Total Solids

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG134664	SM2540	20-NOV-13	19-NOV-13	U 1 %	1 %	N/A
MBLANK	WG134667	SM2540	20-NOV-13	19-NOV-13	U 1 %	1 %	N/A
MBLANK	WG134681	SM2540	20-NOV-13	19-NOV-13	U 1 %	1 %	N/A
MBLANK	WG134768	SM2540	21-NOV-13	20-NOV-13	U 1 %	1 %	N/A

Katahdin Analytical Services 5000003

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Laboratory Control Sample Summary Report

Total Solids

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG134664-2	LCS	WG134664	20-NOV-13	19-NOV-13	%	90	88.	98	80-120	
WG134667-2	LCS	WG134667	20-NOV-13	19-NOV-13	%	90	89.	99	80-120	
WG134681-2	LCS	WG134681	20-NOV-13	19-NOV-13	%	90	88.	98	80-120	
WG134768-2	LCS	WG134768	21-NOV-13	20-NOV-13	%	90	87.	97	80-120	

Katahdin Analytical Services 5000004

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Quality Control Report

Duplicate Sample Summary Report

Total Solids

Duplicate Sample ID	Original Sample ID	QC Batch	Analysis Date	Result Units	Sample Result	Duplicate Result	RPD(%)	RPD Limit
WG134667-4	SG8999-23	WG134667	20-NOV-13	%	86.	86.	1	20
WG134681-4	SG8999-28	WG134681	20-NOV-13	%	88.	86.	2	20
WG134667-3	SG8999-2	WG134667	20-NOV-13	%	94.	94.	0	20

Katahdin Analytical Services 5000005

Tetra Tech INC **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 27, 2014**

FROM: **JOSEPH KALINYAK** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PAH / GRO / PRO**
INORGANIC DATA VALIDATION – TOTAL METALS
NAVSTA NEWPORT, CTO WE30
SAMPLE DELIVERY GROUP (SDG) SG8908

SAMPLES: 7 / Soil / PAH / Total Metals

TF2-004/5-SB1021-0204
TF2-004/5-SB1025-2.604
TF2-004/5-SB1032-0204
TF2-SB-DUP04-1113
TF2-004/5-SB1021-0608
TF2-004/5-SB1026-022.7
TF2-004/5-SB1048-0204

1 / Soil / GRO / PRO

TF2-004/5-SB1021-0204

1 / Soil / GRO

TF2-W-TB01-1113

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG SG8908 consisted of seven (7) soil samples and one (1) trip blank sample. The seven (7) soil samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAH) as listed above. One (1) soil sample and the one (1) trip blank sample were analyzed for Gasoline Range Organics (GRO) as listed above. One (1) soil sample was analyzed for Petroleum Range Organics (PRO) as listed above. One (1) field duplicate sample pair was included in this sample delivery group (SDG): TF2-SB-DUP04-1113 / TF2-004/5-SB1021-0204.

The samples were collected by Tetra Tech on November 13, 2013 and analyzed by Katahdin Analytical Services, Inc. All analyses were conducted in accordance with EPA SW-846 Method 8270D for PAHs, Method 8015B for GRO, FL-PRO for PRO, Method 7471B for mercury, and Method 6020A for total metals, analytical and reporting protocols.

The data was evaluated based on the following parameters:

* Data Completeness
* Holding Times
* GC/MS Instrument Tuning and System Performance
- Initial and Continuing Calibration Verification Results
- Laboratory Method/Preparation Blank Results
* ICP Interference Results
* Laboratory Duplicate Results
- Blank Spike/Blank Spike Duplicate Results

- Matrix Spike/Matrix Spike Duplicate Recoveries
* • Surrogate Spike Recoveries
* • Internal Standard Recoveries
* • Field Duplicate Precision
* • ICP Serial Dilution
* • Analyte Identification and Quantification
* • Detection Limits

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

HOLD TIME

No issues were identified.

BLANKS

PAH analytes were detected in the method blank sample for batch WG134819 at the maximum concentration as indicated below affecting all the PAH samples.

Analytes	Maximum Conc. µg/kg	Action Level µg/kg
Naphthalene	4.9	24.5
Acenaphthene	1.8	9.0
Phenanthrene	4.0	20.0
Anthracene	1.5	7.5
Fluoranthene	2.2	11.0
Pyrene	2.9	14.5

An action level of 5X the maximum concentration for the contaminants was established to evaluate laboratory contamination. Dilution factors, percent solids, and sample aliquots were taken into consideration during the application of all action levels. Detections of PAH analyte results less than the action level were qualified as non-detected, (U), and raised to the Limit of Detection (LOD) if necessary, as a result of blank contamination.

The following metal analytes were detected in the laboratory method and preparation blanks at the following maximum concentrations:

	Maximum Analyte Conc.	Action Level
Aluminum [1]	1.587 mg/Kg	7.935 mg/Kg
Barium [1]	0.049 mg/Kg	0.245 mg/Kg
Chromium [1]	0.084 mg/Kg	0.420 mg/Kg
Lead [1]	0.013 mg/Kg	0.065 mg/Kg
Selenium [1]	0.080 mg/Kg	0.400mg/Kg
Zinc [1]	0.142 mg/Kg	0.710 mg/Kg
Antimony [2]	0.011 µg/L	0.055 mg/Kg
Cadmium [2]	0.005 µg/L	0.0025 mg/Kg
Lead [2]	0.010 µg/L	0.005 mg/Kg
Manganese [2]	0.073 µg/L	0.0365 mg/Kg
Sodium [2]	3.936 µg/L	1.968 mg/Kg

Thallium [2]	0.004 µg/L	0.002 mg/Kg
Zinc [2]	0.138 µg/L	0.0690 mg/Kg
Manganese [3]	0.039 µg/L	0.0195 mg/Kg

(1) Maximum concentration detected in the soil preparation blank associated with preparation batch GK22IMS1 affecting all soil samples.

(2) Maximum concentration found for initial and/or continuing calibration blanks affecting all samples analyzed for these analytes on 11/25/13, excluding manganese and zinc for sample TF2-004/5-SB1021-0204.

(3) Maximum concentration found for initial and/or continuing calibration blanks affecting sample TF2-004/5-SB1021-0204 analyzed on 12/04/13.

An action level of 5X the maximum contaminant concentration was established to evaluate for blank contamination. Percent moisture, dilution factors, and sample aliquots were taken into consideration during the application of the action level. Detected results reported for selenium below the established action levels were qualified as non-detected, (U). Results reported greater than the Method Detection Limit (MDL) but less than the Limit of Detection (LOD) were raised to the LOD.

CALIBRATIONS

The PAH continuing calibration verification (CCV) percent difference (%D) was greater than the 20% quality control limit for fluoranthene on 11/29/13 @ 12:10 on instrument GCMS-N.

Affected Samples: All PAH samples

Actions: The sample detected fluoranthene results were qualified estimated, (J), except where qualified non-detected due to method blank contamination.

The metals analysis CCV %D was less than the 90% quality control limit for silver on 11/25/13 @ 17:25 on instrument AGILENT 7500 ICP-MS.

Affected Samples:

TF2-004/5-SB1021-0608	TF2-004/5-SB1025-2.604	TF2-004/5-SB1026-022.7
TF2-004/5-SB1032-0204	TF2-004/5-SB1048-0204	TF2-SB-DUP04-1113

Actions: The sample detected silver results were qualified estimated, (J).

LABORATORY CONTROL SPIKE (LCS) /LABORATORY CONTROL SPIKE DUPLICATE (LCSD)

The PAH laboratory control sample (LCS) percent recoveries (%Rs) were greater than the quality control limit for phenanthracene, fluoranthene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene for batch WG134819. The LCS duplicate (LCSD) %R for benzo(a)pyrene was less than the quality control limit. Additionally the LCS/LCSD result RPDs (relative percent differences) were greater than the quality control limit for fluoranthene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene.

Affected Samples: All PAH samples

Actions: The detected and non-detected phenanthrene sample results were not qualified as the LCSD %R and the LCS/LCSD RPD were compliant. The detected sample fluoranthene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(a)pyrene, and indeno(1,2,3-cd)pyrene results were qualified estimated, (J), except where qualified non-detected due to blank contamination. The non-detected sample analyte results were not qualified, with the exception of the benzo(a)pyrene non-detected sample results which were qualified estimated, (UJ).

MATRIX SPIKE %R

The Matrix Spike (MS) sample TF2-004/5-SB1021-0204 had %Rs for antimony, arsenic, chromium, copper, nickel and zinc below the 80% quality control limits. The post digestion spike yielded acceptable %Rs for the analytes.

Affected Samples: All samples were affected

Actions: The sample detected antimony, arsenic, chromium, copper, nickel and zinc results were qualified estimated, (J).

LABORATORY DUPLICATE RPD

No issues were identified.

SURROGATE SPIKE RECOVERIES

No issues were identified.

INTERNAL STANDARD RECOVERY

No issues were identified.

COMPOUND QUANTIFICATION

No issues were identified.

ADDITIONAL COMMENTS

Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J).

All samples were diluted 5X for the metals analysis.

The field duplicate sample TF2-SB-DUP04-1113 was not analyzed for GRO and PRO.

PRO sample results were reported as EPH (C08-C44) in the electronic database (EDD).

GRO sample results were reported as TPH (C05-C12) in the EDD.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: PAH and selenium results were qualified for method blank contamination. PAH fluoranthene and silver results were qualified for a CCV %D non-compliances. PAH results were qualified for LCS/LCSD %R and RPD quality control limit non-compliances. Copper results were qualified for a non-compliant laboratory duplicate RPD.

Other Factors Affecting Data Quality: Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J). Metal results were qualified for MS %R non-compliances.

The data for these analyses were reviewed with reference to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements, National Functional Guidelines for Organic Data Validation (June 2008), Superfund Guidance/Procedures Attachment 2-3b: Example Organic Data Review Worksheets (1/13), USEPA National Functional Guidelines for Inorganic Data Validation" (January 2010), and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Joseph Kalinyak
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Value Qualifier Key (Val Qual)

J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The result is an estimated non-detected quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U - Value is a non-detect as reported by the laboratory.

UR – Non-detected result is considered rejected, (UR), as a result of technical non-compliances.

DATA QUALIFICATION CODE (QUAL CODE)

Qualifier Codes:

A	=	Lab Blank Contamination
B	=	Field Blank Contamination
C	=	Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01	=	GC/MS Tuning Noncompliance
D	=	MS/MSD Recovery Noncompliance
E	=	LCS/LCSD Recovery Noncompliance
F	=	Lab Duplicate Imprecision
G	=	Field Duplicate Imprecision
H	=	Holding Time Exceedance
I	=	ICP Serial Dilution Noncompliance
J	=	ICP PDS Recovery Noncompliance; MSA's r < 0.995
K	=	ICP Interference - includes ICS % R Noncompliance
L	=	Instrument Calibration Range Exceedance
M	=	Sample Preservation Noncompliance
N	=	Internal Standard Noncompliance
N01	=	Internal Standard Recovery Noncompliance Dioxins
N02	=	Recovery Standard Noncompliance Dioxins
N03	=	Clean-up Standard Noncompliance Dioxins
O	=	Poor Instrument Performance (i.e., base-time drifting)
P	=	Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q	=	Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R	=	Surrogates Recovery Noncompliance
S	=	Pesticide/PCB Resolution
T	=	% Breakdown Noncompliance for DDT and Endrin
U	=	RPD between columns/detectors >40% for positive results determined via GC/HPLC
V	=	Non-linear calibrations; correlation coefficient r < 0.995
W	=	EMPC result
X	=	Signal to noise response drop
Y	=	Percent solids <30%
Z	=	Uncertainty at 2 sigma deviation is less than sample activity
Z1	=	Tentatively Identified Compound considered presumptively present
Z2	=	Tentatively Identified Compound column bleed

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1021-0204			TF2-004/5-SB1021-0608			TF2-004/5-SB1025-2.604			TF2-004/5-SB1026-022.7		
SDG: SG8908	LAB_ID	SG8908-1			SG8908-2			SG8908-6			SG8908-3		
FRACTION: PAH	SAMP_DATE	11/13/2013			11/13/2013			11/13/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.9			95.3			90.8			94.7		
	DUP_OF												

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE	4.8	J	P	10	U		3.7	J	P	10	U	
ACENAPHTHENE	11	U	A	10	U	A	11	U		14	J	P
ACENAPHTHYLENE	3.5	J	P	1.9	J	P	11	U		3.3	J	P
ANTHRACENE	11	U	A	10	U	A	11	U		24		
BENZO(A)ANTHRACENE	22	J	EP	17	J	EP	3.3	J	EP	110	J	E
BENZO(A)PYRENE	22	J	EP	13	J	EP	11	UJ	E	90	J	E
BENZO(B)FLUORANTHENE	27	J	E	17	J	EP	10	J	EP	140	J	E
BENZO(G,H,I)PERYLENE	11	J	P	5.5	J	P	11	U		52		
BENZO(K)FLUORANTHENE	10	J	P	6.1	J	P	11	U		44		
CHRYSENE	22	J	EP	17	J	EP	3.4	J	EP	110	J	E
DIBENZO(A,H)ANTHRACENE	10	J	P	10	U		11	U		25		
FLUORANTHENE	30	J	CE	30	J	CE	11	U	A	230	J	CE
FLUORENE	11	U		10	U		11	U		11	J	P
INDENO(1,2,3-CD)PYRENE	22	J	EP	13	J	EP	6.4	J	EP	100	J	E
NAPHTHALENE	11	U	A	10	U		11	U	A	10	U	
PHENANTHRENE	20	U	A	18	U	A	11	U	A	130		
PYRENE	21	J	P	32			11	U	A	170		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1032-0204			TF2-004/5-SB1048-0204			TF2-SB-DUP04-1113		
SDG: SG8908	LAB_ID	SG8908-4			SG8908-5			SG8908-7		
FRACTION: PAH	SAMP_DATE	11/13/2013			11/13/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.8			93.5			93.4		
	DUP_OF							TF2-004/5-SB1021-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	U		3.4	J	P	9.8	U	
ACENAPHTHENE		10	U		10	U		9.8	U	A
ACENAPHTHYLENE		10	U		10	U		9.8	U	
ANTHRACENE		10	U		10	U		9.8	U	A
BENZO(A)ANTHRACENE		2.7	J	EP	2.7	J	EP	5.6	J	EP
BENZO(A)PYRENE		10	UJ	E	10	UJ	E	3.5	J	EP
BENZO(B)FLUORANTHENE		9.2	J	EP	9.5	J	EP	11	J	EP
BENZO(G,H,I)PERYLENE		10	U		2.2	J	P	9.8	U	
BENZO(K)FLUORANTHENE		10	U		10	U		9.8	U	
CHRYSENE		2.9	J	EP	3.4	J	EP	6.4	J	EP
DIBENZO(A,H)ANTHRACENE		10	U		10	U		9.8	U	
FLUORANTHENE		10	U	A	10	U	A	14	J	CEP
FLUORENE		10	U		10	U		9.8	U	
INDENO(1,2,3-CD)PYRENE		5.9	J	EP	5.6	J	EP	6	J	EP
NAPHTHALENE		10	U		10	U	A	9.8	U	
PHENANTHRENE		10	U	A	10	U	A	11	U	A
PYRENE		10	U	A	10	U	A	9.8	U	A

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1021-0204			TF2-W-TB01-1113		
SDG: SG8908	LAB_ID	SG8908-1			SG8908-8		
FRACTION: PET	SAMP_DATE	11/13/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	MG/KG			MG/KG		
	PCT_SOLIDS	91.9			100.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
EPH (C08-C44)		6.1	J	P			
TPH (C05-C12)		2	U		2	U	

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1021-0204			TF2-004/5-SB1021-0608			TF2-004/5-SB1025-2.604			TF2-004/5-SB1026-022.7		
SDG: SG8908	LAB_ID	SG8908-001			SG8908-002			SG8908-006			SG8908-003		
FRACTION: M	SAMP_DATE	11/13/2013			11/13/2013			11/13/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	91.9			95.3			90.8			94.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		13900			20700			12800			11800		
ANTIMONY		0.04	J	DP	0.1	J	D	0.06	J	DP	0.15	J	D
ARSENIC		7.4	J	D	13.4	J	D	5	J	D	7.1	J	D
BARIUM		10.2			12.5			15.1			13.3		
BERYLLIUM		0.26			1			0.37			0.62		
CADMIUM		0.07			0.08	J	P	0.05	J	P	0.06	J	P
CALCIUM		655			382			524			592		
CHROMIUM		18.9	J	D	28.8	J	D	14.8	J	D	13.6	J	D
COBALT		14.6			25.4			8.4			11.3		
COPPER		22.6	J	D	63.9	J	D	12.7	J	D	34.9	J	D
IRON		29100			45200			21400			27000		
LEAD		8.9			19.9			9.4			19.2		
MAGNESIUM		4690			6870			3460			3710		
MANGANESE		276			433			215			275		
MERCURY		0.04			0.02	J	P	0.03	J	P	0.02	J	P
NICKEL		27	J	D	51.8	J	D	16.5	J	D	18.4	J	D
POTASSIUM		226			270			384			333		
SELENIUM		0.28	U	A	0.4	U	A	0.34	U	A	0.54	U	A
SILVER		0.02	J	P	0.02	J	CP	0.03	J	CP	0.03	J	CP
SODIUM		19.2	J	P	19.3	J	P	28	J	P	23.7	J	P
THALLIUM		0.02	J	P	0.02	J	P	0.05	J	P	0.03	J	P
VANADIUM		15			20.5			16.2			13.4		
ZINC		58.9	J	D	129	J	D	34.3	J	D	46.9	J	D

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1032-0204			TF2-004/5-SB1048-0204			TF2-SB-DUP04-1113		
SDG: SG8908	LAB_ID	SG8908-004			SG8908-005			SG8908-007		
FRACTION: M	SAMP_DATE	11/13/2013			11/13/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	91.8			93.5			93.4		
	DUP_OF							TF2-004/5-SB1021-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		12800			16300			15100		
ANTIMONY		0.06	J	DP	0.04	J	DP	0.06	J	DP
ARSENIC		7.1	J	D	5.9	J	D	9.9	J	D
BARIUM		13.9			13.5			13		
BERYLLIUM		0.34			0.44			0.4		
CADMIUM		0.1			0.06	J	P	0.08		
CALCIUM		880			373			713		
CHROMIUM		16.4	J	D	21.4	J	D	19	J	D
COBALT		12			10.4			19		
COPPER		16	J	D	21.1	J	D	24.8	J	D
IRON		25000			30600			31500		
LEAD		9.7			13.6			12.5		
MAGNESIUM		3940			5050			4810		
MANGANESE		312			249			340		
MERCURY		0.17			0.005	J	P	0.01	J	P
NICKEL		23.2	J	D	24.1	J	D	27.1	J	D
POTASSIUM		337			300			317		
SELENIUM		0.27	U	A	0.3	U	A	0.34	U	A
SILVER		0.02	J	CP	0.02	J	CP	0.02	J	CP
SODIUM		23.5	J	P	22.5	J	P	22	J	P
THALLIUM		0.04	J	P	0.03	J	P	0.03	J	P
VANADIUM		16.4			17.8			17.2		
ZINC		46.9	J	D	49	J	D	57.5	J	D

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1021-0204			TF2-W-TB01-1113		
SDG: SG8908	LAB_ID	SG8908-1			SG8908-8		
FRACTION: PET	SAMP_DATE	11/13/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	MG/KG			MG/KG		
	PCT_SOLIDS	91.9			100.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
EPH (C08-C44)		6.1	J	P			
TPH (C05-C12)		2	U		2	U	

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1021-0204			TF2-004/5-SB1021-0608			TF2-004/5-SB1025-2.604			TF2-004/5-SB1026-022.7		
SDG: SG8908	LAB_ID	SG8908-1			SG8908-2			SG8908-6			SG8908-3		
FRACTION: MISC	SAMP_DATE	11/13/2013			11/13/2013			11/13/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	%			%			%			%		
	PCT_SOLIDS	91.9			95.3			90.8			94.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL SOLIDS		92			95			91			95		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1032-0204			TF2-004/5-SB1048-0204			TF2-SB-DUP04-1113			TF2-W-TB01-1113		
SDG: SG8908	LAB_ID	SG8908-4			SG8908-5			SG8908-7			SG8908-8		
FRACTION: MISC	SAMP_DATE	11/13/2013			11/13/2013			11/13/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	%			%			%			%		
	PCT_SOLIDS	91.8			93.5			93.4			100.0		
	DUP_OF							TF2-004/5-SB1021-0204					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
TOTAL SOLIDS		92			94			93			100		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8908-1
Client ID: 004/5-SB1021-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8908
Lab File ID: N0961.D

Sample Date: 13-NOV-13
Received Date: 13-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	9.2	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	J	4.8	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	J	3.5	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	J	3.5	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.4	11.
Phenanthrene	JL	20.	ug/Kgdrywt	1	20	22.	1.9	11.
Anthracene	J	5.4	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	L	30.	ug/Kgdrywt	1	20	22.	1.9	11.
Pyrene	J	21.	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	JL	22.	ug/Kgdrywt	1	20	22.	2.0	11.
Chrysene	JL	22.	ug/Kgdrywt	1	20	22.	1.8	11.
Benzo(b)Fluoranthene	L	27.	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	J	10.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	JL	22.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	JL	22.	ug/Kgdrywt	1	20	22.	2.0	11.
Dibenzo(a,h)anthracene	J	10.	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(g,h,i)perylene	J	11.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		67.4	%					
Fluorene-D10		64.7	%					
Pyrene-D10		49.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8908-2
Client ID: 004/5-SB1021-0608
Project: NAVSTA Newport CTO WE:
SDG: SG8908
Lab File ID: N0962.D

Sample Date: 13-NOV-13
Received Date: 13-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	1.9	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	1.8	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	JL	18.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	6.6	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	L	30.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		32.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	JL	17.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	JL	17.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	JL	17.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	J	6.1	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	JL	13.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	JL	13.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	J	5.5	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		93.4	%					
Fluorene-D10		59.7	%					
Pyrene-D10		54.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8908-6
Client ID: 004/5-SB1025-2.604
Project: NAVSTA Newport CTO WE:
SDG: SG8908
Lab File ID: N0966.D

Sample Date: 13-NOV-13
Received Date: 13-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	5.1	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	J	3.7	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	U	11.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	JL	3.1	ug/Kgdrywt	1	20	22.	1.9	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	JL	4.0	ug/Kgdrywt	1	20	22.	1.9	11.
Pyrene	J	4.0	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	JL	3.3	ug/Kgdrywt	1	20	22.	2.0	11.
Chrysene	JL	3.4	ug/Kgdrywt	1	20	22.	1.8	11.
Benzo(b)Fluoranthene	JL	10.	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	UL	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	JL	6.4	ug/Kgdrywt	1	20	22.	2.0	11.
Dibenzo(a,h)anthracene	U	11.	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(g,h,i)perylene	U	11.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		66.6	%					
Fluorene-D10		61.4	%					
Pyrene-D10		68.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8908-3
Client ID: 004/5-SB1026-022.7
Project: NAVSTA Newport CTO WE:
SDG: SG8908
Lab File ID: N0963.D

Sample Date: 13-NOV-13
Received Date: 13-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	3.3	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	14.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	11.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	L	130	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		24.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	L	230	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		170	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	L	110	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	L	110	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	L	140	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		44.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	L	90.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	L	100	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		25.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene		52.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		67.2	%					
Fluorene-D10		71.8	%					
Pyrene-D10		73.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8908-4
Client ID: 004/5-SB1032-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8908
Lab File ID: N0964.D

Sample Date: 13-NOV-13
Received Date: 13-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.3	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Phenanthrene	JL	3.3	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.3	10.
Fluoranthene	JL	3.6	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	J	3.4	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	JL	2.7	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	JL	2.9	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	JL	9.2	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Benzo(a)pyrene	UL	10.	ug/Kgdrywt	1	20	21.	3.5	10.
Indeno(1,2,3-cd)pyrene	JL	5.9	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		62.3	%					
Fluorene-D10		61.7	%					
Pyrene-D10		63.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8908-5
Client ID: 004/5-SB1048-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8908
Lab File ID: N0965.D

Sample Date: 13-NOV-13
Received Date: 13-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	4.2	ug/Kgdrywt	1	20	20.	2.7	10.
2-Methylnaphthalene	J	3.4	ug/Kgdrywt	1	20	20.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Phenanthrene	JL	4.8	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	JL	5.0	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	J	4.4	ug/Kgdrywt	1	20	20.	2.2	10.
Benzo(a)anthracene	JL	2.7	ug/Kgdrywt	1	20	20.	2.0	10.
Chrysene	JL	3.4	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	JL	9.5	ug/Kgdrywt	1	20	20.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene	UL	10.	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene	JL	5.6	ug/Kgdrywt	1	20	20.	2.0	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	J	2.2	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		85.0	%					
Fluorene-D10		75.1	%					
Pyrene-D10		72.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8908-7
Client ID: TF2-SB-DUP04-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8908
Lab File ID: N0967.D

Sample Date: 13-NOV-13
Received Date: 13-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.6	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	U	9.8	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	J	2.0	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	U	9.8	ug/Kgdrywt	1	20	20.	3.2	9.8
Phenanthrene	JL	11.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	2.4	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene	JL	14.	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene	J	10.	ug/Kgdrywt	1	20	20.	2.1	9.8
Benzo(a)anthracene	JL	5.6	ug/Kgdrywt	1	20	20.	1.9	9.8
Chrysene	JL	6.4	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene	JL	11.	ug/Kgdrywt	1	20	20.	2.4	9.8
Benzo(k)fluoranthene	U	9.8	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	JL	3.5	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene	JL	6.0	ug/Kgdrywt	1	20	20.	1.9	9.8
Dibenzo(a,h)anthracene	U	9.8	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	U	9.8	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		75.0	%					
Fluorene-D10		65.4	%					
Pyrene-D10		62.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8908-1
Client ID: 004/5-SB1021-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8908
Lab File ID: AGK20409.D

Sample Date: 13-NOV-13
Received Date: 13-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896

Analysis Date: 27-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 92.
Report Date: 02-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	J	6.1	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		90.4	%					
n-Triacontane-D62		109.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8908-8
Client ID: TF2-W-TB01-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8908
Lab File ID: 9GK4013.D

Sample Date: 13-NOV-13
Received Date: 13-NOV-13
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904

Analysis Date: 23-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 100
Report Date: 03-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		88.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8908-1
Client ID: 004/5-SB1021-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8908
Lab File ID: 9GK4014.D

Sample Date: 13-NOV-13
Received Date: 13-NOV-13
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904

Analysis Date: 23-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 92.
Report Date: 03-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		91.6	%					

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INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1021-0204

Matrix: SOIL **SDG Name:** SG8908

Percent Solids: 91.9 **Lab Sample ID:** SG8908-001

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	13900			MS	5	20	0.33	2.6
7440-36-0	ANTIMONY, TOTAL	0.04	J	N	MS	5	0.066	0.01	0.033
7440-38-2	ARSENIC, TOTAL	7.4		N	MS	5	0.33	0.10	0.26
7440-39-3	BARIUM, TOTAL	10.2			MS	5	0.13	0.02	0.066
7440-41-7	BERYLLIUM, TOTAL	0.26			MS	5	0.066	0.003	0.013
7440-43-9	CADMIUM, TOTAL	0.07			MS	5	0.066	0.007	0.013
7440-70-2	CALCIUM, TOTAL	655			MS	5	6.6	2.51	5.2
7440-47-3	CHROMIUM, TOTAL	18.9		N	MS	5	0.33	0.03	0.26
7440-48-4	COBALT, TOTAL	14.6			MS	5	0.066	0.003	0.020
7440-50-8	COPPER, TOTAL	22.6		N*	MS	5	0.20	0.05	0.13
7439-89-6	IRON, TOTAL	29100			MS	5	6.6	1.57	3.9
7439-92-1	LEAD, TOTAL	8.9			MS	5	0.066	0.003	0.033
7439-95-4	MAGNESIUM, TOTAL	4690			MS	5	6.6	0.89	5.2
7439-96-5	MANGANESE, TOTAL	276			MS	5	0.13	0.03	0.066
7439-97-6	MERCURY, TOTAL	0.04			CV	1	0.030	0.004	0.015
7440-02-0	NICKEL, TOTAL	27.0		N	MS	5	0.13	0.02	0.079
7440-09-7	POTASSIUM, TOTAL	226			MS	5	66	2.99	26
7782-49-2	SELENIUM, TOTAL	0.28	J		MS	5	0.33	0.03	0.20
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.066	0.003	0.026
7440-23-5	SODIUM, TOTAL	19.2	J		MS	5	66	1.68	26
7440-28-0	THALLIUM, TOTAL	0.02	J		MS	5	0.066	0.007	0.026
7440-62-2	VANADIUM, TOTAL	15.0			MS	5	0.33	0.07	0.26
7440-66-6	ZINC, TOTAL	58.9		N	MS	5	0.66	0.09	0.52

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1021-0608

Matrix: SOIL **SDG Name:** SG8908

Percent Solids: 95.3 **Lab Sample ID:** SG8908-002

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	20700			MS	5	27	0.47	3.6
7440-36-0	ANTIMONY, TOTAL	0.10		N	MS	5	0.091	0.02	0.046
7440-38-2	ARSENIC, TOTAL	13.4		N	MS	5	0.46	0.14	0.36
7440-39-3	BARIUM, TOTAL	12.5			MS	5	0.18	0.03	0.091
7440-41-7	BERYLLIUM, TOTAL	1.0			MS	5	0.091	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.091	0.009	0.018
7440-70-2	CALCIUM, TOTAL	382			MS	5	9.1	3.49	7.3
7440-47-3	CHROMIUM, TOTAL	28.8		N	MS	5	0.46	0.05	0.36
7440-48-4	COBALT, TOTAL	25.4			MS	5	0.091	0.005	0.027
7440-50-8	COPPER, TOTAL	63.9		N*	MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	45200			MS	5	9.1	2.19	5.5
7439-92-1	LEAD, TOTAL	19.9			MS	5	0.091	0.005	0.046
7439-95-4	MAGNESIUM, TOTAL	6870			MS	5	9.1	1.25	7.3
7439-96-5	MANGANESE, TOTAL	433			MS	5	0.18	0.04	0.091
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.024	0.004	0.012
7440-02-0	NICKEL, TOTAL	51.8		N	MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	270			MS	5	91	4.16	36
7782-49-2	SELENIUM, TOTAL	0.40	J		MS	5	0.46	0.04	0.27
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.091	0.005	0.036
7440-23-5	SODIUM, TOTAL	19.3	J		MS	5	91	2.34	36
7440-28-0	THALLIUM, TOTAL	0.02	J		MS	5	0.091	0.009	0.036
7440-62-2	VANADIUM, TOTAL	20.5			MS	5	0.46	0.10	0.36
7440-66-6	ZINC, TOTAL	129		N	MS	5	0.91	0.12	0.73

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1025-2.604

Matrix: SOIL **SDG Name:** SG8908

Percent Solids: 90.8 **Lab Sample ID:** SG8908-006

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	12800			MS	5	27	0.46	3.6
7440-36-0	ANTIMONY, TOTAL	0.06	J	N	MS	5	0.090	0.02	0.045
7440-38-2	ARSENIC, TOTAL	5.0		N	MS	5	0.45	0.14	0.36
7440-39-3	BARIUM, TOTAL	15.1			MS	5	0.18	0.03	0.090
7440-41-7	BERYLLIUM, TOTAL	0.37			MS	5	0.090	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.05	J		MS	5	0.090	0.009	0.018
7440-70-2	CALCIUM, TOTAL	524			MS	5	9.0	3.45	7.2
7440-47-3	CHROMIUM, TOTAL	14.8		N	MS	5	0.45	0.05	0.36
7440-48-4	COBALT, TOTAL	8.4			MS	5	0.090	0.005	0.027
7440-50-8	COPPER, TOTAL	12.7		N*	MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	21400			MS	5	9.0	2.17	5.4
7439-92-1	LEAD, TOTAL	9.4			MS	5	0.090	0.005	0.045
7439-95-4	MAGNESIUM, TOTAL	3460			MS	5	9.0	1.23	7.2
7439-96-5	MANGANESE, TOTAL	215			MS	5	0.18	0.04	0.090
7439-97-6	MERCURY, TOTAL	0.03	J		CV	1	0.027	0.004	0.014
7440-02-0	NICKEL, TOTAL	16.5		N	MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	384			MS	5	90	4.12	36
7782-49-2	SELENIUM, TOTAL	0.34	J		MS	5	0.45	0.04	0.27
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.090	0.005	0.036
7440-23-5	SODIUM, TOTAL	28.0	J		MS	5	90	2.32	36
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.090	0.009	0.036
7440-62-2	VANADIUM, TOTAL	16.2			MS	5	0.45	0.10	0.36
7440-66-6	ZINC, TOTAL	34.3		N	MS	5	0.90	0.12	0.72

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1026-022.7

Matrix: SOIL **SDG Name:** SG8908

Percent Solids: 94.7 **Lab Sample ID:** SG8908-003

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11800			MS	5	24	0.42	3.3
7440-36-0	ANTIMONY, TOTAL	0.15		N	MS	5	0.082	0.02	0.041
7440-38-2	ARSENIC, TOTAL	7.1		N	MS	5	0.41	0.12	0.33
7440-39-3	BARIUM, TOTAL	13.3			MS	5	0.16	0.03	0.082
7440-41-7	BERYLLIUM, TOTAL	0.62			MS	5	0.082	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.082	0.008	0.016
7440-70-2	CALCIUM, TOTAL	592			MS	5	8.2	3.13	6.6
7440-47-3	CHROMIUM, TOTAL	13.6		N	MS	5	0.41	0.04	0.33
7440-48-4	COBALT, TOTAL	11.3			MS	5	0.082	0.004	0.024
7440-50-8	COPPER, TOTAL	34.9		N*	MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	27000			MS	5	8.2	1.97	4.9
7439-92-1	LEAD, TOTAL	19.2			MS	5	0.082	0.004	0.041
7439-95-4	MAGNESIUM, TOTAL	3710			MS	5	8.2	1.12	6.6
7439-96-5	MANGANESE, TOTAL	275			MS	5	0.16	0.03	0.082
7439-97-6	MERCURY, TOTAL	0.02	J		CV	1	0.030	0.005	0.015
7440-02-0	NICKEL, TOTAL	18.4		N	MS	5	0.16	0.02	0.098
7440-09-7	POTASSIUM, TOTAL	333			MS	5	82	3.73	33
7782-49-2	SELENIUM, TOTAL	0.54			MS	5	0.41	0.03	0.24
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.082	0.004	0.033
7440-23-5	SODIUM, TOTAL	23.7	J		MS	5	82	2.10	33
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.082	0.008	0.033
7440-62-2	VANADIUM, TOTAL	13.4			MS	5	0.41	0.09	0.33
7440-66-6	ZINC, TOTAL	46.9		N	MS	5	0.82	0.11	0.66

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1032-0204

Matrix: SOIL **SDG Name:** SG8908

Percent Solids: 91.8 **Lab Sample ID:** SG8908-004

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12800			MS	5	27	0.46	3.6
7440-36-0	ANTIMONY, TOTAL	0.06	J	N	MS	5	0.091	0.02	0.045
7440-38-2	ARSENIC, TOTAL	7.1		N	MS	5	0.45	0.14	0.36
7440-39-3	BARIUM, TOTAL	13.9			MS	5	0.18	0.03	0.091
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.091	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.1			MS	5	0.091	0.009	0.018
7440-70-2	CALCIUM, TOTAL	880			MS	5	9.1	3.47	7.3
7440-47-3	CHROMIUM, TOTAL	16.4		N	MS	5	0.45	0.05	0.36
7440-48-4	COBALT, TOTAL	12.0			MS	5	0.091	0.005	0.027
7440-50-8	COPPER, TOTAL	16.0		N*	MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	25000			MS	5	9.1	2.18	5.4
7439-92-1	LEAD, TOTAL	9.7			MS	5	0.091	0.005	0.045
7439-95-4	MAGNESIUM, TOTAL	3940			MS	5	9.1	1.24	7.3
7439-96-5	MANGANESE, TOTAL	312			MS	5	0.18	0.04	0.091
7439-97-6	MERCURY, TOTAL	0.17			CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	23.2		N	MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	337			MS	5	91	4.14	36
7782-49-2	SELENIUM, TOTAL	0.27	J		MS	5	0.45	0.04	0.27
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.091	0.005	0.036
7440-23-5	SODIUM, TOTAL	23.5	J		MS	5	91	2.33	36
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.091	0.009	0.036
7440-62-2	VANADIUM, TOTAL	16.4			MS	5	0.45	0.10	0.36
7440-66-6	ZINC, TOTAL	46.9		N	MS	5	0.91	0.12	0.73

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1048-0204

Matrix: SOIL **SDG Name:** SG8908

Percent Solids: 93.5 **Lab Sample ID:** SG8908-005

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16300			MS	5	26	0.44	3.5
7440-36-0	ANTIMONY, TOTAL	0.04	J	N	MS	5	0.087	0.02	0.043
7440-38-2	ARSENIC, TOTAL	5.9		N	MS	5	0.43	0.13	0.35
7440-39-3	BARIUM, TOTAL	13.5			MS	5	0.17	0.03	0.087
7440-41-7	BERYLLIUM, TOTAL	0.44			MS	5	0.087	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.087	0.009	0.017
7440-70-2	CALCIUM, TOTAL	373			MS	5	8.7	3.33	7.0
7440-47-3	CHROMIUM, TOTAL	21.4		N	MS	5	0.43	0.04	0.35
7440-48-4	COBALT, TOTAL	10.4			MS	5	0.087	0.004	0.026
7440-50-8	COPPER, TOTAL	21.1		N*	MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	30600			MS	5	8.7	2.09	5.2
7439-92-1	LEAD, TOTAL	13.6			MS	5	0.087	0.004	0.043
7439-95-4	MAGNESIUM, TOTAL	5050			MS	5	8.7	1.19	7.0
7439-96-5	MANGANESE, TOTAL	249			MS	5	0.17	0.03	0.087
7439-97-6	MERCURY, TOTAL	0.005	J		CV	1	0.030	0.005	0.015
7440-02-0	NICKEL, TOTAL	24.1		N	MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	300			MS	5	87	3.96	35
7782-49-2	SELENIUM, TOTAL	0.30	J		MS	5	0.43	0.03	0.26
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.087	0.004	0.035
7440-23-5	SODIUM, TOTAL	22.5	J		MS	5	87	2.23	35
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.087	0.009	0.035
7440-62-2	VANADIUM, TOTAL	17.8			MS	5	0.43	0.10	0.35
7440-66-6	ZINC, TOTAL	49.0		N	MS	5	0.87	0.11	0.70

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SB-DUP04-1113

Matrix: SOIL **SDG Name:** SG8908

Percent Solids: 93.4 **Lab Sample ID:** SG8908-007

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	LOQ	ADJUSTED MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15100			MS	5	24	0.41	3.2
7440-36-0	ANTIMONY, TOTAL	0.06	J	N	MS	5	0.080	0.02	0.040
7440-38-2	ARSENIC, TOTAL	9.9		N	MS	5	0.40	0.12	0.32
7440-39-3	BARIUM, TOTAL	13.0			MS	5	0.16	0.03	0.080
7440-41-7	BERYLLIUM, TOTAL	0.40			MS	5	0.080	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.08			MS	5	0.080	0.008	0.016
7440-70-2	CALCIUM, TOTAL	713			MS	5	8.0	3.08	6.4
7440-47-3	CHROMIUM, TOTAL	19.0		N	MS	5	0.40	0.04	0.32
7440-48-4	COBALT, TOTAL	19.0			MS	5	0.080	0.004	0.024
7440-50-8	COPPER, TOTAL	24.8		N*	MS	5	0.24	0.06	0.16
7439-89-6	IRON, TOTAL	31500			MS	5	8.0	1.93	4.8
7439-92-1	LEAD, TOTAL	12.5			MS	5	0.080	0.004	0.040
7439-95-4	MAGNESIUM, TOTAL	4810			MS	5	8.0	1.10	6.4
7439-96-5	MANGANESE, TOTAL	340			MS	5	0.16	0.03	0.080
7439-97-6	MERCURY, TOTAL	0.01	J		CV	1	0.028	0.004	0.014
7440-02-0	NICKEL, TOTAL	27.1		N	MS	5	0.16	0.02	0.096
7440-09-7	POTASSIUM, TOTAL	317			MS	5	80	3.67	32
7782-49-2	SELENIUM, TOTAL	0.34	J		MS	5	0.40	0.03	0.24
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.080	0.004	0.032
7440-23-5	SODIUM, TOTAL	22.0	J		MS	5	80	2.06	32
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.080	0.008	0.032
7440-62-2	VANADIUM, TOTAL	17.2			MS	5	0.40	0.09	0.32
7440-66-6	ZINC, TOTAL	57.5		N	MS	5	0.80	0.10	0.64

Comments:

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8908-1
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8908

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1021-0204	SL	13-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	92. %	1		N/A	SM2540G	WG134807	22-NOV-13 07:29:54	SM2540G	21-NOV-13	

Katahdin Analytical Services 5000008

Katahdin
ANALYTICAL SERVICES

Accredited in accordance with nelac
Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8908-2
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8908

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1021-0608	SL	13-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	95. %	1		N/A	SM2540G	WG134807	22-NOV-13 07:30:02	SM2540G	21-NOV-13	

Katahdin Analytical Services 5000009

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8908-6
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8908

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1025-2.604	SL	13-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	91. %	1		N/A	SM2540G	WG134807	22-NOV-13 07:30:43	SM2540G	21-NOV-13	

Katahdin Analytical Services 5000013

Katahdin
ANALYTICAL SERVICES

Accredited in accordance with nelac
Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8908-3
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8908

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1026-022.7	SL	13-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	95. %	1		N/A	SM2540G	WG134807	22-NOV-13 07:30:10	SM2540G	21-NOV-13	

Katahdin Analytical Services 5000010

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8908-4
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8908

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1032-0204	SL	13-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	92. %	1		N/A	SM2540G	WG134807	22-NOV-13 07:30:19	SM2540G	21-NOV-13	

Katahdin Analytical Services 500011

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8908-5
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8908

Sample Description	Matrix	Date Sampled	Date Received
004/5-SB1048-0204	SL	13-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	94. %	1		N/A	SM2540G	WG134807	22-NOV-13 07:30:27	SM2540G	21-NOV-13	

Katahdin Analytical Services 500012

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8908-7
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8908

Sample Description	Matrix	Date Sampled	Date Received
TF2-SB-DUP04-1113	SL	13-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	93. %	1		N/A	SM2540G	WG134807	22-NOV-13 07:30:51	SM2540G	21-NOV-13	

Katahdin Analytical Services 500014

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8908-8
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8908

Sample Description	Matrix	Date Sampled	Date Received
TF2-W-TB01-1113	SL	13-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	100 %	1		N/A	SM2540G	WG134807	22-NOV-13 07:30:52	SM2540G	21-NOV-13	

Katahdin Analytical Services 5000015

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: 03019 SDG: SG8908

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: _____

Missing Information	Date Lab Contacted	Date Received
	See DV Report	

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation
VOA/SV/Pest/PCB-I

Case: 03019 SDG: SG8908 See SV Report

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator:_____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator:_____

Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: JK

Date: 12/17/13

1/13

EPA NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: _____

Date: 12/17/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator:_____

Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator:_____

Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)
Comments:								

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator:_____

Date: 12/17/13

1/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: _____

Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. Y N

Validator: _____

Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methylphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: _____

Date: 12/17/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4.6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____

Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery			% Recovery		
			Fluoranthene			Naphthalene	
			Pyrene			2-Methylnaphthalene	
			Benzo(a)anthracene			Acenaphthylene	
			Chrysene			Acenaphthene	
			Benzo(b)fluoranthene			Fluorene	
			Benzo(k)fluoranthene			Pentachlorophenol	
			Benzo(a)pyrene			Phenanthrene	
			Indeno(1,2,3-cd)pyrene			Anthracene	
			Dibenzo(a,h)anthracene				
			Benzo(g,h,i)perylene				

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____

Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1.2-Dichloroethane-d_4

Validator: _____

Date: 12/17/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: _____

Date: 12/17/13

Case:_____ SDG:_____

See DV Report

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

_____

_____

_____

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator:_____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: _____

Date: 12/17/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: _____

Date: 12/17/13

Case:_____ SDG:_____

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

See DV Report

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: _____

Date: 12/17/13

EPA NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator:_____

Date: 2/17/13

Case:_____ SDG:_____ See DV Report

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: _____ Date: 12/17/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator:_____ Date: 12/17/13

Case:_____ SDG:_____

See DV Report

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: _____

Date: 12/17/18

APPENDIX D

SUPPORT DOCUMENTATION

HOLDTIME

SDG SG8908

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-SB-DUP04-1113	SG8908-007	NM	11/13/2013	11/26/2013	11/27/2013	13	1	14
HG	MG/KG	TF2-004/5-SB1021-0204	SG8908-001	NM	11/13/2013	11/26/2013	11/27/2013	13	1	14
HG	MG/KG	TF2-004/5-SB1021-0608	SG8908-002	NM	11/13/2013	11/26/2013	11/27/2013	13	1	14
HG	MG/KG	TF2-004/5-SB1025-2.604	SG8908-006	NM	11/13/2013	11/26/2013	11/27/2013	13	1	14
HG	MG/KG	TF2-004/5-SB1026-022.7	SG8908-003	NM	11/13/2013	11/26/2013	11/27/2013	13	1	14
HG	MG/KG	TF2-004/5-SB1032-0204	SG8908-004	NM	11/13/2013	11/26/2013	11/27/2013	13	1	14
HG	MG/KG	TF2-004/5-SB1048-0204	SG8908-005	NM	11/13/2013	11/26/2013	11/27/2013	13	1	14
M	MG/KG	TF2-004/5-SB1021-0204	SG8908-001	NM	11/13/2013	11/22/2013	12/04/2013	9	12	21
M	MG/KG	TF2-004/5-SB1021-0608	SG8908-002	NM	11/13/2013	11/22/2013	11/25/2013	9	3	12
M	MG/KG	TF2-004/5-SB1025-2.604	SG8908-006	NM	11/13/2013	11/22/2013	11/25/2013	9	3	12
M	MG/KG	TF2-004/5-SB1026-022.7	SG8908-003	NM	11/13/2013	11/22/2013	11/25/2013	9	3	12
M	MG/KG	TF2-004/5-SB1032-0204	SG8908-004	NM	11/13/2013	11/22/2013	11/25/2013	9	3	12
M	MG/KG	TF2-004/5-SB1048-0204	SG8908-005	NM	11/13/2013	11/22/2013	11/25/2013	9	3	12
M	MG/KG	TF2-SB-DUP04-1113	SG8908-007	NM	11/13/2013	11/22/2013	11/25/2013	9	3	12
M	MG/KG	TF2-004/5-SB1021-0204	SG8908-001	NM	11/13/2013	11/22/2013	11/25/2013	9	3	12

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-004/5-SB1021-0204	SG8908-1	NM	11/13/2013	11/21/2013	11/22/2013	8	1	9
	%	TF2-SB-DUP04-1113	SG8908-7	NM	11/13/2013	11/21/2013	11/22/2013	8	1	9
	%	TF2-004/5-SB1048-0204	SG8908-5	NM	11/13/2013	11/21/2013	11/22/2013	8	1	9
	%	TF2-004/5-SB1032-0204	SG8908-4	NM	11/13/2013	11/21/2013	11/22/2013	8	1	9
	%	TF2-004/5-SB1026-022.7	SG8908-3	NM	11/13/2013	11/21/2013	11/22/2013	8	1	9
	%	TF2-W-TB01-1113	SG8908-8	NM	11/13/2013	11/21/2013	11/22/2013	8	1	9
	%	TF2-004/5-SB1025-2.604	SG8908-6	NM	11/13/2013	11/21/2013	11/22/2013	8	1	9
	%	TF2-004/5-SB1021-0608	SG8908-2	NM	11/13/2013	11/21/2013	11/22/2013	8	1	9
SIM	%	TF2-004/5-SB1048-0204	SG8908-5	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	%	TF2-004/5-SB1032-0204	SG8908-4	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	%	TF2-004/5-SB1026-022.7	SG8908-3	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	%	TF2-004/5-SB1021-0204	SG8908-1	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	%	TF2-004/5-SB1025-2.604	SG8908-6	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	%	TF2-004/5-SB1021-0608	SG8908-2	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	%	TF2-SB-DUP04-1113	SG8908-7	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	UG/KG DRY	TF2-004/5-SB1032-0204	SG8908-4	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	UG/KG DRY	TF2-004/5-SB1048-0204	SG8908-5	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	UG/KG DRY	TF2-004/5-SB1026-022.7	SG8908-3	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/KG DRY	TF2-004/5-SB1025-2.604	SG8908-6	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	UG/KG DRY	TF2-004/5-SB1021-0608	SG8908-2	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	UG/KG DRY	TF2-004/5-SB1021-0204	SG8908-1	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
SIM	UG/KG DRY	TF2-SB-DUP04-1113	SG8908-7	NM	11/13/2013	11/21/2013	11/29/2013	8	8	16
	%	TF2-W-TB01-1113	SG8908-8	NM	11/13/2013	11/22/2013	11/23/2013	9	1	10
	%	TF2-004/5-SB1021-0204	SG8908-1	NM	11/13/2013	11/22/2013	11/27/2013	9	5	14
	%	TF2-004/5-SB1021-0204	SG8908-1	NM	11/13/2013	11/22/2013	11/23/2013	9	1	10
	MG/KG DRY	TF2-004/5-SB1021-0204	SG8908-1	NM	11/13/2013	11/22/2013	11/23/2013	9	1	10
	MG/KG DRY	TF2-004/5-SB1021-0204	SG8908-1	NM	11/13/2013	11/22/2013	11/27/2013	9	5	14
	MG/KG DRY	TF2-W-TB01-1113	SG8908-8	NM	11/13/2013	11/22/2013	11/23/2013	9	1	10

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** NE 1901 | **PAGE** 4 **OF** 4

PROJECT NO: 112003209 CTO WE30	**FACILITY:** NAVSTA Newport	**PROJECT MANAGER** Debra Sawin	**PHONE NUMBER** (978) 474-8445
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER** Kaylan Folkut	**PHONE NUMBER** (781) 801-0457
		CARRIER/WAYBILL NUMBER Courier plus @ RI hand delivery	**CITY, STATE** Scarborough ME
			LABORATORY NAME AND CONTACT: Katahdin Analytical Services / T Obrin
			ADDRESS 600 Technology Way

STANDARD TAT ☐
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: Lead - shr poly bottle	PAH - Amber lab, 4 ml soln, 4°C	GRO - 2-40 ml vials, 4°C	EXTPH - 1x 1L amber, 4°C, 10ml NaOH	COMMENTS
11/12	1520	TT2-SB-RB02-1113	—	—	—	QC	G	1	P	4°C	X				
11/13	1058	TT2-0045-SB1021-0204	SB1021	2	4	SO	G	4	G	4°C	—	X	X	X	
11/12	1055	TT2-0046-SB1021-0608	SB1021	6	8	SO	G	1	G	4°C	—	X	—	—	
11/13	1015	TT2-0045-SB1046-0227	SB1046	2	2.7	SO	G	1	G	4°C	—	X	—	—	
11/12	0950	TT2-0045-SB1032-0204	SB1032	2	4	SO	G	1	G	4°C	—	X	—	—	
11/13	0940	TT2-0045-SB1048-0204	SB1048	2	4	SO	G	1	G	4°C	—	X	—	—	
11/13	1045	TT2-0045-SB1026-2.6-4	SB1026	2.6	4	SO	G	1	G	4°C	—	X	—	—	
11/13	0000	TT2-SD-RB04-1113	—	—	—	SO	G	1	G	4°C	—	X	—	—	
11/13	1000	TT2-W-TB-1-1113	—	—	—	QC	G	2	G	HCl	—	—	X	—	

1. RELINQUISHED BY		DATE 11-13-13	TIME 1340	1. RECEIVED BY	DATE 11-13-13 TIME 1340
2. RELINQUISHED BY		DATE	TIME	2. RECEIVED BY	DATE TIME
3. RELINQUISHED BY		DATE	TIME	3. RECEIVED BY	DATE TIME
COMMENTS					

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

00001

Katahdin Analytical Services, Inc. **Sample Receipt Condition Report**

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GV	Delivered By: Andrew Harlan
KAS Work Order#: 58903/8907/8908	KIMS Review By:	Received By: GV
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 11/13/13 1800

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?				X	
2. Chain of Custody present in cooler?	X				
3. Chain of Custody signed by client?	X				
4. Chain of Custody matches samples?	X				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	X				Temp (°C): 1.3
Samples received at <6 °C w/o freezing?	X				Note: Not required for metals analysis.
Ice packs or ice present?	X				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	/				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				/	Note: No cooling process required for metals analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?				/	
Soil/Sediment: Received in airtight container?	/				
Received in methanol?	/				
Methanol covering soil?	/				
D.I. Water - Received within 48 hour HT?	X			/	
7. Trip Blank present in cooler?	/				
8. Proper sample containers and volume?	/				
9. Samples within hold time upon receipt?	/				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	/				
Sulfide - >9				/	
Cyanide – pH >12				/	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

TF2-004/5-SB-1026-0227 on chain - logged in according
TF2-004/5-SB-1026-0204 on jar to chain.
~~SS~~ TF2-BSA-SS1091-0204 not on chain
B219-SS1089-0001 + B219 SS1088-0001 missing from cooler

QA-048 – Revision 3 – 10/01/2013

TF2-B219-SS1081-0204 on chain - logged in as TF2-B219-SB1081-0204
TF2-B219-SB1087-0001 on chain - logged in as TF2-B219-SS1087-0000
0000010

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Nov. 15, 2013
07:04 AM

Login Number: SG8908

Account: TETRAT001 Web
Tetra Tech NUS, Inc.

Project: TETRATWE30
NAVSTA Newport CTO WE30 &WE59

Primary Report Address:
Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
661 Anderson Drive
Pittsburgh,PA 15220
vanessa.good@tetratech.com

Primary Invoice Address:
Accounts Payable
Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh,PA 15220

Report CC Addresses:
Invoice CC Addresses:

Quote/Incoming: TETRATWE30

Login Information:

ANALYSIS INSTRUCTIONS	:	DoD QSM with DoD limits. ND to LOD. "J" flag between DL and LOQ. Metals run MS/lab dup, if ms outside limits run post dig spike. Metals run serial dilution on field QC sample. TPH range=C8-C44. GRO=C5-C12. Decant any standing water, homogenize and determine %solids before analysis. Aliquots must be increased to comp. for moisture. Centrifuging may also be used. Report=dry weight basis. 8260C/8015D/8270D/7471B/7470A.
CHECK NO.	:	
CLIENT PO#	:	1045366 40-CTO WE30 (01) 112G03019
CLIENT PROJECT MANAGE	:	Dabra Seiken
CONTRACT	:	
COOLER TEMPERATURE	:	1.3
DELIVERY SERVICES	:	KAS
EDD FORMAT	:	KAS119QC-CSV
LOGIN INITIALS	:	JO
PM	:	JO
PROJECT NAME	:	NAVSTA Newport CTO WE30 &WE59
QC LEVEL	:	IV
REGULATORY LIST	:	
REPORT INSTRUCTIONS	:	Summary package needs all forms. Send HC & 2 CDs to Vanessa.
SDG ID	:	
SDG STATUS	:	

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8908-1	004/5-SB1021-0204	13-NOV-13 10:48	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	12-MAY-14	4oz Glass		TF2-004/5-SB1021-0204
Solid	S	SW6020-ALUMINUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	12-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	12-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	12-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	12-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	12-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	12-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	12-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	12-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	12-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	12-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	11-DEC-13	4oz Glass		
Solid	S	SW8015M-FLPRO	27-NOV-13	4oz Glass		
Solid	S	SW8015M-GRO	27-NOV-13	4oz Glass		
Solid	S	SW8270SIM-S	27-NOV-13	4oz Glass		
Solid	S	TS	13-DEC-13	4oz Glass		

11.15.13

Login Number: SG8908

Quote/Incoming: TETRATWE30

Account: TETRAT001 Web
Tetra Tech NUS, Inc.

Project: TETRATWE30
NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8908-2	004/5-SB1021-0608	13-NOV-13 10:55	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	12-MAY-14	4oz Glass		TF2-004/5-SB1021-0608
Solid	S	SW6020-ALUMINUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	12-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	12-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	12-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	12-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	12-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	12-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	12-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	12-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	12-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	12-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	11-DEC-13	4oz Glass		
Solid	S	SW8270SIM-S	27-NOV-13	4oz Glass		
Solid	S	TS	13-DEC-13	4oz Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8908-3	004/5-SB1026-022.7	13-NOV-13 10:15	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	12-MAY-14	4oz Glass		TF2-004/5-SB1026-022.7
Solid	S	SW6020-ALUMINUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	12-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	12-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	12-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	12-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	12-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	12-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	12-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	12-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	12-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	12-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	11-DEC-13	4oz Glass		
Solid	S	SW8270SIM-S	27-NOV-13	4oz Glass		
Solid	S	TS	13-DEC-13	4oz Glass		

11.15.13

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Nov. 15, 2013
07:04 AM

Login Number: SG8908

Quote/Incoming: TETRATWE30

Account: TETRAT001 Web
Tetra Tech NUS, Inc.

Project: TETRATWE30
NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8908-4	004/5-SB1032-0204	13-NOV-13 08:00	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	12-MAY-14	4oz Glass		TF2-004/5-SB1032-0204
Solid	S	SW6020-ALUMINUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	12-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	12-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	12-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	12-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	12-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	12-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	12-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	12-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	12-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	12-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	11-DEC-13	4oz Glass		
Solid	S	SW8270SIM-S	27-NOV-13	4oz Glass		
Solid	S	TS	13-DEC-13	4oz Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8908-5	004/5-SB1048-0204	13-NOV-13 08:25	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	12-MAY-14	4oz Glass		TF2-004/5-SB1048-0204
Solid	S	SW6020-ALUMINUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	12-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	12-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	12-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	12-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	12-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	12-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	12-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	12-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	12-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	12-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	11-DEC-13	4oz Glass		
Solid	S	SW8270SIM-S	27-NOV-13	4oz Glass		
Solid	S	TS	13-DEC-13	4oz Glass		

11.15.13

0000014

Login Number: SG8908 **Quote/Incoming:** TETRATWE30

Account: TETRAT001 Web

Tetra Tech NUS, Inc.

Project: TETRATWE30

NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8908-6	004/5-SB1025-2.604	13-NOV-13 10:45	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	12-MAY-14	4oz Glass		TF2-004/5-SB1025-2.604
Solid	S	SW6020-ALUMINUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	12-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	12-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	12-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	12-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	12-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	12-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	12-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	12-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	12-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	12-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	11-DEC-13	4oz Glass		
Solid	S	SW8270SIM-S	27-NOV-13	4oz Glass		
Solid	S	TS	13-DEC-13	4oz Glass		

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8908-7	TF2-SB-DUP04-1113	13-NOV-13 00:00	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	12-MAY-14	4oz Glass		
Solid	S	SW6020-ALUMINUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	12-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	12-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	12-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	12-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	12-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	12-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	12-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	12-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	12-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	12-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	12-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	11-DEC-13	4oz Glass		
Solid	S	SW8270SIM-S	27-NOV-13	4oz Glass		
Solid	S	TS	13-DEC-13	4oz Glass		

11.15.13

000005

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Nov. 15, 2013

07:04 AM

Login Number: SG8908

Quote/Incoming: TETRATWE30

Account: TETRAT001 Web

Tetra Tech NUS, Inc.

Project: TETRATWE30

NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8908-8	TF2-W-TB01-1113	13-NOV-13 10:00	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8015M-GRO	27-NOV-13	40 mL Vial		Trip Blank, no TS jar.
Solid	S	TS	13-DEC-13			

Total Samples: ***8*** ***Total Analyses:*** ***186***

11.15.13

0000016

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	Spiked sample recovery not within control limits.
*	Duplicate sample analysis not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

Katahdin ANALYTICAL SERVICES

nelac Cert. No. E87604

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT CTO WE30 & WE59
SG8908

Sample Receipt

The following sample was received on November 13, 2013 and was logged in under Katahdin Analytical Services work order number SG8908 for a hardcopy due date of December 04, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG8908-1	TF2-004/5-SB1021-0204
SG8908-2	TF2-004/5-SB1021-0608
SG8908-3	TF2-004/5-SB1026-022.7
SG8908-4	TF2-004/5-SB1032-0204
SG8908-5	TF2-004/5-SB1048-0204
SG8908-6	TF2-004/5-SB1025-2.604
SG8908-7	TF2-SB-DUP04-1113
SG8908-8	TF2-W-TB01-1113

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Some of the client IDs on the Chain of Custody exceeds the 19-character limit of the Katahdin Analytical Information Management System. Therefore, the first character "TF2-" in the client ID for samples SG8908-1, 2, 3, 4, 5 and 6 were omitted on all forms.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG8908 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8270 SIM Analysis

Samples SG8908-1, 2, 3, 4, 5, 6, and 7 were manually integrated for one or more of the following target analytes: benzo(b)fluoranthene, benzo(k)fluoranthene, acenaphthylene, and/or indeno(1,2,3-cd)pyrene. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The independent check standard (file N0808), associated with the initial calibration analyzed on the N instrument on 11/19/13, had a low concentration for the target analyte benzo(k)fluoranthene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The calibration verification standard (file N0954) had a high response for the target analyte fluoranthene that resulted in a %D that exceeded the DoD QSM acceptance limits of 20%.

The target analytes naphthalene, acenaphthene, phenanthrene, anthracene, fluoranthene, and pyrene were detected below ½ the reporting limit in the method blank WG134819-1. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since the method blank was acceptable, no further action was taken.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are based on laboratory established acceptance limits. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

The LCS WG134819-2 had recoveries for seven spiked analytes that were high and outside of the laboratory established acceptance limits. The DoD QSM number of allowable exceedances for 17 analytes is one. Since the LCSD, after factoring in the allowable number of exceedances was acceptable, no further action was taken.

FL-PRO Analysis

Sample SG8908-1 was manually integrated for the petroleum range organics. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

8015B GRO Analysis

The closing CV (file 9GK4015) had a high response for naphthalene, which was greater than 20%. Since the method requirement applies to only the GRO range response, which was acceptable, the associated samples were not reanalyzed.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG8908 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Soil-matrix Katahdin Sample Nos. SG8908-(1-7) were digested for ICP-MS analysis on 11/22/13 (QC Batch GK22IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8908-1 was prepared in duplicate and with a matrix spike in this digestion batch.

ICP-MS analyses of Work Order SG8908 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	Associated Analytes
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Solid-matrix Katahdin Sample Numbers SG8908-(1-7) were digested for mercury analysis on 11/26/13 (QC Batch GK26HGS2) in accordance with USEPA Method 7471B. Duplicate laboratory control samples were prepared in this batch.

Mercury analysis of the Katahdin Work Order SG8908 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG8908-1 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for copper.

The measured recoveries of antimony, arsenic, chromium, copper, nickel, and zinc in the matrix-spiked aliquot of Katahdin Sample No. SG8908-1 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added). The measured recoveries of these elements in a post-digestion matrix spike aliquot of this sample are within the laboratory's acceptance limits (75% - 125% recovery of the added element, if the native concentration is less than four times the amount added).

The serial dilution analysis of Katahdin Sample No. SG8908-1 is within the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for all analytes.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the laboratory's limits of quantitation (LOQ) are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQ's, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG8908 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond

12.06.13

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Jennifer Obrin

From: Jalkut, Kayleen [Kayleen.Jalkut@tetratech.com]
Sent: Sunday, November 17, 2013 2:15 PM
To: Jennifer Obrin
Cc: Seiken, Dabra
Subject: RE: COCs for the samples received 11/13-Newport-SG8902, SG8903, SG8908

Jennifer,
I will review the issues with the field crew and we will work together to resolve them. Here are my responses to the issues you raised:

1) Yes, the depth was from 2- 2.7 as written on the COC. Sharpie IDs on top of the lids are just for our use...they provide a quick count for us. Please only log the samples in using the sample label around the jar. Did the actual paper label on the jar say 022.7 or 0204?
2) Look at TT COC # 027647...last 2 lines: sample time for TF2-BSA-SS1091-0001 is 1320 hrs; sample time for TF2-BSA-SB1091-0204 is 1331 hrs. There was no sample from 2-4 ft bgs from BSA-SB1090 (no viable soil to sample).
3) A sample was not collected from 0-1 ft for PCBs at location 1088 from B219 ...only the 2-4 ft interval was sampled.
4) A sample was not collected from 0-1 ft for PCBs at location 1089 from B219 ...only the 2-4 ft interval was sampled.
5) Yes, the SB designation should be used for all samples below 1-foot. Thank you for logging it in as SB1081-0204. I will make the correction on my chain.
6) Yes, the SS designation should be used for all samples from 0-1 foot. Thank you for logging it in as SS1081-0204. I will make the correction on my chain.

Thank you for your help and your patience,
Kayleen

Kayleen Jalkut, P.G. | Geologist, Site Manager
Direct: 978.474.8417 | Main: 978.474.8400 | Fax: 978.474.8499
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From: Jennifer Obrin [mailto:jobrin@katahdinlab.com]
Sent: Friday, November 15, 2013 7:43 AM
To: Jalkut, Kayleen; Seiken, Dabra; Good, Vanessa
Subject: COCs for the samples received 11/13-Newport-SG8902, SG8903, SG8908

Good Morning,

Please find attached the COCs for the samples received 11/13 for the project Newport under the work orders SG8902, SG8903 and SG8908. There were a few issues with the chains.

1) TF2-004/5-SB-1026-022.7 was written on the chain, TF2-004/5-SB-1026-0204 was on the jar. I logged it in according to the chain.
2) TF2-BSA-SS1091-0204 was not on the chain but there was a jar. ?same sample time as TF2-BSA-SS1091-0204
3) TF2-B219-SS1089-0001 was missing from the cooler
4) TF2-B219-SS1088-0001 was missing from the cooler
5) TF2-B219-SS1081-0204 on chain, logged in as TF2-B219-SB1081-0204 to be consistent with naming convention
6) TF2-B219-SB1087-0001 on chain, logged in as TF2-B219-SS1081-0001 to be consistent with naming convention

Please let me know if any of my corrections are incorrect and please let me know if you have any questions.
Have a great day!

Jennifer Obrin
Federal Programs Project Manager
Katahdin Analytical Services
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DoD ELAP Accredited
600 Technology Way
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Cell - 207.333.7469
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No virus found in this message.
Checked by AVG - www.avg.com
Version: 2014.0.4158 / Virus Database: 3629/6839 - Release Date: 11/15/13

SIM DATA

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : ND640.D
Instrument ID : GCMS-N

SDG : SG8908
Date Analyzed : 19-NOV-13
Time Analyzed : 08:29

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	35.9		
68	Less than 2.0% of mass 69	0.7	1.42	1
69	Less than 100.0% of mass 198	49.1		
70	Less than 2.0% of mass 69	0.2	0.43	1
127	40.0 - 60.0% of mass 198	59.7		
197	Less than 1.0% of mass 198	0.6		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.4		
275	10.0 - 30.0% of mass 198	20.9		
365	1.0 - 100.0% of mass 198	2.6		
441	0.0 - 100.0% of mass 443	8.0	72.23	2
442	40.0 - 100.0% of mass 198	55.2		
443	17.0 - 23.0% of mass 442	11.1	20.09	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG134654-4	N0799.D	11/19/13	09:18
Initial Calibration	WG134654-2	N0800.D	11/19/13	10:02
Initial Calibration	WG134654-3	N0801.D	11/19/13	10:45
Initial Calibration	WG134654-5	N0805.D	11/19/13	13:41
Initial Calibration	WG134654-6	N0806.D	11/19/13	14:25
Initial Calibration	WG134654-7	N0807.D	11/19/13	15:09
Independent Source	WG134654-8	N0808.D	11/19/13	15:54

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8908
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GCMS-N
Lab File IDs : N0800.D N0801.D N0799.D **Column ID:**
N0805.D N0806.D N0807.D **Calibration Date(s):** 19-NOV-13 09:18
19-NOV-13 15:09

	0.200000(Level 1	0.500000(Level 2	1.0000 Level 3	3.0000 Level 4	7.0000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.97773	0.98289	0.98535	0.97168	0.98919	0.95511	AVG		0.97699		1.26271	15.00000	O
2-Methylnaphthalene	0.66933	0.69987	0.63442	0.62910	0.58835	0.57197	AVG		0.63217		7.59365	15.00000	O
Acenaphthylene	1.95357	2.10140	2.22526	2.07543	2.30450	2.38188	AVG		2.17367		7.31605	15.00000	O
Acenaphthene	1.26421	1.32992	1.33838	1.30431	1.42186	1.45294	AVG		1.35194		5.30555	15.00000	O
Fluorene	1.26808	1.27226	1.32524	1.33670	1.51952	1.55085	AVG		1.37877		9.03869	15.00000	O
Phenanthrene	1.13837	1.20920	1.24817	1.21552	1.31497	1.33922	AVG		1.24424		5.93887	15.00000	O
Anthracene	1.05711	1.22999	1.26973	1.22753	1.33986	1.37728	AVG		1.25025		8.96203	15.00000	O
Fluoranthene	0.94398	0.96933	1.07254	1.05949	1.13367	1.13623	AVG		1.05254		7.68859	15.00000	O
Pyrene	2.68252	2.53019	2.21937	2.12973	2.36990	2.32656	AVG		2.37638		8.52883	15.00000	O
Benzo(a)anthracene	1.14259	1.13994	1.27906	1.13571	1.29209	1.33338	AVG		1.22046		7.42369	15.00000	O
Chrysene	1.57750	1.52247	1.48308	1.37164	1.43466	1.41445	AVG		1.46730		5.14060	15.00000	O
Benzo(b)fluoranthene	2649	6889	25358	57673	158719	225272	LNR	0.24464	1.40779		0.99783	0.99000	O
Benzo(k)fluoranthene	2.13696	1.91831	1.75092	1.75653	1.83417	1.83678	AVG		1.87228		7.66652	15.00000	O
Benzo(a)pyrene	1.24255	1.18713	1.19834	1.18148	1.31406	1.34505	AVG		1.24477		5.60583	15.00000	O
Indeno(1,2,3-cd)pyrene	1260	3203	13355	24317	73776	109771	QUA	0.10476	1.87762	-0.05034	0.99795	0.99000	O
Dibenzo(a,h)anthracene	1347	3418	14921	27665	79946	117418	LNR	0.27329	0.72711		0.99566	0.99000	O
Benzo(g,h,i)perylene	0.67017	0.78524	0.91171	0.85671	0.95818	0.96821	AVG		0.85837		13.34841	15.00000	O
2-Methylnaphthalene-D10	1.08489	1.18658	1.16058	1.07917	1.16348	1.19944	AVG		1.14569		4.48829	15.00000	
Fluorene-D10	0.94534	0.81224	0.78076	0.78150	0.88428	0.89501	AVG		0.84986		8.01587	15.00000	
Pyrene-D10	1.30797	1.44867	1.29046	1.23317	1.37769	1.36406	AVG		1.33700		5.66149	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : ND648.D
Instrument ID : GCMS-N

SDG : SG8908
Date Analyzed : 29-NOV-13
Time Analyzed : 11:52

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	34.1		
68	Less than 2.0% of mass 69	0.6	1.34	1
69	Less than 100.0% of mass 198	43.4		
70	Less than 2.0% of mass 69	0.4	0.88	1
127	40.0 - 60.0% of mass 198	58.3		
197	Less than 1.0% of mass 198	0.5		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.8		
275	10.0 - 30.0% of mass 198	20.8		
365	1.0 - 100.0% of mass 198	2.1		
441	0.0 - 100.0% of mass 443	8.7	79.94	2
442	40.0 - 100.0% of mass 198	57.1		
443	17.0 - 23.0% of mass 442	10.9	19.06	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG135356-2	N0954.D	11/29/13	12:10
Method Blank Sample	WG134819-1	N0955.D	11/29/13	12:54
Laboratory Control S	WG134819-2	N0957.D	11/29/13	14:20
Laboratory Control S	WG134819-3	N0958.D	11/29/13	15:04
004/5-SB1021-0204	SG8908-1	N0961.D	11/29/13	17:13
004/5-SB1021-0608	SG8908-2	N0962.D	11/29/13	17:56
004/5-SB1026-022.7	SG8908-3	N0963.D	11/29/13	18:39
004/5-SB1032-0204	SG8908-4	N0964.D	11/29/13	19:21
004/5-SB1048-0204	SG8908-5	N0965.D	11/29/13	20:04
004/5-SB1025-2.604	SG8908-6	N0966.D	11/29/13	20:46
TF2-SB-DUP04-1113	SG8908-7	N0967.D	11/29/13	21:28

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG8908
Lab ID : WG135356-2 **Analytical Date:** 11/29/13 12:10
Lab File ID : N0954.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 11/19/13 09:18 11/19/13 15:09 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.97699	1.07470	1.07470	0.010	10.00149	20.00000	Averaged	
31 2-Methylnaphthalene	0.63217	0.75021	0.75021	0.010	18.67174	20.00000	Averaged	
42 Acenaphthylene	2.17367	2.12487	2.12487	0.010	-2.24536	20.00000	Averaged	
45 Acenaphthene	1.35194	1.34022	1.34022	0.010	-0.86653	20.01000	Averaged	
54 Fluorene	1.37877	1.38636	1.38636	0.010	0.54998	20.00000	Averaged	
64 Phenanthrene	1.24424	1.25432	1.25432	0.010	0.81018	20.00000	Averaged	
65 Anthracene	1.25025	1.31720	1.31720	0.010	5.35512	20.00000	Averaged	
68 Fluoranthene	1.05254	1.39384	1.39384	0.010	32.42606	20.01000	Averaged	*
70 Pyrene	2.37638	2.05097	2.05097	0.010	-13.69355	20.00000	Averaged	
72 Benzo(a)anthracene	1.22046	1.22499	1.22499	0.010	0.37131	20.00000	Averaged	
74 Chrysene	1.46730	1.59467	1.59467	0.010	8.68060	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.00000	1.09530	1.26642	0.010	9.52965	20.00000	Linear	
79 Benzo(k)fluoranthene	1.87228	1.69560	1.69560	0.010	-9.43680	20.00000	Averaged	
80 Benzo(a)pyrene	1.24477	1.23453	1.23453	0.010	-0.82248	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	1.00000	1.11234	0.55823	0.010	11.23440	20.00000	Quadratic	
83 Dibenzo(a,h)anthracene	1.00000	1.12018	0.65552	0.010	12.01752	20.00000	Linear	
84 Benzo(g,h,i)perylene	0.85837	0.91142	0.91142	0.010	6.18035	20.00000	Averaged	
30 2-Methylnaphthalene-D10	1.14569	1.23246	1.23246	0.010	7.57389	20.00000	Averaged	
52 Fluorene-D10	0.84986	0.88198	0.88198	0.010	3.77992	20.00000	Averaged	
69 Pyrene-D10	1.33700	1.19954	1.19954	0.010	-10.28174	20.00000	Averaged	

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : N0955.D
Instrument ID : GCMS-N
Matrix : SL

SDG : SG8908
Lab Sample ID : WG134819-1
Date Extracted : 21-NOV-13
Date Analyzed : 29-NOV-13
Time Analyzed : 12:54

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134819-2	N0957.D	11/29/13	14:20
Laboratory Control S	WG134819-3	N0958.D	11/29/13	15:04
004/5-SB1021-0204	SG8908-1	N0961.D	11/29/13	17:13
004/5-SB1021-0608	SG8908-2	N0962.D	11/29/13	17:56
004/5-SB1026-022.7	SG8908-3	N0963.D	11/29/13	18:39
004/5-SB1032-0204	SG8908-4	N0964.D	11/29/13	19:21
004/5-SB1048-0204	SG8908-5	N0965.D	11/29/13	20:04
004/5-SB1025-2.604	SG8908-6	N0966.D	11/29/13	20:46
TF2-SB-DUP04-1113	SG8908-7	N0967.D	11/29/13	21:28

Report of Analytical Results

Client:
Lab ID: WG134819-1
Client ID: Method Blank Sample
Project:
SDG: SG8908
Lab File ID: N0955.D

Sample Date:
Received Date:
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	4.9	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	1.8	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	J	4.0	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	1.5	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	J	2.2	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	J	2.9	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		64.1	%					
Fluorene-D10		64.2	%					
Pyrene-D10		81.6	%					

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http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG134819-2
LCSD ID: WG134819-3
Project:
SDG: SG8908
Report Date: 30-NOV-13
LCS File ID: N0957.D

Received Date:
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819
LCSD File ID: N0958.D

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	41.9	62.8	40.6	60.9	ug/Kgdrywt	3	30	10-129
2-Methylnaphthalene	66.7	37.6	56.4	42.2	63.3	ug/Kgdrywt	12	30	10-152
Acenaphthylene	66.7	39.5	59.2	33.6	50.4	ug/Kgdrywt	16	30	25-94
Acenaphthene	66.7	39.7	59.5	36.7	55.0	ug/Kgdrywt	8	30	33-98
Fluorene	66.7	44.8	67.2	40.6	60.9	ug/Kgdrywt	10	30	40-92
Phenanthrene	66.7	68.3	102.*	55.0	82.4	ug/Kgdrywt	22	30	46-96
Anthracene	66.7	51.6	77.4	50.7	76.0	ug/Kgdrywt	2	30	34-96
Fluoranthene	66.7	96.3	144.*	52.3	78.4	ug/Kgdrywt	59*	30	38-116
Pyrene	66.7	61.8	92.6	48.8	73.2	ug/Kgdrywt	24	30	35-111
Benzo(a)anthracene	66.7	74.3	111.*	48.2	72.3	ug/Kgdrywt	43*	30	48-100
Chrysene	66.7	70.8	106.*	51.9	77.8	ug/Kgdrywt	31*	30	46-101
Benzo(b)Fluoranthene	66.7	83.3	125.*	51.9	77.8	ug/Kgdrywt	46*	30	53-100
Benzo(k)fluoranthene	66.7	51.6	77.4	42.6	63.9	ug/Kgdrywt	19	30	49-96
Benzo(a)pyrene	66.7	81.3	122.*	40.3	60.4*	ug/Kgdrywt	67*	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	85.0	127.*	59.0	88.4	ug/Kgdrywt	36*	30	50-105
Dibenzo(a,h)anthracene	66.7	50.7	76.0	56.9	85.3	ug/Kgdrywt	12	30	55-105
Benzo(g,h,i)perylene	66.7	38.0	57.0	39.3	58.9	ug/Kgdrywt	3	30	53-103
2-Methylnaphthalene-D10			67.7		67.9				19-94
Fluorene-D10			67.3		66.2				20-96
Pyrene-D10			73.0		74.6				31-128

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG8908

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
004/5-SB1021-0204	SG8908-1		67.4		64.7		49.6	
004/5-SB1021-0608	SG8908-2		93.4		59.7		54.3	
004/5-SB1026-022.7	SG8908-3		67.2		71.8		73.0	
004/5-SB1032-0204	SG8908-4		62.3		61.7		63.4	
004/5-SB1048-0204	SG8908-5		85.0		75.1		72.9	
004/5-SB1025-2.604	SG8908-6		66.6		61.4		68.0	
TF2-SB-DUP04-1113	SG8908-7		75.0		65.4		62.7	
Method Blank Sample	WG134819-1		64.1		64.2		81.6	
Laboratory Control S	WG134819-2		67.7		67.3		73.0	
Laboratory Control S	WG134819-3		67.9		66.2		74.6	

		QC Limits
PYR	PYRENE-D10	31-128
FLO	FLUORENE-D10	20-96
2MN	2-METHYLNAPHTHALENE-D10	19-94

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG134654-4
Lab File ID : N0799.D

SDG: SG8908
Analytical Date: 11/19/13 09:18
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	32791		9.04		97502		11.82		38165		15.92	
	Upper Limit	65582		9.54		195004		12.32		76330		16.42	
	Lower Limit	16395.5		8.54		48751		11.32		19082.5		15.42	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG135356-2	20999		9.01		76350		11.81		35843		15.89	
Method Blank Sample	WG134819-1	20621		9.01		74881		11.81		35541		15.89	
Laboratory Control S	WG134819-2	20344		9.01		73312		11.79		36278		15.89	
Laboratory Control S	WG134819-3	19495		9.01		68913		11.81		32707		15.89	
004/5-SB1021-0204	SG8908-1	20413		9.01		74834		11.81		36351		15.89	
004/5-SB1021-0608	SG8908-2	21687		9.01		77534		11.81		35956		15.89	
004/5-SB1026-022.7	SG8908-3	19363		9.01		69841		11.81		35361		15.89	
004/5-SB1032-0204	SG8908-4	21263		9.01		79926		11.81		38002		15.89	
004/5-SB1048-0204	SG8908-5	21285		9.01		77018		11.81		36833		15.89	
004/5-SB1025-2.604	SG8908-6	21304		9.01		78667		11.81		37794		15.89	
TF2-SB-DUP04-1113	SG8908-7	22077		9.01		81342		11.81		38117		15.89	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG134654-4
Lab File ID : N0799.D

SDG: SG8908
Analytical Date: 11/19/13 09:18
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	50068	19.40	24899	25.68	19035	28.83
	Upper Limit	100136	19.90	49798	26.18	38070	29.33
	Lower Limit	25034	18.90	12449.5	25.18	9517.5	28.33
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG135356-2	50535	19.38	38873	25.65	19867	28.78
Method Blank Sample	WG134819-1	49938	19.38	25467	25.65	18026	28.78
Laboratory Control S	WG134819-2	54006	19.38	44443	25.65	31344	28.78
Laboratory Control S	WG134819-3	46688	19.38	24486	25.65	17723	28.78
004/5-SB1021-0204	SG8908-1	51218	19.38	37627	25.63	20288	28.78
004/5-SB1021-0608	SG8908-2	50748	19.36	27477	25.63	19285	28.78
004/5-SB1026-022.7	SG8908-3	52985	19.36	27314	25.63	18473	28.76
004/5-SB1032-0204	SG8908-4	54309	19.38	30797	25.63	21207	28.78
004/5-SB1048-0204	SG8908-5	52922	19.36	27445	25.63	18757	28.78
004/5-SB1025-2.604	SG8908-6	52945	19.36	28072	25.63	18908	28.78
TF2-SB-DUP04-1113	SG8908-7	54228	19.38	30636	25.63	21352	28.78

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

GASOLINE RANGE ORGANICS DATA

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8908
Project : NAVSTA Newport CTO WE30 &WE59 **Column ID :** A
Instrument ID : GC09

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	BFB	
Initial Calibration	WG127983-2	07/26/13	10:52	31.92	
Initial Calibration	WG127983-3	07/26/13	11:46	31.84	
Initial Calibration	WG127983-4	07/26/13	12:39	31.82	
Initial Calibration	WG127983-5	07/26/13	13:32	31.84	
Initial Calibration	WG127983-6	07/26/13	14:25	31.85	
Initial Calibration	WG127983-1	07/26/13	17:56	31.89	
INDEPENDENT SOURCE	WG127983-7	07/26/13	18:50	31.91	
Continuing Calibrati	WG134904-6	11/23/13	10:15	31.68	
Method Blank Sample	WG134904-1	11/23/13	13:43	31.68	
Laboratory Control S	WG134904-2	11/23/13	14:38	31.67	
Laboratory Control S	WG134904-3	11/23/13	15:32	31.67	
TF2-W-TB01-1113	SG8908-8	11/23/13	21:56	31.67	
004/5-SB1021-0204	SG8908-1	11/23/13	22:51	31.67	
Continuing Calibrati	WG134904-7	11/23/13	23:45	31.68	

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8908
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GC09
Lab File IDs : 9GG2130.d 9GG2123.d 9GG2124.d **Column ID:** A
9GG2125.d 9GG2126.d 9GG2127.d **Calibration Date(s):** 26-JUL-13 09:58
26-JUL-13 17:56

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	10.0000	100.0000	250.0000	500.0000	1000.0000	2000.0000	New	b	m1	m2	%RSD	%RSD	
Gasoline Range Organic	12176	12675	12913	12768	12910	13282	AVG		12787		2.84495	20.00000	M
Methyl tert-butyl ether	6010	8181	8380	7569	7477	8149	AVG		7628		11.40841	20.00000	O
Benzene	15826	15860	16448	16739	17015	17326	AVG		16536		3.69285	20.00000	O
Toluene	15470	16041	16286	16166	16555	16718	AVG		16206		2.70556	20.00000	O
Ethylbenzene	14185	14823	15058	15019	15114	15298	AVG		14916		2.61143	20.00000	O
m+p-Xylenes	14785	15435	15552	15559	15638	15874	AVG		15474		2.37846	20.00000	O
o-Xylene	16358	14889	14896	15443	15410	15788	AVG		15464		3.61301	20.00000	O
1,2,4-trimethylbenzene	11095	12102	12347	12071	12262	12757	AVG		12106		4.56871	20.00000	O
1,3,5-trimethylbenzene	9784	10620	10743	10552	10765	11352	AVG		10636		4.74665	20.00000	O
Naphthalene	3461	3359	3870	3000	3223	3680	AVG		3432		9.12376	20.00000	O
p-Bromofluorobenzene	6432	6935	7300	7023	6937	7145	AVG		6962		4.23260	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG8908
Lab ID : WG134904-6 **Analytical Date:** 11/23/13 10:15
Lab File ID : 9GK4001.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	12161	12161	0.100	-4.89459	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7523	7523	0.100	-1.37164	20.00000	Averaged
4 Benzene	16536	15133	15133	0.100	-8.48600	20.00000	Averaged
5 Toluene	16206	14609	14609	0.100	-9.85537	20.00000	Averaged
7 Ethylbenzene	14916	13823	13823	0.100	-7.33015	20.00000	Averaged
8 m+p-Xylenes	15474	14442	14442	0.100	-6.67008	20.00000	Averaged
9 o-Xylene	15464	15063	15063	0.100	-2.59297	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11809	11809	0.100	-2.45352	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10969	10969	0.100	3.12661	20.00000	Averaged
13 Naphthalene	3432	3802	3802	0.100	10.78747	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6230	6230	0.100	-10.51954	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG8908
Lab ID : WG134904-7 **Analytical Date:** 11/23/13 23:45
Lab File ID : 9GK4015.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1 Gasoline Range Organic	12787	11625	11625	0.100	-9.09249	20.00000	Averaged	
3 Methyl tert-butyl ether	7628	8033	8033	0.100	5.30882	20.00000	Averaged	
4 Benzene	16536	14109	14109	0.100	-14.67345	20.00000	Averaged	
5 Toluene	16206	13716	13716	0.100	-15.36669	20.00000	Averaged	
7 Ethylbenzene	14916	12920	12920	0.100	-13.38130	20.00000	Averaged	
8 m+p-Xylenes	15474	13271	13271	0.100	-14.23702	20.00000	Averaged	
9 o-Xylene	15464	13513	13513	0.100	-12.61892	20.00000	Averaged	
11 1,2,4-trimethylbenzene	12106	11144	11144	0.100	-7.94123	20.00000	Averaged	
12 1,3,5-trimethylbenzene	10636	9926	9926	0.100	-6.67402	20.00000	Averaged	
13 Naphthalene	3432	6342	6342	0.100	84.79944	20.00000	Averaged	*
10 p-Bromofluorobenzene	6962	5854	5854	0.100	-15.91074	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : 9GK4004.D
Instrument ID : GC09
Heated Purge : No

SDG : SG8908
Lab Sample ID : WG134904-1
Date Analyzed : 23-NOV-13
Time Analyzed : 13:43

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134904-2	9GK4005.D	11/23/13	14:38
Laboratory Control S	WG134904-3	9GK4006.D	11/23/13	15:32
TF2-W-TB01-1113	SG8908-8	9GK4013.D	11/23/13	21:56
004/5-SB1021-0204	SG8908-1	9GK4014.D	11/23/13	22:51

Report of Analytical Results

Client:
Lab ID: WG134904-1
Client ID: Method Blank Sample
Project:
SDG: SG8908
Lab File ID: 9GK4004.D

Sample Date:
Received Date:
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904

Analysis Date: 23-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA
Report Date: 03-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		95.0	%					

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LCS/LCSD Recovery Report

LCS ID: WG134904-2
LCSD ID: WG134904-3
Project:
SDG: SG8908
Report Date: 03-DEC-13
LCS File ID: 9GK4005.D

Received Date:
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904
LCSD File ID: 9GK4006.d

Analysis Date: 23-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	25.0	26.3	105.	24.0	96.0	mg/Kgdrywt	9	30	67-137
-Bromofluorobenzene			93.8		94.6				81-119

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG8908

Client Sample ID	Lab Sample ID	Col. ID	BFB #
004/5-SB1021-0204	SG8908-1	A	91.6
TF2-W-TB01-1113	SG8908-8	A	88.4
Method Blank Sample	WG134904-1	A	95.0
Laboratory Control S	WG134904-2	A	93.8
Laboratory Control S	WG134904-3	A	94.6

		QC Limits
BFB	P-BROMOFLUOROBENZENE	81-119

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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FL-PRO DATA

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8908
Project : NAVSTA Newport CTO WE30 &WE59 **Column ID :** A
Instrument ID : GC10

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	OTP	NTD	
Initial Calibration	WG128015-5	07/26/13	11:13	10.44	15.29	
Initial Calibration	WG128015-4	07/26/13	11:52	10.44	15.29	
Initial Calibration	WG128015-2	07/26/13	12:31	10.44	15.29	
Initial Calibration	WG128015-1	07/26/13	13:10	10.44	15.29	
Initial Calibration	WG128015-3	07/26/13	13:49	10.44	15.29	
Independent Source	WG128015-6	07/26/13	14:39	10.44	15.29	
Continuing Calibrati	WG135397-1	11/27/13	18:47	10.22	15.06	
Method Blank Sample	WG134896-1	11/27/13	19:26	10.20	15.05	
Laboratory Control S	WG134896-2	11/27/13	20:05	10.20	15.05	
Laboratory Control S	WG134896-3	11/27/13	20:44	10.20	15.05	
004/5-SB1021-0204	SG8908-1	11/27/13	21:23	10.20	15.05	
Continuing Calibrati	WG135397-2	11/28/13	02:35	10.22	15.06	

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File IDs : AGG20231.D,AGG20230.D,AGG20232.D
AGG20229.D,AGG20228.D

SDG: SG8908
Instrument ID: GC10
Column ID: A
Calibration Date(s): 26-JUL-13 10:34
26-JUL-13 13:49

	5.0000 Level 1	20.0000 Level 2	50.0000 Level 3	100.0000 Level 4	200.0000 Level 5		New Crv	b	m1	m2	%RSD	Max %RSD	
Petroleum Range Organic	3089102	12636617	29064611	60208084	122271060		LNR	7.40184	35900		0.99976	0.99000	M
C-8	181933	731463	1715023	3597538	7399389		LNR	1.05675	36959		0.99955	0.99000	O
C-10	179016	749462	1739250	3724105	7629535		LNR	1.27141	38167		0.99946	0.99000	O
C-12	175693	743553	1750024	3747522	7665333		LNR	1.33539	38372		0.99950	0.99000	O
C-14	180367	756314	1748066	3765084	7677765		LNR	1.22555	38427		0.99947	0.99000	O
C-16	182823	754185	1751923	3777081	7684649		LNR	1.19425	38470		0.99949	0.99000	O
C-18	188749	776459	1784336	3853299	7821892		LNR	1.09221	39150		0.99949	0.99000	O
C-20	190254	769795	1772595	2897952	5891299		LNR	-3.67435	29019		0.99674	0.99000	O
C-22	189757	766624	1814396	3037617	6260195		LNR	-2.63046	30883		0.99764	0.99000	O
C-24	188458	749611	1697810	3194570	6695340		LNR	-0.48887	33143		0.99917	0.99000	O
C-26	194578	747032	1690170	3581426	6950490		LNR	-0.53461	34805		0.99962	0.99000	O
C-28	218772	778314	1732495	3663153	7147609		LNR	-0.68229	35718		0.99964	0.99000	O
C-30	192475	795453	1747341	3679252	7257458		LNR	-0.32754	36269		0.99971	0.99000	O
C-32	182906	746924	1714008	3693105	7412365		LNR	0.75824	37115		0.99961	0.99000	O
C-34	172985	732428	1684206	3667824	7401790		LNR	1.12303	37091		0.99949	0.99000	O
C-36	169313	721822	1658556	3607947	7516848		LNR	1.89380	37605		0.99896	0.99000	O
C-38	156767	682840	1580679	3457880	7142775		LNR	1.84020	35776		0.99912	0.99000	O
C-40	144249	634331	1483724	3262729	6716319		LNR	1.90824	33672		0.99915	0.99000	O
O-Terphenyl	10302658	10032499	9941055	10236461	10225858		LNR	0.22789	40635		0.99891	0.99000	
n-Triacontane-D62	9023242	8760852	8483761	8952633	8598295		LNR	0.81290	29308		0.99675	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG8908
Lab ID : WG135397-1 **Analytical Date:** 11/27/13 18:47
Lab File ID : AGK20405.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	863	35958	0.010	1.49745	25.00000	Linear
2 C-8	50.00000	51.05518	36958	0.010	2.11036	25.00000	Linear
3 C-10	50.00000	48.35478	35940	0.010	-3.29044	25.00000	Linear
4 C-12	50.00000	48.86779	36478	0.010	-2.26441	25.00000	Linear
5 C-14	50.00000	48.10575	36029	0.010	-3.78850	25.00000	Linear
6 C-16	50.00000	48.16377	36139	0.010	-3.67247	25.00000	Linear
8 C-18	50.00000	48.12315	36825	0.010	-3.75371	25.00000	Linear
10 C-20	50.00000	59.21337	36499	0.010	18.42674	25.00000	Linear
11 C-22	50.00000	56.97386	36815	0.010	13.94771	25.00000	Linear
12 C-24	50.00000	55.38856	37039	0.010	10.77712	25.00000	Linear
13 C-26	50.00000	50.58729	35586	0.010	1.17459	25.00000	Linear
14 C-28	50.00000	49.74959	36026	0.010	-0.50082	25.00000	Linear
16 C-30	50.00000	48.95834	35751	0.010	-2.08332	25.00000	Linear
17 C-32	50.00000	49.46381	36154	0.010	-1.07237	25.00000	Linear
18 C-34	50.00000	49.46706	35863	0.010	-1.06587	25.00000	Linear
19 C-36	50.00000	49.72638	35975	0.010	-0.54725	25.00000	Linear
20 C-38	50.00000	50.22438	34620	0.010	0.44877	25.00000	Linear
21 C-40	50.00000	50.30528	32592	0.010	0.61057	25.00000	Linear
9 O-Terphenyl	250	248	40343	0.010	-0.62693	25.00000	Linear
15 n-Triacontane-D62	300	293	28555	0.010	-2.29612	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG8908
Lab ID : WG135397-2 **Analytical Date:** 11/28/13 02:35
Lab File ID : AGK20417.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	363	37462	0.010	6.81536	25.00000	Linear
2 C-8	20.00000	20.31517	35589	0.010	1.57585	25.00000	Linear
3 C-10	20.00000	20.99440	37638	0.010	4.97202	25.00000	Linear
4 C-12	20.00000	21.62044	38919	0.010	8.10219	25.00000	Linear
5 C-14	20.00000	20.82927	37666	0.010	4.14634	25.00000	Linear
6 C-16	20.00000	20.74172	37600	0.010	3.70861	25.00000	Linear
8 C-18	20.00000	20.50538	38001	0.010	2.52689	25.00000	Linear
10 C-20	20.00000	22.58079	38095	0.010	12.90397	25.00000	Linear
11 C-22	20.00000	21.97075	37988	0.010	9.85375	25.00000	Linear
12 C-24	20.00000	22.23041	37649	0.010	11.15206	25.00000	Linear
13 C-26	20.00000	20.93256	37359	0.010	4.66280	25.00000	Linear
14 C-28	20.00000	20.93183	38600	0.010	4.65916	25.00000	Linear
16 C-30	20.00000	20.84475	38394	0.010	4.22375	25.00000	Linear
17 C-32	20.00000	21.23166	37994	0.010	6.15832	25.00000	Linear
18 C-34	20.00000	21.57053	37921	0.010	7.85264	25.00000	Linear
19 C-36	20.00000	21.80315	37434	0.010	9.01575	25.00000	Linear
20 C-38	20.00000	21.99384	36051	0.010	9.96922	25.00000	Linear
21 C-40	20.00000	22.07555	33953	0.010	10.37776	25.00000	Linear
9 O-Terphenyl	250	257	41797	0.010	2.95099	25.00000	Linear
15 n-Triacontane-D62	300	308	30021	0.010	2.70475	25.00000	Linear

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : AGK20406.D
Instrument ID : GC10
Matrix : SL

SDG : SG8908
Lab Sample ID : WG134896-1
Date Extracted : 22-NOV-13
Date Analyzed : 27-NOV-13
Time Analyzed : 19:26

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134896-2	AGK20407	11/27/13	20:05
Laboratory Control S	WG134896-3	AGK20408	11/27/13	20:44
004/5-SB1021-0204	SG8908-1	AGK20409	11/27/13	21:23

Report of Analytical Results

Client:
Lab ID: WG134896-1
Client ID: Method Blank Sample
Project:
SDG: SG8908
Lab File ID: AGK20406.D

Sample Date:
Received Date:
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896

Analysis Date: 27-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA
Report Date: 02-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		84.8	%					
n-Triacontane-D62		97.0	%					

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Tel:(207) 874-2400 Fax:(207) 775-4029

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LCS/LCSD Recovery Report

LCS ID: WG134896-2
LCSD ID: WG134896-3
Project:
SDG: SG8908
Report Date: 04-DEC-13
LCS File ID: AGK20407.D

Received Date:
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896
LCSD File ID: AGK20408.D

Analysis Date: 27-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	60	45.0	74.6	43.0	71.7	mg/Kgdrywt	4	30	63-153
o-Terphenyl			81.8		84.8				62-109
n-Triacontane-D62			96.0		96.0				70-130

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG8908

Client Sample ID	Lab Sample ID	Col. ID	NTD	#	OTP	#
004/5-SB1021-0204	SG8908-1	A	109.		90.4	
Method Blank Sample	WG134896-1	A	97.0		84.8	
Laboratory Control S	WG134896-2	A	96.0		81.8	
Laboratory Control S	WG134896-3	A	96.0		84.8	

		QC Limits
OTP	O-TERPHENYL	62-109
NTD	N-TRIACONTANE-D62	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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sales@katahdinlab.com

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8908-3
Client ID: 004/5-SB1026-022.7
Project: NAVSTA Newport CTO WE.
SDG: SG8908
Lab File ID: N0963.D

Sample Date: 13-NOV-13
Received Date: 13-NOV-13
Extract Date: 21-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG134819

Analysis Date: 29-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	3.3	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	14.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	11.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	L	130	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		24.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	L	230	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		170	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	L	110	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	L	110	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	L	140	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		44.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	L	90.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	L	100	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		25.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene		52.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		67.2	%					
Fluorene-D10		71.8	%					
Pyrene-D10		73.0	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N112913.b\N0963.D
Report Date: 30-Nov-2013 12:23

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N112913.b\N0963.D
Lab Smp Id: SG8908-3 Client Smp ID: 004/5-SB1026-022.7
Inj Date : 29-NOV-2013 18:39
Operator : JCG Inst ID: gcms-n.i
Smp Info : SG8908-3
Misc Info : WG135356,WG134819,WG134654-4
Comment :
Method : \\target_server\GG\chem\gcms-n.i\N112913.b\NSPSIM80.m
Meth Date : 30-Nov-2013 12:20 gcms-n.i Quant Type: ISTD
Cal Date : 19-NOV-2013 15:09 Cal File: N0807.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03130	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	5.336	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW C
*	8 1,4-Dichlorobenzene-D4	152	9.010	9.010	(1.000)	19363	0.80000		
*	24 Naphthalene-D8	136	11.807	11.807	(1.000)	69841	0.80000		
$	30 2-Methylnaphthalene-D10	152	13.398	13.398	(0.843)	68161	1.34597	45.4	
	42 Acenaphthylene	152	15.545	15.532	(0.978)	9423	0.09808	3.31(aMH)	M6
*	44 Acenaphthene-D10	164	15.888	15.888	(1.000)	35361	0.80000		
	45 Acenaphthene	153	15.954	15.954	(1.004)	24474	0.40956	13.8(a)	
$	52 Fluorene-D10	174	17.120	17.120	(1.078)	53953	1.43627	48.5(Q)	
	54 Fluorene	166	17.183	17.183	(1.082)	19384	0.31806	10.7(a)	
*	63 Phenanthrene-D10	188	19.360	19.375	(1.000)	52985	0.80000		
	64 Phenanthrene	178	19.420	19.420	(1.003)	319812	3.88085	131	
	65 Anthracene	178	19.540	19.555	(1.009)	59690	0.72085	24.3	
	68 Fluoranthene	202	22.233	22.233	(1.148)	482856	6.92653	234	
$	69 Pyrene-D10	212	22.700	22.700	(0.886)	66660	1.46028	49.3	
	70 Pyrene	202	22.739	22.739	(0.887)	409893	5.05196	170	
	72 Benzo(a)anthracene	228	25.607	25.621	(0.999)	130277	3.12642	106	
*	73 Chrysene-D12	240	25.634	25.648	(1.000)	27314	0.80000		
	74 Chrysene	228	25.688	25.702	(1.002)	160530	3.20437	108	
	78 Benzo(b)fluoranthene	252	28.008	28.008	(0.974)	127807	4.12732	139	
	79 Benzo(k)fluoranthene	252	28.059	28.059	(0.976)	55705	1.28848	43.5(M)	M6
	80 Benzo(a)pyrene	252	28.642	28.659	(0.996)	76259	2.65311	89.5	
*	81 Perylene-D12	264	28.762	28.780	(1.000)	18473	0.80000		

WAS

12:33 pm, Nov 30, 2013

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8908

Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GCMS-N

Lab File IDs : N0800.D N0801.D N0799.D **Column ID:**
N0805.D N0806.D N0807.D **Calibration Date(s):** 19-NOV-13 09:18
19-NOV-13 15:09

	0.200000(Level 1	0.500000(Level 2	1.0000 Level 3	3.0000 Level 4	7.0000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.97773	0.98289	0.98535	0.97168	0.98919	0.95511	AVG		0.97699		1.26271	15.00000	O
2-Methylnaphthalene	0.66933	0.69987	0.63442	0.62910	0.58835	0.57197	AVG		0.63217		7.59365	15.00000	O
Acenaphthylene	1.95357	2.10140	2.22526	2.07543	2.30450	2.38188	AVG		2.17367		7.31605	15.00000	O
Acenaphthene	1.26421	1.32992	1.33838	1.30431	1.42186	1.45294	AVG		1.35194		5.30555	15.00000	O
Fluorene	1.26808	1.27226	1.32524	1.33670	1.51952	1.55085	AVG		1.37877		9.03869	15.00000	O
Phenanthrene	1.13837	1.20920	1.24817	1.21552	1.31497	1.33922	AVG		1.24424		5.93887	15.00000	O
Anthracene	1.05711	1.22999	1.26973	1.22753	1.33986	1.37728	AVG		1.25025		8.96203	15.00000	O
Fluoranthene	0.94398	0.96933	1.07254	1.05949	1.13367	1.13623	AVG		1.05254		7.68859	15.00000	O
Pyrene	2.68252	2.53019	2.21937	2.12973	2.36990	2.32656	AVG		2.37638		8.52883	15.00000	O
Benzo(a)anthracene	1.14259	1.13994	1.27906	1.13571	1.29209	1.33338	AVG		1.22046		7.42369	15.00000	O
Chrysene	1.57750	1.52247	1.48308	1.37164	1.43466	1.41445	AVG		1.46730		5.14060	15.00000	O
Benzo(b)fluoranthene	2649	6889	25358	57673	158719	225272	LNR	0.24464	1.40779		0.99783	0.99000	O
Benzo(k)fluoranthene	2.13696	1.91831	1.75092	1.75653	1.83417	1.83678	AVG		1.87228		7.66652	15.00000	O
Benzo(a)pyrene	1.24255	1.18713	1.19834	1.18148	1.31406	1.34505	AVG		1.24477		5.60583	15.00000	O
Indeno(1,2,3-cd)pyrene	1260	3203	13355	24317	73776	109771	QUA	0.10476	1.87762	-0.05034	0.99795	0.99000	O
Dibenzo(a,h)anthracene	1347	3418	14921	27665	79946	117418	LNR	0.27329	0.72711		0.99566	0.99000	O
Benzo(g,h,i)perylene	0.67017	0.78524	0.91171	0.85671	0.95818	0.96821	AVG		0.85837		13.34841	15.00000	O
2-Methylnaphthalene-D10	1.08489	1.18658	1.16058	1.07917	1.16348	1.19944	AVG		1.14569		4.48829	15.00000	
Fluorene-D10	0.94534	0.81224	0.78076	0.78150	0.88428	0.89501	AVG		0.84986		8.01587	15.00000	
Pyrene-D10	1.30797	1.44867	1.29046	1.23317	1.37769	1.36406	AVG		1.33700		5.66149	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

METALS DATA

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	Spiked sample recovery not within control limits.
*	Duplicate sample analysis not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a greater rate for false negatives, i.e. greater than 1%, than those results reported as "U" PQL/LOQ or "U" LOD.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name Katahdin Analytical Services

SDG Name: SG8908 **SOW No.** SW846

Client Field ID	Lab Sample ID
004/5-SB1021-0204	SG8908-001
004/5-SB1021-0204	SG8908-001D
004/5-SB1021-0204	SG8908-001S
004/5-SB1021-0608	SG8908-002
004/5-SB1025-2.604	SG8908-006
004/5-SB1026-022.7	SG8908-003
004/5-SB1032-0204	SG8908-004
004/5-SB1048-0204	SG8908-005
TF2-SB-DUP04-1113	SG8908-007

Were ICP interelement corrections applied ?	Yes
Were ICP background corrections applied ?	Yes
If yes - were raw data generated before application of background corrections ?	No

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: George Brewer Name: George Brewer

Date: 12/05/13 Title: Inorganics Dept. Mgr.

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Instrument ID: CETAC M6100 **File Name:** HGK27A

Date: 11/27/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	11:00	Hg
Standard #1 (0.2 p		1	11:02	Hg
Standard #2 (0.5 p		1	11:04	Hg
Standard #3 (1.0 p		1	11:06	Hg
Standard #4 (5.0 p		1	11:08	Hg
Standard #5 (10.0		1	11:10	Hg
ICV			11:12	HG
ICB		1	11:14	HG
PQL		1	11:16	HG
ZZZZZZ		1	11:19	
ZZZZZZ		1	11:21	
ZZZZZZ		1	11:23	
ZZZZZZ		1	11:25	
ZZZZZZ		5	11:29	
ZZZZZZ		1	11:31	
ZZZZZZ		1	11:35	
ZZZZZZ		1	11:40	
ZZZZZZ		1	11:46	
CCV		1	11:50	HG
CCB		1	11:52	HG
ZZZZZZ		1	11:54	
ZZZZZZ		1	11:58	
ZZZZZZ		1	12:00	
ZZZZZZ		1	12:04	
ZZZZZZ		1	12:08	
ZZZZZZ		1	12:13	
ZZZZZZ		1	12:16	
ZZZZZZ		1	12:20	
ZZZZZZ		1	12:23	
ZZZZZZ		1	12:28	
CCV		1	12:30	HG
CCB		1	12:33	HG
ZZZZZZ		1	12:35	
ZZZZZZ		1	12:39	
ZZZZZZ		1	12:42	
ZZZZZZ		1	12:47	
ZZZZZZ		1	12:51	
ZZZZZZ		1	12:56	
ZZZZZZ		1	12:58	
LC2OGK26HGS2		1	13:00	HG
LCSOGK26HGS2		1	13:03	HG
PBSGK26HGS2		1	13:05	HG
CCV		1	13:07	HG
CCB		1	13:09	HG

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: ICV

File: HGK27A Nov 27, 2013 11:12

Analyte	True	Found	%R (1)
MERCURY	6.0	5.92	98.7

SAMPLE: CCV

File: HGK27A Nov 27, 2013 11:50

Analyte	True	Found	%R (1)
MERCURY	5.0	5.79	115.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: CCV

File: HGK27A Nov 27, 2013 12:30

Analyte	True	Found	%R (1)
MERCURY	5.0	5.10	102.0

SAMPLE: CCV

File: HGK27A Nov 27, 2013 13:07

Analyte	True	Found	%R (1)
MERCURY	5.0	4.35	87.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: PQL

File: HGK27A Nov 27, 2013 11:16

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.23	115.0

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: ICB

File: HGK27A Nov 27, 2013 11:14

Analyte	Result	C
MERCURY	0.030	J

SAMPLE: CCB

File: HGK27A Nov 27, 2013 11:52

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGK27A Nov 27, 2013 12:33

Analyte	Result	C
MERCURY	0.030	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: CCB

File: HGK27A Nov 27, 2013 13:09

Analyte	Result	C
MERCURY	0.030	U

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Instrument ID: CETAC M6100 **File Name:** HGK27B

Date: 11/27/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	14:14	Hg
Standard #1 (0.2 p		1	14:16	Hg
Standard #2 (0.5 p		1	14:18	Hg
Standard #3 (1.0 p		1	14:20	Hg
Standard #4 (5.0 p		1	14:23	Hg
Standard #5 (10.0		1	14:25	Hg
ICV		1	14:27	HG
ICB		1	14:29	HG
PQL		1	14:31	HG
CCV		1	14:33	HG
CCB		1	14:35	HG
SG8908-001	004/5-SB1021-0204	1	14:37	HG
SG8908-002	004/5-SB1021-0608	1	14:39	HG
SG8908-003	004/5-SB1026-022.7	1	14:42	HG
SG8908-004	004/5-SB1032-0204	1	14:44	HG
SG8908-005	004/5-SB1048-0204	1	14:46	HG
SG8908-006	004/5-SB1025-2.604	1	14:48	HG
SG8908-007	TF2-SB-DUP04-1113	1	14:50	HG
ZZZZZZ		1	14:52	
ZZZZZZ		1	14:55	
ZZZZZZ		1	14:57	
CCV		1	14:59	HG
CCB		1	15:01	HG

FORM XIV - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: ICV

File: HGK27B Nov 27, 2013 14:27

Analyte	True	Found	%R (1)
MERCURY	6.0	5.79	96.5

SAMPLE: CCV

File: HGK27B Nov 27, 2013 14:33

Analyte	True	Found	%R (1)
MERCURY	5.0	4.85	97.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: CCV

File: HGK27B Nov 27, 2013 14:59

Analyte	True	Found	%R (1)
MERCURY	5.0	4.07	81.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: PQL

File: HGK27B Nov 27, 2013 14:31

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.19	95.0

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: ICB

File: HGK27B Nov 27, 2013 14:29

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGK27B Nov 27, 2013 14:35

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGK27B Nov 27, 2013 15:01

Analyte	Result	C
MERCURY	0.030	U

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK26HGS2

Matrix: SOIL **SDG Name:** SG8908

Method: CV **Prep Date:** 11/26/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LC2OGK26HGS2	LC2OGK26HGS2	0.6	0.1	
LCSOGK26HGS2	LCSOGK26HGS2	0.6	0.1	
PBSGK26HGS2	PBSGK26HGS2	0.6	0.1	
004/5-SB1021-0204	SG8908-001	0.73	0.1	A
004/5-SB1021-0608	SG8908-002	0.87	0.1	A
004/5-SB1026-022.7	SG8908-003	0.7	0.1	A
004/5-SB1032-0204	SG8908-004	0.7	0.1	A
004/5-SB1048-0204	SG8908-005	0.71	0.1	A
004/5-SB1025-2.604	SG8908-006	0.81	0.1	A
TF2-SB-DUP04-1113	SG8908-007	0.75	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK26HGS2

Matrix: SOIL **SDG Name:** SG8908

QC Batch ID: GK26HGS2

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.017	U

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LC2OGK26HGS2

Matrix: SOIL **SDG Name:** SG8908

QC Batch ID: GK26HGS2

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.76	91.6	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK26HGS2

Matrix: SOIL **SDG Name:** SG8908

QC Batch ID: GK26HGS2

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.81	97.6	80	120

7D

LABORATORY CONTROL SAMPLE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: SOIL **SDG Name:** SG8908

QC Batch ID: GK26HGS2 **Lab Sample ID:** LCSOGK26HGS2

Concentration Units: mg/Kgdrywt

Analyte	Control Limit (%)	LCS Result	LCS Dup. Result	RPD(%)	Q
MERCURY	20.0	0.81	0.76	5.8	

FORM VIID - IN

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/30/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
MERCURY	0.20	0.03	CV

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/7/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.02	mg/Kg	CV	SW846 7471A / 7471

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/7/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.005	mg/Kg	CV	SW846 7471A / SW846 7471A

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK25A

Date: 11/25/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	14:23	
ZZZZZZ		1	14:26	
Cal Blank		1	14:50	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 1		1	14:54	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 2		1	14:57	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 3		1	15:00	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 4		1	15:03	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	15:06	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	15:09	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	15:13	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSA		1	15:16	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	15:19	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCV		1	15:22	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	15:25	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	15:29	
ZZZZZZ		1	15:32	
ZZZZZZ		50	15:35	
ZZZZZZ		10	15:39	
ZZZZZZ		50	15:42	
ZZZZZZ		10	15:45	
ZZZZZZ		10	15:48	
ZZZZZZ		10	15:52	
ZZZZZZ		25	15:55	
ZZZZZZ		250	15:58	
CCV		1	16:01	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	16:05	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		25	16:08	
ZZZZZZ		25	16:11	
ZZZZZZ		25	16:14	
ZZZZZZ		10	16:18	
ZZZZZZ		20	16:22	
ZZZZZZ		50	16:25	
ZZZZZZ		10	16:29	
ZZZZZZ		20	16:32	
LCSOGK22IMS1		5	16:35	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8908-001	004/5-SB1021-0204	5	16:39	Al Sb As Ba Be Cd Ca Cr Pb Mg K Se Ag Na Tl V
CCV		1	16:42	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	16:45	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PBSGK22IMS1		5	16:49	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8908-001L	004/5-SB1021-0204L	25	16:52	Al Sb As Ba Be Cd Ca Cr Pb Mg K Se Ag Na Tl V
SG8908-001D	004/5-SB1021-0204D	5	16:57	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8908-001A	004/5-SB1021-0204A	5	17:00	Al Sb As Ba Be Cd Ca Cr Pb Mg K Se Ag Na Tl V
SG8908-001S	004/5-SB1021-0204S	5	17:04	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8908-002	004/5-SB1021-0608	5	17:07	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8908-003	004/5-SB1026-022.7	5	17:10	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8908-004	004/5-SB1032-0204	5	17:14	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8908-005	004/5-SB1048-0204	5	17:18	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG8908-006	004/5-SB1025-2.604	5	17:21	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
CCV		1	17:25	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	17:28	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

* CCV Ag < 30%

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK25A

Date: 11/25/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
SG8908-007	TF2-SB-DUP04-1113	5	17:32	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	17:35	
ZZZZZZ		5	17:39	
ZZZZZZ		5	17:42	
ZZZZZZ		1	17:46	
ZZZZZZ		5	17:49	
ZZZZZZ		1	17:53	
ZZZZZZ		5	17:56	
ZZZZZZ		1	18:00	
ZZZZZZ		1	18:03	
CCV		1	18:07	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:10	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: ICV

File: JGK25A Nov 25, 2013 15:06

Analyte	True	Found	%R (1)
ALUMINUM	400.0	406.90	101.7
ANTIMONY	20.0	20.12	100.6
ARSENIC	20.0	20.81	104.1
BARIUM	20.0	20.75	103.8
BERYLLIUM	20.0	20.33	101.6
CADMIUM	20.0	20.92	104.6
CALCIUM	4000.0	4086.00	102.2
CHROMIUM	20.0	20.87	104.4
COBALT	20.0	21.01	105.1
COPPER	20.0	20.88	104.4
IRON	4000.0	4182.00	104.6
LEAD	20.0	20.76	103.8
MAGNESIUM	4000.0	4184.00	104.6
MANGANESE	20.0	19.23	96.2
MOLYBDENUM	40.0	41.46	103.6
NICKEL	20.0	21.08	105.4
POTASSIUM	4000.0	4173.00	104.3
SELENIUM	20.0	21.03	105.2
SILVER	20.0	20.46	102.3
SODIUM	4000.0	4149.00	103.7
THALLIUM	20.0	21.67	108.4
VANADIUM	20.0	20.51	102.6
ZINC	20.0	20.68	103.4

SAMPLE: CCV

File: JGK25A Nov 25, 2013 15:22

Analyte	True	Found	%R (1)
ALUMINUM	500.0	501.10	100.2
ANTIMONY	25.0	24.54	98.2
ARSENIC	25.0	24.95	99.8
BARIUM	25.0	25.29	101.2
BERYLLIUM	10.0	9.64	96.4
CADMIUM	10.0	10.09	100.9
CALCIUM	5000.0	5042.00	100.8
CHROMIUM	25.0	25.54	102.2
COBALT	10.0	10.14	101.4
COPPER	25.0	25.20	100.8
IRON	5000.0	5140.00	102.8
LEAD	25.0	24.71	98.8
MAGNESIUM	5000.0	4989.00	99.8
MANGANESE	25.0	25.20	100.8
MOLYBDENUM	25.0	26.82	107.3
NICKEL	25.0	25.29	101.2
POTASSIUM	5000.0	5017.00	100.3
SELENIUM	25.0	24.86	99.4
SILVER	10.0	9.17	91.7
SODIUM	5000.0	4889.00	97.8
THALLIUM	10.0	9.93	99.3
VANADIUM	25.0	25.34	101.4
ZINC	25.0	24.71	98.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: CCV

File: JGK25A Nov 25, 2013 16:01

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.40	101.1
ANTIMONY	25.0	24.65	98.6
ARSENIC	25.0	25.02	100.1
BARIUM	25.0	24.92	99.7
BERYLLIUM	10.0	9.88	98.8
CADMIUM	10.0	10.21	102.1
CALCIUM	5000.0	5080.00	101.6
CHROMIUM	25.0	25.39	101.6
COBALT	10.0	10.21	102.1
COPPER	25.0	25.31	101.2
IRON	5000.0	5084.00	101.7
LEAD	25.0	25.04	100.2
MAGNESIUM	5000.0	5011.00	100.2
MANGANESE	25.0	25.14	100.6
MOLYBDENUM	25.0	25.09	100.4
NICKEL	25.0	25.33	101.3
POTASSIUM	5000.0	5071.00	101.4
SELENIUM	25.0	24.68	98.7
SILVER	10.0	9.32	93.2
SODIUM	5000.0	4887.00	97.7
THALLIUM	10.0	9.86	98.6
VANADIUM	25.0	25.00	100.0
ZINC	25.0	25.00	100.0

SAMPLE: CCV

File: JGK25A Nov 25, 2013 16:42

Analyte	True	Found	%R (1)
ALUMINUM	500.0	495.20	99.0
ANTIMONY	25.0	24.71	98.8
ARSENIC	25.0	24.81	99.2
BARIUM	25.0	25.40	101.6
BERYLLIUM	10.0	9.75	97.5
CADMIUM	10.0	10.17	101.7
CALCIUM	5000.0	5021.00	100.4
CHROMIUM	25.0	25.20	100.8
COBALT	10.0	10.09	100.9
COPPER	25.0	25.19	100.8
IRON	5000.0	4979.00	99.6
LEAD	25.0	25.11	100.4
MAGNESIUM	5000.0	4934.00	98.7
MANGANESE	25.0	25.08	100.3
MOLYBDENUM	25.0	25.35	101.4
NICKEL	25.0	24.92	99.7
POTASSIUM	5000.0	5139.00	102.8
SELENIUM	25.0	24.65	98.6
SILVER	10.0	9.36	93.6
SODIUM	5000.0	4912.00	98.2
THALLIUM	10.0	9.96	99.6
VANADIUM	25.0	24.70	98.8
ZINC	25.0	25.15	100.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: CCV

File: JGK25A Nov 25, 2013 17:25

Analyte	True	Found	%R (1)
ALUMINUM	500.0	477.10	95.4
ANTIMONY	25.0	23.94	95.8
ARSENIC	25.0	23.63	94.5
BARIUM	25.0	24.75	99.0
BERYLLIUM	10.0	9.90	99.0
CADMIUM	10.0	9.89	98.9
CALCIUM	5000.0	4885.00	97.7
CHROMIUM	25.0	23.85	95.4
COBALT	10.0	9.59	95.9
COPPER	25.0	24.05	96.2
IRON	5000.0	4896.00	97.9
LEAD	25.0	24.49	98.0
MAGNESIUM	5000.0	4726.00	94.5
MANGANESE	25.0	24.29	97.2
MOLYBDENUM	25.0	24.37	97.5
NICKEL	25.0	24.18	96.7
POTASSIUM	5000.0	4953.00	99.1
SELENIUM	25.0	23.35	93.4
SILVER	10.0	8.99	89.9
SODIUM	5000.0	4715.00	94.3
THALLIUM	10.0	9.73	97.3
VANADIUM	25.0	23.75	95.0
ZINC	25.0	23.86	95.4

SAMPLE: CCV

File: JGK25A Nov 25, 2013 18:07

Analyte	True	Found	%R (1)
ALUMINUM	500.0	490.00	98.0
ANTIMONY	25.0	24.45	97.8
ARSENIC	25.0	24.50	98.0
BARIUM	25.0	24.89	99.6
BERYLLIUM	10.0	9.76	97.6
CADMIUM	10.0	10.14	101.4
CALCIUM	5000.0	5024.00	100.5
CHROMIUM	25.0	24.67	98.7
COBALT	10.0	9.84	98.4
COPPER	25.0	24.73	98.9
IRON	5000.0	4991.00	99.8
LEAD	25.0	24.78	99.1
MAGNESIUM	5000.0	4883.00	97.7
MANGANESE	25.0	24.81	99.2
MOLYBDENUM	25.0	24.99	100.0
NICKEL	25.0	24.45	97.8
POTASSIUM	5000.0	5098.00	102.0
SELENIUM	25.0	24.70	98.8
SILVER	10.0	9.31	93.1
SODIUM	5000.0	4864.00	97.3
THALLIUM	10.0	9.87	98.7
VANADIUM	25.0	24.46	97.8
ZINC	25.0	24.75	99.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: ICB
File: JGK25A Nov 25, 2013 15:09

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.008	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	-0.021	U
MOLYBDENUM	0.180	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK25A Nov 25, 2013 15:25

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.014	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.006	J
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	-0.006	U
COPPER	0.030	U
IRON	-6.689	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	-0.041	U
MOLYBDENUM	0.475	
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK25A Nov 25, 2013 16:05

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.008	J
ARSENIC	0.410	U
BARIUM	-0.022	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.138	J

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: CCB
File: JGK25A Nov 25, 2013 16:45

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.011	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.005	J
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-5.723	U
LEAD	0.010	J
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK25A Nov 25, 2013 17:28

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.010	J
ARSENIC	0.410	U
BARIUM	-0.029	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	-4.835	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.073	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.174	J

SAMPLE: CCB
File: JGK25A Nov 25, 2013 18:10

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.006	U
ARSENIC	0.410	U
BARIUM	-0.037	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.936	J
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK22IMS1

Matrix: SOIL **SDG Name:** SG8908

Method: MS **Prep Date:** 11/22/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK22IMS1	LCSOGK22IMS1	1	0.1	
PBSGK22IMS1	PBSGK22IMS1	1	0.1	
004/5-SB1021-0204	SG8908-001	1.66	0.1	B
004/5-SB1021-0204D	SG8908-001D	1.49	0.1	B
004/5-SB1021-0204S	SG8908-001S	1.48	0.1	B
004/5-SB1021-0608	SG8908-002	1.15	0.1	A
004/5-SB1026-022.7	SG8908-003	1.29	0.1	A
004/5-SB1032-0204	SG8908-004	1.2	0.1	A
004/5-SB1048-0204	SG8908-005	1.23	0.1	A
004/5-SB1025-2.604	SG8908-006	1.22	0.1	A
TF2-SB-DUP04-1113	SG8908-007	1.33	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK22IMS1

Matrix: SOIL **SDG Name:** SG8908

QC Batch ID: GK22IMS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	1.587	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.049	J
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	8.0	U
CHROMIUM	0.084	J
COBALT	0.030	U
COPPER	0.20	U
IRON	6.0	U
LEAD	0.013	J
MAGNESIUM	8.0	U
MANGANESE	0.10	U
NICKEL	0.12	U
POTASSIUM	40	U
SELENIUM	0.080	J
SILVER	0.040	U
SODIUM	40	U
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.142	J

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK22IMS1

Matrix: SOIL **SDG Name:** SG8908

QC Batch ID: GK22IMS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	100.00	106.30	106.3	80	120
ANTIMONY	5.00	4.89	97.8	80	120
ARSENIC	5.00	4.83	96.6	80	120
BARIUM	100.00	98.65	98.7	80	120
BERYLLIUM	2.50	2.40	96.0	80	120
CADMIUM	12.50	12.83	102.6	80	120
CALCIUM	125.00	116.45	93.2	80	120
CHROMIUM	10.00	10.46	104.6	80	120
COBALT	25.00	25.72	102.9	80	120
COPPER	12.50	12.57	100.6	80	120
IRON	50.00	50.90	101.8	80	120
LEAD	5.00	5.09	101.8	80	120
MAGNESIUM	250.00	250.15	100.1	80	120
MANGANESE	25.00	23.42	93.7	80	120
NICKEL	25.00	25.60	102.4	80	120
POTASSIUM	500.00	507.00	101.4	80	120
SELENIUM	5.00	4.66	93.2	80	120
SILVER	2.50	2.49	99.6	80	120
SODIUM	375.00	368.85	98.4	80	120
THALLIUM	5.00	4.95	99.0	80	120
VANADIUM	25.00	24.21	96.8	80	120
ZINC	25.00	24.23	96.9	80	120

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL04A

Date: 12/4/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
Cal Blank		1	12:17	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn
Cal Std 1		1	12:20	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn
Cal Std 2		1	12:23	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn
Cal Std 3		1	12:26	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn
Cal Std 4		1	12:29	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn
ICV		1	12:32	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn
ICB		1	12:36	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn
PQL		1	12:39	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn
ICSA		1	12:42	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn
ICSAB		1	12:45	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn
CCV		1	12:49	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn
CCB		1	12:52	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn
SG8908-001	004/5-SB1021-0204	5	12:55	Co Cu Fe Mn Ni Zn
SG8908-001L	004/5-SB1021-0204L	25	12:59	Co Cu Fe Mn Ni Zn
SG8908-001A	004/5-SB1021-0204A	5	13:02	Co Cu Fe Mn Ni Zn
ZZZZZZ		5	13:05	
ZZZZZZ		5	13:08	
ZZZZZZ		5	13:12	
ZZZZZZ		10	13:15	
ZZZZZZ		5	13:18	
ZZZZZZ		25	13:22	
ZZZZZZ		5	13:25	
CCV		1	13:28	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn
CCB		1	13:32	Al Ca Co Cu Fe Mg Mn Mo Ni K Na Zn

FORM XIV - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: ICV

File: JGL04A Dec 04, 2013 12:32

Analyte	True	Found	%R (1)
ALUMINUM	400.0	414.00	103.5
CALCIUM	4000.0	3817.00	95.4
COBALT	20.0	21.39	107.0
COPPER	20.0	21.20	106.0
IRON	4000.0	3896.00	97.4
MAGNESIUM	4000.0	3895.00	97.4
MANGANESE	20.0	19.54	97.7
MOLYBDENUM	40.0	42.05	105.1
NICKEL	20.0	21.37	106.8
POTASSIUM	4000.0	3906.00	97.7
SODIUM	4000.0	3914.00	97.9
ZINC	20.0	21.52	107.6

SAMPLE: CCV

File: JGL04A Dec 04, 2013 12:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	499.00	99.8
CALCIUM	5000.0	4988.00	99.8
COBALT	10.0	10.10	101.0
COPPER	25.0	25.69	102.8
IRON	5000.0	5024.00	100.5
MAGNESIUM	5000.0	4908.00	98.2
MANGANESE	25.0	25.53	102.1
MOLYBDENUM	25.0	26.57	106.3
NICKEL	25.0	25.18	100.7
POTASSIUM	5000.0	4904.00	98.1
SODIUM	5000.0	4954.00	99.1
ZINC	25.0	25.11	100.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: CCV

File: JGL04A Dec 04, 2013 13:28

Analyte	True	Found	%R (1)
ALUMINUM	500.0	502.90	100.6
CALCIUM	5000.0	4932.00	98.6
COBALT	10.0	9.98	99.8
COPPER	25.0	25.77	103.1
IRON	5000.0	4935.00	98.7
MAGNESIUM	5000.0	4998.00	100.0
MANGANESE	25.0	25.08	100.3
MOLYBDENUM	25.0	24.93	99.7
NICKEL	25.0	24.55	98.2
POTASSIUM	5000.0	4986.00	99.7
SODIUM	5000.0	5006.00	100.1
ZINC	25.0	24.95	99.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: ICB			**SAMPLE: CCB**			**SAMPLE: CCB**		
File: JGL04A Dec 04, 2013 12:36			File: JGL04A Dec 04, 2013 12:52			File: JGL04A Dec 04, 2013 13:32		
Analyte	**Result**	**C**	**Analyte**	**Result**	**C**	**Analyte**	**Result**	**C**
~~ALUMINUM~~	~~0.340~~	~~U~~	~~ALUMINUM~~	~~0.441~~	~~J~~	~~ALUMINUM~~	~~0.340~~	~~U~~
~~CALCIUM~~	~~4.100~~	~~U~~	~~CALCIUM~~	~~6.370~~	~~J~~	~~CALCIUM~~	~~4.100~~	U
COBALT	0.006	U	COBALT	-0.008	U	COBALT	0.006	U
COPPER	0.030	U	COPPER	0.030	U	COPPER	-0.039	U
IRON	4.700	U	IRON	-10.140	U	IRON	4.700	U
~~MAGNESIUM~~	~~0.690~~	~~U~~	~~MAGNESIUM~~	~~0.938~~	~~J~~	~~MAGNESIUM~~	~~0.690~~	~~U~~
MANGANESE	0.020	U	MANGANESE	-0.026	U	MANGANESE	0.039	J
~~MOLYBDENUM~~	~~0.123~~	~~J~~	~~MOLYBDENUM~~	~~0.476~~		~~MOLYBDENUM~~	~~0.120~~	~~U~~
NICKEL	0.020	U	NICKEL	0.020	U	NICKEL	0.020	U
~~POTASSIUM~~	~~8.200~~	~~U~~	~~POTASSIUM~~	~~8.200~~	~~U~~	~~POTASSIUM~~	~~8.200~~	~~U~~
~~SODIUM~~	~~3.900~~	~~U~~	~~SODIUM~~	~~7.725~~	~~J~~	~~SODIUM~~	~~3.900~~	~~U~~
ZINC	0.130	U	ZINC	0.130	U	ZINC	0.130	U

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services | **Client Field ID:** 004/5-SB1021-0204S

Matrix: SOIL | **SDG Name:** SG8908

Percent Solids: 91.9 | **Lab Sample ID:** SG8908-001S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	14318.6827		13909.6260	>4X	73.5	556.5		80	120	MS
ANTIMONY, TOTAL	1.5230		0.0358	J	3.68	40.4	N	80	120	MS
ARSENIC, TOTAL	10.1363		7.3857		3.68	74.7	N	80	120	MS
BARIUM, TOTAL	80.1934		10.2594		73.5	95.1		80	120	MS
BERYLLIUM, TOTAL	1.9835		0.2640		1.84	93.5		80	120	MS
CADMIUM, TOTAL	8.5376		0.0662		9.19	92.2		80	120	MS
CALCIUM, TOTAL	832.0713		655.3416	>4X	91.88	192.3		80	120	MS
CHROMIUM, TOTAL	24.6314		18.9230		7.35	77.7	N	80	120	MS
COBALT, TOTAL	30.3610		14.6338		18.38	85.6		80	120	MS
COPPER, TOTAL	29.3246		22.6519		9.19	72.6	N	80	120	MS
IRON, TOTAL	28596.9379		29061.1244	>4X	36.75	-1263.1		80	120	MS
LEAD, TOTAL	11.8930		8.9061		3.68	81.2		80	120	MS
MAGNESIUM, TOTAL	4910.1027		4692.2460	>4X	183.76	118.6		80	120	MS
MANGANESE, TOTAL	279.5377		275.9316	>4X	18.38	19.6		80	120	MS
NICKEL, TOTAL	41.6036		26.9935		18.38	79.5	N	80	120	MS
POTASSIUM, TOTAL	578.1131		225.8635		367.52	95.8		80	120	MS
SELENIUM, TOTAL	3.2842		0.2859	J	3.68	81.5		80	120	MS
SILVER, TOTAL	1.6601		0.0208	J	1.84	89.1		80	120	MS
SODIUM, TOTAL	281.1916		19.2310	J	275.64	95.0		80	120	MS
THALLIUM, TOTAL	3.7083		0.0202	J	3.68	100.2		80	120	MS
VANADIUM, TOTAL	32.7573		15.0073		18.38	96.6		80	120	MS
ZINC, TOTAL	69.5720		58.8824		18.38	58.2	N	80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services | **Client Field ID:** 004/5-SB1021-0204S

Matrix: SOIL | **SDG Name:** SG8908

Percent Solids: 91.9 | **Lab Sample ID:** SG8908-001A

Concentration Units : ug/L

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	42270.0000		42450.0000	>4X	600	-30.0		75	125	MS
ANTIMONY, TOTAL	2.1940		0.1092	J	2	104.2		75	125	MS
ARSENIC, TOTAL	31.7700		22.5400		10	92.3		75	125	MS
BARIUM, TOTAL	36.3400		31.3100	>4X	4	125.8		75	125	MS
BERYLLIUM, TOTAL	2.8950		0.8056		2	104.5		75	125	MS
CADMIUM, TOTAL	2.1340		0.2020		2	96.6		75	125	MS
CALCIUM, TOTAL	2195.0000		2000.0000	>4X	200	97.5		75	125	MS
CHROMIUM, TOTAL	67.4400		57.7500	>4X	10	96.9		75	125	MS
COBALT, TOTAL	55.2300		44.6600	>4X	10	105.7		75	125	MS
COPPER, TOTAL	100.2000		69.1300		30	103.6		75	125	MS
IRON, TOTAL	88700.0000		88690.0000	>4X	1000	1.0		75	125	MS
LEAD, TOTAL	29.2900		27.1800		2	105.5		75	125	MS
MAGNESIUM, TOTAL	14410.0000		14320.0000	>4X	200	45.0		75	125	MS
MANGANESE, TOTAL	855.5000		842.1000	>4X	20	67.0		75	125	MS
NICKEL, TOTAL	103.6000		82.3800		20	106.1		75	125	MS
POTASSIUM, TOTAL	2760.0000		689.3000		2000	103.5		75	125	MS
SELENIUM, TOTAL	9.9530		0.8726	J	10	90.8		75	125	MS
SILVER, TOTAL	2.0430		0.0633	J	2	99.0		75	125	MS
SODIUM, TOTAL	2087.0000		58.6900	J	2000	101.4		75	125	MS
THALLIUM, TOTAL	2.2480		0.0616	J	2	109.3		75	125	MS
VANADIUM, TOTAL	55.9300		45.8000	>4X	10	101.3		75	125	MS
ZINC, TOTAL	277.7000		179.7000		100	98.0		75	125	MS

Comments:

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1021-0204D

Matrix: SOIL **SDG Name:** SG8908

Percent Solids: 91.9 **Lab Sample ID:** SG8908-001D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M
ALUMINUM, TOTAL		13909.6260		13382.9553		3.9		MS
ANTIMONY, TOTAL		0.0358	J	0.0549	J	42.1	N/A	MS
ARSENIC, TOTAL		7.3857		7.5202		1.8		MS
BARIUM, TOTAL		10.2594		10.4443		1.8		MS
BERYLLIUM, TOTAL	0.073	0.2640		0.3170		18.2		MS
CADMIUM, TOTAL		0.0662		0.0607	J	8.7	N/A	MS
CALCIUM, TOTAL		655.3416		617.6749		5.9		MS
CHROMIUM, TOTAL		18.9230		17.4789		7.9		MS
COBALT, TOTAL		14.6338		17.2014		16.1		MS
COPPER, TOTAL		22.6519		18.3988		20.7	* 0K	MS
IRON, TOTAL		29061.1244		28357.5550		2.5		MS
LEAD, TOTAL		8.9061		9.8967		10.5		MS
MAGNESIUM, TOTAL		4692.2460		4460.9851		5.1		MS
MANGANESE, TOTAL		275.9316		282.6994		2.4		MS
NICKEL, TOTAL		26.9935		24.1010		11.3		MS
POTASSIUM, TOTAL	73	225.8635		261.5627		14.6		MS
SELENIUM, TOTAL		0.2859	J	0.3075	J	7.3	N/A	MS
SILVER, TOTAL		0.0208	J	0.0245	J	16.3		MS
SODIUM, TOTAL		19.2310	J	21.2974	J	10.2		MS
THALLIUM, TOTAL		0.0202	J	0.0228	J	12.1		MS
VANADIUM, TOTAL		15.0073		15.3178		2.0		MS
ZINC, TOTAL		58.8824		49.3556		17.6		MS

Comments:

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SB1021-0204L

Matrix: SOIL **SDG Name:** SG8908

Lab Sample ID: SG8908-001L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	42450.00		45240.00		6.6		MS
ANTIMONY, TOTAL	0.11	J	0.12	U	100.0	N/A	MS
ARSENIC, TOTAL	22.54		24.89		10.4	N/A	MS
BARIUM, TOTAL	31.31		33.89		8.2		MS
BERYLLIUM, TOTAL	0.81		0.95	J	17.3	N/A	MS
CADMIUM, TOTAL	0.20		0.30	J	50.0	N/A	MS
CALCIUM, TOTAL	2000.00		2144.50		7.2		MS
CHROMIUM, TOTAL	57.75		62.80		8.7		MS
COBALT, TOTAL	44.66		45.06		0.9		MS
COPPER, TOTAL	69.13		71.05		2.8		MS
IRON, TOTAL	88690.00		91150.00		2.8		MS
LEAD, TOTAL	27.18		27.60		1.5		MS
MAGNESIUM, TOTAL	14320.00		15445.00		7.9		MS
MANGANESE, TOTAL	842.10		880.00		4.5		MS
NICKEL, TOTAL	82.38		84.55		2.6		MS
POTASSIUM, TOTAL	689.30		773.50	J	12.2		MS
SELENIUM, TOTAL	0.87	J	1.39	J	59.8	N/A	MS
SILVER, TOTAL	0.06	J	0.07	J	16.7	N/A	MS
SODIUM, TOTAL	58.69	J	62.60	J	6.7	N/A	MS
THALLIUM, TOTAL	0.06	J	0.09	U	100.0	N/A	MS
VANADIUM, TOTAL	45.80		49.37		7.8	N/A	MS
ZINC, TOTAL	179.70		186.65		3.9		MS

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: PQL

File: JGK25A Nov 25, 2013 15:13

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	63.56	105.9
ANTIMONY	0.2	0.18	90.0
ARSENIC	1.0	1.01	101.0
BARIUM	0.4	0.43	107.5
BERYLLIUM	0.2	0.19	95.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	18.98	94.9
CHROMIUM	1.0	1.01	101.0
COBALT	0.2	0.21	105.0
COPPER	0.6	0.65	108.3
IRON	20.0	18.50	92.5
LEAD	0.2	0.19	95.0
MAGNESIUM	20.0	20.83	104.1
MANGANESE	0.4	0.37	92.5
MOLYBDENUM	1.0	1.06	106.0
NICKEL	0.4	0.40	100.0
POTASSIUM	200.0	215.60	107.8
SELENIUM	1.0	1.17	117.0
SILVER	0.2	0.19	95.0
SODIUM	200.0	210.80	105.4
THALLIUM	0.2	0.19	95.0
VANADIUM	1.0	0.94	94.0
ZINC	2.0	2.14	107.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: PQL

File: JGL04A Dec 04, 2013 12:39

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	63.31	105.5
CALCIUM	20.0	21.03	105.2
COBALT	0.2	0.20	100.0
COPPER	0.6	0.64	106.7
IRON	20.0	18.23	91.1
MAGNESIUM	20.0	21.58	107.9
MANGANESE	0.4	0.36	90.0
MOLYBDENUM	1.0	1.05	105.0
NICKEL	0.4	0.41	102.5
POTASSIUM	200.0	207.90	104.0
SODIUM	200.0	212.50	106.3
ZINC	2.0	2.21	110.5

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: ICSA

File: JGK25A Nov 25, 2013 15:16

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	98310	98.3
ANTIMONY	0	0	
ARSENIC	0	0	
BARIUM	0	0	
BERYLLIUM	0	0	
CADMIUM	0	0	
CALCIUM	100000	96540	96.5
CHROMIUM	0	1	
COBALT	0	0	
COPPER	0	0	
IRON	100000	90830	90.8
LEAD	0	0	
MAGNESIUM	100000	96730	96.7
MANGANESE	0	0	
MOLYBDENUM	2000	1924	96.2
NICKEL	0	0	
POTASSIUM	100000	99850	99.9
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	96520	96.5
THALLIUM	0	0	
VANADIUM	0	0	
ZINC	0	2	

SAMPLE: ICSAB

File: JGK25A Nov 25, 2013 15:19

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	95790	95.8
ANTIMONY	20	20	100.0
ARSENIC	20	19	95.0
BARIUM	21	21	100.0
BERYLLIUM	20	19	95.0
CADMIUM	20	18	90.0
CALCIUM	100000	93260	93.3
CHROMIUM	20	21	105.0
COBALT	20	19	95.0
COPPER	20	18	90.0
IRON	100000	90160	90.2
LEAD	20	21	105.0
MAGNESIUM	100000	95090	95.1
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1937	96.9
NICKEL	20	19	95.0
POTASSIUM	100000	95980	96.0
SELENIUM	20	18	90.0
SILVER	20	16	80.0
SODIUM	100000	95000	95.0
THALLIUM	20	21	105.0
VANADIUM	20	20	100.0
ZINC	20	19	95.0

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8908

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL04A Dec 04, 2013 12:42

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	94810	94.8
CALCIUM	100000	93390	93.4
COBALT	0	0	
COPPER	0	1	
IRON	100000	88780	88.8
MAGNESIUM	100000	93030	93.0
MANGANESE	0	0	
MOLYBDENUM	2000	1942	97.1
NICKEL	0	1	
POTASSIUM	100000	96530	96.5
SODIUM	100000	98240	98.2
ZINC	0	2	

SAMPLE: ICSAB

File: JGL04A Dec 04, 2013 12:45

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	91670	91.7
CALCIUM	100000	90660	90.7
COBALT	20	19	95.0
COPPER	20	19	95.0
IRON	100000	87290	87.3
MAGNESIUM	100000	90880	90.9
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1919	96.0
NICKEL	20	19	95.0
POTASSIUM	100000	91890	91.9
SODIUM	100000	93860	93.9
ZINC	20	20	100.0

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 6/11/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
ALUMINUM	60	0.34	MS
ANTIMONY	0.20	0.006	MS
ARSENIC	1.0	0.41	MS
BARIUM	0.40	0.02	MS
BERYLLIUM	0.20	0.003	MS
CADMIUM	0.20	0.004	MS
CALCIUM	20	4.10	MS
CHROMIUM	1.0	0.03	MS
COBALT	0.20	0.006	MS
COPPER	0.60	0.03	MS
IRON	20	4.70	MS
LEAD	0.20	0.009	MS
MAGNESIUM	20	0.69	MS
MANGANESE	0.40	0.02	MS
MOLYBDENUM	1.0	0.12	MS
NICKEL	0.40	0.02	MS
POTASSIUM	200	8.20	MS
SELENIUM	1.0	0.64	MS
SILVER	0.20	0.004	MS
SODIUM	200	3.90	MS
THALLIUM	0.20	0.003	MS
VANADIUM	1.0	0.15	MS
ZINC	2.0	0.13	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.80	mg/kg	MS	SW846 3050B / 6010/200.7
ANTIMONY	0.01	mg/kg	MS	SW846 3050B / 6010/200.7
ARSENIC	0.08	mg/kg	MS	SW846 3050B / 6010/200.7
BARIUM	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
BERYLLIUM	0.004	mg/Kg	MS	SW846 3050B / 6010/200.7
CADMIUM	0.004	mg/kg	MS	SW846 3050B / 6010/200.7
CALCIUM	1.60	mg/kg	MS	SW846 3050B / 6010/200.7
CHROMIUM	0.08	mg/kg	MS	SW846 3050B / 6010/200.7
COBALT	0.006	mg/kg	MS	SW846 3050B / 6010/200.7
COPPER	0.04	mg/kg	MS	SW846 3050B / 6010/200.7
IRON	1.20	mg/kg	MS	SW846 3050B / 6010/200.7
LEAD	0.01	mg/Kg	MS	SW846 3050B / 6010/200.7
MAGNESIUM	1.60	mg/kg	MS	SW846 3050B / 6010/200.7
MANGANESE	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
NICKEL	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
POTASSIUM	8.00	mg/Kg	MS	SW846 3050B / 6010/200.7
SELENIUM	0.06	mg/kg	MS	SW846 3050B / 6010/200.7
SILVER	0.008	mg/kg	MS	SW846 3050B / 6010/200.7
SODIUM	8.00	mg/kg	MS	SW846 3050B / 6010/200.7
THALLIUM	0.008	mg/kg	MS	SW846 3050B / 6010/200.7
VANADIUM	0.08	mg/Kg	MS	SW846 3050B / 6010/200.7
ZINC	0.16	mg/kg	MS	SW846 3050B / 6010/200.7

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.10	mg/kg	MS	SW846 3050B / SW846 6020
ANTIMONY	0.004	mg/kg	MS	SW846 3050B / SW846 6020
ARSENIC	0.03	mg/kg	MS	SW846 3050B / SW846 6020
BARIUM	0.007	mg/kg	MS	SW846 3050B / SW846 6020
BERYLLIUM	0.0008	mg/kg	MS	SW846 3050B / SW846 6020
CADMIUM	0.002	mg/kg	MS	SW846 3050B / SW846 6020
CALCIUM	0.77	mg/kg	MS	SW846 3050B / SW846 6020
CHROMIUM	0.010	mg/kg	MS	SW846 3050B / SW846 6020
COBALT	0.001	mg/kg	MS	SW846 3050B / SW846 6020
COPPER	0.01	mg/kg	MS	SW846 3050B / SW846 6020
IRON	0.48	mg/kg	MS	SW846 3050B / SW846 6020
LEAD	0.001	mg/kg	MS	SW846 3050B / SW846 6020
MAGNESIUM	0.27	mg/kg	MS	SW846 3050B / SW846 6020
MANGANESE	0.008	mg/kg	MS	SW846 3050B / SW846 6020
NICKEL	0.005	mg/kg	MS	SW846 3050B / SW846 6020
POTASSIUM	0.91	mg/kg	MS	SW846 3050B / SW846 6020
SELENIUM	0.008	mg/kg	MS	SW846 3050B / SW846 6020
SILVER	0.001	mg/kg	MS	SW846 3050B / SW846 6020
SODIUM	0.51	mg/kg	MS	SW846 3050B / SW846 6020
THALLIUM	0.002	mg/kg	MS	SW846 3050B / SW846 6020
VANADIUM	0.02	mg/kg	MS	SW846 3050B / SW846 6020
ZINC	0.03	mg/kg	MS	SW846 3050B / SW846 6020

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 6/7/2013

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	0.01	200000	MS
ANTIMONY	0.10	1000	MS
ARSENIC	0.30	1000	MS
BARIUM	0.10	1000	MS
BERYLLIUM	0.30	100	MS
CADMIUM	0.10	500	MS
CALCIUM	0.03	200000	MS
CHROMIUM	0.10	1000	MS
COBALT	0.10	1000	MS
COPPER	0.10	500	MS
IRON	0.03	100000	MS
LEAD	0.10	1000	MS
MAGNESIUM	0.05	200000	MS
MANGANESE	0.10	1000	MS
MOLYBDENUM	0.10	1000	MS
NICKEL	0.10	500	MS
POTASSIUM	0.01	200000	MS
SELENIUM	0.30	500	MS
SILVER	0.10	250	MS
SODIUM	0.01	200000	MS
THALLIUM	0.10	1000	MS
VANADIUM	0.10	1000	MS
ZINC	0.10	500	MS

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGK25A.B\045SMPL.D\045SMPL.D#
Date Acquired: Nov 25 2013 04:39 pm
Acq. Method: K2008ESW.M
Operator: HHM
Sample Name: SG8908-001
Misc Info: ~~DILUTION 1.6/8~~
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Nov 25 2013 03:05 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.028	0.8056	ppb	1.97	100.	
11 B	6.39	1.278	ppb	12.89	1000.	
23 Na	293.45	58.69	ppb	1.84	200000.	
25 Mg	71,600.	14,320.	ppb	2.03	200000.	
27 Al	212,250.	42,450.	ppb	0.92	200000.	
28 Si	8,345.	1,669.	ppb	2.02	#VALUE!	
29 Si	12,875.	2,575.	ppb	4.96	10000.	
39 K	3,446.5	689.3	ppb	2.04	200000.	
43 Ca	10,990.	2,198.	ppb	1.11	200000.	
44 Ca	10,000.	2,000.	ppb	1.07	200000.	
51 V	229.	45.8	ppb	0.49	1000.	
52 Cr	288.75	57.75	ppb	0.94	1000.	
53 Cr	325.8	65.16	ppb	3.06	1000.	
55 Mn	4,090.5	818.1	ppb	2.74	1000.	
56 Fe	457,050.	91,410.	ppb	1.69	200000.	
57 Fe	438,250.	87,650.	ppb	0.60	100000.	
59 Co	213.7	42.74	ppb	0.55	1000.	
60 Ni	398.8	79.76	ppb	1.46	500.	
63 Cu	331.4	66.28	ppb	1.63	1000.	
65 Cu	333.55	66.71	ppb	0.53	500.	
66 Zn	839.5	167.9	ppb	0.60	500.	
68 Zn	830.	166.	ppb	0.86	1000.	
75 As	112.7	22.54	ppb	0.45	1000.	
82 Se	4.363	0.8726	ppb	12.92	500.	
88 Sr	77.35	15.47	ppb	0.85	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.995	1.799	ppb	2.80	1000.	
107 Ag	0.3167	0.0633	ppb	10.73	250.	
109 Ag	0.2514	0.0503	ppb	9.08	100.	
111 Cd	0.9605	0.1921	ppb	13.27	500.	
114 Cd	1.01	0.202	ppb	6.67	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	31.52	6.304	ppb	1.31	500.	
120 Sn	31.48	6.296	ppb	0.66	1000.	
121 Sb	0.53	0.106	ppb	6.30	1000.	
123 Sb	0.546	0.1092	ppb	10.91	1000.	
135 Ba	156.55	31.31	ppb	1.30	1000.	
137 Ba	156.2	31.24	ppb	0.46	#VALUE!	
182 W	0.5215	0.1043	ppb ---		#VALUE!	
203 Tl	0.3082	0.0616	ppb	9.56	1000.	
205 Tl	0.3201	0.064	ppb	1.51	#VALUE!	
208 Pb	135.9	27.18	ppb	0.82	1000.	
232 Th	74.45	14.89	ppb	1.18	1000.	
238 U	7.53	1.506	ppb	0.60	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4158829.00	1.57	4199766.00	99.0	69.5 - 130	
45 Sc	2322488.80	1.61	2249105.80	103.3	69.5 - 130	
72 Ge	494369.03	0.93	454833.06	108.7	69.5 - 130	
159 Tb	4895327.00	0.69	4418971.00	110.8	69.5 - 130	
209 Bi	3030689.00	0.59	2868900.30	105.6	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGK25A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000124

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGK25A.B\053SMPL.D\053SMPL.D#
Date Acquired: Nov 25 2013 05:07 pm
Acq. Method: K2008ESW.M
Operator: NHM
Sample Name: SG8908-002
Misc Info: DILUTION 1.6/8
Vial Number: 2302
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Nov 25 2013 03:05 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	11.095	2.219	ppb	1.20	100.	
11 B	6.255	1.251	ppb	27.66	1000.	
23 Na	211.4	42.28	ppb	1.36	200000.	
25 Mg	75,300.	15,060.	ppb	1.60	200000.	
27 Al	227,250.	45,450.	ppb	1.56	200000.	
28 Si	5,860.	1,172.	ppb	3.95	#VALUE!	
29 Si	6,420.	1,284.	ppb	4.36	10000.	
39 K	2,958.	591.6	ppb	1.44	200000.	
43 Ca	5,150.	1,030.	ppb	1.29	200000.	
44 Ca	4,193.	838.6	ppb	2.43	200000.	
51 V	224.45	44.89	ppb	1.14	1000.	
52 Cr	315.15	63.03	ppb	1.67	1000.	
53 Cr	345.4	69.08	ppb	1.22	1000.	
55 Mn	4,744.5	948.9	ppb	1.61	1000.	
56 Fe	513,500.	102,700.	ppb	0.42	200000.	
57 Fe	495,500.	99,100.	ppb	1.38	100000.	
59 Co	278.85	55.77	ppb	1.03	1000.	
60 Ni	568.	113.6	ppb	0.48	500.	
63 Cu	707.	141.4	ppb	0.54	1000.	
65 Cu	700.5	140.1	ppb	0.80	500.	
66 Zn	1,416.5	283.3	ppb	1.01	500.	
68 Zn	1,408.	281.6	ppb	1.38	1000.	
75 As	147.2	29.44	ppb	0.64	1000.	
82 Se	4.3825	0.8765	ppb	5.44	500.	
88 Sr	49.905	9.981	ppb	2.75	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.325	2.665	ppb	2.73	1000.	
107 Ag	0.1884	0.0377	ppb	28.88	250.	
109 Ag	0.172	0.0344	ppb	23.63	100.	
111 Cd	0.9655	0.1931	ppb	9.15	500.	
114 Cd	0.863	0.1726	ppb	5.53	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	31.405	6.281	ppb	0.10	500.	
120 Sn	32.185	6.437	ppb	1.64	1000.	
121 Sb	1.0975	0.2195	ppb	4.25	1000.	
123 Sb	1.114	0.2228	ppb	2.32	1000.	
135 Ba	136.7	27.34	ppb	2.23	1000.	
137 Ba	134.35	26.87	ppb	2.67	#VALUE!	
182 W	0.4461	0.0892	ppb ---		#VALUE!	
203 Tl	0.1993	0.0399	ppb	8.02	1000.	
205 Tl	0.2334	0.0467	ppb	2.14	#VALUE!	
208 Pb	217.7	43.54	ppb	0.94	1000.	
232 Th	79.1	15.82	ppb	1.17	1000.	
238 U	7.97	1.594	ppb	1.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4161812.50	1.06	4199766.00	99.1	69.5 - 130	
45 Sc	2344044.80	0.93	2249105.80	104.2	69.5 - 130	
72 Ge	507026.81	0.74	454833.06	111.5	69.5 - 130	
159 Tb	4961577.50	1.05	4418971.00	112.3	69.5 - 130	
209 Bi	3088661.80	0.62	2868900.30	107.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGK25A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000132

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGK25A.B\054SMPL.D\054SMPL.D#
Date Acquired: Nov 25 2013 05:10 pm
Acq. Method: K2008ESW.M
Operator: HHM
Sample Name: SG8908-003
Misc Info: DILUTION 1.6/8
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Nov 25 2013 03:05 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.58	1.516	ppb	2.13	100.	
11 B	6.625	1.325	ppb	4.07	1000.	
23 Na	289.35	57.87	ppb	2.94	200000.	
25 Mg	45,325.	9,065.	ppb	1.40	200000.	
27 Al	144,250.	28,850.	ppb	0.64	200000.	
28 Si	6,755.	1,351.	ppb	1.71	#VALUE!	
29 Si	10,535.	2,107.	ppb	23.88	10000.	
39 K	4,070.	814.	ppb	0.39	200000.	
43 Ca	7,960.	1,592.	ppb	2.76	200000.	
44 Ca	7,235.	1,447.	ppb	1.41	200000.	
51 V	164.1	32.82	ppb	0.94	1000.	
52 Cr	166.65	33.33	ppb	0.73	1000.	
53 Cr	195.1	39.02	ppb	1.71	1000.	
55 Mn	3,355.	671.	ppb	0.46	1000.	
56 Fe	343,350.	68,670.	ppb	1.22	200000.	
57 Fe	330,350.	66,070.	ppb	0.72	100000.	
59 Co	138.6	27.72	ppb	0.65	1000.	
60 Ni	224.7	44.94	ppb	0.41	500.	
63 Cu	419.5	83.9	ppb	0.38	1000.	
65 Cu	426.1	85.22	ppb	1.70	500.	
66 Zn	572.5	114.5	ppb	0.43	500.	
68 Zn	563.5	112.7	ppb	0.06	1000.	
75 As	86.55	17.31	ppb	1.09	1000.	
82 Se	6.635	1.327	ppb	17.28	500.	
88 Sr	71.	14.2	ppb	0.67	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	13.24	2.648	ppb	1.04	1000.	
107 Ag	0.3943	0.0789	ppb	15.27	250.	
109 Ag	0.3506	0.0701	ppb	8.31	100.	
111 Cd	0.761	0.1522	ppb	5.67	500.	
114 Cd	0.704	0.1408	ppb	11.68	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	32.515	6.503	ppb	2.68	500.	
120 Sn	32.13	6.426	ppb	1.87	1000.	
121 Sb	1.919	0.3838	ppb	3.94	1000.	
123 Sb	1.8075	0.3615	ppb	4.67	1000.	
135 Ba	162.3	32.46	ppb	3.25	1000.	
137 Ba	161.7	32.34	ppb	2.62	#VALUE!	
182 W	0.727	0.1454	ppb ---		#VALUE!	
203 Tl	0.393	0.0786	ppb	3.50	1000.	
205 Tl	0.363	0.0726	ppb	4.40	#VALUE!	
208 Pb	234.6	46.92	ppb	1.04	1000.	
232 Th	60.95	12.19	ppb	1.41	1000.	
238 U	8.28	1.656	ppb	1.86	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4101453.80	3.24	4199766.00	97.7	69.5 - 130	
45 Sc	2298869.50	0.71	2249105.80	102.2	69.5 - 130	
72 Ge	494258.44	0.69	454833.06	108.7	69.5 - 130	
159 Tb	4991783.50	1.80	4418971.00	113.0	69.5 - 130	
209 Bi	3113115.00	1.24	2868900.30	108.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGK25A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000133

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGK25A.B\055SMPL.D\055SMPL.D#
Date Acquired: Nov 25 2013 05:14 pm
Acq. Method: K2008ESW.M
Operator: HHM
Sample Name: SG8908-004
Misc Info: ~~DILUTION 1.6/8~~
Vial Number: 2304
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Nov 25 2013 03:05 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.7415	0.7483	ppb	1.72	100.	
11 B	6.42	1.284	ppb	1.52	1000.	
23 Na	258.75	51.75	ppb	2.72	200000.	
25 Mg	43,350.	8,670.	ppb	1.86	200000.	
27 Al	141,000.	28,200.	ppb	0.69	200000.	
28 Si	8,220.	1,644.	ppb	4.45	#VALUE!	
29 Si	12,125.	2,425.	ppb	23.50	10000.	
39 K	3,708.5	741.7	ppb	1.89	200000.	
43 Ca	10,490.	2,098.	ppb	3.50	200000.	
44 Ca	9,695.	1,939.	ppb	0.65	200000.	
51 V	180.85	36.17	ppb	0.87	1000.	
52 Cr	180.8	36.16	ppb	1.15	1000.	
53 Cr	208.4	41.68	ppb	0.33	1000.	
55 Mn	3,431.	686.2	ppb	0.71	1000.	
56 Fe	289,650.	57,930.	ppb	0.88	200000.	
57 Fe	275,750.	55,150.	ppb	0.62	100000.	
59 Co	132.	26.4	ppb	0.42	1000.	
60 Ni	255.05	51.01	ppb	1.23	500.	
63 Cu	178.35	35.67	ppb	0.52	1000.	
65 Cu	176.55	35.31	ppb	0.27	500.	
66 Zn	517.	103.4	ppb	1.73	500.	
68 Zn	517.	103.4	ppb	1.47	1000.	
75 As	78.05	15.61	ppb	1.60	1000.	
82 Se	2.9705	0.5941	ppb	4.34	500.	
88 Sr	93.5	18.7	ppb	1.62	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.7545	0.9509	ppb	2.45	1000.	
107 Ag	0.1997	0.0399	ppb	7.46	250.	
109 Ag	0.1945	0.0389	ppb	9.36	100.	
111 Cd	1.2595	0.2519	ppb	2.51	500.	
114 Cd	1.0815	0.2163	ppb	2.92	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	32.845	6.569	ppb	0.48	500.	
120 Sn	33.335	6.667	ppb	1.15	1000.	
121 Sb	0.707	0.1414	ppb	8.03	1000.	
123 Sb	0.722	0.1444	ppb	6.56	1000.	
135 Ba	153.1	30.62	ppb	1.28	1000.	
137 Ba	150.85	30.17	ppb	1.78	#VALUE!	
182 W	0.8385	0.1677	ppb ---		#VALUE!	
203 Tl	0.4216	0.0843	ppb	9.86	1000.	
205 Tl	0.4618	0.0924	ppb	9.07	#VALUE!	
208 Pb	107.05	21.41	ppb	0.70	1000.	
232 Th	66.8	13.36	ppb	0.18	1000.	
238 U	10.225	2.045	ppb	0.77	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4097726.30	1.99	4199766.00	97.6	69.5 - 130	
45 Sc	2362154.50	0.39	2249105.80	105.0	69.5 - 130	
72 Ge	497905.56	0.27	454833.06	109.5	69.5 - 130	
159 Tb	4988633.00	0.61	4418971.00	112.9	69.5 - 130	
209 Bi	3133522.80	0.52	2868900.30	109.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGK25A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000134

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGK25A.B\056SMPL.D\056SMPL.D#
Date Acquired: Nov 25 2013 05:18 pm
Acq. Method: K2008ESW.M
Operator: HHM
Sample Name: SG8908-005
Misc Info: DILUTION 1.6/8
Vial Number: 2305
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Nov 25 2013 03:05 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.07	1.014	ppb	1.76	100.	
11 B	6.195	1.239	ppb	3.48	1000.	
23 Na	259.05	51.81	ppb	5.90	200000.	
25 Mg	58,100.	11,620.	ppb	5.05	200000.	
27 Al	187,400.	37,480.	ppb	4.07	200000.	
28 Si	7,535.	1,507.	ppb	10.60	#VALUE!	
29 Si	9,495.	1,899.	ppb	15.03	10000.	
39 K	3,448.	689.6	ppb	5.23	200000.	
43 Ca	5,095.	1,019.	ppb	7.07	200000.	
44 Ca	4,292.	858.4	ppb	4.80	200000.	
51 V	205.25	41.05	ppb	2.10	1000.	
52 Cr	246.6	49.32	ppb	2.89	1000.	
53 Cr	282.45	56.49	ppb	2.96	1000.	
55 Mn	2,860.5	572.1	ppb	3.02	1000.	
56 Fe	365,700.	73,140.	ppb	2.09	200000.	
57 Fe	351,850.	70,370.	ppb	3.39	100000.	
59 Co	119.15	23.83	ppb	3.05	1000.	
60 Ni	277.15	55.43	ppb	2.76	500.	
63 Cu	244.8	48.96	ppb	1.67	1000.	
65 Cu	242.75	48.55	ppb	2.84	500.	
66 Zn	564.	112.8	ppb	2.22	500.	
68 Zn	559.	111.8	ppb	2.14	1000.	
75 As	67.75	13.55	ppb	3.60	1000.	
82 Se	3.4085	0.6817	ppb	13.77	500.	
88 Sr	57.65	11.53	ppb	3.71	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.595	1.119	ppb	3.55	1000.	
107 Ag	0.1976	0.0395	ppb	6.60	250.	
109 Ag	0.1821	0.0364	ppb	9.79	100.	
111 Cd	0.3722	0.0744	ppb	20.36	500.	
114 Cd	0.659	0.1318	ppb	5.87	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	32.91	6.582	ppb	5.91	500.	
120 Sn	32.395	6.479	ppb	3.59	1000.	
121 Sb	0.5195	0.1039	ppb	12.63	1000.	
123 Sb	0.4434	0.0887	ppb	8.39	1000.	
135 Ba	155.25	31.05	ppb	3.48	1000.	
137 Ba	156.1	31.22	ppb	3.02	#VALUE!	
182 W	0.626	0.1252	ppb ---		#VALUE!	
203 Tl	0.3994	0.0799	ppb	8.22	1000.	
205 Tl	0.4237	0.0847	ppb	7.34	#VALUE!	
208 Pb	156.8	31.36	ppb	3.89	1000.	
232 Th	71.8	14.36	ppb	3.28	1000.	
238 U	8.78	1.756	ppb	3.41	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4013663.80	2.25	4199766.00	95.6	69.5 - 130	
45 Sc	2313623.30	3.73	2249105.80	102.9	69.5 - 130	
72 Ge	493491.53	1.63	454833.06	108.5	69.5 - 130	
159 Tb	4940143.00	2.86	4418971.00	111.8	69.5 - 130	
209 Bi	3134156.80	3.16	2868900.30	109.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGK25A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000135

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGK25A.B\057SMPL.D\057SMPL.D#
Date Acquired: Nov 25 2013 05:21 pm
Acq. Method: K2008ESW.M
Operator: HHM
Sample Name: SG8908-006
Misc Info: DILUTION 1.6/8
Vial Number: 2306
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Nov 25 2013 03:05 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.113	0.8226	ppb	3.38	100.	
11 B	8.005	1.601	ppb	4.52	1000.	
23 Na	310.4	62.08	ppb	4.43	200000.	
25 Mg	38,320.	7,664.	ppb	2.05	200000.	
27 Al	141,400.	28,280.	ppb	2.38	200000.	
28 Si	5,735.	1,147.	ppb	0.96	#VALUE!	
29 Si	6,830.	1,366.	ppb	2.54	10000.	
39 K	4,256.	851.2	ppb	1.44	200000.	
43 Ca	6,450.	1,290.	ppb	3.23	200000.	
44 Ca	5,810.	1,162.	ppb	0.32	200000.	
51 V	180.	36.	ppb	0.79	1000.	
52 Cr	164.	32.8	ppb	0.71	1000.	
53 Cr	193.05	38.61	ppb	1.19	1000.	
55 Mn	2,386.	477.2	ppb	1.34	1000.	
56 Fe	244,700.	48,940.	ppb	0.66	200000.	
57 Fe	237,500.	47,500.	ppb	0.65	100000.	
59 Co	92.95	18.59	ppb	1.28	1000.	
60 Ni	183.35	36.67	ppb	0.72	500.	
63 Cu	140.2	28.04	ppb	0.68	1000.	
65 Cu	140.3	28.06	ppb	1.40	500.	
66 Zn	379.8	75.96	ppb	0.46	500.	
68 Zn	377.8	75.56	ppb	1.43	1000.	
75 As	55.65	11.13	ppb	0.51	1000.	
82 Se	3.819	0.7638	ppb	8.76	500.	
88 Sr	75.05	15.01	ppb	0.97	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.376	0.8752	ppb	3.60	1000.	
107 Ag	0.3063	0.0613	ppb	4.25	250.	
109 Ag	0.258	0.0516	ppb	8.95	100.	
111 Cd	0.3861	0.0772	ppb	29.78	500.	
114 Cd	0.512	0.1024	ppb	9.90	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	33.065	6.613	ppb	1.47	500.	
120 Sn	33.61	6.722	ppb	1.37	1000.	
121 Sb	0.7485	0.1497	ppb	11.46	1000.	
123 Sb	0.6495	0.1299	ppb	11.19	1000.	
135 Ba	167.25	33.45	ppb	0.76	1000.	
137 Ba	169.1	33.82	ppb	1.52	#VALUE!	
182 W	0.8625	0.1725	ppb ---		#VALUE!	
203 Tl	0.5185	0.1037	ppb	7.15	1000.	
205 Tl	0.5265	0.1053	ppb	5.82	#VALUE!	
208 Pb	104.	20.8	ppb	2.14	1000.	
232 Th	63.5	12.7	ppb	1.45	1000.	
238 U	10.	2.	ppb	2.82	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4055085.80	0.94	4199766.00	96.6	69.5 - 130	
45 Sc	2299117.50	0.65	2249105.80	102.2	69.5 - 130	
72 Ge	493426.41	0.46	454833.06	108.5	69.5 - 130	
159 Tb	5030861.00	0.62	4418971.00	113.8	69.5 - 130	
209 Bi	3158994.00	1.74	2868900.30	110.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGK25A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000136

Sample QC Report

Data File:	C:\ICPCHEM\1\DATA\JGK25A.B\060SMPL.D\060SMPL.D#
Date Acquired:	Nov 25 2013 05:32 pm
Acq. Method:	K2008ESW.M
Operator:	HHM
Sample Name:	SG8908-007
Misc Info:	DILUTION 1.6/8
Vial Number:	2307
Current Method:	C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File:	C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update:	Nov 25 2013 03:05 pm
Sample Type:	Sample
Dilution Factor:	5.00
Autodil Factor:	Undiluted
Final Dil Factor:	5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.923	0.9846	ppb	3.11	100.	
11 B	4.601	0.9202	ppb	4.86	1000.	
23 Na	272.95	54.59	ppb	3.32	200000.	
25 Mg	59,750.	11,950.	ppb	1.40	200000.	
27 Al	188,050.	37,610.	ppb	0.73	200000.	
28 Si	8,395.	1,679.	ppb	4.03	#VALUE!	
29 Si	12,635.	2,527.	ppb	24.79	10000.	
39 K	3,938.5	787.7	ppb	0.61	200000.	
43 Ca	9,750.	1,950.	ppb	3.40	200000.	
44 Ca	8,860.	1,772.	ppb	1.10	200000.	
51 V	214.25	42.85	ppb	1.41	1000.	
52 Cr	236.	47.2	ppb	1.60	1000.	
53 Cr	265.05	53.01	ppb	1.66	1000.	
55 Mn	4,224.5	844.9	ppb	1.25	1000.	
56 Fe	409,600.	81,920.	ppb	1.46	200000.	
57 Fe	391,950.	78,390.	ppb	1.72	100000.	
59 Co	236.4	47.28	ppb	1.77	1000.	
60 Ni	337.2	67.44	ppb	2.16	500.	
63 Cu	308.35	61.67	ppb	2.01	1000.	
65 Cu	308.45	61.69	ppb	2.33	500.	
66 Zn	715.	143.	ppb	1.64	500.	
68 Zn	701.5	140.3	ppb	1.54	1000.	
75 As	123.05	24.61	ppb	0.91	1000.	
82 Se	4.217	0.8434	ppb	33.67	500.	
88 Sr	73.1	14.62	ppb	2.94	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	14.715	2.943	ppb	1.86	1000.	
107 Ag	0.272	0.0544	ppb	8.28	250.	
109 Ag	0.2242	0.0448	ppb	5.84	100.	
111 Cd	1.017	0.2034	ppb	19.96	500.	
114 Cd	1.03	0.206	ppb	4.38	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	30.635	6.127	ppb	1.67	500.	
120 Sn	31.39	6.278	ppb	0.52	1000.	
121 Sb	0.8185	0.1637	ppb	6.99	1000.	
123 Sb	0.791	0.1582	ppb	3.90	1000.	
135 Ba	161.55	32.31	ppb	1.65	1000.	
137 Ba	159.35	31.87	ppb	1.66	#VALUE!	
182 W	0.71	0.142	ppb ---		#VALUE!	
203 Tl	0.3796	0.0759	ppb	10.93	1000.	
205 Tl	0.4004	0.0801	ppb	14.91	#VALUE!	
208 Pb	155.85	31.17	ppb	2.84	1000.	
232 Th	77.95	15.59	ppb	2.62	1000.	
238 U	8.84	1.768	ppb	2.22	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3947294.50	0.98	4199766.00	94.0	69.5 - 130	
45 Sc	2265291.80	0.27	2249105.80	100.7	69.5 - 130	
72 Ge	492503.56	0.39	454833.06	108.3	69.5 - 130	
159 Tb	4881564.00	1.51	4418971.00	110.5	69.5 - 130	
209 Bi	3089908.50	1.56	2868900.30	107.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGK25A.B\012CALB.D\012CALB.D#

0 :Element Failures — 0 :Max. Number of Failures Allowed

0 :ISTD Failures — 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass

ISTD: Pass

Katahdin Analytical Services 4000139

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\024SMPL.D\024SMPL.D#
Date Acquired: Dec 4 2013 12:55 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG8908-001
Misc Info: ~~DILUTION 1:6/8~~
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.256	0.8512	ppb	3.78	100.	
11 B	5.01	1.002	ppb	17.30	1000.	
23 Na	345.95	69.19	ppb	4.44	200000.	
25 Mg	70,200.	14,040.	ppb	3.11	200000.	
27 Al	215,000.	43,000.	ppb	6.77	200000.	
28 Si	15,305.	3,061.	ppb	4.83	#VALUE!	
29 Si	8,640.	1,728.	ppb	10.75	10000.	
39 K	3,304.	660.8	ppb	8.73	200000.	
43 Ca	10,465.	2,093.	ppb	6.20	200000.	
44 Ca	10,055.	2,011.	ppb	3.29	200000.	
51 V	245.05	49.01	ppb	2.51	1000.	
52 Cr	301.35	60.27	ppb	3.57	1000.	
53 Cr	359.35	71.87	ppb	1.47	1000.	
55 Mn	4,210.5	842.1	ppb	0.62	1000.	
56 Fe	462,950.	92,590.	ppb	0.76	200000.	
57 Fe	443,450.	88,690.	ppb	1.71	100000.	
59 Co	223.3	44.66	ppb	1.29	1000.	
60 Ni	411.9	82.38	ppb	1.88	500.	
63 Cu	345.2	69.04	ppb	2.07	1000.	
65 Cu	345.65	69.13	ppb	1.28	500.	
66 Zn	898.5	179.7	ppb	0.90	500.	
68 Zn	872.	174.4	ppb	1.39	1000.	
75 As	120.45	24.09	ppb	2.18	1000.	
82 Se	3.7725	0.7545	ppb	16.77	500.	
88 Sr	77.75	15.55	ppb	3.27	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.915	2.183	ppb	5.85	1000.	
107 Ag	0.3474	0.0695	ppb	5.17	250.	
109 Ag	0.2862	0.0572	ppb	12.15	100.	
111 Cd	0.8655	0.1731	ppb	27.31	500.	
114 Cd	1.0905	0.2181	ppb	2.62	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	31.535	6.307	ppb	1.23	500.	
120 Sn	32.225	6.445	ppb	2.87	1000.	
121 Sb	0.656	0.1312	ppb	2.61	1000.	
123 Sb	0.643	0.1286	ppb	8.31	1000.	
135 Ba	157.05	31.41	ppb	1.93	1000.	
137 Ba	163.35	32.67	ppb	1.39	#VALUE!	
182 W	0.643	0.1286	ppb ---		#VALUE!	
203 Tl	0.3359	0.0672	ppb	10.60	1000.	
205 Tl	0.3732	0.0746	ppb	1.76	#VALUE!	
208 Pb	136.25	27.25	ppb	1.41	1000.	
232 Th	75.25	15.05	ppb	1.76	1000.	
238 U	7.565	1.513	ppb	3.54	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3506380.80	3.31	3134288.50	111.9	69.5 - 130	
45 Sc	2240901.80	3.99	2003066.00	111.9	69.5 - 130	
72 Ge	496320.47	1.21	442079.53	112.3	69.5 - 130	
159 Tb	5204615.50	1.31	4801135.00	108.4	69.5 - 130	
209 Bi	3225915.50	1.33	3117805.30	103.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000174

CONVENTIONAL AND PHYSICAL ANALYTICAL DATA

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Blank Sample Summary Report

Total Solids

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG134807	SM2540	22-NOV-13	21-NOV-13	U 1 %	1 %	N/A

Katahdin Analytical Services 5000003

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Laboratory Control Sample Summary Report

Total Solids

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG134807-2	LCS	WG134807	22-NOV-13	21-NOV-13	%	90	87.	97	80-120	

Katahdin Analytical Services 5000004

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Duplicate Sample Summary Report

Total Solids

Duplicate Sample ID	Original Sample ID	QC Batch	Analysis Date	Result Units	Sample Result	Duplicate Result	RPD(%)	RPD Limit
WG134807-3	SG8908-1	WG134807	22-NOV-13	%	92.	92.	0	20

Katahdin Analytical Services 5000005

NAVSTA NEWPORT
SOIL DATA
SG8908

FRACTION	CHEMICAL	TF2-SB-DUP04-1113	UNITS	TF2-004/5-SB1021-0204	RPD	D
PAH	2-METHYLNAPHTHALENE	ND	UG/KG	4.8 J	200.00	4.80 N/A <2XR.L.
PAH	ACENAPHTHYLENE	ND	UG/KG	3.5 J	200.00	3.50 N/A <2XR.L.
PAH	BENZO(A)ANTHRACENE	5.6 J	UG/KG	22 J	118.84	16.40 N/A <2XR.L.
PAH	BENZO(A)PYRENE	3.5 J	UG/KG	22 J	145.10	18.50 N/A <2XR.L.
PAH	BENZO(B)FLUORANTHENE	11 J	UG/KG	27 J	84.21	16.00 N/A <2XR.L.
PAH	BENZO(G,H,I)PERYLENE	ND	UG/KG	11 J	200.00	11.00 N/A <2XR.L.
PAH	BENZO(K)FLUORANTHENE	ND	UG/KG	10 J	200.00	10.00 N/A <2XR.L.
PAH	CHRYSENE	6.4 J	UG/KG	22 J	109.86	15.60 N/A <2XR.L.
PAH	DIBENZO(A,H)ANTHRACENE	ND	UG/KG	10 J	200.00	10.00 N/A <2XR.L.
PAH	FLUORANTHENE	14 J	UG/KG	30 J	72.73	16.00 N/A <2XR.L.
PAH	INDENO(1,2,3-CD)PYRENE	6 J	UG/KG	22 J	114.29	16.00 N/A <2XR.L.
PAH	PYRENE	ND	UG/KG	21 J	200.00	21.00 N/A <2XR.L.

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8908

FRACTION	CHEMICAL	TF2-SB-DUP04-1113	UNITS	TF2-004/5-SB1021-0204	RPD	D
M	ALUMINUM	15100	MG/KG	13900	8.28	1200.00
M	ANTIMONY	0.06 J	MG/KG	0.04 J	40.00	0.02
M	ARSENIC	9.9 J	MG/KG	7.4 J	28.90	2.50
M	BARIUM	13	MG/KG	10.2	24.14	2.80
M	BERYLLIUM	0.4	MG/KG	0.26	42.42	0.14
M	CADMIUM	0.08	MG/KG	0.07	13.33	0.01
M	CALCIUM	713	MG/KG	655	8.48	58.00
M	CHROMIUM	19 J	MG/KG	18.9 J	0.53	0.10
M	COBALT	19	MG/KG	14.6	26.19	4.40
M	COPPER	24.8 J	MG/KG	22.6 J	9.28	2.20
M	IRON	31500	MG/KG	29100	7.92	2400.00
M	LEAD	12.5	MG/KG	8.9	33.64	3.60
M	MAGNESIUM	4810	MG/KG	4690	2.53	120.00
M	MANGANESE	340	MG/KG	276	20.78	64.00
M	MERCURY	0.01 J	MG/KG	0.04	120.00	0.03 NA 2X RL
M	NICKEL	27.1 J	MG/KG	27 J	0.37	0.10
M	POTASSIUM	317	MG/KG	226	33.52	91.00
M	SILVER	0.02 J	MG/KG	0.02 J	0.00	0.00
M	SODIUM	22 J	MG/KG	19.2 J	13.59	2.80
M	THALLIUM	0.03 J	MG/KG	0.02 J	40.00	0.01
M	VANADIUM	17.2	MG/KG	15	13.66	2.20
M	ZINC	57.5 J	MG/KG	58.9 J	2.41	1.40

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8908

FRACTION	CHEMICAL	TF2-SB-DUP04-1113	UNITS	TF2-004/5-SB1021-0204	RPD	D
MISC	TOTAL SOLIDS	93	%	92	1.08	1.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

Tetra Tech **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **FEBRUARY 13, 2014**

FROM: **EDWARD SEDLMYER** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PCDD/PCDF**
NAVSTA NEWPORT, CTO WE30
SAMPLE DELIVERY GROUP (SDG) 320-5001-1

SAMPLES: 20 / Soil / PCDD/PCDF

TF2-004/5-SB1021-0204	TF2-004/5-SB1025-2.604	TF2-004/5-SB1026-0204
TF2-004/5-SB1031-0204	TF2-004/5-SB1032-0204	TF2-004/5-SB1038-0204
TF2-004/5-SB1040-0204	TF2-004/5-SB1041-022.5	TF2-004/5-SB1043-0.10.5
TF2-004/5-SB1047-0204	TF2-004/5-SB1048-0204	TF2-004/5-SB1049-0204
TF2-004/5-SB1057-0304	TF2-004/5-SB1058-0204	TF2-004/5-SB1064-0204
TF2-004/5-SB1065-0204	TF2-004/5-SB1066-0203	TF2-004/5-SB1068-0204
TF2-SB-DUP04-1113	TF2-SB-DUP06-1113	

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG 320-5001-1 consisted of twenty (20) soil samples. All samples were analyzed for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDF), as indicated above. Two (2) field duplicate sample pairs were included in this sample delivery group (SDG): TF2-004/5-SB1021-0204 / TF2-SB-DUP04-1113 and TF2-004/5-SB1068-0204 / TF2-SB-DUP06-1113.

The samples were collected by Tetra Tech on November 13 and 14, 2013 and analyzed by TestAmerica Laboratories Inc. All analyses were conducted in accordance with EPA SW-846 Method 8290A for PCDDs and PCDFs, analytical and reporting protocols.

The data contained in this SDG were fully validated Tier II with regard to the following parameters:

	• Data completeness
*	• Hold times
*	• Mass Calibration
*	• HRGC/HRMS Tuning and System Performance
*	• Chromatographic Resolution /Window Defining Mixtures
	• Initial and continuing calibration
	• Method Blank results
*	• Blank Spike/Blank Spike Duplicate Results
	• Matrix Spike/Matrix Spike Duplicate Results
*	• Clean-up Standard Recoveries
	• Internal Standard Recoveries
*	• Field Duplicate Precision
*	• Estimated Detection Limits
	• Compound Quantitation
*	• Compound Identification

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified

Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

HOLD TIME

Samples associated with extraction batch 320-30804 were re-extracted outside the 45 day hold time listed in the recommendations for the analytical method due to low surrogate recoveries in the method blank. However, no validation action was taken as PCDDs/PCDFs are considered very stable. Per the SW846 8290A method, "The holding times listed in this method are recommendations. PCDDs and PCDFs are very stable in a variety of matrices, and holding times under the conditions listed in this section may be as long as a year for certain matrices." The re-extracted results were used for validation because all surrogate recoveries met percent recovery limits.

BLANKS

The following compounds were detected in the method blanks at the maximum concentrations indicated below.

Compound	Maximum Conc. ng/kg	Action Level ng/kg
1,2,3,4,7,8-HxCDF[1]	0.235	1.175
1,2,3,4,6,7,8-HpCDD[1]	0.239	1.195
1,2,3,4,6,7,8-HpCDF[1]	0.496	2.48
1,2,3,4,7,8,9-HpCDF[1]	0.117	0.585
OCDD[1]	2.4	24
OCDF[1]	0.940	9.4
Total HxCDF[1]	0.294	1.47
Total HpCDD[1]	0.501	2.505
Total HpCDF [1]	0.614	3.07
1,2,3,6,7,8-HxCDD[2]	0.0259	0.1295
1,2,3,4,7,8-HxCDF[2]	0.0676	0.338
1,2,3,4,6,7,8-HpCDF[2]	0.205	1.025
OCDD[2]	0.397	3.97
OCDF[2]	0.254	2.54
Total HxCDD[2]	0.0259	0.1295
Total HxCDF[2]	0.0676	0.338
Total HpCDF[2]	0.205	1.025

(1) Method blank 320-30809 affecting samples TF2-004/5-SB1031-0204, TF2-004/5-SB1040-0204, TF2-004/5-SB1049-0204, TF2-004/5-SB1065-0204, TF2-004/5-SB1068-0204 and TF2-SB-DUP06-1113.

(2) Method blank 320-32631 affecting samples TF2-004/5-SB1021-0204, TF2-004/5-SB1025-2.604, TF2-004/5-SB1026-0204, TF2-004/5-SB1032-0204, TF2-004/5-SB1038-0204, TF2-004/5-SB1041-022.5, TF2-004/5-SB1043-0.10.5, TF2-004/5-SB1047-0204, TF2-004/5-SB1048-0204, TF2-004/5-SB1057-0304, TF2-004/5-SB1058-0204, TF2-004/5-SB1064-0204, and TF2-004/5-SB1066-0203.

An action level of 10X for the maximum level for OCDD and OCDF, 5X for the other PCDD/PCDFs has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination for each individual sample. Detected results less than the blank action level were qualified (U) as a result of laboratory blank contamination.

CALIBRATIONS

The continuing calibration verification (CCV) percent difference (%D) was greater than the 20% quality control limit for 2,3,7,8-TCDF on 1/03/14 @ 22:13 on instrument 11D5. The detected and nondetected 2,3,7,8-TCDF results for samples TF2-004/5-SB1064-0204, TF2-SB-DUP04-1113, TF2-004/5-SB1066-0203, TF2-004/5-SB1047-0204, and TF2-004/5-SB1038-0204 were qualified as estimated (J) and (UJ), respectively.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

The matrix spike / matrix spike duplicate associated with batch 320-30809 had a relative percent difference (RPD) greater than the laboratory control limit for 1,2,3,4,7,8,9-HpCDF. No action was taken on this basis because the spike recoveries were acceptable.

INTERNAL STANDARD RECOVERY

The internal standard recovery for 13C-1,2,3,7,8-PeCDF in sample TF2-004/5-SB1049-0204 was below the 40% lower quality control limit. The detected and nondetected results for 1,2,3,7,8-PeCDF and 2,3,4,7,8-PeCDF were qualified as estimated (J) and (UJ), respectively.

The internal standard recovery for 13C-2,3,7,8-TCDF in sample TF2-004/5-SB1049-0204 was below the 40% lower quality control limit for the confirmation column sample re-analysis for 2,3,7,8-TCDF. The nondetected result for 2,3,7,8-TCDF was qualified as estimated (UJ).

COMPOUND QUANTIFICATION

Positive sample analyte results with ion ratios outside of the limits were reported as EMPC (estimated maximum possible concentration) results and were qualified estimated, (J).

ADDITIONAL COMMENTS

Positive sample analyte results below the reporting limit (RL) but above the estimated detection limit (EDL) were qualified estimated, (J).

Samples were analyzed both undiluted and at a 10X dilution for OCDD as listed below due to the undiluted OCDD analysis results exceeding the highest calibration standard. Only the 10X diluted OCDD results were reported for the samples.

Affected Samples:

TF2-004/5-SB1021-0204	TF2-004/5-SB1032-0204	TF2-004/5-SB1038-0204
TF2-004/5-SB1041-022.5	TF2-004/5-SB1047-0204	TF2-004/5-SB1066-0203

The laboratory did not associate the correct method blanks with the appropriate samples for the re-extracted analysis. The laboratory was contacted and a correct revised package was submitted.

Non-detected sample analyte results were reported at the EDL.

EXECUTIVE SUMMARY

Laboratory Performance: Blank contamination resulted in the qualification of results. CCV %D noncompliance for 2,3,7,8-TCDF resulted in the qualification of data. Internal standard recovery noncompliances resulted in the qualification of data.

Other Factors Affecting Data Quality: Positive results reported below the RL but above the EDL were qualified as estimated, (J). Positive sample analyte results reported as EMPC (estimated maximum possible concentration) results were qualified estimated, (J).

The data for these analyses were reviewed with reference to the EPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans (Sept. 2011), to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Guidance/Procedures Attachment 2-3b: Example Organic Data Review Worksheets (1/13) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Edward Sedlmyer
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1021-0204-RE			TF2-004/5-SB1025-2.604-RE			TF2-004/5-SB1026-0204-RE			TF2-004/5-SB1031-0204		
SDG: 320-5001-1	LAB_ID	320-5001-5			320-5001-4			320-5001-3			320-5001-15		
FRACTION: DIOX	SAMP_DATE	11/13/2013			11/13/2013			11/13/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.4			98.2			93.7			90.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		5700			2000			1700			1900		
1,2,3,4,6,7,8,9-OCDF		1.5	U	A	0.69	U	A	9.5	J	P	1.1	U	A
1,2,3,4,6,7,8-HPCDD		22			9.1			19			7.9		
1,2,3,4,6,7,8-HPCDF		0.47	U	A	0.32	U	A	5.9			1.3	U	A
1,2,3,4,7,8,9-HPCDF		0.034	U		0.028	U		0.085	U		0.023	U	
1,2,3,4,7,8-HXCDD		0.088	J	P	0.08	J	P	0.36	J	P	0.081	J	PW
1,2,3,4,7,8-HXCDF		0.15	U	A	0.22	U	A	0.5	J	PW	0.65	U	A
1,2,3,6,7,8-HXCDD		0.087	U	A	0.071	U	A	0.71	J	P	0.14	J	P
1,2,3,6,7,8-HXCDF		0.36	J	P	0.16	J	PW	0.7	J	P	0.42	J	P
1,2,3,7,8,9-HXCDD		0.15	J	P	0.13	J	PW	0.81	J	P	0.19	J	P
1,2,3,7,8,9-HXCDF		0.031	U		0.024	U		0.044	U		0.094	J	P
1,2,3,7,8-PECDD		0.072	U		0.039	U		0.18	J	P	0.035	U	
1,2,3,7,8-PECDF		0.028	U		0.051	J	PW	0.045	U		0.026	U	
2,3,4,6,7,8-HXCDF		0.12	J	P	0.022	U		1	J	P	0.02	U	
2,3,4,7,8-PECDF		0.029	U		0.062	J	P	0.18	J	P	0.12	J	PW
2,3,7,8-TCDD		0.032	U		0.033	U		0.03	U		0.027	U	
2,3,7,8-TCDF		0.43	U		0.28	U		0.34	U		0.099	U	
TOTAL HPCDD		38			16			38			13		
TOTAL HPCDF		1	U	A	0.43	U	A	15			1.5	U	A
TOTAL HXCDD		1.6	J	PW	0.93	J	PW	6	J	W	1.2	J	PW
TOTAL HXCDF		1.6	J	PW	0.48	J	PW	19	J	W	1.8	J	PW
TOTAL PECDD		0.072	U		0.043	J	PW	0.18	J	P	1	J	PW
TOTAL PECDF		1.1	J	PW	0.31	J	PW	9.6	J	W	0.88	J	PW
TOTAL TCDD		0.81	J	PW	0.49	J	P	0.19	J	P	0.5	J	PW
TOTAL TCDF		0.63	J	PW	0.86	J	PW	2	J	W	1	J	PW

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1032-0204-RE			TF2-004/5-SB1038-0204-RE			TF2-004/5-SB1040-0204			TF2-004/5-SB1041-022.5-RE		
SDG: 320-5001-1	LAB_ID	320-5001-1			320-5001-14			320-5001-16			320-5001-7		
FRACTION: DIOX	SAMP_DATE	11/13/2013			11/14/2013			11/14/2013			11/13/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	90.1			91.3			94.3			93.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		5500			5000			3400			8800		
1,2,3,4,6,7,8,9-OCDF		1.5	U	A	1.8	U	A	1	U	A	1.3	U	A
1,2,3,4,6,7,8-HPCDD		24			25			17			40		
1,2,3,4,6,7,8-HPCDF		0.34	U	A	0.82	U	A	0.56	U	A	0.27	U	A
1,2,3,4,7,8,9-HPCDF		0.086	J	PW	0.052	U		0.02	U		0.035	U	
1,2,3,4,7,8-HXCDD		0.19	J	P	0.16	J	P	0.03	U		0.13	J	P
1,2,3,4,7,8-HXCDF		0.08	U	A	0.44	J	P	0.18	U	A	0.096	U	A
1,2,3,6,7,8-HXCDD		0.099	U	A	0.19	J	P	0.2	J	PW	0.11	U	A
1,2,3,6,7,8-HXCDF		0.6	J	P	0.22	U	A	0.35	J	P	0.17	J	P
1,2,3,7,8,9-HXCDD		0.18	J	P	0.061	U		0.13	J	PW	0.13	J	PW
1,2,3,7,8,9-HXCDF		0.032	U		0.04	U		0.018	U		0.049	J	PW
1,2,3,7,8-PECDD		0.069	U		0.078	U		0.035	U		0.048	U	
1,2,3,7,8-PECDF		0.035	U		0.054	J	P	0.024	U		0.03	U	
2,3,4,6,7,8-HXCDF		0.029	U		0.12	J	P	0.016	U		0.022	U	
2,3,4,7,8-PECDF		0.037	U		0.046	U		0.062	J	P	0.031	U	
2,3,7,8-TCDD		0.033	U		0.051	U		0.028	U		0.033	U	
2,3,7,8-TCDF		0.42	U		0.072	UJ	C	0.19	U		0.02	U	
TOTAL HPCDD		40			43			25			69		
TOTAL HPCDF		0.62	U	A	1.6	J	P	0.89	U	A	0.4	U	A
TOTAL HXCDD		1	J	PW	1.5	J	PW	0.95	J	PW	1.3	J	PW
TOTAL HXCDF		0.92	J	PW	1.7	J	PW	1.1	U	A	0.49	J	PW
TOTAL PECDD		0.069	U		0.83	J	PW	0.53	J	PW	0.048	U	
TOTAL PECDF		0.1	J	P	0.85	J	PW	0.45	J	PW	0.18	J	PW
TOTAL TCDD		0.84	J	PW	0.54	J	PW	0.14	J	PW	0.4	J	PW
TOTAL TCDF		0.67	J	PW	0.92	J	PW	0.47	J	PW	0.55	J	P

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1043-0.10.5-RE			TF2-004/5-SB1047-0204-RE			TF2-004/5-SB1048-0204-RE			TF2-004/5-SB1049-0204		
SDG: 320-5001-1	LAB_ID	320-5001-6			320-5001-13			320-5001-2			320-5001-17		
FRACTION: DIOX	SAMP_DATE	11/13/2013			11/14/2013			11/13/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.2			90.6			91.5			90.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		1700			5800			1400			1300		
1,2,3,4,6,7,8,9-OCDF		10	J	P	1	U	A	0.64	U	A	2.2	U	A
1,2,3,4,6,7,8-HPCDD		32			27			9.3			6		
1,2,3,4,6,7,8-HPCDF		5.9			0.59	U	A	0.65	U	A	1.1	U	A
1,2,3,4,7,8,9-HPCDF		0.077	U		0.048	U		0.12	J	PW	0.038	U	
1,2,3,4,7,8-HXCDD		0.44	J	P	0.22	J	P	0.1	J	PW	0.033	U	
1,2,3,4,7,8-HXCDF		0.98	J	P	0.5	J	P	0.5	J	PW	0.43	U	A
1,2,3,6,7,8-HXCDD		1.4	J	P	0.27	J	P	0.24	J	PW	0.095	J	PW
1,2,3,6,7,8-HXCDF		0.64	J	P	0.4	U	A	0.45	J	P	0.4	J	P
1,2,3,7,8,9-HXCDD		1	J	P	0.26	J	PW	0.25	J	PW	0.19	J	P
1,2,3,7,8,9-HXCDF		0.19	J	P	0.17	J	PW	0.26	J	P	0.025	U	
1,2,3,7,8-PECDD		0.047	U		0.1	U		0.039	U		0.047	UJ	N01
1,2,3,7,8-PECDF		0.15	J	PW	0.092	J	PW	0.054	J	P	0.034	UJ	N01
2,3,4,6,7,8-HXCDF		0.88	J	P	0.074	J	PW	0.66	J	PW	0.1	J	P
2,3,4,7,8-PECDF		0.18	J	PW	0.12	J	P	0.18	J	P	0.13	J	PW
2,3,7,8-TCDD		0.028	U		0.059	U		0.031	U		0.03	U	
2,3,7,8-TCDF		0.32	U		0.12	UJ	C	0.55	U		0.13	UJ	N01
TOTAL HPCDD		57			45			19			10		
TOTAL HPCDF		14			1.1	U	A	1.4	J	PW	1.6	U	A
TOTAL HXCDD		9.1	J	W	3.1	J	PW	3.3	J	PW	1	J	PW
TOTAL HXCDF		10			2.6	J	PW	6	J	W	1.4	U	A
TOTAL PECDD		0.047	U		1.7	J	PW	0.039	U		0.37	J	P
TOTAL PECDF		4.4	J	PW	3.7	J	PW	5.2	J	PW	0.43	J	PW
TOTAL TCDD		0.36	J	PW	0.55	J	P	0.26	J	PW	0.47	J	PW
TOTAL TCDF		2.4	J	W	2.2	J	W	2	J	W	0.46	J	PW

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1057-0304-RE	TF2-004/5-SB1058-0204-RE	TF2-004/5-SB1064-0204-RE	TF2-004/5-SB1065-0204
SDG: 320-5001-1	LAB_ID	320-5001-12	320-5001-8	320-5001-9	320-5001-18
FRACTION: DIOX	SAMP_DATE	11/14/2013	11/13/2013	11/13/2013	11/14/2013
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM
	UNITS	NG/KG	NG/KG	NG/KG	NG/KG
	PCT_SOLIDS	91.4	93.9	95.2	94.4
	DUP_OF				

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD	1600			2000			2100			3000		
1,2,3,4,6,7,8,9-OCDF	0.32	U	A	1.9	U	A	7.6	J	P	1.6	U	A
1,2,3,4,6,7,8-HPCDD	7			8.4			20			11		
1,2,3,4,6,7,8-HPCDF	0.19	U	A	0.58	U	A	3.5	J	P	1	U	A
1,2,3,4,7,8,9-HPCDF	0.038	U		0.031	U		0.067	U		0.2	U	A
1,2,3,4,7,8-HXCDD	0.064	U		0.032	U		0.15	J	PW	0.1	J	P
1,2,3,4,7,8-HXCDF	0.08	U	A	0.13	U	A	0.38	J	P	0.37	U	A
1,2,3,6,7,8-HXCDD	0.045	U		0.022	U		0.68	J	P	0.13	J	P
1,2,3,6,7,8-HXCDF	0.25	U	A	0.29	J	P	0.48	J	P	0.49	J	P
1,2,3,7,8,9-HXCDD	0.047	U		0.11	J	P	0.42	J	PW	0.15	J	PW
1,2,3,7,8,9-HXCDF	0.03	U		0.024	U		0.04	U		0.022	U	
1,2,3,7,8-PECDD	0.068	U		0.039	U		0.069	U		0.034	U	
1,2,3,7,8-PECDF	0.035	U		0.027	U		0.034	U		0.021	U	
2,3,4,6,7,8-HXCDF	0.027	U		0.021	U		0.26	J	P	0.16	J	PW
2,3,4,7,8-PECDF	0.037	U		0.029	U		0.035	U		0.086	J	PW
2,3,7,8-TCDD	0.043	U		0.037	J	PW	0.038	U		0.03	U	
2,3,7,8-TCDF	0.021	U		0.017	U		0.071	UJ	C	0.084	U	
TOTAL HPCDD	12			14	J	W	35			19		
TOTAL HPCDF	0.26	U	A	1.2	J	PW	8.9			1.7	U	A
TOTAL HXCDD	0.27	J	P	0.46	J	PW	3.8	J	PW	1	J	PW
TOTAL HXCDF	0.33	U	A	0.62	J	PW	5.5	J	W	1.9	J	PW
TOTAL PECDD	0.82	J	P	0.36	J	P	0.069	U		0.18	J	PW
TOTAL PECDF	0.037	U		0.11	J	PW	2.3	J	P	1	J	PW
TOTAL TCDD	0.7	J	PW	0.2	J	PW	0.29	J	PW	0.1	J	P
TOTAL TCDF	0.33	J	PW	0.11	J	PW	1.2	J	W	0.69	J	PW

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SB1066-0203-RE			TF2-004/5-SB1068-0204			TF2-SB-DUP04-1113-RE			TF2-SB-DUP06-1113		
SDG: 320-5001-1	LAB_ID	320-5001-11			320-5001-19			320-5001-10			320-5001-20		
FRACTION: DIOX	SAMP_DATE	11/14/2013			11/14/2013			11/13/2013			11/14/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			FD			FD		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	96.9			89.9			93.6			89.7		
	DUP_OF							TF2-004/5-SB1021-0204			TF2-004/5-SB1068-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		7300			1900			2800			2600		
1,2,3,4,6,7,8,9-OCDF		21			0.91	U	A	1.8	U	A	0.77	U	A
1,2,3,4,6,7,8-HPCDD		75			6.3			15			7.6		
1,2,3,4,6,7,8-HPCDF		11			0.73	U	A	0.62	U	A	0.72	U	A
1,2,3,4,7,8,9-HPCDF		0.12	U		0.11	U	A	0.038	U		0.024	U	
1,2,3,4,7,8-HXCDD		1.1	J	P	0.026	U		0.079	U		0.027	U	
1,2,3,4,7,8-HXCDF		1.3	J	PW	0.31	U	A	0.16	U	A	0.4	U	A
1,2,3,6,7,8-HXCDD		2.7	J	P	0.023	U		0.056	U		0.066	J	PW
1,2,3,6,7,8-HXCDF		0.99	J	P	0.12	J	PW	0.34	J	PW	0.1	J	PW
1,2,3,7,8,9-HXCDD		2.6	J	P	0.13	J	PW	0.058	U		0.11	J	PW
1,2,3,7,8,9-HXCDF		0.19	J	PW	0.017	U		0.031	U		0.017	U	
1,2,3,7,8-PECDD		0.74	J	P	0.038	U		0.05	U		0.044	U	
1,2,3,7,8-PECDF		0.2	J	PW	0.022	U		0.032	U		0.023	U	
2,3,4,6,7,8-HXCDF		1.7	J	P	0.07	J	PW	0.12	J	PW	0.067	J	P
2,3,4,7,8-PECDF		0.41	J	P	0.065	J	P	0.033	U		0.066	J	PW
2,3,7,8-TCDD		0.051	U		0.023	U		0.029	U		0.034	U	
2,3,7,8-TCDF		0.23	J	CP	0.015	U		0.044	UJ	C	0.085	U	
TOTAL HPCDD		150			10			25			13		
TOTAL HPCDF		26			0.99	U	A	1.6	J	P	0.72	U	A
TOTAL HXCDD		21	J	W	0.79	J	PW	0.57	J	PW	0.85	J	PW
TOTAL HXCDF		22	J	W	0.67	U	A	1.8	J	PW	0.85	U	A
TOTAL PECDD		6.1	J	W	1	J	PW	0.67	J	PW	1.1	J	PW
TOTAL PECDF		11	J	W	0.15	J	PW	1	J	PW	0.18	J	PW
TOTAL TCDD		2.5	J	W	1.6	J	W	0.34	J	P	1.5	J	W
TOTAL TCDF		5.4	J	W	0.35	J	PW	0.64	J	PW	0.51	J	PW

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1021-0204 Lab Sample ID: 320-5001-5

Matrix: Solid Lab File ID: 24DE133D5_10.d

Analysis Method: 8290A Date Collected: 11/13/2013 10:48

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.20(g) Date Analyzed: 12/24/2013 16:21

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.047
51207-31-9	2,3,7,8-TCDF	0.11	J	1.0	0.029
40321-76-4	1,2,3,7,8-PeCDD	ND		5.2	0.072
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.053
57117-31-4	2,3,4,7,8-PeCDF	ND		5.2	0.055
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.2	0.052
57653-85-7	1,2,3,6,7,8-HxCDD	0.13	J B q	5.2	0.037
19408-74-3	1,2,3,7,8,9-HxCDD	0.10	J B q	5.2	0.038
70648-26-9	1,2,3,4,7,8-HxCDF	0.29	J B q	5.2	0.047
57117-44-9	1,2,3,6,7,8-HxCDF	0.33	J	5.2	0.035
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.045
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.2	0.041
35822-46-9	1,2,3,4,6,7,8-HpCDD	13	B q	5.2	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.82	J B	5.2	0.050
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.2	0.059
3268-87-9	OCDD	2500	B	10	0.97
39001-02-0	OCDF	1.9	J B	10	0.091
41903-57-5	Total TCDD	0.076	J q	1.0	0.047
30402-14-3	Total TCDF	0.43	J q	1.0	0.029
36088-22-9	Total PeCDD	0.70	J B	5.2	0.072
30402-15-4	Total PeCDF	0.75	J B q	5.2	0.054
34465-46-8	Total HxCDD	0.99	J B q	5.2	0.043
55684-94-1	Total HxCDF	1.4	J B q	5.2	0.042
37871-00-4	Total HpCDD	21	B q	5.2	0.20
38998-75-3	Total HpCDF	1.4	J B q	5.2	0.055

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1021-0204 Lab Sample ID: 320-5001-5

Matrix: Solid Lab File ID: 24DE133D5_10.d

Analysis Method: 8290A Date Collected: 11/13/2013 10:48

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.20(g) Date Analyzed: 12/24/2013 16:21

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	49		40-135
89059-46-1	13C-2,3,7,8-TCDF	48		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	45		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	42		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	51		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	44		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	53		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	45		40-135
114423-97-1	13C-OCDD	55		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1021-0204 RE Lab Sample ID: 320-5001-5 RE

Matrix: Solid Lab File ID: 03JA143D5_10.d

Analysis Method: 8290A Date Collected: 11/13/2013 10:48

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.14(g) Date Analyzed: 01/03/2014 19:00

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	H	1.1	0.032
40321-76-4	1,2,3,7,8-PeCDD	ND	H	5.3	0.072
57117-41-6	1,2,3,7,8-PeCDF	ND	H	5.3	0.028
57117-31-4	2,3,4,7,8-PeCDF	ND	H	5.3	0.029
39227-28-6	1,2,3,4,7,8-HxCDD	0.088	J H	5.3	0.038
57653-85-7	1,2,3,6,7,8-HxCDD	0.087	J H q B	5.3	0.026
19408-74-3	1,2,3,7,8,9-HxCDD	0.15	J H	5.3	0.027
70648-26-9	1,2,3,4,7,8-HxCDF	0.15	J H q B	5.3	0.032
57117-44-9	1,2,3,6,7,8-HxCDF	0.36	J H	5.3	0.024
72918-21-9	1,2,3,7,8,9-HxCDF	ND	H	5.3	0.031
60851-34-5	2,3,4,6,7,8-HxCDF	0.12	J H	5.3	0.028
35822-46-9	1,2,3,4,6,7,8-HpCDD	22	H	5.3	0.13
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.47	J H q B	5.3	0.029
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND	H	5.3	0.034
39001-02-0	OCDF	1.5	J H q B	11	0.051
41903-57-5	Total TCDD	0.81	J H q	1.1	0.032
30402-14-3	Total TCDF	0.63	J H q	1.1	0.018
36088-22-9	Total PeCDD	ND	H	5.3	0.072
30402-15-4	Total PeCDF	1.1	J H q	5.3	0.028
34465-46-8	Total HxCDD	1.6	J H q B	5.3	0.030
55684-94-1	Total HxCDF	1.6	J H q B	5.3	0.029
37871-00-4	Total HpCDD	38	H	5.3	0.13
38998-75-3	Total HpCDF	1.0	J H q B	5.3	0.032

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1021-0204 RE | Lab Sample ID: 320-5001-5 RE

Matrix: Solid | Lab File ID: 03JA143D5_10.d

Analysis Method: 8290A | Date Collected: 11/13/2013 10:48

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.14(g) | Date Analyzed: 01/03/2014 19:00

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	58		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	63		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	58		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	57		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	75		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1021-0204 | Lab Sample ID: 320-5001-5 RERA

Matrix: Solid | Lab File ID: 03JA14A5D2_009.d

Analysis Method: 8290A | Date Collected: 11/13/2013 10:48

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.14(g) | Date Analyzed: 01/04/2014 02:19

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33232 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	H	1.1	0.43

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		40-135
89059-46-1	13C-2,3,7,8-TCDF	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1021-0204 | Lab Sample ID: 320-5001-5 REDL

Matrix: Solid | Lab File ID: 03JA1410D5_34.d

Analysis Method: 8290A | Date Collected: 11/13/2013 10:48

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.14(g) | Date Analyzed: 01/04/2014 11:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33225 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	5700	H B	110	1.6

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		40-135
89059-46-1	13C-2,3,7,8-TCDF	67		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	61		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	63		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	79		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	65		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	69		40-135
114423-97-1	13C-OCDD	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1025-2.604 | Lab Sample ID: 320-5001-4

Matrix: Solid | Lab File ID: 24DE133D5_9.d

Analysis Method: 8290A | Date Collected: 11/13/2013 10:45

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.04(g) | Date Analyzed: 12/24/2013 15:39

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 1.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.031
51207-31-9	2,3,7,8-TCDF	0.20	J	1.0	0.028
40321-76-4	1,2,3,7,8-PeCDD	ND		5.1	0.059
57117-41-6	1,2,3,7,8-PeCDF	ND		5.1	0.043
57117-31-4	2,3,4,7,8-PeCDF	ND		5.1	0.045
39227-28-6	1,2,3,4,7,8-HxCDD	0.13	J	5.1	0.064
57653-85-7	1,2,3,6,7,8-HxCDD	0.098	J B q	5.1	0.045
19408-74-3	1,2,3,7,8,9-HxCDD	0.14	J B q	5.1	0.047
70648-26-9	1,2,3,4,7,8-HxCDF	0.22	J B q	5.1	0.035
57117-44-9	1,2,3,6,7,8-HxCDF	0.28	J	5.1	0.026
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.034
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.1	0.030
35822-46-9	1,2,3,4,6,7,8-HpCDD	8.3	B	5.1	0.13
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.49	J B q	5.1	0.043
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.1	0.050
3268-87-9	OCDD	1300	B	10	0.59
39001-02-0	OCDF	0.97	J B	10	0.063
41903-57-5	Total TCDD	0.44	J q	1.0	0.031
30402-14-3	Total TCDF	0.69	J q	1.0	0.028
36088-22-9	Total PeCDD	0.48	J B	5.1	0.059
30402-15-4	Total PeCDF	ND		5.1	0.045
34465-46-8	Total HxCDD	1.1	J B q	5.1	0.052
55684-94-1	Total HxCDF	0.73	J B q	5.1	0.031
37871-00-4	Total HpCDD	15	B	5.1	0.13
38998-75-3	Total HpCDF	0.49	J B q	5.1	0.047

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1025-2.604 | Lab Sample ID: 320-5001-4

Matrix: Solid | Lab File ID: 24DE133D5_9.d

Analysis Method: 8290A | Date Collected: 11/13/2013 10:45

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.04(g) | Date Analyzed: 12/24/2013 15:39

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 1.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	57		40-135
89059-46-1	13C-2,3,7,8-TCDF	52		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	53		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	50		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	60		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	50		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	59		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	57		40-135
114423-97-1	13C-OCDD	67		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1025-2.604 RE Lab Sample ID: 320-5001-4 RE

Matrix: Solid Lab File ID: 03JA143D5_09.d

Analysis Method: 8290A Date Collected: 11/13/2013 10:45

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.10(g) Date Analyzed: 01/03/2014 18:18

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 1.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	H	1.0	0.033
40321-76-4	1,2,3,7,8-PeCDD	ND	H	5.0	0.039
57117-41-6	1,2,3,7,8-PeCDF	0.051	J H q	5.0	0.028
57117-31-4	2,3,4,7,8-PeCDF	0.062	J H	5.0	0.029
39227-28-6	1,2,3,4,7,8-HxCDD	0.080	J H	5.0	0.035
57653-85-7	1,2,3,6,7,8-HxCDD	0.071	J H q B	5.0	0.025
19408-74-3	1,2,3,7,8,9-HxCDD	0.13	J H q	5.0	0.026
70648-26-9	1,2,3,4,7,8-HxCDF	0.22	J H B	5.0	0.025
57117-44-9	1,2,3,6,7,8-HxCDF	0.16	J H q	5.0	0.019
72918-21-9	1,2,3,7,8,9-HxCDF	ND	H	5.0	0.024
60851-34-5	2,3,4,6,7,8-HxCDF	ND	H	5.0	0.022
35822-46-9	1,2,3,4,6,7,8-HpCDD	9.1	H	5.0	0.10
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.32	J H q B	5.0	0.024
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND	H	5.0	0.028
3268-87-9	OCDD	2000	H B	10	0.58
39001-02-0	OCDF	0.69	J H B	10	0.046
41903-57-5	Total TCDD	0.49	J H	1.0	0.033
30402-14-3	Total TCDF	0.86	J H q	1.0	0.016
36088-22-9	Total PeCDD	0.043	J H q	5.0	0.039
30402-15-4	Total PeCDF	0.31	J H q	5.0	0.028
34465-46-8	Total HxCDD	0.93	J H q B	5.0	0.029
55684-94-1	Total HxCDF	0.48	J H q B	5.0	0.023
37871-00-4	Total HpCDD	16	H	5.0	0.10
38998-75-3	Total HpCDF	0.43	J H q B	5.0	0.026

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1025-2.604 RE | Lab Sample ID: 320-5001-4 RE

Matrix: Solid | Lab File ID: 03JA143D5_09.d

Analysis Method: 8290A | Date Collected: 11/13/2013 10:45

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.10(g) | Date Analyzed: 01/03/2014 18:18

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 1.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		40-135
89059-46-1	13C-2,3,7,8-TCDF	56		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	66		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	59		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	68		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	55		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1025-2.604 | Lab Sample ID: 320-5001-4 RERA

Matrix: Solid | Lab File ID: 03JA14A5D2_008.d

Analysis Method: 8290A | Date Collected: 11/13/2013 10:45

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.10(g) | Date Analyzed: 01/04/2014 01:42

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 1.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33232 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	H	1.0	0.28

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	61		40-135
89059-46-1	13C-2,3,7,8-TCDF	65		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1026-0204 | Lab Sample ID: 320-5001-3

Matrix: Solid | Lab File ID: 24DE133D5_8.d

Analysis Method: 8290A | Date Collected: 11/13/2013 10:15

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.40(g) | Date Analyzed: 12/24/2013 14:57

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.035
51207-31-9	2,3,7,8-TCDF	0.21	J	1.0	0.037
40321-76-4	1,2,3,7,8-PeCDD	0.30	J B	5.1	0.065
57117-41-6	1,2,3,7,8-PeCDF	ND		5.1	0.051
57117-31-4	2,3,4,7,8-PeCDF	0.24	J B	5.1	0.054
39227-28-6	1,2,3,4,7,8-HxCDD	0.37	J q	5.1	0.067
57653-85-7	1,2,3,6,7,8-HxCDD	0.92	J B	5.1	0.047
19408-74-3	1,2,3,7,8,9-HxCDD	0.84	J B	5.1	0.049
70648-26-9	1,2,3,4,7,8-HxCDF	0.83	J B	5.1	0.065
57117-44-9	1,2,3,6,7,8-HxCDF	1.0	J	5.1	0.048
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.062
60851-34-5	2,3,4,6,7,8-HxCDF	1.1	J B	5.1	0.056
35822-46-9	1,2,3,4,6,7,8-HpCDD	22	B	5.1	0.17
67562-39-4	1,2,3,4,6,7,8-HpCDF	6.1	B	5.1	0.092
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.40	J	5.1	0.11
3268-87-9	OCDD	1700	B	10	0.71
39001-02-0	OCDF	10	B	10	0.089
41903-57-5	Total TCDD	0.25	J q	1.0	0.035
30402-14-3	Total TCDF	2.5	q	1.0	0.037
36088-22-9	Total PeCDD	1.0	J B q	5.1	0.065
30402-15-4	Total PeCDF	11	B q	5.1	0.052
34465-46-8	Total HxCDD	7.1	B q	5.1	0.054
55684-94-1	Total HxCDF	22	B	5.1	0.058
37871-00-4	Total HpCDD	42	B	5.1	0.17
38998-75-3	Total HpCDF	16	B	5.1	0.10

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1026-0204 Lab Sample ID: 320-5001-3

Matrix: Solid Lab File ID: 24DE133D5_8.d

Analysis Method: 8290A Date Collected: 11/13/2013 10:15

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.40(g) Date Analyzed: 12/24/2013 14:57

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	56		40-135
89059-46-1	13C-2,3,7,8-TCDF	50		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	53		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	51		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	56		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	51		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	59		40-135
114423-97-1	13C-OCDD	66		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1026-0204 RE Lab Sample ID: 320-5001-3 RE

Matrix: Solid Lab File ID: 03JA143D5_08.d

Analysis Method: 8290A Date Collected: 11/13/2013 10:15

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.06(g) Date Analyzed: 01/03/2014 17:36

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	H	1.1	0.030
40321-76-4	1,2,3,7,8-PeCDD	0.18	J H	5.3	0.052
57117-41-6	1,2,3,7,8-PeCDF	ND	H	5.3	0.045
57117-31-4	2,3,4,7,8-PeCDF	0.18	J H	5.3	0.047
39227-28-6	1,2,3,4,7,8-HxCDD	0.36	J H	5.3	0.065
57653-85-7	1,2,3,6,7,8-HxCDD	0.71	J H B	5.3	0.046
19408-74-3	1,2,3,7,8,9-HxCDD	0.81	J H	5.3	0.047
70648-26-9	1,2,3,4,7,8-HxCDF	0.50	J H q B	5.3	0.046
57117-44-9	1,2,3,6,7,8-HxCDF	0.70	J H	5.3	0.034
72918-21-9	1,2,3,7,8,9-HxCDF	ND	H	5.3	0.044
60851-34-5	2,3,4,6,7,8-HxCDF	1.0	J H	5.3	0.040
35822-46-9	1,2,3,4,6,7,8-HpCDD	19	H	5.3	0.12
67562-39-4	1,2,3,4,6,7,8-HpCDF	5.9	H B	5.3	0.073
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND	H	5.3	0.085
3268-87-9	OCDD	1700	H B	11	0.56
39001-02-0	OCDF	9.5	J H B	11	0.070
41903-57-5	Total TCDD	0.19	J H	1.1	0.030
30402-14-3	Total TCDF	2.0	H q	1.1	0.023
36088-22-9	Total PeCDD	0.18	J H	5.3	0.052
30402-15-4	Total PeCDF	9.6	H q	5.3	0.046
34465-46-8	Total HxCDD	6.0	H q B	5.3	0.053
55684-94-1	Total HxCDF	19	H q B	5.3	0.041
37871-00-4	Total HpCDD	38	H	5.3	0.12
38998-75-3	Total HpCDF	15	H B	5.3	0.079

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1026-0204 RE Lab Sample ID: 320-5001-3 RE

Matrix: Solid Lab File ID: 03JA143D5_08.d

Analysis Method: 8290A Date Collected: 11/13/2013 10:15

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.06(g) Date Analyzed: 01/03/2014 17:36

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	54		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	64		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	59		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	67		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	56		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	75		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	70		40-135
114423-97-1	13C-OCDD	75		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1026-0204 | Lab Sample ID: 320-5001-3 RERA

Matrix: Solid | Lab File ID: 03JA14A5D2_007.d

Analysis Method: 8290A | Date Collected: 11/13/2013 10:15

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.06(g) | Date Analyzed: 01/04/2014 01:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33232 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	H	1.1	0.34

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	64		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1031-0204 Lab Sample ID: 320-5001-15

Matrix: Solid Lab File ID: 23DE1310D5_6.d

Analysis Method: 8290A Date Collected: 11/14/2013 13:40

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.01(g) Date Analyzed: 12/23/2013 14:41

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.027
40321-76-4	1,2,3,7,8-PeCDD	ND		5.5	0.035
57117-41-6	1,2,3,7,8-PeCDF	ND		5.5	0.026
57117-31-4	2,3,4,7,8-PeCDF	0.12	J q	5.5	0.027
39227-28-6	1,2,3,4,7,8-HxCDD	0.081	J q	5.5	0.024
57653-85-7	1,2,3,6,7,8-HxCDD	0.14	J	5.5	0.021
19408-74-3	1,2,3,7,8,9-HxCDD	0.19	J	5.5	0.020
70648-26-9	1,2,3,4,7,8-HxCDF	0.65	J q B	5.5	0.021
57117-44-9	1,2,3,6,7,8-HxCDF	0.42	J	5.5	0.018
72918-21-9	1,2,3,7,8,9-HxCDF	0.094	J	5.5	0.021
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.5	0.020
35822-46-9	1,2,3,4,6,7,8-HpCDD	7.9	B	5.5	0.11
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.3	J B	5.5	0.019
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.5	0.023
3268-87-9	OCDD	1900	B	11	0.15
39001-02-0	OCDF	1.1	J B	11	0.021
41903-57-5	Total TCDD	0.50	J q	1.1	0.027
30402-14-3	Total TCDF	1.0	J q	1.1	0.016
36088-22-9	Total PeCDD	1.0	J q	5.5	0.035
30402-15-4	Total PeCDF	0.88	J q	5.5	0.027
34465-46-8	Total HxCDD	1.2	J q	5.5	0.022
55684-94-1	Total HxCDF	1.8	J q B	5.5	0.020
37871-00-4	Total HpCDD	13	B	5.5	0.11
38998-75-3	Total HpCDF	1.5	J q B	5.5	0.021

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1031-0204 Lab Sample ID: 320-5001-15

Matrix: Solid Lab File ID: 23DE1310D5_6.d

Analysis Method: 8290A Date Collected: 11/14/2013 13:40

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.01(g) Date Analyzed: 12/23/2013 14:41

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	57		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	57		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	55		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	63		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	59		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	63		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1031-0204 RA Lab Sample ID: 320-5001-15 RA

Matrix: Solid Lab File ID: 02JA1411D2_005.d

Analysis Method: 8290A Date Collected: 11/14/2013 13:40

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.01(g) Date Analyzed: 01/02/2014 16:32

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33115 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.099

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	51		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1032-0204 Lab Sample ID: 320-5001-1

Matrix: Solid Lab File ID: 24DE133D5_6.d

Analysis Method: 8290A Date Collected: 11/13/2013 08:00

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.40(g) Date Analyzed: 12/24/2013 13:34

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.049
51207-31-9	2,3,7,8-TCDF	0.16	J	1.1	0.031
40321-76-4	1,2,3,7,8-PeCDD	ND		5.3	0.071
57117-41-6	1,2,3,7,8-PeCDF	ND		5.3	0.047
57117-31-4	2,3,4,7,8-PeCDF	ND		5.3	0.049
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.3	0.060
57653-85-7	1,2,3,6,7,8-HxCDD	0.19	J q B	5.3	0.043
19408-74-3	1,2,3,7,8,9-HxCDD	0.22	J B	5.3	0.044
70648-26-9	1,2,3,4,7,8-HxCDF	ND		5.3	0.047
57117-44-9	1,2,3,6,7,8-HxCDF	0.78	J	5.3	0.035
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.045
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.3	0.041
35822-46-9	1,2,3,4,6,7,8-HpCDD	32	B	5.3	0.31
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.65	J B	5.3	0.047
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.3	0.056
3268-87-9	OCDD	5600	E B	11	1.4
39001-02-0	OCDF	2.3	J q B	11	0.080
41903-57-5	Total TCDD	0.41	J q	1.1	0.049
30402-14-3	Total TCDF	0.57	J q	1.1	0.031
36088-22-9	Total PeCDD	1.4	J B	5.3	0.071
30402-15-4	Total PeCDF	0.25	J q B	5.3	0.048
34465-46-8	Total HxCDD	1.6	J q B	5.3	0.049
55684-94-1	Total HxCDF	1.1	J q B	5.3	0.042
37871-00-4	Total HpCDD	52	q B	5.3	0.31
38998-75-3	Total HpCDF	0.65	J B	5.3	0.052

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1032-0204 | Lab Sample ID: 320-5001-1

Matrix: Solid | Lab File ID: 24DE133D5_6.d

Analysis Method: 8290A | Date Collected: 11/13/2013 08:00

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.40(g) | Date Analyzed: 12/24/2013 13:34

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	53		40-135
89059-46-1	13C-2,3,7,8-TCDF	49		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	49		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	48		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	53		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	46		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	55		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	52		40-135
114423-97-1	13C-OCDD	65		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1032-0204 RE | Lab Sample ID: 320-5001-1 RE

Matrix: Solid | Lab File ID: 03JA143D5_06.d

Analysis Method: 8290A | Date Collected: 11/13/2013 08:00

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.12(g) | Date Analyzed: 01/03/2014 16:13

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	H	1.1	0.033
40321-76-4	1,2,3,7,8-PeCDD	ND	H	5.5	0.069
57117-41-6	1,2,3,7,8-PeCDF	ND	H	5.5	0.035
57117-31-4	2,3,4,7,8-PeCDF	ND	H	5.5	0.037
39227-28-6	1,2,3,4,7,8-HxCDD	0.19	J H	5.5	0.035
57653-85-7	1,2,3,6,7,8-HxCDD	0.099	J H q B	5.5	0.025
19408-74-3	1,2,3,7,8,9-HxCDD	0.18	J H	5.5	0.025
70648-26-9	1,2,3,4,7,8-HxCDF	0.080	J H q B	5.5	0.033
57117-44-9	1,2,3,6,7,8-HxCDF	0.60	J H	5.5	0.025
72918-21-9	1,2,3,7,8,9-HxCDF	ND	H	5.5	0.032
60851-34-5	2,3,4,6,7,8-HxCDF	ND	H	5.5	0.029
35822-46-9	1,2,3,4,6,7,8-HpCDD	24	H	5.5	0.14
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.34	J H q B	5.5	0.028
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.086	J H q	5.5	0.033
39001-02-0	OCDF	1.5	J H q B	11	0.057
41903-57-5	Total TCDD	0.84	J H q	1.1	0.033
30402-14-3	Total TCDF	0.67	J H q	1.1	0.023
36088-22-9	Total PeCDD	ND	H	5.5	0.069
30402-15-4	Total PeCDF	0.10	J H	5.5	0.036
34465-46-8	Total HxCDD	1.0	J H q B	5.5	0.028
55684-94-1	Total HxCDF	0.92	J H q B	5.5	0.030
37871-00-4	Total HpCDD	40	H	5.5	0.14
38998-75-3	Total HpCDF	0.62	J H q B	5.5	0.031

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1032-0204 RE Lab Sample ID: 320-5001-1 RE

Matrix: Solid Lab File ID: 03JA143D5_06.d

Analysis Method: 8290A Date Collected: 11/13/2013 08:00

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.12(g) Date Analyzed: 01/03/2014 16:13

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		40-135
89059-46-1	13C-2,3,7,8-TCDF	60		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	69		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	63		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	68		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	61		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	79		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	82		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1032-0204 | Lab Sample ID: 320-5001-1 RERA

Matrix: Solid | Lab File ID: 03JA14A5D2_005.d

Analysis Method: 8290A | Date Collected: 11/13/2013 08:00

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.12(g) | Date Analyzed: 01/03/2014 23:49

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33232 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	H	1.1	0.42

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	68		40-135
89059-46-1	13C-2,3,7,8-TCDF	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1032-0204 | Lab Sample ID: 320-5001-1 REDL

Matrix: Solid | Lab File ID: 03JA1410D5_33.d

Analysis Method: 8290A | Date Collected: 11/13/2013 08:00

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.12(g) | Date Analyzed: 01/04/2014 11:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33225 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	5500	H B	110	1.5

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	66		40-135
89059-46-1	13C-2,3,7,8-TCDF	68		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	64		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	66		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	84		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	74		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1038-0204 | Lab Sample ID: 320-5001-14

Matrix: Solid | Lab File ID: 24DE133D5_25.d

Analysis Method: 8290A | Date Collected: 11/14/2013 13:15

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.12(g) | Date Analyzed: 12/25/2013 03:07

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.035
51207-31-9	2,3,7,8-TCDF	0.30	J	1.1	0.023
40321-76-4	1,2,3,7,8-PeCDD	ND		5.4	0.050
57117-41-6	1,2,3,7,8-PeCDF	ND		5.4	0.030
57117-31-4	2,3,4,7,8-PeCDF	0.24	J B q	5.4	0.031
39227-28-6	1,2,3,4,7,8-HxCDD	0.18	J	5.4	0.058
57653-85-7	1,2,3,6,7,8-HxCDD	0.21	J B	5.4	0.041
19408-74-3	1,2,3,7,8,9-HxCDD	0.28	J B	5.4	0.043
70648-26-9	1,2,3,4,7,8-HxCDF	2.2	J B	5.4	0.033
57117-44-9	1,2,3,6,7,8-HxCDF	0.62	J	5.4	0.025
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.032
60851-34-5	2,3,4,6,7,8-HxCDF	0.20	J B	5.4	0.029
35822-46-9	1,2,3,4,6,7,8-HpCDD	21	B	5.4	0.13
67562-39-4	1,2,3,4,6,7,8-HpCDF	6.0	B	5.4	0.045
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.4	0.053
3268-87-9	OCDD	3500	B	11	0.72
39001-02-0	OCDF	8.1	J B	11	0.048
41903-57-5	Total TCDD	0.32	J q	1.1	0.035
30402-14-3	Total TCDF	1.3	q	1.1	0.023
36088-22-9	Total PeCDD	0.72	J B	5.4	0.050
30402-15-4	Total PeCDF	1.8	J B q	5.4	0.031
34465-46-8	Total HxCDD	2.4	J B q	5.4	0.047
55684-94-1	Total HxCDF	4.7	J B q	5.4	0.030
37871-00-4	Total HpCDD	36	B	5.4	0.13
38998-75-3	Total HpCDF	7.0	B	5.4	0.049

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1038-0204 Lab Sample ID: 320-5001-14

Matrix: Solid Lab File ID: 24DE133D5_25.d

Analysis Method: 8290A Date Collected: 11/14/2013 13:15

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.12(g) Date Analyzed: 12/25/2013 03:07

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	77		40-135
89059-46-1	13C-2,3,7,8-TCDF	69		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	77		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	73		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	78		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	77		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	98		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	90		40-135
114423-97-1	13C-OCDD	106		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1038-0204 | Lab Sample ID: 320-5001-14 RERA

Matrix: Solid | Lab File ID: 03JA1411D2_015.d

Analysis Method: 8290A | Date Collected: 11/14/2013 13:15

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.06(g) | Date Analyzed: 01/03/2014 20:11

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33217 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	H	1.1	0.072

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	48		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1038-0204 RE | Lab Sample ID: 320-5001-14 RE

Matrix: Solid | Lab File ID: 03JA143D5_25.d

Analysis Method: 8290A | Date Collected: 11/14/2013 13:15

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.06(g) | Date Analyzed: 01/04/2014 05:46

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	H	1.1	0.051
40321-76-4	1,2,3,7,8-PeCDD	ND	H	5.4	0.078
57117-41-6	1,2,3,7,8-PeCDF	0.054	J H	5.4	0.045
57117-31-4	2,3,4,7,8-PeCDF	ND	H	5.4	0.046
39227-28-6	1,2,3,4,7,8-HxCDD	0.16	J H	5.4	0.083
57653-85-7	1,2,3,6,7,8-HxCDD	0.19	J H	5.4	0.059
19408-74-3	1,2,3,7,8,9-HxCDD	ND	H	5.4	0.061
70648-26-9	1,2,3,4,7,8-HxCDF	0.44	J H B	5.4	0.042
57117-44-9	1,2,3,6,7,8-HxCDF	0.22	J H q B	5.4	0.031
72918-21-9	1,2,3,7,8,9-HxCDF	ND	H	5.4	0.040
60851-34-5	2,3,4,6,7,8-HxCDF	0.12	J H	5.4	0.036
35822-46-9	1,2,3,4,6,7,8-HpCDD	25	H B	5.4	0.19
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.82	J H B	5.4	0.044
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND	H	5.4	0.052
39001-02-0	OCDF	1.8	J H B	11	0.073
41903-57-5	Total TCDD	0.54	J H q	1.1	0.051
30402-14-3	Total TCDF	0.92	J H q	1.1	0.028
36088-22-9	Total PeCDD	0.83	J H q	5.4	0.078
30402-15-4	Total PeCDF	0.85	J H q	5.4	0.045
34465-46-8	Total HxCDD	1.5	J H q	5.4	0.067
55684-94-1	Total HxCDF	1.7	J H q B	5.4	0.037
37871-00-4	Total HpCDD	43	H B	5.4	0.19
38998-75-3	Total HpCDF	1.6	J H B	5.4	0.048

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1038-0204 RE Lab Sample ID: 320-5001-14 RE

Matrix: Solid Lab File ID: 03JA143D5_25.d

Analysis Method: 8290A Date Collected: 11/14/2013 13:15

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.06(g) Date Analyzed: 01/04/2014 05:46

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	57		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	63		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	59		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	71		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	60		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	79		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1038-0204 | Lab Sample ID: 320-5001-14 REDL

Matrix: Solid | Lab File ID: 03JA1410D5_38.d

Analysis Method: 8290A | Date Collected: 11/14/2013 13:15

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.06(g) | Date Analyzed: 01/04/2014 14:55

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33225 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	5000	H B	110	1.4

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	0	*	40-135
89059-46-1	13C-2,3,7,8-TCDF	0	*	40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	0	*	40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	0	*	40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	80		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	69		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	73		40-135
114423-97-1	13C-OCDD	67		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1040-0204 | Lab Sample ID: 320-5001-16

Matrix: Solid | Lab File ID: 23DE1310D5_7.d

Analysis Method: 8290A | Date Collected: 11/14/2013 14:15

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.46(g) | Date Analyzed: 12/23/2013 15:27

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.028
40321-76-4	1,2,3,7,8-PeCDD	ND		5.1	0.035
57117-41-6	1,2,3,7,8-PeCDF	ND		5.1	0.024
57117-31-4	2,3,4,7,8-PeCDF	0.062	J	5.1	0.024
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.1	0.030
57653-85-7	1,2,3,6,7,8-HxCDD	0.20	J q	5.1	0.026
19408-74-3	1,2,3,7,8,9-HxCDD	0.13	J q	5.1	0.025
70648-26-9	1,2,3,4,7,8-HxCDF	0.18	J B	5.1	0.017
57117-44-9	1,2,3,6,7,8-HxCDF	0.35	J	5.1	0.015
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.018
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.1	0.016
35822-46-9	1,2,3,4,6,7,8-HpCDD	17	B	5.1	0.19
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.56	J B	5.1	0.017
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.1	0.020
3268-87-9	OCDD	3400	B	10	0.18
39001-02-0	OCDF	1.0	J q B	10	0.019
41903-57-5	Total TCDD	0.14	J q	1.0	0.028
30402-14-3	Total TCDF	0.47	J q	1.0	0.017
36088-22-9	Total PeCDD	0.53	J q	5.1	0.035
30402-15-4	Total PeCDF	0.45	J q	5.1	0.024
34465-46-8	Total HxCDD	0.95	J q	5.1	0.027
55684-94-1	Total HxCDF	1.1	J q B	5.1	0.017
37871-00-4	Total HpCDD	25	B	5.1	0.19
38998-75-3	Total HpCDF	0.89	J B	5.1	0.019

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1040-0204 Lab Sample ID: 320-5001-16

Matrix: Solid Lab File ID: 23DE1310D5_7.d

Analysis Method: 8290A Date Collected: 11/14/2013 14:15

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.46(g) Date Analyzed: 12/23/2013 15:27

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	54		40-135
89059-46-1	13C-2,3,7,8-TCDF	52		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	52		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	51		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	57		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	54		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	56		40-135
114423-97-1	13C-OCDD	64		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1040-0204 RA Lab Sample ID: 320-5001-16 RA

Matrix: Solid Lab File ID: 02JA1411D2_006.d

Analysis Method: 8290A Date Collected: 11/14/2013 14:15

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.46(g) Date Analyzed: 01/02/2014 17:11

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33115 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.19

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	46		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1041-022.5 | Lab Sample ID: 320-5001-7

Matrix: Solid | Lab File ID: 24DE133D5_12.d

Analysis Method: 8290A | Date Collected: 11/13/2013 13:20

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.07(g) | Date Analyzed: 12/24/2013 17:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.051
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.031
40321-76-4	1,2,3,7,8-PeCDD	ND		5.3	0.071
57117-41-6	1,2,3,7,8-PeCDF	ND		5.3	0.046
57117-31-4	2,3,4,7,8-PeCDF	ND		5.3	0.048
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.3	0.058
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.3	0.22
19408-74-3	1,2,3,7,8,9-HxCDD	0.22	J B	5.3	0.042
70648-26-9	1,2,3,4,7,8-HxCDF	ND		5.3	0.041
57117-44-9	1,2,3,6,7,8-HxCDF	0.36	J	5.3	0.031
72918-21-9	1,2,3,7,8,9-HxCDF	0.051	J B q	5.3	0.040
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.3	0.036
35822-46-9	1,2,3,4,6,7,8-HpCDD	43	B	5.3	0.33
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.49	J B	5.3	0.048
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.3	0.057
3268-87-9	OCDD	8600	E B	11	1.5
39001-02-0	OCDF	3.5	J B q	11	0.069
41903-57-5	Total TCDD	0.082	J q	1.1	0.051
30402-14-3	Total TCDF	0.52	J	1.1	0.031
36088-22-9	Total PeCDD	0.39	J B	5.3	0.071
30402-15-4	Total PeCDF	ND		5.3	0.048
34465-46-8	Total HxCDD	0.93	J B q	5.3	0.11
55684-94-1	Total HxCDF	0.41	J B q	5.3	0.037
37871-00-4	Total HpCDD	73	B	5.3	0.33
38998-75-3	Total HpCDF	0.49	J B	5.3	0.053

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1041-022.5 Lab Sample ID: 320-5001-7

Matrix: Solid Lab File ID: 24DE133D5_12.d

Analysis Method: 8290A Date Collected: 11/13/2013 13:20

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.07(g) Date Analyzed: 12/24/2013 17:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	53		40-135
89059-46-1	13C-2,3,7,8-TCDF	50		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	48		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	47		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	51		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	46		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	51		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	49		40-135
114423-97-1	13C-OCDD	64		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1041-022.5 RE | Lab Sample ID: 320-5001-7 RE

Matrix: Solid | Lab File ID: 03JA143D5_12.d

Analysis Method: 8290A | Date Collected: 11/13/2013 13:20

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.02(g) | Date Analyzed: 01/03/2014 20:24

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	H	1.1	0.033
51207-31-9	2,3,7,8-TCDF	ND	H	1.1	0.020
40321-76-4	1,2,3,7,8-PeCDD	ND	H	5.3	0.048
57117-41-6	1,2,3,7,8-PeCDF	ND	H	5.3	0.030
57117-31-4	2,3,4,7,8-PeCDF	ND	H	5.3	0.031
39227-28-6	1,2,3,4,7,8-HxCDD	0.13	J H	5.3	0.046
57653-85-7	1,2,3,6,7,8-HxCDD	0.11	J H q B	5.3	0.033
19408-74-3	1,2,3,7,8,9-HxCDD	0.13	J H q	5.3	0.034
70648-26-9	1,2,3,4,7,8-HxCDF	0.096	J H q B	5.3	0.026
57117-44-9	1,2,3,6,7,8-HxCDF	0.17	J H	5.3	0.019
72918-21-9	1,2,3,7,8,9-HxCDF	0.049	J H q	5.3	0.025
60851-34-5	2,3,4,6,7,8-HxCDF	ND	H	5.3	0.022
35822-46-9	1,2,3,4,6,7,8-HpCDD	40	H	5.3	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.27	J H B	5.3	0.030
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND	H	5.3	0.035
39001-02-0	OCDF	1.3	J H q B	11	0.050
41903-57-5	Total TCDD	0.40	J H q	1.1	0.033
30402-14-3	Total TCDF	0.55	J H	1.1	0.020
36088-22-9	Total PeCDD	ND	H	5.3	0.048
30402-15-4	Total PeCDF	0.18	J H q	5.3	0.031
34465-46-8	Total HxCDD	1.3	J H q B	5.3	0.038
55684-94-1	Total HxCDF	0.49	J H q B	5.3	0.023
37871-00-4	Total HpCDD	69	H	5.3	0.21
38998-75-3	Total HpCDF	0.40	J H q B	5.3	0.033

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1041-022.5 RE Lab Sample ID: 320-5001-7 RE

Matrix: Solid Lab File ID: 03JA143D5_12.d

Analysis Method: 8290A Date Collected: 11/13/2013 13:20

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.02(g) Date Analyzed: 01/03/2014 20:24

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	53		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	65		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	65		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	57		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	74		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		40-135
114423-97-1	13C-OCDD	80		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1041-022.5 | Lab Sample ID: 320-5001-7 REDL

Matrix: Solid | Lab File ID: 03JA1410D5_35.d

Analysis Method: 8290A | Date Collected: 11/13/2013 13:20

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.02(g) | Date Analyzed: 01/04/2014 12:37

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33225 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	8800	H B	110	1.9

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	61		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	58		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	58		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	79		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	70		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	68		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	74		40-135
114423-97-1	13C-OCDD	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1043-0.10.5 Lab Sample ID: 320-5001-6

Matrix: Solid Lab File ID: 24DE133D5_11.d

Analysis Method: 8290A Date Collected: 11/13/2013 12:50

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.03(g) Date Analyzed: 12/24/2013 17:03

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.043
51207-31-9	2,3,7,8-TCDF	0.45	J	1.1	0.028
40321-76-4	1,2,3,7,8-PeCDD	0.15	J B	5.4	0.070
57117-41-6	1,2,3,7,8-PeCDF	ND		5.4	0.059
57117-31-4	2,3,4,7,8-PeCDF	0.24	J B	5.4	0.062
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.4	0.11
57653-85-7	1,2,3,6,7,8-HxCDD	1.2	J B	5.4	0.076
19408-74-3	1,2,3,7,8,9-HxCDD	0.57	J B q	5.4	0.078
70648-26-9	1,2,3,4,7,8-HxCDF	0.64	J B q	5.4	0.046
57117-44-9	1,2,3,6,7,8-HxCDF	0.59	J	5.4	0.034
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.044
60851-34-5	2,3,4,6,7,8-HxCDF	0.71	J B	5.4	0.040
35822-46-9	1,2,3,4,6,7,8-HpCDD	29	B	5.4	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	4.7	J B	5.4	0.074
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.4	0.087
3268-87-9	OCDD	1600	B	11	0.74
39001-02-0	OCDF	7.8	J B	11	0.10
41903-57-5	Total TCDD	0.38	J q	1.1	0.043
30402-14-3	Total TCDF	2.8	q	1.1	0.028
36088-22-9	Total PeCDD	1.5	J B q	5.4	0.070
30402-15-4	Total PeCDF	3.3	J B q	5.4	0.061
34465-46-8	Total HxCDD	7.2	B q	5.4	0.087
55684-94-1	Total HxCDF	8.4	B q	5.4	0.041
37871-00-4	Total HpCDD	51	B	5.4	0.20
38998-75-3	Total HpCDF	12	B	5.4	0.080

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1043-0.10.5 Lab Sample ID: 320-5001-6

Matrix: Solid Lab File ID: 24DE133D5_11.d

Analysis Method: 8290A Date Collected: 11/13/2013 12:50

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.03(g) Date Analyzed: 12/24/2013 17:03

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	54		40-135
89059-46-1	13C-2,3,7,8-TCDF	51		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	50		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	48		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	54		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	49		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	55		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	50		40-135
114423-97-1	13C-OCDD	56		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1043-0.10.5 Lab Sample ID: 320-5001-6 RE

Matrix: Solid Lab File ID: 03JA143D5_11.d

Analysis Method: 8290A Date Collected: 11/13/2013 12:50

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.03(g) Date Analyzed: 01/03/2014 19:42

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	H	1.1	0.028
40321-76-4	1,2,3,7,8-PeCDD	ND	H	5.4	0.047
57117-41-6	1,2,3,7,8-PeCDF	0.15	J H q	5.4	0.027
57117-31-4	2,3,4,7,8-PeCDF	0.18	J H q	5.4	0.028
39227-28-6	1,2,3,4,7,8-HxCDD	0.44	J H	5.4	0.091
57653-85-7	1,2,3,6,7,8-HxCDD	1.4	J H B	5.4	0.064
19408-74-3	1,2,3,7,8,9-HxCDD	1.0	J H	5.4	0.067
70648-26-9	1,2,3,4,7,8-HxCDF	0.98	J H B	5.4	0.037
57117-44-9	1,2,3,6,7,8-HxCDF	0.64	J H	5.4	0.027
72918-21-9	1,2,3,7,8,9-HxCDF	0.19	J H	5.4	0.035
60851-34-5	2,3,4,6,7,8-HxCDF	0.88	J H	5.4	0.032
35822-46-9	1,2,3,4,6,7,8-HpCDD	32	H	5.4	0.16
67562-39-4	1,2,3,4,6,7,8-HpCDF	5.9	H B	5.4	0.066
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND	H	5.4	0.077
3268-87-9	OCDD	1700	H B	11	0.61
39001-02-0	OCDF	10	J H B	11	0.071
41903-57-5	Total TCDD	0.36	J H q	1.1	0.028
30402-14-3	Total TCDF	2.4	H q	1.1	0.019
36088-22-9	Total PeCDD	ND	H	5.4	0.047
30402-15-4	Total PeCDF	4.4	J H q	5.4	0.028
34465-46-8	Total HxCDD	9.1	H q B	5.4	0.074
55684-94-1	Total HxCDF	10	H B	5.4	0.033
37871-00-4	Total HpCDD	57	H	5.4	0.16
38998-75-3	Total HpCDF	14	H B	5.4	0.072

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1043-0.10.5 Lab Sample ID: 320-5001-6 RE

Matrix: Solid Lab File ID: 03JA143D5_11.d

Analysis Method: 8290A Date Collected: 11/13/2013 12:50

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.03(g) Date Analyzed: 01/03/2014 19:42

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	56		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	64		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	59		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	65		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	55		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	76		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		40-135
114423-97-1	13C-OCDD	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1043-0.10.5 Lab Sample ID: 320-5001-6 RERA

Matrix: Solid Lab File ID: 03JA14A5D2_010.d

Analysis Method: 8290A Date Collected: 11/13/2013 12:50

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.03(g) Date Analyzed: 01/04/2014 02:57

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33232 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	H	1.1	0.32

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1047-0204 | Lab Sample ID: 320-5001-13

Matrix: Solid | Lab File ID: 24DE133D5_24.d

Analysis Method: 8290A | Date Collected: 11/14/2013 10:50

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.14(g) | Date Analyzed: 12/25/2013 02:25

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.034
51207-31-9	2,3,7,8-TCDF	0.20	J	1.1	0.024
40321-76-4	1,2,3,7,8-PeCDD	ND		5.4	0.057
57117-41-6	1,2,3,7,8-PeCDF	ND		5.4	0.044
57117-31-4	2,3,4,7,8-PeCDF	ND		5.4	0.046
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.4	0.056
57653-85-7	1,2,3,6,7,8-HxCDD	0.23	J B	5.4	0.040
19408-74-3	1,2,3,7,8,9-HxCDD	0.14	J B q	5.4	0.041
70648-26-9	1,2,3,4,7,8-HxCDF	0.23	J B q	5.4	0.030
57117-44-9	1,2,3,6,7,8-HxCDF	0.40	J	5.4	0.022
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.085
60851-34-5	2,3,4,6,7,8-HxCDF	0.15	J B q	5.4	0.026
35822-46-9	1,2,3,4,6,7,8-HpCDD	30	B	5.4	0.14
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.62	J B	5.4	0.027
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.4	0.032
3268-87-9	OCDD	6300	E B	11	1.2
39001-02-0	OCDF	1.3	J B	11	0.048
41903-57-5	Total TCDD	0.95	J q	1.1	0.034
30402-14-3	Total TCDF	1.8	q	1.1	0.024
36088-22-9	Total PeCDD	1.6	J B q	5.4	0.057
30402-15-4	Total PeCDF	1.2	J B q	5.4	0.045
34465-46-8	Total HxCDD	2.0	J B q	5.4	0.045
55684-94-1	Total HxCDF	1.9	J B q	5.4	0.041
37871-00-4	Total HpCDD	50	B	5.4	0.14
38998-75-3	Total HpCDF	0.92	J B q	5.4	0.030

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1047-0204 Lab Sample ID: 320-5001-13

Matrix: Solid Lab File ID: 24DE133D5_24.d

Analysis Method: 8290A Date Collected: 11/14/2013 10:50

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.14(g) Date Analyzed: 12/25/2013 02:25

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	62		40-135
89059-46-1	13C-2,3,7,8-TCDF	57		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	60		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	56		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	61		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	58		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	75		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	65		40-135
114423-97-1	13C-OCDD	80		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name:	TestAmerica Sacramento	Job No.:	320-5001-1
SDG No.:			
Client Sample ID:	TF2-004/5-SB1047-0204	Lab Sample ID:	320-5001-13 RERA
Matrix:	Solid	Lab File ID:	03JA1411D2_014.d
Analysis Method:	8290A	Date Collected:	11/14/2013 10:50
Extract. Method:	8290	Date Extracted:	12/26/2013 12:44
Sample wt/vol:	10.12(g)	Date Analyzed:	01/03/2014 19:32
Con. Extract Vol.:	20(uL)	Dilution Factor:	1
Injection Volume:	2(uL)	Level: (low/med)	Low
% Moisture:	9.4	GPC Cleanup:(Y/N)	N
Analysis Batch No.:	33217	Units:	pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	H	1.1	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		40-135
89059-46-1	13C-2,3,7,8-TCDF	49		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1047-0204 RE Lab Sample ID: 320-5001-13 RE

Matrix: Solid Lab File ID: 03JA143D5_24.d

Analysis Method: 8290A Date Collected: 11/14/2013 10:50

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.12(g) Date Analyzed: 01/04/2014 05:04

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	H	1.1	0.059
40321-76-4	1,2,3,7,8-PeCDD	ND	H	5.5	0.10
57117-41-6	1,2,3,7,8-PeCDF	0.092	J H q	5.5	0.050
57117-31-4	2,3,4,7,8-PeCDF	0.12	J H	5.5	0.052
39227-28-6	1,2,3,4,7,8-HxCDD	0.22	J H	5.5	0.082
57653-85-7	1,2,3,6,7,8-HxCDD	0.27	J H	5.5	0.058
19408-74-3	1,2,3,7,8,9-HxCDD	0.26	J H q	5.5	0.060
70648-26-9	1,2,3,4,7,8-HxCDF	0.50	J H B	5.5	0.048
57117-44-9	1,2,3,6,7,8-HxCDF	0.40	J H B	5.5	0.036
72918-21-9	1,2,3,7,8,9-HxCDF	0.17	J H q	5.5	0.046
60851-34-5	2,3,4,6,7,8-HxCDF	0.074	J H q	5.5	0.042
35822-46-9	1,2,3,4,6,7,8-HpCDD	27	H B	5.5	0.17
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.59	J H B	5.5	0.041
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND	H	5.5	0.048
39001-02-0	OCDF	1.0	J H B	11	0.071
41903-57-5	Total TCDD	0.55	J H	1.1	0.059
30402-14-3	Total TCDF	2.2	H q	1.1	0.036
36088-22-9	Total PeCDD	1.7	J H q	5.5	0.10
30402-15-4	Total PeCDF	3.7	J H q	5.5	0.051
34465-46-8	Total HxCDD	3.1	J H q	5.5	0.067
55684-94-1	Total HxCDF	2.6	J H q B	5.5	0.043
37871-00-4	Total HpCDD	45	H B	5.5	0.17
38998-75-3	Total HpCDF	1.1	J H B	5.5	0.045

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1047-0204 RE Lab Sample ID: 320-5001-13 RE

Matrix: Solid Lab File ID: 03JA143D5_24.d

Analysis Method: 8290A Date Collected: 11/14/2013 10:50

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.12(g) Date Analyzed: 01/04/2014 05:04

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		40-135
89059-46-1	13C-2,3,7,8-TCDF	57		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	65		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	62		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	71		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	59		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	84		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	74		40-135
114423-97-1	13C-OCDD	83		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1047-0204 | Lab Sample ID: 320-5001-13 REDL

Matrix: Solid | Lab File ID: 03JA1410D5_37.d

Analysis Method: 8290A | Date Collected: 11/14/2013 10:50

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.12(g) | Date Analyzed: 01/04/2014 14:09

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33225 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	5800	H B	110	1.4

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	66		40-135
89059-46-1	13C-2,3,7,8-TCDF	68		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	65		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	67		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	86		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	74		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	75		40-135
114423-97-1	13C-OCDD	74		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1048-0204 | Lab Sample ID: 320-5001-2

Matrix: Solid | Lab File ID: 24DE133D5_7.d

Analysis Method: 8290A | Date Collected: 11/13/2013 08:25

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.19(g) | Date Analyzed: 12/24/2013 14:16

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	G	1.3	1.3
51207-31-9	2,3,7,8-TCDF	110	G	5.3	5.3
40321-76-4	1,2,3,7,8-PeCDD	ND	G	7.4	7.4
57117-41-6	1,2,3,7,8-PeCDF	ND	G	11	11
57117-31-4	2,3,4,7,8-PeCDF	590	B G	11	11
39227-28-6	1,2,3,4,7,8-HxCDD	ND	G	6.3	6.3
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.4	4.5
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.4	4.6
70648-26-9	1,2,3,4,7,8-HxCDF	2900	E B G	17	17
57117-44-9	1,2,3,6,7,8-HxCDF	ND	G	13	13
72918-21-9	1,2,3,7,8,9-HxCDF	ND	G	17	17
60851-34-5	2,3,4,6,7,8-HxCDF	110	B q G	15	15
35822-46-9	1,2,3,4,6,7,8-HpCDD	23	B	5.4	3.6
67562-39-4	1,2,3,4,6,7,8-HpCDF	5500	E B G	26	26
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND	G	30	30
3268-87-9	OCDD	1500	B	11	5.9
39001-02-0	OCDF	2300	B	11	8.8
41903-57-5	Total TCDD	2.9	G	1.3	1.3
30402-14-3	Total TCDF	300	q G	5.3	5.3
36088-22-9	Total PeCDD	74	B q G	7.4	7.4
30402-15-4	Total PeCDF	2100	B q G	11	11
34465-46-8	Total HxCDD	36	B q	5.4	5.1
55684-94-1	Total HxCDF	4700	B q G	15	15
37871-00-4	Total HpCDD	50	B q	5.4	3.6
38998-75-3	Total HpCDF	8900	B G	28	28

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1048-0204 Lab Sample ID: 320-5001-2

Matrix: Solid Lab File ID: 24DE133D5_7.d

Analysis Method: 8290A Date Collected: 11/13/2013 08:25

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.19(g) Date Analyzed: 12/24/2013 14:16

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	2	*	40-135
89059-46-1	13C-2,3,7,8-TCDF	0.3	*	40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	0.3	* q	40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	0.3	*	40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	0.7	*	40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	0.4	*	40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	1	*	40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	0.8	*	40-135
114423-97-1	13C-OCDD	2	*	40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1048-0204 RE Lab Sample ID: 320-5001-2 RE

Matrix: Solid Lab File ID: 03JA143D5_07.d

Analysis Method: 8290A Date Collected: 11/13/2013 08:25

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.08(g) Date Analyzed: 01/03/2014 16:55

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	H	1.1	0.031
40321-76-4	1,2,3,7,8-PeCDD	ND	H	5.4	0.039
57117-41-6	1,2,3,7,8-PeCDF	0.054	J H	5.4	0.038
57117-31-4	2,3,4,7,8-PeCDF	0.18	J H	5.4	0.039
39227-28-6	1,2,3,4,7,8-HxCDD	0.10	J H q	5.4	0.058
57653-85-7	1,2,3,6,7,8-HxCDD	0.24	J H q B	5.4	0.041
19408-74-3	1,2,3,7,8,9-HxCDD	0.25	J H q	5.4	0.042
70648-26-9	1,2,3,4,7,8-HxCDF	0.50	J H q B	5.4	0.037
57117-44-9	1,2,3,6,7,8-HxCDF	0.45	J H	5.4	0.027
72918-21-9	1,2,3,7,8,9-HxCDF	0.26	J H	5.4	0.035
60851-34-5	2,3,4,6,7,8-HxCDF	0.66	J H q	5.4	0.032
35822-46-9	1,2,3,4,6,7,8-HpCDD	9.3	H	5.4	0.091
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.65	J H B	5.4	0.033
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.12	J H q	5.4	0.038
3268-87-9	OCDD	1400	H B	11	0.50
39001-02-0	OCDF	0.64	J H q B	11	0.048
41903-57-5	Total TCDD	0.26	J H q	1.1	0.031
30402-14-3	Total TCDF	2.0	H q	1.1	0.023
36088-22-9	Total PeCDD	ND	H	5.4	0.039
30402-15-4	Total PeCDF	5.2	J H q	5.4	0.038
34465-46-8	Total HxCDD	3.3	J H q B	5.4	0.047
55684-94-1	Total HxCDF	6.0	H q B	5.4	0.033
37871-00-4	Total HpCDD	19	H	5.4	0.091
38998-75-3	Total HpCDF	1.4	J H q B	5.4	0.035

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1048-0204 RE | Lab Sample ID: 320-5001-2 RE

Matrix: Solid | Lab File ID: 03JA143D5_07.d

Analysis Method: 8290A | Date Collected: 11/13/2013 08:25

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.08(g) | Date Analyzed: 01/03/2014 16:55

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	54		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	66		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	59		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	65		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	55		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	72		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		40-135
114423-97-1	13C-OCDD	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1048-0204 | Lab Sample ID: 320-5001-2 RERA

Matrix: Solid | Lab File ID: 03JA14A5D2_006.d

Analysis Method: 8290A | Date Collected: 11/13/2013 08:25

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.08(g) | Date Analyzed: 01/04/2014 00:27

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33232 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	H	1.1	0.55

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	61		40-135
89059-46-1	13C-2,3,7,8-TCDF	65		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1049-0204 | Lab Sample ID: 320-5001-17

Matrix: Solid | Lab File ID: 23DE1310D5_8.d

Analysis Method: 8290A | Date Collected: 11/14/2013 12:40

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.15(g) | Date Analyzed: 12/23/2013 16:13

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.030
40321-76-4	1,2,3,7,8-PeCDD	ND		5.4	0.047
57117-41-6	1,2,3,7,8-PeCDF	ND		5.4	0.034
57117-31-4	2,3,4,7,8-PeCDF	0.13	J q	5.4	0.034
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.4	0.033
57653-85-7	1,2,3,6,7,8-HxCDD	0.095	J q	5.4	0.029
19408-74-3	1,2,3,7,8,9-HxCDD	0.19	J	5.4	0.027
70648-26-9	1,2,3,4,7,8-HxCDF	0.43	J B	5.4	0.025
57117-44-9	1,2,3,6,7,8-HxCDF	0.40	J	5.4	0.021
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.025
60851-34-5	2,3,4,6,7,8-HxCDF	0.10	J	5.4	0.023
35822-46-9	1,2,3,4,6,7,8-HpCDD	6.0	B	5.4	0.12
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.1	J B	5.4	0.033
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.4	0.038
3268-87-9	OCDD	1300	B	11	0.16
39001-02-0	OCDF	2.2	J B	11	0.031
41903-57-5	Total TCDD	0.47	J q	1.1	0.030
30402-14-3	Total TCDF	0.46	J q	1.1	0.017
36088-22-9	Total PeCDD	0.37	J	5.4	0.047
30402-15-4	Total PeCDF	0.43	J q	5.4	0.034
34465-46-8	Total HxCDD	1.0	J q	5.4	0.029
55684-94-1	Total HxCDF	1.4	J q B	5.4	0.024
37871-00-4	Total HpCDD	10	B	5.4	0.12
38998-75-3	Total HpCDF	1.6	J B	5.4	0.035

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1049-0204 Lab Sample ID: 320-5001-17

Matrix: Solid Lab File ID: 23DE1310D5_8.d

Analysis Method: 8290A Date Collected: 11/14/2013 12:40

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.15(g) Date Analyzed: 12/23/2013 16:13

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	43		40-135
89059-46-1	13C-2,3,7,8-TCDF	43		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	41		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	39	*	40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	44		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	41		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	45		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	42		40-135
114423-97-1	13C-OCDD	45		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1049-0204 RA Lab Sample ID: 320-5001-17 RA

Matrix: Solid Lab File ID: 02JA1411D2_007.d

Analysis Method: 8290A Date Collected: 11/14/2013 12:40

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.15(g) Date Analyzed: 01/02/2014 17:50

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33115 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.13

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	38	*	40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1057-0304 Lab Sample ID: 320-5001-12

Matrix: Solid Lab File ID: 24DE133D5_23.d

Analysis Method: 8290A Date Collected: 11/14/2013 10:15

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.14(g) Date Analyzed: 12/25/2013 01:44

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.036
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.023
40321-76-4	1,2,3,7,8-PeCDD	ND		5.4	0.054
57117-41-6	1,2,3,7,8-PeCDF	ND		5.4	0.033
57117-31-4	2,3,4,7,8-PeCDF	ND		5.4	0.035
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.4	0.037
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.4	0.026
19408-74-3	1,2,3,7,8,9-HxCDD	0.095	J B q	5.4	0.027
70648-26-9	1,2,3,4,7,8-HxCDF	0.18	J B	5.4	0.028
57117-44-9	1,2,3,6,7,8-HxCDF	0.23	J	5.4	0.021
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.027
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.4	0.025
35822-46-9	1,2,3,4,6,7,8-HpCDD	8.0	B	5.4	0.085
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.46	J B	5.4	0.026
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.4	0.030
3268-87-9	OCDD	1700	B	11	0.42
39001-02-0	OCDF	0.59	J B q	11	0.048
41903-57-5	Total TCDD	0.64	J q	1.1	0.036
30402-14-3	Total TCDF	0.28	J q	1.1	0.023
36088-22-9	Total PeCDD	0.78	J B q	5.4	0.054
30402-15-4	Total PeCDF	ND		5.4	0.035
34465-46-8	Total HxCDD	0.63	J B q	5.4	0.030
55684-94-1	Total HxCDF	0.48	J B q	5.4	0.025
37871-00-4	Total HpCDD	13	B	5.4	0.085
38998-75-3	Total HpCDF	0.59	J B q	5.4	0.028

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1057-0304 | Lab Sample ID: 320-5001-12

Matrix: Solid | Lab File ID: 24DE133D5_23.d

Analysis Method: 8290A | Date Collected: 11/14/2013 10:15

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.14(g) | Date Analyzed: 12/25/2013 01:44

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		40-135
89059-46-1	13C-2,3,7,8-TCDF	56		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	57		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	53		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	59		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	58		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	70		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	63		40-135
114423-97-1	13C-OCDD	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1057-0304 RE | Lab Sample ID: 320-5001-12 RE

Matrix: Solid | Lab File ID: 03JA143D5_23.d

Analysis Method: 8290A | Date Collected: 11/14/2013 10:15

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.22(g) | Date Analyzed: 01/04/2014 04:22

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	H	1.1	0.043
51207-31-9	2,3,7,8-TCDF	ND	H	1.1	0.021
40321-76-4	1,2,3,7,8-PeCDD	ND	H	5.4	0.068
57117-41-6	1,2,3,7,8-PeCDF	ND	H	5.4	0.035
57117-31-4	2,3,4,7,8-PeCDF	ND	H	5.4	0.037
39227-28-6	1,2,3,4,7,8-HxCDD	ND	H	5.4	0.064
57653-85-7	1,2,3,6,7,8-HxCDD	ND	H	5.4	0.045
19408-74-3	1,2,3,7,8,9-HxCDD	ND	H	5.4	0.047
70648-26-9	1,2,3,4,7,8-HxCDF	0.080	J H q B	5.4	0.031
57117-44-9	1,2,3,6,7,8-HxCDF	0.25	J H B	5.4	0.023
72918-21-9	1,2,3,7,8,9-HxCDF	ND	H	5.4	0.030
60851-34-5	2,3,4,6,7,8-HxCDF	ND	H	5.4	0.027
35822-46-9	1,2,3,4,6,7,8-HpCDD	7.0	H B	5.4	0.10
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.19	J H q B	5.4	0.033
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND	H	5.4	0.038
3268-87-9	OCDD	1600	H B	11	0.58
39001-02-0	OCDF	0.32	J H q B	11	0.062
41903-57-5	Total TCDD	0.70	J H q	1.1	0.043
30402-14-3	Total TCDF	0.33	J H q	1.1	0.021
36088-22-9	Total PeCDD	0.82	J H	5.4	0.068
30402-15-4	Total PeCDF	ND	H	5.4	0.037
34465-46-8	Total HxCDD	0.27	J H	5.4	0.052
55684-94-1	Total HxCDF	0.33	J H q B	5.4	0.028
37871-00-4	Total HpCDD	12	H B	5.4	0.10
38998-75-3	Total HpCDF	0.26	J H q B	5.4	0.036

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1057-0304 RE | Lab Sample ID: 320-5001-12 RE

Matrix: Solid | Lab File ID: 03JA143D5_23.d

Analysis Method: 8290A | Date Collected: 11/14/2013 10:15

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.22(g) | Date Analyzed: 01/04/2014 04:22

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	66		40-135
89059-46-1	13C-2,3,7,8-TCDF	59		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	68		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	63		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	68		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	60		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	81		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	73		40-135
114423-97-1	13C-OCDD	74		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1058-0204 | Lab Sample ID: 320-5001-8

Matrix: Solid | Lab File ID: 24DE133D5_17.d

Analysis Method: 8290A | Date Collected: 11/13/2013 14:05

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.19(g) | Date Analyzed: 12/24/2013 21:33

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.039
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.026
40321-76-4	1,2,3,7,8-PeCDD	ND		5.2	0.060
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.047
57117-31-4	2,3,4,7,8-PeCDF	ND		5.2	0.049
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.2	0.060
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.2	0.043
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.2	0.044
70648-26-9	1,2,3,4,7,8-HxCDF	ND		5.2	0.046
57117-44-9	1,2,3,6,7,8-HxCDF	0.30	J q	5.2	0.034
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.044
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.2	0.040
35822-46-9	1,2,3,4,6,7,8-HpCDD	10	B	5.2	0.18
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.71	J q B	5.2	0.050
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.2	0.058
3268-87-9	OCDD	1800	B	10	0.83
39001-02-0	OCDF	2.1	J q B	10	0.10
41903-57-5	Total TCDD	ND		1.0	0.039
30402-14-3	Total TCDF	ND		1.0	0.026
36088-22-9	Total PeCDD	0.20	J q B	5.2	0.060
30402-15-4	Total PeCDF	0.10	J B	5.2	0.048
34465-46-8	Total HxCDD	0.19	J q B	5.2	0.049
55684-94-1	Total HxCDF	0.30	J q B	5.2	0.041
37871-00-4	Total HpCDD	17	B	5.2	0.18
38998-75-3	Total HpCDF	1.5	J q B	5.2	0.054

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1058-0204 | Lab Sample ID: 320-5001-8

Matrix: Solid | Lab File ID: 24DE133D5_17.d

Analysis Method: 8290A | Date Collected: 11/13/2013 14:05

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.19(g) | Date Analyzed: 12/24/2013 21:33

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	48		40-135
89059-46-1	13C-2,3,7,8-TCDF	49		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	44		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	41		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	49		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	45		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	47		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	44		40-135
114423-97-1	13C-OCDD	48		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1058-0204 RE Lab Sample ID: 320-5001-8 RE

Matrix: Solid Lab File ID: 03JA143D5_17.d

Analysis Method: 8290A Date Collected: 11/13/2013 14:05

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.07(g) Date Analyzed: 01/04/2014 00:11

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.037	J H q	1.1	0.024
51207-31-9	2,3,7,8-TCDF	ND	H	1.1	0.017
40321-76-4	1,2,3,7,8-PeCDD	ND	H	5.3	0.039
57117-41-6	1,2,3,7,8-PeCDF	ND	H	5.3	0.027
57117-31-4	2,3,4,7,8-PeCDF	ND	H	5.3	0.029
39227-28-6	1,2,3,4,7,8-HxCDD	ND	H	5.3	0.032
57653-85-7	1,2,3,6,7,8-HxCDD	ND	H	5.3	0.022
19408-74-3	1,2,3,7,8,9-HxCDD	0.11	J H	5.3	0.023
70648-26-9	1,2,3,4,7,8-HxCDF	0.13	J H B	5.3	0.024
57117-44-9	1,2,3,6,7,8-HxCDF	0.29	J H B	5.3	0.018
72918-21-9	1,2,3,7,8,9-HxCDF	ND	H	5.3	0.024
60851-34-5	2,3,4,6,7,8-HxCDF	ND	H	5.3	0.021
35822-46-9	1,2,3,4,6,7,8-HpCDD	8.4	H B	5.3	0.081
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.58	J H B	5.3	0.027
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND	H	5.3	0.031
3268-87-9	OCDD	2000	H B	11	0.72
39001-02-0	OCDF	1.9	J H B	11	0.054
41903-57-5	Total TCDD	0.20	J H q	1.1	0.024
30402-14-3	Total TCDF	0.11	J H q	1.1	0.017
36088-22-9	Total PeCDD	0.36	J H	5.3	0.039
30402-15-4	Total PeCDF	0.11	J H q	5.3	0.028
34465-46-8	Total HxCDD	0.46	J H q	5.3	0.026
55684-94-1	Total HxCDF	0.62	J H q B	5.3	0.022
37871-00-4	Total HpCDD	14	H q B	5.3	0.081
38998-75-3	Total HpCDF	1.2	J H q B	5.3	0.029

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1058-0204 RE | Lab Sample ID: 320-5001-8 RE

Matrix: Solid | Lab File ID: 03JA143D5_17.d

Analysis Method: 8290A | Date Collected: 11/13/2013 14:05

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.07(g) | Date Analyzed: 01/04/2014 00:11

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		40-135
89059-46-1	13C-2,3,7,8-TCDF	55		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	61		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	65		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	53		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	69		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	64		40-135
114423-97-1	13C-OCDD	64		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1064-0204 Lab Sample ID: 320-5001-9

Matrix: Solid Lab File ID: 24DE133D5_20.d

Analysis Method: 8290A Date Collected: 11/13/2013 14:40

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.36(g) Date Analyzed: 12/24/2013 23:38

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.037
51207-31-9	2,3,7,8-TCDF	0.19	J	1.0	0.031
40321-76-4	1,2,3,7,8-PeCDD	0.068	J B	5.1	0.061
57117-41-6	1,2,3,7,8-PeCDF	ND		5.1	0.047
57117-31-4	2,3,4,7,8-PeCDF	ND		5.1	0.083
39227-28-6	1,2,3,4,7,8-HxCDD	0.20	J	5.1	0.069
57653-85-7	1,2,3,6,7,8-HxCDD	0.58	J B q	5.1	0.049
19408-74-3	1,2,3,7,8,9-HxCDD	0.38	J B q	5.1	0.050
70648-26-9	1,2,3,4,7,8-HxCDF	0.50	J B q	5.1	0.042
57117-44-9	1,2,3,6,7,8-HxCDF	0.46	J q	5.1	0.032
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.041
60851-34-5	2,3,4,6,7,8-HxCDF	0.28	J B	5.1	0.037
35822-46-9	1,2,3,4,6,7,8-HpCDD	20	B	5.1	0.15
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.8	J B	5.1	0.067
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.1	0.079
3268-87-9	OCDD	1300	B	10	0.56
39001-02-0	OCDF	7.4	J B	10	0.071
41903-57-5	Total TCDD	0.14	J q	1.0	0.037
30402-14-3	Total TCDF	0.79	J q	1.0	0.031
36088-22-9	Total PeCDD	0.76	J B	5.1	0.061
30402-15-4	Total PeCDF	1.7	J B q	5.1	0.065
34465-46-8	Total HxCDD	4.2	J B q	5.1	0.056
55684-94-1	Total HxCDF	5.7	B q	5.1	0.038
37871-00-4	Total HpCDD	35	B	5.1	0.15
38998-75-3	Total HpCDF	9.2	B	5.1	0.073

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1064-0204 Lab Sample ID: 320-5001-9

Matrix: Solid Lab File ID: 24DE133D5_20.d

Analysis Method: 8290A Date Collected: 11/13/2013 14:40

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.36(g) Date Analyzed: 12/24/2013 23:38

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	55		40-135
89059-46-1	13C-2,3,7,8-TCDF	51		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	54		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	52		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	61		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	56		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	65		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1064-0204 | Lab Sample ID: 320-5001-9 RERA

Matrix: Solid | Lab File ID: 03JA1411D2_010.d

Analysis Method: 8290A | Date Collected: 11/13/2013 14:40

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.08(g) | Date Analyzed: 01/03/2014 16:56

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33217 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	H	1.0	0.071

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	48		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1064-0204 RE Lab Sample ID: 320-5001-9 RE

Matrix: Solid Lab File ID: 03JA143D5_20.d

Analysis Method: 8290A Date Collected: 11/13/2013 14:40

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.08(g) Date Analyzed: 01/04/2014 02:17

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	H	1.0	0.038
40321-76-4	1,2,3,7,8-PeCDD	ND	H	5.2	0.069
57117-41-6	1,2,3,7,8-PeCDF	ND	H	5.2	0.034
57117-31-4	2,3,4,7,8-PeCDF	ND	H	5.2	0.035
39227-28-6	1,2,3,4,7,8-HxCDD	0.15	J H q	5.2	0.057
57653-85-7	1,2,3,6,7,8-HxCDD	0.68	J H	5.2	0.040
19408-74-3	1,2,3,7,8,9-HxCDD	0.42	J H q	5.2	0.042
70648-26-9	1,2,3,4,7,8-HxCDF	0.38	J H B	5.2	0.042
57117-44-9	1,2,3,6,7,8-HxCDF	0.48	J H B	5.2	0.031
72918-21-9	1,2,3,7,8,9-HxCDF	ND	H	5.2	0.040
60851-34-5	2,3,4,6,7,8-HxCDF	0.26	J H	5.2	0.036
35822-46-9	1,2,3,4,6,7,8-HpCDD	20	H B	5.2	0.15
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.5	J H B	5.2	0.057
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND	H	5.2	0.067
3268-87-9	OCDD	2100	H B	10	0.70
39001-02-0	OCDF	7.6	J H B	10	0.080
41903-57-5	Total TCDD	0.29	J H q	1.0	0.038
30402-14-3	Total TCDF	1.2	H q	1.0	0.023
36088-22-9	Total PeCDD	ND	H	5.2	0.069
30402-15-4	Total PeCDF	2.3	J H	5.2	0.034
34465-46-8	Total HxCDD	3.8	J H q	5.2	0.046
55684-94-1	Total HxCDF	5.5	H q B	5.2	0.037
37871-00-4	Total HpCDD	35	H B	5.2	0.15
38998-75-3	Total HpCDF	8.9	H B	5.2	0.062

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1064-0204 RE | Lab Sample ID: 320-5001-9 RE

Matrix: Solid | Lab File ID: 03JA143D5_20.d

Analysis Method: 8290A | Date Collected: 11/13/2013 14:40

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.08(g) | Date Analyzed: 01/04/2014 02:17

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	61		40-135
89059-46-1	13C-2,3,7,8-TCDF	53		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	61		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	56		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	72		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	69		40-135
114423-97-1	13C-OCDD	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1065-0204 | Lab Sample ID: 320-5001-18

Matrix: Solid | Lab File ID: 23DE1310D5_9.d

Analysis Method: 8290A | Date Collected: 11/14/2013 14:45

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.15(g) | Date Analyzed: 12/23/2013 16:59

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.030
40321-76-4	1,2,3,7,8-PeCDD	ND		5.2	0.034
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.021
57117-31-4	2,3,4,7,8-PeCDF	0.086	J q	5.2	0.022
39227-28-6	1,2,3,4,7,8-HxCDD	0.10	J	5.2	0.023
57653-85-7	1,2,3,6,7,8-HxCDD	0.13	J	5.2	0.020
19408-74-3	1,2,3,7,8,9-HxCDD	0.15	J q	5.2	0.019
70648-26-9	1,2,3,4,7,8-HxCDF	0.37	J B	5.2	0.021
57117-44-9	1,2,3,6,7,8-HxCDF	0.49	J	5.2	0.018
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.022
60851-34-5	2,3,4,6,7,8-HxCDF	0.16	J q	5.2	0.020
35822-46-9	1,2,3,4,6,7,8-HpCDD	11	B	5.2	0.11
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.0	J B	5.2	0.017
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.20	J B	5.2	0.020
3268-87-9	OCDD	3000	B	10	0.19
39001-02-0	OCDF	1.6	J B	10	0.022
41903-57-5	Total TCDD	0.10	J	1.0	0.030
30402-14-3	Total TCDF	0.69	J q	1.0	0.018
36088-22-9	Total PeCDD	0.18	J q	5.2	0.034
30402-15-4	Total PeCDF	1.0	J q	5.2	0.022
34465-46-8	Total HxCDD	1.0	J q	5.2	0.020
55684-94-1	Total HxCDF	1.9	J q B	5.2	0.020
37871-00-4	Total HpCDD	19	B	5.2	0.11
38998-75-3	Total HpCDF	1.7	J B	5.2	0.018

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1065-0204 Lab Sample ID: 320-5001-18

Matrix: Solid Lab File ID: 23DE1310D5_9.d

Analysis Method: 8290A Date Collected: 11/14/2013 14:45

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.15(g) Date Analyzed: 12/23/2013 16:59

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	56		40-135
89059-46-1	13C-2,3,7,8-TCDF	55		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	54		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	53		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	61		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	57		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	59		40-135
114423-97-1	13C-OCDD	67		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1065-0204 RA Lab Sample ID: 320-5001-18 RA

Matrix: Solid Lab File ID: 02JA1411D2_008.d

Analysis Method: 8290A Date Collected: 11/14/2013 14:45

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.15(g) Date Analyzed: 01/02/2014 18:29

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33115 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.084

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	47		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1066-0203 Lab Sample ID: 320-5001-11

Matrix: Solid Lab File ID: 24DE133D5_22.d

Analysis Method: 8290A Date Collected: 11/14/2013 09:45

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.17(g) Date Analyzed: 12/25/2013 01:02

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.041
51207-31-9	2,3,7,8-TCDF	0.77	J	1.0	0.024
40321-76-4	1,2,3,7,8-PeCDD	0.78	J B	5.1	0.063
57117-41-6	1,2,3,7,8-PeCDF	0.23	J B q	5.1	0.041
57117-31-4	2,3,4,7,8-PeCDF	0.50	J B	5.1	0.043
39227-28-6	1,2,3,4,7,8-HxCDD	1.4	J	5.1	0.096
57653-85-7	1,2,3,6,7,8-HxCDD	2.7	J B	5.1	0.068
19408-74-3	1,2,3,7,8,9-HxCDD	3.0	J B	5.1	0.070
70648-26-9	1,2,3,4,7,8-HxCDF	1.2	J B q	5.1	0.065
57117-44-9	1,2,3,6,7,8-HxCDF	0.84	J q	5.1	0.048
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.063
60851-34-5	2,3,4,6,7,8-HxCDF	1.5	J B	5.1	0.057
35822-46-9	1,2,3,4,6,7,8-HpCDD	80	B	5.1	0.18
67562-39-4	1,2,3,4,6,7,8-HpCDF	11	B	5.1	0.067
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.1	0.079
3268-87-9	OCDD	6900	E B	10	0.94
39001-02-0	OCDF	20	B	10	0.058
41903-57-5	Total TCDD	2.8	q	1.0	0.041
30402-14-3	Total TCDF	6.0	q	1.0	0.024
36088-22-9	Total PeCDD	8.2	B q	5.1	0.063
30402-15-4	Total PeCDF	12	B q	5.1	0.042
34465-46-8	Total HxCDD	26	B	5.1	0.078
55684-94-1	Total HxCDF	20	B q	5.1	0.058
37871-00-4	Total HpCDD	150	B	5.1	0.18
38998-75-3	Total HpCDF	27	B	5.1	0.073

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1066-0203 | Lab Sample ID: 320-5001-11

Matrix: Solid | Lab File ID: 24DE133D5_22.d

Analysis Method: 8290A | Date Collected: 11/14/2013 09:45

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.17(g) | Date Analyzed: 12/25/2013 01:02

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		40-135
89059-46-1	13C-2,3,7,8-TCDF	55		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	61		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	60		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	56		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	56		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	72		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	75		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1066-0203 | Lab Sample ID: 320-5001-11 RERA

Matrix: Solid | Lab File ID: 03JA1411D2_012.d

Analysis Method: 8290A | Date Collected: 11/14/2013 09:45

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.23(g) | Date Analyzed: 01/03/2014 18:14

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33217 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.23	J H	1.0	0.085

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		40-135
89059-46-1	13C-2,3,7,8-TCDF	53		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1066-0203 RE | Lab Sample ID: 320-5001-11 RE

Matrix: Solid | Lab File ID: 03JA143D5_22.d

Analysis Method: 8290A | Date Collected: 11/14/2013 09:45

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.23(g) | Date Analyzed: 01/04/2014 03:40

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	H	1.0	0.051
40321-76-4	1,2,3,7,8-PeCDD	0.74	J H	5.0	0.11
57117-41-6	1,2,3,7,8-PeCDF	0.20	J H q	5.0	0.063
57117-31-4	2,3,4,7,8-PeCDF	0.41	J H	5.0	0.066
39227-28-6	1,2,3,4,7,8-HxCDD	1.1	J H	5.0	0.14
57653-85-7	1,2,3,6,7,8-HxCDD	2.7	J H	5.0	0.10
19408-74-3	1,2,3,7,8,9-HxCDD	2.6	J H	5.0	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	1.3	J H q B	5.0	0.061
57117-44-9	1,2,3,6,7,8-HxCDF	0.99	J H B	5.0	0.046
72918-21-9	1,2,3,7,8,9-HxCDF	0.19	J H q	5.0	0.059
60851-34-5	2,3,4,6,7,8-HxCDF	1.7	J H	5.0	0.053
35822-46-9	1,2,3,4,6,7,8-HpCDD	75	H B	5.0	0.36
67562-39-4	1,2,3,4,6,7,8-HpCDF	11	H B	5.0	0.11
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND	H	5.0	0.12
39001-02-0	OCDF	21	H B	10	0.12
41903-57-5	Total TCDD	2.5	H q	1.0	0.051
30402-14-3	Total TCDF	5.4	H q	1.0	0.032
36088-22-9	Total PeCDD	6.1	H q	5.0	0.11
30402-15-4	Total PeCDF	11	H q	5.0	0.064
34465-46-8	Total HxCDD	21	H q	5.0	0.11
55684-94-1	Total HxCDF	22	H q B	5.0	0.055
37871-00-4	Total HpCDD	150	H B	5.0	0.36
38998-75-3	Total HpCDF	26	H B	5.0	0.12

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1066-0203 RE Lab Sample ID: 320-5001-11 RE

Matrix: Solid Lab File ID: 03JA143D5_22.d

Analysis Method: 8290A Date Collected: 11/14/2013 09:45

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.23(g) Date Analyzed: 01/04/2014 03:40

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		40-135
89059-46-1	13C-2,3,7,8-TCDF	59		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	68		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	65		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	71		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	62		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	79		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	78		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1066-0203 | Lab Sample ID: 320-5001-11 REDL

Matrix: Solid | Lab File ID: 03JA1410D5_36.d

Analysis Method: 8290A | Date Collected: 11/14/2013 09:45

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.23(g) | Date Analyzed: 01/04/2014 13:23

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33225 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	OCDD	7300	H B	100	1.6

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	66		40-135
89059-46-1	13C-2,3,7,8-TCDF	64		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	64		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	68		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	84		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	75		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	72		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	74		40-135
114423-97-1	13C-OCDD	78		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1068-0204 Lab Sample ID: 320-5001-19

Matrix: Solid Lab File ID: 23DE1310D5_10.d

Analysis Method: 8290A Date Collected: 11/14/2013 15:00

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.42(g) Date Analyzed: 12/23/2013 17:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.023
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.015
40321-76-4	1,2,3,7,8-PeCDD	ND		5.3	0.038
57117-41-6	1,2,3,7,8-PeCDF	ND		5.3	0.022
57117-31-4	2,3,4,7,8-PeCDF	0.065	J	5.3	0.023
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.3	0.026
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.3	0.023
19408-74-3	1,2,3,7,8,9-HxCDD	0.13	J q	5.3	0.021
70648-26-9	1,2,3,4,7,8-HxCDF	0.31	J B	5.3	0.017
57117-44-9	1,2,3,6,7,8-HxCDF	0.12	J q	5.3	0.014
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.017
60851-34-5	2,3,4,6,7,8-HxCDF	0.070	J q	5.3	0.016
35822-46-9	1,2,3,4,6,7,8-HpCDD	6.3	B	5.3	0.11
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.73	J B	5.3	0.020
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.11	J B	5.3	0.023
3268-87-9	OCDD	1900	B	11	0.16
39001-02-0	OCDF	0.91	J B	11	0.025
41903-57-5	Total TCDD	1.6	q	1.1	0.023
30402-14-3	Total TCDF	0.35	J q	1.1	0.015
36088-22-9	Total PeCDD	1.0	J q	5.3	0.038
30402-15-4	Total PeCDF	0.15	J q	5.3	0.023
34465-46-8	Total HxCDD	0.79	J q	5.3	0.023
55684-94-1	Total HxCDF	0.67	J q B	5.3	0.016
37871-00-4	Total HpCDD	10	B	5.3	0.11
38998-75-3	Total HpCDF	0.99	J q B	5.3	0.022

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1068-0204 | Lab Sample ID: 320-5001-19

Matrix: Solid | Lab File ID: 23DE1310D5_10.d

Analysis Method: 8290A | Date Collected: 11/14/2013 15:00

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.42(g) | Date Analyzed: 12/23/2013 17:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 10.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	57		40-135
89059-46-1	13C-2,3,7,8-TCDF	57		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	55		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	53		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	61		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	58		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	57		40-135
114423-97-1	13C-OCDD	60		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-SB-DUP04-1113 Lab Sample ID: 320-5001-10

Matrix: Solid Lab File ID: 24DE133D5_21.d

Analysis Method: 8290A Date Collected: 11/13/2013 00:00

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.01(g) Date Analyzed: 12/25/2013 00:20

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.039
51207-31-9	2,3,7,8-TCDF	0.084	J	1.1	0.031
40321-76-4	1,2,3,7,8-PeCDD	ND		5.3	0.070
57117-41-6	1,2,3,7,8-PeCDF	ND		5.3	0.050
57117-31-4	2,3,4,7,8-PeCDF	ND		5.3	0.052
39227-28-6	1,2,3,4,7,8-HxCDD	0.15	J	5.3	0.047
57653-85-7	1,2,3,6,7,8-HxCDD	0.20	J B	5.3	0.033
19408-74-3	1,2,3,7,8,9-HxCDD	0.19	J B q	5.3	0.034
70648-26-9	1,2,3,4,7,8-HxCDF	0.26	J B	5.3	0.040
57117-44-9	1,2,3,6,7,8-HxCDF	0.42	J	5.3	0.030
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.039
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.3	0.16
35822-46-9	1,2,3,4,6,7,8-HpCDD	21	B	5.3	0.25
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.2	J B	5.3	0.052
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.3	0.061
3268-87-9	OCDD	3200	B	11	0.93
39001-02-0	OCDF	4.6	J B	11	0.081
41903-57-5	Total TCDD	0.31	J q	1.1	0.039
30402-14-3	Total TCDF	0.58	J q	1.1	0.031
36088-22-9	Total PeCDD	0.52	J B q	5.3	0.070
30402-15-4	Total PeCDF	1.2	J B q	5.3	0.051
34465-46-8	Total HxCDD	1.8	J B q	5.3	0.038
55684-94-1	Total HxCDF	2.3	J B q	5.3	0.066
37871-00-4	Total HpCDD	34	B	5.3	0.25
38998-75-3	Total HpCDF	2.6	J B	5.3	0.056

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-SB-DUP04-1113 Lab Sample ID: 320-5001-10

Matrix: Solid Lab File ID: 24DE133D5_21.d

Analysis Method: 8290A Date Collected: 11/13/2013 00:00

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10.01(g) Date Analyzed: 12/25/2013 00:20

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.4 GPC Cleanup: (Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	51		40-135
89059-46-1	13C-2,3,7,8-TCDF	51		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	49		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	47		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	55		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	49		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	57		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	54		40-135
114423-97-1	13C-OCDD	63		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-SB-DUP04-1113 RERA Lab Sample ID: 320-5001-10 RERA

Matrix: Solid Lab File ID: 03JA1411D2_011.d

Analysis Method: 8290A Date Collected: 11/13/2013 00:00

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.10(g) Date Analyzed: 01/03/2014 17:35

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33217 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	H	1.1	0.044

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	49		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-SB-DUP04-1113 RE Lab Sample ID: 320-5001-10 RE

Matrix: Solid Lab File ID: 03JA143D5_21.d

Analysis Method: 8290A Date Collected: 11/13/2013 00:00

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.10(g) Date Analyzed: 01/04/2014 02:59

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND	H	1.1	0.029
40321-76-4	1,2,3,7,8-PeCDD	ND	H	5.3	0.050
57117-41-6	1,2,3,7,8-PeCDF	ND	H	5.3	0.032
57117-31-4	2,3,4,7,8-PeCDF	ND	H	5.3	0.033
39227-28-6	1,2,3,4,7,8-HxCDD	ND	H	5.3	0.079
57653-85-7	1,2,3,6,7,8-HxCDD	ND	H	5.3	0.056
19408-74-3	1,2,3,7,8,9-HxCDD	ND	H	5.3	0.058
70648-26-9	1,2,3,4,7,8-HxCDF	0.16	J H B	5.3	0.032
57117-44-9	1,2,3,6,7,8-HxCDF	0.34	J H q B	5.3	0.024
72918-21-9	1,2,3,7,8,9-HxCDF	ND	H	5.3	0.031
60851-34-5	2,3,4,6,7,8-HxCDF	0.12	J H q	5.3	0.028
35822-46-9	1,2,3,4,6,7,8-HpCDD	15	H B	5.3	0.14
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.62	J H B	5.3	0.032
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND	H	5.3	0.038
3268-87-9	OCDD	2800	H B	11	0.84
39001-02-0	OCDF	1.8	J H B	11	0.054
41903-57-5	Total TCDD	0.34	J H	1.1	0.029
30402-14-3	Total TCDF	0.64	J H q	1.1	0.018
36088-22-9	Total PeCDD	0.67	J H q	5.3	0.050
30402-15-4	Total PeCDF	1.0	J H q	5.3	0.032
34465-46-8	Total HxCDD	0.57	J H q	5.3	0.064
55684-94-1	Total HxCDF	1.8	J H q B	5.3	0.029
37871-00-4	Total HpCDD	25	H B	5.3	0.14
38998-75-3	Total HpCDF	1.6	J H B	5.3	0.035

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-SB-DUP04-1113 RE | Lab Sample ID: 320-5001-10 RE

Matrix: Solid | Lab File ID: 03JA143D5_21.d

Analysis Method: 8290A | Date Collected: 11/13/2013 00:00

Extract. Method: 8290 | Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.10(g) | Date Analyzed: 01/04/2014 02:59

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33210 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	54		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	60		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	56		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	54		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	72		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	64		40-135
114423-97-1	13C-OCDD	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-SB-DUP06-1113 | Lab Sample ID: 320-5001-20

Matrix: Solid | Lab File ID: 23DE1310D5_11.d

Analysis Method: 8290A | Date Collected: 11/14/2013 00:00

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.11(g) | Date Analyzed: 12/23/2013 18:31

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 10.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.034
40321-76-4	1,2,3,7,8-PeCDD	ND		5.5	0.044
57117-41-6	1,2,3,7,8-PeCDF	ND		5.5	0.023
57117-31-4	2,3,4,7,8-PeCDF	0.066	J q	5.5	0.024
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.5	0.027
57653-85-7	1,2,3,6,7,8-HxCDD	0.066	J q	5.5	0.024
19408-74-3	1,2,3,7,8,9-HxCDD	0.11	J q	5.5	0.022
70648-26-9	1,2,3,4,7,8-HxCDF	0.40	J B	5.5	0.016
57117-44-9	1,2,3,6,7,8-HxCDF	0.10	J q	5.5	0.014
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.5	0.017
60851-34-5	2,3,4,6,7,8-HxCDF	0.067	J	5.5	0.015
35822-46-9	1,2,3,4,6,7,8-HpCDD	7.6	B	5.5	0.17
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.72	J B	5.5	0.020
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.5	0.024
3268-87-9	OCDD	2600	B	11	0.17
39001-02-0	OCDF	0.77	J B	11	0.025
41903-57-5	Total TCDD	1.5	q	1.1	0.034
30402-14-3	Total TCDF	0.51	J q	1.1	0.017
36088-22-9	Total PeCDD	1.1	J q	5.5	0.044
30402-15-4	Total PeCDF	0.18	J q	5.5	0.024
34465-46-8	Total HxCDD	0.85	J q	5.5	0.024
55684-94-1	Total HxCDF	0.85	J q B	5.5	0.016
37871-00-4	Total HpCDD	13	B	5.5	0.17
38998-75-3	Total HpCDF	0.72	J B	5.5	0.022

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-SB-DUP06-1113 Lab Sample ID: 320-5001-20

Matrix: Solid Lab File ID: 23DE1310D5_11.d

Analysis Method: 8290A Date Collected: 11/14/2013 00:00

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.11(g) Date Analyzed: 12/23/2013 18:31

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		40-135
89059-46-1	13C-2,3,7,8-TCDF	57		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	56		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	55		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	62		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	59		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	62		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	59		40-135
114423-97-1	13C-OCDD	67		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-SB-DUP06-1113 RA | Lab Sample ID: 320-5001-20 RA

Matrix: Solid | Lab File ID: 02JA1411D2_009.d

Analysis Method: 8290A | Date Collected: 11/14/2013 00:00

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.11(g) | Date Analyzed: 01/02/2014 19:07

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 10.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33115 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.085

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	49		40-135

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: Dioxin

Missing Information	Date Lab Contacted	Date Received
See DV Report		

Validator: Edward Hedley Date: 2/7/14

See DV Report

EPA-NE - Data Validation
VOA/SV/Pest/PCB-I

Case: NAVSTA Newport SDG: 320-50014-1

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: Edward Sadlon Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: Edward Sedlyn Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport. SDG: 320-5001-1

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: Edward Lodbyer Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA SDG: 320-50014-1

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: Edward Ledlow Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Edward Sedlmyer Date: 2/7/14

NA

EPA NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Edward Sadlon

Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Edward Sedlmyer Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 320-5001-1

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator: Edward Sedlyar Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)
Comments:								

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: Edward Sedlmyer Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: Edward Lichtyger Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: Edward Sullivan

Date: 2/7/14

EPA-NE - Data Validation Worksheet See DV Report

Case: NAUSTA Newport SDG: 320-5001-1

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Validator: Edward Lodlyn Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: Edward Lodhgren Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

VOA/SV/Pest/PCB-V-B

V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: Edward Sedlazo Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 320-5001-1

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4
2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4
4MP= 4-Methyhlphenol-d_8
DCP= 2.4-Dichlorophenol-d_3

Validator: Edward Sedlmyer Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
SOM01.2		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4.6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedlazo Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria							
		Fluoranthene-d_{10}		Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10}		Affected Analytes	Action (Detection/ND)
		Water 50-150	Soil 50-150			Water 50-150	Soil 50-150		
Sample ID	Matrix	% Recovery				% Recovery			
				Fluoranthene				Naphthalene	
				Pyrene				2-Methylnaphthalene	
				Benzo(a)anthracene				Acenaphthylene	
				Chrysene				Acenaphthene	
				Benzo(b)fluoranthene				Fluorene	
				Benzo(k)fluoranthene				Pentachlorophenol	
				Benzo(a)pyrene				Phenanthrene	
				Indeno(1.2.2-cd)pyrene				Anthracene	
				Dibenzo(a.h)anthracene					
				Benzo(g.h.i)perylene					

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sadlowski Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1.2-Dichloroethane-d_4

Validator: Edward Sedlmyer Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sullivan Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Edward Ledoyen Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: Edward Hollman Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sedlazo Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-50014-1

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: Edward Ludlow Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sedlmayer Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: Edward Sedlmyer Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 320-5001-1

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: Edward Sullivan Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: Edward Sullivan Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: Edward Sullivan Date: 2/7/14

EPA-NE - Data Validation Worksheet See DV Report

Case: NAVSTA Newport SDG: 320-5001-1

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: Edward Sedlmyer Date: 2/7/14

See DV Report

EPA NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 320-5001-1

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: Edward Sedlmyer Date: 2/7/14

EPA-NE - Data Validation Worksheet See DV Report

Case: NAVSTA Newport SDG: 320-5001-1

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: Edward Sedlmyer Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Sedlmyer Date: 2/7/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Hedley Date: 2/7/14

NA

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-1

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: Edward Sedlmyer Date: 2/7/14

APPENDIX D

SUPPORT DOCUMENTATION

NAVSTA NEWPORT
SOIL DATA
320-5001-1

FRACTION	CHEMICAL	F2-004/5-SB1025-2.604-R	UNITS	TF2-SB-DUP04-1113-RE	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	2000	NG/KG	2800	33.33	800.00
DIOX	1,2,3,4,6,7,8-HPCDD	9.1	NG/KG	15	48.96	5.90
DIOX	1,2,3,4,7,8-HXCDD	0.08 J	NG/KG	ND	200.00	0.08
DIOX	1,2,3,6,7,8-HXCDF	0.16 J	NG/KG	0.34 J	72.00	0.18
DIOX	1,2,3,7,8,9-HXCDD	0.13 J	NG/KG	ND	200.00	0.13
DIOX	1,2,3,7,8-PECDF	0.051 J	NG/KG	ND	200.00	0.05
DIOX	2,3,4,6,7,8-HXCDF	ND	NG/KG	0.12 J	200.00	0.12
DIOX	2,3,4,7,8-PECDF	0.062 J	NG/KG	ND	200.00	0.06
DIOX	TOTAL HPCDD	16	NG/KG	25	43.90	9.00
DIOX	TOTAL HPCDF	ND	NG/KG	1.6 J	200.00	1.60
DIOX	TOTAL HXCDD	0.93 J	NG/KG	0.57 J	48.00	0.36
DIOX	TOTAL HXCDF	0.48 J	NG/KG	1.8 J	115.79	1.32
DIOX	TOTAL PECDD	0.043 J	NG/KG	0.67 J	175.88	0.63
DIOX	TOTAL PECDF	0.31 J	NG/KG	1 J	105.34	0.69
DIOX	TOTAL TCDD	0.49 J	NG/KG	0.34 J	36.14	0.15
DIOX	TOTAL TCDF	0.86 J	NG/KG	0.64 J	29.33	0.22

0 K, < 2xRL

0,K < 2xRL

0, K, < 2xRL

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-5001-1

FRACTION	CHEMICAL	TF2-004/5-SB1068-0204	UNITS	TF2-SB-DUP06-1113	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	1900 B	NG/KG	2600 B	31.11	700.00
DIOX	1,2,3,4,6,7,8,9-OCDF	0.91 J B	NG/KG	0.77 J B	16.67	0.14
DIOX	1,2,3,4,6,7,8-HPCDD	6.3 B	NG/KG	7.6 B	18.71	1.30
DIOX	1,2,3,4,6,7,8-HPCDF	0.73 J B	NG/KG	0.72 J B	1.38	0.01
DIOX	1,2,3,4,7,8,9-HPCDF	0.11 J B	NG/KG	ND	200.00	0.11
DIOX	1,2,3,4,7,8-HXCDF	0.31 J B	NG/KG	0.4 J B	25.35	0.09
DIOX	1,2,3,6,7,8-HXCDD	ND	NG/KG	0.066 J q	200.00	0.07
DIOX	1,2,3,6,7,8-HXCDF	0.12 J q	NG/KG	0.1 J q	18.18	0.02
DIOX	1,2,3,7,8,9-HXCDD	0.13 J q	NG/KG	0.11 J q	16.67	0.02
DIOX	2,3,4,6,7,8-HXCDF	0.07 J q	NG/KG	0.067 J	4.38	0.00
DIOX	2,3,4,7,8-PECDF	0.065 J	NG/KG	0.066 J q	1.53	0.00
DIOX	TEQ WHO-2005	-99	NG/KG	-99	0.00	0.00
DIOX	TOTAL HPCDD	10 B	NG/KG	13 B	26.09	3.00
DIOX	TOTAL HPCDF	0.99 J q B	NG/KG	0.72 J B	31.58	0.27
DIOX	TOTAL HXCDD	0.79 J q	NG/KG	0.85 J q	7.32	0.06
DIOX	TOTAL HXCDF	0.67 J q B	NG/KG	0.85 J q B	23.68	0.18
DIOX	TOTAL PECDD	1 J q	NG/KG	1.1 J q	9.52	0.10
DIOX	TOTAL PECDF	0.15 J q	NG/KG	0.18 J q	18.18	0.03
DIOX	TOTAL TCDD	1.6 q	NG/KG	1.5 q	6.45	0.10
DIOX	TOTAL TCDF	0.35 J q	NG/KG	0.51 J q	37.21	0.16

0.11 < 2x RL

0.07 < 2x RL

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 320-5001-1

Job Description: TF2 Portsmouth RI, CTO WE 30

For:
Tetra Tech, Inc.
250 Andover Street
Suite 200
Wilmington, MA 01887

Attention: Dabra Seiken

Approved for release.
Karen M Sellers
Project Manager I
1/14/2014 1:57 PM

Designee for
Jill Kellmann, Senior Project Manager
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374-4402
jill.kellmann@testamericainc.com
01/14/2014

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The isomer is qualified as positively identified, but at an estimated quantity because the quantitation is based on the theoretical ratio for these samples.
E	Result exceeded calibration range.
H	Sample was prepped or analyzed beyond the specified holding time
*	Isotope Dilution analyte exceeds control limits
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F2	MS/MSD RPD exceeds control limits
F	MS/MSD Recovery and/or RPD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Tetra Tech, Inc.

Project: TF2 Portsmouth RI, CTO WE 30

Report Number: 320-5001-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica West Sacramento attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

All parameters for which TestAmerica West Sacramento has certification were evaluated to the QSM specified reporting convention or to the client specified format if different from QSM. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Receipt
The samples were received on 11/16/2013 9:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.9° C and 3.8° C. The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): Received 2 jars for TF2-003-SB1011-0204, COC lists 1 jar. There were 3 jars received for TF2-003-SB1012-0204 but the COC listed 2.

Dioxin - 8290A
The following samples were prepared outside of preparation holding time due to the original method blank (MB) having several isotope dilution analytes (IDA), less than 10% recoveries: TF2-004/5-SB1021-0204 (320-5001-5), TF2-004/5-SB1025-2.604 (320-5001-4), TF2-004/5-SB1026-0204 (320-5001-3), TF2-004/5-SB1032-0204 (320-5001-1), TF2-004/5-SB1038-0204 (320-5001-14), TF2-004/5-SB1041-022.5 (320-5001-7), TF2-004/5-SB1043-0.10.5 (320-5001-6), TF2-004/5-SB1047-0204 (320-5001-13), TF2-004/5-SB1048-0204 (320-5001-2), TF2-004/5-SB1057-0304 (320-5001-12), TF2-004/5-SB1058-0204 (320-5001-8), TF2-004/5-SB1058-0204 (320-5001-8 MS), TF2-004/5-SB1058-0204 (320-5001-8 MSD), TF2-004/5-SB1064-0204 (320-5001-9), TF2-004/5-SB1066-0203 (320-5001-11), TF2-SB-DUP04-1113 (320-5001-10).

The samples in analytical batch 32619 were analyzed on 12/24/2014. It was found that the method blank (MB 320-30804/1-A), and one sample, TF2-004/5-SB1048-0204 (320-5001-2) had very low Isotope Dilution Analyte (IDA) recoveries, indicating an inefficient extraction. There are elevated detection limits and falsely elevated values for many analytes in sample 320-5001-2 as a result of the low IDA recoveries. The samples in the batch were set for re-extraction. For this reason no 2,3,7,8-TCDF confirmations were run for the samples in this batch. All TCDF results in the original run were less than the reporting limit except for sample TF2-004/5-SB1048-0204 (320-5001-2), whose result was suspect due to very low IDA recovery.

The samples were re-extracted but the re-extraction was outside holding time. The re-extraction met all other QC requirements. The results for the re-extraction were consistent with the sample results from the original sample analyses. The exception was sample TF2-004/5-SB1048-0204 (320-5001-2), where the re-extraction showed lower concentrations. This result is consistent with the results from the other samples. For this reason the original result for TF2-004/5-SB1048-0204 (320-5001-2) should be considered suspect.

Finally, the unconfirmed 2,3,7,8-TCDF results agreed well in the two runs. There is no reason to think the DB225 column confirmation values that were obtained out of holding time are likely to be different than what would have been obtained for in hold confirmations had

they been run.

Ion abundance ratios are outside criteria for the following samples: (MB 320-30809/1-A), TF2-003-SB1012-0204 (320-5001-23), TF2-004/5-SB1031-0204 (320-5001-15), TF2-004/5-SB1040-0204 (320-5001-16), TF2-004/5-SB1065-0204 (320-5001-18), TF2-004/5-SB1068-0204 (320-5001-19), TF2-SB-DUP06-1113 (320-5001-20). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC). The affected analytes have been flagged.

Ion abundance ratios are outside criteria for the Isotope Dilution Analyte (IDA) associated with the following samples: (MB 320-30804/1-A), TF2-004/5-SB1048-0204 (320-5001-2). The theoretical area for the IDA was used to quantitate recovery and target concentration.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 30809 were outside control limits for OCDD. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 30809 was outside control limits for 1,2,3,4,7,8,9-HpCDF and OCDD. Sample matrix interference and/or non-homogeneity are suspected as the cause.

The matrix spike / matrix spike duplicate (MS/MSD) for batch 30804 had recoveries and % RPDs that were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit and was confirmed by reanalysis: TF2-004/5-SB1049-0204 (320-5001-17). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for this IDA in the sample.

Ion abundance ratios are outside criteria for the following samples: (MB 320-30804/1-A), TF2-004/5-SB1021-0204 (320-5001-5), TF2-004/5-SB1025-2.604 (320-5001-4), TF2-004/5-SB1026-0204 (320-5001-3), TF2-004/5-SB1032-0204 (320-5001-1), TF2-004/5-SB1038-0204 (320-5001-14), TF2-004/5-SB1041-022.5 (320-5001-7), TF2-004/5-SB1043-0.10.5 (320-5001-6), TF2-004/5-SB1047-0204 (320-5001-13), TF2-004/5-SB1048-0204 (320-5001-2), TF2-004/5-SB1057-0304 (320-5001-12), TF2-004/5-SB1058-0204 (320-5001-8), TF2-004/5-SB1064-0204 (320-5001-9), TF2-004/5-SB1066-0203 (320-5001-11), TF2-SB-DUP04-1113 (320-5001-10). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC). The affected analytes have been flagged.

The concentration of one or more analytes associated with the following samples exceeded the instrument calibration range: TF2-004/5-SB1032-0204 (320-5001-1), TF2-004/5-SB1041-022.5 (320-5001-7), TF2-004/5-SB1047-0204 (320-5001-13), TF2-004/5-SB1066-0203 (320-5001-11). The samples were re-analyzed at a dilution to report these analytes.

No other analytical or quality issues were noted.

Method Summary

Client: Tetra Tech, Inc.
Project/Site: TF2 Portsmouth RI, CTO WE 30

TestAmerica Job ID: 320-5001-1

Method	Method Description	Protocol	Laboratory
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: TF2 Portsmouth RI, CTO WE 30

TestAmerica Job ID: 320-5001-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-5001-1	TF2-004/5-SB1032-0204	Solid	11/13/13 08:00	11/16/13 09:05
320-5001-2	TF2-004/5-SB1048-0204	Solid	11/13/13 08:25	11/16/13 09:05
320-5001-3	TF2-004/5-SB1026-0204	Solid	11/13/13 10:15	11/16/13 09:05
320-5001-4	TF2-004/5-SB1025-2.604	Solid	11/13/13 10:45	11/16/13 09:05
320-5001-5	TF2-004/5-SB1021-0204	Solid	11/13/13 10:48	11/16/13 09:05
320-5001-6	TF2-004/5-SB1043-0.10.5	Solid	11/13/13 12:50	11/16/13 09:05
320-5001-7	TF2-004/5-SB1041-022.5	Solid	11/13/13 13:20	11/16/13 09:05
320-5001-8	TF2-004/5-SB1058-0204	Solid	11/13/13 14:05	11/16/13 09:05
320-5001-9	TF2-004/5-SB1064-0204	Solid	11/13/13 14:40	11/16/13 09:05
320-5001-10	TF2-SB-DUP04-1113	Solid	11/13/13 00:00	11/16/13 09:05
320-5001-11	TF2-004/5-SB1066-0203	Solid	11/14/13 09:45	11/16/13 09:05
320-5001-12	TF2-004/5-SB1057-0304	Solid	11/14/13 10:15	11/16/13 09:05
320-5001-13	TF2-004/5-SB1047-0204	Solid	11/14/13 10:50	11/16/13 09:05
320-5001-14	TF2-004/5-SB1038-0204	Solid	11/14/13 13:15	11/16/13 09:05
320-5001-15	TF2-004/5-SB1031-0204	Solid	11/14/13 13:40	11/16/13 09:05
320-5001-16	TF2-004/5-SB1040-0204	Solid	11/14/13 14:15	11/16/13 09:05
320-5001-17	TF2-004/5-SB1049-0204	Solid	11/14/13 12:40	11/16/13 09:05
320-5001-18	TF2-004/5-SB1065-0204	Solid	11/14/13 14:45	11/16/13 09:05
320-5001-19	TF2-004/5-SB1068-0204	Solid	11/14/13 15:00	11/16/13 09:05
320-5001-20	TF2-SB-DUP06-1113	Solid	11/14/13 00:00	11/16/13 09:05

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1906 | PAGE 1 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington MA	Debra Seiken	978 474 8445	Test America / J Kellmann
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
Kjalkut		Kayleen Jalkut	781 801 0457	880 Riverside Parkway
		CARRIER/WAYBILL NUMBER		CITY, STATE 916 373 5600
		FedEx AB# 875937975520		West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): 6 G G
PRESERVATIVE USED: ≤6°C ≤6°C ≤6°C by 11-14-13

TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS; 8oz jar; Dioxins-4oz amber glass

320-5001 Chain of Custody

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS									COMMENTS
11/13	0800	TF2-004/5-SB1032-0204	SB 1032	2	4	SO	G	1	X								
11/13	0825	TF2-004/5-SB1048-0204	SB 1048	2	4	SO	G	1	X								
11/13	1015	TF2-004/5-SB1026-0204	SB 1026	2	4	SO	G	1	X								
11/13	1045	TF2-004/5-SB1025-2.604	SB 1025	2.6	4	SO	G	1	X								
11/13	1048	TF2-004/5-SB1021-0204	SB 1021	2	4	SO	G	1	X								
11/13	1250	TF2-004/5-SB1043-0.10.5	SB 1043	0.1	0.5	SO	G	1	X								
11/13	1320	TF2-004/5-SB1041-02.2.5	SB 1041	2	2.5	SO	G	1	X								
11/13	1405	TF2-004/5-SB1058-0204	SB 1058	2	4	SO	G	2	X								Lab QC
11/13	1440	TF2-004/5-SB1064-0204	SB 1064	2	4	SO	G	1	X								
11/13	0000	TF2-SB-DUP04-1113	—	—	—	SO	G	1	X								
11/14	0945	TF2-SB004/5-SB1066-0203	SB 1066	2	3	SO	G	1	X								
11/14	1015	TF2-004/5-SB1057-~~0203~~ 0304	SB 1057	2.3	3.4	SO	G	1	X								
11/14	1050	TF2-004/5-SB1047-0204	SB 1047	2	4	SO	G	1	X								

Kjalkut 11-15-13

1. RELINQUISHED BY	DATE 11-15-13	TIME 1500	1. RECEIVED BY FedEx	DATE	TIME
2 RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE 11-16-13	TIME 905
3 RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: 3.8°C, 0.9°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

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01/14/2014

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1905 | PAGE 2 OF 3

PROJECT NO: CTO 112G03019 WE30	FACILITY: Wilmington, MA	PROJECT MANAGER Debra Seiken	PHONE NUMBER 978 474 8445	LABORATORY NAME AND CONTACT: Test America / J. Kellmann
SAMPLERS (SIGNATURE) KJalkut		FIELD OPERATIONS LEADER Kayleen Jalkut	PHONE NUMBER 7813010457	ADDRESS 880 Riverside Parkway
		CARRIER/WAYBILL NUMBER FedEx AB# 8759 3797 5520		CITY, STATE 916 373 5600 West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED		TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS - 8oz JAR	TYPE OF ANALYSIS: DIOXIN - 1L AMBER GLASS	COMMENTS
									G	G			≤6°C	≤6°C	
11/14	1315	TF2-004/5-SB1038-0204	SB1038	2	4	SO	G	1	X	—					
11/14	1340	TF2-004/5-SB1031-0204	SB1031	2	4	SO	G	1	X	—					
11/14	1415	TF2-004/5-SB1040-0204	SB1040	2	4	SO	G	1	X	—					
11/14	1240	TF2-004/5-SB1049-0204	SB1049	2	4	SO	G	1	X	—					
11/14	1445	TF2-004/5-SB1065-0204	SB1065	2	4	SO	G	1	X	—					
11/14	1500	TF2-004/5-SB1068-0204	SB1068	2	4	SO	G	1	X	—					
11/14	0000	TF2-SB-DUP06-1113 *	—	—	—	SO	G	1	X	—					
11/14	1200	TF2-SB-RB03-1113	—	—	—	QC	G	2	—	X					
11/15	1025	TF2-003-SB1011-0204	SB1011	2	4	SO	G	1	X	—					
11/15	1110	TF2-003-SB1012-0204	SB1012	2	4	SO	G	1	X	—					Lab QC
11/15	0915	TF2-003-SB1017-0111.6	SB1017	1	1.6	SO	G	1	X	—					
11/15	0920	TF2-003-SB1017-0204	SB1017	2	4	SO	G	1	X	—					
11/15	1145	TF2-003-SB1014-0204	SB1014	2	4	SO	G	1	X	—					

KJalkut 11-15-13

1 RELINQUISHED BY		DATE 11-15-13	TIME 1500	1. RECEIVED BY FedEx		DATE	TIME
2 RELINQUISHED BY		DATE	TIME	2. RECEIVED BY		DATE 11-16-13	TIME 905
3. RELINQUISHED BY		DATE	TIME	3 RECEIVED BY		DATE	TIME

COMMENTS * There is no DUP05 for dioxin or DUP07 for DIOXIN

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

FORM NO TtNUS-001 4/02R

1 rec'd 2 jars 2 rec'd 3 jars on 11-16-13

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01/14/2014

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER № 1909 | PAGE 3 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington, MA	Debra Seiken	978 474 8445	Test America / Jill Kellmann
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
Kjalbert		Kayleen Jalkut	781 801 0457	880 Riverside Parkway
		CARRIER/WAYBILL NUMBER		CITY, STATE 916-373-5600
		FedEx AB # 8759 3797 5520		West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: DIOXIN, TOTAL 5 Si-IDS Soil Cuttings	TYPE OF ANALYSIS: PIOXIN - IL AMBER	COMMENTS
									G	4°C			
									G	HCl			
11/15	1100	TF2-003-SB1015-0204	SB 1015	2	4	SO	G	1	X	—			
11/15	1015	TF2-003-SB1016-0204	SB 1016	2	4	SO	G	1	X	—			
11/15	1000	TF2-003-SB1018-0204	SB 1018	2	4	SO	G	1	X	—			
11/15	1200	TF2-SB-RB04-1113	—	—	—	QC	G	2	—	X			
11/15	0000	TF2-SB-DUP08-1113	—	—	—	SO	G	1	X	—			

K Jalbert 11-15-13

1. RELINQUISHED BY	DATE	TIME	1 RECEIVED BY	DATE	TIME
[signature]	11-15-13	1500	FedEx		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
			[signature]	11-16-13	905
3 RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
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01/14/2014

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 320-5001-1

Login Number: 5001
List Number: 1
Creator: Hytrek, Cheryl

List Source: TestAmerica Sacramento

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Method 8290A

Dioxins and Furans (HRGC/HRMS) by Method 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-225 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDD #	TCDF #
TF2-004/5-SB1032-0 204 RERA	320-5001-1 RERA	68	69
TF2-004/5-SB1064-0 204 RERA	320-5001-9 RERA	63	48
TF2-SB-DUP04-1113 RERA	320-5001-10 RERA	65	49
TF2-004/5-SB1066-0 203 RERA	320-5001-11 RERA	70	53
TF2-004/5-SB1047-0 204 RERA	320-5001-13 RERA	67	49
TF2-004/5-SB1038-0 204 RERA	320-5001-14 RERA	65	48

	QC LIMITS
TCDD = 13C-2,3,7,8-TCDD	40-135
TCDF = 13C-2,3,7,8-TCDF	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-225 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF	#
TF2-004/5-SB1031-0 204 RA	320-5001-15 RA	51	
TF2-004/5-SB1040-0 204 RA	320-5001-16 RA	46	
TF2-004/5-SB1049-0 204 RA	320-5001-17 RA	38	*
TF2-004/5-SB1065-0 204 RA	320-5001-18 RA	47	
TF2-SB-DUP06-1113 RA	320-5001-20 RA	49	

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-225 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #
TF2-004/5-SB1048-0 204 RERA	320-5001-2 RERA	65	61
TF2-004/5-SB1026-0 204 RERA	320-5001-3 RERA	64	63
TF2-004/5-SB1025-2 .604 RERA	320-5001-4 RERA	65	61
TF2-004/5-SB1021-0 204 RERA	320-5001-5 RERA	69	67
TF2-004/5-SB1043-0 .10.5 RERA	320-5001-6 RERA	66	63

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-004/5-SB1032-0 204	320-5001-1	49	53	48	49	46	53	52	55
TF2-004/5-SB1032-0 204 RE	320-5001-1 RE	60	67	63	69	61	68	72	79
TF2-004/5-SB1032-0 204 REDL	320-5001-1 REDL	68	66	66	64	73	84	72	74
TF2-004/5-SB1048-0 204	320-5001-2	0.3 *	2 *	0.3 *	0.3 * q	0.4 *	0.7 *	0.8 *	1 *
TF2-004/5-SB1048-0 204 RE	320-5001-2 RE	54	63	59	66	55	65	68	72
TF2-004/5-SB1026-0 204	320-5001-3	50	56	51	53	51	56	59	60
TF2-004/5-SB1026-0 204 RE	320-5001-3 RE	54	63	59	64	56	67	70	75
TF2-004/5-SB1025-2 .604	320-5001-4	52	57	50	53	50	60	57	59
TF2-004/5-SB1025-2 .604 RE	320-5001-4 RE	56	64	59	66	55	68	67	73
TF2-004/5-SB1021-0 204	320-5001-5	48	49	42	45	44	51	45	53
TF2-004/5-SB1021-0 204 RE	320-5001-5 RE	58	65	58	63	57	69	67	75
TF2-004/5-SB1021-0 204 REDL	320-5001-5 REDL	67	64	63	61	71	79	69	65
TF2-004/5-SB1043-0 .10.5	320-5001-6	51	54	48	50	49	54	50	55
TF2-004/5-SB1043-0 .10.5 RE	320-5001-6 RE	56	65	59	64	55	65	68	76
TF2-004/5-SB1041-0 22.5	320-5001-7	50	53	47	48	46	51	49	51
TF2-004/5-SB1041-0 22.5 RE	320-5001-7 RE	53	63	57	65	57	65	68	74
TF2-004/5-SB1041-0 22.5 REDL	320-5001-7 REDL	61	59	58	58	70	79	74	68
TF2-004/5-SB1058-0 204	320-5001-8	49	48	41	44	45	49	44	47
TF2-004/5-SB1058-0 204 RE	320-5001-8 RE	55	64	57	61	53	65	64	69
TF2-004/5-SB1064-0 204	320-5001-9	51	55	52	54	56	61	62	65
TF2-004/5-SB1064-0 204 RE	320-5001-9 RE	53	61	57	61	56	70	69	72
TF2-SB-DUP04-1113	320-5001-10	51	51	47	49	49	55	54	57
TF2-SB-DUP04-1113 RE	320-5001-10 RE	54	63	56	60	54	66	64	72
TF2-004/5-SB1066-0 203	320-5001-11	55	64	60	61	56	56	67	72
TF2-004/5-SB1066-0 203 RE	320-5001-11 RE	59	67	65	68	62	71	72	79

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): SPB-Octyl ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-004/5-SB1066-0 203 REDL	320-5001-11 REDL	64	66	68	64	75	84	74	72
TF2-004/5-SB1057-0 304	320-5001-12	56	58	53	57	58	59	63	70
TF2-004/5-SB1057-0 304 RE	320-5001-12 RE	59	66	63	68	60	68	73	81
TF2-004/5-SB1047-0 204	320-5001-13	57	62	56	60	58	61	65	75
TF2-004/5-SB1047-0 204 RE	320-5001-13 RE	57	67	62	65	59	71	74	84
TF2-004/5-SB1047-0 204 REDL	320-5001-13 REDL	68	66	67	65	74	86	75	73
TF2-004/5-SB1038-0 204	320-5001-14	69	77	73	77	77	78	90	98
TF2-004/5-SB1038-0 204 RE	320-5001-14 RE	57	63	59	63	60	71	72	79
TF2-004/5-SB1038-0 204 REDL	320-5001-14 REDL	0 *	0 *	0 *	0 *	71	80	73	69
TF2-004/5-SB1031-0 204	320-5001-15	57	59	55	57	59	63	62	63
TF2-004/5-SB1040-0 204	320-5001-16	52	54	51	52	54	57	56	58
TF2-004/5-SB1049-0 204	320-5001-17	43	43	39 *	41	41	44	42	45
TF2-004/5-SB1065-0 204	320-5001-18	55	56	53	54	57	61	59	61
TF2-004/5-SB1068-0 204	320-5001-19	57	57	53	55	58	61	57	60
TF2-SB-DUP06-1113	320-5001-20	57	58	55	56	59	62	59	62
	MB 320-30804/1-A	4 *	5 * q	5 *	5 *	8 *	9 *	10 *	12 *
	MB 320-30809/1-A	55	58	57	57	59	61	62	64
	MB 320-32631/1-A	58	66	63	68	64	72	77	84
	LCS 320-30804/2-A	46	54	48	49	47	52	58	60
	LCS 320-30809/2-A	56	59	57	58	58	62	63	65
	LCS 320-32631/2-A	55	64	59	64	54	63	66	73
TF2-004/5-SB1058-0 204 MS	320-5001-8 MS	50	51	45	46	47	50	45	50
TF2-004/5-SB1058-0 204 MS RE	320-5001-8 MS RE	49	57	51	55	48	61	56	64
	320-5001-A-23-B MS	59	60	56	60	55	61	62	69
TF2-004/5-SB1058-0 204 MSD	320-5001-8 MSD	45	49	41	45	47	51	49	55

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-004/5-SB1058-0204 MSD RE	320-5001-8 MSD RE	54	61	57	63	54	64	63	68
	320-5001-A-23-C MSD	69	71	71	70	79	78	69	71

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-004/5-SB1032-0 204	320-5001-1	65
TF2-004/5-SB1032-0 204 RE	320-5001-1 RE	82
TF2-004/5-SB1032-0 204 REDL	320-5001-1 REDL	76
TF2-004/5-SB1048-0 204	320-5001-2	2 *
TF2-004/5-SB1048-0 204 RE	320-5001-2 RE	71
TF2-004/5-SB1026-0 204	320-5001-3	66
TF2-004/5-SB1026-0 204 RE	320-5001-3 RE	75
TF2-004/5-SB1025-2 .604	320-5001-4	67
TF2-004/5-SB1025-2 .604 RE	320-5001-4 RE	73
TF2-004/5-SB1021-0 204	320-5001-5	55
TF2-004/5-SB1021-0 204 RE	320-5001-5 RE	77
TF2-004/5-SB1021-0 204 REDL	320-5001-5 REDL	61
TF2-004/5-SB1043-0 .10.5	320-5001-6	56
TF2-004/5-SB1043-0 .10.5 RE	320-5001-6 RE	71
TF2-004/5-SB1041-0 22.5	320-5001-7	64
TF2-004/5-SB1041-0 22.5 RE	320-5001-7 RE	80
TF2-004/5-SB1041-0 22.5 REDL	320-5001-7 REDL	72
TF2-004/5-SB1058-0 204	320-5001-8	48
TF2-004/5-SB1058-0 204 RE	320-5001-8 RE	64
TF2-004/5-SB1064-0 204	320-5001-9	70
TF2-004/5-SB1064-0 204 RE	320-5001-9 RE	70
TF2-SB-DUP04-1113	320-5001-10	63
TF2-SB-DUP04-1113 RE	320-5001-10 RE	68
TF2-004/5-SB1066-0 203	320-5001-11	75
TF2-004/5-SB1066-0 203 RE	320-5001-11 RE	78

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): SPB-Octyl ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	OCDD	#
TF2-004/5-SB1066-0 203 REDL	320-5001-11 REDL	78	
TF2-004/5-SB1057-0 304	320-5001-12	71	
TF2-004/5-SB1057-0 304 RE	320-5001-12 RE	74	
TF2-004/5-SB1047-0 204	320-5001-13	80	
TF2-004/5-SB1047-0 204 RE	320-5001-13 RE	83	
TF2-004/5-SB1047-0 204 REDL	320-5001-13 REDL	74	
TF2-004/5-SB1038-0 204	320-5001-14	106	
TF2-004/5-SB1038-0 204 RE	320-5001-14 RE	79	
TF2-004/5-SB1038-0 204 REDL	320-5001-14 REDL	67	
TF2-004/5-SB1031-0 204	320-5001-15	68	
TF2-004/5-SB1040-0 204	320-5001-16	64	
TF2-004/5-SB1049-0 204	320-5001-17	45	
TF2-004/5-SB1065-0 204	320-5001-18	67	
TF2-004/5-SB1068-0 204	320-5001-19	60	
TF2-SB-DUP06-1113	320-5001-20	67	
	MB 320-30804/1-A	13	*
	MB 320-30809/1-A	61	
	MB 320-32631/1-A	73	
	LCS 320-30804/2-A	59	
	LCS 320-30809/2-A	64	
	LCS 320-32631/2-A	67	
TF2-004/5-SB1058-0 204 MS	320-5001-8 MS	50	
TF2-004/5-SB1058-0 204 MS RE	320-5001-8 MS RE	58	
	320-5001-A-23-B MS	96	
TF2-004/5-SB1058-0 204 MSD	320-5001-8 MSD	57	

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-004/5-SB1058-0204 MSD RE	320-5001-8 MSD RE	66
	320-5001-A-23-C MSD	62

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID (1): CPS 320-32536/1 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/23/2013 14:57

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.11	23

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID (1): CPS 320-32502/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 12/19/2013 17:26

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.03	25

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID (1): CPS 320-32566/1 Instrument ID (1): 10D5

GC Column (1): SPB-Octyl ID: 0.25(mm) Date Analyzed (1): 12/22/2013 13:44

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.59	17

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID (1): CPS 320-32672/1 Instrument ID (1): 10D5

GC Column (1): SPB-Octyl ID: 0.25(mm) Date Analyzed (1): 12/23/2013 10:50

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.55	19

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID (1): CPS 320-32619/15 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/24/2013 20:10

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.14	22

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID (1): CPS 320-32619/1 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/24/2013 09:56

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.12	22

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID (1): CPS 320-33115/3 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 01/02/2014 15:14

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.86	21

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID (1): CPS 320-33209/1 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 01/03/2014 12:30

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.17	19

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID (1): CPS 320-33210/15 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 01/03/2014 22:48

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.18	20

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID (1): CPS 320-33217/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 01/03/2014 11:04

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.84	22

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID (1): CPS 320-33225/31 Instrument ID (1): 10D5

GC Column (1): SPB-Octyl ID: 0.25(mm) Date Analyzed (1): 01/04/2014 09:32

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.59	19

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID (1): CPS 320-33232/3 Instrument ID (1): 5D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 01/03/2014 22:34

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.30	25

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/23/2013 14:57

Analysis Batch Number: 32536 End Date: 12/23/2013 20:50

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32536/1		12/23/2013 14:57	1	23DE13A3D5_1.d	DB-5 0.32(mm)
ZZZZZ		12/23/2013 15:49	1		DB-5 0.32(mm)
IC 320-32536/3		12/23/2013 16:39	1	23DE13A3D5_3.d	DB-5 0.32(mm)
IC 320-32536/4		12/23/2013 17:21	1	23DE13A3D5_4.d	DB-5 0.32(mm)
IC 320-32536/5		12/23/2013 18:02	1	23DE13A3D5_5.d	DB-5 0.32(mm)
IC 320-32536/6		12/23/2013 18:44	1	23DE13A3D5_6.d	DB-5 0.32(mm)
IC 320-32536/7		12/23/2013 19:26	1	23DE13A3D5_7.d	DB-5 0.32(mm)
ZZZZZ		12/23/2013 20:08	1		DB-5 0.32(mm)
ICV 320-32536/9		12/23/2013 20:50	1	23DE13A3D5_9.d	DB-5 0.32(mm)

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1 Analy Batch No.: 32536

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/23/2013 16:39 Calibration End Date: 12/23/2013 19:26 Calibration ID: 5694

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32536/3	23DE13A3D5_3.d
Level 2	IC 320-32536/4	23DE13A3D5_4.d
Level 3	IC 320-32536/5	23DE13A3D5_5.d
Level 4	IC 320-32536/6	23DE13A3D5_6.d
Level 5	IC 320-32536/7	23DE13A3D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9066	0.9848	1.0052	0.9868	1.0235	AveID		0.9814				4.6		20.0			
2,3,7,8-TCDD	1.2929	1.2631	1.2665	1.2825	1.2631	AveID		1.2736				1.1		20.0			
1,2,3,7,8-PeCDF	1.0319	1.1150	1.1719	1.1085	1.1773	AveID		1.1209				5.3		20.0			
2,3,4,7,8-PeCDF	1.0397	1.0564	1.1065	1.0522	1.1178	AveID		1.0745				3.3		20.0			
1,2,3,7,8-PeCDD	1.0076	1.1357	1.1508	1.0982	1.1482	AveID		1.1081				5.4		20.0			
1,2,3,4,7,8-HxCDF	1.0336	0.8601	1.0947	1.0240	1.0711	AveID		1.0167				9.1		20.0			
1,2,3,6,7,8-HxCDF	1.3754	1.1338	1.5017	1.4567	1.3657	AveID		1.3667				10.0		20.0			
2,3,4,6,7,8-HxCDF	1.1387	0.9758	1.2869	1.2395	1.2033	AveID		1.1689				10.0		20.0			
1,2,3,4,7,8-HxCDD	0.7237	0.6962	0.7910	0.7398	0.8674	AveID		0.7636				8.8		20.0			
1,2,3,6,7,8-HxCDD	1.0405	0.9829	1.1547	1.1068	1.1212	AveID		1.0812				6.4		20.0			
1,2,3,7,8,9-HxCDD	0.9476	0.9872	1.1371	1.0623	1.0939	AveID		1.0456				7.4		20.0			
1,2,3,7,8,9-HxCDF	1.0144	0.9379	1.1576	1.0839	1.0786	AveID		1.0545				7.8		20.0			
1,2,3,4,6,7,8-HpCDF	1.3777	1.4703	1.4554	1.4520	1.4503	AveID		1.4411				2.5		20.0			
1,2,3,4,6,7,8-HpCDD	1.0951	1.1090	1.1547	1.1146	1.1761	AveID		1.1299				3.0		20.0			
1,2,3,4,7,8,9-HpCDF	1.1037	1.2392	1.2566	1.2603	1.2699	AveID		1.2259				5.6		20.0			
OCDD	1.0941	1.1666	1.2545	1.2161	1.2701	AveID		1.2002				6.0		20.0			
OCDF	1.6686	1.6878	1.7166	1.8003	1.8499	AveID		1.7446				4.4		20.0			
13C-2,3,7,8-TCDF	2.0661	2.0256	2.0822	1.9611	1.9511	Ave		2.0172				3.0		20.0			
13C-2,3,7,8-TCDD	1.1139	1.0810	1.1103	1.0539	1.1051	Ave		1.0929				2.3		20.0			
13C-1,2,3,7,8-PeCDF	1.5781	1.5189	1.5232	1.4758	1.5160	Ave		1.5224				2.4		20.0			
13C-1,2,3,7,8-PeCDD	0.9337	0.8721	0.9016	0.8490	0.9057	Ave		0.8924				3.7		20.0			
13C-1,2,3,4,7,8-HxCDF	1.0547	1.2696	1.1009	1.0889	1.1844	Ave		1.1397				7.6		20.0			
13C-1,2,3,6,7,8-HxCDD	1.0082	1.0596	1.0336	1.0286	1.0492	Ave		1.0358				1.9		20.0			
13C-1,2,3,4,6,7,8-HpCDF	0.8164	0.7910	0.8468	0.8149	0.9081	Ave		0.8354				5.4		20.0			
13C-1,2,3,4,6,7,8-HpCDD	0.6057	0.6108	0.6648	0.6460	0.6852	Ave		0.6425				5.3		20.0			
13C-OCDD	0.3729	0.3762	0.4234	0.4004	0.4804	Ave		0.4107				11.0		20.0			
37Cl4-2,3,7,8-TCDD	1.6215	1.6288	1.6486	1.6816	1.7028	Ave		1.6567				2.1		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1 Analy Batch No.: 32536

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/23/2013 16:39 Calibration End Date: 12/23/2013 19:26 Calibration ID: 5694

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32536/3	23DE13A3D5_3.d
Level 2	IC 320-32536/4	23DE13A3D5_4.d
Level 3	IC 320-32536/5	23DE13A3D5_5.d
Level 4	IC 320-32536/6	23DE13A3D5_6.d
Level 5	IC 320-32536/7	23DE13A3D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	674374	3202466	17028736	61961087	295637038	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	580367	2393189	11673173	44979267	219349389	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	4267022	19931624	100290356	370960489	1903732254	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	4345494	18898503	94415176	352734332	1811208368	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	2489827	11414720	58157907	210681471	1101514449	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	2832410	11545413	60192871	226073468	1256566401	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	3739732	15821917	82794100	317761083	1614625519	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	3004187	13737275	71217487	276927616	1427455263	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1897118	7950489	42422505	154168006	902528175	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	2753145	11488543	60984135	232682440	1166054353	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	2373003	11214765	61121953	221215738	1124414202	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	2584345	13057023	62967266	238005702	1238608708	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	2825972	11728532	57815058	222142163	1184929725	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	1547081	6864662	36326958	134991383	737707699	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	2207049	10151016	49324510	191887150	1051552635	2.50	10.0	50.0	200	1000
OCDD		AveID	1782885	8094640	44536491	168724499	1025266991	5.00	20.0	100	400	2000
OCDF		AveID	2750500	11923655	64144843	251705071	1507682132	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	155505655	170112365	165658711	155850585	147915669	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	82477679	88248158	86364050	81386612	85673221	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	165479079	174344247	168678400	168481048	161150010	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	101157998	101983025	98855535	96813399	96098492	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	67309477	85604449	70085298	68063552	71731520	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	104558392	118369173	106828074	104869894	104576250	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	47019097	48883537	48685688	46877933	51042755	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	58469473	61684905	63714500	61909817	62590650	100	100	100	100	100
13C-OCDD	13CHx(	Ave	65090062	74014921	75134241	69920441	82262634	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	700247	3078337	14937712	61844566	293733956	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: ICV 320-32536/9 Calibration Date: 12/23/2013 20:50

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 23DE13A3D5_9.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	1.004		10.2	10.0	2.3	30.0
2,3,7,8-TCDD	AveID	1.274	1.272		9.98	10.0	-0.2	30.0
1,2,3,7,8-PeCDF	AveID	1.121	1.208		26.9	25.0	7.7	30.0
2,3,4,7,8-PeCDF	AveID	1.075	1.108		25.8	25.0	3.1	30.0
1,2,3,7,8-PeCDD	AveID	1.108	1.134		25.6	25.0	2.3	30.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.129		27.8	25.0	11.1	30.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.585		29.0	25.0	15.9	30.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.366		29.2	25.0	16.9	30.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.7622		25.0	25.0	-0.2	30.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.155		26.7	25.0	6.8	30.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.175		28.1	25.0	12.3	30.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.211		28.7	25.0	14.9	30.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.543		26.8	25.0	7.1	30.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.196		26.5	25.0	5.9	30.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.220		24.9	25.0	-0.5	30.0
OCDD	AveID	1.200	1.274		53.1	50.0	6.1	30.0
OCDF	AveID	1.745	1.885		54.0	50.0	8.1	30.0
13C-2,3,7,8-TCDF	Ave	2.017	1.933		95.8	100	-4.2	
13C-2,3,7,8-TCDD	Ave	1.093	1.051		96.2	100	-3.8	
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.408		92.5	100	-7.5	
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8239		83.5	100	-7.7	
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.021		89.6	100	-10.4	
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.016		98.1	100	-1.9	
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8562		102	100	2.5	
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.6164		95.9	100	-4.1	
13C-OCDD	Ave	0.4107	0.3938		192	200	-4.1	
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.525		9.21	10.0	-7.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-32619/27 Calibration Date: 12/25/2013 04:41

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 24DE133D5_27.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9809		10.0	10.0	-0.0	20.0
2,3,7,8-TCDD	AveID	1.274	1.227		9.63	10.0	-3.7	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.139		50.8	50.0	1.6	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.089		50.7	50.0	1.4	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.153		52.0	50.0	4.0	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.062		52.2	50.0	4.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.321		48.3	50.0	-3.4	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.170		50.0	50.0	0.0	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.9136		59.8	50.0	19.6	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.119		51.7	50.0	3.5	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.163		55.6	50.0	11.2	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.079		51.2	50.0	2.3	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.494		51.8	50.0	3.7	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.186		52.5	50.0	5.0	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.322		53.9	50.0	7.8	20.0
OCDD	AveID	1.200	1.256		105	100	4.6	20.0
OCDF	AveID	1.745	1.723		98.8	100	-1.2	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.801		89.3	100	-10.7	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.079		98.7	100	-1.3	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.454		95.5	100	-4.5	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8695		97.4	100	-2.6	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.068		93.7	100	-6.3	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	0.9421		91.0	100	-9.0	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8857		106	100	6.0	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.7416		115	100	15.4	30.0
13C-OCDD	Ave	0.4107	0.4917		239	200	19.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.605		4.84	5.00	-3.1	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-33209/2 Calibration Date: 01/03/2014 13:11

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 03JA143D5_02.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9376		9.55	10.0	-4.5	20.0
2,3,7,8-TCDD	AveID	1.274	1.152		9.04	10.0	-9.6	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.075		48.0	50.0	-4.1	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.025		47.7	50.0	-4.6	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.086		49.0	50.0	-2.0	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.054		51.8	50.0	3.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.447		53.0	50.0	5.9	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.258		53.8	50.0	7.6	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.7908		51.8	50.0	3.6	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.154		53.4	50.0	6.7	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.132		54.1	50.0	8.2	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.126		53.4	50.0	6.7	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.456		50.5	50.0	1.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.118		49.5	50.0	-1.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.199		48.9	50.0	-2.2	20.0
OCDD	AveID	1.200	1.218		101	100	1.5	20.0
OCDF	AveID	1.745	1.723		98.8	100	-1.2	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.742		86.4	100	-13.6	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.100		101	100	0.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.395		91.6	100	-8.4	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8661		97.0	100	-3.0	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	0.9904		86.9	100	-13.1	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	0.9777		94.4	100	-5.6	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8650		104	100	3.5	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.7373		115	100	14.8	30.0
13C-OCDD	Ave	0.4107	0.4437		216	200	8.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.506		4.55	5.00	-9.1	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/24/2013 09:56

Analysis Batch Number: 32619 End Date: 12/25/2013 04:41

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32619/1		12/24/2013 09:56	1	24DE133D5_1.d	DB-5 0.32(mm)
CCV 320-32619/2		12/24/2013 10:37	1	24DE133D5_2.d	DB-5 0.32(mm)
ZZZZZ		12/24/2013 11:26	1		DB-5 0.32(mm)
MB 320-30804/1-A		12/24/2013 12:11	1	24DE133D5_4.d	DB-5 0.32(mm)
LCS 320-30804/2-A		12/24/2013 12:52	1	24DE133D5_5.d	DB-5 0.32(mm)
320-5001-1	TF2-004/5-SB1032-0204	12/24/2013 13:34	1	24DE133D5_6.d	DB-5 0.32(mm)
320-5001-2	TF2-004/5-SB1048-0204	12/24/2013 14:16	1	24DE133D5_7.d	DB-5 0.32(mm)
320-5001-3	TF2-004/5-SB1026-0204	12/24/2013 14:57	1	24DE133D5_8.d	DB-5 0.32(mm)
320-5001-4	TF2-004/5-SB1025-2.60 4	12/24/2013 15:39	1	24DE133D5_9.d	DB-5 0.32(mm)
320-5001-5	TF2-004/5-SB1021-0204	12/24/2013 16:21	1	24DE133D5_10.d	DB-5 0.32(mm)
320-5001-6	TF2-004/5-SB1043-0.10 .5	12/24/2013 17:03	1	24DE133D5_11.d	DB-5 0.32(mm)
320-5001-7	TF2-004/5-SB1041-022. 5	12/24/2013 17:45	1	24DE133D5_12.d	DB-5 0.32(mm)
ZZZZZ		12/24/2013 18:27	1		DB-5 0.32(mm)
CCV 320-32619/14		12/24/2013 19:18	1	24DE133D5_14.d	DB-5 0.32(mm)
CPS 320-32619/15		12/24/2013 20:10	1	24DE133D5_15.d	DB-5 0.32(mm)
ZZZZZ		12/24/2013 20:51	1		DB-5 0.32(mm)
320-5001-8	TF2-004/5-SB1058-0204	12/24/2013 21:33	1	24DE133D5_17.d	DB-5 0.32(mm)
320-5001-8 MS	TF2-004/5-SB1058-0204 MS	12/24/2013 22:14	1	24DE133D5_18.d	DB-5 0.32(mm)
320-5001-8 MSD	TF2-004/5-SB1058-0204 MSD	12/24/2013 22:56	1	24DE133D5_19.d	DB-5 0.32(mm)
320-5001-9	TF2-004/5-SB1064-0204	12/24/2013 23:38	1	24DE133D5_20.d	DB-5 0.32(mm)
320-5001-10	TF2-SB-DUP04-1113	12/25/2013 00:20	1	24DE133D5_21.d	DB-5 0.32(mm)
320-5001-11	TF2-004/5-SB1066-0203	12/25/2013 01:02	1	24DE133D5_22.d	DB-5 0.32(mm)
320-5001-12	TF2-004/5-SB1057-0304	12/25/2013 01:44	1	24DE133D5_23.d	DB-5 0.32(mm)
320-5001-13	TF2-004/5-SB1047-0204	12/25/2013 02:25	1	24DE133D5_24.d	DB-5 0.32(mm)
320-5001-14	TF2-004/5-SB1038-0204	12/25/2013 03:07	1	24DE133D5_25.d	DB-5 0.32(mm)
ZZZZZ		12/25/2013 03:49	1		DB-5 0.32(mm)
CCV 320-32619/27		12/25/2013 04:41	1	24DE133D5_27.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-32619/2 Calibration Date: 12/24/2013 10:37

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 24DE133D5_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9815		10.0	10.0	0.0	20.0
2,3,7,8-TCDD	AveID	1.274	1.202		9.44	10.0	-5.6	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.140		50.8	50.0	1.7	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.078		50.1	50.0	0.3	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.155		52.1	50.0	4.2	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.091		53.7	50.0	7.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.476		54.0	50.0	8.0	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.264		54.1	50.0	8.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.7628		49.9	50.0	-0.1	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.089		50.4	50.0	0.7	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.127		53.9	50.0	7.8	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.136		53.9	50.0	7.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.449		50.3	50.0	0.5	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.163		51.4	50.0	2.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.219		49.7	50.0	-0.5	20.0
OCDD	AveID	1.200	1.234		103	100	2.8	20.0
OCDF	AveID	1.745	1.719		98.5	100	-1.5	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.858		92.1	100	-7.9	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.068		97.7	100	-2.3	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.479		97.1	100	-2.9	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8645		96.9	100	-3.1	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	1.011		88.7	100	-11.3	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.009		97.4	100	-2.6	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8260		98.9	100	-1.1	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.6441		100	100	0.2	30.0
13C-OCDD	Ave	0.4107	0.4143		202	200	0.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.609		4.86	5.00	-2.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-32619/14 Calibration Date: 12/24/2013 19:18

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 24DE133D5_14.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9551		9.73	10.0	-2.7	20.0
2,3,7,8-TCDD	AveID	1.274	1.205		9.46	10.0	-5.4	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.132		50.5	50.0	1.0	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.095		50.9	50.0	1.9	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.127		50.9	50.0	1.7	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.058		52.0	50.0	4.1	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.444		52.8	50.0	5.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.218		52.1	50.0	4.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.7669		50.2	50.0	0.4	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.062		49.1	50.0	-1.8	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.097		52.5	50.0	5.0	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.099		52.1	50.0	4.3	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.391		48.2	50.0	-3.5	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.152		51.0	50.0	1.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.228		50.1	50.0	0.1	20.0
OCDD	AveID	1.200	1.182		98.5	100	-1.5	20.0
OCDF	AveID	1.745	1.638		93.9	100	-6.1	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.799		89.2	100	-10.8	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.096		100	100	0.3	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.416		93.0	100	-7.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8625		96.7	100	-3.3	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	0.9765		85.7	100	-14.3	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.001		96.6	100	-3.4	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8393		100	100	0.5	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.6912		108	100	7.6	30.0
13C-OCDD	Ave	0.4107	0.4544		221	200	10.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.601		4.83	5.00	-3.3	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Instrument ID: 3D5 Start Date: 01/03/2014 21:57

Analysis Batch Number: 33210 End Date: 01/04/2014 07:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-33210/14		01/03/2014 21:57	1	03JA143D5_14.d	DB-5 0.32(mm)
CPS 320-33210/15		01/03/2014 22:48	1	03JA143D5_15.d	DB-5 0.32(mm)
ZZZZZ		01/03/2014 23:30	1		DB-5 0.32(mm)
320-5001-8 RE	TF2-004/5-SB1058-0204 RE	01/04/2014 00:11	1	03JA143D5_17.d	DB-5 0.32(mm)
320-5001-8 MS RE	TF2-004/5-SB1058-0204 MS RE	01/04/2014 00:53	1	03JA143D5_18.d	DB-5 0.32(mm)
320-5001-8 MSD RE	TF2-004/5-SB1058-0204 MSD RE	01/04/2014 01:35	1	03JA143D5_19.d	DB-5 0.32(mm)
320-5001-9 RE	TF2-004/5-SB1064-0204 RE	01/04/2014 02:17	1	03JA143D5_20.d	DB-5 0.32(mm)
320-5001-10 RE	TF2-SB-DUP04-1113 RE	01/04/2014 02:59	1	03JA143D5_21.d	DB-5 0.32(mm)
320-5001-11 RE	TF2-004/5-SB1066-0203 RE	01/04/2014 03:40	1	03JA143D5_22.d	DB-5 0.32(mm)
320-5001-12 RE	TF2-004/5-SB1057-0304 RE	01/04/2014 04:22	1	03JA143D5_23.d	DB-5 0.32(mm)
320-5001-13 RE	TF2-004/5-SB1047-0204 RE	01/04/2014 05:04	1	03JA143D5_24.d	DB-5 0.32(mm)
320-5001-14 RE	TF2-004/5-SB1038-0204 RE	01/04/2014 05:46	1	03JA143D5_25.d	DB-5 0.32(mm)
ZZZZZ		01/04/2014 06:28	1		DB-5 0.32(mm)
CCV 320-33210/27		01/04/2014 07:20	1	03JA143D5_27.d	DB-5 0.32(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Instrument ID: 3D5 Start Date: 01/03/2014 12:30

Analysis Batch Number: 33209 End Date: 01/03/2014 21:57

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-33209/1		01/03/2014 12:30	1	03JA143D5_01.d	DB-5 0.32(mm)
CCV 320-33209/2		01/03/2014 13:11	1	03JA143D5_02.d	DB-5 0.32(mm)
MB 320-32631/1-A		01/03/2014 14:49	1	03JA143D5_04.d	DB-5 0.32(mm)
LCS 320-32631/2-A		01/03/2014 15:31	1	03JA143D5_05.d	DB-5 0.32(mm)
320-5001-1 RE	TF2-004/5-SB1032-0204 RE	01/03/2014 16:13	1	03JA143D5_06.d	DB-5 0.32(mm)
320-5001-2 RE	TF2-004/5-SB1048-0204 RE	01/03/2014 16:55	1	03JA143D5_07.d	DB-5 0.32(mm)
320-5001-3 RE	TF2-004/5-SB1026-0204 RE	01/03/2014 17:36	1	03JA143D5_08.d	DB-5 0.32(mm)
320-5001-4 RE	TF2-004/5-SB1025-2.60 4 RE	01/03/2014 18:18	1	03JA143D5_09.d	DB-5 0.32(mm)
320-5001-5 RE	TF2-004/5-SB1021-0204 RE	01/03/2014 19:00	1	03JA143D5_10.d	DB-5 0.32(mm)
320-5001-6 RE	TF2-004/5-SB1043-0.10 .5 RE	01/03/2014 19:42	1	03JA143D5_11.d	DB-5 0.32(mm)
320-5001-7 RE	TF2-004/5-SB1041-022. 5 RE	01/03/2014 20:24	1	03JA143D5_12.d	DB-5 0.32(mm)
ZZZZZ		01/03/2014 21:05	1		DB-5 0.32(mm)
CCV 320-33209/14		01/03/2014 21:57	1	03JA143D5_14.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-33209/14 Calibration Date: 01/03/2014 21:57

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 03JA143D5_14.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9226		9.40	10.0	-6.0	20.0
2,3,7,8-TCDD	AveID	1.274	1.152		9.05	10.0	-9.5	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.065		47.5	50.0	-5.0	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.019		47.4	50.0	-5.2	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.057		47.7	50.0	-4.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.033		50.8	50.0	1.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.475		53.9	50.0	7.9	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.258		53.8	50.0	7.7	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.6697		43.9	50.0	-12.3	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.027		47.5	50.0	-5.1	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	0.9797		46.8	50.0	-6.3	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.134		53.8	50.0	7.6	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.414		49.1	50.0	-1.9	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.125		49.8	50.0	-0.4	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.153		47.0	50.0	-5.9	20.0
OCDD	AveID	1.200	1.302		108	100	8.5	20.0
OCDF	AveID	1.745	1.716		98.4	100	-1.6	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.760		87.2	100	-12.8	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.106		101	100	1.2	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.423		93.5	100	-6.5	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.9022		101	100	1.1	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	0.9095		79.8	100	-20.2	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.062		103	100	2.5	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8114		97.1	100	-2.9	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.6553		102	100	2.0	30.0
13C-OCDD	Ave	0.4107	0.3726		181	200	-9.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.600		4.83	5.00	-3.4	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-33210/27 Calibration Date: 01/04/2014 07:20

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 03JA143D5_27.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9322		9.50	10.0	-5.0	20.0
2,3,7,8-TCDD	AveID	1.274	1.168		9.17	10.0	-8.3	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.094		48.8	50.0	-2.4	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.034		48.1	50.0	-3.7	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.079		48.7	50.0	-2.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.043		51.3	50.0	2.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.516		55.4	50.0	10.9	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.284		54.9	50.0	9.9	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.7036		46.1	50.0	-7.9	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.147		53.0	50.0	6.1	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.096		52.4	50.0	4.8	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.171		55.5	50.0	11.0	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.428		49.5	50.0	-0.9	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.141		50.5	50.0	1.0	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.173		47.8	50.0	-4.3	20.0
OCDD	AveID	1.200	1.284		107	100	6.9	20.0
OCDF	AveID	1.745	1.692		97.0	100	-3.0	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.738		86.2	100	-13.8	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.106		101	100	1.2	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.380		90.6	100	-9.4	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8608		96.5	100	-3.5	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	0.9246		81.1	100	-18.9	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	0.9847		95.1	100	-4.9	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8002		95.8	100	-4.2	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.6593		103	100	2.6	30.0
13C-OCDD	Ave	0.4107	0.3618		176	200	-11.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.590		4.80	5.00	-4.0	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Instrument ID: 10D5 Start Date: 12/22/2013 13:44

Analysis Batch Number: 32566 End Date: 12/22/2013 19:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32566/1		12/22/2013 13:44	1	22DE13A10D5_1.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/22/2013 14:30	1		SPB-Octyl 0.25(mm)
IC 320-32566/3		12/22/2013 15:15	1	22DE13A10D5_3.d	SPB-Octyl 0.25(mm)
IC 320-32566/4		12/22/2013 16:01	1	22DE13A10D5_4.d	SPB-Octyl 0.25(mm)
IC 320-32566/5		12/22/2013 16:47	1	22DE13A10D5_5.d	SPB-Octyl 0.25(mm)
IC 320-32566/6		12/22/2013 17:32	1	22DE13A10D5_6.d	SPB-Octyl 0.25(mm)
IC 320-32566/7		12/22/2013 18:18	1	22DE13A10D5_7.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/22/2013 19:03	1		SPB-Octyl 0.25(mm)
ICV 320-32566/9		12/22/2013 19:49	1	22DE13A10D5_9.d	SPB-Octyl 0.25(mm)

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1 Analy Batch No.: 32566

SDG No.:

Instrument ID: 10D5 GC Column: SPB-Octyl ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/22/2013 15:15 Calibration End Date: 12/22/2013 18:18 Calibration ID: 5715

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32566/3	22DE13A10D5_3.d
Level 2	IC 320-32566/4	22DE13A10D5_4.d
Level 3	IC 320-32566/5	22DE13A10D5_5.d
Level 4	IC 320-32566/6	22DE13A10D5_6.d
Level 5	IC 320-32566/7	22DE13A10D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9170	0.9431	0.9989	0.9685	1.0079	AveID		0.9671				3.9		20.0			
2,3,7,8-TCDD	0.9231	0.9517	1.0180	1.0055	1.0416	AveID		0.9880				5.0		20.0			
1,2,3,7,8-PeCDF	0.9285	0.9856	1.0360	1.0099	1.0269	AveID		0.9974				4.3		20.0			
2,3,4,7,8-PeCDF	0.9053	0.9734	1.0103	0.9776	1.0033	AveID		0.9740				4.3		20.0			
1,2,3,7,8-PeCDD	0.8501	0.9077	0.9747	0.9339	0.9514	AveID		0.9236				5.2		20.0			
1,2,3,4,7,8-HxCDF	1.0810	0.9387	1.2070	1.1524	1.1729	AveID		1.1104				9.6		20.0			
1,2,3,6,7,8-HxCDF	1.2687	1.0921	1.4095	1.3651	1.3836	AveID		1.3038				10.0		20.0			
2,3,4,6,7,8-HxCDF	1.1350	0.9992	1.2701	1.2350	1.2490	AveID		1.1777				9.5		20.0			
1,2,3,4,7,8-HxCDD	0.7815	0.8942	0.9511	0.8930	0.8976	AveID		0.8835				7.0		20.0			
1,2,3,6,7,8-HxCDD	0.9189	1.0093	1.0382	1.0122	1.0316	AveID		1.0020				4.8		20.0			
1,2,3,7,8,9-HxCDD	0.9931	1.1316	1.1287	1.0710	1.0817	AveID		1.0812				5.2		20.0			
1,2,3,7,8,9-HxCDF	1.0928	0.9490	1.1606	1.1284	1.1226	AveID		1.0907				7.6		20.0			
1,2,3,4,6,7,8-HpCDF	1.2569	1.3557	1.3687	1.3445	1.3892	AveID		1.3430				3.8		20.0			
1,2,3,4,6,7,8-HpCDD	0.9387	0.9739	1.0185	0.9850	1.0187	AveID		0.9870				3.4		20.0			
1,2,3,4,7,8,9-HpCDF	1.0641	1.1308	1.1687	1.1563	1.2249	AveID		1.1490				5.1		20.0			
OCDD	1.0549	1.0710	1.0945	1.0651	1.0943	AveID		1.0760				1.7		20.0			
OCDF	1.2454	1.3183	1.3570	1.3546	1.3888	AveID		1.3328				4.1		20.0			
13C-2,3,7,8-TCDF	1.5492	1.5245	1.4941	1.4931	1.4967	Ave		1.5115				1.6		20.0			
13C-2,3,7,8-TCDD	1.1123	1.0841	1.0850	1.0754	1.0947	Ave		1.0903				1.3		20.0			
13C-1,2,3,7,8-PeCDF	1.2346	1.1921	1.1857	1.1975	1.2683	Ave		1.2156				2.9		20.0			
13C-1,2,3,7,8-PeCDD	0.8907	0.8637	0.8462	0.8689	0.9317	Ave		0.8802				3.7		20.0			
13C-1,2,3,4,7,8-HxCDF	1.0833	1.3277	1.1295	1.1113	1.0767	Ave		1.1457				9.1		20.0			
13C-1,2,3,6,7,8-HxCDD	0.9274	0.8941	0.9346	0.9294	0.9210	Ave		0.9213				1.7		20.0			
13C-1,2,3,4,6,7,8-HpCDF	0.8496	0.8487	0.8854	0.8566	0.8339	Ave		0.8548				2.2		20.0			
13C-1,2,3,4,6,7,8-HpCDD	0.7878	0.7873	0.8222	0.8047	0.7979	Ave		0.8000				1.8		20.0			
13C-OCDD	0.6187	0.6204	0.6628	0.6610	0.6971	Ave		0.6520				5.1		20.0			
37Cl4-2,3,7,8-TCDD	1.3097	1.3047	1.4191	1.4792	1.5184	Ave		1.4062				6.9		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1 Analy Batch No.: 32566

SDG No.:

Instrument ID: 10D5 GC Column: SPB-Octyl ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/22/2013 15:15 Calibration End Date: 12/22/2013 18:18 Calibration ID: 5715

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32566/3	22DE13A10D5_3.d
Level 2	IC 320-32566/4	22DE13A10D5_4.d
Level 3	IC 320-32566/5	22DE13A10D5_5.d
Level 4	IC 320-32566/6	22DE13A10D5_6.d
Level 5	IC 320-32566/7	22DE13A10D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	863258	4021761	17769983	89190314	458907971	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	639017	2908398	13186941	66108414	345996005	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	5139164	22613347	102691034	515720215	2713946948	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	4970616	22231369	99327851	497485548	2673370214	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	3414006	15037540	68559587	346155465	1862382282	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	3927206	17649951	79718907	399638196	2133831556	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	4649809	20260450	93381170	477620463	2524582075	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	4133202	18516764	84164861	430795012	2262710181	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	2364048	11547950	51543412	259116758	1399547182	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	2799120	12300035	56246065	294991969	1616211013	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	2971724	14056872	61106943	309133062	1689663703	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	3923057	17689601	77094436	390561458	2003655882	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	3345534	14650844	64333990	328772178	1796403536	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	2213154	9822730	44926875	226405156	1266025833	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	2793374	12097767	54808453	282236394	1589646648	2.50	10.0	50.0	200	1000
OCDD		AveID	3682874	15886033	71693677	370325105	2196841952	5.00	20.0	100	400	2000
OCDF		AveID	4414215	19615134	89746190	471260302	2839057227	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	199338093	210291372	179150103	229642692	228807947	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	143823241	148978567	129862423	163986114	165279774	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	222530087	227604422	197182291	254982944	266773300	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	159497217	165917388	140449265	185183291	196969093	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	89009382	115713200	81832744	106462003	112469138	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	124076259	124197854	109762761	144771368	156781801	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	62070676	64989157	56248942	73601411	79170644	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	96860631	102213657	88624001	115126492	125258063	100	100	100	100	100
13C-OCDD	13CHx(	Ave	139618866	147845388	133314669	176292267	202025187	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	963345	4086236	19314961	103241374	523265071	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: ICV 320-32566/9 Calibration Date: 12/22/2013 19:49

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 22DE13A10D5_9.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	1.008		10.4	10.0	4.2	30.0
2,3,7,8-TCDD	AveID	0.9880	1.026		10.4	10.0	3.8	30.0
1,2,3,7,8-PeCDF	AveID	0.997	1.058		26.5	25.0	6.0	30.0
2,3,4,7,8-PeCDF	AveID	0.9740	1.018		26.1	25.0	4.6	30.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9353		25.3	25.0	1.3	30.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.309		29.5	25.0	17.9	30.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.545		29.6	25.0	18.5	30.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.400		29.7	25.0	18.9	30.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.8607		24.4	25.0	-2.6	30.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.075		26.8	25.0	7.3	30.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.126		26.0	25.0	4.2	30.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.296		29.7	25.0	18.8	30.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.456		27.1	25.0	8.4	30.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	1.039		26.3	25.0	5.3	30.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.189		25.9	25.0	3.5	30.0
OCDD	AveID	1.076	1.103		51.3	50.0	2.6	30.0
OCDF	AveID	1.333	1.331		49.9	50.0	-0.1	30.0
13C-2,3,7,8-TCDF	Ave	1.512	1.535		102	100	1.6	
13C-2,3,7,8-TCDD	Ave	1.090	1.112		102	100	2.0	
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.214		99.9	100	-0.1	
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8727		99.1	100	-0.9	
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.023		89.3	100	-10.7	
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	0.9703		105	100	5.3	
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8563		100	100	0.2	
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.7976		99.7	100	-0.3	
13C-OCDD	Ave	0.6520	0.6433		197	200	-1.3	
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.420		10.1	10.0	0.9	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Instrument ID: 10D5 Start Date: 12/23/2013 10:50

Analysis Batch Number: 32672 End Date: 12/23/2013 20:59

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32672/1		12/23/2013 10:50	1	23DE1310D5_1.d	SPB-Octyl 0.25(mm)
CCV 320-32672/2		12/23/2013 11:36	1	23DE1310D5_2.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/23/2013 12:23	1		SPB-Octyl 0.25(mm)
MB 320-30809/1-A		12/23/2013 13:09	1	23DE1310D5_4.d	SPB-Octyl 0.25(mm)
LCS 320-30809/2-A		12/23/2013 13:55	1	23DE1310D5_5.d	SPB-Octyl 0.25(mm)
320-5001-15	TF2-004/5-SB1031-0204	12/23/2013 14:41	1	23DE1310D5_6.d	SPB-Octyl 0.25(mm)
320-5001-16	TF2-004/5-SB1040-0204	12/23/2013 15:27	1	23DE1310D5_7.d	SPB-Octyl 0.25(mm)
320-5001-17	TF2-004/5-SB1049-0204	12/23/2013 16:13	1	23DE1310D5_8.d	SPB-Octyl 0.25(mm)
320-5001-18	TF2-004/5-SB1065-0204	12/23/2013 16:59	1	23DE1310D5_9.d	SPB-Octyl 0.25(mm)
320-5001-19	TF2-004/5-SB1068-0204	12/23/2013 17:45	1	23DE1310D5_10.d	SPB-Octyl 0.25(mm)
320-5001-20	TF2-SB-DUP06-1113	12/23/2013 18:31	1	23DE1310D5_11.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/23/2013 19:17	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/23/2013 20:03	1		SPB-Octyl 0.25(mm)
CCV 320-32672/14		12/23/2013 20:59	1	23DE1310D5_14.d	SPB-Octyl 0.25(mm)

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Instrument ID: 10D5 Start Date: 12/24/2013 07:11

Analysis Batch Number: 32754 End Date: 12/24/2013 17:58

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32754/1		12/24/2013 07:11	1		SPB-Octyl 0.25(mm)
CCV 320-32754/2		12/24/2013 07:57	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/24/2013 08:52	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/24/2013 10:53	1		SPB-Octyl 0.25(mm)
320-5001-A-23-B MS		12/24/2013 11:39	1	24DE1310D5_6.d	SPB-Octyl 0.25(mm)
320-5001-A-23-C MSD		12/24/2013 12:26	1	24DE1310D5_7.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/24/2013 13:12	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/24/2013 13:58	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/24/2013 14:44	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/24/2013 15:30	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/24/2013 16:16	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/24/2013 17:02	1		SPB-Octyl 0.25(mm)
CCV 320-32754/14		12/24/2013 17:58	1		SPB-Octyl 0.25(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-32672/2 Calibration Date: 12/23/2013 11:36

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 23DE1310D5_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	0.9698		10.0	10.0	0.3	20.0
2,3,7,8-TCDD	AveID	0.9880	0.9833		9.95	10.0	-0.5	20.0
1,2,3,7,8-PeCDF	AveID	0.997	1.019		51.1	50.0	2.1	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	0.9842		50.5	50.0	1.0	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9363		50.7	50.0	1.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.192		53.7	50.0	7.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.367		52.4	50.0	4.9	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.239		52.6	50.0	5.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.8986		50.9	50.0	1.7	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.020		50.9	50.0	1.8	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.091		50.5	50.0	0.9	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.142		52.4	50.0	4.7	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.353		50.4	50.0	0.7	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	0.9855		49.9	50.0	-0.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.128		49.1	50.0	-1.8	20.0
OCDD	AveID	1.076	1.106		103	100	2.8	20.0
OCDF	AveID	1.333	1.345		101	100	0.9	20.0
13C-2,3,7,8-TCDF	Ave	1.512	1.446		95.6	100	-4.4	30.0
13C-2,3,7,8-TCDD	Ave	1.090	1.097		101	100	0.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.193		98.1	100	-1.9	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8872		101	100	0.8	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.105		96.5	100	-3.5	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	0.9391		102	100	1.9	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8765		103	100	2.5	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.8208		103	100	2.6	30.0
13C-OCDD	Ave	0.6520	0.6707		206	200	2.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.414		5.03	5.00	0.6	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-32672/14 Calibration Date: 12/23/2013 20:59

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 23DE1310D5_14.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	0.9227		9.54	10.0	-4.6	20.0
2,3,7,8-TCDD	AveID	0.9880	0.9620		9.74	10.0	-2.6	20.0
1,2,3,7,8-PeCDF	AveID	0.997	0.9505		47.7	50.0	-4.7	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	0.9060		46.5	50.0	-7.0	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9201		49.8	50.0	-0.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.072		48.3	50.0	-3.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.254		48.1	50.0	-3.8	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.074		45.6	50.0	-8.8	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.8605		48.7	50.0	-2.6	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.051		52.4	50.0	4.9	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.080		50.0	50.0	-0.0	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	0.995		45.6	50.0	-8.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.206		44.9	50.0	-10.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	0.9678		49.0	50.0	-1.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.034		45.0	50.0	-10.0	20.0
OCDD	AveID	1.076	1.065		99.0	100	-1.0	20.0
OCDF	AveID	1.333	1.283		96.2	100	-3.8	20.0
13C-2,3,7,8-TCDF	Ave	1.512	1.427		94.4	100	-5.6	30.0
13C-2,3,7,8-TCDD	Ave	1.090	1.082		99.3	100	-0.7	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.176		96.8	100	-3.2	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8963		102	100	1.8	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.136		99.1	100	-0.9	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	0.998		108	100	8.4	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.9024		106	100	5.6	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.8973		112	100	12.2	30.0
13C-OCDD	Ave	0.6520	0.7544		231	200	15.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.429		5.08	5.00	1.6	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Instrument ID: 10D5 Start Date: 01/04/2014 08:36

Analysis Batch Number: 33225 End Date: 01/04/2014 18:55

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-33225/30		01/04/2014 08:36	1	03JA1410D5_30.d	SPB-Octyl 0.25(mm)
CPS 320-33225/31		01/04/2014 09:32	1	03JA1410D5_31.d	SPB-Octyl 0.25(mm)
ZZZZZ		01/04/2014 10:18	1		SPB-Octyl 0.25(mm)
320-5001-1 REDL	TF2-004/5-SB1032-0204 REDL	01/04/2014 11:04	10	03JA1410D5_33.d	SPB-Octyl 0.25(mm)
320-5001-5 REDL	TF2-004/5-SB1021-0204 REDL	01/04/2014 11:50	10	03JA1410D5_34.d	SPB-Octyl 0.25(mm)
320-5001-7 REDL	TF2-004/5-SB1041-022. 5 REDL	01/04/2014 12:37	10	03JA1410D5_35.d	SPB-Octyl 0.25(mm)
320-5001-11 REDL	TF2-004/5-SB1066-0203 REDL	01/04/2014 13:23	10	03JA1410D5_36.d	SPB-Octyl 0.25(mm)
320-5001-13 REDL	TF2-004/5-SB1047-0204 REDL	01/04/2014 14:09	10	03JA1410D5_37.d	SPB-Octyl 0.25(mm)
320-5001-14 REDL	TF2-004/5-SB1038-0204 REDL	01/04/2014 14:55	10	03JA1410D5_38.d	SPB-Octyl 0.25(mm)
ZZZZZ		01/04/2014 15:41	5		SPB-Octyl 0.25(mm)
ZZZZZ		01/04/2014 16:27	5		SPB-Octyl 0.25(mm)
ZZZZZ		01/04/2014 17:13	5		SPB-Octyl 0.25(mm)
ZZZZZ		01/04/2014 17:59	1		SPB-Octyl 0.25(mm)
CCV 320-33225/43		01/04/2014 18:55	1	03JA1410D5_43.d	SPB-Octyl 0.25(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-33225/30 Calibration Date: 01/04/2014 08:36

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 03JA1410D5_30.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	1.009		10.4	10.0	4.3	20.0
2,3,7,8-TCDD	AveID	0.9880	1.022		10.3	10.0	3.5	20.0
1,2,3,7,8-PeCDF	AveID	0.997	1.060		53.2	50.0	6.3	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	1.022		52.4	50.0	4.9	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9344		50.6	50.0	1.2	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.216		54.7	50.0	9.5	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.560		59.8	50.0	19.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.340		56.9	50.0	13.8	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.8325		47.1	50.0	-5.8	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.041		51.9	50.0	3.9	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.057		48.9	50.0	-2.2	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.164		53.4	50.0	6.7	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.412		52.6	50.0	5.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	1.007		51.0	50.0	2.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.117		48.6	50.0	-2.8	20.0
OCDD	AveID	1.076	1.047		97.3	100	-2.7	20.0
OCDF	AveID	1.333	1.276		95.8	100	-4.2	20.0
13C-2,3,7,8-TCDF	Ave	1.512	1.508		99.8	100	-0.2	30.0
13C-2,3,7,8-TCDD	Ave	1.090	1.085		99.5	100	-0.5	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.229		101	100	1.1	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8855		101	100	0.6	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.086		94.8	100	-5.2	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	1.002		109	100	8.7	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8605		101	100	0.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.7875		98.4	100	-1.6	30.0
13C-OCDD	Ave	0.6520	0.6748		207	200	3.5	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.409		5.01	5.00	0.2	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-33225/43 Calibration Date: 01/04/2014 18:55

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 03JA1410D5_43.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	0.9865		10.2	10.0	2.0	20.0
2,3,7,8-TCDD	AveID	0.9880	1.023		10.4	10.0	3.5	20.0
1,2,3,7,8-PeCDF	AveID	0.997	1.061		53.2	50.0	6.4	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	1.023		52.5	50.0	5.0	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9543		51.7	50.0	3.3	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.195		53.8	50.0	7.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.483		56.9	50.0	13.7	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.306		55.5	50.0	10.9	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.7528		42.6	50.0	-14.8	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.040		51.9	50.0	3.8	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.001		46.3	50.0	-7.4	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.113		51.0	50.0	2.0	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.405		52.3	50.0	4.6	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	1.015		51.4	50.0	2.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.112		48.4	50.0	-3.2	20.0
OCDD	AveID	1.076	1.078		100	100	0.2	20.0
OCDF	AveID	1.333	1.248		93.7	100	-6.3	20.0
13C-2,3,7,8-TCDF	Ave	1.512	1.499		99.2	100	-0.8	30.0
13C-2,3,7,8-TCDD	Ave	1.090	1.075		98.6	100	-1.4	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.211		99.6	100	-0.4	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8800		100	100	-0.0	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.130		98.6	100	-1.4	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	1.068		116	100	16.0	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8545		100	100	-0.0	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.7780		97.2	100	-2.8	30.0
13C-OCDD	Ave	0.6520	0.6461		198	200	-0.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.437		5.11	5.00	2.2	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Instrument ID: 5D2 Start Date: 12/30/2013 21:48

Analysis Batch Number: 32960 End Date: 12/31/2013 03:33

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32960/2		12/30/2013 21:48	1		DB-225 0.32(mm)
IC 320-32960/4		12/30/2013 23:11	1	30DE13C5D2_004.d	DB-225 0.32(mm)
IC 320-32960/5		12/30/2013 23:48	1	30DE13C5D2_005.d	DB-225 0.32(mm)
IC 320-32960/6		12/31/2013 01:04	1	30DE13C5D2_007.d	DB-225 0.32(mm)
IC 320-32960/7		12/31/2013 01:41	1	30DE13C5D2_008.d	DB-225 0.32(mm)
IC 320-32960/8		12/31/2013 02:19	1	30DE13C5D2_009.d	DB-225 0.32(mm)
ICV 320-32960/10		12/31/2013 03:33	1		DB-225 0.32(mm)

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1 Analy Batch No.: 32960

SDG No.:

Instrument ID: 5D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/30/2013 23:11 Calibration End Date: 12/31/2013 02:19 Calibration ID: 5765

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32960/4	30DE13C5D2_004.d
Level 2	IC 320-32960/5	30DE13C5D2_005.d
Level 3	IC 320-32960/6	30DE13C5D2_007.d
Level 4	IC 320-32960/7	30DE13C5D2_008.d
Level 5	IC 320-32960/8	30DE13C5D2_009.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.6222	1.7089	1.5590	1.5753	1.7465	AveID		1.6424				5.0		20.0			
2,3,7,8-TCDF	0.8921	0.8171	0.8043	0.7932	0.8661	AveID		0.8346				5.1		20.0			
13C-2,3,7,8-TCDD	1.0076	1.0075	1.0234	0.9769	0.9496	Ave		0.9930				3.0		20.0			
13C-2,3,7,8-TCDF	2.1975	2.2438	2.2362	2.1635	2.1587	Ave		2.1999				1.8		20.0			
37Cl4-2,3,7,8-TCDD	1.7266	1.4786	1.5362	1.5793	1.6223	Ave		1.5886				5.9		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1 Analy Batch No.: 32960

SDG No.:

Instrument ID: 5D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/30/2013 23:11 Calibration End Date: 12/31/2013 02:19 Calibration ID: 5765

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32960/4	30DE13C5D2_004.d
Level 2	IC 320-32960/5	30DE13C5D2_005.d
Level 3	IC 320-32960/6	30DE13C5D2_007.d
Level 4	IC 320-32960/7	30DE13C5D2_008.d
Level 5	IC 320-32960/8	30DE13C5D2_009.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	272464	1551980	7485310	23665639	120768581	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	370300	1762657	8086983	25574045	132892762	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCI	Ave	35880447	45362702	46014307	36764276	33822470	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCI	Ave	81408485	103274735	104703930	82376819	78255618	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCI	Ave	359889	1545726	8125666	27629245	133970516	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Instrument ID: 5D2 Start Date: 01/03/2014 21:57

Analysis Batch Number: 33232 End Date: 01/04/2014 04:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-33232/2		01/03/2014 21:57	1	03JA14A5D2_002.d	DB-225 0.32(mm)
CPS 320-33232/3		01/03/2014 22:34	1	03JA14A5D2_003.d	DB-225 0.32(mm)
ZZZZZ		01/03/2014 23:12	1		DB-225 0.32(mm)
320-5001-1 RERA	TF2-004/5-SB1032-0204 RERA	01/03/2014 23:49	1	03JA14A5D2_005.d	DB-225 0.32(mm)
320-5001-2 RERA	TF2-004/5-SB1048-0204 RERA	01/04/2014 00:27	1	03JA14A5D2_006.d	DB-225 0.32(mm)
320-5001-3 RERA	TF2-004/5-SB1026-0204 RERA	01/04/2014 01:04	1	03JA14A5D2_007.d	DB-225 0.32(mm)
320-5001-4 RERA	TF2-004/5-SB1025-2.604 RERA	01/04/2014 01:42	1	03JA14A5D2_008.d	DB-225 0.32(mm)
320-5001-5 RERA	TF2-004/5-SB1021-0204 RERA	01/04/2014 02:19	1	03JA14A5D2_009.d	DB-225 0.32(mm)
320-5001-6 RERA	TF2-004/5-SB1043-0.10.5 RERA	01/04/2014 02:57	1	03JA14A5D2_010.d	DB-225 0.32(mm)
ZZZZZ		01/04/2014 03:34	1		DB-225 0.32(mm)
ZZZZZ		01/04/2014 04:12	1		DB-225 0.32(mm)
CCV 320-33232/13		01/04/2014 04:49	1	03JA14A5D2_013.d	DB-225 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-33232/2 Calibration Date: 01/03/2014 21:57

Instrument ID: 5D2 Calib Start Date: 12/30/2013 23:11

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/31/2013 02:19

Lab File ID: 03JA14A5D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.642	1.680		10.2	10.0	2.3	20.0
2,3,7,8-TCDF	AveID	0.8346	0.7439		8.91	10.0	-10.9	20.0
13C-2,3,7,8-TCDD	Ave	0.9930	1.050		106	100	5.8	30.0
13C-2,3,7,8-TCDF	Ave	2.200	2.360		107	100	7.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.589	1.805		5.68	5.00	13.6	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-33232/13 Calibration Date: 01/04/2014 04:49

Instrument ID: 5D2 Calib Start Date: 12/30/2013 23:11

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/31/2013 02:19

Lab File ID: 03JA14A5D2_013.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.642	1.758		10.7	10.0	7.0	20.0
2,3,7,8-TCDF	AveID	0.8346	0.7606		9.11	10.0	-8.9	20.0
13C-2,3,7,8-TCDD	Ave	0.9930	1.036		104	100	4.3	30.0
13C-2,3,7,8-TCDF	Ave	2.200	2.401		109	100	9.1	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.589	1.798		5.66	5.00	13.2	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Instrument ID: 11D5 Start Date: 12/19/2013 17:26

Analysis Batch Number: 32502 End Date: 12/19/2013 23:17

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32502/1		12/19/2013 17:26	1	19DE1311D2_001.d	DB-225 0.32(mm)
IC 320-32502/3		12/19/2013 18:45	1	19DE1311D2_003.d	DB-225 0.32(mm)
IC 320-32502/4		12/19/2013 19:24	1	19DE1311D2_004.d	DB-225 0.32(mm)
IC 320-32502/5		12/19/2013 20:02	1	19DE1311D2_005.d	DB-225 0.32(mm)
IC 320-32502/6		12/19/2013 20:41	1	19DE1311D2_006.d	DB-225 0.32(mm)
IC 320-32502/7		12/19/2013 21:20	1	19DE1311D2_007.d	DB-225 0.32(mm)
ICV 320-32502/9		12/19/2013 22:38	1	19DE1311D2_009.d	DB-225 0.32(mm)
CPS 320-32502/10		12/19/2013 23:17	1		DB-225 0.32(mm)

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1 Analy Batch No.: 32502

SDG No.:

Instrument ID: 11D5 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/19/2013 18:45 Calibration End Date: 12/19/2013 21:20 Calibration ID: 5676

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32502/3	19DE1311D2_003.d
Level 2	IC 320-32502/4	19DE1311D2_004.d
Level 3	IC 320-32502/5	19DE1311D2_005.d
Level 4	IC 320-32502/6	19DE1311D2_006.d
Level 5	IC 320-32502/7	19DE1311D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.2293	1.2266	1.2712	1.2371	1.2670	AveID		1.2462				1.7		20.0			
2,3,7,8-TCDF	1.1343	1.1494	1.1412	1.1011	1.1432	AveID		1.1338				1.7		20.0			
13C-2,3,7,8-TCDD	0.9802	0.9601	0.9969	0.9394	0.9777	Ave		0.9709				2.3		20.0			
13C-2,3,7,8-TCDF	1.6591	1.7043	1.7154	1.6515	1.6854	Ave		1.6831				1.6		20.0			
37Cl4-2,3,7,8-TCDD	1.5736	1.4648	1.6241	1.6014	1.6364	Ave		1.5800				4.3		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1 Analy Batch No.: 32502

SDG No.:

Instrument ID: 11D5 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/19/2013 18:45 Calibration End Date: 12/19/2013 21:20 Calibration ID: 5676

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32502/3	19DE1311D2_003.d
Level 2	IC 320-32502/4	19DE1311D2_004.d
Level 3	IC 320-32502/5	19DE1311D2_005.d
Level 4	IC 320-32502/6	19DE1311D2_006.d
Level 5	IC 320-32502/7	19DE1311D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	288615	1110124	5924122	22362477	116845811	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	442816	1925656	9121618	35182839	181121900	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCl	Ave	46859665	47032082	47298421	46061130	46483387	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCl	Ave	78328887	83186601	81238564	80393098	79536331	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	416085	1607175	8593900	34885147	172747010	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: ICV 320-32502/9 Calibration Date: 12/19/2013 22:38

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 19DE1311D2_009.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.262		10.1	10.0	1.3	30.0
2,3,7,8-TCDF	AveID	1.134	1.146		10.1	10.0	1.1	30.0
13C-2,3,7,8-TCDD	Ave	0.9709	1.006		104	100	3.6	
13C-2,3,7,8-TCDF	Ave	1.683	1.718		102	100	2.1	
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.573		9.96	10.0	-0.4	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Instrument ID: 11D5 Start Date: 01/02/2014 14:33

Analysis Batch Number: 33115 End Date: 01/03/2014 00:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-33115/2		01/02/2014 14:33	1	02JA1411D2_002.d	DB-225 0.32(mm)
CPS 320-33115/3		01/02/2014 15:14	1	02JA1411D2_003.d	DB-225 0.32(mm)
ZZZZZ		01/02/2014 15:53	1		DB-225 0.32(mm)
320-5001-15 RA	TF2-004/5-SB1031-0204 RA	01/02/2014 16:32	1	02JA1411D2_005.d	DB-225 0.32(mm)
320-5001-16 RA	TF2-004/5-SB1040-0204 RA	01/02/2014 17:11	1	02JA1411D2_006.d	DB-225 0.32(mm)
320-5001-17 RA	TF2-004/5-SB1049-0204 RA	01/02/2014 17:50	1	02JA1411D2_007.d	DB-225 0.32(mm)
320-5001-18 RA	TF2-004/5-SB1065-0204 RA	01/02/2014 18:29	1	02JA1411D2_008.d	DB-225 0.32(mm)
320-5001-20 RA	TF2-SB-DUP06-1113 RA	01/02/2014 19:07	1	02JA1411D2_009.d	DB-225 0.32(mm)
ZZZZZ		01/02/2014 19:46	1		DB-225 0.32(mm)
ZZZZZ		01/02/2014 20:25	1		DB-225 0.32(mm)
ZZZZZ		01/02/2014 21:04	1		DB-225 0.32(mm)
ZZZZZ		01/02/2014 21:43	1		DB-225 0.32(mm)
ZZZZZ		01/02/2014 22:22	1		DB-225 0.32(mm)
ZZZZZ		01/02/2014 23:01	1		DB-225 0.32(mm)
ZZZZZ		01/02/2014 23:40	1		DB-225 0.32(mm)
CCV 320-33115/17		01/03/2014 00:19	1	02JA1411D2_017.d	DB-225 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-33115/2 Calibration Date: 01/02/2014 14:33

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 02JA1411D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.147		9.20	10.0	-8.0	20.0
2,3,7,8-TCDF	AveID	1.134	0.9836		8.67	10.0	-13.3	20.0
13C-2,3,7,8-TCDD	Ave	0.9709	0.9660		99.5	100	-0.5	30.0
13C-2,3,7,8-TCDF	Ave	1.683	1.427		84.8	100	-15.2	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.461		4.62	5.00	-7.5	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-33115/17 Calibration Date: 01/03/2014 00:19

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 02JA1411D2_017.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.120		8.99	10.0	-10.1	20.0
2,3,7,8-TCDF	AveID	1.134	0.9432		8.32	10.0	-16.8	20.0
13C-2,3,7,8-TCDD	Ave	0.9709	1.030		106	100	6.1	30.0
13C-2,3,7,8-TCDF	Ave	1.683	1.442		85.7	100	-14.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.522		4.82	5.00	-3.7	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Instrument ID: 11D5 Start Date: 01/03/2014 11:04

Analysis Batch Number: 33217 End Date: 01/03/2014 22:13

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-33217/1		01/03/2014 11:04	1	03JA1411D2_001.d	DB-225 0.32(mm)
CCV 320-33217/2		01/03/2014 11:43	1	03JA1411D2_002.d	DB-225 0.32(mm)
ZZZZZ		01/03/2014 12:22	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 13:03	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 13:42	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 14:21	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 15:00	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 15:39	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 16:18	1		DB-225 0.32(mm)
320-5001-9 RERA	TF2-004/5-SB1064-0204 RERA	01/03/2014 16:56	1	03JA1411D2_010.d	DB-225 0.32(mm)
320-5001-10 RERA	TF2-SB-DUP04-1113 RERA	01/03/2014 17:35	1	03JA1411D2_011.d	DB-225 0.32(mm)
320-5001-11 RERA	TF2-004/5-SB1066-0203 RERA	01/03/2014 18:14	1	03JA1411D2_012.d	DB-225 0.32(mm)
ZZZZZ		01/03/2014 18:53	1		DB-225 0.32(mm)
320-5001-13 RERA	TF2-004/5-SB1047-0204 RERA	01/03/2014 19:32	1	03JA1411D2_014.d	DB-225 0.32(mm)
320-5001-14 RERA	TF2-004/5-SB1038-0204 RERA	01/03/2014 20:11	1	03JA1411D2_015.d	DB-225 0.32(mm)
ZZZZZ		01/03/2014 20:50	1		DB-225 0.32(mm)
CCV 320-33217/18		01/03/2014 22:13	1	03JA1411D2_018.d	DB-225 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-33217/2 Calibration Date: 01/03/2014 11:43

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 03JA1411D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.071		8.59	10.0	-14.1	20.0
2,3,7,8-TCDF	AveID	1.134	0.9120		8.04	10.0	-19.6	20.0
13C-2,3,7,8-TCDD	Ave	0.9709	1.054		109	100	8.5	30.0
13C-2,3,7,8-TCDF	Ave	1.683	1.392		82.7	100	-17.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.613		5.10	5.00	2.1	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab Sample ID: CCV 320-33217/18 Calibration Date: 01/03/2014 22:13

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 03JA1411D2_018.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.097		8.81	10.0	-11.9	20.0
2,3,7,8-TCDF	AveID	1.134	0.8751		7.72	10.0	-22.8*	20.0
13C-2,3,7,8-TCDD	Ave	0.9709	1.027		106	100	5.7	30.0
13C-2,3,7,8-TCDF	Ave	1.683	1.432		85.1	100	-14.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.591		5.03	5.00	0.7	

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab File ID: 24DE133D5_4.d Lab Sample ID: MB 320-30804/1-A

Matrix: Solid Date Extracted: 11/27/2013 11:51

Instrument ID: 3D5 Date Analyzed: 12/24/2013 12:11

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-30804/2-A	24DE133D5_5.d	12/24/2013 12:52
TF2-004/5-SB1032-0204	320-5001-1	24DE133D5_6.d	12/24/2013 13:34
TF2-004/5-SB1048-0204	320-5001-2	24DE133D5_7.d	12/24/2013 14:16
TF2-004/5-SB1026-0204	320-5001-3	24DE133D5_8.d	12/24/2013 14:57
TF2-004/5-SB1025-2.604	320-5001-4	24DE133D5_9.d	12/24/2013 15:39
TF2-004/5-SB1021-0204	320-5001-5	24DE133D5_10.d	12/24/2013 16:21
TF2-004/5-SB1043-0.10.5	320-5001-6	24DE133D5_11.d	12/24/2013 17:03
TF2-004/5-SB1041-022.5	320-5001-7	24DE133D5_12.d	12/24/2013 17:45
TF2-004/5-SB1058-0204	320-5001-8	24DE133D5_17.d	12/24/2013 21:33
TF2-004/5-SB1058-0204 MS	320-5001-8 MS	24DE133D5_18.d	12/24/2013 22:14
TF2-004/5-SB1058-0204 MSD	320-5001-8 MSD	24DE133D5_19.d	12/24/2013 22:56
TF2-004/5-SB1064-0204	320-5001-9	24DE133D5_20.d	12/24/2013 23:38
TF2-SB-DUP04-1113	320-5001-10	24DE133D5_21.d	12/25/2013 00:20
TF2-004/5-SB1066-0203	320-5001-11	24DE133D5_22.d	12/25/2013 01:02
TF2-004/5-SB1057-0304	320-5001-12	24DE133D5_23.d	12/25/2013 01:44
TF2-004/5-SB1047-0204	320-5001-13	24DE133D5_24.d	12/25/2013 02:25
TF2-004/5-SB1038-0204	320-5001-14	24DE133D5_25.d	12/25/2013 03:07

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-30804/1-A

Matrix: Solid Lab File ID: 24DE133D5_4.d

Analysis Method: 8290A Date Collected:

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10(g) Date Analyzed: 12/24/2013 12:11

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.34
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.34
40321-76-4	1,2,3,7,8-PeCDD	2.00	J	5.0	0.38
57117-41-6	1,2,3,7,8-PeCDF	1.20	J	5.0	0.39
57117-31-4	2,3,4,7,8-PeCDF	1.04	J	5.0	0.40
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.28
57653-85-7	1,2,3,6,7,8-HxCDD	1.83	J	5.0	0.20
19408-74-3	1,2,3,7,8,9-HxCDD	1.16	J	5.0	0.20
70648-26-9	1,2,3,4,7,8-HxCDF	1.86	J	5.0	0.26
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.19
72918-21-9	1,2,3,7,8,9-HxCDF	1.48	J	5.0	0.25
60851-34-5	2,3,4,6,7,8-HxCDF	1.23	J	5.0	0.23
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.972	J	5.0	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	4.14	J	5.0	0.22
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.25
3268-87-9	OCDD	2.30	J	10	0.29
39001-02-0	OCDF	2.83	J	10	0.34
41903-57-5	Total TCDD	ND		1.0	0.34
30402-14-3	Total TCDF	ND		1.0	0.34
36088-22-9	Total PeCDD	2.00	J	5.0	0.38
30402-15-4	Total PeCDF	2.24	J	5.0	0.40
34465-46-8	Total HxCDD	2.99	J	5.0	0.22
55684-94-1	Total HxCDF	4.56	J	5.0	0.23
37871-00-4	Total HpCDD	0.972	J	5.0	0.20
38998-75-3	Total HpCDF	4.14	J	5.0	0.24

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-30804/1-A

Matrix: Solid Lab File ID: 24DE133D5_4.d

Analysis Method: 8290A Date Collected:

Extract. Method: 8290 Date Extracted: 11/27/2013 11:51

Sample wt/vol: 10(g) Date Analyzed: 12/24/2013 12:11

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 32619 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	5	* q	40-135
89059-46-1	13C-2,3,7,8-TCDF	4	*	40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	5	*	40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	5	*	40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	9	*	40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	8	*	40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	12	*	40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	10	*	40-135
114423-97-1	13C-OCDD	13	*	40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 24DE133D5_5.d

Lab ID: LCS 320-30804/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	18.2	91	77-130	
2,3,7,8-TCDF	20.0	19.2	96	79-137	
1,2,3,7,8-PeCDD	100	104	104	79-134	
1,2,3,7,8-PeCDF	100	101	101	81-134	
2,3,4,7,8-PeCDF	100	100	100	76-132	
1,2,3,4,7,8-HxCDD	100	102	102	65-144	
1,2,3,6,7,8-HxCDD	100	105	105	73-147	
1,2,3,7,8,9-HxCDD	100	113	113	80-143	
1,2,3,4,7,8-HxCDF	100	110	110	72-140	
1,2,3,6,7,8-HxCDF	100	108	108	63-152	
1,2,3,7,8,9-HxCDF	100	108	108	72-152	
2,3,4,6,7,8-HxCDF	100	107	107	72-151	
1,2,3,4,6,7,8-HpCDD	100	104	104	86-134	
1,2,3,4,6,7,8-HpCDF	100	112	112	81-137	
1,2,3,4,7,8,9-HpCDF	100	94.5	95	79-139	
OCDD	200	211	105	80-137	
OCDF	200	201	101	75-141	
13C-2,3,7,8-TCDD	200	108	54	40-135	
13C-2,3,7,8-TCDF	200	92.8	46	40-135	
13C-1,2,3,7,8-PeCDD	200	97.7	49	40-135	
13C-1,2,3,7,8-PeCDF	200	96.2	48	40-135	
13C-1,2,3,6,7,8-HxCDD	200	104	52	40-135	
13C-1,2,3,4,7,8-HxCDF	200	94.3	47	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	119	60	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	117	58	40-135	
13C-OCDD	400	236	59	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 24DE133D5_18.d

Lab ID: 320-5001-8 MS Client ID: TF2-004/5-SB1058-0204 MS

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.9	ND	19.9	95	77-130	
2,3,7,8-TCDF	20.9	ND	20.4	98	79-137	
1,2,3,7,8-PeCDD	105	ND	111	106	79-134	
1,2,3,7,8-PeCDF	105	ND	105	100	81-134	
2,3,4,7,8-PeCDF	105	ND	117	112	76-132	
1,2,3,4,7,8-HxCDD	105	ND	116	110	65-144	
1,2,3,6,7,8-HxCDD	105	ND	107	102	73-147	
1,2,3,7,8,9-HxCDD	105	ND	90.4	86	80-143	
1,2,3,4,7,8-HxCDF	105	ND	110	105	72-140	
1,2,3,6,7,8-HxCDF	105	0.30 J	109	103	63-152	
1,2,3,7,8,9-HxCDF	105	ND	81.8	78	72-152	
2,3,4,6,7,8-HxCDF	105	ND	99.5	95	72-151	
1,2,3,4,6,7,8-HpCDD	105	10	118	103	86-134	
1,2,3,4,6,7,8-HpCDF	105	0.71 J	107	102	81-137	
1,2,3,4,7,8,9-HpCDF	105	ND	113	108	79-139	
OCDD	209	1800	1900	27	80-137	4
OCDF	209	2.1 J	206	98	75-141	
13C-2,3,7,8-TCDD	209	100	106	51	40-135	
13C-2,3,7,8-TCDF	209	100	105	50	40-135	
13C-1,2,3,7,8-PeCDD	209	92	97.1	46	40-135	
13C-1,2,3,7,8-PeCDF	209	87	93.5	45	40-135	
13C-1,2,3,6,7,8-HxCDD	209	100	106	50	40-135	
13C-1,2,3,4,7,8-HxCDF	209	93	99.1	47	40-135	
13C-1,2,3,4,6,7,8-HpCDD	209	99	105	50	40-135	
13C-1,2,3,4,6,7,8-HpCDF	209	92	94.7	45	40-135	
13C-OCDD	419	200	211	50	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 24DE133D5_19.d

Lab ID: 320-5001-8 MSD Client ID: TF2-004/5-SB1058-0204 MSD

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	21.0	19.9	95	0	20	77-130	
2,3,7,8-TCDF	21.0	20.9	99	2	20	79-137	
1,2,3,7,8-PeCDD	105	108	103	2	20	79-134	
1,2,3,7,8-PeCDF	105	110	105	5	20	81-134	
2,3,4,7,8-PeCDF	105	120	115	2	20	76-132	
1,2,3,4,7,8-HxCDD	105	112	107	3	20	65-144	
1,2,3,6,7,8-HxCDD	105	108	103	1	20	73-147	
1,2,3,7,8,9-HxCDD	105	103	99	13	20	80-143	
1,2,3,4,7,8-HxCDF	105	117	112	6	20	72-140	
1,2,3,6,7,8-HxCDF	105	117	111	8	20	63-152	
1,2,3,7,8,9-HxCDF	105	101	96	21	20	72-152	F2
2,3,4,6,7,8-HxCDF	105	112	107	12	20	72-151	
1,2,3,4,6,7,8-HpCDD	105	116	101	1	20	86-134	
1,2,3,4,6,7,8-HpCDF	105	110	104	2	20	81-137	
1,2,3,4,7,8,9-HpCDF	105	113	107	0	20	79-139	
OCDD	210	2490	312	27	20	80-137	4 F2
OCDF	210	212	100	3	20	75-141	
13C-2,3,7,8-TCDD	210	103	49			40-135	
13C-2,3,7,8-TCDF	210	93.5	45			40-135	
13C-1,2,3,7,8-PeCDD	210	94.1	45			40-135	
13C-1,2,3,7,8-PeCDF	210	86.9	41			40-135	
13C-1,2,3,6,7,8-HxCDD	210	107	51			40-135	
13C-1,2,3,4,7,8-HxCDF	210	98.3	47			40-135	
13C-1,2,3,4,6,7,8-HpCDD	210	115	55			40-135	
13C-1,2,3,4,6,7,8-HpCDF	210	103	49			40-135	
13C-OCDD	419	240	57			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab File ID: 23DE1310D5_4.d Lab Sample ID: MB 320-30809/1-A

Matrix: Solid Date Extracted: 11/27/2013 11:55

Instrument ID: 10D5 Date Analyzed: 12/23/2013 13:09

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-30809/2-A	23DE1310D5_5.d	12/23/2013 13:55
TF2-004/5-SB1031-0204	320-5001-15	23DE1310D5_6.d	12/23/2013 14:41
TF2-004/5-SB1040-0204	320-5001-16	23DE1310D5_7.d	12/23/2013 15:27
TF2-004/5-SB1049-0204	320-5001-17	23DE1310D5_8.d	12/23/2013 16:13
TF2-004/5-SB1065-0204	320-5001-18	23DE1310D5_9.d	12/23/2013 16:59
TF2-004/5-SB1068-0204	320-5001-19	23DE1310D5_10.d	12/23/2013 17:45
TF2-SB-DUP06-1113	320-5001-20	23DE1310D5_11.d	12/23/2013 18:31
	320-5001-A-23-B MS	24DE1310D5_6.d	12/24/2013 11:39
	320-5001-A-23-C MSD	24DE1310D5_7.d	12/24/2013 12:26
TF2-004/5-SB1031-0204 RA	320-5001-15 RA	02JA1411D2_005.d	01/02/2014 16:32
TF2-004/5-SB1040-0204 RA	320-5001-16 RA	02JA1411D2_006.d	01/02/2014 17:11
TF2-004/5-SB1049-0204 RA	320-5001-17 RA	02JA1411D2_007.d	01/02/2014 17:50
TF2-004/5-SB1065-0204 RA	320-5001-18 RA	02JA1411D2_008.d	01/02/2014 18:29
TF2-SB-DUP06-1113 RA	320-5001-20 RA	02JA1411D2_009.d	01/02/2014 19:07

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-30809/1-A

Matrix: Solid Lab File ID: 23DE1310D5_4.d

Analysis Method: 8290A Date Collected:

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10(g) Date Analyzed: 12/23/2013 13:09

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.022
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.016
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.033
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.023
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.023
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.019
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.017
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.015
70648-26-9	1,2,3,4,7,8-HxCDF	0.235	J	5.0	0.020
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.017
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.020
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.018
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.239	J	5.0	0.021
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.496	J	5.0	0.018
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.117	J	5.0	0.021
3268-87-9	OCDD	2.40	J	10	0.022
39001-02-0	OCDF	0.940	J	10	0.023
41903-57-5	Total TCDD	ND		1.0	0.022
30402-14-3	Total TCDF	ND		1.0	0.016
36088-22-9	Total PeCDD	ND		5.0	0.033
30402-15-4	Total PeCDF	ND		5.0	0.023
34465-46-8	Total HxCDD	ND		5.0	0.019
55684-94-1	Total HxCDF	0.294	J	5.0	0.019
37871-00-4	Total HpCDD	0.501	J	5.0	0.021
38998-75-3	Total HpCDF	0.614	J	5.0	0.020

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-30809/1-A

Matrix: Solid | Lab File ID: 23DE1310D5_4.d

Analysis Method: 8290A | Date Collected:

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10(g) | Date Analyzed: 12/23/2013 13:09

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup: (Y/N) N

Analysis Batch No.: 32672 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		40-135
89059-46-1	13C-2,3,7,8-TCDF	55		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	57		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	61		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	59		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	64		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	61		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 23DE1310D5_5.d

Lab ID: LCS 320-30809/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	19.1	95	77-130	
2,3,7,8-TCDF	20.0	19.4	97	79-137	
1,2,3,7,8-PeCDD	100	101	101	79-134	
1,2,3,7,8-PeCDF	100	100	100	81-134	
2,3,4,7,8-PeCDF	100	97.4	97	76-132	
1,2,3,4,7,8-HxCDD	100	98.4	98	65-144	
1,2,3,6,7,8-HxCDD	100	102	102	73-147	
1,2,3,7,8,9-HxCDD	100	104	104	80-143	
1,2,3,4,7,8-HxCDF	100	106	106	72-140	
1,2,3,6,7,8-HxCDF	100	108	108	63-152	
1,2,3,7,8,9-HxCDF	100	108	108	72-152	
2,3,4,6,7,8-HxCDF	100	109	109	72-151	
1,2,3,4,6,7,8-HpCDD	100	99.2	99	86-134	
1,2,3,4,6,7,8-HpCDF	100	100	100	81-137	
1,2,3,4,7,8,9-HpCDF	100	98.4	98	79-139	
OCDD	200	202	101	80-137	
OCDF	200	200	100	75-141	
13C-2,3,7,8-TCDD	200	119	59	40-135	
13C-2,3,7,8-TCDF	200	111	56	40-135	
13C-1,2,3,7,8-PeCDD	200	116	58	40-135	
13C-1,2,3,7,8-PeCDF	200	113	57	40-135	
13C-1,2,3,6,7,8-HxCDD	200	124	62	40-135	
13C-1,2,3,4,7,8-HxCDF	200	115	58	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	130	65	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	126	63	40-135	
13C-OCDD	400	254	64	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 24DE1310D5_6.d

Lab ID: 320-5001-A-23-B MS Client ID:

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	21.0	ND	21.4	102	77-130	
1,2,3,7,8-PeCDD	105	0.59 J	107	102	79-134	
1,2,3,7,8-PeCDF	105	0.43 J	109	103	81-134	
2,3,4,7,8-PeCDF	105	0.39 J	114	108	76-132	
1,2,3,4,7,8-HxCDD	105	0.73 J	111	105	65-144	
1,2,3,6,7,8-HxCDD	105	1.6 J	114	107	73-147	
1,2,3,7,8,9-HxCDD	105	1.5 J	105	99	80-143	
1,2,3,4,7,8-HxCDF	105	1.2 J	114	107	72-140	
1,2,3,6,7,8-HxCDF	105	0.76 J	113	106	63-152	
1,2,3,7,8,9-HxCDF	105	ND	105	100	72-152	
2,3,4,6,7,8-HxCDF	105	0.53 J	111	105	72-151	
1,2,3,4,6,7,8-HpCDD	105	27	152	118	86-134	
1,2,3,4,6,7,8-HpCDF	105	5.3	125	114	81-137	
1,2,3,4,7,8,9-HpCDF	105	0.44 J	129	122	79-139	
OCDD	210	3200	2550	-291	80-137	4
OCDF	210	4.3 J	254	118	75-141	
13C-2,3,7,8-TCDD	210	110	126	60	40-135	
13C-2,3,7,8-TCDF	210	110	123	59	40-135	
13C-1,2,3,7,8-PeCDD	210	110	126	60	40-135	
13C-1,2,3,7,8-PeCDF	210	97	117	56	40-135	
13C-1,2,3,6,7,8-HxCDD	210	110	127	61	40-135	
13C-1,2,3,4,7,8-HxCDF	210	100	116	55	40-135	
13C-1,2,3,4,6,7,8-HpCDD	210	110	146	69	40-135	
13C-1,2,3,4,6,7,8-HpCDF	210	100	130	62	40-135	
13C-OCDD	421	260	406	96	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 24DE1310D5_7.d

Lab ID: 320-5001-A-23-C MSD Client ID:

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	21.8	22.9	105	7	20	77-130	
1,2,3,7,8-PeCDD	109	115	105	6	20	79-134	
1,2,3,7,8-PeCDF	109	115	105	5	20	81-134	
2,3,4,7,8-PeCDF	109	111	102	2	20	76-132	
1,2,3,4,7,8-HxCDD	109	124	113	11	20	65-144	
1,2,3,6,7,8-HxCDD	109	115	105	1	20	73-147	
1,2,3,7,8,9-HxCDD	109	111	101	5	20	80-143	
1,2,3,4,7,8-HxCDF	109	120	109	5	20	72-140	
1,2,3,6,7,8-HxCDF	109	118	107	4	20	63-152	
1,2,3,7,8,9-HxCDF	109	103	95	2	20	72-152	
2,3,4,6,7,8-HxCDF	109	112	103	1	20	72-151	
1,2,3,4,6,7,8-HpCDD	109	146	109	4	20	86-134	
1,2,3,4,6,7,8-HpCDF	109	120	105	5	20	81-137	
1,2,3,4,7,8,9-HpCDF	109	104	95	21	20	79-139	F
OCDD	218	3340	81	27	20	80-137	4 F
OCDF	218	217	98	16	20	75-141	
13C-2,3,7,8-TCDD	218	154	71			40-135	
13C-2,3,7,8-TCDF	218	151	69			40-135	
13C-1,2,3,7,8-PeCDD	218	153	70			40-135	
13C-1,2,3,7,8-PeCDF	218	154	71			40-135	
13C-1,2,3,6,7,8-HxCDD	218	169	78			40-135	
13C-1,2,3,4,7,8-HxCDF	218	171	79			40-135	
13C-1,2,3,4,6,7,8-HpCDD	218	154	71			40-135	
13C-1,2,3,4,6,7,8-HpCDF	218	150	69			40-135	
13C-OCDD	435	269	62			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Lab File ID: 03JA143D5_04.d Lab Sample ID: MB 320-32631/1-A

Matrix: Solid Date Extracted: 12/26/2013 12:44

Instrument ID: 3D5 Date Analyzed: 01/03/2014 14:49

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-32631/2-A	03JA143D5_05.d	01/03/2014 15:31
TF2-004/5-SB1032-0204 RE	320-5001-1 RE	03JA143D5_06.d	01/03/2014 16:13
TF2-004/5-SB1048-0204 RE	320-5001-2 RE	03JA143D5_07.d	01/03/2014 16:55
TF2-004/5-SB1026-0204 RE	320-5001-3 RE	03JA143D5_08.d	01/03/2014 17:36
TF2-004/5-SB1025-2.604 RE	320-5001-4 RE	03JA143D5_09.d	01/03/2014 18:18
TF2-004/5-SB1021-0204 RE	320-5001-5 RE	03JA143D5_10.d	01/03/2014 19:00
TF2-004/5-SB1043-0.10.5 RE	320-5001-6 RE	03JA143D5_11.d	01/03/2014 19:42
TF2-004/5-SB1041-022.5 RE	320-5001-7 RE	03JA143D5_12.d	01/03/2014 20:24
TF2-004/5-SB1048-0204 RERA	320-5001-2 RERA	03JA14A5D2_006.d	01/04/2014 00:27
TF2-004/5-SB1026-0204 RERA	320-5001-3 RERA	03JA14A5D2_007.d	01/04/2014 01:04
TF2-004/5-SB1025-2.604 RERA	320-5001-4 RERA	03JA14A5D2_008.d	01/04/2014 01:42
TF2-004/5-SB1021-0204 RERA	320-5001-5 RERA	03JA14A5D2_009.d	01/04/2014 02:19
TF2-004/5-SB1043-0.10.5 RERA	320-5001-6 RERA	03JA14A5D2_010.d	01/04/2014 02:57

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-32631/1-A

Matrix: Solid Lab File ID: 03JA143D5_04.d

Analysis Method: 8290A Date Collected:

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10(g) Date Analyzed: 01/03/2014 14:49

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup: (Y/N) N

Analysis Batch No.: 33209 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.022
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.015
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.037
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.023
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.024
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.027
57653-85-7	1,2,3,6,7,8-HxCDD	0.0259	J	5.0	0.019
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.020
70648-26-9	1,2,3,4,7,8-HxCDF	0.0676	J	5.0	0.022
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.016
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.021
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.019
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		5.0	0.027
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.205	J	5.0	0.022
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.026
3268-87-9	OCDD	0.397	J	10	0.039
39001-02-0	OCDF	0.254	J	10	0.047
41903-57-5	Total TCDD	ND		1.0	0.022
30402-14-3	Total TCDF	ND		1.0	0.015
36088-22-9	Total PeCDD	ND		5.0	0.037
30402-15-4	Total PeCDF	ND		5.0	0.024
34465-46-8	Total HxCDD	0.0259	J	5.0	0.022
55684-94-1	Total HxCDF	0.0676	J	5.0	0.019
37871-00-4	Total HpCDD	ND		5.0	0.027
38998-75-3	Total HpCDF	0.205	J	5.0	0.024

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-32631/1-A

Matrix: Solid Lab File ID: 03JA143D5_04.d

Analysis Method: 8290A Date Collected:

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10(g) Date Analyzed: 01/03/2014 14:49

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 33209 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	66		40-135
89059-46-1	13C-2,3,7,8-TCDF	58		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	68		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	63		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	72		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	64		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	84		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	77		40-135
114423-97-1	13C-OCDD	73		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 03JA143D5_05.d

Lab ID: LCS 320-32631/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	18.9	95	77-130	
2,3,7,8-TCDF	20.0	19.4	97	79-137	
1,2,3,7,8-PeCDD	100	101	101	79-134	
1,2,3,7,8-PeCDF	100	99.2	99	81-134	
2,3,4,7,8-PeCDF	100	98.8	99	76-132	
1,2,3,4,7,8-HxCDD	100	98.8	99	65-144	
1,2,3,6,7,8-HxCDD	100	104	104	73-147	
1,2,3,7,8,9-HxCDD	100	107	107	80-143	
1,2,3,4,7,8-HxCDF	100	103	103	72-140	
1,2,3,6,7,8-HxCDF	100	105	105	63-152	
1,2,3,7,8,9-HxCDF	100	108	108	72-152	
2,3,4,6,7,8-HxCDF	100	107	107	72-151	
1,2,3,4,6,7,8-HpCDD	100	103	103	86-134	
1,2,3,4,6,7,8-HpCDF	100	103	103	81-137	
1,2,3,4,7,8,9-HpCDF	100	99.4	99	79-139	
OCDD	200	212	106	80-137	
OCDF	200	205	103	75-141	
13C-2,3,7,8-TCDD	200	129	64	40-135	
13C-2,3,7,8-TCDF	200	109	55	40-135	
13C-1,2,3,7,8-PeCDD	200	128	64	40-135	
13C-1,2,3,7,8-PeCDF	200	117	59	40-135	
13C-1,2,3,6,7,8-HxCDD	200	125	63	40-135	
13C-1,2,3,4,7,8-HxCDF	200	108	54	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	147	73	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	133	66	40-135	
13C-OCDD	400	268	67	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 03JA143D5_18.d

Lab ID: 320-5001-8 MS RE Client ID: TF2-004/5-SB1058-0204 MS RE

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	21.1	0.037 J	20.0	95	77-130	H
2,3,7,8-TCDF	21.1	ND	21.5	102	79-137	H
1,2,3,7,8-PeCDD	105	ND	106	101	79-134	H
1,2,3,7,8-PeCDF	105	ND	108	103	81-134	H
2,3,4,7,8-PeCDF	105	ND	112	106	76-132	H
1,2,3,4,7,8-HxCDD	105	ND	97.0	92	65-144	H
1,2,3,6,7,8-HxCDD	105	ND	110	104	73-147	H
1,2,3,7,8,9-HxCDD	105	0.11 J	108	102	80-143	H
1,2,3,4,7,8-HxCDF	105	0.13 J	115	109	72-140	H
1,2,3,6,7,8-HxCDF	105	0.29 J	122	115	63-152	H
1,2,3,7,8,9-HxCDF	105	ND	119	113	72-152	H
2,3,4,6,7,8-HxCDF	105	ND	122	115	72-151	H
1,2,3,4,6,7,8-HpCDD	105	8.4	112	99	86-134	H
1,2,3,4,6,7,8-HpCDF	105	0.58 J	113	107	81-137	H
1,2,3,4,7,8,9-HpCDF	105	ND	106	100	79-139	H
OCDD	211	2000	2010	21	80-137	H 4
OCDF	211	1.9 J	228	107	75-141	H
13C-2,3,7,8-TCDD	211	140	120	57	40-135	
13C-2,3,7,8-TCDF	211	120	104	49	40-135	
13C-1,2,3,7,8-PeCDD	211	130	117	55	40-135	
13C-1,2,3,7,8-PeCDF	211	120	107	51	40-135	
13C-1,2,3,6,7,8-HxCDD	211	140	128	61	40-135	
13C-1,2,3,4,7,8-HxCDF	211	110	102	48	40-135	
13C-1,2,3,4,6,7,8-HpCDD	211	140	134	64	40-135	
13C-1,2,3,4,6,7,8-HpCDF	211	140	119	56	40-135	
13C-OCDD	422	270	243	58	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 03JA143D5_19.d

Lab ID: 320-5001-8 MSD RE Client ID: TF2-004/5-SB1058-0204 MSD RE

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	21.1	20.7	98	3	20	77-130	H
2,3,7,8-TCDF	21.1	21.9	104	2	20	79-137	H
1,2,3,7,8-PeCDD	106	108	102	2	20	79-134	H
1,2,3,7,8-PeCDF	106	107	101	2	20	81-134	H
2,3,4,7,8-PeCDF	106	111	105	1	20	76-132	H
1,2,3,4,7,8-HxCDD	106	107	101	10	20	65-144	H
1,2,3,6,7,8-HxCDD	106	108	102	1	20	73-147	H
1,2,3,7,8,9-HxCDD	106	112	106	4	20	80-143	H
1,2,3,4,7,8-HxCDF	106	115	109	0	20	72-140	H
1,2,3,6,7,8-HxCDF	106	119	113	2	20	63-152	H
1,2,3,7,8,9-HxCDF	106	121	114	1	20	72-152	H
2,3,4,6,7,8-HxCDF	106	122	116	0	20	72-151	H
1,2,3,4,6,7,8-HpCDD	106	119	105	6	20	86-134	H
1,2,3,4,6,7,8-HpCDF	106	110	104	3	20	81-137	H
1,2,3,4,7,8,9-HpCDF	106	106	100	0	20	79-139	H
OCDD	211	2140	81	6	20	80-137	H 4
OCDF	211	205	96	11	20	75-141	H
13C-2,3,7,8-TCDD	211	130	61			40-135	
13C-2,3,7,8-TCDF	211	115	54			40-135	
13C-1,2,3,7,8-PeCDD	211	133	63			40-135	
13C-1,2,3,7,8-PeCDF	211	121	57			40-135	
13C-1,2,3,6,7,8-HxCDD	211	134	64			40-135	
13C-1,2,3,4,7,8-HxCDF	211	114	54			40-135	
13C-1,2,3,4,6,7,8-HpCDD	211	144	68			40-135	
13C-1,2,3,4,6,7,8-HpCDF	211	132	63			40-135	
13C-OCDD	422	278	66			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Batch Number: 30804 Batch Start Date: 11/27/13 11:51 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/02/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ExtractionID	RotoVapID	HRDXNIDA 00105	HRDXNIS 00040
MB 320-30804/1		8290, 8290A		10 g	20 uL	A2-5	9	1 mL	20 uL
LCS 320-30804/2		8290, 8290A		10 g	20 uL	A3-2	2	1 mL	20 uL
320-5001-A-1	TF2-004/5-SB1032-0204	8290, 8290A	T	10.40 g	20 uL	A4-64	9	1 mL	20 uL
320-5001-A-2	TF2-004/5-SB1048-0204	8290, 8290A	T	10.19 g	20 uL	A6-17	2	1 mL	20 uL
320-5001-A-3	TF2-004/5-SB1026-0204	8290, 8290A	T	10.40 g	20 uL	B1-89	9	1 mL	20 uL
320-5001-A-4	TF2-004/5-SB1025-2.604	8290, 8290A	T	10.04 g	20 uL	B2-38	2	1 mL	20 uL
320-5001-A-5	TF2-004/5-SB1021-0204	8290, 8290A	T	10.20 g	20 uL	B3-66	9	1 mL	20 uL
320-5001-A-6	TF2-004/5-SB1043-0.10.5	8290, 8290A	T	10.03 g	20 uL	B4-40	2	1 mL	20 uL
320-5001-A-7	TF2-004/5-SB1041-022.5	8290, 8290A	T	10.07 g	20 uL	B5	9	1 mL	20 uL
320-5001-A-8	TF2-004/5-SB1058-0204	8290, 8290A	T	10.19 g	20 uL	B6-59	2	1 mL	20 uL
320-5001-A-8 MS	TF2-004/5-SB1058-0204	8290, 8290A	T	10.17 g	20 uL	C1	9	1 mL	20 uL
320-5001-A-8 MSD	TF2-004/5-SB1058-0204	8290, 8290A	T	10.15 g	20 uL	C2	2	1 mL	20 uL
320-5001-A-9	TF2-004/5-SB1064-0204	8290, 8290A	T	10.36 g	20 uL	C3-3	9	1 mL	20 uL
320-5001-A-10	TF2-SB-DUP04-1113	8290, 8290A	T	10.01 g	20 uL	C4-56	2	1 mL	20 uL
320-5001-A-11	TF2-004/5-SB1066-0203	8290, 8290A	T	10.17 g	20 uL	C5-48	9	1 mL	20 uL
320-5001-A-12	TF2-004/5-SB1057-0304	8290, 8290A	T	10.14 g	20 uL	C6-30	2	1 mL	20 uL
320-5001-A-13	TF2-004/5-SB1047-0204	8290, 8290A	T	10.14 g	20 uL	D1	9	1 mL	20 uL
320-5001-A-14	TF2-004/5-SB1038-0204	8290, 8290A	T	10.12 g	20 uL	D2	2	1 mL	20 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNSU 00058	HRDXNTA 00027				
MB 320-30804/1		8290, 8290A		1 mL					
LCS 320-30804/2		8290, 8290A		1 mL	50 uL				
320-5001-A-1	TF2-004/5-SB1032-0204	8290, 8290A	T	1 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Batch Number: 30804 Batch Start Date: 11/27/13 11:51 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/02/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNSU 00058	HRDXNTA 00027				
320-5001-A-2	TF2-004/5-SB1048 -0204	8290, 8290A	T	1 mL					
320-5001-A-3	TF2-004/5-SB1026 -0204	8290, 8290A	T	1 mL					
320-5001-A-4	TF2-004/5-SB1025 -2.604	8290, 8290A	T	1 mL					
320-5001-A-5	TF2-004/5-SB1021 -0204	8290, 8290A	T	1 mL					
320-5001-A-6	TF2-004/5-SB1043 -0.10.5	8290, 8290A	T	1 mL					
320-5001-A-7	TF2-004/5-SB1041 -022.5	8290, 8290A	T	1 mL					
320-5001-A-8	TF2-004/5-SB1058 -0204	8290, 8290A	T	1 mL					
320-5001-A-8 MS	TF2-004/5-SB1058 -0204	8290, 8290A	T	1 mL	50 uL				
320-5001-A-8 MSD	TF2-004/5-SB1058 -0204	8290, 8290A	T	1 mL	50 uL				
320-5001-A-9	TF2-004/5-SB1064 -0204	8290, 8290A	T	1 mL					
320-5001-A-10	TF2-SB-DUP04-111 3	8290, 8290A	T	1 mL					
320-5001-A-11	TF2-004/5-SB1066 -0203	8290, 8290A	T	1 mL					
320-5001-A-12	TF2-004/5-SB1057 -0304	8290, 8290A	T	1 mL					
320-5001-A-13	TF2-004/5-SB1047 -0204	8290, 8290A	T	1 mL					
320-5001-A-14	TF2-004/5-SB1038 -0204	8290, 8290A	T	1 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Batch Number: 30804 Batch Start Date: 11/27/13 11:51 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/02/13 15:00

Batch Notes	
20% DCM:Hexane	4022-119C mL
65% DCM:Hexane	4022-120B mL
Acid Alumina	32
Balance ID	QA-074
C14	MEL 12/02/13
Hexane Lot#	0000041837 mL
IFB Clean Up	MEL 12/02/13
Na2SO4 Lot Number	0000055053
IDA Reagent Drop	GDB 11/27/13
IDA Reagent Drop Witness	TGL 11/27/13
IS Reagent Drop	TGL 12/02/13
IS Reagent Drop Witness	CFR 12/02/13
SU Reagent Drop	MEL 12/02/13
SU Reagent Drop Witness	TGL 12/02/13
TA Reagent Drop	GDB 11/27/13
TA Reagent Drop Witness	TGL 11/27/13
Silica Gel Lot Number	4022-119E
Soxhlet/Soxtherm End	16:45
Soxhlet/Soxtherm Start	13:45
Storage Box	91
Toluene Lot #	0000057186 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Batch Number: 30809 Batch Start Date: 11/27/13 11:55 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/02/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ExtractionID	RotoVapID	HRDXNIDA 00105	HRDXNIS 00040
MB 320-30809/1		8290, 8290A		10 g	20 uL	D3-29	9	1 mL	20 uL
LCS 320-30809/2		8290, 8290A		10 g	20 uL	D4	2	1 mL	20 uL
320-5001-A-15	TF2-004/5-SB1031-0204	8290, 8290A	T	10.01 g	20 uL	D5-70	9	1 mL	20 uL
320-5001-A-16	TF2-004/5-SB1040-0204	8290, 8290A	T	10.46 g	20 uL	D6-6	2	1 mL	20 uL
320-5001-A-17	TF2-004/5-SB1049-0204	8290, 8290A	T	10.15 g	20 uL	E1	9	1 mL	20 uL
320-5001-A-18	TF2-004/5-SB1065-0204	8290, 8290A	T	10.15 g	20 uL	E2-35	2	1 mL	20 uL
320-5001-A-19	TF2-004/5-SB1068-0204	8290, 8290A	T	10.42 g	20 uL	E3-71	9	1 mL	20 uL
320-5001-A-20	TF2-SB-DUP06-1113	8290, 8290A	T	10.11 g	20 uL	E4	2	1 mL	20 uL
320-5001-A-23 MS		8290, 8290A	T	10.41 g	20 uL	F1-93	9	1 mL	20 uL
320-5001-A-23 MSD		8290, 8290A	T	10.07 g	20 uL	F2-5	2	1 mL	20 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNSU 00058	HRDXNTA 00027				
MB 320-30809/1		8290, 8290A		1 mL					
LCS 320-30809/2		8290, 8290A		1 mL	50 uL				
320-5001-A-15	TF2-004/5-SB1031-0204	8290, 8290A	T	1 mL					
320-5001-A-16	TF2-004/5-SB1040-0204	8290, 8290A	T	1 mL					
320-5001-A-17	TF2-004/5-SB1049-0204	8290, 8290A	T	1 mL					
320-5001-A-18	TF2-004/5-SB1065-0204	8290, 8290A	T	1 mL					
320-5001-A-19	TF2-004/5-SB1068-0204	8290, 8290A	T	1 mL					
320-5001-A-20	TF2-SB-DUP06-1113	8290, 8290A	T	1 mL					
320-5001-A-23 MS		8290, 8290A	T	1 mL	50 uL				
320-5001-A-23 MSD		8290, 8290A	T	1 mL	50 uL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Batch Number: 30809 Batch Start Date: 11/27/13 11:55 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/02/13 15:00

Batch Notes	
20% DCM:Hexane	4022-119C mL
65% DCM:Hexane	4022-120B mL
Acid Alumina	32
Balance ID	QA-074
C14	MEL 12/02/13
Hexane Lot#	0000041837 mL
IFB Clean Up	MEL 12/02/13
Na2SO4 Lot Number	0000055053
IDA Reagent Drop	GDB 11/27/13
IDA Reagent Drop Witness	TGL 11/27/13
IS Reagent Drop	TGL 12/02/13
IS Reagent Drop Witness	GDB 12/02/13
SU Reagent Drop	MEL 12/02/13
SU Reagent Drop Witness	TGL 12/02/13
TA Reagent Drop	GDB 11/27/13
TA Reagent Drop Witness	TGL 11/27/13
Silica Gel Lot Number	4022-119E
Soxhlet/Soxtherm End	16:55
Soxhlet/Soxtherm Start	13:55
Storage Box	91
Toluene Lot #	0000057186 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Batch Number: 32631 Batch Start Date: 12/26/13 12:44 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/27/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ExtractionID	RotoVapID	HRDXNIDA 00106	HRDXNIS 00040
MB 320-32631/1		8290, 8290A		10 g	20 uL	D1	9	1 mL	20 uL
LCS 320-32631/2		8290, 8290A		10 g	20 uL	D2-7	2	1 mL	20 uL
320-5001-A-1	TF2-004/5-SB1032-0204	8290, 8290A	T	10.12 g	20 uL	D3-17	9	1 mL	20 uL
320-5001-A-2	TF2-004/5-SB1048-0204	8290, 8290A	T	10.08 g	20 uL	D4	2	1 mL	20 uL
320-5001-A-3	TF2-004/5-SB1026-0204	8290, 8290A	T	10.06 g	20 uL	D5-93	9	1 mL	20 uL
320-5001-A-4	TF2-004/5-SB1025-2.604	8290, 8290A	T	10.10 g	20 uL	D6-63	2	1 mL	20 uL
320-5001-A-5	TF2-004/5-SB1021-0204	8290, 8290A	T	10.14 g	20 uL	E1-17	9	1 mL	20 uL
320-5001-A-6	TF2-004/5-SB1043-0.10.5	8290, 8290A	T	10.03 g	20 uL	E2	2	1 mL	20 uL
320-5001-A-7	TF2-004/5-SB1041-022.5	8290, 8290A	T	10.02 g	20 uL	E3-35	9	1 mL	20 uL
320-5001-A-8	TF2-004/5-SB1058-0204	8290, 8290A	T	10.07 g	20 uL	E4-9	2	1 mL	20 uL
320-5001-A-8 MS	TF2-004/5-SB1058-0204	8290, 8290A	T	10.09 g	20 uL	E5	9	1 mL	20 uL
320-5001-A-8 MSD	TF2-004/5-SB1058-0204	8290, 8290A	T	10.08 g	20 uL	E6-30	2	1 mL	20 uL
320-5001-A-9	TF2-004/5-SB1064-0204	8290, 8290A	T	10.08 g	20 uL	F1-70	9	1 mL	20 uL
320-5001-A-10	TF2-SB-DUP04-1113	8290, 8290A	T	10.10 g	20 uL	F2-89	2	1 mL	20 uL
320-5001-A-11	TF2-004/5-SB1066-0203	8290, 8290A	T	10.23 g	20 uL	F3-14	9	1 mL	20 uL
320-5001-A-12	TF2-004/5-SB1057-0304	8290, 8290A	T	10.22 g	20 uL	F4	2	1 mL	20 uL
320-5001-A-13	TF2-004/5-SB1047-0204	8290, 8290A	T	10.12 g	20 uL	F5-29	9	1 mL	20 uL
320-5001-A-14	TF2-004/5-SB1038-0204	8290, 8290A	T	10.06 g	20 uL	F6-64	2	1 mL	20 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNSU 00061	HRDXNTA 00028				
MB 320-32631/1		8290, 8290A		1 mL					
LCS 320-32631/2		8290, 8290A		1 mL	50 uL				
320-5001-A-1	TF2-004/5-SB1032-0204	8290, 8290A	T	1 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Batch Number: 32631 Batch Start Date: 12/26/13 12:44 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/27/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNSU 00061	HRDXNTA 00028				
320-5001-A-2	TF2-004/5-SB1048 -0204	8290, 8290A	T	1 mL					
320-5001-A-3	TF2-004/5-SB1026 -0204	8290, 8290A	T	1 mL					
320-5001-A-4	TF2-004/5-SB1025 -2.604	8290, 8290A	T	1 mL					
320-5001-A-5	TF2-004/5-SB1021 -0204	8290, 8290A	T	1 mL					
320-5001-A-6	TF2-004/5-SB1043 -0.10.5	8290, 8290A	T	1 mL					
320-5001-A-7	TF2-004/5-SB1041 -022.5	8290, 8290A	T	1 mL					
320-5001-A-8	TF2-004/5-SB1058 -0204	8290, 8290A	T	1 mL					
320-5001-A-8 MS	TF2-004/5-SB1058 -0204	8290, 8290A	T	1 mL	50 uL				
320-5001-A-8 MSD	TF2-004/5-SB1058 -0204	8290, 8290A	T	1 mL	50 uL				
320-5001-A-9	TF2-004/5-SB1064 -0204	8290, 8290A	T	1 mL					
320-5001-A-10	TF2-SB-DUP04-111 3	8290, 8290A	T	1 mL					
320-5001-A-11	TF2-004/5-SB1066 -0203	8290, 8290A	T	1 mL					
320-5001-A-12	TF2-004/5-SB1057 -0304	8290, 8290A	T	1 mL					
320-5001-A-13	TF2-004/5-SB1047 -0204	8290, 8290A	T	1 mL					
320-5001-A-14	TF2-004/5-SB1038 -0204	8290, 8290A	T	1 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Batch Number: 32631 Batch Start Date: 12/26/13 12:44 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/27/13 15:00

Batch Notes	
20% DCM:Hexane	4022-120A mL
65% DCM:Hexane	4981-1E mL
Acid Alumina	32
Balance ID	QA-074
C14	TGL 12/27/13
Hexane Lot#	0000061435 mL
IFB Clean Up	TGL 12/27/13
Na2SO4 Lot Number	0000055053
IDA Reagent Drop	GDB 12/26/13
IDA Reagent Drop Witness	TGL 12/26/13
IS Reagent Drop	TGL 12/27/13
IS Reagent Drop Witness	CCC 12/27/13
SU Reagent Drop	TGL 12/27/13
SU Reagent Drop Witness	GDB 12/27/13
TA Reagent Drop	GDB 12/26/13
TA Reagent Drop Witness	TGL 12/26/13
Silica Gel Lot Number	4981-2F
Soxhlet/Soxtherm End	16:50
Soxhlet/Soxtherm Start	13:50
Storage Box	EPA-40
Toluene Lot #	0000057807 mL

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE_____ OF_____

CLIENT		JOB NUMBER	
NAVSTA Newport			
SUBJECT	PCDD/PCDF		
BASED ON	8290A	DRAWING NUMBER	
BY	CHECKED BY	APPROVED BY	DATE
EWS			

TF 2-004/5 = SB1066-0203

2,3,7,8-TCDF = 0.23 ng/kg

$$\frac{52938 \times 100 \times 20}{4154337.2 \times 1.134 \times 10.23 \times 0.969} = 0.23 \text{ ng/kg}$$

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-1

SDG No.:

Client Sample ID: TF2-004/5-SB1066-0203 Lab Sample ID: 320-5001-11 RERA

Matrix: Solid Lab File ID: 03JA1411D2_012.d

Analysis Method: 8290A Date Collected: 11/14/2013 09:45

Extract. Method: 8290 Date Extracted: 12/26/2013 12:44

Sample wt/vol: 10.23(g) Date Analyzed: 01/03/2014 18:14

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33217 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.23	J H	1.0	0.085

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		40-135
89059-46-1	13C-2,3,7,8-TCDF	53		40-135

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\Sacchrom\ChromData\11D5\20140106-9665.b\03JA1411D2_012.d
Lims ID: 320-5001-A-11-B Lab Sample ID: 320-5001-11
Client ID: TF2-004/5-SB1066-0203
Sample Type: Client
Inject. Date: 03-Jan-2014 18:14:43 ALS Bottle#: 0 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-32631
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D5

Method: \\Sacchrom\ChromData\11D5\20140106-9665.b\DXN_DB225_11D2.m
Limit Group: HR - 8290A - ICAL
Last Update: 06-Jan-2014 13:45:14 Calib Date: 19-Dec-2013 21:20:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\Sacchrom\ChromData\11D5\20131223-9430.b\19DE1311D2_007.d

Column 1 : DB-225 (0.32 mm) Detector F1:HRSIR
Process Host: XAWRK028

First Level Reviewer: stephensk Date: 06-Jan-2014 13:44:41

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.607	47009383	0.79	1.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.801	41543372	0.84	1.6831	52.5	52.5	0.1342	0.1342	52.50	
2,3,7,8-TCDF	16.801	52938	0.87	1.1338	0.1124	0.1124	0.0419	0.0419		M
D 13C-2,3,7,8-TCDD	15.402	32077270	0.82	0.9709	70.3	70.3	0.1800	0.1800	70.28	
$ 37Cl4-2,3,7,8-TCDD	15.415	13539250		1.5800	18.2	18.2	0.0310	0.0310	45.57	
2,3,7,8-TCDD	15.588						0.0568	0.0568		

QC Flag Legend

Review Flags
M - Manually Integrated

Tetra Tech INC **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **DECEMBER 12, 2013**

FROM: **JOSEPH KALINYAK** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PCB**
NAVSTA NEWPORT, CTO WE30
SAMPLE DELIVERY GROUP (SDG) SG8902

SAMPLES: 1 / Aqueous / PCB

TF2-SB-RB01-1113

20 / Soil / PCB

TF2-B219-SB1080-0204	TF2-B219-SB1081-0204	TF2-B219-SB1082-0204
TF2-B219-SB1083-0204	TF2-B219-SB1084-0204	TF2-B219-SB1085-0204
TF2-B219-SB1086-0204	TF2-B219-SB1087-0204	TF2-B219-SB1088-0204
TF2-B219-SB1089-0204	TF2-B219-SS1080-0001	TF2-B219-SS1081-0001
TF2-B219-SS1082-0001	TF2-B219-SS1083-0001	TF2-B219-SS1084-0001
TF2-B219-SS1085-0001	TF2-B219-SS1086-0001	TF2-B219-SS1087-0001
TF2-SB-DUP01-1113	TF2-SB-DUP02-1113	

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG SG8902 consisted of one (1) aqueous rinse blank sample and twenty (20) soil samples. The samples were analyzed as listed above for polychlorinated biphenyls (PCB). Two field duplicate sample pairs were included in this sample delivery group (SDG): TF2-SB-DUP01-1113 / TF2-B219-SB1089-0204 and TF2-SB-DUP01-1113 /TF2-B219-SB1082-0204.

The samples were collected by Tetra Tech on November 12, 2013 and analyzed by Katahdin Analytical Services, Inc. All analyses were conducted in accordance with EPA SW-846 Method 8082A for PCBs, analytical and reporting protocols.

The data was evaluated based on the following parameters:

*	• Data Completeness
*	• Holding Times
*	• GC/MS Instrument Tuning and System Performance
*	• Initial and Continuing Calibration
*	• Blank Results
*	• Blank Spike/Blank Spike Duplicate Results
	• Surrogate Spike Recoveries
*	• Internal Standard Recoveries
*	• Matrix Spike/Matrix Spike Duplicate Recoveries
*	• Field Duplicate Precision
*	• Compound Identification and Quantification
*	• Detection Limits

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are

presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

HOLD TIME

No issues were identified.

BLANKS

No issues were identified.

CALIBRATIONS

No issues were identified.

LABORATORY CONTROL SPIKE (LCS) /LABORATORY CONTROL SPIKE DUPLICATE (LCSD)

No issues were identified.

MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

No issues were identified.

SURROGATE SPIKE RECOVERIES

Sample TF2-SB-RB01-1113 had surrogate percent recoveries (%Rs) for tetrachloro-m-xylene (TCX) and decachlorobiphenyl (DCB) less than the quality control limit for both analytical columns (A & B).

Affected Sample: TF2-SB-RB01-1113
Actions: The sample was re-extracted and re-analyzed with the surrogate %Rs for TCX less than the quality control limit for both columns and the DCB %R less than the quality control limit for the A column. In both analyses all Aroclors were non-detected. The original sample analysis results were reported/validated and the non-detected Aroclor results were qualified estimated, (UJ).

Sample TF2-B219-SS1086-0001 had non-compliant surrogate %Rs for both TCX and DCB for analytical column A.

Affected Sample: TF2-B219-SS1086-0001
Actions: The sample had compliant surrogate %Rs for column B. However, the laboratory reported the detected Aroclor 1260 result from column A. The Aroclor 1260 detected result was qualified estimated, (J). The non-detected Aroclor results were not qualified as column B was compliant.

Sample TF2-B219-SS1085-0001 had a non-compliant surrogate %R for DCB for analytical column A.

Affected Sample: TF2-B219-SS1085-0001
Actions: No validation action was taken. The sample had compliant surrogate %Rs for column B and the laboratory reported the detected Aroclor 1260 result from column B. The non-detected Aroclor results were not qualified as column B was compliant.

Sample TF2-SB-DUP02-1113 had surrogate %Rs for TCX less than the quality control limit for both analytical columns (A & B).

Affected Sample: TF2-SB-DUP02-1113
Actions: The sample was not re-extracted or re-analyzed. The sample non-detected Aroclor results were qualified estimated, (UJ).

COMPOUND QUANTIFICATION

No issues were identified.

ADDITIONAL COMMENTS

Sample TF2-B219-SS1080-0001 was diluted 10X for the PCB/Aroclor analysis resulting in elevated Method Detection Limits and Limits of Detection reported for the non-detected Aroclor results.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: Aroclor results were qualified for surrogate %R quality control limit non-compliances.

Other Factors Affecting Data Quality: None

The data for these analyses were reviewed with reference to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Guidance/Procedures Attachment 2-3b: Example Organic Data Review Worksheets (1/13) and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Joseph Kalinyak
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Value Qualifier Key (Val Qual)

J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The result is an estimated non-detected quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U - Value is a non-detect as reported by the laboratory.

UR – Non-detected result is considered rejected, (UR), as a result of technical non-compliances.

DATA QUALIFICATION CODE (QUAL CODE)

Qualifier Codes:

A	=	Lab Blank Contamination
B	=	Field Blank Contamination
C	=	Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01	=	GC/MS Tuning Noncompliance
D	=	MS/MSD Recovery Noncompliance
E	=	LCS/LCSD Recovery Noncompliance
F	=	Lab Duplicate Imprecision
G	=	Field Duplicate Imprecision
H	=	Holding Time Exceedance
I	=	ICP Serial Dilution Noncompliance
J	=	ICP PDS Recovery Noncompliance; MSA's r < 0.995
K	=	ICP Interference - includes ICS % R Noncompliance
L	=	Instrument Calibration Range Exceedance
M	=	Sample Preservation Noncompliance
N	=	Internal Standard Noncompliance
N01	=	Internal Standard Recovery Noncompliance Dioxins
N02	=	Recovery Standard Noncompliance Dioxins
N03	=	Clean-up Standard Noncompliance Dioxins
O	=	Poor Instrument Performance (i.e., base-time drifting)
P	=	Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q	=	Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R	=	Surrogates Recovery Noncompliance
S	=	Pesticide/PCB Resolution
T	=	% Breakdown Noncompliance for DDT and Endrin
U	=	RPD between columns/detectors >40% for positive results determined via GC/HPLC
V	=	Non-linear calibrations; correlation coefficient r < 0.995
W	=	EMPC result
X	=	Signal to noise response drop
Y	=	Percent solids <30%
Z	=	Uncertainty at 2 sigma deviation is less than sample activity
Z1	=	Tentatively Identified Compound considered presumptively present
Z2	=	Tentatively Identified Compound column bleed

PROJ_NO: 03019	NSAMPLE	TF2-SB-RB01-1113		
SDG: SG8902	LAB_ID	SG8902-23		
FRACTION: PCB	SAMP_DATE	11/12/2013		
MEDIA: WATER	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
AROCLOR-1016		0.024	UJ	R
AROCLOR-1221		0.024	UJ	R
AROCLOR-1232		0.024	UJ	R
AROCLOR-1242		0.024	UJ	R
AROCLOR-1248		0.024	UJ	R
AROCLOR-1254		0.024	UJ	R
AROCLOR-1260		0.024	UJ	R
AROCLOR-1262		0.024	UJ	R
AROCLOR-1268		0.024	UJ	R

PROJ_NO: 03019	NSAMPLE	TF2-B219-SB1080-0204			TF2-B219-SB1081-0204			TF2-B219-SB1082-0204			TF2-B219-SB1083-0204		
SDG: SG8902	LAB_ID	SG8902-17			SG8902-13			SG8902-2			SG8902-4		
FRACTION: PCB	SAMP_DATE	11/12/2013			11/12/2013			11/12/2013			11/12/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.0			89.8			95.5			95.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
AROCLOR-1016		9.1	U		9.4	U		8.8	U		8.9	U	
AROCLOR-1221		9.1	U		9.4	U		8.8	U		8.9	U	
AROCLOR-1232		11	U		11	U		10	U		10	U	
AROCLOR-1242		9.1	U		9.4	U		8.8	U		8.9	U	
AROCLOR-1248		9.1	U		9.4	U		8.8	U		8.9	U	
AROCLOR-1254		9.1	U		9.4	U		8.8	U		8.9	U	
AROCLOR-1260		84			110			8.8	U		8.9	U	
AROCLOR-1262		9.1	U		9.4	U		8.8	U		8.9	U	
AROCLOR-1268		9.1	U		9.4	U		8.8	U		8.9	U	

PROJ_NO: 03019	NSAMPLE	TF2-B219-SB1084-0204			TF2-B219-SB1085-0204			TF2-B219-SB1086-0204			TF2-B219-SB1087-0204		
SDG: SG8902	LAB_ID	SG8902-11			SG8902-8			SG8902-6			SG8902-22		
FRACTION: PCB	SAMP_DATE	11/12/2013			11/12/2013			11/12/2013			11/12/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	96.3			95.1			94.4			95.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
AROCLOR-1016		8.8	U		8.8	U		8.9	U		8.6	U	
AROCLOR-1221		8.8	U		8.8	U		8.9	U		8.6	U	
AROCLOR-1232		10	U		10	U		10	U		10	U	
AROCLOR-1242		8.8	U		8.8	U		8.9	U		8.6	U	
AROCLOR-1248		8.8	U		8.8	U		8.9	U		8.6	U	
AROCLOR-1254		8.8	U		8.8	U		8.9	U		8.6	U	
AROCLOR-1260		8.8	U		8.8	U		8.9	U		8.6	U	
AROCLOR-1262		8.8	U		8.8	U		8.9	U		8.6	U	
AROCLOR-1268		8.8	U		8.8	U		8.9	U		8.6	U	

PROJ_NO: 03019	NSAMPLE	TF2-B219-SB1088-0204			TF2-B219-SB1089-0204			TF2-B219-SS1080-0001			TF2-B219-SS1081-0001		
SDG: SG8902	LAB_ID	SG8902-15			SG8902-19			SG8902-16DL			SG8902-12		
FRACTION: PCB	SAMP_DATE	11/12/2013			11/12/2013			11/12/2013			11/12/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	92.8			92.2			88.5			91.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
AROCLOR-1016		9.1	U		9.2	U		96	U		9.2	U	
AROCLOR-1221		9.1	U		9.2	U		96	U		9.2	U	
AROCLOR-1232		11	U		11	U		110	U		11	U	
AROCLOR-1242		9.1	U		9.2	U		96	U		9.2	U	
AROCLOR-1248		9.1	U		9.2	U		96	U		9.2	U	
AROCLOR-1254		9.1	U		9.2	U		96	U		9.2	U	
AROCLOR-1260		9.1	U		25			4400			2400		
AROCLOR-1262		9.1	U		9.2	U		96	U		9.2	U	
AROCLOR-1268		9.1	U		9.2	U		96	U		9.2	U	

PROJ_NO: 03019	NSAMPLE	TF2-B219-SS1082-0001			TF2-B219-SS1083-0001			TF2-B219-SS1084-0001			TF2-B219-SS1085-0001		
SDG: SG8902	LAB_ID	SG8902-1			SG8902-3			SG8902-10			SG8902-7		
FRACTION: PCB	SAMP_DATE	11/12/2013			11/12/2013			11/12/2013			11/12/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.9			94.1			95.6			94.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
AROCLOR-1016		9	U		9	U		8.9	U		9	U	
AROCLOR-1221		9	U		9	U		8.9	U		9	U	
AROCLOR-1232		11	U		10	U		10	U		10	U	
AROCLOR-1242		9	U		9	U		8.9	U		9	U	
AROCLOR-1248		9	U		9	U		8.9	U		9	U	
AROCLOR-1254		9	U		9	U		8.9	U		9	U	
AROCLOR-1260		360			24			42			1300		
AROCLOR-1262		9	U		9	U		8.9	U		9	U	
AROCLOR-1268		9	U		9	U		8.9	U		9	U	

PROJ_NO: 03019	NSAMPLE	TF2-B219-SS1086-0001			TF2-B219-SS1087-0001			TF2-SB-DUP01-1113			TF2-SB-DUP02-1113		
SDG: SG8902	LAB_ID	SG8902-5			SG8902-21			SG8902-20			SG8902-9		
FRACTION: PCB	SAMP_DATE	11/12/2013			11/12/2013			11/12/2013			11/12/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	88.1			94.3			92.1			95.4		
	DUP_OF							TF2-B219-SB1089-0204			TF2-B219-SB1082-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
AROCLOR-1016		9.6	U		8.9	U		9.1	U		8.8	UJ	R
AROCLOR-1221		9.6	U		8.9	U		9.1	U		8.8	UJ	R
AROCLOR-1232		11	U		10	U		11	U		10	UJ	R
AROCLOR-1242		9.6	U		8.9	U		9.1	U		8.8	UJ	R
AROCLOR-1248		9.6	U		8.9	U		9.1	U		8.8	UJ	R
AROCLOR-1254		9.6	U		8.9	U		9.1	U		8.8	UJ	R
AROCLOR-1260		2800	J	R	600			28			8.8	UJ	R
AROCLOR-1262		9.6	U		8.9	U		9.1	U		8.8	UJ	R
AROCLOR-1268		9.6	U		8.9	U		9.1	U		8.8	UJ	R

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-23
Client ID: TF2-SB-RB01-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK328.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 18-NOV-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG134636

Analysis Date: 18-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	0.024	ug/L	1	.5	0.047	0.014	0.024
Aroclor-1221	U	0.024	ug/L	1	.5	0.047	0.019	0.024
Aroclor-1232	U	0.024	ug/L	1	.5	0.047	0.0084	0.024
Aroclor-1242	U	0.024	ug/L	1	.5	0.047	0.017	0.024
Aroclor-1248	U	0.024	ug/L	1	.5	0.047	0.019	0.024
Aroclor-1254	U	0.024	ug/L	1	.5	0.047	0.0077	0.024
Aroclor-1260	U	0.024	ug/L	1	.5	0.047	0.016	0.024
Aroclor-1262	U	0.024	ug/L	1	.5	0.047	0.0062	0.024
Aroclor-1268	U	0.024	ug/L	1	.5	0.047	0.0068	0.024
Tetrachloro-M-Xylene	*	43.8	%					
Decachlorobiphenyl	*	15.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-23RE
Client ID: TF2-SB-RB01-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK415.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 21-NOV-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG134812

Analysis Date: 22-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	0.025	ug/L	1	.5	0.050	0.015	0.025
Aroclor-1221	U	0.025	ug/L	1	.5	0.050	0.020	0.025
Aroclor-1232	U	0.025	ug/L	1	.5	0.050	0.0089	0.025
Aroclor-1242	U	0.025	ug/L	1	.5	0.050	0.018	0.025
Aroclor-1248	U	0.025	ug/L	1	.5	0.050	0.020	0.025
Aroclor-1254	U	0.025	ug/L	1	.5	0.050	0.0082	0.025
Aroclor-1260	U	0.025	ug/L	1	.5	0.050	0.017	0.025
Aroclor-1262	U	0.025	ug/L	1	.5	0.050	0.0066	0.025
Aroclor-1268	U	0.025	ug/L	1	.5	0.050	0.0072	0.025
Tetrachloro-M-Xylene	*	50.7	%					
Decachlorobiphenyl	*	14.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-17
Client ID: F2-B219-SB1080-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK398.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 22-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 93.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	9.1	ug/Kgdrywt	1	17	18.	6.4	9.1
Aroclor-1221	U	9.1	ug/Kgdrywt	1	17	18.	8.4	9.1
Aroclor-1232	U	11.	ug/Kgdrywt	1	17	18.	9.9	11.
Aroclor-1242	U	9.1	ug/Kgdrywt	1	17	18.	6.2	9.1
Aroclor-1248	U	9.1	ug/Kgdrywt	1	17	18.	6.5	9.1
Aroclor-1254	U	9.1	ug/Kgdrywt	1	17	18.	5.0	9.1
Aroclor-1260		84.	ug/Kgdrywt	1	17	18.	6.4	9.1
Aroclor-1262	U	9.1	ug/Kgdrywt	1	17	18.	4.0	9.1
Aroclor-1268	U	9.1	ug/Kgdrywt	1	17	18.	2.8	9.1
Tetrachloro-M-Xylene		76.4	%					
Decachlorobiphenyl		98.6	%					

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-13
Client ID: F2-B219-SB1081-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK395.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 22-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 90.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	9.4	ug/Kgdrywt	1	17	19.	6.6	9.4
Aroclor-1221	U	9.4	ug/Kgdrywt	1	17	19.	8.7	9.4
Aroclor-1232	U	11.	ug/Kgdrywt	1	17	19.	10.	11.
Aroclor-1242	U	9.4	ug/Kgdrywt	1	17	19.	6.4	9.4
Aroclor-1248	U	9.4	ug/Kgdrywt	1	17	19.	6.7	9.4
Aroclor-1254	U	9.4	ug/Kgdrywt	1	17	19.	5.2	9.4
Aroclor-1260		110	ug/Kgdrywt	1	17	19.	6.6	9.4
Aroclor-1262	U	9.4	ug/Kgdrywt	1	17	19.	4.1	9.4
Aroclor-1268	U	9.4	ug/Kgdrywt	1	17	19.	2.9	9.4
Tetrachloro-M-Xylene		72.2	%					
Decachlorobiphenyl		89.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-2
Client ID: F2-B219-SB1082-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK379.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 95.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	8.8	ug/Kgdrywt	1	17	18.	6.2	8.8
Aroclor-1221	U	8.8	ug/Kgdrywt	1	17	18.	8.1	8.8
Aroclor-1232	U	10.	ug/Kgdrywt	1	17	18.	9.6	10.
Aroclor-1242	U	8.8	ug/Kgdrywt	1	17	18.	6.0	8.8
Aroclor-1248	U	8.8	ug/Kgdrywt	1	17	18.	6.3	8.8
Aroclor-1254	U	8.8	ug/Kgdrywt	1	17	18.	4.8	8.8
Aroclor-1260	U	8.8	ug/Kgdrywt	1	17	18.	6.2	8.8
Aroclor-1262	U	8.8	ug/Kgdrywt	1	17	18.	3.8	8.8
Aroclor-1268	U	8.8	ug/Kgdrywt	1	17	18.	2.7	8.8
Tetrachloro-M-Xylene		67.9	%					
Decachlorobiphenyl		84.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-4
Client ID: F2-B219-SB1083-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK381.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 95.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	8.9	ug/Kgdrywt	1	17	18.	6.3	8.9
Aroclor-1221	U	8.9	ug/Kgdrywt	1	17	18.	8.3	8.9
Aroclor-1232	U	10.	ug/Kgdrywt	1	17	18.	9.8	10.
Aroclor-1242	U	8.9	ug/Kgdrywt	1	17	18.	6.1	8.9
Aroclor-1248	U	8.9	ug/Kgdrywt	1	17	18.	6.4	8.9
Aroclor-1254	U	8.9	ug/Kgdrywt	1	17	18.	4.9	8.9
Aroclor-1260	U	8.9	ug/Kgdrywt	1	17	18.	6.3	8.9
Aroclor-1262	U	8.9	ug/Kgdrywt	1	17	18.	3.9	8.9
Aroclor-1268	U	8.9	ug/Kgdrywt	1	17	18.	2.7	8.9
Tetrachloro-M-Xylene		80.3	%					
Decachlorobiphenyl		89.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-11
Client ID: F2-B219-SB1084-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK388.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 96.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	8.8	ug/Kgdrywt	1	17	18.	6.2	8.8
Aroclor-1221	U	8.8	ug/Kgdrywt	1	17	18.	8.2	8.8
Aroclor-1232	U	10.	ug/Kgdrywt	1	17	18.	9.6	10.
Aroclor-1242	U	8.8	ug/Kgdrywt	1	17	18.	6.0	8.8
Aroclor-1248	U	8.8	ug/Kgdrywt	1	17	18.	6.3	8.8
Aroclor-1254	U	8.8	ug/Kgdrywt	1	17	18.	4.9	8.8
Aroclor-1260	U	8.8	ug/Kgdrywt	1	17	18.	6.2	8.8
Aroclor-1262	U	8.8	ug/Kgdrywt	1	17	18.	3.8	8.8
Aroclor-1268	U	8.8	ug/Kgdrywt	1	17	18.	2.7	8.8
Tetrachloro-M-Xylene		81.5	%					
Decachlorobiphenyl		93.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-8
Client ID: F2-B219-SB1085-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK385.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 95.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	8.8	ug/Kgdrywt	1	17	18.	6.2	8.8
Aroclor-1221	U	8.8	ug/Kgdrywt	1	17	18.	8.2	8.8
Aroclor-1232	U	10.	ug/Kgdrywt	1	17	18.	9.6	10.
Aroclor-1242	U	8.8	ug/Kgdrywt	1	17	18.	6.0	8.8
Aroclor-1248	U	8.8	ug/Kgdrywt	1	17	18.	6.3	8.8
Aroclor-1254	U	8.8	ug/Kgdrywt	1	17	18.	4.8	8.8
Aroclor-1260	U	8.8	ug/Kgdrywt	1	17	18.	6.2	8.8
Aroclor-1262	U	8.8	ug/Kgdrywt	1	17	18.	3.8	8.8
Aroclor-1268	U	8.8	ug/Kgdrywt	1	17	18.	2.7	8.8
Tetrachloro-M-Xylene		79.1	%					
Decachlorobiphenyl		115.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-6
Client ID: F2-B219-SB1086-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK383.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 94.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	8.9	ug/Kgdrywt	1	17	18.	6.3	8.9
Aroclor-1221	U	8.9	ug/Kgdrywt	1	17	18.	8.2	8.9
Aroclor-1232	U	10.	ug/Kgdrywt	1	17	18.	9.7	10.
Aroclor-1242	U	8.9	ug/Kgdrywt	1	17	18.	6.1	8.9
Aroclor-1248	U	8.9	ug/Kgdrywt	1	17	18.	6.4	8.9
Aroclor-1254	U	8.9	ug/Kgdrywt	1	17	18.	4.9	8.9
Aroclor-1260	U	8.9	ug/Kgdrywt	1	17	18.	6.3	8.9
Aroclor-1262	U	8.9	ug/Kgdrywt	1	17	18.	3.9	8.9
Aroclor-1268	U	8.9	ug/Kgdrywt	1	17	18.	2.7	8.9
Tetrachloro-M-Xylene		69.8	%					
Decachlorobiphenyl		116.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-22
Client ID: F2-B219-SB1087-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK344.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134661

Analysis Date: 20-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 95.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	8.6	ug/Kgdrywt	1	17	17.	6.1	8.6
Aroclor-1221	U	8.6	ug/Kgdrywt	1	17	17.	8.0	8.6
Aroclor-1232	U	10.	ug/Kgdrywt	1	17	17.	9.4	10.
Aroclor-1242	U	8.6	ug/Kgdrywt	1	17	17.	5.9	8.6
Aroclor-1248	U	8.6	ug/Kgdrywt	1	17	17.	6.2	8.6
Aroclor-1254	U	8.6	ug/Kgdrywt	1	17	17.	4.8	8.6
Aroclor-1260	U	8.6	ug/Kgdrywt	1	17	17.	6.1	8.6
Aroclor-1262	U	8.6	ug/Kgdrywt	1	17	17.	3.8	8.6
Aroclor-1268	U	8.6	ug/Kgdrywt	1	17	17.	2.6	8.6
Tetrachloro-M-Xylene		71.3	%					
Decachlorobiphenyl		85.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-15
Client ID: F2-B219-SB1088-0204
Project: NAVSTA Newport CTO WE
SDG: SG8902
Lab File ID: 7GK396.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 22-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 93.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	9.1	ug/Kgdrywt	1	17	18.	6.4	9.1
Aroclor-1221	U	9.1	ug/Kgdrywt	1	17	18.	8.4	9.1
Aroclor-1232	U	11.	ug/Kgdrywt	1	17	18.	9.9	11.
Aroclor-1242	U	9.1	ug/Kgdrywt	1	17	18.	6.2	9.1
Aroclor-1248	U	9.1	ug/Kgdrywt	1	17	18.	6.5	9.1
Aroclor-1254	U	9.1	ug/Kgdrywt	1	17	18.	5.0	9.1
Aroclor-1260	U	9.1	ug/Kgdrywt	1	17	18.	6.4	9.1
Aroclor-1262	U	9.1	ug/Kgdrywt	1	17	18.	3.9	9.1
Aroclor-1268	U	9.1	ug/Kgdrywt	1	17	18.	2.8	9.1
Tetrachloro-M-Xylene		72.1	%					
Decachlorobiphenyl		94.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-19
Client ID: F2-B219-SB1089-0204
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK341.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134661

Analysis Date: 20-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 92.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	9.2	ug/Kgdrywt	1	17	18.	6.5	9.2
Aroclor-1221	U	9.2	ug/Kgdrywt	1	17	18.	8.5	9.2
Aroclor-1232	U	11.	ug/Kgdrywt	1	17	18.	10.	11.
Aroclor-1242	U	9.2	ug/Kgdrywt	1	17	18.	6.3	9.2
Aroclor-1248	U	9.2	ug/Kgdrywt	1	17	18.	6.6	9.2
Aroclor-1254	U	9.2	ug/Kgdrywt	1	17	18.	5.1	9.2
Aroclor-1260		25.	ug/Kgdrywt	1	17	18.	6.5	9.2
Aroclor-1262	U	9.2	ug/Kgdrywt	1	17	18.	4.0	9.2
Aroclor-1268	U	9.2	ug/Kgdrywt	1	17	18.	2.8	9.2
Tetrachloro-M-Xylene		70.8	%					
Decachlorobiphenyl		89.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-16DL
Client ID: F2-B219-SS1080-0001
Project: NAVSTA Newport CTO WE
SDG: SG8902
Lab File ID: 7GK465.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 25-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 88.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	96.	ug/Kgdrywt	10	17	190	68.	96.
Aroclor-1221	U	96.	ug/Kgdrywt	10	17	190	89.	96.
Aroclor-1232	U	110	ug/Kgdrywt	10	17	190	100	110
Aroclor-1242	U	96.	ug/Kgdrywt	10	17	190	65.	96.
Aroclor-1248	U	96.	ug/Kgdrywt	10	17	190	69.	96.
Aroclor-1254	U	96.	ug/Kgdrywt	10	17	190	53.	96.
Aroclor-1260		4400	ug/Kgdrywt	10	17	190	68.	96.
Aroclor-1262	U	96.	ug/Kgdrywt	10	17	190	42.	96.
Aroclor-1268	U	96.	ug/Kgdrywt	10	17	190	29.	96.
Tetrachloro-M-Xylene	D	0.00	%					
Decachlorobiphenyl	D	0.00	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-12
Client ID: F2-B219-SS1081-0001
Project: NAVSTA Newport CTO WE.
SDG: SG8902
Lab File ID: 7GK394.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 22-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 91.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	9.2	ug/Kgdrywt	1	17	18.	6.5	9.2
Aroclor-1221	U	9.2	ug/Kgdrywt	1	17	18.	8.6	9.2
Aroclor-1232	U	11.	ug/Kgdrywt	1	17	18.	10.	11.
Aroclor-1242	U	9.2	ug/Kgdrywt	1	17	18.	6.3	9.2
Aroclor-1248	U	9.2	ug/Kgdrywt	1	17	18.	6.6	9.2
Aroclor-1254	U	9.2	ug/Kgdrywt	1	17	18.	5.1	9.2
Aroclor-1260		2400	ug/Kgdrywt	1	17	18.	6.5	9.2
Aroclor-1262	U	9.2	ug/Kgdrywt	1	17	18.	4.0	9.2
Aroclor-1268	U	9.2	ug/Kgdrywt	1	17	18.	2.8	9.2
Tetrachloro-M-Xylene		79.3	%					
Decachlorobiphenyl	*	138.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-1
Client ID: F2-B219-SS1082-0001
Project: NAVSTA Newport CTO WE
SDG: SG8902
Lab File ID: 7GK374.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 94.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	9.0	ug/Kgdrywt	1	17	18.	6.4	9.0
Aroclor-1221	U	9.0	ug/Kgdrywt	1	17	18.	8.4	9.0
Aroclor-1232	U	11.	ug/Kgdrywt	1	17	18.	9.9	11.
Aroclor-1242	U	9.0	ug/Kgdrywt	1	17	18.	6.2	9.0
Aroclor-1248	U	9.0	ug/Kgdrywt	1	17	18.	6.5	9.0
Aroclor-1254	U	9.0	ug/Kgdrywt	1	17	18.	5.0	9.0
Aroclor-1260		360	ug/Kgdrywt	1	17	18.	6.4	9.0
Aroclor-1262	U	9.0	ug/Kgdrywt	1	17	18.	3.9	9.0
Aroclor-1268	U	9.0	ug/Kgdrywt	1	17	18.	2.8	9.0
Tetrachloro-M-Xylene		84.8	%					
Decachlorobiphenyl		94.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-3
Client ID: F2-B219-SS1083-0001
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK380.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 94.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	9.0	ug/Kgdrywt	1	17	18.	6.3	9.0
Aroclor-1221	U	9.0	ug/Kgdrywt	1	17	18.	8.3	9.0
Aroclor-1232	U	10.	ug/Kgdrywt	1	17	18.	9.8	10.
Aroclor-1242	U	9.0	ug/Kgdrywt	1	17	18.	6.1	9.0
Aroclor-1248	U	9.0	ug/Kgdrywt	1	17	18.	6.4	9.0
Aroclor-1254	U	9.0	ug/Kgdrywt	1	17	18.	5.0	9.0
Aroclor-1260		24.	ug/Kgdrywt	1	17	18.	6.3	9.0
Aroclor-1262	U	9.0	ug/Kgdrywt	1	17	18.	3.9	9.0
Aroclor-1268	U	9.0	ug/Kgdrywt	1	17	18.	2.7	9.0
Tetrachloro-M-Xylene		84.6	%					
Decachlorobiphenyl		96.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-10
Client ID: F2-B219-SS1084-0001
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK387.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 96.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	8.9	ug/Kgdrywt	1	17	18.	6.3	8.9
Aroclor-1221	U	8.9	ug/Kgdrywt	1	17	18.	8.3	8.9
Aroclor-1232	U	10.	ug/Kgdrywt	1	17	18.	9.7	10.
Aroclor-1242	U	8.9	ug/Kgdrywt	1	17	18.	6.1	8.9
Aroclor-1248	U	8.9	ug/Kgdrywt	1	17	18.	6.4	8.9
Aroclor-1254	U	8.9	ug/Kgdrywt	1	17	18.	4.9	8.9
Aroclor-1260		42.	ug/Kgdrywt	1	17	18.	6.3	8.9
Aroclor-1262	U	8.9	ug/Kgdrywt	1	17	18.	3.9	8.9
Aroclor-1268	U	8.9	ug/Kgdrywt	1	17	18.	2.7	8.9
Tetrachloro-M-Xylene		85.6	%					
Decachlorobiphenyl		95.7	%					

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Tel:(207) 874-2400 Fax:(207) 775-4029

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-7
Client ID: F2-B219-SS1085-0001
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK384.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 94.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	9.0	ug/Kgdrywt	1	17	18.	6.4	9.0
Aroclor-1221	U	9.0	ug/Kgdrywt	1	17	18.	8.4	9.0
Aroclor-1232	U	10.	ug/Kgdrywt	1	17	18.	9.8	10.
Aroclor-1242	U	9.0	ug/Kgdrywt	1	17	18.	6.1	9.0
Aroclor-1248	U	9.0	ug/Kgdrywt	1	17	18.	6.5	9.0
Aroclor-1254	U	9.0	ug/Kgdrywt	1	17	18.	5.0	9.0
Aroclor-1260		1300	ug/Kgdrywt	1	17	18.	6.4	9.0
Aroclor-1262	U	9.0	ug/Kgdrywt	1	17	18.	3.9	9.0
Aroclor-1268	U	9.0	ug/Kgdrywt	1	17	18.	2.8	9.0
Tetrachloro-M-Xylene		71.4	%					
Decachlorobiphenyl	*	354.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-5
Client ID: F2-B219-SS1086-0001
Project: NAVSTA Newport CTO WE.
SDG: SG8902
Lab File ID: 7GK382.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 88.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	9.6	ug/Kgdrywt	1	17	19.	6.8	9.6
Aroclor-1221	U	9.6	ug/Kgdrywt	1	17	19.	9.0	9.6
Aroclor-1232	U	11.	ug/Kgdrywt	1	17	19.	10.	11.
Aroclor-1242	U	9.6	ug/Kgdrywt	1	17	19.	6.6	9.6
Aroclor-1248	U	9.6	ug/Kgdrywt	1	17	19.	6.9	9.6
Aroclor-1254	U	9.6	ug/Kgdrywt	1	17	19.	5.3	9.6
Aroclor-1260		2800	ug/Kgdrywt	1	17	19.	6.8	9.6
Aroclor-1262	U	9.6	ug/Kgdrywt	1	17	19.	4.2	9.6
Aroclor-1268	U	9.6	ug/Kgdrywt	1	17	19.	3.0	9.6
Tetrachloro-M-Xylene		69.6	%					
Decachlorobiphenyl	*	333.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-21
Client ID: F2-B219-SS1087-0001
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK343.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134661

Analysis Date: 20-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 94.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	8.9	ug/Kgdrywt	1	17	18.	6.3	8.9
Aroclor-1221	U	8.9	ug/Kgdrywt	1	17	18.	8.3	8.9
Aroclor-1232	U	10.	ug/Kgdrywt	1	17	18.	9.8	10.
Aroclor-1242	U	8.9	ug/Kgdrywt	1	17	18.	6.1	8.9
Aroclor-1248	U	8.9	ug/Kgdrywt	1	17	18.	6.4	8.9
Aroclor-1254	U	8.9	ug/Kgdrywt	1	17	18.	4.9	8.9
Aroclor-1260		600	ug/Kgdrywt	1	17	18.	6.3	8.9
Aroclor-1262	U	8.9	ug/Kgdrywt	1	17	18.	3.9	8.9
Aroclor-1268	U	8.9	ug/Kgdrywt	1	17	18.	2.7	8.9
Tetrachloro-M-Xylene		71.1	%					
Decachlorobiphenyl		85.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-20
Client ID: TF2-SB-DUP01-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK342.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134661

Analysis Date: 20-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 92.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	9.1	ug/Kgdrywt	1	17	18.	6.4	9.1
Aroclor-1221	U	9.1	ug/Kgdrywt	1	17	18.	8.5	9.1
Aroclor-1232	U	11.	ug/Kgdrywt	1	17	18.	10.	11.
Aroclor-1242	U	9.1	ug/Kgdrywt	1	17	18.	6.2	9.1
Aroclor-1248	U	9.1	ug/Kgdrywt	1	17	18.	6.6	9.1
Aroclor-1254	U	9.1	ug/Kgdrywt	1	17	18.	5.0	9.1
Aroclor-1260		28.	ug/Kgdrywt	1	17	18.	6.4	9.1
Aroclor-1262	U	9.1	ug/Kgdrywt	1	17	18.	4.0	9.1
Aroclor-1268	U	9.1	ug/Kgdrywt	1	17	18.	2.8	9.1
Tetrachloro-M-Xylene		72.1	%					
Decachlorobiphenyl		86.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-9
Client ID: TF2-SB-DUP02-1113
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK386.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 95.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	8.8	ug/Kgdrywt	1	17	18.	6.2	8.8
Aroclor-1221	U	8.8	ug/Kgdrywt	1	17	18.	8.2	8.8
Aroclor-1232	U	10.	ug/Kgdrywt	1	17	18.	9.7	10.
Aroclor-1242	U	8.8	ug/Kgdrywt	1	17	18.	6.0	8.8
Aroclor-1248	U	8.8	ug/Kgdrywt	1	17	18.	6.4	8.8
Aroclor-1254	U	8.8	ug/Kgdrywt	1	17	18.	4.9	8.8
Aroclor-1260	U	8.8	ug/Kgdrywt	1	17	18.	6.2	8.8
Aroclor-1262	U	8.8	ug/Kgdrywt	1	17	18.	3.8	8.8
Aroclor-1268	U	8.8	ug/Kgdrywt	1	17	18.	2.7	8.8
Tetrachloro-M-Xylene	*	55.0	%					
Decachlorobiphenyl		70.6	%					

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-17
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SB1080-0204	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	93. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:25:04	SM2540G	18-NOV-13	

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-13
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SB1081-0204	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	90. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:24:34	SM2540G	18-NOV-13	

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
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Lab Sample ID: SG8902-2
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SB1082-0204	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	95. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:22:19	SM2540G	18-NOV-13	

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Report of Analytical Results

Client: Vanessa Good
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Lab Sample ID: SG8902-4
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SB1083-0204	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	95. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:22:47	SM2540G	18-NOV-13	

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
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Lab Sample ID: SG8902-11
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SB1084-0204	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	96. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:24:14	SM2540G	18-NOV-13	

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
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Lab Sample ID: SG8902-8
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SB1085-0204	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	95. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:23:36	SM2540G	18-NOV-13	

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-6
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SB1086-0204	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	94. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:23:13	SM2540G	18-NOV-13	

Katahdin Analytical Services A0000089

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-22
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SB1087-0204	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	95. %	1		N/A	SM2540G	WG134664	20-NOV-13 08:58:15	SM2540G	19-NOV-13	

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-15
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SB1088-0204	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	93. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:24:46	SM2540G	18-NOV-13	

Katahdin Analytical Services A0000097

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-19
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SB1089-0204	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	92. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:25:13	SM2540G	18-NOV-13	

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-16
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SS1080-0001	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	88. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:24:55	SM2540G	18-NOV-13	

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-12
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SS1081-0001	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	91. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:24:23	SM2540G	18-NOV-13	

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-1
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SS1082-0001	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	94. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:22:09	SM2540G	18-NOV-13	

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-3
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SS1083-0001	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	94. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:22:29	SM2540G	18-NOV-13	

Katahdin Analytical Services A000086

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-10
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SS1084-0001	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	96. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:24:04	SM2540G	18-NOV-13	

Katahdin Analytical Services A0000093

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-7
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SS1085-0001	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	94. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:23:24	SM2540G	18-NOV-13	

Katahdin Analytical Services A0000090

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-5
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SS1086-0001	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	88. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:23:02	SM2540G	18-NOV-13	

Katahdin Analytical Services A0000088

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-21
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
F2-B219-SS1087-0001	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	94. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:25:33	SM2540G	18-NOV-13	

Katahdin Analytical Services A000102

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-20
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
TF2-SB-DUP01-1113	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	92. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:25:22	SM2540G	18-NOV-13	

Katahdin Analytical Services A0000101

Katahdin
ANALYTICAL SERVICES

Accredited in accordance with nelac
Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG8902-9
Report Date: 03-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG8902

Sample Description	Matrix	Date Sampled	Date Received
TF2-SB-DUP02-1113	SL	12-NOV-13	13-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	95. %	1		N/A	SM2540G	WG134604	19-NOV-13 10:23:54	SM2540G	18-NOV-13	

Katahdin Analytical Services A0000092

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: 03019 SDG: SG8902

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: PCB/Aroclors

Missing Information	Date Lab Contacted	Date Received
N/A		

Validator: [signature]

Date: 12/12/13

EPA-NE - Data Validation
VOA/SV/Pest/PCB-I

See DV Report

Case: _____ SDG: _____

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: _____ Date: 12/12/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG: See DV Report

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator:_____ Date: 12/12/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: _____

Date: 12/12/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator:_____ Date: 12/12/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: _____ Date: 12/12/13

1/13

EPA NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator:_____

Date: 12/12/13

EPA-NE - Data Validation Worksheet

See OV Report

Case:_____ SDG:_____

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator:_____

Date: 12/12/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator:_____

Date: 12/12/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)
Comments:								

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator:_____ Date: 12/12/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator:_____

Date: 12/12/13

1/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator:_____

Date: 12/12/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Validator:_____

Date: 12/12/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: JK Date: 12/12/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: _____ Date: 12/12/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) -- List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methyhlphenol-d_8
DCP= 2.4-Dichlorophenol-d_3

Validator: _____

Date: 12/12/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____ Date: 12/12/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery			% Recovery		
			Fluoranthene			Naphthalene	
			Pyrene			2-Methylnaphthalene	
			Benzo(a)anthracene			Acenaphthylene	
			Chrysene			Acenaphthene	
			Benzo(b)fluoranthene			Fluorene	
			Benzo(k)fluoranthene			Pentachlorophenol	
			Benzo(a)pyrene			Phenanthrene	
			Indeno(1,2,2-cd)pyrene			Anthracene	
			Dibenzo(a,h)anthracene				
			Benzo(g,h,i)perylene				

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____ Date: 12/12/13

APPENDIX D

SUPPORT DOCUMENTATION

HOLDTIME

SDG SG8902

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-B219-SS1085-0001	SG8902-7	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SB1080-0204	SG8902-17	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-SB-DUP02-1113	SG8902-9	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-SB-DUP01-1113	SG8902-20	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SS1086-0001	SG8902-5	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SS1084-0001	SG8902-10	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SS1083-0001	SG8902-3	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SS1082-0001	SG8902-1	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SS1081-0001	SG8902-12	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SS1080-0001	SG8902-16	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SB1088-0204	SG8902-15	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SB1087-0204	SG8902-22	NM	11/12/2013	11/19/2013	11/20/2013	7	1	8
	%	TF2-B219-SB1086-0204	SG8902-6	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SB1085-0204	SG8902-8	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SB1081-0204	SG8902-13	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	%	TF2-B219-SB1084-0204	SG8902-11	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SB1083-0204	SG8902-4	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SB1082-0204	SG8902-2	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SB1089-0204	SG8902-19	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
	%	TF2-B219-SS1087-0001	SG8902-21	NM	11/12/2013	11/18/2013	11/19/2013	6	1	7
PCB	%	TF2-B219-SB1080-0204	SG8902-17	NM	11/12/2013	11/19/2013	11/22/2013	7	3	10
PCB	%	TF2-B219-SB1089-0204	SG8902-19	NM	11/12/2013	11/19/2013	11/20/2013	7	1	8
PCB	%	TF2-B219-SB1088-0204	SG8902-15	NM	11/12/2013	11/19/2013	11/22/2013	7	3	10
PCB	%	TF2-B219-SB1087-0204	SG8902-22	NM	11/12/2013	11/19/2013	11/20/2013	7	1	8
PCB	%	TF2-B219-SB1086-0204	SG8902-6	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	%	TF2-B219-SB1085-0204	SG8902-8	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	%	TF2-B219-SB1084-0204	SG8902-11	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	%	TF2-B219-SB1083-0204	SG8902-4	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	%	TF2-B219-SB1081-0204	SG8902-13	NM	11/12/2013	11/19/2013	11/22/2013	7	3	10
PCB	%	TF2-B219-SS1081-0001	SG8902-12	NM	11/12/2013	11/19/2013	11/22/2013	7	3	10
PCB	%	TF2-B219-SS1082-0001	SG8902-1	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	%	TF2-B219-SB1082-0204	SG8902-2	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	%	TF2-SB-RB01-1113	SG8902-23RE	NM	11/12/2013	11/21/2013	11/22/2013	9	1	10

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCB	%	TF2-B219-SS1083-0001	SG8902-3	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	%	TF2-B219-SS1084-0001	SG8902-10	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	%	TF2-B219-SS1085-0001	SG8902-7	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	%	TF2-B219-SS1086-0001	SG8902-5	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	%	TF2-B219-SS1087-0001	SG8902-21	NM	11/12/2013	11/19/2013	11/20/2013	7	1	8
PCB	%	TF2-SB-DUP01-1113	SG8902-20	NM	11/12/2013	11/19/2013	11/20/2013	7	1	8
PCB	%	TF2-SB-DUP02-1113	SG8902-9	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	%	TF2-SB-RB01-1113	SG8902-23	NM	11/12/2013	11/18/2013	11/18/2013	6	0	6
PCB	%	TF2-B219-SS1080-0001	SG8902-16DL	NM	11/12/2013	11/19/2013	11/25/2013	7	6	13
PCB	UG/KG DRY	TF2-B219-SS1082-0001	SG8902-1	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	UG/KG DRY	TF2-B219-SS1083-0001	SG8902-3	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	UG/KG DRY	TF2-B219-SS1084-0001	SG8902-10	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	UG/KG DRY	TF2-B219-SS1085-0001	SG8902-7	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	UG/KG DRY	TF2-B219-SS1086-0001	SG8902-5	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	UG/KG DRY	TF2-B219-SS1087-0001	SG8902-21	NM	11/12/2013	11/19/2013	11/20/2013	7	1	8
PCB	UG/KG DRY	TF2-B219-SS1081-0001	SG8902-12	NM	11/12/2013	11/19/2013	11/22/2013	7	3	10
PCB	UG/KG DRY	TF2-SB-DUP02-1113	SG8902-9	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	UG/KG DRY	TF2-B219-SB1085-0204	SG8902-8	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCB	UG/KG DRY	TF2-SB-DUP01-1113	SG8902-20	NM	11/12/2013	11/19/2013	11/20/2013	7	1	8
PCB	UG/KG DRY	TF2-B219-SS1080-0001	SG8902-16DL	NM	11/12/2013	11/19/2013	11/25/2013	7	6	13
PCB	UG/KG DRY	TF2-B219-SB1089-0204	SG8902-19	NM	11/12/2013	11/19/2013	11/20/2013	7	1	8
PCB	UG/KG DRY	TF2-B219-SB1088-0204	SG8902-15	NM	11/12/2013	11/19/2013	11/22/2013	7	3	10
PCB	UG/KG DRY	TF2-B219-SB1086-0204	SG8902-6	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	UG/KG DRY	TF2-B219-SB1084-0204	SG8902-11	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	UG/KG DRY	TF2-B219-SB1083-0204	SG8902-4	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	UG/KG DRY	TF2-B219-SB1082-0204	SG8902-2	NM	11/12/2013	11/19/2013	11/21/2013	7	2	9
PCB	UG/KG DRY	TF2-B219-SB1081-0204	SG8902-13	NM	11/12/2013	11/19/2013	11/22/2013	7	3	10
PCB	UG/KG DRY	TF2-B219-SB1080-0204	SG8902-17	NM	11/12/2013	11/19/2013	11/22/2013	7	3	10
PCB	UG/KG DRY	TF2-B219-SB1087-0204	SG8902-22	NM	11/12/2013	11/19/2013	11/20/2013	7	1	8
PCB	UG/L	TF2-SB-RB01-1113	SG8902-23RE	NM	11/12/2013	11/21/2013	11/22/2013	9	1	10
PCB	UG/L	TF2-SB-RB01-1113	SG8902-23	NM	11/12/2013	11/18/2013	11/18/2013	6	0	6

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER No 027647 | PAGE 2 OF 4

PROJECT NO: 112G03019 CTOWE30	FACILITY: NAVSTA Newport	PROJECT MANAGER Debra Selken	PHONE NUMBER (978) 474-8400
SAMPLERS (SIGNATURE) K Jalkut Peter Sel WAM		FIELD OPERATIONS LEADER Kayleen Jalkut	PHONE NUMBER (781) 201-0457
STANDARD TAT [X] RUSH TAT [ ] 24 hr. [ ] 48 hr. [ ] 72 hr. [ ] 7 day [ ] 14 day		CARRIER/WAYBILL NUMBER Courier plus @ RI · hand delivery	LABORATORY NAME AND CONTACT: Katahdin, Jen Obrin; ADDRESS 600 Technology Way; CITY, STATE Scarborough ME

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: PCBs	Total Solids	Lead	Total Solids	COMMENTS
		SG8902/SG8903							G	≤6°C		4oz jar		4oz jar	
11/12	1015	TF2-B219-SS1088-0001	B219	0	1	SO	G	1			X	X			
	1025	TF2-B219-SB1088-0204		2	4			1			X	X			
	1035	TF2-B219-SS1080-0001		0	1			1			X	X			
	1045	TF2-B219-SB1080-0204		2	4			1			X	X			
	1118	TF2-B219-SS1089-0001		0	1			1			X	X			
	1121	TF2-B219-SB1089-0204		2	4			1			X	X			
	0000	TF2-SB-DUP01-1113		/	/			1			X	X			
	1050	TF2-B219-SB1087-0001		0	1			1			X	X			
	1055	TF2-B219-SB1087-0204		2	4			1			X	X			
	1400	TF2-SB-RB01-1113	NA	/	/	QC		32			X		X per PA 11-12-13		
	1530	TF2-BSA-SS1090-0001	BSA	0	1	SO		1				X	X		
	1320	TF2-BSA-SS1091-0001		0	1			1				X	X		
	1331	TF2-BSA-SB1091-0204		2	4			2				X	X		Lab QC

1. RELINQUISHED BY Peter Sel	DATE 11-13-13	TIME 1340	1. RECEIVED BY
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY

1. RECEIVED BY	DATE	TIME
	11-13-13	1340
2. RECEIVED BY	DATE	TIME
3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

00000

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER No 027654 | PAGE 1 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	NAVSTA Newport	Debra Seiken	(978) 474-8400	Katahdin - Jen Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
Kjalkut, Peter Seward		Kayleen Jalkut	(781) 801-0457	Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier plus @ RI-hand delivery		Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

SG 8902/~~SG 8~~ CN

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
									G	G							
									PRESERVATIVE USED								
									<6°C	<6°C							
									TYPE OF ANALYSIS								
									PCBs	Total Solids	3 40z glass						
11/12	1220	TF2-B219-SS1082-0001	B219	0	1	SO	G	1	X	X							
	1225	TF2-B219-SB1082-0204		2	4			1	X	X							
	1207	TF2-B219-SS1083-0001		0	1			1	X	X							
	1212	TF2-B219-SB1083-0204		2	4			1	X	X							Lab QC (1 jar only)
	1140	TF2-B219-SS1086-0001		0	1			1	X	X							
	1145	TF2-B219-SB1086-0204		2	4			1	X	X							
	1155	TF2-B219-SS1085-0001		0	1			1	X	X							
	1200	TF2-B219-SB1085-0204		2	4			1	X	X							
	0000	TF2-SB-DUP02-1113		/	/			1	X	X							
	1130	~~TF2-SB~~ TF2-B219-SS1084-0001		0	1			1	X	X							
	1135	TF2-B219-SB1084-0204		2	4			1	X	X							
	1060	TF2-B219-SS1081-0001		0	1			1	X	X							
	1005	TF2-B219-SS1081-0204		2	4			1	X	X							

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY Peter Jalkut	11-13-13	1340	1. RECEIVED BY	11-13-13	1340
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

0000009

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Nov. 15, 2013
06:59 AM

Login Number: SG8902

Account: TETRAT001 Web
Tetra Tech NUS, Inc.

Project: TETRATWE30
NAVSTA Newport CTO WE30 &WE59

Primary Report Address:
Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
661 Anderson Drive
Pittsburgh,PA 15220
vanessa.good@tetratech.com

Primary Invoice Address:
Accounts Payable
Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh,PA 15220

Report CC Addresses:
Invoice CC Addresses:

Quote/Incoming: TETRATWE30

Login Information:

ANALYSIS INSTRUCTIONS	:	DoD QSM with DoD limits. ND to LOD. "J" flag between DL and LOQ. Decant any standing water, homogenize and determine %solids before analysis. Aliquots must be increased to comp. for moisture. Centrifuging may also be used. Report=dry weight basis. 8082=30/40 days--Final Vol=1ml for AQ.
CHECK NO.	:	
CLIENT PO#	:	1045366 40-CTO WE30 (01) 112G03019
CLIENT PROJECT MANAGE	:	Dabra Seiken
CONTRACT	:	
COOLER TEMPERATURE	:	1.3
DELIVERY SERVICES	:	KAS
EDD FORMAT	:	KAS119QC-CSV
LOGIN INITIALS	:	JO
PM	:	JO
PROJECT NAME	:	NAVSTA Newport CTO WE30 &WE59
QC LEVEL	:	IV
REGULATORY LIST	:	
REPORT INSTRUCTIONS	:	Summary package needs all forms. Send HC & 2 CDs to Vanessa.
SDG ID	:	
SDG STATUS	:	

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8902-1	F2-B219-SS1082-0001	12-NOV-13 12:20	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	COURIER-BILLING				TF2-B219-SS1082-0001
Solid	S	SW8082-S	26-NOV-13	100g Glass		
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-2	F2-B219-SB1082-0204	12-NOV-13 12:25	13-NOV-13			04-DEC-13

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		TF2-B219-SB1082-0204
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-3	F2-B219-SS1083-0001	12-NOV-13 12:07	13-NOV-13			04-DEC-13

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		TF2-B219-SS1083-0001
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-4	F2-B219-SB1083-0204	12-NOV-13 12:12	13-NOV-13			04-DEC-13

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		MS/MSD; TF2-B219-SB1083-0204
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-5	F2-B219-SS1086-0001	12-NOV-13 11:40	13-NOV-13			04-DEC-13

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		TF2-B219-SS1086-0001
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-6	F2-B219-SB1086-0204	12-NOV-13 11:45	13-NOV-13			04-DEC-13

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		TF2-B219-SB1086-0204
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-7	F2-B219-SS1085-0001	12-NOV-13 11:55	13-NOV-13			04-DEC-13

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		TF2-B219-SS1085-0001
Solid	S	TS	12-DEC-13	100g Glass		

11.15.13

6000011

Login Number: SG8902

Quote/Incoming: TETRATWE30

Account: TETRAT001 Web

Tetra Tech NUS, Inc.

Project: TETRATWE30

NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8902-8	F2-B219-SB1085-0204	12-NOV-13 12:00	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		**TF2-B219-SB1085-0204**
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-9	TF2-SB-DUP02-1113	12-NOV-13 00:00	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-10	F2-B219-SS1084-0001	12-NOV-13 11:30	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		**TF2-B219-SS1084-0001**
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-11	F2-B219-SB1084-0204	12-NOV-13 11:35	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		**TF2-B219-SB1084-0204**
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-12	F2-B219-SS1081-0001	12-NOV-13 10:00	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		**TF2-B219-SS1081-0001**
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-13	F2-B219-SB1081-0204	12-NOV-13 10:05	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		**TF2-B219-SB1081-0204**
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-14	F2-B219-SS1088-0001	12-NOV-13 10:15	13-NOV-13			04-DEC-13	

Matrix	Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
					TF2-B219-SS1088-0001; sample not in cooler

SG8902-15	F2-B219-SB1088-0204	12-NOV-13 10:25	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		**TF2-B219-SB1088-0204**
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-16	F2-B219-SS1080-0001	12-NOV-13 10:35	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		**TF2-B219-SS1080-0001**
Solid	S	TS	12-DEC-13	100g Glass		

SG8902-17	F2-B219-SB1080-0204	12-NOV-13 10:45	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW8082-S	26-NOV-13	100g Glass		**TF2-B219-SB1080-0204**
Solid	S	TS	12-DEC-13	100g Glass		

11.15.13

0000012

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Nov. 15, 2013

06:59 AM

Login Number: SG8902

Quote/Incoming: TETRATWE30

Account: TETRAT001 Web

Tetra Tech NUS, Inc.

Project: TETRATWE30

NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8902-18	F2-B219-SS1089-0001	12-NOV-13 11:18	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
						TF2-B219-SS1089-0001; sample not in cooler

SG8902-19	F2-B219-SB1089-0204	12-NOV-13 11:21	13-NOV-13		04-DEC-13	
Solid	S SW8082-S	26-NOV-13	100g Glass			**TF2-B219-SB1089-0204**
Solid	S TS	12-DEC-13	100g Glass			

SG8902-20	TF2-SB-DUP01-1113	12-NOV-13 00:00	13-NOV-13		04-DEC-13	
Solid	S SW8082-S	26-NOV-13	100g Glass			
Solid	S TS	12-DEC-13	100g Glass			

SG8902-21	F2-B219-SS1087-0001	12-NOV-13 10:50	13-NOV-13		04-DEC-13	
Solid	S SW8082-S	26-NOV-13	100g Glass			**TF2-B219-SS1087-0001**
Solid	S TS	12-DEC-13	100g Glass			

SG8902-22	F2-B219-SB1087-0204	12-NOV-13 10:55	13-NOV-13		04-DEC-13	
Solid	S SW8082-S	26-NOV-13	100g Glass			**TF2-B219-SB1087-0204**
Solid	S TS	12-DEC-13	100g Glass			

SG8902-23	TF2-SB-RB01-1113	12-NOV-13 14:00	13-NOV-13		04-DEC-13	
Aqueous	S SW8082-S	19-NOV-13	1L N-Amber Glass			

Total Samples: ***21*** ***Total Analyses:*** ***42***

11.15.13

0000013

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS
(Refer to BOD Qualifiers Page for BOD footnotes)

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1	pH
H2	DO
H3	sulfite
H4	residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT CTO WE30 & WE59
SG8902

Sample Receipt

The following samples were received on November 13, 2013 and were logged in under Katahdin Analytical Services work order number SG8902 for a hardcopy due date of December 04, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG8902-1	TF2-B219-SS1082-0001
SG8902-2	TF2-B219-SB1082-0204
SG8902-3	TF2-B219-SS1083-0001
SG8902-4	TF2-B219-SB1083-0204
SG8902-5	TF2-B219-SS1086-0001
SG8902-6	TF2-B219-SB1086-0204
SG8902-7	TF2-B219-SS1085-0001
SG8902-8	TF2-B219-SB1085-0204
SG8902-9	TF2-SB-DUP02-1113
SG8902-10	TF2-B219-SS1084-0001
SG8902-11	TF2-B219-SB1084-0204
SG8902-12	TF2-B219-SS1081-0001
SG8902-13	TF2-B219-SB1081-0204
SG8902-14	TF2-B219-SS1088-0001
SG8902-15	TF2-B219-SB1088-0204
SG8902-16	TF2-B219-SS1080-0001
SG8902-17	TF2-B219-SB1080-0204
SG8902-18	TF2-B219-SS1089-0001
SG8902-19	TF2-B219-SB1089-0204
SG8902-20	TF2-SB-DUP01-1113
SG8902-21	TF2-B219-SS1087-0001
SG8902-22	TF2-B219-SB1087-0204
SG8902-23	TF2-SB-RB01-1113

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Some of the client IDs on the Chain of Custody exceeds the 19-character limit of the Katahdin Analytical Information Management System. Therefore, the first character "T" in the client ID for samples SG8902-1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21 and 22 were omitted on all forms.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG8902 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8082A Analysis

Sample SG8902-4 was used for the matrix spike (MS) and matrix spike duplicate (MSD) samples, per client request.

Samples SG8902-5, 6, 9, 10, 12, 13, 19, 21, 23, and 23RE were manually integrated for TCX and/or DCB and/or Aroclor 1260. The specific reason for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Sample SG8902-23 had low recoveries for the surrogates TCX and DCB both channels, which were outside the laboratory established and DoD QSM acceptance limits, respectively. This sample was reextracted within hold time, analyzed and had low recoveries for TCX and DCB on both channels, confirming the initial extract. The results for both extractions are reported.

Sample SG8902-5 had a high recovery for DCB and a low recovery for TCX on channel A, which were outside the DoD QSM and laboratory established acceptance limits, respectively. Since the recoveries were acceptable on the confirmation channel, the sample was not reextracted.

Sample SG8902-6 and the LCSD, WG134812-3, had low recoveries for TCX on channel B, which were outside the laboratory established acceptance limits. Since the recoveries were acceptable on the confirmation channel, the samples were not reextracted.

Samples SG8902-7 and 12 had high recoveries for DCB on channel A, which were outside the DoD QSM acceptance limits. Since the recoveries were acceptable on the confirmation channel, the samples were not reextracted.

Sample SG8902-9 as well as the method blank, WG134636-1, had low recoveries for TCX on both channels, which were outside the laboratory established acceptance limits. Since the recoveries were acceptable for the method required DCB, the sample was not reextracted.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Katahdin
ANALYTICAL SERVICES

nelac
Cert. No. E87604

Wet Chemistry Analysis

The samples of Work Order SG8902 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
12.03.13

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Jennifer Obrin

From: Jalkut, Kayleen [Kayleen.Jalkut@tetratech.com]
Sent: Sunday, November 17, 2013 2:15 PM
To: Jennifer Obrin
Cc: Seiken, Dabra
Subject: RE: COCs for the samples received 11/13-Newport-SG8902, SG8903, SG8908

Jennifer,
I will review the issues with the field crew and we will work together to resolve them. Here are my responses to the issues you raised:

1) Yes, the depth was from 2- 2.7 as written on the COC. Sharpie IDs on top of the lids are just for our use...they provide a quick count for us. Please only log the samples in using the sample label around the jar. Did the actual paper label on the jar say 022.7 or 0204?
2) Look at TT COC # 027647...last 2 lines: sample time for TF2-BSA-SS1091-0001 is 1320 hrs; sample time for TF2-BSA-SB1091-0204 is 1331 hrs. There was no sample from 2-4 ft bgs from BSA-SB1090 (no viable soil to sample).
3) A sample was not collected from 0-1 ft for PCBs at location 1088 from B219 ...only the 2-4 ft interval was sampled.
4) A sample was not collected from 0-1 ft for PCBs at location 1089 from B219 ...only the 2-4 ft interval was sampled.
5) Yes, the SB designation should be used for all samples below 1-foot. Thank you for logging it in as SB1081-0204. I will make the correction on my chain.
6) Yes, the SS designation should be used for all samples from 0-1 foot. Thank you for logging it in as SS1081-0204. I will make the correction on my chain.

Thank you for your help and your patience,
Kayleen

Kayleen Jalkut, P.G. | Geologist, Site Manager
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From: Jennifer Obrin [mailto:jobrin@katahdinlab.com]
Sent: Friday, November 15, 2013 7:43 AM
To: Jalkut, Kayleen; Seiken, Dabra; Good, Vanessa
Subject: COCs for the samples received 11/13-Newport-SG8902, SG8903, SG8908

Good Morning,

000006

Please find attached the COCs for the samples received 11/13 for the project Newport under the work orders SG8902, SG8903 and SG8908. There were a few issues with the chains.

1) TF2-004/5-SB-1026-022.7 was written on the chain, TF2-004/5-SB-1026-0204 was on the jar. I logged it in according to the chain.
2) TF2-BSA-SS1091-0204 was not on the chain but there was a jar. ?same sample time as TF2-BSA-SS1091-0204
3) TF2-B219-SS1089-0001 was missing from the cooler
4) TF2-B219-SS1088-0001 was missing from the cooler
5) TF2-B219-SS1081-0204 on chain, logged in as TF2-B219-SB1081-0204 to be consistent with naming convention
6) TF2-B219-SB1087-0001 on chain, logged in as TF2-B219-SS1081-0001 to be consistent with naming convention

Please let me know if any of my corrections are incorrect and please let me know if you have any questions.
Have a great day!

Jennifer Obrin
Federal Programs Project Manager
Katahdin Analytical Services
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DoD ELAP Accredited
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OCXXXX7

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: G	Delivered By: Andrew Harlan
KAS Work Order#: SG8902/8903/8908	KIMS Review By:	Received By: G
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 11/13/13 1800

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?				X	
2. Chain of Custody present in cooler?	X				
3. Chain of Custody signed by client?	X				
4. Chain of Custody matches samples?	X				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	X				Temp (°C): 1.3
Samples received at <6 °C w/o freezing?	X				Note: Not required for metals analysis.
Ice packs or ice present?	X				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	/				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				/	Note: No cooling process required for metals analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?				/	
Soil/Sediment: Received in airtight container?	/				
Received in methanol?	/				
Methanol covering soil?	/				
D.I. Water - Received within 48 hour HT?	X			/	
7. Trip Blank present in cooler?	/				
8. Proper sample containers and volume?	/				
9. Samples within hold time upon receipt?	/				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	/				
Sulfide - >9				/	
Cyanide – pH >12				/	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

TF2-004/5-SB-1026-0227 on chain - logged in according
TF2-004/5-SB-1026-0204 on jar to chain.

~~SS~~ TF2-BSA-SS1091-0204 not on chain

B219-SS1089-0001 + B219 SS1088-0001 missing from cooler

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TF2-B219-SS1081-0204 on chain - logged in as TF2-B219-SB1081-0204
TF2-B219-SB1087-0001 on chain - logged in as TF2-B219-SS1087-0001
CXXXXX08

PCB DATA

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8902
Project : NAVSTA Newport CTO WE30 &WE59 **Column ID :** A
Instrument ID : GC07

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	TCX	DCB	
Initial Calibration	WG134226-1	11/08/13	02:09	6.068	27.79	
Initial Calibration	WG134226-3	11/08/13	02:45	6.064	27.80	
Initial Calibration	WG134226-5	11/08/13	03:21	6.067	27.80	
Initial Calibration	WG134226-7	11/08/13	03:57	6.066	27.80	
Initial Calibration	WG134226-9	11/08/13	04:33	6.068	27.80	
Initial Calibration	WG134226-11	11/08/13	05:09	6.069	27.80	
Independent Source	WG134226-13	11/08/13	05:46			
Independent Source	WG134226-14	11/08/13	06:22			
Initial Calibration	WG134226-15	11/08/13	06:58			
Initial Calibration	WG134226-27	11/08/13	10:34			
Initial Calibration	WG134226-75	11/09/13	01:00			
Initial Calibration	WG134226-87	11/09/13	04:37			
Initial Calibration	WG134226-39	11/09/13	14:11			
Initial Calibration	WG134226-51	11/09/13	17:47			
Initial Calibration	WG134226-63	11/09/13	21:24			
Continuing Calibrati	WG134656-1	11/18/13	10:22	6.065	27.78	
Method Blank Sample	WG134636-1	11/18/13	16:23	6.079	27.79	
Laboratory Control S	WG134636-2	11/18/13	16:59	6.097	27.79	
Laboratory Control S	WG134636-3	11/18/13	17:35	6.089	27.79	
TF2-SB-RB01-1113	SG8902-23	11/18/13	18:11	6.068	27.77	
Continuing Calibrati	WG134656-7	11/18/13	18:47	6.066	27.78	
Continuing Calibrati	WG134806-1	11/20/13	13:09	6.08	27.80	
Method Blank Sample	WG134661-1	11/20/13	15:33	6.086	27.80	
Laboratory Control S	WG134661-2	11/20/13	16:10	6.086	27.80	
Laboratory Control S	WG134661-3	11/20/13	16:46	6.08	27.8	
F2-B219-SB1089-0204	SG8902-19	11/20/13	17:22	6.082	27.80	
TF2-SB-DUP01-1113	SG8902-20	11/20/13	17:58	6.081	27.80	
F2-B219-SS1087-0001	SG8902-21	11/20/13	18:34	6.081	27.80	
F2-B219-SB1087-0204	SG8902-22	11/20/13	19:10	6.079	27.80	
Continuing Calibrati	WG134806-3	11/20/13	20:22	6.076	27.79	
Continuing Calibrati	WG134806-5	11/21/13	05:24	6.088	27.80	
Method Blank Sample	WG134663-1	11/21/13	11:09	6.091	27.8	
Laboratory Control S	WG134663-2	11/21/13	11:45	6.094	27.81	
Laboratory Control S	WG134663-3	11/21/13	12:21	6.092	27.81	
Matrix Spike	WG134663-4	11/21/13	12:57	6.093	27.81	
Matrix Spike Duplica	WG134663-5	11/21/13	13:33	6.093	27.81	

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8902
Project : NAVSTA Newport CTO WE30 &WE59 **Column ID :** A
Instrument ID : GC07

F2-B219-SS1082-0001	SG8902-1	11/21/13	14:09	6.093	27.81	
Continuing Calibrati	WG134901-1	11/21/13	14:46	6.093	27.81	
F2-B219-SB1082-0204	SG8902-2	11/21/13	17:10	6.093	27.81	
F2-B219-SS1083-0001	SG8902-3	11/21/13	17:46	6.092	27.80	
F2-B219-SB1083-0204	SG8902-4	11/21/13	18:22	6.089	27.79	
F2-B219-SS1086-0001	SG8902-5	11/21/13	18:58	6.085	27.79	
F2-B219-SB1086-0204	SG8902-6	11/21/13	19:34	6.083	27.79	
F2-B219-SS1085-0001	SG8902-7	11/21/13	20:10	6.083	27.79	
F2-B219-SB1085-0204	SG8902-8	11/21/13	20:47	6.082	27.80	
TF2-SB-DUP02-1113	SG8902-9	11/21/13	21:23	6.082	27.80	
F2-B219-SS1084-0001	SG8902-10	11/21/13	21:59	6.085	27.79	
F2-B219-SB1084-0204	SG8902-11	11/21/13	22:35	6.085	27.80	
Continuing Calibrati	WG134901-3	11/21/13	23:47	6.082	27.79	
F2-B219-SS1081-0001	SG8902-12	11/22/13	02:11	6.083	27.79	
F2-B219-SB1081-0204	SG8902-13	11/22/13	02:47	6.085	27.80	
F2-B219-SB1088-0204	SG8902-15	11/22/13	03:23	6.082	27.80	
F2-B219-SB1080-0204	SG8902-17	11/22/13	04:35	6.082	27.80	
Method Blank Sample	WG134812-1	11/22/13	11:50	6.086	27.80	
Laboratory Control S	WG134812-2	11/22/13	12:26	6.087	27.80	
Laboratory Control S	WG134812-3	11/22/13	13:02	6.086	27.80	
Continuing Calibrati	WG134901-5	11/22/13	15:27	6.089	27.81	
TF2-SB-RB01-1113	SG8902-23RE	11/22/13	21:28	6.09	27.79	
Continuing Calibrati	WG134901-9	11/22/13	23:52	6.077	27.79	
Continuing Calibrati	WG135143-1	11/25/13	10:07	6.082	27.8	
F2-B219-SS1080-0001	SG8902-16DL	11/25/13	16:08			
Continuing Calibrati	WG135143-7	11/25/13	18:32	6.085	27.81	

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8902
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GC07
Lab File IDs : 7GK147.D 7GK148.D 7GK149.D **Column ID:** A
7GK146.D 7GK150.D 7GK145.D **Calibration Date(s):** 08-NOV-13 02:09
09-NOV-13 23:48

	0.0500000 Level 1	0.1000000 Level 2	0.2500000 Level 3	1.0000 Level 4	2.5000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Aroclor-1221(1)	1072520	980900	939148	836855	749307	586825	AVG		860926		20.34877	20.00000	W
Aroclor-1221(4)	7396180	6848350	6529304	5886938	5475154	4577149	AVG		6118846		16.63000	20.00000	O
Aroclor-1221(3)	2092020	1959460	1854164	1677784	1566244	1304029	AVG		1742283		16.41998	20.00000	O
Aroclor-1221(2)	2820760	2609770	2549560	2340296	2178960	1930168	AVG		2404919		13.36352	20.00000	O
Aroclor-1232(5)	2682400	2618000	2645472	2415813	2471223	2420092	AVG		2542167		4.72001	20.00000	O
Aroclor-1232(2)	3467960	3416460	3239588	2940246	2897308	2545100	AVG		3084444		11.49080	20.00000	O
Aroclor-1232(4)	6501500	6040280	5691632	5275463	5463119	5342702	AVG		5719116		8.27580	20.00000	O
Aroclor-1232(3)	2961100	2942790	2884752	2554719	2563700	2384112	AVG		2715196		9.01144	20.00000	O
Aroclor-1232(1)	6679740	6409540	6132364	5526681	5249804	4548762	AVG		5757815		13.86870	20.00000	O
Aroclor-1242(1)	6880360	6414390	5748268	5245563	4835360	4207027	AVG		5555161		17.93481	20.00000	O
Aroclor-1242(5)	5348180	5035640	4558060	4360622	4090173	3995747	AVG		4564737		11.70010	20.00000	O
Aroclor-1242(2)	5727040	5184640	4934096	4642893	4278582	3793418	AVG		4760111		14.32715	20.00000	O
Aroclor-1242(4)	6943900	6518110	5881260	5554769	5263784	4914976	AVG		5846133		13.13652	20.00000	O
Aroclor-1242(3)	12645300	11381910	10273888	9781405	9339413	8775981	AVG		10366316		13.75080	20.00000	O
Aroclor-1016(1)	8158500	7513340	7052460	6567539	5718259	5193344	AVG		6700574		16.57091	20.00000	O
Aroclor-1016(3)	14254120	13477910	12874712	12450362	11312275	11044345	AVG		12568954		9.85865	20.00000	O
Aroclor-1016(2)	6633040	6272670	5989700	5747742	5010424	4667550	AVG		5720188		13.13764	20.00000	O
Aroclor-1016(5)	6196460	5879230	5631740	5459063	4857492	5021812	AVG		5507633		9.21896	20.00000	O
Aroclor-1016(4)	8096640	7622280	7319844	7013036	6379257	6134828	AVG		7094314		10.49696	20.00000	O
Aroclor-1248(3)	9614780	8749160	8320204	7575910	7175654	6884992	AVG		8053450		12.85242	20.00000	O
Aroclor-1248(1)	3818640	3554870	3230344	2984498	2718979	2369110	AVG		3112740		17.19315	20.00000	O
Aroclor-1248(4)	6491820	6205080	5744776	5434927	5292528	5170122	AVG		5723209		9.23884	20.00000	O
Aroclor-1248(2)	8755360	7880400	7236100	6720240	6431616	6125424	AVG		7191523		13.70675	20.00000	O
Aroclor-1248(5)	4867560	4615870	4300204	4250214	4031872	4086883	AVG		4358767		7.40553	20.00000	O
Aroclor-1254(3)	10813180	10176660	9717916	9140276	9330308	8806006	AVG		9664058		7.61536	20.00000	O
Aroclor-1254(4)	7155380	6775910	7014308	7327643	7609486	8109462	AVG		7332032		6.46318	20.00000	O
Aroclor-1254(5)	9065720	8498370	8498300	8623080	8951907	9167273	AVG		8800775		3.37787	20.00000	O
Aroclor-1254(1)	5965600	5722960	5310188	4696778	4792752	4305032	AVG		5132218		12.51964	20.00000	O
Aroclor-1254(2)	10077760	9402100	8742928	8187381	8138416	7815779	AVG		8727394		9.92110	20.00000	O
Aroclor-1260(3)	13139360	12882000	12203388	13100451	11860642	13531306	AVG		12786191		4.92677	20.00000	O
Aroclor-1260(1)	11163720	10490110	10423400	10304020	9203891	9941701	AVG		10254474		6.34214	20.00000	O
Aroclor-1260(2)	16291360	15771960	14922904	14512311	13914947	14943622	AVG		15059517		5.68636	20.00000	O
Aroclor-1260(5)	10320800	10158490	10392700	10638499	9962828	11583277	AVG		10509432		5.45108	20.00000	O
Aroclor-1260(4)	8595600	7906590	7826600	7973995	7448620	8050118	AVG		7966921		4.67691	20.00000	O
Aroclor-1262(1)	9805240	8580270	8423948	7924137	8124432	7484012	AVG		8390340		9.45793	20.00000	O
Aroclor-1262(2)	12184160	11280930	10242480	10374224	10438086	10227684	AVG		10791261		7.29356	20.00000	O
Aroclor-1262(3)	14863440	13474200	13027456	12545303	13394826	13082587	AVG		13397969		5.89331	20.00000	O

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8902
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GC07
Lab File IDs : 7GK147.D 7GK148.D 7GK149.D **Column ID:** A
7GK146.D 7GK150.D 7GK145.D **Calibration Date(s):** 08-NOV-13 02:09
09-NOV-13 23:48

Aroclor-1262(4)	10712420	10275190	9746336	9537765	10023719	9520903	AVG		9969389		4.67425	20.00000	O
Aroclor-1262(5)	13710500	12579970	12355212	13285052	14246802	13899712	AVG		13346208		5.63013	20.00000	O
Aroclor-1268(4)	25433540	22019420	22043500	23357069	23921444	24876606	AVG		23608596		6.01250	20.00000	O
Aroclor-1268(5)	13852340	12397680	12010168	12301350	12378470	13454881	AVG		12732481		5.79380	20.00000	O
Aroclor-1268(3)	23534520	21399580	21423912	23475040	23526736	26015847	AVG		23229272		7.35981	20.00000	O
Aroclor-1268(2)	29337780	25965460	25732352	28736904	28031794	29972102	AVG		27962732		6.29574	20.00000	O
Aroclor-1268(1)	8239140	6995180	6746116	6633796	6153465	6674061	AVG		6906960		10.24777	20.00000	O
Tetrachloro-m-xylene	33741900	33503700	32051860	31506085	28113708(	26162223	AVG		308465793		9.91207	20.00000	
Decachlorobiphenyl	15058200	14738700	14425960	14631050	13388898(	14863681	AVG		145177482		4.08221	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG134656-1
Lab File ID : 7GK315.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/18/13 10:22
Instrument ID: GC07
Column ID: A

Compound	RRF/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
6 Aroclor-1016(3)	12568954	12517088	0.001	-0.41265	20.00000	Averaged
6 Aroclor-1016(5)	5507633	5443729	0.001	-1.16028	20.00000	Averaged
6 Aroclor-1016(2)	5720188	5786315	0.001	1.15604	20.00000	Averaged
6 Aroclor-1016(1)	6700574	6699731	0.001	-0.01258	20.00000	Averaged
6 Aroclor-1016(4)	7094314	7067203	0.001	-0.38215	20.00000	Averaged
9 Aroclor-1260(1)	10254474	10153780	0.001	-0.98195	20.00000	Averaged
9 Aroclor-1260(5)	10509432	11947562	0.001	13.68418	20.00000	Averaged
9 Aroclor-1260(3)	12786191	13747874	0.001	7.52126	20.00000	Averaged
9 Aroclor-1260(2)	15059517	16209358	0.001	7.63531	20.00000	Averaged
9 Aroclor-1260(4)	7966921	8317793	0.001	4.40412	20.00000	Averaged
3 Tetrachloro-m-xylene	308465793	325846300	0.001	5.63450	20.00000	Averaged
12 Decachlorobiphenyl	145177482	156313750	0.001	7.67080	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134656-7
Lab File ID : 7GK329.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/18/13 18:47
Instrument ID: GC07
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
6 Aroclor-1016(3)	12568954	12667388	0.001	0.78315	20.00000	Averaged
6 Aroclor-1016(5)	5507633	5711756	0.001	3.70618	20.00000	Averaged
6 Aroclor-1016(2)	5720188	5961032	0.001	4.21043	20.00000	Averaged
6 Aroclor-1016(1)	6700574	6985660	0.001	4.25465	20.00000	Averaged
6 Aroclor-1016(4)	7094314	7316568	0.001	3.13284	20.00000	Averaged
9 Aroclor-1260(1)	10254474	10120704	0.001	-1.30450	20.00000	Averaged
9 Aroclor-1260(5)	10509432	12196184	0.001	16.04988	20.00000	Averaged
9 Aroclor-1260(3)	12786191	13429444	0.001	5.03084	20.00000	Averaged
9 Aroclor-1260(2)	15059517	15792520	0.001	4.86737	20.00000	Averaged
9 Aroclor-1260(4)	7966921	8408132	0.001	5.53804	20.00000	Averaged
3 Tetrachloro-m-xylene	308465793	325589000	0.001	5.55109	20.00000	Averaged
12 Decachlorobiphenyl	145177482	161118800	0.001	10.98057	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134806-1
Lab File ID : 7GK334.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/20/13 13:09
Instrument ID: GC07
Column ID: A

Compound	RRF/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
6 Aroclor-1016(3)	12568954	12184991	0.001	-3.05485	20.00000	Averaged
6 Aroclor-1016(5)	5507633	5246953	0.001	-4.73307	20.00000	Averaged
6 Aroclor-1016(2)	5720188	5587326	0.001	-2.32268	20.00000	Averaged
6 Aroclor-1016(1)	6700574	6427651	0.001	-4.07313	20.00000	Averaged
6 Aroclor-1016(4)	7094314	6733512	0.001	-5.08579	20.00000	Averaged
9 Aroclor-1260(1)	10254474	10278806	0.001	0.23729	20.00000	Averaged
9 Aroclor-1260(5)	10509432	11753251	0.001	11.83526	20.00000	Averaged
9 Aroclor-1260(3)	12786191	13351660	0.001	4.42250	20.00000	Averaged
9 Aroclor-1260(2)	15059517	15741135	0.001	4.52616	20.00000	Averaged
9 Aroclor-1260(4)	7966921	8160988	0.001	2.43592	20.00000	Averaged
3 Tetrachloro-m-xylene	308465793	310080650	0.001	0.52351	20.00000	Averaged
12 Decachlorobiphenyl	145177482	157377400	0.001	8.40345	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG134806-3
Lab File ID : 7GK346.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/20/13 20:22
Instrument ID: GC07
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
6 Aroclor-1016(3)	12568954	12068276	0.001	-3.98345	20.00000	Averaged
6 Aroclor-1016(5)	5507633	5044340	0.001	-8.41183	20.00000	Averaged
6 Aroclor-1016(2)	5720188	5696828	0.001	-0.40837	20.00000	Averaged
6 Aroclor-1016(1)	6700574	6488476	0.001	-3.16537	20.00000	Averaged
6 Aroclor-1016(4)	7094314	6896416	0.001	-2.78953	20.00000	Averaged
9 Aroclor-1260(1)	10254474	9499340	0.001	-7.36394	20.00000	Averaged
9 Aroclor-1260(5)	10509432	10942680	0.001	4.12246	20.00000	Averaged
9 Aroclor-1260(3)	12786191	12326400	0.001	-3.59600	20.00000	Averaged
9 Aroclor-1260(2)	15059517	14642164	0.001	-2.77136	20.00000	Averaged
9 Aroclor-1260(4)	7966921	7361712	0.001	-7.59652	20.00000	Averaged
3 Tetrachloro-m-xylene	308465793	311555400	0.001	1.00160	20.00000	Averaged
12 Decachlorobiphenyl	145177482	146152200	0.001	0.67140	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134806-5
Lab File ID : 7GK361.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/21/13 05:24
Instrument ID: GC07
Column ID: A

Compound	RRF/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type	
6 Aroclor-1016(3)	12568954	11462533	0.001	-8.80281	20.00000	Averaged	
6 Aroclor-1016(5)	5507633	4384058	0.001	-20.40032 *	20.00000	Averaged	<-
6 Aroclor-1016(2)	5720188	5486543	0.001	-4.08456	20.00000	Averaged	
6 Aroclor-1016(1)	6700574	6347521	0.001	-5.26899	20.00000	Averaged	
6 Aroclor-1016(4)	7094314	6333947	0.001	-10.71798	20.00000	Averaged	
9 Aroclor-1260(1)	10254474	9094654	0.001	-11.31038	20.00000	Averaged	
9 Aroclor-1260(5)	10509432	11053148	0.001	5.17360	20.00000	Averaged	
9 Aroclor-1260(3)	12786191	12348095	0.001	-3.42632	20.00000	Averaged	
9 Aroclor-1260(2)	15059517	15404408	0.001	2.29018	20.00000	Averaged	
9 Aroclor-1260(4)	7966921	7573255	0.001	-4.94125	20.00000	Averaged	
3 Tetrachloro-m-xylene	308465793	327916350	0.001	6.30558	20.00000	Averaged	
12 Decachlorobiphenyl	145177482	155526400	0.001	7.12846	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG134901-1
Lab File ID : 7GK375.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/21/13 14:46
Instrument ID: GC07
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
6 Aroclor-1016(3)	12568954	12284392	0.001	-2.26401	20.00000	Averaged
6 Aroclor-1016(5)	5507633	5240300	0.001	-4.85386	20.00000	Averaged
6 Aroclor-1016(2)	5720188	5795340	0.001	1.31381	20.00000	Averaged
6 Aroclor-1016(1)	6700574	6819012	0.001	1.76758	20.00000	Averaged
6 Aroclor-1016(4)	7094314	6978168	0.001	-1.63717	20.00000	Averaged
9 Aroclor-1260(1)	10254474	9957296	0.001	-2.89803	20.00000	Averaged
9 Aroclor-1260(5)	10509432	11631380	0.001	10.67563	20.00000	Averaged
9 Aroclor-1260(3)	12786191	11352940	0.001	-11.20937	20.00000	Averaged
9 Aroclor-1260(2)	15059517	14841972	0.001	-1.44457	20.00000	Averaged
9 Aroclor-1260(4)	7966921	7790580	0.001	-2.21341	20.00000	Averaged
3 Tetrachloro-m-xylene	308465793	323376800	0.001	4.83393	20.00000	Averaged
12 Decachlorobiphenyl	145177482	161544000	0.001	11.27346	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG134901-3
Lab File ID : 7GK390.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/21/13 23:47
Instrument ID: GC07
Column ID: A

Compound	RRF/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
6 Aroclor-1016(3)	12568954	12344510	0.001	-1.78570	20.00000	Averaged
6 Aroclor-1016(5)	5507633	5285926	0.001	-4.02545	20.00000	Averaged
6 Aroclor-1016(2)	5720188	5596510	0.001	-2.16212	20.00000	Averaged
6 Aroclor-1016(1)	6700574	6582217	0.001	-1.76637	20.00000	Averaged
6 Aroclor-1016(4)	7094314	6980871	0.001	-1.59907	20.00000	Averaged
9 Aroclor-1260(1)	10254474	10024154	0.001	-2.24604	20.00000	Averaged
9 Aroclor-1260(5)	10509432	11520498	0.001	9.62055	20.00000	Averaged
9 Aroclor-1260(3)	12786191	13086273	0.001	2.34692	20.00000	Averaged
9 Aroclor-1260(2)	15059517	15516571	0.001	3.03498	20.00000	Averaged
9 Aroclor-1260(4)	7966921	7672014	0.001	-3.70164	20.00000	Averaged
3 Tetrachloro-m-xylene	308465793	326799400	0.001	5.94348	20.00000	Averaged
12 Decachlorobiphenyl	145177482	151273350	0.001	4.19891	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134901-5
Lab File ID : 7GK405.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/22/13 15:27
Instrument ID: GC07
Column ID: A

Compound	RRF/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type	
6 Aroclor-1016(3)	12568954	12894995	0.001	2.59402	20.00000	Averaged	
6 Aroclor-1016(5)	5507633	5565758	0.001	1.05535	20.00000	Averaged	
6 Aroclor-1016(2)	5720188	6005842	0.001	4.99379	20.00000	Averaged	
6 Aroclor-1016(1)	6700574	6765022	0.001	0.96183	20.00000	Averaged	
6 Aroclor-1016(4)	7094314	7238721	0.001	2.03553	20.00000	Averaged	
9 Aroclor-1260(1)	10254474	10391420	0.001	1.33548	20.00000	Averaged	
9 Aroclor-1260(5)	10509432	12639601	0.001	20.26911	20.00000	Averaged	<-
9 Aroclor-1260(3)	12786191	14063938	0.001	9.99318	20.00000	Averaged	
9 Aroclor-1260(2)	15059517	16224399	0.001	7.73519	20.00000	Averaged	
9 Aroclor-1260(4)	7966921	8515427	0.001	6.88480	20.00000	Averaged	
3 Tetrachloro-m-xylene	308465793	337861550	0.001	9.52966	20.00000	Averaged	
12 Decachlorobiphenyl	145177482	159869400	0.001	10.11997	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134901-9
Lab File ID : 7GK419.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/22/13 23:52
Instrument ID: GC07
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
6 Aroclor-1016(3)	12568954	13625484	0.001	8.40587	20.00000	Averaged
6 Aroclor-1016(5)	5507633	5873280	0.001	6.63891	20.00000	Averaged
6 Aroclor-1016(2)	5720188	6548108	0.001	14.47366	20.00000	Averaged
6 Aroclor-1016(1)	6700574	7526332	0.001	12.32369	20.00000	Averaged
6 Aroclor-1016(4)	7094314	7692952	0.001	8.43828	20.00000	Averaged
9 Aroclor-1260(1)	10254474	11234904	0.001	9.56100	20.00000	Averaged
9 Aroclor-1260(5)	10509432	12563004	0.001	19.54027	20.00000	Averaged
9 Aroclor-1260(3)	12786191	14036220	0.001	9.77640	20.00000	Averaged
9 Aroclor-1260(2)	15059517	16428420	0.001	9.08995	20.00000	Averaged
9 Aroclor-1260(4)	7966921	8751448	0.001	9.84731	20.00000	Averaged
3 Tetrachloro-m-xylene	308465793	357243800	0.001	15.81310	20.00000	Averaged
12 Decachlorobiphenyl	145177482	166757400	0.001	14.86451	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
SDG: SG8902
Lab ID : WG135143-1
Analytical Date: 11/25/13 10:07
Lab File ID : 7GK455.D
Instrument ID: GC07
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48
Column ID: A

Compound	RRF/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
6 Aroclor-1016(3)	12568954	12673369	0.001	0.83074	20.00000	Averaged
6 Aroclor-1016(5)	5507633	5387400	0.001	-2.18302	20.00000	Averaged
6 Aroclor-1016(2)	5720188	5813451	0.001	1.63043	20.00000	Averaged
6 Aroclor-1016(1)	6700574	6690646	0.001	-0.14816	20.00000	Averaged
6 Aroclor-1016(4)	7094314	7095900	0.001	0.02235	20.00000	Averaged
9 Aroclor-1260(1)	10254474	9804054	0.001	-4.39242	20.00000	Averaged
9 Aroclor-1260(5)	10509432	10960448	0.001	4.29153	20.00000	Averaged
9 Aroclor-1260(3)	12786191	12676890	0.001	-0.85484	20.00000	Averaged
9 Aroclor-1260(2)	15059517	14781799	0.001	-1.84414	20.00000	Averaged
9 Aroclor-1260(4)	7966921	7511655	0.001	-5.71445	20.00000	Averaged
3 Tetrachloro-m-xylene	308465793	335724200	0.001	8.83677	20.00000	Averaged
12 Decachlorobiphenyl	145177482	140701850	0.001	-3.08287	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ,
Lab ID : WG135143-7
Lab File ID : 7GK469.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/25/13 18:32
Instrument ID: GC07
Column ID: A

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
6 Aroclor-1016(3)	12568954	13362204	0.001	6.31119	20.00000	Averaged
6 Aroclor-1016(5)	5507633	5941364	0.001	7.87509	20.00000	Averaged
6 Aroclor-1016(2)	5720188	6373188	0.001	11.41572	20.00000	Averaged
6 Aroclor-1016(1)	6700574	7450700	0.001	11.19496	20.00000	Averaged
6 Aroclor-1016(4)	7094314	7566428	0.001	6.65482	20.00000	Averaged
9 Aroclor-1260(1)	10254474	10984804	0.001	7.12207	20.00000	Averaged
9 Aroclor-1260(5)	10509432	11508564	0.001	9.50700	20.00000	Averaged
9 Aroclor-1260(3)	12786191	13485120	0.001	5.46628	20.00000	Averaged
9 Aroclor-1260(2)	15059517	16108136	0.001	6.96316	20.00000	Averaged
9 Aroclor-1260(4)	7966921	8354564	0.001	4.86566	20.00000	Averaged
3 Tetrachloro-m-xylene	308465793	359320200	0.001	16.48624	20.00000	Averaged
12 Decachlorobiphenyl	145177482	156946800	0.001	8.10685	20.00000	Averaged

*** = Compound out of QC criteria**

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8902
Project : NAVSTA Newport CTO WE30 &WE59 **Column ID :** B
Instrument ID : GC07

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	TCX	DCB	
Initial Calibration	WG134226-2	11/08/13	02:09	6.306	28.85	
Initial Calibration	WG134226-4	11/08/13	02:45	6.304	28.85	
Initial Calibration	WG134226-6	11/08/13	03:21	6.307	28.85	
Initial Calibration	WG134226-8	11/08/13	03:57	6.306	28.85	
Initial Calibration	WG134226-10	11/08/13	04:33	6.307	28.85	
Initial Calibration	WG134226-12	11/08/13	05:09	6.309	28.85	
Independent Source	WG134226-13	11/08/13	05:46			
Independent Source	WG134226-14	11/08/13	06:22			
Initial Calibration	WG134226-16	11/08/13	06:58			
Initial Calibration	WG134226-28	11/08/13	10:34			
Initial Calibration	WG134226-76	11/09/13	01:00			
Initial Calibration	WG134226-88	11/09/13	04:37			
Initial Calibration	WG134226-40	11/09/13	14:11			
Initial Calibration	WG134226-52	11/09/13	17:47			
Initial Calibration	WG134226-64	11/09/13	21:24			
Continuing Calibrati	WG134656-2	11/18/13	10:22	6.3	28.82	
Method Blank Sample	WG134636-1	11/18/13	16:23	6.315	28.84	
Laboratory Control S	WG134636-2	11/18/13	16:59	6.331	28.84	
Laboratory Control S	WG134636-3	11/18/13	17:35	6.324	28.83	
TF2-SB-RB01-1113	SG8902-23	11/18/13	18:11	6.305	28.82	
Continuing Calibrati	WG134656-8	11/18/13	18:47	6.301	28.82	
Continuing Calibrati	WG134806-2	11/20/13	13:09	6.318	28.84	
Method Blank Sample	WG134661-1	11/20/13	15:33	6.322	28.85	
Laboratory Control S	WG134661-2	11/20/13	16:10	6.322	28.85	
Laboratory Control S	WG134661-3	11/20/13	16:46	6.319	28.85	
F2-B219-SB1089-0204	SG8902-19	11/20/13	17:22	6.318	28.85	
TF2-SB-DUP01-1113	SG8902-20	11/20/13	17:58	6.317	28.85	
F2-B219-SS1087-0001	SG8902-21	11/20/13	18:34	6.318	28.85	
F2-B219-SB1087-0204	SG8902-22	11/20/13	19:10	6.317	28.85	
Continuing Calibrati	WG134806-4	11/20/13	20:22	6.316	28.84	
Continuing Calibrati	WG134806-6	11/21/13	05:24	6.326	28.85	
Method Blank Sample	WG134663-1	11/21/13	11:09	6.329	28.85	
Laboratory Control S	WG134663-2	11/21/13	11:45	6.332	28.86	
Laboratory Control S	WG134663-3	11/21/13	12:21	6.33	28.86	
Matrix Spike	WG134663-4	11/21/13	12:57	6.33	28.86	
Matrix Spike Duplica	WG134663-5	11/21/13	13:33	6.331	28.85	

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8902
Project : NAVSTA Newport CTO WE30 &WE59 **Column ID :** B
Instrument ID : GC07

F2-B219-SS1082-0001	SG8902-1	11/21/13	14:09	6.331	28.85	
Continuing Calibrati	WG134901-2	11/21/13	14:46	6.329	28.86	
F2-B219-SB1082-0204	SG8902-2	11/21/13	17:10	6.331	28.86	
F2-B219-SS1083-0001	SG8902-3	11/21/13	17:46	6.33	28.85	
F2-B219-SB1083-0204	SG8902-4	11/21/13	18:22	6.325	28.85	
F2-B219-SS1086-0001	SG8902-5	11/21/13	18:58	6.323	28.85	
F2-B219-SB1086-0204	SG8902-6	11/21/13	19:34	6.319	28.84	
F2-B219-SS1085-0001	SG8902-7	11/21/13	20:10	6.323	28.85	
F2-B219-SB1085-0204	SG8902-8	11/21/13	20:47	6.32	28.84	
TF2-SB-DUP02-1113	SG8902-9	11/21/13	21:23	6.318	28.84	
F2-B219-SS1084-0001	SG8902-10	11/21/13	21:59	6.321	28.84	
F2-B219-SB1084-0204	SG8902-11	11/21/13	22:35	6.321	28.84	
Continuing Calibrati	WG134901-4	11/21/13	23:47	6.318	28.84	
F2-B219-SS1081-0001	SG8902-12	11/22/13	02:11	6.319	28.84	
F2-B219-SB1081-0204	SG8902-13	11/22/13	02:47	6.32	28.84	
F2-B219-SB1088-0204	SG8902-15	11/22/13	03:23	6.319	28.84	
F2-B219-SB1080-0204	SG8902-17	11/22/13	04:35	6.318	28.84	
Method Blank Sample	WG134812-1	11/22/13	11:50	6.308	28.83	
Laboratory Control S	WG134812-2	11/22/13	12:26	6.322	28.85	
Laboratory Control S	WG134812-3	11/22/13	13:02	6.321	28.85	
Continuing Calibrati	WG134901-6	11/22/13	15:27	6.325	28.85	
TF2-SB-RB01-1113	SG8902-23RE	11/22/13	21:28	6.326	28.83	
Continuing Calibrati	WG134901-10	11/22/13	23:52	6.312	28.83	
Continuing Calibrati	WG135143-2	11/25/13	10:07	6.316	28.84	
F2-B219-SS1080-0001	SG8902-16DL	11/25/13	16:08			
Continuing Calibrati	WG135143-8	11/25/13	18:32	6.322	28.85	

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8902
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GC07
Lab File IDs : 7GK147.D 7GK148.D 7GK149.D **Column ID:** B
7GK146.D 7GK150.D 7GK145.D **Calibration Date(s):** 08-NOV-13 02:09
09-NOV-13 23:48

	0.050000(Level 1	0.100000(Level 2	0.250000(Level 3	1.0000 Level 4	2.5000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Aroclor-1221(1)	158860	159450	164036	142431	129152	105190	AVG		143186		15.8833	20.00000	O
Aroclor-1221(2)	585120	553490	530636	473137	448732	402113	AVG		498871		13.8788	20.00000	O
Aroclor-1221(3)	396260	389260	382192	329220	305802	264863	AVG		344599		15.4519	20.00000	O
Aroclor-1221(4)	1515140	1393210	1308624	1154734	1096860	969836	AVG		1239734		16.3182	20.00000	O
Aroclor-1232(3)	525820	549450	539580	490327	477924	452887	AVG		505998		7.53236	20.00000	O
Aroclor-1232(5)	552460	555260	537804	497085	494144	495037	AVG		521965		5.68814	20.00000	O
Aroclor-1232(1)	1375760	1300890	1214828	1089722	1060640	967560	AVG		1168233		13.3076	20.00000	O
Aroclor-1232(4)	1159120	1113520	1061004	969528	975945	971771	AVG		1041815		7.88499	20.00000	O
Aroclor-1232(2)	661020	650410	615512	550656	534255	502643	AVG		585749		11.2007	20.00000	O
Aroclor-1016(1)	1500600	1435080	1325772	1234311	1092750	1037353	AVG		1270978		14.5226	20.00000	O
Aroclor-1016(3)	2612240	2451690	2299164	2277215	2081824	2052768	AVG		2295817		9.33478	20.00000	O
Aroclor-1016(2)	1342620	1242220	1144920	1082875	976108	946181	AVG		1122487		13.6497	20.00000	O
Aroclor-1016(4)	1433900	1339910	1256836	1195401	1061205	1079500	AVG		1227792		11.8971	20.00000	O
Aroclor-1016(5)	1204700	1140310	1063812	1017400	925900	958214	AVG		1051723		10.1652	20.00000	O
Aroclor-1242(3)	2279740	2055280	1849628	1759486	1741719	1644022	AVG		1888312		12.5399	20.00000	O
Aroclor-1242(5)	1069980	994750	892552	817870	766773	750282	AVG		882035		14.5984	20.00000	O
Aroclor-1242(4)	1159640	1089390	979180	902129	880152	852246	AVG		977123		12.6624	20.00000	O
Aroclor-1242(1)	1359260	1224070	1109796	995801	925341	842012	AVG		1076047		17.9811	20.00000	O
Aroclor-1242(2)	1120420	1081800	938932	865036	808688	750645	AVG		927587		16.0232	20.00000	O
Aroclor-1248(2)	1870580	1665910	1513716	1402926	1341516	1272610	AVG		1511210		14.8124	20.00000	O
Aroclor-1248(3)	2403260	2113090	1928140	1835567	1805115	1764001	AVG		1974862		12.3514	20.00000	O
Aroclor-1248(5)	945160	878900	805484	800052	747124	767456	AVG		824029		9.03542	20.00000	O
Aroclor-1248(4)	1224240	1098520	1042956	1006132	965590	977477	AVG		1052486		9.21534	20.00000	O
Aroclor-1248(1)	1676600	1546700	1384824	1230918	1188740	1127563	AVG		1359224		15.9744	20.00000	O
Aroclor-1254(3)	1479840	1422840	1330660	1275574	1305210	1296534	AVG		1351776		6.00290	20.00000	O
Aroclor-1254(4)	1493920	1391520	1371568	1438862	1509025	1528376	AVG		1455545		4.45952	20.00000	O
Aroclor-1254(2)	2122380	1992690	1853172	1708256	1750868	1642100	AVG		1844911		9.92219	20.00000	O
Aroclor-1254(5)	1737600	1722290	1654668	1679641	1743163	1719007	AVG		1709395		2.03910	20.00000	O
Aroclor-1254(1)	2213320	2074030	1943960	1781914	1819567	1710832	AVG		1923937		9.94778	20.00000	O
Aroclor-1260(4)	1705620	1661810	1617424	1665976	1567785	1702512	AVG		1653521		3.19921	20.00000	O
Aroclor-1260(3)	2292580	2163610	2111928	2232722	2091233	2247557	AVG		2189938		3.66488	20.00000	O
Aroclor-1260(1)	2226920	2108070	1996464	1924980	1772272	1908103	AVG		1989468		8.05653	20.00000	O
Aroclor-1260(2)	2605320	2464690	2403100	2379898	2229834	2367347	AVG		2408365		5.13120	20.00000	O
Aroclor-1260(5)	2062360	2002370	2059016	2190509	2108824	2250095	AVG		2112196		4.36666	20.00000	O
Aroclor-1262(3)	3073200	2742200	2606552	2595068	2765126	2467706	AVG		2708309		7.72026	20.00000	O
Aroclor-1262(5)	2757660	2519160	2466112	2612773	2776092	2661334	AVG		2632189		4.74616	20.00000	O
Aroclor-1262(2)	2087260	1915090	1800852	1773652	1859226	1743571	AVG		1863275		6.75157	20.00000	O

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8902
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GC07
Lab File IDs : 7GK147.D 7GK148.D 7GK149.D **Column ID:** B
7GK146.D 7GK150.D 7GK145.D **Calibration Date(s):** 08-NOV-13 02:09
09-NOV-13 23:48

Aroclor-1262(1)	1906460	1717240	1569496	1517213	1550473	1421155	AVG		1613673		10.6892	20.00000	O
Aroclor-1262(4)	2370880	2173090	2107616	2110626	2238154	2086141	AVG		2181084		4.96859	20.00000	O
Aroclor-1268(5)	2673040	2365310	2347252	2403407	2361535	2420620	AVG		2428527		5.06229	20.00000	O
Aroclor-1268(4)	4795140	4299340	4222532	4653727	4355069	4383713	AVG		4451587		5.00756	20.00000	O
Aroclor-1268(3)	5124260	4611770	4559320	5070186	5008629	4967939	AVG		4890351		4.96061	20.00000	O
Aroclor-1268(1)	1718520	1467340	1390492	1363125	1286376	1330371	AVG		1426037		10.9146	20.00000	O
Aroclor-1268(2)	6036560	5396950	5334144	5800268	5512003	5404520	AVG		5580741		4.98084	20.00000	O
Tetrachloro-m-xylene	61945000	59216500	56758600	56752150	53319660	57049840	AVG		57506958		5.00923	20.00000	
Decachlorobiphenyl	28439000	28841000	28633400	28848900	26486620	28949555	AVG		28366413		3.31012	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG134656-2
Lab File ID : 7GK315.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/18/13 10:22
Instrument ID: GC07
Column ID: B

Compound	RRF/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
5 Aroclor-1016(5)	1051723	1005763	0.001	-4.36993	20.00000	Averaged
5 Aroclor-1016(2)	1122487	1081453	0.001	-3.65566	20.00000	Averaged
5 Aroclor-1016(4)	1227792	1178441	0.001	-4.01949	20.00000	Averaged
5 Aroclor-1016(1)	1270978	1247163	0.001	-1.87373	20.00000	Averaged
5 Aroclor-1016(3)	2295817	2234870	0.001	-2.65469	20.00000	Averaged
9 Aroclor-1260(4)	1653521	1700586	0.001	2.84634	20.00000	Averaged
9 Aroclor-1260(1)	1989468	1919044	0.001	-3.53985	20.00000	Averaged
9 Aroclor-1260(5)	2112196	2307302	0.001	9.23713	20.00000	Averaged
9 Aroclor-1260(3)	2189938	2220890	0.001	1.41336	20.00000	Averaged
9 Aroclor-1260(2)	2408365	2524103	0.001	4.80567	20.00000	Averaged
2 Tetrachloro-m-xylene	57506958	56999700	0.001	-0.88208	20.00000	Averaged
12 Decachlorobiphenyl	28366413	28955400	0.001	2.07636	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134656-8
Lab File ID : 7GK329.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/18/13 18:47
Instrument ID: GC07
Column ID: B

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
5 Aroclor-1016(5)	1051723	1037512	0.001	-1.35117	20.00000	Averaged
5 Aroclor-1016(2)	1122487	1101352	0.001	-1.88290	20.00000	Averaged
5 Aroclor-1016(4)	1227792	1192984	0.001	-2.83501	20.00000	Averaged
5 Aroclor-1016(1)	1270978	1297908	0.001	2.11886	20.00000	Averaged
5 Aroclor-1016(3)	2295817	2244112	0.001	-2.25213	20.00000	Averaged
9 Aroclor-1260(4)	1653521	1699588	0.001	2.78599	20.00000	Averaged
9 Aroclor-1260(1)	1989468	1994796	0.001	0.26780	20.00000	Averaged
9 Aroclor-1260(5)	2112196	2154872	0.001	2.02047	20.00000	Averaged
9 Aroclor-1260(3)	2189938	2170592	0.001	-0.88341	20.00000	Averaged
9 Aroclor-1260(2)	2408365	2487840	0.001	3.29996	20.00000	Averaged
2 Tetrachloro-m-xylene	57506958	55847400	0.001	-2.88584	20.00000	Averaged
12 Decachlorobiphenyl	28366413	30624200	0.001	7.95937	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134806-2
Lab File ID : 7GK334.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/20/13 13:09
Instrument ID: GC07
Column ID: B

Compound	RRF/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
5 Aroclor-1016(5)	1051723	967807	0.001	-7.97887	20.00000	Averaged
5 Aroclor-1016(2)	1122487	1027802	0.001	-8.43532	20.00000	Averaged
5 Aroclor-1016(4)	1227792	1135453	0.001	-7.52074	20.00000	Averaged
5 Aroclor-1016(1)	1270978	1184145	0.001	-6.83196	20.00000	Averaged
5 Aroclor-1016(3)	2295817	2139348	0.001	-6.81539	20.00000	Averaged
9 Aroclor-1260(4)	1653521	1655562	0.001	0.12343	20.00000	Averaged
9 Aroclor-1260(1)	1989468	1911673	0.001	-3.91035	20.00000	Averaged
9 Aroclor-1260(5)	2112196	2280645	0.001	7.97508	20.00000	Averaged
9 Aroclor-1260(3)	2189938	2150324	0.001	-1.80892	20.00000	Averaged
9 Aroclor-1260(2)	2408365	2400789	0.001	-0.31456	20.00000	Averaged
2 Tetrachloro-m-xylene	57506958	54037800	0.001	-6.03259	20.00000	Averaged
12 Decachlorobiphenyl	28366413	28452500	0.001	0.30348	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG134806-4
Lab File ID : 7GK346.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/20/13 20:22
Instrument ID: GC07
Column ID: B

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
5 Aroclor-1016(5)	1051723	957160	0.001	-8.99121	20.00000	Averaged
5 Aroclor-1016(2)	1122487	1028540	0.001	-8.36957	20.00000	Averaged
5 Aroclor-1016(4)	1227792	1104088	0.001	-10.07532	20.00000	Averaged
5 Aroclor-1016(1)	1270978	1196028	0.001	-5.89701	20.00000	Averaged
5 Aroclor-1016(3)	2295817	2069640	0.001	-9.85169	20.00000	Averaged
9 Aroclor-1260(4)	1653521	1625944	0.001	-1.66778	20.00000	Averaged
9 Aroclor-1260(1)	1989468	1794972	0.001	-9.77629	20.00000	Averaged
9 Aroclor-1260(5)	2112196	2042732	0.001	-3.28870	20.00000	Averaged
9 Aroclor-1260(3)	2189938	2058224	0.001	-6.01452	20.00000	Averaged
9 Aroclor-1260(2)	2408365	2309828	0.001	-4.09144	20.00000	Averaged
2 Tetrachloro-m-xylene	57506958	50744800	0.001	-11.75885	20.00000	Averaged
12 Decachlorobiphenyl	28366413	29290200	0.001	3.25662	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134806-6
Lab File ID : 7GK361.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/21/13 05:24
Instrument ID: GC07
Column ID: B

Compound	RRF/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
5 Aroclor-1016(5)	1051723	955976	0.001	-9.10379	20.00000	Averaged
5 Aroclor-1016(2)	1122487	1055922	0.001	-5.93017	20.00000	Averaged
5 Aroclor-1016(4)	1227792	1155729	0.001	-5.86932	20.00000	Averaged
5 Aroclor-1016(1)	1270978	1232755	0.001	-3.00735	20.00000	Averaged
5 Aroclor-1016(3)	2295817	2245194	0.001	-2.20500	20.00000	Averaged
9 Aroclor-1260(4)	1653521	1748554	0.001	5.74730	20.00000	Averaged
9 Aroclor-1260(1)	1989468	1878861	0.001	-5.55963	20.00000	Averaged
9 Aroclor-1260(5)	2112196	2279428	0.001	7.91746	20.00000	Averaged
9 Aroclor-1260(3)	2189938	2213056	0.001	1.05564	20.00000	Averaged
9 Aroclor-1260(2)	2408365	2511612	0.001	4.28702	20.00000	Averaged
2 Tetrachloro-m-xylene	57506958	57643900	0.001	0.23813	20.00000	Averaged
12 Decachlorobiphenyl	28366413	29484900	0.001	3.94300	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134901-2
Lab File ID : 7GK375.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/21/13 14:46
Instrument ID: GC07
Column ID: B

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
5 Aroclor-1016(5)	1051723	1018368	0.001	-3.17142	20.00000	Averaged
5 Aroclor-1016(2)	1122487	1092032	0.001	-2.71320	20.00000	Averaged
5 Aroclor-1016(4)	1227792	1190824	0.001	-3.01093	20.00000	Averaged
5 Aroclor-1016(1)	1270978	1264588	0.001	-0.50274	20.00000	Averaged
5 Aroclor-1016(3)	2295817	2196284	0.001	-4.33540	20.00000	Averaged
9 Aroclor-1260(4)	1653521	1613484	0.001	-2.42132	20.00000	Averaged
9 Aroclor-1260(1)	1989468	1887632	0.001	-5.11876	20.00000	Averaged
9 Aroclor-1260(5)	2112196	2179176	0.001	3.17112	20.00000	Averaged
9 Aroclor-1260(3)	2189938	2132144	0.001	-2.63908	20.00000	Averaged
9 Aroclor-1260(2)	2408365	2461700	0.001	2.21458	20.00000	Averaged
2 Tetrachloro-m-xylene	57506958	54681200	0.001	-4.91377	20.00000	Averaged
12 Decachlorobiphenyl	28366413	33557600	0.001	18.30047	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134901-4
Lab File ID : 7GK390.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/21/13 23:47
Instrument ID: GC07
Column ID: B

Compound	RRF/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
5 Aroclor-1016(5)	1051723	957547	0.001	-8.95441	20.00000	Averaged
5 Aroclor-1016(2)	1122487	1039123	0.001	-7.42675	20.00000	Averaged
5 Aroclor-1016(4)	1227792	1137399	0.001	-7.36224	20.00000	Averaged
5 Aroclor-1016(1)	1270978	1213627	0.001	-4.51233	20.00000	Averaged
5 Aroclor-1016(3)	2295817	2198922	0.001	-4.22050	20.00000	Averaged
9 Aroclor-1260(4)	1653521	1636787	0.001	-1.01203	20.00000	Averaged
9 Aroclor-1260(1)	1989468	1870582	0.001	-5.97578	20.00000	Averaged
9 Aroclor-1260(5)	2112196	2247035	0.001	6.38384	20.00000	Averaged
9 Aroclor-1260(3)	2189938	2171450	0.001	-0.84423	20.00000	Averaged
9 Aroclor-1260(2)	2408365	2420222	0.001	0.49233	20.00000	Averaged
2 Tetrachloro-m-xylene	57506958	55545600	0.001	-3.41065	20.00000	Averaged
12 Decachlorobiphenyl	28366413	29072200	0.001	2.48811	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134901-6
Lab File ID : 7GK405.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/22/13 15:27
Instrument ID: GC07
Column ID: B

Compound	RRF/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
5 Aroclor-1016(5)	1051723	1012548	0.001	-3.72480	20.00000	Averaged
5 Aroclor-1016(2)	1122487	1096596	0.001	-2.30661	20.00000	Averaged
5 Aroclor-1016(4)	1227792	1182814	0.001	-3.66332	20.00000	Averaged
5 Aroclor-1016(1)	1270978	1245276	0.001	-2.02220	20.00000	Averaged
5 Aroclor-1016(3)	2295817	2259125	0.001	-1.59821	20.00000	Averaged
9 Aroclor-1260(4)	1653521	1739082	0.001	5.17447	20.00000	Averaged
9 Aroclor-1260(1)	1989468	1961837	0.001	-1.38887	20.00000	Averaged
9 Aroclor-1260(5)	2112196	2351596	0.001	11.33419	20.00000	Averaged
9 Aroclor-1260(3)	2189938	2243516	0.001	2.44654	20.00000	Averaged
9 Aroclor-1260(2)	2408365	2597517	0.001	7.85397	20.00000	Averaged
2 Tetrachloro-m-xylene	57506958	57506500	0.001	-0.00080	20.00000	Averaged
12 Decachlorobiphenyl	28366413	29279350	0.001	3.21837	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134901-10
Lab File ID : 7GK419.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/22/13 23:52
Instrument ID: GC07
Column ID: B

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
5 Aroclor-1016(5)	1051723	1084224	0.001	3.09030	20.00000	Averaged
5 Aroclor-1016(2)	1122487	1186652	0.001	5.71629	20.00000	Averaged
5 Aroclor-1016(4)	1227792	1274708	0.001	3.82117	20.00000	Averaged
5 Aroclor-1016(1)	1270978	1355320	0.001	6.63601	20.00000	Averaged
5 Aroclor-1016(3)	2295817	2349860	0.001	2.35398	20.00000	Averaged
9 Aroclor-1260(4)	1653521	1726516	0.001	4.41451	20.00000	Averaged
9 Aroclor-1260(1)	1989468	2026200	0.001	1.84631	20.00000	Averaged
9 Aroclor-1260(5)	2112196	2308632	0.001	9.30010	20.00000	Averaged
9 Aroclor-1260(3)	2189938	2251960	0.001	2.83212	20.00000	Averaged
9 Aroclor-1260(2)	2408365	2576184	0.001	6.96818	20.00000	Averaged
2 Tetrachloro-m-xylene	57506958	58567000	0.001	1.84333	20.00000	Averaged
12 Decachlorobiphenyl	28366413	30465400	0.001	7.39955	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30
Lab ID : WG135143-2
Lab File ID : 7GK455.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/25/13 10:07
Instrument ID: GC07
Column ID: B

Compound	RRF/Amount	RF1	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
5 Aroclor-1016(5)	1051723	979345	0.001	-6.88181	20.00000	Averaged
5 Aroclor-1016(2)	1122487	1057595	0.001	-5.78112	20.00000	Averaged
5 Aroclor-1016(4)	1227792	1150236	0.001	-6.31671	20.00000	Averaged
5 Aroclor-1016(1)	1270978	1208433	0.001	-4.92099	20.00000	Averaged
5 Aroclor-1016(3)	2295817	2202614	0.001	-4.05968	20.00000	Averaged
9 Aroclor-1260(4)	1653521	1622583	0.001	-1.87104	20.00000	Averaged
9 Aroclor-1260(1)	1989468	1853712	0.001	-6.82374	20.00000	Averaged
9 Aroclor-1260(5)	2112196	2171124	0.001	2.78990	20.00000	Averaged
9 Aroclor-1260(3)	2189938	2158458	0.001	-1.43749	20.00000	Averaged
9 Aroclor-1260(2)	2408365	2422160	0.001	0.57280	20.00000	Averaged
2 Tetrachloro-m-xylene	57506958	56716300	0.001	-1.37489	20.00000	Averaged
12 Decachlorobiphenyl	28366413	26737000	0.001	-5.74416	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG135143-8
Lab File ID : 7GK469.D
Initial Calibration Date(s): 11/08/13 02:09 11/09/13 23:48

SDG: SG8902
Analytical Date: 11/25/13 18:32
Instrument ID: GC07
Column ID: B

Compound	RRF/Amount	RF0.250	Min RRF	%D/ %Drift	Max %D/ %Drift	Curve Type
5 Aroclor-1016(5)	1051723	1054548	0.001	0.26865	20.00000	Averaged
5 Aroclor-1016(2)	1122487	1145884	0.001	2.08436	20.00000	Averaged
5 Aroclor-1016(4)	1227792	1220968	0.001	-0.55579	20.00000	Averaged
5 Aroclor-1016(1)	1270978	1325868	0.001	4.31874	20.00000	Averaged
5 Aroclor-1016(3)	2295817	2297308	0.001	0.06495	20.00000	Averaged
9 Aroclor-1260(4)	1653521	1687128	0.001	2.03244	20.00000	Averaged
9 Aroclor-1260(1)	1989468	2030720	0.001	2.07351	20.00000	Averaged
9 Aroclor-1260(5)	2112196	2231424	0.001	5.64475	20.00000	Averaged
9 Aroclor-1260(3)	2189938	2116568	0.001	-3.35033	20.00000	Averaged
9 Aroclor-1260(2)	2408365	2539568	0.001	5.44781	20.00000	Averaged
2 Tetrachloro-m-xylene	57506958	57070600	0.001	-0.75879	20.00000	Averaged
12 Decachlorobiphenyl	28366413	28823600	0.001	1.61172	20.00000	Averaged

*** = Compound out of QC criteria**

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : 7GK325.D
Matrix : AQ

Column A
Instrument ID : GC07
Date Analyzed : 18-NOV-13
Time Analyzed : 16:23

SDG : SG8902
Lab Sample ID : WG134636-1
Date Extracted : 18-NOV-13
Extraction Method : SW846 3510

Column B
Instrument ID : GC07
Date Analyzed : 18-NOV-13
Time Analyzed : 16:23

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134636-2	7GK326.D	11/18/13	16:59
Laboratory Control S	WG134636-3	7GK327.D	11/18/13	17:35
TF2-SB-RB01-1113	SG8902-23	7GK328.D	11/18/13	18:11

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Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG134636-1
Client ID: Method Blank Sample
Project:
SDG: SG8902
Lab File ID: 7GK325.D

Sample Date:
Received Date:
Extract Date: 18-NOV-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG134636

Analysis Date: 18-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	0.025	ug/L	1	.5	0.050	0.015	0.025
Aroclor-1221	U	0.025	ug/L	1	.5	0.050	0.020	0.025
Aroclor-1232	U	0.025	ug/L	1	.5	0.050	0.0089	0.025
Aroclor-1242	U	0.025	ug/L	1	.5	0.050	0.018	0.025
Aroclor-1248	U	0.025	ug/L	1	.5	0.050	0.020	0.025
Aroclor-1254	U	0.025	ug/L	1	.5	0.050	0.0082	0.025
Aroclor-1260	U	0.025	ug/L	1	.5	0.050	0.017	0.025
Aroclor-1262	U	0.025	ug/L	1	.5	0.050	0.0066	0.025
Aroclor-1268	U	0.025	ug/L	1	.5	0.050	0.0072	0.025
Tetrachloro-M-Xylene	*	52.5	%					
Decachlorobiphenyl		89.0	%					

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LCS/LCSD Recovery Report

LCS ID: WG134636-2
LCSD ID: WG134636-3
Project:
SDG: SG8902
Report Date: 30-NOV-13
LCS File ID: 7GK326.D

Received Date:
Extract Date: 18-NOV-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG134636
LCSD File ID: 7GK327.D

Analysis Date: 18-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Aroclor-1016	0.500	0.371	74.2	0.419	83.8	ug/L	12	30	25-145
Aroclor-1260	0.500	0.442	88.4	0.442	88.4	ug/L	0	30	30-145
Tetrachloro-M-Xylene			75.3		82.9				62-111
Decachlorobiphenyl			98.0		116.				40-135

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : 7GK338.D
Matrix : SL

Column A
Instrument ID : GC07
Date Analyzed : 20-NOV-13
Time Analyzed : 15:33

SDG : SG8902
Lab Sample ID : WG134661-1
Date Extracted : 19-NOV-13
Extraction Method : SW846 3550

Column B
Instrument ID : GC07
Date Analyzed : 20-NOV-13
Time Analyzed : 15:33

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134661-2	7GK339.D	11/20/13	16:10
Laboratory Control S	WG134661-3	7GK340.D	11/20/13	16:46
F2-B219-SB1089-0204	SG8902-19	7GK341.D	11/20/13	17:22
TF2-SB-DUP01-1113	SG8902-20	7GK342.D	11/20/13	17:58
F2-B219-SS1087-0001	SG8902-21	7GK343.D	11/20/13	18:34
F2-B219-SB1087-0204	SG8902-22	7GK344.D	11/20/13	19:10

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Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG134661-1
Client ID: Method Blank Sample
Project:
SDG: SG8902
Lab File ID: 7GK338.D

Sample Date:
Received Date:
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134661

Analysis Date: 20-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: NA
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	8.5	ug/Kgdrywt	1	17	17.	6.0	8.5
Aroclor-1221	U	8.5	ug/Kgdrywt	1	17	17.	7.9	8.5
Aroclor-1232	U	10.	ug/Kgdrywt	1	17	17.	9.3	10.
Aroclor-1242	U	8.5	ug/Kgdrywt	1	17	17.	5.8	8.5
Aroclor-1248	U	8.5	ug/Kgdrywt	1	17	17.	6.1	8.5
Aroclor-1254	U	8.5	ug/Kgdrywt	1	17	17.	4.7	8.5
Aroclor-1260	U	8.5	ug/Kgdrywt	1	17	17.	6.0	8.5
Aroclor-1262	U	8.5	ug/Kgdrywt	1	17	17.	3.7	8.5
Aroclor-1268	U	8.5	ug/Kgdrywt	1	17	17.	2.6	8.5
Tetrachloro-M-Xylene		66.1	%					
Decachlorobiphenyl		80.5	%					

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LCS/LCSD Recovery Report

LCS ID: WG134661-2
LCSD ID: WG134661-3
Project:
SDG: SG8902
Report Date: 30-NOV-13
LCS File ID: 7GK339.D

Received Date:
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134661
LCSD File ID: 7GK340.D

Analysis Date: 20-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Aroclor-1016	167.	141.	84.4	146.	87.4	ug/Kgdrywt	6	30	40-140
Aroclor-1260	167.	162.	97.0	156.	93.4	ug/Kgdrywt	4	30	60-130
Tetrachloro-M-Xylene			77.2		78.7				56-115
Decachlorobiphenyl			99.7		97.0				60-125

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : 7GK369.D
Matrix : SL

Column A
Instrument ID : GC07
Date Analyzed : 21-NOV-13
Time Analyzed : 11:09

SDG : SG8902
Lab Sample ID : WG134663-1
Date Extracted : 19-NOV-13
Extraction Method : SW846 3550

Column B
Instrument ID : GC07
Date Analyzed : 21-NOV-13
Time Analyzed : 11:09

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134663-2	7GK370.D	11/21/13	11:45
Laboratory Control S	WG134663-3	7GK371.D	11/21/13	12:21
Matrix Spike	WG134663-4	7GK372.D	11/21/13	12:57
Matrix Spike Duplica	WG134663-5	7GK373.D	11/21/13	13:33
F2-B219-SS1082-0001	SG8902-1	7GK374.D	11/21/13	14:09
F2-B219-SB1082-0204	SG8902-2	7GK379.D	11/21/13	17:10
F2-B219-SS1083-0001	SG8902-3	7GK380.D	11/21/13	17:46
F2-B219-SB1083-0204	SG8902-4	7GK381.D	11/21/13	18:22
F2-B219-SS1086-0001	SG8902-5	7GK382.D	11/21/13	18:58
F2-B219-SB1086-0204	SG8902-6	7GK383.D	11/21/13	19:34
F2-B219-SS1085-0001	SG8902-7	7GK384.D	11/21/13	20:10
F2-B219-SB1085-0204	SG8902-8	7GK385.D	11/21/13	20:47
TF2-SB-DUP02-1113	SG8902-9	7GK386.D	11/21/13	21:23
F2-B219-SS1084-0001	SG8902-10	7GK387.D	11/21/13	21:59
F2-B219-SB1084-0204	SG8902-11	7GK388.D	11/21/13	22:35
F2-B219-SS1081-0001	SG8902-12	7GK394.D	11/22/13	02:11
F2-B219-SB1081-0204	SG8902-13	7GK395.D	11/22/13	02:47
F2-B219-SB1088-0204	SG8902-15	7GK396.D	11/22/13	03:23
F2-B219-SS1080-0001	SG8902-16	7GK397.D	11/22/13	03:59
F2-B219-SB1080-0204	SG8902-17	7GK398.D	11/22/13	04:35

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Report of Analytical Results

Client:
Lab ID: WG134663-1
Client ID: Method Blank Sample
Project:
SDG: SG8902
Lab File ID: 7GK369.D

Sample Date:
Received Date:
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: NA
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	8.5	ug/Kgdrywt	1	17	17.	6.0	8.5
Aroclor-1221	U	8.5	ug/Kgdrywt	1	17	17.	7.9	8.5
Aroclor-1232	U	10.	ug/Kgdrywt	1	17	17.	9.3	10.
Aroclor-1242	U	8.5	ug/Kgdrywt	1	17	17.	5.8	8.5
Aroclor-1248	U	8.5	ug/Kgdrywt	1	17	17.	6.1	8.5
Aroclor-1254	U	8.5	ug/Kgdrywt	1	17	17.	4.7	8.5
Aroclor-1260	U	8.5	ug/Kgdrywt	1	17	17.	6.0	8.5
Aroclor-1262	U	8.5	ug/Kgdrywt	1	17	17.	3.7	8.5
Aroclor-1268	U	8.5	ug/Kgdrywt	1	17	17.	2.6	8.5
Tetrachloro-M-Xylene		69.4	%					
Decachlorobiphenyl		92.8	%					

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LCS/LCSD Recovery Report

LCS ID: WG134663-2
LCSD ID: WG134663-3
Project:
SDG: SG8902
Report Date: 30-NOV-13
LCS File ID: 7GK370.D

Received Date:
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663
LCSD File ID: 7GK371.D

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Aroclor-1016	167.	142.	85.0	139.	83.2	ug/Kgdrywt	2	30	40-140
Aroclor-1260	167.	147.	88.0	146.	87.4	ug/Kgdrywt	1	30	60-130
Tetrachloro-M-Xylene			77.5		76.9				56-115
Decachlorobiphenyl			94.9		91.3				60-125

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : 7GK399.D
Matrix : AQ

Column A
Instrument ID : GC07
Date Analyzed : 22-NOV-13
Time Analyzed : 11:50

SDG : SG8902
Lab Sample ID : WG134812-1
Date Extracted : 21-NOV-13
Extraction Method : SW846 3510

Column B
Instrument ID : GC07
Date Analyzed : 22-NOV-13
Time Analyzed : 11:50

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134812-2	7GK400.D	11/22/13	12:26
Laboratory Control S	WG134812-3	7GK401.D	11/22/13	13:02
TF2-SB-RB01-1113	SG8902-23RE	7GK415.D	11/22/13	21:28

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ANALYTICAL SERVICES

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Report of Analytical Results

Client:
Lab ID: WG134812-1
Client ID: Method Blank Sample
Project:
SDG: SG8902
Lab File ID: 7GK399.D

Sample Date:
Received Date:
Extract Date: 21-NOV-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG134812

Analysis Date: 22-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	0.25	ug/L	1	.5	0.50	0.15	0.25
Aroclor-1221	U	0.25	ug/L	1	.5	0.50	0.20	0.25
Aroclor-1232	U	0.25	ug/L	1	.5	0.50	0.089	0.25
Aroclor-1242	U	0.25	ug/L	1	.5	0.50	0.18	0.25
Aroclor-1248	U	0.25	ug/L	1	.5	0.50	0.20	0.25
Aroclor-1254	U	0.25	ug/L	1	.5	0.50	0.082	0.25
Aroclor-1260	U	0.25	ug/L	1	.5	0.50	0.17	0.25
Aroclor-1262	U	0.25	ug/L	1	.5	0.50	0.066	0.25
Aroclor-1268	U	0.25	ug/L	1	.5	0.50	0.072	0.25
Tetrachloro-M-Xylene		73.5	%					
Decachlorobiphenyl		83.0	%					

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LCS/LCSD Recovery Report

LCS ID: WG134812-2
LCSD ID: WG134812-3
Project:
SDG: SG8902
Report Date: 30-NOV-13
LCS File ID: 7GK400.D

Received Date:
Extract Date: 21-NOV-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG134812
LCSD File ID: 7GK401.D

Analysis Date: 22-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Aroclor-1016	5.00	3.73	74.6	3.75	75.0	ug/L	0	30	25-145
Aroclor-1260	5.00	3.39	67.8	3.56	71.2	ug/L	5	30	30-145
Tetrachloro-M-Xylene			64.4		63.2				62-111
Decachlorobiphenyl			59.3		64.0				40-135

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MS/MSD Recovery Report

MS ID: WG134663-4
MSD ID: WG134663-5
Sample ID: SG8902-4
Client ID: F2-B219-SB1083-0204
Project:
SDG: SG8902
MS File ID: 7GK372.D

Received Date:
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663
Report Date: 30-NOV-13
MSD File ID: 7GK373.D

Analysis Date: 21-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 95.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Aroclor-1016	176.	176.	ug/Kgdrywt	U8.9	150	150	84.8	85.9	1	30	40-140
Aroclor-1260	176.	176.	ug/Kgdrywt	U8.9	160	160	91.1	92.8	2	30	60-130
Tetrachloro-M-Xylene							79.7	82.3			56-115
Decachlorobiphenyl							94.3	94.8			60-125

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** AQ
Lab Code: KAS **SDG:** SG8902

Client Sample ID	Lab Sample ID	Col. ID	DCB	#	TCX	#
TF2-SB-RB01-1113	SG8902-23	A	15.4	*	43.8	*
TF2-SB-RB01-1113	SG8902-23	B	14.2	*	30.2	*
TF2-SB-RB01-1113	SG8902-23RE	A	14.1	*	50.7	*
TF2-SB-RB01-1113	SG8902-23RE	B	13.3		37.2	*
Method Blank Sample	WG134636-1	B	86.3		52.5	*
Method Blank Sample	WG134636-1	A	89.0		48.8	*
Laboratory Control S	WG134636-2	A	98.0		67.4	
Laboratory Control S	WG134636-2	B	93.6		75.3	
Laboratory Control S	WG134636-3	A	116.		70.3	
Laboratory Control S	WG134636-3	B	108.		82.9	
Method Blank Sample	WG134812-1	A	83.0		73.5	
Method Blank Sample	WG134812-1	B	78.9		70.9	
Laboratory Control S	WG134812-2	A	59.3		64.4	
Laboratory Control S	WG134812-2	B	57.6		62.3	
Laboratory Control S	WG134812-3	A	64.0		63.2	
Laboratory Control S	WG134812-3	B	62.6		59.1	*

		QC Limits
TCX	TETRACHLORO-M-XYLENE	62-111
DCB	DECACHLOROBIPHENYL	40-135

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG8902

Client Sample ID	Lab Sample ID	Col. ID	DCB	#	TCX	#	
F2-B219-SS1082-0001	SG8902-1	B	91.3		82.8		
F2-B219-SS1082-0001	SG8902-1	A	94.9		84.8		
F2-B219-SS1084-0001	SG8902-10	A	95.7		85.6		
F2-B219-SS1084-0001	SG8902-10	B	87.4		81.3		
F2-B219-SB1084-0204	SG8902-11	A	93.1		81.5		
F2-B219-SB1084-0204	SG8902-11	B	89.9		76.3		
F2-B219-SS1081-0001	SG8902-12	A	138.	*	64.1		
F2-B219-SS1081-0001	SG8902-12	B	97.0		79.3		
F2-B219-SB1081-0204	SG8902-13	A	81.7		72.2		
F2-B219-SB1081-0204	SG8902-13	B	89.4		61.8		
F2-B219-SB1088-0204	SG8902-15	A	94.1		72.1		
F2-B219-SB1088-0204	SG8902-15	B	86.5		68.4		
F2-B219-SS1080-0001	SG8902-16DL	B	0.00	D	0.00	D	10X
F2-B219-SS1080-0001	SG8902-16DL	A	0.00	D	0.00	D	10X
F2-B219-SB1080-0204	SG8902-17	A	95.2		76.4		
F2-B219-SB1080-0204	SG8902-17	B	98.6		65.4		
F2-B219-SB1089-0204	SG8902-19	A	89.4		70.8		
F2-B219-SB1089-0204	SG8902-19	B	85.8		68.9		
F2-B219-SB1082-0204	SG8902-2	A	84.8		67.9		
F2-B219-SB1082-0204	SG8902-2	B	79.9		65.6		
TF2-SB-DUP01-1113	SG8902-20	A	86.9		72.1		
TF2-SB-DUP01-1113	SG8902-20	B	81.8		70.4		
F2-B219-SS1087-0001	SG8902-21	A	85.1		69.7		
F2-B219-SS1087-0001	SG8902-21	B	82.6		71.1		
F2-B219-SB1087-0204	SG8902-22	A	85.2		71.3		
F2-B219-SB1087-0204	SG8902-22	B	82.0		68.3		
F2-B219-SS1083-0001	SG8902-3	A	96.3		84.6		
F2-B219-SS1083-0001	SG8902-3	B	92.6		83.5		
F2-B219-SB1083-0204	SG8902-4	A	87.1		80.3		
F2-B219-SB1083-0204	SG8902-4	B	89.7		76.3		
F2-B219-SS1086-0001	SG8902-5	A	333.	*	53.2	*	
F2-B219-SS1086-0001	SG8902-5	B	109.		69.6		
F2-B219-SB1086-0204	SG8902-6	A	74.4		69.8		
F2-B219-SB1086-0204	SG8902-6	B	116.		52.6	*	
F2-B219-SS1085-0001	SG8902-7	A	354.	*	64.0		
F2-B219-SS1085-0001	SG8902-7	B	112.		71.4		

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG8902

Client Sample ID	Lab Sample ID	Col. ID	DCB	#	TCX	#
F2-B219-SB1085-0204	SG8902-8	A	86.6		79.1	
F2-B219-SB1085-0204	SG8902-8	B	115.		60.2	
TF2-SB-DUP02-1113	SG8902-9	A	70.6		55.0	*
TF2-SB-DUP02-1113	SG8902-9	B	68.9		52.2	*
Method Blank Sample	WG134661-1	A	80.5		66.1	
Method Blank Sample	WG134661-1	B	78.1		64.6	
Laboratory Control S	WG134661-2	A	99.7		77.2	
Laboratory Control S	WG134661-2	B	91.3		77.2	
Laboratory Control S	WG134661-3	A	97.0		78.7	
Laboratory Control S	WG134661-3	B	92.8		77.2	
Method Blank Sample	WG134663-1	A	91.6		69.4	
Method Blank Sample	WG134663-1	B	92.8		67.3	
Laboratory Control S	WG134663-2	A	94.9		77.5	
Laboratory Control S	WG134663-2	B	92.2		74.8	
Laboratory Control S	WG134663-3	A	91.3		76.9	
Laboratory Control S	WG134663-3	B	89.2		74.5	
Matrix Spike	WG134663-4	A	94.3		79.7	
Matrix Spike	WG134663-4	B	89.1		78.0	
Matrix Spike Duplica	WG134663-5	A	94.8		82.3	
Matrix Spike Duplica	WG134663-5	B	93.7		79.7	

		QC Limits
DCB	DECACHLOROBIPHENYL	60-125
TCX	TETRACHLORO-M-XYLENE	56-115

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59

SDG : SG8902
Lab Sample ID : SG8902-17
Client Sample ID : F2-B219-SB1080-0204

Column A
Instrument ID : GC07
Date Analyzed : 11/22/13
Time Analyzed : 04:35

Column B
Instrument ID : GC07
Date Analyzed : 11/22/13
Time Analyzed : 04:35

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	16.57	0		
	2	A	17.8	83.5		
	3	A	18.96	91.2		
	4	A	20.31	0		
	5	A	23	70.6	81.8	
	1	B	17.53	0		
	2	B	18.49	89.6		
	3	B	19.98	95.2		
	4	B	21.38	0		
	5	B	24.2	67.8	84.2	2.9

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59

SDG : SG8902
Lab Sample ID : SG8902-13
Client Sample ID : F2-B219-SB1081-0204

Column A
Instrument ID : GC07
Date Analyzed : 11/22/13
Time Analyzed : 02:47

Column B
Instrument ID : GC07
Date Analyzed : 11/22/13
Time Analyzed : 02:47

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	16.57	80.4		
	2	A	17.79	106		
	3	A	18.96	105		
	4	A	20.31	0		
	5	A	23	90.8	95.5	
	1	B	17.53	0		
	2	B	18.48	114		
	3	B	19.99	122		
	4	B	21.38	0		
	5	B	24.2	81	106	10.4

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59

SDG : SG8902
Lab Sample ID : SG8902-19
Client Sample ID : F2-B219-SB1089-0204

Column A
Instrument ID : GC07
Date Analyzed : 11/20/13
Time Analyzed : 17:22

Column B
Instrument ID : GC07
Date Analyzed : 11/20/13
Time Analyzed : 17:22

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	16.58	24.8		
	2	A	17.8	31		
	3	A	18.97	31.1		
	4	A	20.31	17.6		
	5	A	23.01	22	25.3	
	1	B	17.53	23.3		
	2	B	18.49	33.5		
	3	B	20	31.1		
	4	B	21.38	15.8		
	5	B	24.21	21.2	25	1.2

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Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59

SDG : SG8902
Lab Sample ID : SG8902-16DL
Client Sample ID : F2-B219-SS1080-0001

Column A
Instrument ID : GC07
Date Analyzed : 11/25/13
Time Analyzed : 16:08

Column B
Instrument ID : GC07
Date Analyzed : 11/25/13
Time Analyzed : 16:08

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	16.58	0		
	2	A	17.81	4220		
	3	A	18.97	4720		
	4	A	20.32	0		
	5	A	23.02	3860	4260	
	1	B	17.52	0		
	2	B	18.49	4850		
	3	B	20	5060		
	4	B	21.37	0		
	5	B	24.21	3440	4450	4.4

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59

SDG : SG8902
Lab Sample ID : SG8902-12
Client Sample ID : F2-B219-SS1081-0001

Column A
Instrument ID : GC07
Date Analyzed : 11/22/13
Time Analyzed : 02:11

Column B
Instrument ID : GC07
Date Analyzed : 11/22/13
Time Analyzed : 02:11

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	16.57	0		
	2	A	17.8	2290		
	3	A	18.96	2680		
	4	A	20.31	0		
	5	A	23	2300	2420	
	1	B	17.53	0		
	2	B	18.48	2430		
	3	B	19.99	2740		
	4	B	21.38	0		
	5	B	24.2	2050	2410	.4

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59

SDG : SG8902
Lab Sample ID : SG8902-1
Client Sample ID : F2-B219-SS1082-0001

Column A
Instrument ID : GC07
Date Analyzed : 11/21/13
Time Analyzed : 14:09

Column B
Instrument ID : GC07
Date Analyzed : 11/21/13
Time Analyzed : 14:09

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	16.57	0		
	2	A	17.8	331		
	3	A	18.98	388		
	4	A	20.31	0		
	5	A	23.02	295	338	
	1	B	17.52	0		
	2	B	18.5	399		
	3	B	20	407		
	4	B	21.38	0		
	5	B	24.21	282	363	7.1

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59

SDG : SG8902
Lab Sample ID : SG8902-3
Client Sample ID : F2-B219-SS1083-0001

Column A
Instrument ID : GC07
Date Analyzed : 11/21/13
Time Analyzed : 17:46

Column B
Instrument ID : GC07
Date Analyzed : 11/21/13
Time Analyzed : 17:46

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	16.57	0		
	2	A	17.8	20.6		
	3	A	18.97	20.5		
	4	A	20.31	0		
	5	A	23.01	25.3	22.1	
	1	B	17.52	0		
	2	B	18.5	23.9		
	3	B	20.01	29.5		
	4	B	21.38	0		
	5	B	24.21	20	24.4	9.9

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59

SDG : SG8902
Lab Sample ID : SG8902-10
Client Sample ID : F2-B219-SS1084-0001

Column A
Instrument ID : GC07
Date Analyzed : 11/21/13
Time Analyzed : 21:59

Column B
Instrument ID : GC07
Date Analyzed : 11/21/13
Time Analyzed : 21:59

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	16.57	0		
	2	A	17.8	39.4		
	3	A	18.97	43.2		
	4	A	20.31	0		
	5	A	23.01	39.6	40.8	
	1	B	17.52	0		
	2	B	18.48	46.5		
	3	B	19.99	47.8		
	4	B	21.38	0		
	5	B	24.21	31	41.8	2.4

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59

SDG : SG8902
Lab Sample ID : SG8902-7
Client Sample ID : F2-B219-SS1085-0001

Column A
Instrument ID : GC07
Date Analyzed : 11/21/13
Time Analyzed : 20:10

Column B
Instrument ID : GC07
Date Analyzed : 11/21/13
Time Analyzed : 20:10

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	16.57	0		
	2	A	17.8	1180		
	3	A	18.96	1370		
	4	A	20.31	0		
	5	A	23	1260	1270	
	1	B	17.52	0		
	2	B	18.49	1440		
	3	B	19.99	1550		
	4	B	21.38	0		
	5	B	24.2	1030	1340	5.4

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59

SDG : SG8902
Lab Sample ID : SG8902-5
Client Sample ID : F2-B219-SS1086-0001

Column A
Instrument ID : GC07
Date Analyzed : 11/21/13
Time Analyzed : 18:58

Column B
Instrument ID : GC07
Date Analyzed : 11/21/13
Time Analyzed : 18:58

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	16.57	0		
	2	A	17.8	2460		
	3	A	18.96	3110		
	4	A	20.31	0		
	5	A	23	2880	2820	
	1	B	17.52	0		
	2	B	18.49	2790		
	3	B	19.99	3340		
	4	B	21.38	0		
	5	B	24.2	2520	2880	2.1

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59

SDG : SG8902
Lab Sample ID : SG8902-21
Client Sample ID : F2-B219-SS1087-0001

Column A
Instrument ID : GC07
Date Analyzed : 11/20/13
Time Analyzed : 18:34

Column B
Instrument ID : GC07
Date Analyzed : 11/20/13
Time Analyzed : 18:34

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	16.57	0		
	2	A	17.79	610		
	3	A	18.97	808		
	4	A	20.31	347		
	5	A	23	638	601	
	1	B	17.52	0		
	2	B	18.49	701		
	3	B	19.99	802		
	4	B	21.38	341		
	5	B	24.21	532	594	1.2

Form 10
Pesticide Identification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59

SDG : SG8902
Lab Sample ID : SG8902-20
Client Sample ID : TF2-SB-DUP01-1113

Column A
Instrument ID : GC07
Date Analyzed : 11/20/13
Time Analyzed : 17:58

Column B
Instrument ID : GC07
Date Analyzed : 11/20/13
Time Analyzed : 17:58

Analyte	Peak	Column	RT	Concentration	Mean	RPD
Aroclor-1260	1	A	16.58	28.9		
	2	A	17.8	32.9		
	3	A	18.97	32.5		
	4	A	20.31	20.7		
	5	A	23	23.1	27.6	
	1	B	17.53	24.9		
	2	B	18.49	35.3		
	3	B	20	35.6		
	4	B	21.38	16.8		
	5	B	24.2	22.5	27	2.2

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Blank Sample Summary Report

Total Solids

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG134604	SM2540	19-NOV-13	18-NOV-13	U 1 %	1 %	N/A
MBLANK	WG134664	SM2540	20-NOV-13	19-NOV-13	U 1 %	1 %	N/A

Katahdin Analytical Services A0000104

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Laboratory Control Sample Summary Report

Total Solids

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG134604-2	LCS	WG134604	19-NOV-13	18-NOV-13	%	90	87.	96	80-120	
WG134664-2	LCS	WG134664	20-NOV-13	19-NOV-13	%	90	88.	98	80-120	

Katahdin Analytical Services A0000105

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Duplicate Sample Summary Report

Total Solids

Duplicate Sample ID	Original Sample ID	QC Batch	Analysis Date	Result Units	Sample Result	Duplicate Result	RPD(%)	RPD Limit
WG134604-3	SG8902-1	WG134604	19-NOV-13	%	94.	94.	0	20
WG134664-3	SG8902-22	WG134664	20-NOV-13	%	95.	95.	0	20
WG134604-4	SG8902-21	WG134604	19-NOV-13	%	94.	95.	1	20

Katahdin Analytical Services A0000106

AROCLOR-1260 CALCULATION

SAMPLE **TF2-B219-SS1080-0001**

	peak1	peak 2	peak3
Sample peak area	3115890.0	2955754.0	1937341.0
Calibration CF (area/ng)	2408365.0	2189938.0	2112196.0
area/CF	1.293778144	1.349697571	0.917216489
average area/RF	1.18690		
dilution Factor	10		
extraction weight g	30.1		
final volume µl	10000		
injection volume µl	1		
% moisture	11.46		
solids	0.8854		

Calculation=[(PK1/RF+PK2/RF+PK3/RF+PK4/RF+PK5/RF)/5 X DF X FINAL VOL.] / [WEIGHT X INJ. VOL. X SOLIDS]
Calculation=[(Average area/RF) X DF X FINAL VOL.] / [WEIGHT X SOLIDS]

RESULT **4453.558546 ug/kg (ng/g)**

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8902-16DL
Client ID: F2-B219-SS1080-0001
Project: NAVSTA Newport CTO WE:
SDG: SG8902
Lab File ID: 7GK465.D

Sample Date: 12-NOV-13
Received Date: 13-NOV-13
Extract Date: 19-NOV-13
Extracted By: AM
Extraction Method: SW846 3550
Lab Prep Batch: WG134663

Analysis Date: 25-NOV-13
Analyst: CB
Analysis Method: SW846 8082A
Matrix: SL
% Solids: 88.
Report Date: 30-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Aroclor-1016	U	96.	ug/Kgdrywt	10	17	190	68.	96.
Aroclor-1221	U	96.	ug/Kgdrywt	10	17	190	89.	96.
Aroclor-1232	U	110	ug/Kgdrywt	10	17	190	100	110
Aroclor-1242	U	96.	ug/Kgdrywt	10	17	190	65.	96.
Aroclor-1248	U	96.	ug/Kgdrywt	10	17	190	69.	96.
Aroclor-1254	U	96.	ug/Kgdrywt	10	17	190	53.	96.
Aroclor-1260		4400	ug/Kgdrywt	10	17	190	68.	96.
Aroclor-1262	U	96.	ug/Kgdrywt	10	17	190	42.	96.
Aroclor-1268	U	96.	ug/Kgdrywt	10	17	190	29.	96.
Tetrachloro-M-Xylene	D	0.00	%					
Decachlorobiphenyl	D	0.00	%					

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Data File: 7GK465.D
Report Date: 30-Nov-2013 13:03

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc07.i\GC07GK25.b\GC07GK25.b\7GK465.D
Lab Smp Id: SG8902-16DL Client Smp ID: F2-B219-SS1080-0001
Inj Date : 25-NOV-2013 16:08
Operator : CB Inst ID: gc07.i
Smp Info : SG8902-16DL
Misc Info : WG135143,WG134663,WG134226-1
Comment :
Method : \\target_server\gg\chem\gc07.i\GC07GK25.b\PCB067.m\PCB067.m
Meth Date : 30-Nov-2013 10:12 cbyrne Quant Type: ESTD
Cal Date : 09-NOV-2013 23:12 Cal File: 7GK149.D
Als bottle: 12
Dil Factor: 10.00000
Integrator: Falcon Compound Sublist: TTWE49.sub
Target Version: 4.12 Sample Matrix: SOIL
Processing Host: V200T5

Concentration Formula: Amt * DF * 1000*Vt*(100/(100-M))/Ws * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Vt	0.01000	Final Volume (L)
M	11.460	% Moisture
Ws	0.03010	Weight of Sample (Kg)
Cpnd Variable		Local Compound Variable

RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COL (ug/mL)	CONCENTRATIONS FINAL (ug/Kg)	TARGET RANGE	RATIO	REVIEW CODE
9 Aroclor-1260					CAS #: 11096-82-5			
17.518	17.517	0.001	0	0.000	0.000	80.00- 120.00	0.00	
18.491	18.482	0.009	3115890	1.29378	4850	94.69- 142.03	217.10	
19.999	19.988	0.011	2955754	1.34970	5060	89.28- 133.92	205.94	
21.373	21.373	0.000	0	0.000	0.000	72.48- 108.72	0.00	
24.211	24.210	0.001	1937341	0.91722	3440	0.00- 0.00	134.99	
			Average of Peak Concentrations =		4450			

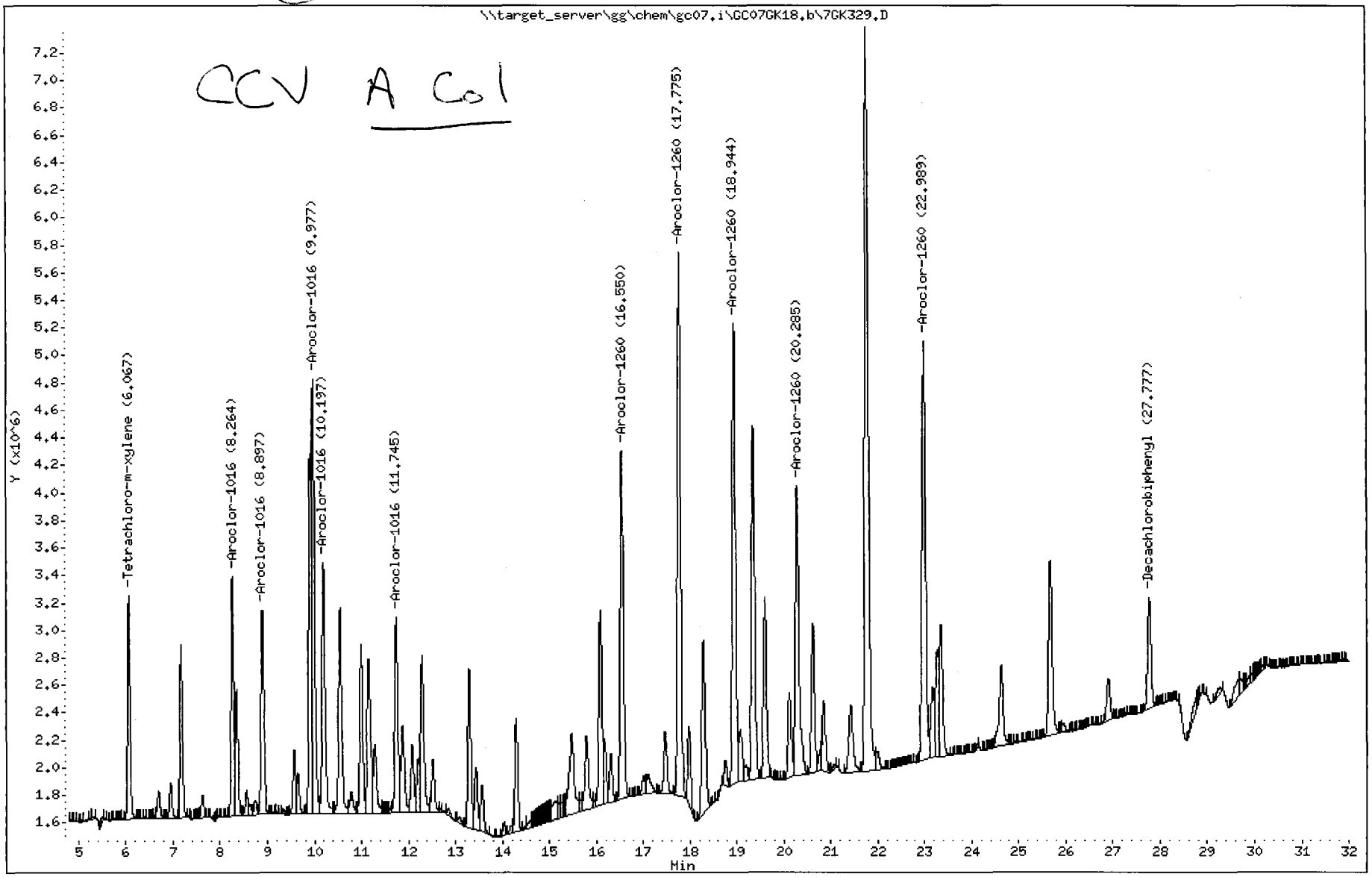
Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8902
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GC07
Lab File IDs : 7GK147.D 7GK148.D 7GK149.D **Column ID:** B
7GK146.D 7GK150.D 7GK145.D **Calibration Date(s):** 08-NOV-13 02:09
09-NOV-13 23:48

	0.0500000 Level 1	0.1000000 Level 2	0.2500000 Level 3	1.0000 Level 4	2.5000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Aroclor-1221(1)	158860	159450	164036	142431	129152	105190	AVG		143186		15.8833	20.00000	O
Aroclor-1221(2)	585120	553490	530636	473137	448732	402113	AVG		498871		13.8788	20.00000	O
Aroclor-1221(3)	396260	389260	382192	329220	305802	264863	AVG		344599		15.4519	20.00000	O
Aroclor-1221(4)	1515140	1393210	1308624	1154734	1096860	969836	AVG		1239734		16.3182	20.00000	O
Aroclor-1232(3)	525820	549450	539580	490327	477924	452887	AVG		505998		7.53236	20.00000	O
Aroclor-1232(5)	552460	555260	537804	497085	494144	495037	AVG		521965		5.68814	20.00000	O
Aroclor-1232(1)	1375760	1300890	1214828	1089722	1060640	967560	AVG		1168233		13.3076	20.00000	O
Aroclor-1232(4)	1159120	1113520	1061004	969528	975945	971771	AVG		1041815		7.88499	20.00000	O
Aroclor-1232(2)	661020	650410	615512	550656	534255	502643	AVG		585749		11.2007	20.00000	O
Aroclor-1016(1)	1500600	1435080	1325772	1234311	1092750	1037353	AVG		1270978		14.5226	20.00000	O
Aroclor-1016(3)	2612240	2451690	2299164	2277215	2081824	2052768	AVG		2295817		9.33478	20.00000	O
Aroclor-1016(2)	1342620	1242220	1144920	1082875	976108	946181	AVG		1122487		13.6497	20.00000	O
Aroclor-1016(4)	1433900	1339910	1256836	1195401	1061205	1079500	AVG		1227792		11.8971	20.00000	O
Aroclor-1016(5)	1204700	1140310	1063812	1017400	925900	958214	AVG		1051723		10.1652	20.00000	O
Aroclor-1242(3)	2279740	2055280	1849628	1759486	1741719	1644022	AVG		1888312		12.5399	20.00000	O
Aroclor-1242(5)	1069980	994750	892552	817870	766773	750282	AVG		882035		14.5984	20.00000	O
Aroclor-1242(4)	1159640	1089390	979180	902129	880152	852246	AVG		977123		12.6624	20.00000	O
Aroclor-1242(1)	1359260	1224070	1109796	995801	925341	842012	AVG		1076047		17.9811	20.00000	O
Aroclor-1242(2)	1120420	1081800	938932	865036	808688	750645	AVG		927587		16.0232	20.00000	O
Aroclor-1248(2)	1870580	1665910	1513716	1402926	1341516	1272610	AVG		1511210		14.8124	20.00000	O
Aroclor-1248(3)	2403260	2113090	1928140	1835567	1805115	1764001	AVG		1974862		12.3514	20.00000	O
Aroclor-1248(5)	945160	878900	805484	800052	747124	767456	AVG		824029		9.03542	20.00000	O
Aroclor-1248(4)	1224240	1098520	1042956	1006132	965590	977477	AVG		1052486		9.21534	20.00000	O
Aroclor-1248(1)	1676600	1546700	1384824	1230918	1188740	1127563	AVG		1359224		15.9744	20.00000	O
Aroclor-1254(3)	1479840	1422840	1330660	1275574	1305210	1296534	AVG		1351776		6.00290	20.00000	O
Aroclor-1254(4)	1493920	1391520	1371568	1438862	1509025	1528376	AVG		1455545		4.45952	20.00000	O
Aroclor-1254(2)	2122380	1992690	1853172	1708256	1750868	1642100	AVG		1844911		9.92219	20.00000	O
Aroclor-1254(5)	1737600	1722290	1654668	1679641	1743163	1719007	AVG		1709395		2.03910	20.00000	O
Aroclor-1254(1)	2213320	2074030	1943960	1781914	1819567	1710832	AVG		1923937		9.94778	20.00000	O
Aroclor-1260(4)	1705620	1661810	1617424	1665976	1567785	1702512	AVG	4	1653521		3.19921	20.00000	O
Aroclor-1260(3)	2292580	2163610	2111928	2232722	2091233	2247557	AVG	3	2189938		3.66488	20.00000	O
Aroclor-1260(1)	2226920	2108070	1996464	1924980	1772272	1908103	AVG	1	1989468		8.05653	20.00000	O
Aroclor-1260(2)	2605320	2464690	2403100	2379898	2229834	2367347	AVG	2	2408365		5.13120	20.00000	O
Aroclor-1260(5)	2062360	2002370	2059016	2190509	2108824	2250095	AVG	5	2112196		4.36666	20.00000	O
Aroclor-1262(3)	3073200	2742200	2606552	2595068	2765126	2467706	AVG		2708309		7.72026	20.00000	O
Aroclor-1262(5)	2757660	2519160	2466112	2612773	2776092	2661334	AVG		2632189		4.74616	20.00000	O
Aroclor-1262(2)	2087260	1915090	1800852	1773652	1859226	1743571	AVG		1863275		6.75157	20.00000	O

Data File: \\target_server\gg\chem\gc07.i\GC07GK18.b\7GK329.D
Date : 18-NOV-2013 18:47
Client ID:
Sample Info: WG134656-7,SG8902
Purge Volume: 1.0
Column phase: ZB-MultiResidue-1

Instrument: gc07.i
Operator: CB
Column diameter: 0.53



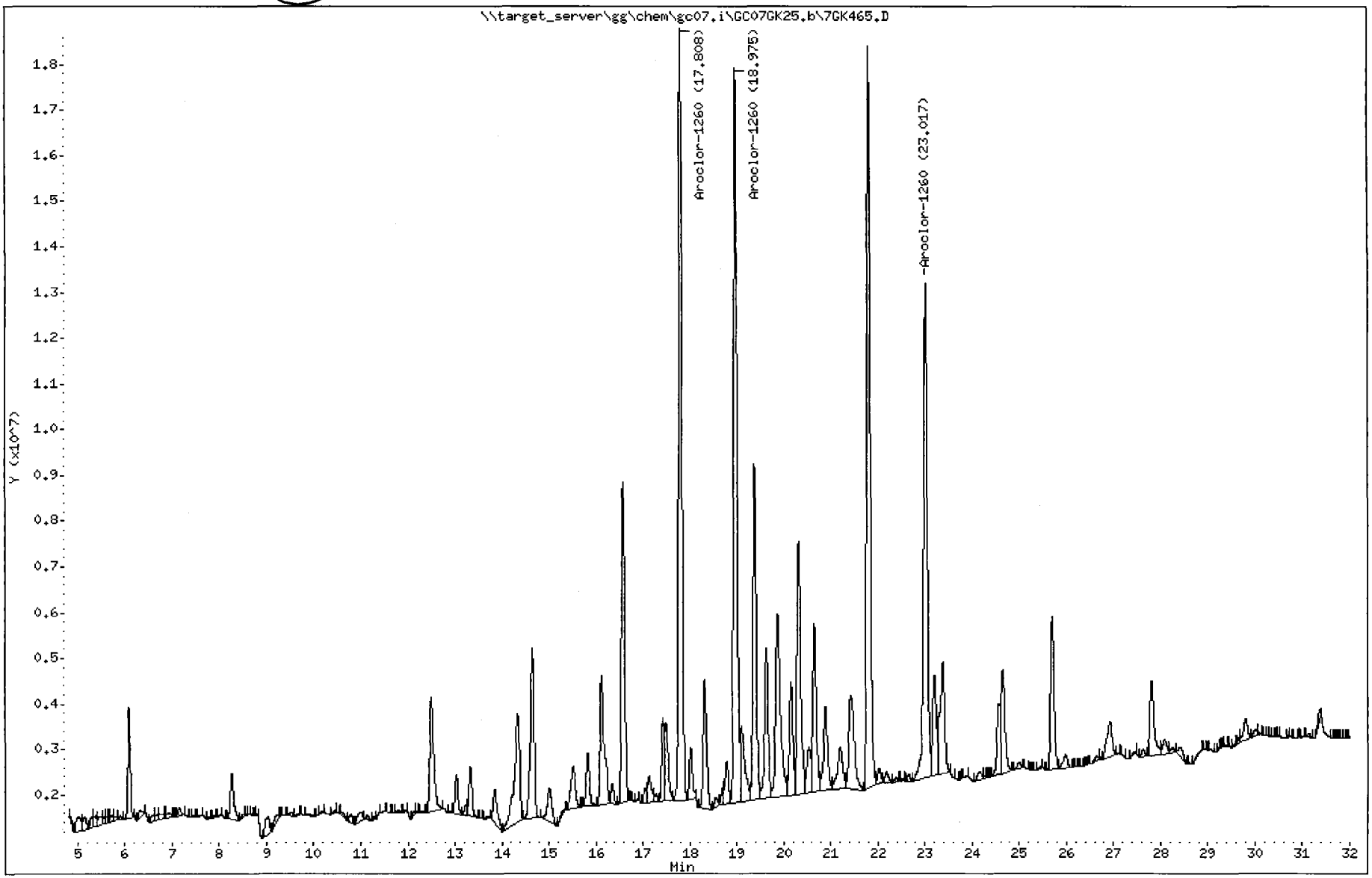
Katahdin Analytical Services 1000231

Data File: \\target_server\gg\chem\gc07.i\GC07GK25.b\7GK465.D
Date : 25-NOV-2013 16:08
Client ID: F2-B219-SS1080-0001
Sample Info: SG8902-16DL

Column phase: ZB-MultiResidue-1

Instrument: gc07.i

Operator: CB
Column diameter: 0.53

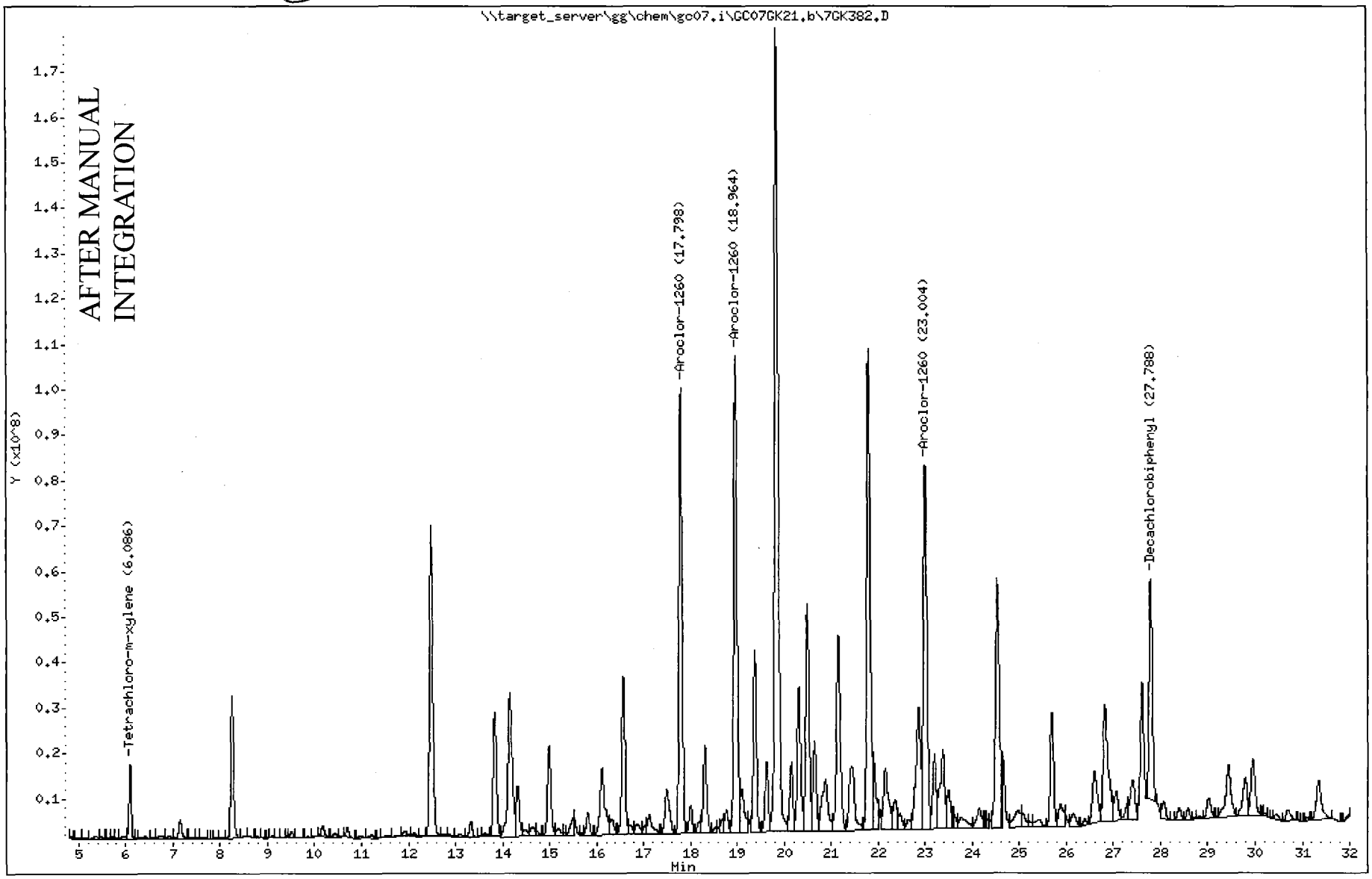


Katahdin Analytical Services 1000103

Data File: \\target_server\gg\chem\gc07.i\GC07GK21.b\7GK382.D
Date : 21-NOV-2013 18:58
Client ID: F2-B219-SS1086-0001
Sample Info: SG8902-5

Instrument: gc07.i
Operator: CB
Column diameter: 0.53

Column phase: ZB-MultiResidue-1



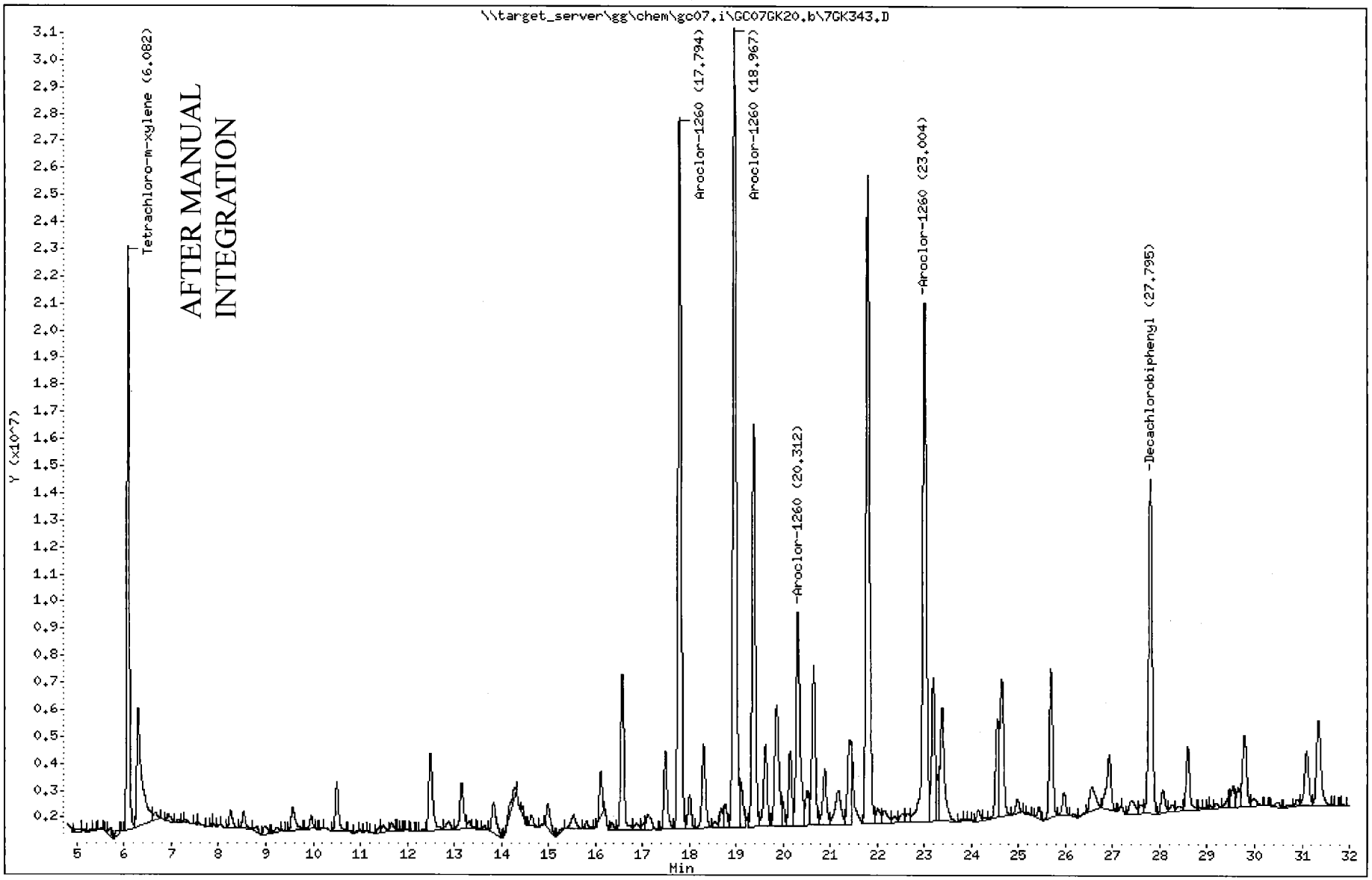
Katahdin Analytical Services 1000043

Data File: \\target_server\gg\chem\gc07.i\GC07GK20.b\7GK343.D
Date : 20-NOV-2013 18:34
Client ID: F2-B219-SS1087-0001
Sample Info: SG8902-21

Column phase: ZB-MultiResidue-1

Instrument: gc07.i

Operator: CB
Column diameter: 0.53



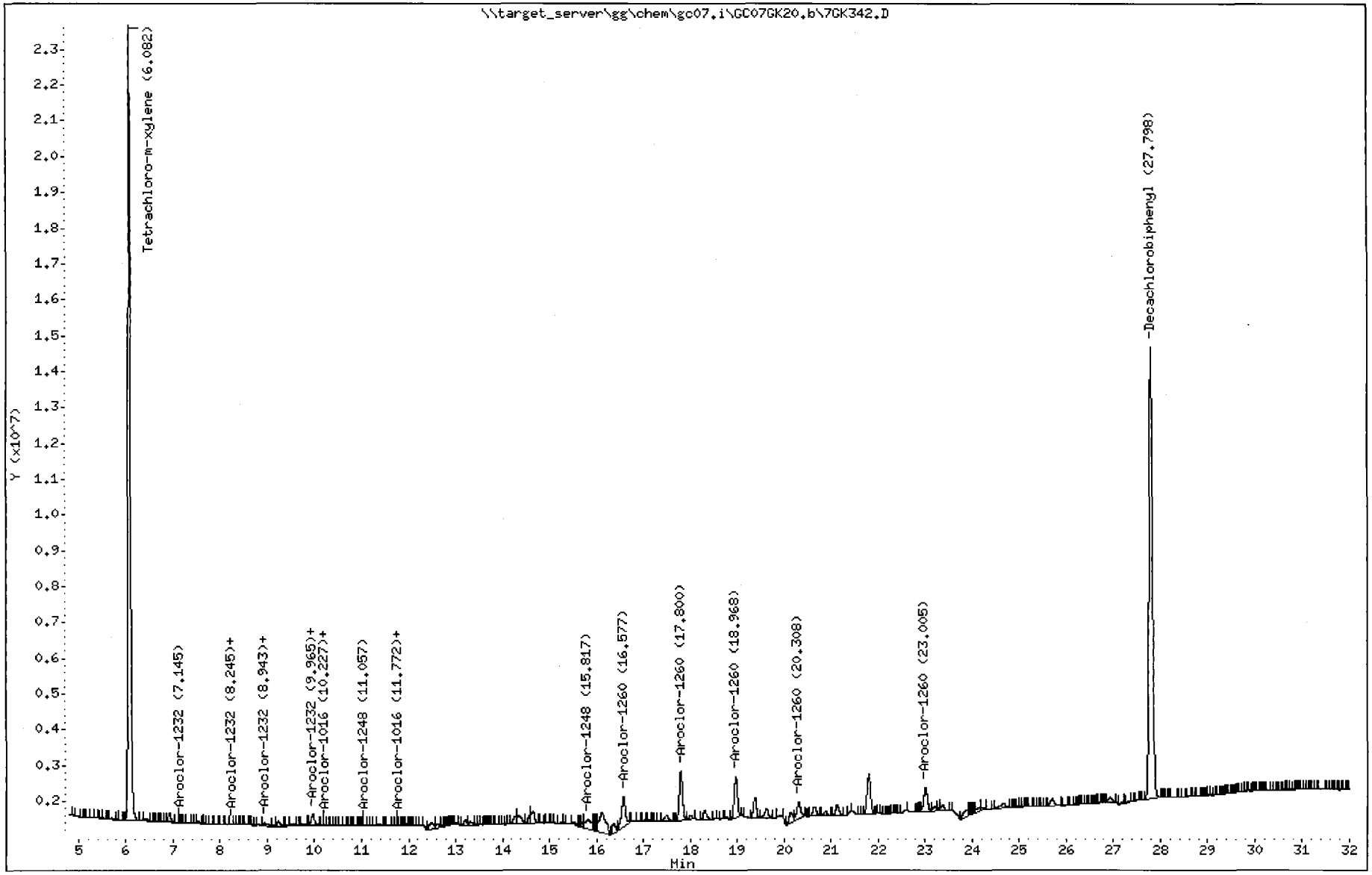
Katahdin Analytical Services 1000129

Data File: \\target_server\gg\chem\gc07.i\GC07GK20.b\7GK342.D
Date : 20-NOV-2013 17:58
Client ID: TF2-SB-DUP01-1113
Sample Info: SG8902-20

Column phase: ZB-MultiResidue-1

Instrument: gc07.i

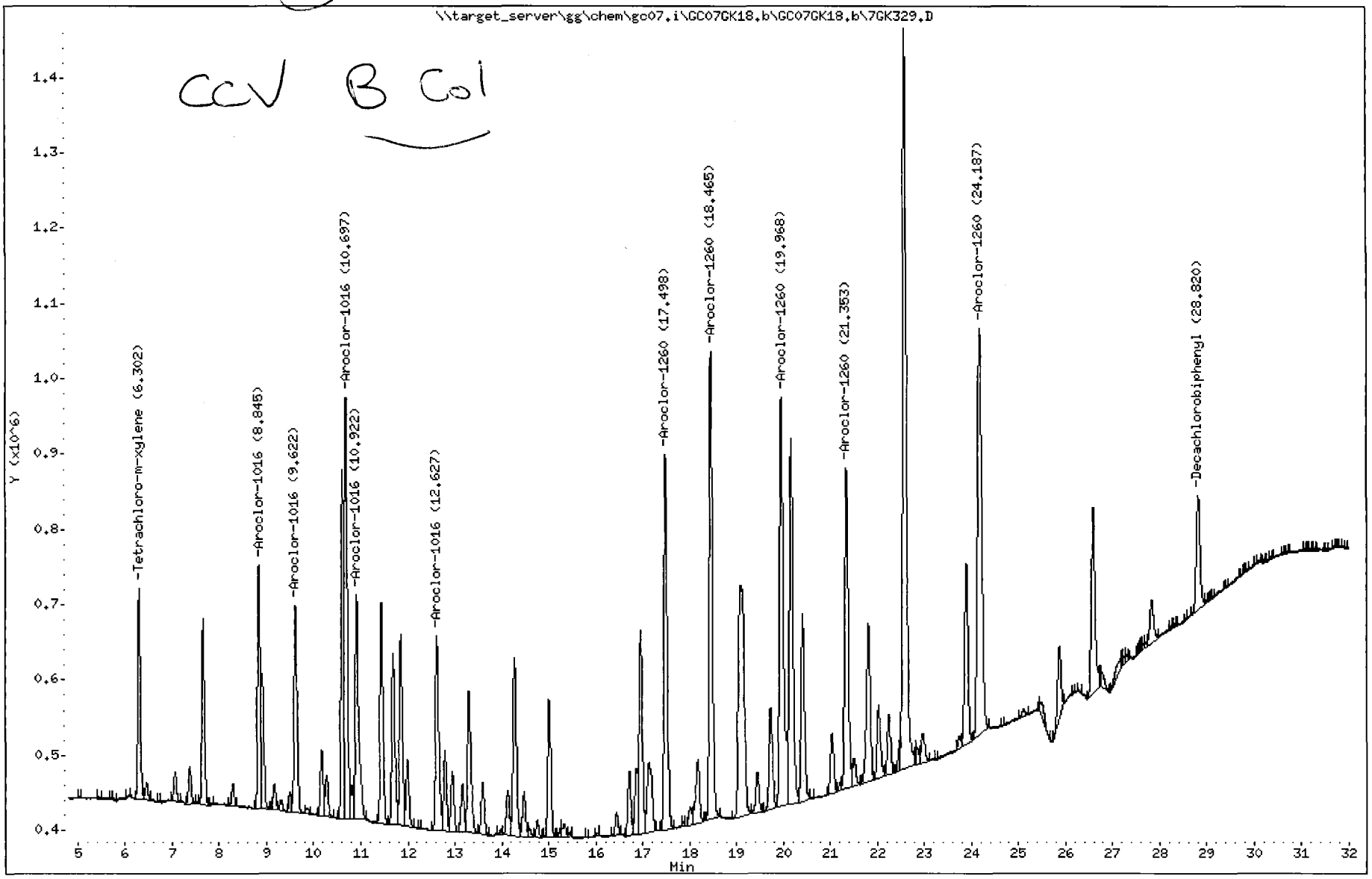
Operator: CB
Column diameter: 0.53



Katahdin Analytical Services 1000122

Data File: \\target_server\gg\chem\gc07.i\GC07GK18.b\GC07GK18.b\7GK329.D
Date : 18-NOV-2013 18:47
Client ID:
Sample Info: WG134656-8,SG8902
Purge Volume: 1.0
Column phase: ZB-MultiResidue-2

Instrument: gc07.i
Operator: CB
Column diameter: 0.53



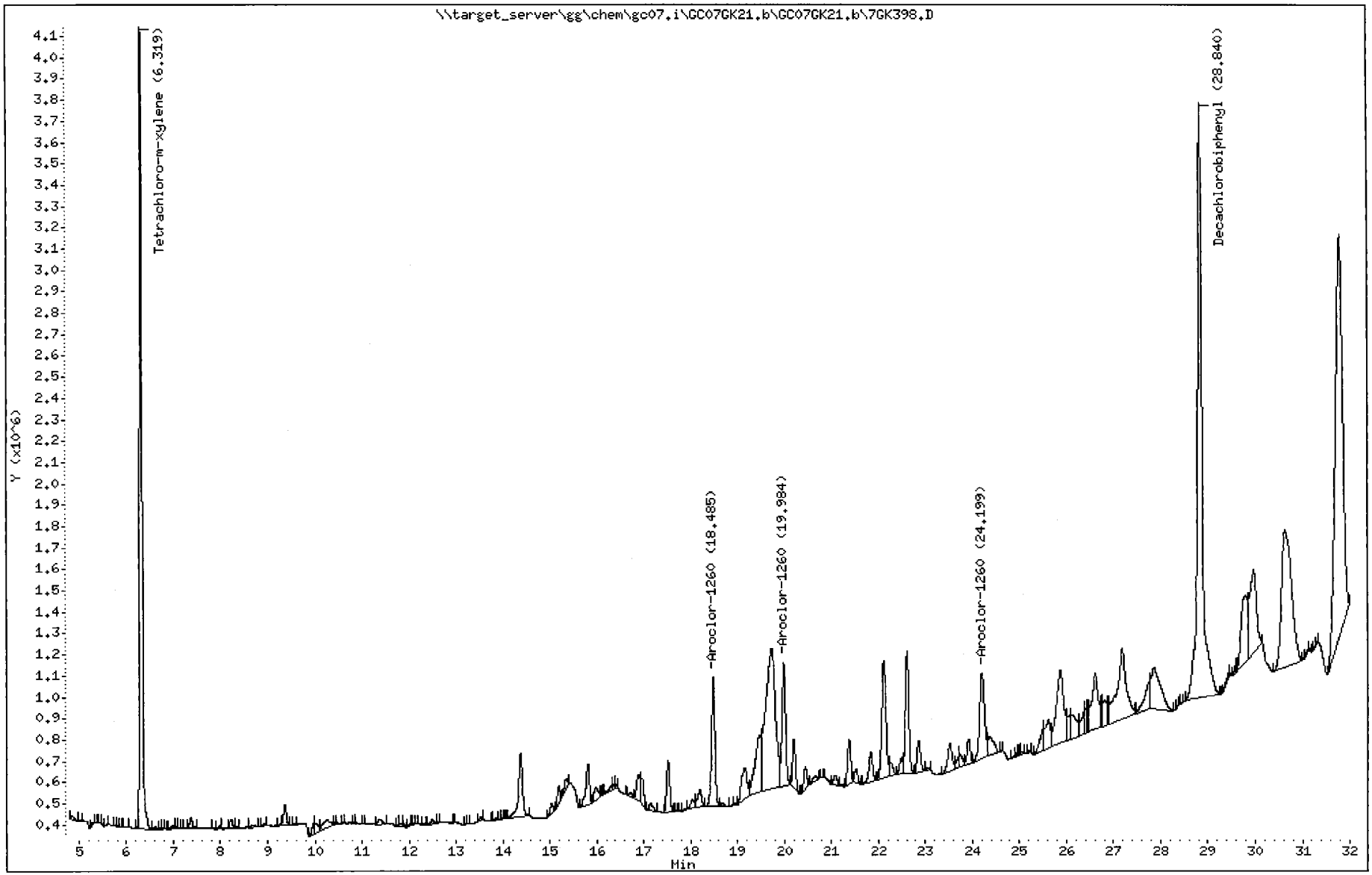
Katahdin Analytical Services 1000234

Data File: \\target_server\gg\chem\gc07.i\GC07GK21.b\GC07GK21.b\7GK398.D
Date : 22-NOV-2013 04:35
Client ID: F2-B219-SB1080-0204
Sample Info: SG8902-17

Instrument: gc07.i

Operator: CB
Column diameter: 0.53

Column phase: ZB-MultiResidue-2



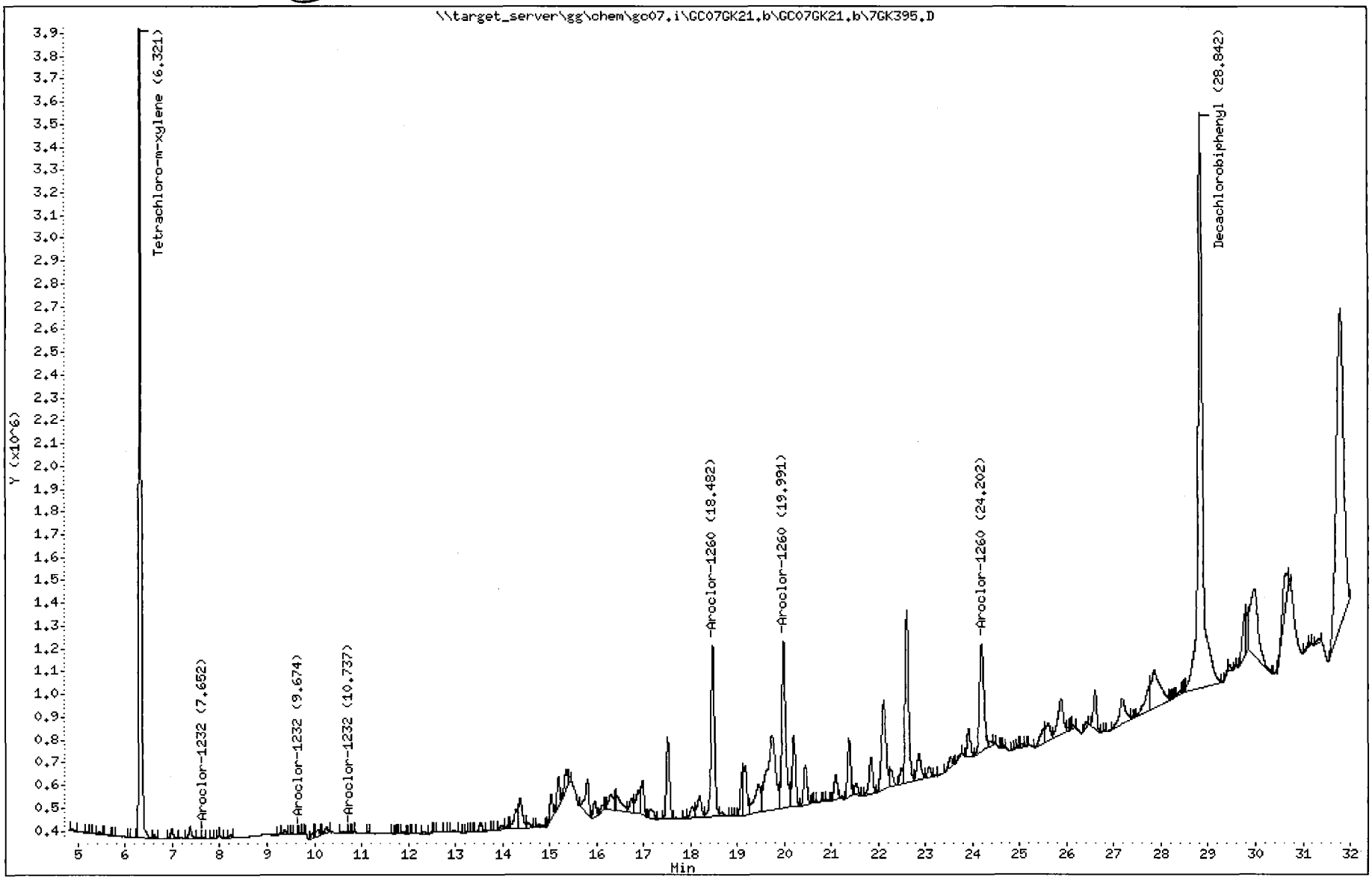
Katahdin Analytical Services 1000111

Data File: \\target_server\gg\chem\gc07.i\GC07GK21.b\GC07GK21.b\7GK395.D
Date : 22-NOV-2013 02:47
Client ID: F2-B219-SB1081-0204
Sample Info: SG8902-13

Instrument: gc07.i

Operator: CB
Column diameter: 0.53

Column phase: ZB-MultiResidue-2

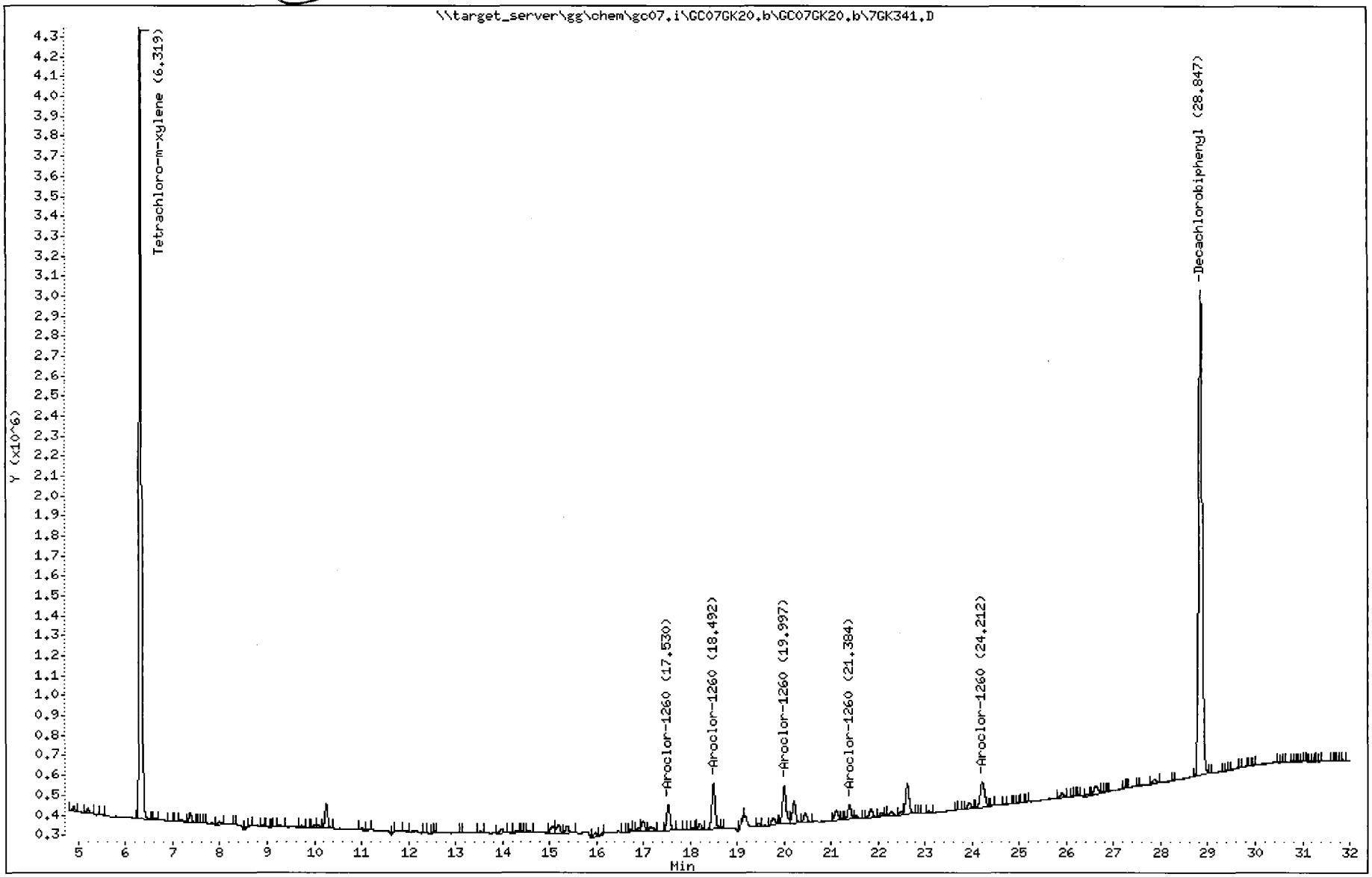


Katahdin Analytical Services 1000094

Data File: \\target_server\gg\chem\gc07.i\GC07GK20.b\GC07GK20.b\7GK341.D
Date : 20-NOV-2013 17:22
Client ID: F2-B219-SB1089-0204
Sample Info: SG8902-19

Instrument: gc07.i

Operator: CB
Column phase: ZB-MultiResidue-2
Column diameter: 0.53



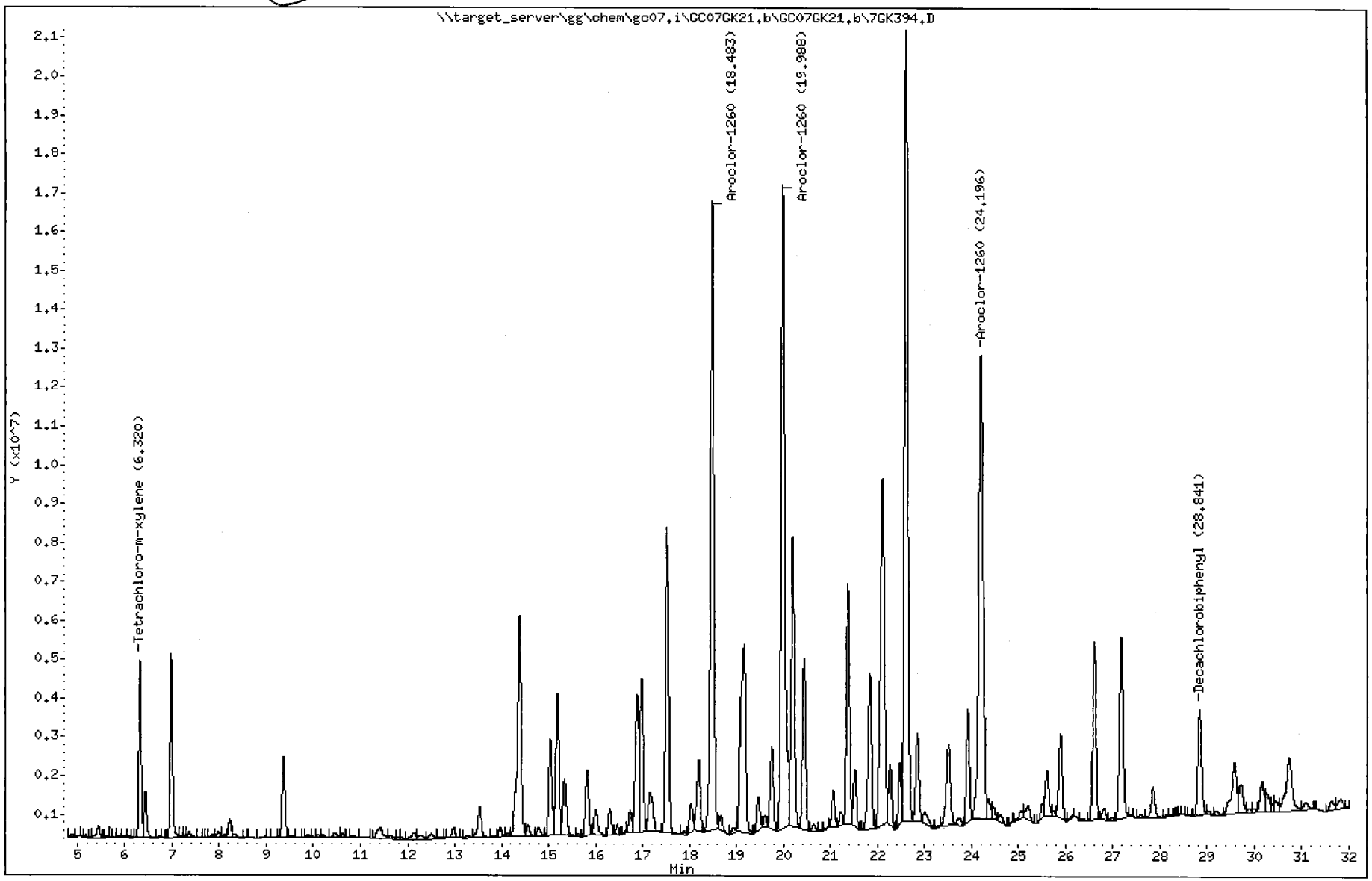
Katahdin Analytical Services 1000118

Data File: \\target_server\gg\chem\gc07.i\GC07GK21.b\GC07GK21.b\7GK394.D
Date : 22-NOV-2013 02:11
Client ID: F2-B219-SS1081-0001
Sample Info: SG8902-12

Instrument: gc07.i

Operator: CB
Column diameter: 0.53

Column phase: ZB-MultiResidue-2



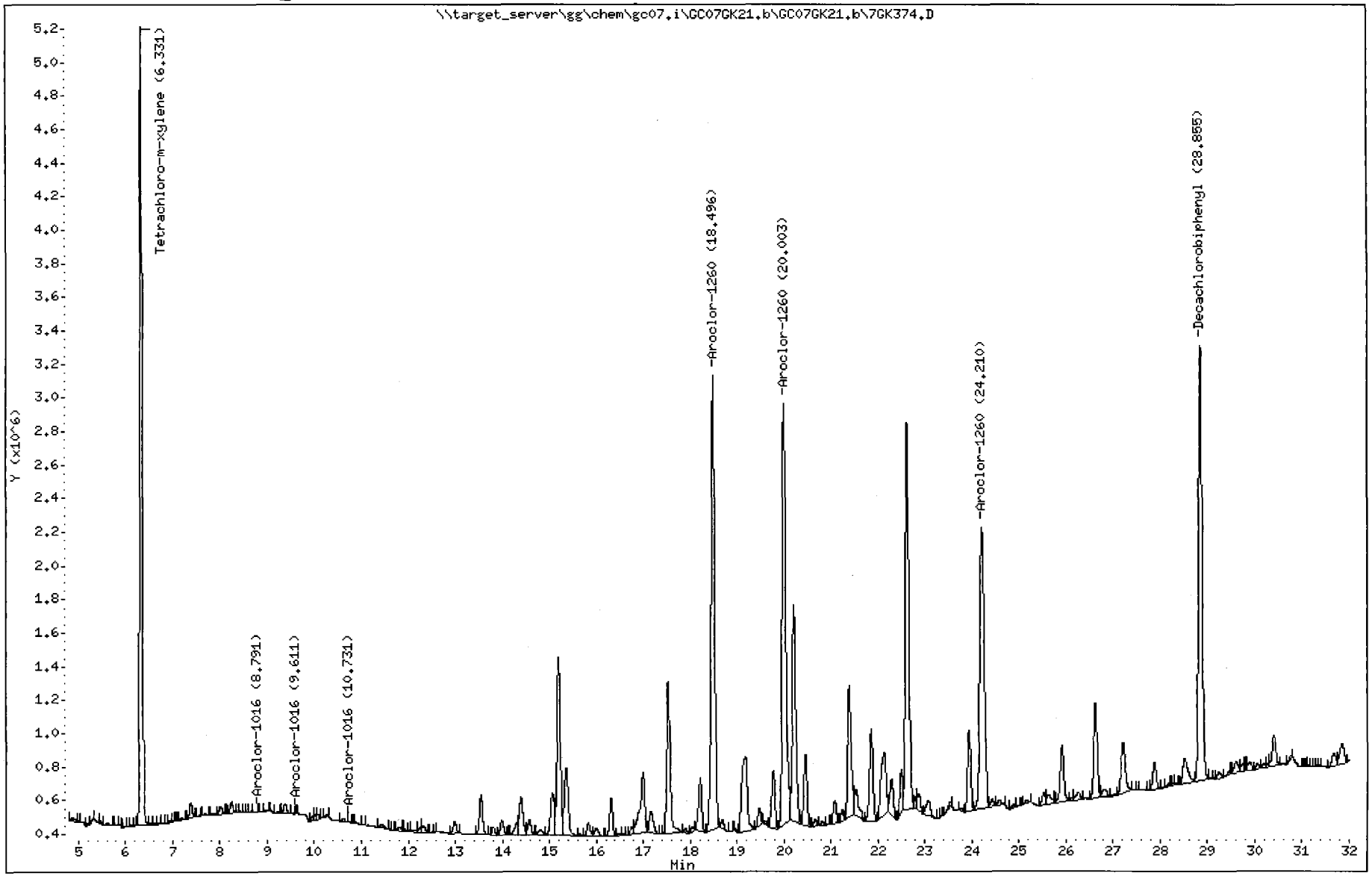
Katahdin Analytical Services 1000087

Data File: \\target_server\gg\chem\gc07.i\GC07GK21.b\GC07GK21.b\7GK374.D
Date : 21-NOV-2013 14:09
Client ID: F2-B219-SS1082-0001
Sample Info: SG8902-1

Instrument: gc07.i

Operator: CB
Column diameter: 0.53

Column phase: ZB-MultiResidue-2



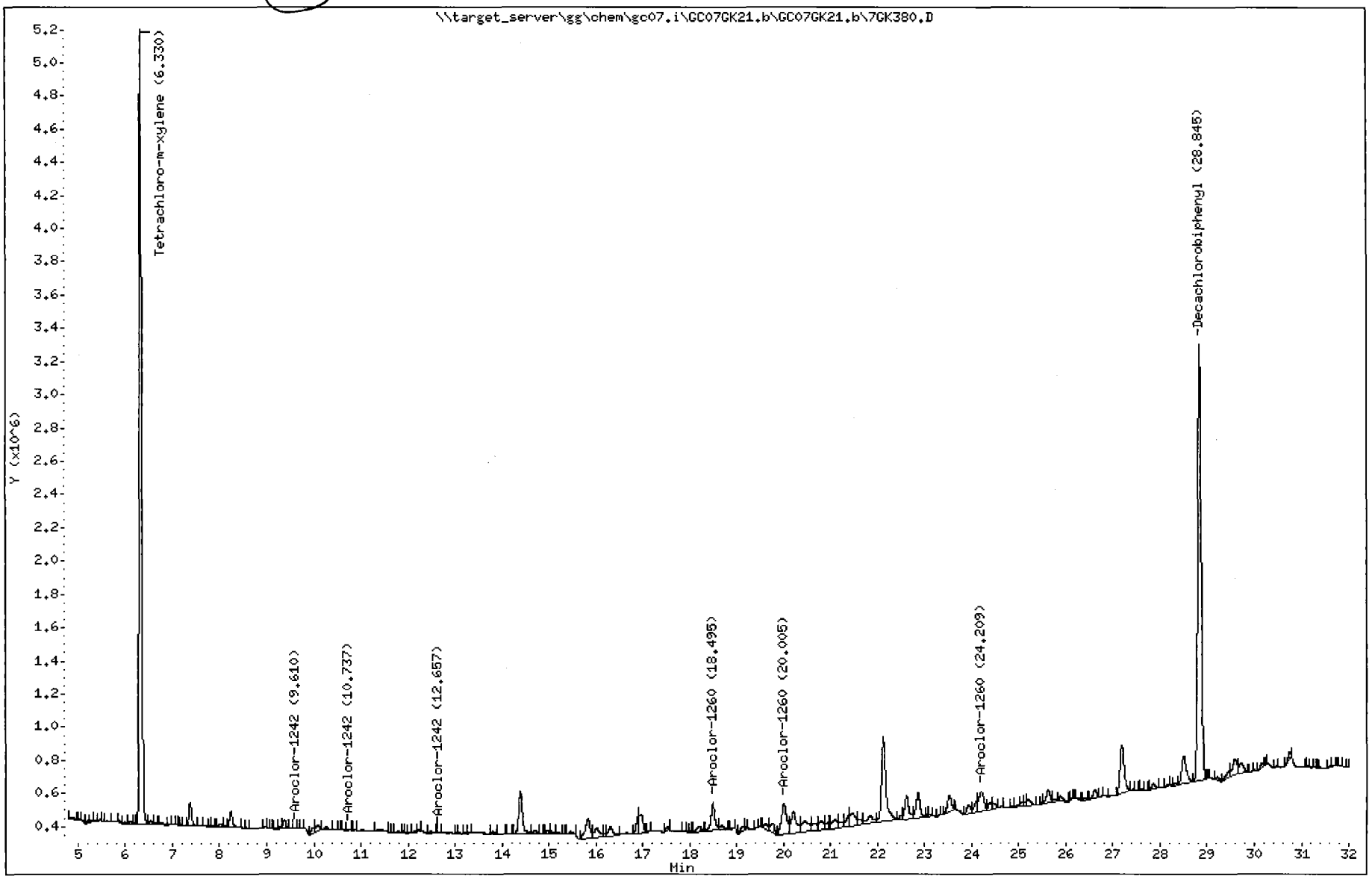
Katahdin Analytical Services 1000022

Data File: \\target_server\gg\chem\gc07.i\GC07GK21.b\GC07GK21.b\7GK380.D
Date : 21-NOV-2013 17:46
Client ID: F2-B219-SS1083-0001
Sample Info: SG8902-3

Instrument: gc07.i

Operator: CB
Column diameter: 0.53

Column phase: ZB-MultiResidue-2



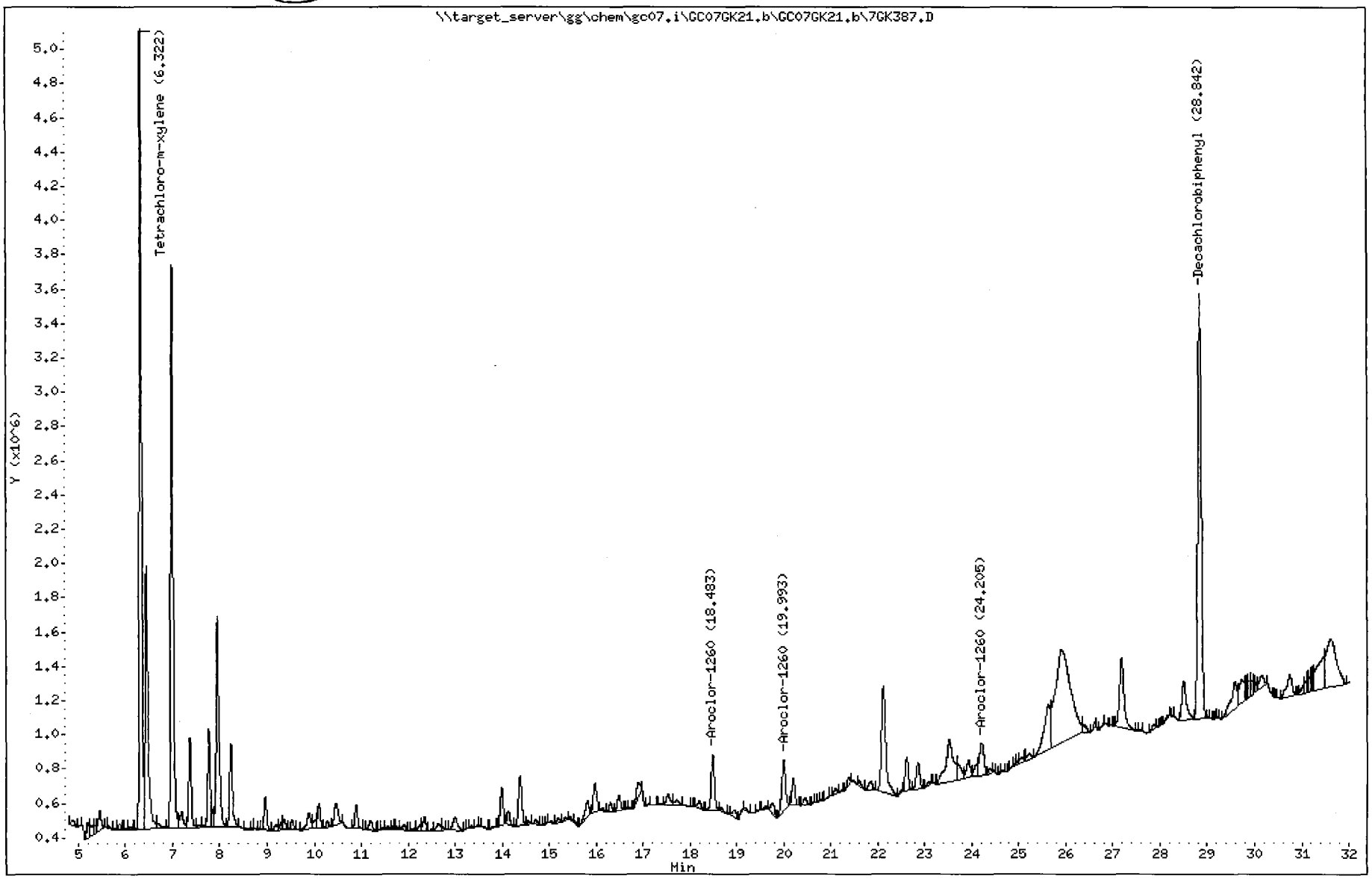
Katahdin Analytical Services 1000033

Data File: \\target_server\gg\chem\gc07.i\GC07GK21.b\GC07GK21.b\7GK387.D
Date : 21-NOV-2013 21:59
Client ID: F2-B219-SS1084-0001
Sample Info: SG8902-10

Instrument: gc07.i

Operator: CB
Column diameter: 0.53

Column phase: ZB-MultiResidue-2



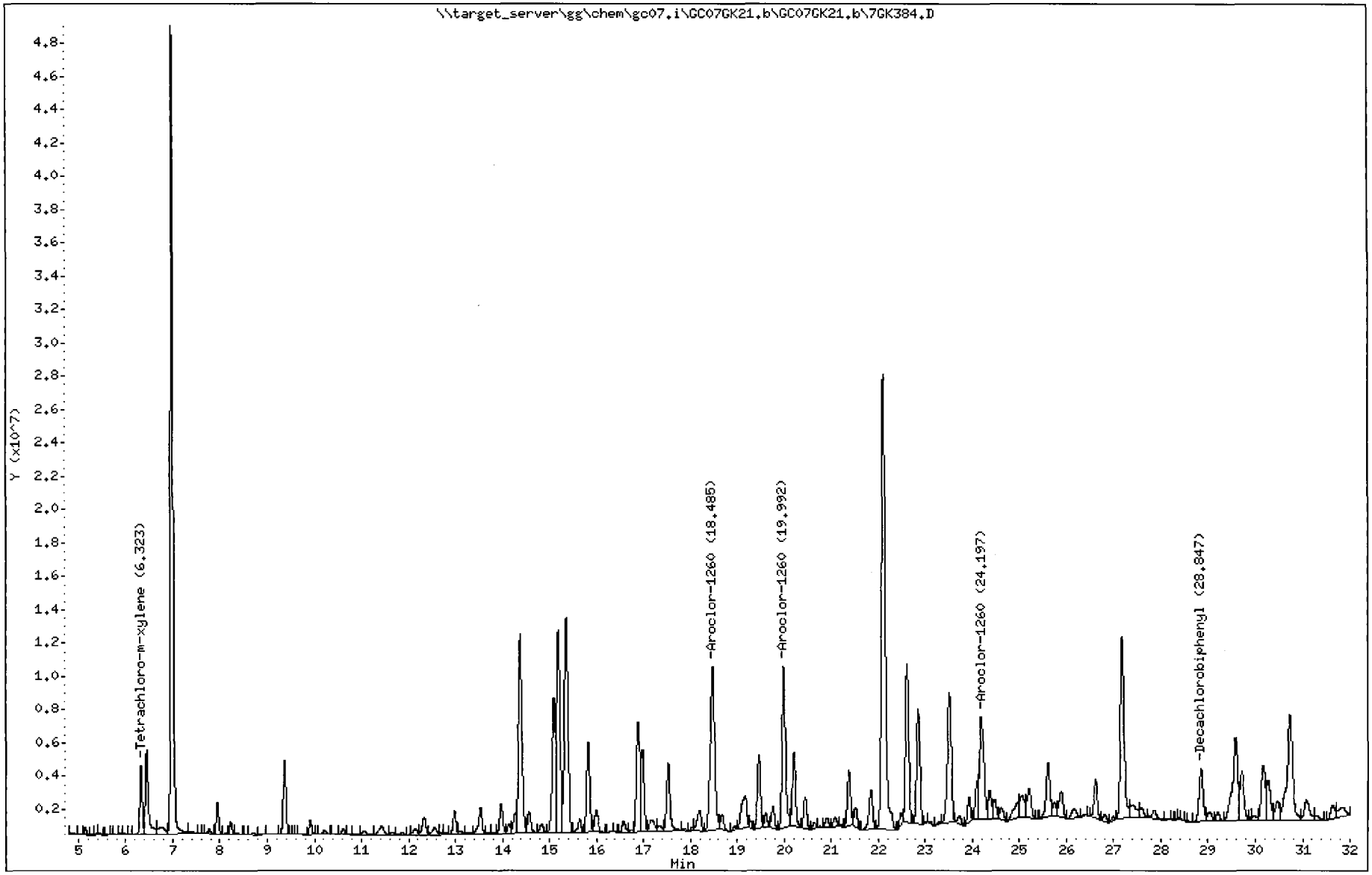
Katahdin Analytical Services 1000075

Data File: \\target_server\gg\chem\gc07.i\GC07GK21.b\GC07GK21.b\7GK384.D
Date : 21-NOV-2013 20:10
Client ID: F2-B219-SS1085-0001
Sample Info: SG8902-7

Instrument: gc07.i

Operator: CB
Column diameter: 0.53

Column phase: ZB-MultiResidue-2



Katahdin Analytical Services 1000057

NAVSTA NEWPORT
SOIL DATA
SG8902

FRACTION	CHEMICAL	TF2-SB-DUP01-1113	UNITS	TF2-B219-SB1089-0204	RPD	D
PCB	AROCLOR-1260	28	UG/KG	25	11.32	3.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8902

FRACTION	CHEMICAL	TF2-SB-DUP01-1113	UNITS	TF2-B219-SB1089-0204	RPD	D
MISC	TOTAL SOLIDS	92	%	92	0.00	0.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8902

FRACTION	CHEMICAL	TF2-SB-DUP02-1113	UNITS	TF2-B219-SB1082-0204	RPD	D
MISC	TOTAL SOLIDS	95	%	95	0.00	0.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

Tetra Tech, Inc. **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **DECEMBER 12, 2013**

FROM: **MICHELLE L. ALLEN** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – LEAD**
CTO WE30, NAVSTA NEWPORT
SDG SG8903

SAMPLES: 17/Soil/Metals

TF2-BSA-SB1091-0204	TF2-BSA-SB1092-0204
TF2-BSA-SB1093-0204	TF2-BSA-SB1094-0204
TF2-BSA-SB1095-0204	TF2-BSA-SB1096-0204
TF2-BSA-SB1097-0204	TF2-BSA-SS1090-0001
TF2-BSA-SS1091-0001	TF2-BSA-SS1091-0204
TF2-BSA-SS1092-0001	TF2-BSA-SS1093-0001
TF2-BSA-SS1094-0001	TF2-BSA-SS1095-0001
TF2-BSA-SS1096-0001	TF2-BSA-SS1097-0001
TF2-SS-DUP03-1113	

1/Aqueous/Metals

TF2-SB-RB02-1113

Overview

The sample set for NAVSTA Newport, CTO WE30, SDG SG8903 consisted of seventeen (17) soil environmental samples and one (1) rinsate blank. All eighteen (18) samples were analyzed for lead. One field duplicate pair was included in this sample delivery group (SDG): TF2-SS-DUP03-1113/TF2-BSA-SS1096-0001.

The samples were collected by Tetra Tech, Inc. on November 12, 2013 and analyzed by Katahdin Analytical Services. All analyses were conducted in accordance with SW846 Method 6020A analytical and reporting protocols. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Initial and Continuing Calibration Verification Results
• Laboratory Method/Preparation Blank Analyses
* • ICP Interference Results
* • Laboratory Duplicate Results
* • Laboratory Control Sample Results
• Matrix Spike Recoveries
* • Internal Standard Recoveries
* • Field Duplicate Precision
* • ICP Serial Dilution
* • Detection Limits
* • Analyte Quantitation

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report. An EPA Region 1 tier II validation was performed on the data in this SDG. The text of this report has been formulated to address only those areas affecting data quality.

MATRIX SPIKE RECOVERY

The Matrix Spike (MS) sample associated with preparation batch #GK25IMS2 had a %R for lead above the 120% quality control limit. The post digestion spike yielded an acceptable %R for lead. All soil samples were affected. Only detected results were reported for lead in the affected samples and these detected results were qualified as estimated, (J).

NOTES

Sample TF2-BSA-SS1091-0204 was not on the sample Chain of Custody (COC). This sample was logged in by the laboratory with the same sampling time and date (November 12, 2013 @ 13:31) as sample TF2-BSA-SB1091-0204. The data validator contacted the field operations leader and confirmed that this sample was more than likely a duplicate of sample jar of sample TF2-BSA-SB1091-0204 and the sample jar was misread or mislabeled. Therefore, the result for lead in sample TF2-BSA-SS1091-0204 was not used in the data validation and was removed from the data base.

Lead was detected in the laboratory preparation blank the following maximum concentration:

Analyte	Maximum Concentration	Action Level
Lead [1]	0.011 mg/Kg	0.055 mg/Kg

[1] Maximum concentration detected in the soil preparation blank associated with preparation batch #GK25IMS2 affecting all the soil samples.

An action level of 5X the maximum contaminant concentration was established to evaluate blank contamination. Percent moisture, dilution factor, and sample aliquot were taken into consideration during the application of the action level. No action was necessary because lead was detected above the established action level in all the soil samples.

Lead was detected in the laboratory preparation blank associated with rinsate blank. No action was taken because field quality control blanks are not qualified for laboratory blank contamination.

All samples and laboratory preparation blanks were analyzed at a 5X dilution.

EXECUTIVE SUMMARY

Laboratory Performance: Blank contamination was noted in the laboratory preparation blanks.

Other Factors Affecting Data Quality: One sample result was not used in the data validation because it was not on the COC. The MS sample had a noncompliant %R.

The data for these analyses were accomplished with reference to the criteria for the "USEPA National Functional Guidelines for Inorganic Data Validation" (January 2010), and the Department of Defense (DOD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

For Tetra Tech, Inc.
Michelle L. Allen
Environmental Chemist

Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Manager

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-BSA-SB1091-0204			TF2-BSA-SB1092-0204			TF2-BSA-SB1093-0204			TF2-BSA-SB1094-0204		
SDG: SG8903	LAB_ID	SG8903-003			SG8903-010			SG8903-012			SG8903-014		
FRACTION: M	SAMP_DATE	11/12/2013			11/12/2013			11/12/2013			11/12/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	93.5			92.8			94.0			88.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
LEAD		10	J	D	10.7	J	D	20.1	J	D	30.3	J	D

PROJ_NO: 03019	NSAMPLE	TF2-BSA-SB1095-0204			TF2-BSA-SB1096-0204			TF2-BSA-SB1097-0204			TF2-BSA-SS1090-0001		
SDG: SG8903	LAB_ID	SG8903-016			SG8903-005			SG8903-008			SG8903-001		
FRACTION: M	SAMP_DATE	11/12/2013			11/12/2013			11/12/2013			11/12/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	92.4			86.9			86.8			90.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
LEAD		15.4	J	D	31.1	J	D	55.9	J	D	23.5	J	D

PROJ_NO: 03019	NSAMPLE	TF2-BSA-SS1091-0001			TF2-BSA-SS1092-0001			TF2-BSA-SS1093-0001			TF2-BSA-SS1094-0001		
SDG: SG8903	LAB_ID	SG8903-002			SG8903-009			SG8903-011			SG8903-013		
FRACTION: M	SAMP_DATE	11/12/2013			11/12/2013			11/12/2013			11/12/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	92.8			90.3			91.4			96.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
LEAD		19.5	J	D	43.4	J	D	15.5	J	D	19.1	J	D

PROJ_NO: 03019	NSAMPLE	TF2-BSA-SS1095-0001			TF2-BSA-SS1096-0001			TF2-BSA-SS1097-0001			TF2-SS-DUP03-1113		
SDG: SG8903	LAB_ID	SG8903-015			SG8903-004			SG8903-007			SG8903-006		
FRACTION: M	SAMP_DATE	11/12/2013			11/12/2013			11/12/2013			11/12/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	89.3			88.5			90.0			88.3		
	DUP_OF										TF2-BSA-SS1096-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
LEAD		15.5	J	D	46.5	J	D	73.8	J	D	37.6	J	D

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SB1091-0204

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 93.5 **Lab Sample ID:** SG8903-003

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	10.0		N	MS	5	0.087	0.004	0.043

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SB1092-0204

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 92.8 **Lab Sample ID:** SG8903-010

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	10.7		N	MS	5	0.084	0.004	0.042

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SB1093-0204

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 94.0 **Lab Sample ID:** SG8903-012

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	20.1		N	MS	5	0.073	0.004	0.037

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SB1094-0204

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 88.4 **Lab Sample ID:** SG8903-014

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	30.3		N	MS	5	0.087	0.004	0.044

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SB1095-0204

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 92.4 **Lab Sample ID:** SG8903-016

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	15.4		N	MS	5	0.079	0.004	0.040

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SB1096-0204

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 86.9 **Lab Sample ID:** SG8903-005

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	31.1		N	MS	5	0.082	0.004	0.041

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SB1097-0204

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 86.8 **Lab Sample ID:** SG8903-008

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	55.9		N	MS	5	0.082	0.004	0.041

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SS1090-0001

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 90.3 **Lab Sample ID:** SG8903-001

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	23.5		N	MS	5	0.081	0.004	0.040

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SS1091-0001

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 92.8 **Lab Sample ID:** SG8903-002

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	19.5		N	MS	5	0.078	0.004	0.039

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SS1091-0204

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 93.2 **Lab Sample ID:** SG8903-018

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	10.8		N	MS	5	0.097	0.005	0.048

not used MA 12/12/13

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SS1092-0001

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 90.3 **Lab Sample ID:** SG8903-009

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	43.4		N	MS	5	0.066	0.003	0.033

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SS1093-0001

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 91.4 **Lab Sample ID:** SG8903-011

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	15.5		N	MS	5	0.076	0.004	0.038

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SS1094-0001

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 96.9 **Lab Sample ID:** SG8903-013

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	19.1		N	MS	5	0.079	0.004	0.039

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SS1095-0001

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 89.3 **Lab Sample ID:** SG8903-015

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	15.5		N	MS	5	0.082	0.004	0.041

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SS1096-0001

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 88.5 **Lab Sample ID:** SG8903-004

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	46.5		N	MS	5	0.088	0.004	0.044

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SS1097-0001

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 90.0 **Lab Sample ID:** SG8903-007

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	73.8		N	MS	5	0.084	0.004	0.042

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SS-DUP03-1113

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 88.3 **Lab Sample ID:** SG8903-006

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	37.6		N	MS	5	0.090	0.005	0.045

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SB-RB02-1113

Matrix: WATER **SDG Name:** SG8903

Percent Solids: 0.00 **Lab Sample ID:** SG8903-017

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7439-92-1	LEAD, TOTAL	0.26	J		MS	5	1.0	0.05	0.50

Comments:

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet
INORG
Case: #63019, CTO WE34 SDG: 3G8943

COMPLETE SDG FILE (CSF) AUDIT

Inorganic Parameters: _____

Missing Information	Date Lab Contacted	Date Received
N/A		

Validator: Michelle Allen Date: 12/12/13

EPA-NE - Data Validation Worksheet
INORG-1
Case: _____ SDG: _____

I. PRESERVATION AND HOLDING TIMES

Circle sample numbers with exceeded technical holding times or omitted preservation.
Circle all exceeded technical holding times.

See DV letter

Sample No.	Matrix	Pres. Code		Date Sampled	Metals		Hg		CN		Action
		Metals	CN		Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	

Preservation Code:
1. Cool (≤ 6°C)
2. pH < 2 with HNO_3
3. pH > 12 with NaOH
4. Room Temperature
5. Freeze
6. Reducing agent (for oxidants)
7. Treated for sulfides
8. Other - _____

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Sampler: _____ Company: _____ Contacted: Y N Date: _____

Validator: M. Allen Date: 12/12/13

EPA-NE - Data Validation Worksheet
INORG-II
Case: _____ SDG: _____

II. ICP-MS TUNE

List all Tunes that are outside method QC acceptance criteria. Use a separate sheet if more than one instrument was used for sample analysis.

Method:_____Instrument ID: _____

Method QC acceptance criteria for mass calibration:_____

Method QC acceptance criteria for resolution check/peak width:_____ at_____% peak height.

Method QC acceptance criteria for % RSD:_____

see DV letter

Analysis Date and Time	Analyte	Mass Calibration			Mass Resolution		% RSD of Absolute Signals	Analyte/Samples Affected	Action
		True Mass (amu)	Measured Mass (amu)	Absolute Difference of Masses (amu)	Peak Width (amu)	% Peak Height			

Comments:

Validator: M. Allen Date: 12/12/13

EPA-NE - Data Validation Worksheet
INORG-III-C/D
Case: _____ SDG: _____

III. CALIBRATIONS

See DV letter

C. Initial and Continuing Calibration Verifications - List all ICV and CCV analyte recoveries that are outside the method QC acceptance criteria.

ICV method QC acceptance criteria: _____ CCV method QC acceptance criteria: _____

Date/Time	Instrument ID	Analyte	ICV/CCV #	% R	Samples Affected	Action

D. Quantitation Limit Check Standard - List all QL Check Standard analytes that are outside method QC acceptance criteria (for non-CLP methods).

QL Check Standard method QC acceptance criteria: _____

Date	Instr.	Analyte	QL Check Std. #	% R	Affected Range	Samples Affected	Action

Comments: _____

EPA-NE - Data Validation Worksheet

INORG-III-A/B

Case: _____ SDG: _____

III. CALIBRATIONS

A. Initial Calibration - List all calibration correlation coefficients that are outside the method QC acceptance criteria and/or the y-intercept of the calibration curve that is >CRQL.

Calibration correlation QC acceptance criteria: _____ Calibration Type: See DV Letter

Date/Time	Instrument ID	Analyte	Correlation Coefficient.	y-Intercept	CRQL	Samples Affected	Action

B. Initial Calibration Standard Concentration Verifications – Review CLP Form 16-IN and list all calculated %Ds that are >30 of the true value of any non-zero standard.

Date/time	Instrument ID	Analyte	True Conc.	Found Conc.	%D	Samples Affected	Action

Comments: _____

Validator: M. Allen Date: 12/12/13

EPA-NE - Data Validation Worksheet
INORG-IV-C.2
Case: _____ SDG: _____

IV. BLANKS

C.2 Blank Actions - List the maximum concentrations of each analyte among all blanks associated with each sample. see DV letter

Analyte	Type of Blank	Date Blank Originated	Max. Conc. (units)	MDL or (-MDL) (units)	CRQL or (-CRQL) (units)	10xCRQL	Samples Affected	Action

Comments:

Refer to EPA New England Data Review Program Supplemental guidance for blank contamination actions (Section 2.6).

Validator: M. Allen Date: 12/12/13

EPA-NE - Data Validation Worksheet

INORG-IV-A/B

Case: _____ SDG: _____

IV. BLANKS - List the blank contamination and negative blank results below. See DV letter

Sampler: _____ Company: _____ Contacted: Y N Date: _____

A. Laboratory: Preparation (Method) and Calibration (Instrument) Blanks

Date Prepared	Date Analyzed	Blank Type (ICB/CCB#/Prep Blank)	Matrix	Instrument	Analyte	Concentration	Units

B. Field: Equipment (Rinsate) and Bottle Blanks

Date Sampled	Date Analyzed	Sample No. (Blank Type)	Matrix	Instrument	Analyte	Concentration	Units

Were the proper number of blanks analyzed at the proper frequency? Y N

For ICP MS - Are internal standard responses in all blanks within method QC acceptance criteria? Y N

Comments: _____

Validator: M. Allen Date: 12/12/13

EPA-NE - Data Validation Worksheet
INORG-IV-C.1
Case: _____ SDG: _____
IV. BLANKS **C.1 Blank Contamination Worksheet**

Circle or list the highest concentration of each contaminant. See DV Letter

Analyte	Date Analyzed	ICB	CCB							PBW	PBS	EB	BB	Max. Conc.	CRQL
			1	2	3	4	5	6	7						
Aluminum															
Antimony															
Arsenic															
Barium															
Beryllium															
Cadmium															
Calcium															
Chromium															
Cobalt															
Copper															
Iron															
Lead															
Magnesium															
Manganese															
Mercury															
Nickel															
Potassium															
Selenium															
Silver															
Sodium															
Thallium															
Vanadium															
Zinc															
Cyanide															

Validator: M. Allen Date: 12/12/13

EPA NE - Data Validation Worksheet
INORG-V-A
Case: _____ SDG: _____

V. A. ICP-AES INTERFERENCE CHECK SAMPLE - ICSAB

Re DV Letter

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

N/A

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen

Date: 12/12/13

EPA NE - Data Validation Worksheet
INORG-V-B
Case: _____ SDG: _____

V. B. ICP-AES INTERFERENCE CHECK SAMPLE - ICSA

See DV Letter

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

N/A

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen

Date: 12/12/13

EPA NE - Data Validation Worksheet
INORG-VI-A
Case: _____ SDG: _____

VI. A. ICP-MS INTERFERENCE CHECK SAMPLE - ICSAB

See DV Letter

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M Allen

Date: 12/12/13

EPA NE - Data Validation Worksheet
INORG-VI-B
Case: _____ SDG: _____

VI. B. ICP-MS INTERFERENCE CHECK SAMPLE - ICSA

All ON with

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen

Date: 12/12/13

EPA-NE - Data Validation Worksheet
INORG-VII
Case: _____ SDG: _____

VII. ICP-MS INTERNAL STANDARDS

List all internal standards that are outside method QC acceptance criteria.

Method: _____ Method QC acceptance criteria: per DV Letter

Sample Number	Date and Time Analyzed	IS, amu	% RI	Analytes Affected (amu)	Action
Comments:					

Validator: M. Allen Date: 12/12/13

EPA-NE - Data Validation Worksheet
INORG-VIII
Case: _____ SDG: _____

VIII. MATRIX SPIKES - List all matrix spike analytes that are outside method QC acceptance criteria.

Use a separate worksheet for each matrix spike sample.

Sample No.: _____ Matrix: _____ see DV letter

Method	Analyte	Spiked Sample Result	Sample Result	Amount of Spike Added	MS % Recovery	Method QC Limits % Recovery	Post-Digest Spike % Recovery	Action
Comments:								

Refer to EPA New England Data Review Program Supplemental guidance for additional matrix spike actions (Section 2.12).

Validator: M. Allen Date: 12/12/13

EPA-NE - Data Validation Worksheet
INORG-IX
Case: _____ SDG: _____

IX. LABORATORY DUPLICATE SAMPLES - List all analytes that are outside method QC acceptance criteria for the specific matrix.

Use a separate worksheet for each laboratory duplicate sample.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Laboratory duplicate sample method QC acceptance criteria:_____ per DV letter

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the field duplicate sample data indicate acceptable field precision? Y N

Comments:_____

Validator: M. Allen Date: 12/12/13

EPA-NE - Data Validation Worksheet
INORG-X
Case: _____ SDG: _____

X. FIELD DUPLICATES - List all field duplicate analytes that are outside criteria.

Use a separate worksheet for each field duplicate pair. see DV Letter

Sample No.: _____ Duplicate Sample No.: _____ Matrix: _____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the laboratory duplicate sample data indicate acceptable laboratory precision? Y N
Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.9).

Comments: _____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for contact and resolution obtained: _____

Validator: M. Allen Date: 12/12/13

EPA-NE - Data Validation Worksheet
INORG-XI
Case: _____ SDG: _____

XI. ICP SERIAL DILUTIONS

Use a separate worksheet for each serial dilution sample.

Sample No.:_____ Matrix:_____ Method:_____

List all serial dilution analytes that are outside method QC acceptance criteria.

% Difference method QC acceptance criteria: _____
Minimum concentration required to apply the % D criteria (e.g., 50x MDL): _____ see DV letter

Analyte	MDL	Min. Conc. Required	Sample Result	Serial Dilution Sample Result (corrected for dilution)	% D	Action
Comments:						

Validator: M. Allen Date: 12/12/13

EPA-NE - Data Validation Worksheet

INORG-XII

Case: _____ SDG: _____

XII. LABORATORY CONTROL SAMPLES

List all analytes that are outside criteria.

SDG No.:_____ Case:_____

Are more than one-half of the LCS analytes within criteria for each parameter and method? **Y** **N** See DV letter

Date Prepared	Date Analyzed	Parameter/ Method	Matrix	Analyte	% Recovery (or Observed Conc.)	Method QC Acceptance Criteria	Samples Affected	Action

Comments:

Validator: M. Allen Date: 12/12/13

EPA-NE - Data Validation Worksheet

INORG-XIII

Case: _____ SDG: _____

XIII. PERFORMANCE EVALUATION SAMPLES

List all analytes that are outside criteria.

Indicate the source of the PES: Region 1 EPA PES Non-EPA PES

Are more than one-half of the PES analytes within criteria for each parameter and method? **Y** **N** see DV Letter

PE Sample Number	Ampule Number	Parameter/ Method	Type of PES	Matrix	Analyte	Conc.	PES Score*	Samples Affected	Action

* For Region 1 PESs indicate the Region 1 PES Score Report Result: Action High, Action Low, Analyte Missed, Contaminant.
For Non-EPA PESs indicate the Non-EPA PES Score: PES Analyte Missed; PES Analyte Contaminant; PES Analyte Hit (% Recovery Limits).
Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Comments: _____

Validator: M. Allen Date: 12/12/13

EPA-NE - Data Validation Worksheet

INORG-XIV

Case: _____ SDG: _____

XIV. ANALYTE QUANTITATION, REPORTED QUANTITATION LIMITS AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per analytical method

Do all soil/sediment samples have % solids greater than 30%? **Y** **N**

- If no, were any steps employed to address the high moisture content? _____
- Indicate the action and list the affected sample nos.: _____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Method		Calculation
ICP-AES		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
ICP-MS		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
Mercury		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		
Cyanide		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		

See DV Letter

Validator: M. Allen Date: 12/12/13

APPENDIX D

SUPPORT DOCUMENTATION

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGK26A.B\041SMPL.D\041SMPL.D#
Date Acquired: Nov 26 2013 06:42 pm
Acq. Method: K2008ESW.M
Operator: HHM
Sample Name: SG8903-007
Misc Info: DILUTION 1.6/8
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Nov 26 2013 05:21 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

TF2-BSA-551097-0001
% solid - 90%
1.32g / 1L

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.97	1.194	ppb	1.74	100.	
11 B	10.735	2.147	ppb	4.11	1000.	
23 Na	343.05	68.61	ppb	1.75	200000.	
25 Mg	46,690.	9,338.	ppb	2.79	200000.	
27 Al	144,000.	28,800.	ppb	1.46	200000.	
28 Si	6,235.	1,247.	ppb	4.99	#VALUE!	
29 Si	6,550.	1,310.	ppb	4.12	10000.	
39 K	6,320.	1,264.	ppb	0.72	200000.	
43 Ca	15,620.	3,124.	ppb	1.11	200000.	
44 Ca	14,885.	2,977.	ppb	1.27	200000.	
51 V	223.9	44.78	ppb	1.47	1000.	
52 Cr	201.	40.2	ppb	1.38	1000.	
53 Cr	235.15	47.03	ppb	2.55	1000.	
55 Mn	4,093.	818.6	ppb	0.85	1000.	
56 Fe	368,500.	73,700.	ppb	0.72	200000.	
57 Fe	355,200.	71,040.	ppb	1.33	100000.	
59 Co	140.35	28.07	ppb	0.87	1000.	
60 Ni	257.9	51.58	ppb	0.99	500.	
63 Cu	247.3	49.46	ppb	1.40	1000.	
65 Cu	247.25	49.45	ppb	1.29	500.	
66 Zn	1,147.5	229.5	ppb	1.42	500.	
68 Zn	1,117.	223.4	ppb	0.42	1000.	
75 As	81.4	16.28	ppb	1.90	1000.	
82 Se	4.999	0.9998	ppb	22.48	500.	
88 Sr	134.4	26.88	ppb	1.39	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	20.6	4.12	ppb	2.62	1000.	
107 Ag	0.3119	0.0624	ppb	6.38	250.	
109 Ag	0.3701	0.074	ppb	19.00	100.	
111 Cd	3.0135	0.6027	ppb	15.14	500.	
114 Cd	3.0315	0.6063	ppb	5.83	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	37.715	7.543	ppb	2.73	500.	
120 Sn	37.725	7.545	ppb	2.35	1000.	
121 Sb	11.435	2.287	ppb	0.68	1000.	
123 Sb	11.195	2.239	ppb	2.27	1000.	
135 Ba	306.3	61.26	ppb	2.27	1000.	
137 Ba	300.3	60.06	ppb	2.73	#VALUE!	
182 W	0.993	0.1986	ppb ---		#VALUE!	
203 Tl	0.6525	0.1305	ppb	8.82	1000.	
205 Tl	0.6435	0.1287	ppb	4.32	#VALUE!	
208 Pb	877.	175.4	ppb	0.91	1000.	
232 Th	72.25	14.45	ppb	1.35	1000.	
238 U	23.825	4.765	ppb	0.34	1000.	

$\frac{877\,\mu g}{1L} \times \frac{0.1L}{1.32g} \times \frac{1}{.90}$

$\times \frac{1000g}{1kg} \times \frac{1mg}{1000\mu g}$

$= 73.8\ mg/kg$

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3832491.50	0.57	4025412.00	95.2	69.5 - 130	
45 Sc	2179357.80	1.42	2368434.30	92.0	69.5 - 130	
72 Ge	474487.25	1.30	496797.75	95.5	69.5 - 130	
159 Tb	4726576.00	2.64	4929491.00	95.9	69.5 - 130	
209 Bi	3027513.00	0.58	3238901.30	93.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGK26A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000092

NAVSTA NEWPORT
SOIL DATA
SG8903

FRACTION	CHEMICAL	TF2-BSA-SS1096-0001	UNITS	TF2-SS-DUP03-1113	RPD	D
M	LEAD	46.5	MG/KG	37.6	21.17	8.90

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER No 027647 | PAGE 2 OF 4

PROJECT NO: 112G03019 CTOWE30	FACILITY: NAVSTA Newport	PROJECT MANAGER Debra Sexton	PHONE NUMBER (978) 474-8400
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER Kayleen Jalkut	PHONE NUMBER (781) 201-0457
		CARRIER/WAYBILL NUMBER Courier pick up AT hand delivery	

LABORATORY NAME AND CONTACT: Katahdin, Jen Obrin
ADDRESS: 600 Technology Way
CITY, STATE: Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									PRESERVATIVE USED								TYPE OF ANALYSIS: PCBs	Total Solids	Lead	Total Solids	Lead	Total Solids	Lead	COMMENTS
		SS-8902 / SS-8903							G	G	G							4°C	4°C	4°C										
11/12	1015	TF2-B219-SS1088-0001	B219	0	1	SO	G	1	X	X																				
	1025	TF2-B219-SB1088-0204		2	4			1	X	X																				
	1035	TF2-B219-SS1080-0001		0	1			1	X	X																				
	1045	TF2-B219-SB1080-0204		2	4			1	X	X																				
	1118	TF2-B219-SS1089-0001		0	1			1	X	X																				
	1121	TF2-B219-SB1089-0204		2	4			1	X	X																				
	0000	TF2-SB-DUP01-1113		—	—			1	X	X																				
	1050	TF2-B219-SB1087-0001		0	1			1	X	X																				
	1055	TF2-B219-SB1087-0204		2	4			1	X	X																				
	1400	TF2-SB-RB01-1113	NA	—	—	QC		32	X		X																			
	1530	TF2-BSA-SS1090-0001	BSA	0	1	SO		1		X	X																			
	1320	TF2-BSA-SS1091-0001		0	1			1		X	X																			
	1331	TF2-BSA-SB1091-0204		2	4			2		X	X																			

Lab QC

1. RELINQUISHED BY	DATE 11-13-13	TIME 1340	1. RECEIVED BY
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY

1. RECEIVED BY	DATE 11-13-13	TIME 1340	
2. RECEIVED BY	DATE	TIME	
3. RECEIVED BY	DATE	TIME	

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER No. 027645 | PAGE 3 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019 CTO WE30	NAVSTA Newport	Debra Seiken	(978) 474-8445	Katahdin Analytical Services / J. Obrin
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
		Kayleen Jalkut	(781) 801-0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		CITY, STATE
		Courier plus @ RI - hand delivery		Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

SG 8903

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: 4°C	TYPE OF ANALYSIS: Lead	Total Solids	402.jar	COMMENTS
11/12	1505	TF2-BSA-SS1096-0001	BSA	0	1	SO	G	1			X	X		
	1510	TF2-BSA-SB1096-0204		2	4			1			X	X		
	0000	TF2-SB-DUP03-1113		/	/			1			X	X		
	1515	TF2-BSA-SS1097-0001		0	1			1			X	X		
	1520	TF2-BSA-SB1097-0204		2	4			1			X	X		
	1400	TF2-BSA-SB1092-0001		0	1			1			X	X		
	1410	TF2-BSA-SB1092-0204		2	4			1			X	X		
	1340	TF2-BSA-SS1093-0001		0	1			1			X	X		
	1350	TF2-BSA-SB1093-0204		2	4			1			X	X		
	1420	TF2-BSA-SS1094-0001		0	1			1			X	X		
	1430	TF2-BSA-SB1094-0204		2	4			1			X	X		
	1450	TF2-BSA-SS1095-0001		0	1			1			X	X		
	1500	TF2-BSA-SB1095-0204		2	4			1			X	X		

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-13-13	1340	1. RECEIVED BY	11-13-13	1340
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

00000

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1901 | PAGE 4 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019 CTO WE30	NAVSTA Newport	Dale Seiken	(978) 474-8445	Katahdin Analytical Services / J. Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
KJackut, Peter Seward		Kaylee Jalkut	(781) 801-0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier plus@RI, hand delivery		Scarborough ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE / YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	TYPE OF ANALYSIS: Lead 4oz poly bottle	PAH, metals, % total solids 4oz jar	GRO 2x40 ml vials	EXTPH 1x4oz jar	COMMENTS
									PRESERVATIVE USED					
											≤6°C HNO3	≤6°C	10ml MeOH ≤6°C	
11/12/2013	1530	SG8903/SG8908 TF2-SB-RB02-1113	—	—	—	QC	G	1	P	X				
11/13	1048	TF2-004/5-SB1021-0204	SB1021	2	4	SO	G	4	G	—	X	X	X	
11/13	1055	TF2-004/5-SB1021-0608	SB1021	6	8	SO	G	1	G	—	X	—	—	
11/13	1015	TF2-004/5-SB1026-0227	SB1026	2	2.7	SO	G	1	G	—	X	—	—	
11/13	0800	TF2-004/5-SB1032-0204	SB1032	2	4	SO	G	1	G	—	X	—	—	
11/13	0825	TF2-004/5-SB1048-0204	SB1048	2	4	SO	G	1	G	—	X	—	—	
11/13	1045	TF2-004/5-SB1025-2.6-4	SB1025	2.6	4	SO	G	1	G	—	X	—	—	
11/13	0000	TF2-SB-DUP04-1113	—	—	—	SO	G	1	G	—	X	—	—	
11/13	1000	TF2-W-TB01-1113	—	—	—	QC	G	2	G	—	—	X	—	

KJ 11/13/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-13-13	1340	1. RECEIVED BY	11-13-13	1340
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

R1000

Jennifer Obrin

From: Jalkut, Kayleen [Kayleen.Jalkut@tetratech.com]
Sent: Sunday, November 17, 2013 2:15 PM
To: Jennifer Obrin
Cc: Seiken, Dabra
Subject: RE: COCs for the samples received 11/13-Newport-SG8902, SG8903, SG8908

Jennifer,
I will review the issues with the field crew and we will work together to resolve them. Here are my responses to the issues you raised:

1) Yes, the depth was from 2- 2.7 as written on the COC. Sharpie IDs on top of the lids are just for our use...they provide a quick count for us. Please only log the samples in using the sample label around the jar. Did the actual paper label on the jar say 022.7 or 0204?
2) Look at TT COC # 027647...last 2 lines: sample time for TF2-BSA-SS1091-0001 is 1320 hrs; sample time for TF2-BSA-SB1091-0204 is 1331 hrs. There was no sample from 2-4 ft bgs from BSA-SB1090 (no viable soil to sample).
3) A sample was not collected from 0-1 ft for PCBs at location 1088 from B219 ...only the 2-4 ft interval was sampled.
4) A sample was not collected from 0-1 ft for PCBs at location 1089 from B219 ...only the 2-4 ft interval was sampled.
5) Yes, the SB designation should be used for all samples below 1-foot. Thank you for logging it in as SB1081-0204. I will make the correction on my chain.
6) Yes, the SS designation should be used for all samples from 0-1 foot. Thank you for logging it in as SS1081-0204. I will make the correction on my chain.

Thank you for your help and your patience,
Kayleen

Kayleen Jalkut, P.G. | Geologist, Site Manager
Direct: 978.474.8417 | Main: 978.474.8400 | Fax: 978.474.8499
kayleen.jalkut@tetratech.com

Tetra Tech, Inc. I Complex World, Clear Solutions™
250 Andover Street, Suite 200 | Wilmington, MA 01887 | www.tetratech.com

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From: Jennifer Obrin [mailto:jobrin@katahdinlab.com]
Sent: Friday, November 15, 2013 7:43 AM
To: Jalkut, Kayleen; Seiken, Dabra; Good, Vanessa
Subject: COCs for the samples received 11/13-Newport-SG8902, SG8903, SG8908

Good Morning,

COCs

Please find attached the COCs for the samples received 11/13 for the project Newport under the work orders SG8902, SG8903 and SG8908. There were a few issues with the chains.

1) TF2-004/5-SB-1026-022.7 was written on the chain, TF2-004/5-SB-1026-0204 was on the jar. I logged it in according to the chain.
2) TF2-BSA-SS1091-0204 was not on the chain but there was a jar. ?same sample time as TF2-BSA-SS1091-0204
3) TF2-B219-SS1089-0001 was missing from the cooler
4) TF2-B219-SS1088-0001 was missing from the cooler
5) TF2-B219-SS1081-0204 on chain, logged in as TF2-B219-SB1081-0204 to be consistent with naming convention
6) TF2-B219-SB1087-0001 on chain, logged in as TF2-B219-SS1081-0001 to be consistent with naming convention

Please let me know if any of my corrections are incorrect and please let me know if you have any questions.
Have a great day!

Jennifer Obrin
Federal Programs Project Manager
Katahdin Analytical Services
A Woman-Owned Small Business Enterprise
DoD ELAP Accredited
600 Technology Way
Scarborough, Maine 04074
Direct - 207.874.2400 x17
Cell - 207.333.7469
Fax - 207.775.4029

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No virus found in this message.
Checked by AVG - www.avg.com
Version: 2014.0.4158 / Virus Database: 3629/6839 - Release Date: 11/15/13

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: G	Delivered By: Andrew Harlan
KAS Work Order#: SG8907/8908/8908	KIMS Review By:	Received By: G
SDG #:	Cooler: 1 of 1	Date/Time Rec.: 11/13/13 1800

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?				X	
2. Chain of Custody present in cooler?	X				
3. Chain of Custody signed by client?	X				
4. Chain of Custody matches samples?	X				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	X				Temp (°C): 1.3
Samples received at <6 °C w/o freezing?	X				Note: Not required for metals analysis.
Ice packs or ice present?	X				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	/				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				/	Note: No cooling process required for metals analysis.
6. Volatiles:				/	
Aqueous: No bubble larger than a pea?					
Soil/Sediment:					
Received in airtight container?	/				
Received in methanol?	/				
Methanol covering soil?	/				
D.I. Water - Received within 48 hour HT?	x			/	
7. Trip Blank present in cooler?	/				
8. Proper sample containers and volume?	/				
9. Samples within hold time upon receipt?	/				
10. Aqueous samples properly preserved?	/				
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2					
Sulfide - >9				/	
Cyanide – pH >12				/	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

TF2-004/5-SB-1026-0227 on chain - logged in according
TF2-004/5-SB-1026-0204 on jar to chain.
~~SS~~ TF2-BSA-SB1091-0204 not on chain.
B219-SS1089-0001 + B219 SS1088-0001 missing from cooler

QA-048 – Revision 3 – 10/01/2013

TF2-B219-SS1081-0204 on chain - logged in as TF2-B219-SB1081-0204
TF2-B219-SB1087-0001 on chain - logged in as TF2-B219-SS1087-000

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Nov. 15, 2013
07:13 AM

Login Number: SG8903

Account: TETRAT001 Web
Tetra Tech NUS, Inc.

Project: TETRATWE30
NAVSTA Newport CTO WE30 &WE59

Primary Report Address:
Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
661 Anderson Drive
Pittsburgh,PA 15220
vanessa.good@tetratech.com

Primary Invoice Address:
Accounts Payable
Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh,PA 15220

Report CC Addresses:
Invoice CC Addresses:

Quote/Incoming: TETRATWE30

Login Information:

ANALYSIS INSTRUCTIONS	:	DoD QSM with DoD limits. ND to LOD. "J" flag between DL and LOQ. Metals run MS/lab dup, if ms outside limits run post dig spike. Metals run serial dilution on field QC sample. Decant any standing water, homogenize and determine %solids before analysis. Aliquots must be increased to comp. for moisture. Centrifuging may also be used. Report=dry weight basis. 8260C/8015D/8270D/7471B/7470A.
CHECK NO.	:	
CLIENT PO#	:	1045366 40-CTO WE30 (01) 112G03019
CLIENT PROJECT MANAGE	:	Dabra Seiken
CONTRACT	:	
COOLER TEMPERATURE	:	1.3
DELIVERY SERVICES	:	KAS
EDD FORMAT	:	KAS119QC-CSV
LOGIN INITIALS	:	JO
PM	:	JO
PROJECT NAME	:	NAVSTA Newport CTO WE30 &WE59
QC LEVEL	:	IV
REGULATORY LIST	:	
REPORT INSTRUCTIONS	:	Summary package needed. All forms. Send HC & 2 CDs to Vanessa.

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8903-1	TF2-BSA-SS1090-0001	12-NOV-13 10:15	SDG ID 13-NOV-13			04-DEC-13	
			SDG STATUS				

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-2	TF2-BSA-SS1091-0001	12-NOV-13 13:20	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-3	TF2-BSA-SB1091-0204	12-NOV-13 13:31	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			MS/MSD
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-4	TF2-BSA-SS1096-0001	12-NOV-13 15:05	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-5	TF2-BSA-SB1096-0204	12-NOV-13 15:10	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-6	TF2-SS-DUP03-1113	12-NOV-13 00:00	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-7	TF2-BSA-SS1097-0001	12-NOV-13 15:15	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

11.15.13

Login Number: SG8903

Quote/Incoming: TETRATWE30

Account: TETRAT001 Web
Tetra Tech NUS, Inc.

Project: TETRATWE30
NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8903-8	TF2-BSA-SB1097-0204	12-NOV-13 15:20	13-NOV-13			04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-9	TF2-BSA-SS1092-0001	12-NOV-13 14:00	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-10	TF2-BSA-SB1092-0204	12-NOV-13 14:10	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-11	TF2-BSA-SS1093-0001	12-NOV-13 13:40	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-12	TF2-BSA-SB1093-0204	12-NOV-13 13:50	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-13	TF2-BSA-SS1094-0001	12-NOV-13 14:20	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-14	TF2-BSA-SB1094-0204	12-NOV-13 14:30	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-15	TF2-BSA-SS1095-0001	12-NOV-13 14:50	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-16	TF2-BSA-SB1095-0204	12-NOV-13 15:00	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

SG8903-17	TF2-SB-RB02-1113	12-NOV-13 15:30	13-NOV-13		04-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW3010MS-PREP	11-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD	11-MAY-14	250mL Plastic+HNO3		

11-15-13

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Nov. 15, 2013
07:13 AM

Login Number: SG8903

Quote/Incoming: TETRATWE30

Account: TETRAT001 Web
Tetra Tech NUS, Inc.

Project: TETRATWE30
NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG8903-18	TF2-BSA-SS1091-0204	12-NOV-13 13:31	13-NOV-13			04-DEC-13	

Matrix		*Product*	*Hold Date (shortest)*	*Bottle Type*	*Bottle Count*	*Comments*
Solid	S	SW3050MS-PREP	11-MAY-14			
Solid	S	SW6020-LEAD	11-MAY-14	4oz Glass		
Solid	S	TS	12-DEC-13	4oz Glass		

Total Samples: ***18*** ***Total Analyses:*** ***53***

11.15.13

00005

Katahdin
ANALYTICAL SERVICES

Cert. No. E87604

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT CTO WE30 & WE59
SG8903

Sample Receipt

The following samples were received on November 13, 2013 and were logged in under Katahdin Analytical Services work order number SG8903 for a hardcopy due date of December 04, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG8903-1	TF2-BSA-SS1090-0001
SG8903-2	TF2-BSA-SS1091-0001
SG8903-3	TF2-BSA-SB1091-0204
SG8903-4	TF2-BSA-SS1096-0001
SG8903-5	TF2-BSA-SB1096-0204
SG8903-6	TF2-SS-DUP03-1113
SG8903-7	TF2-BSA-SS1097-0001
SG8903-8	TF2-BSA-SB1097-0204
SG8903-9	TF2-BSA-SS1092-0001
SG8903-10	TF2-BSA-SB1092-0204
SG8903-11	TF2-BSA-SS1093-0001
SG8903-12	TF2-BSA-SB1093-0204
SG8903-13	TF2-BSA-SS1094-0001
SG8903-14	TF2-BSA-SB1094-0204
SG8903-15	TF2-BSA-SS1095-0001
SG8903-16	TF2-BSA-SB1095-0204
SG8903-17	TF2-SB-RB02-1113
SG8903-18	TF2-BSA-SS1091-0204

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Metals Analysis

The samples of Katahdin Work Order SG8903 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods."

The serial dilution analysis of Katahdin Sample Number SG8903 -3 is within the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for lead.

The measured recovery of lead in the post-digestion spiked aliquot of Katahdin Sample Number SG8903 -3 is within the laboratory's acceptance limit of 75% - 125%.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the laboratory's limits of quantitation (LOQ) are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQ's, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG8903 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Soil-matrix Katahdin Sample Nos. SG8903 -(1-16 and 18) were digested for ICP-MS analysis on 11/25/13 (QC Batch GK25IMS2) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8903 -3 was prepared in duplicate and with a matrix spike in this digestion batch. Duplicate laboratory control samples were digested in this batch.

Aqueous-matrix Katahdin Sample No. SG8903 -17 was digested for ICP-MS analysis on 11/26/13 (QC Batch GK26IMW2) in accordance with USEPA Method 3010A.

ICP-MS analyses of Work Order SG8903 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	**Associated Analytes**
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG8903 -3 is within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for lead.

The measured recovery of lead in the matrix-spiked aliquot of Katahdin Sample No. SG8903 -3 is outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
12.03.13

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	Spiked sample recovery not within control limits.
*	Duplicate sample analysis not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS
(Refer to BOD Qualifiers Page for BOD footnotes)

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1	pH
H2	DO
H3	sulfite
H4	residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 6/11/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
ALUMINUM	60	0.34	MS
CALCIUM	20	4.10	MS
IRON	20	4.70	MS
LEAD	0.20	0.009	MS
MAGNESIUM	20	0.69	MS
MOLYBDENUM	1.0	0.12	MS
POTASSIUM	200	8.20	MS
SODIUM	200	3.90	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
LEAD	0.10	ug/L	MS	SW846 3010A / SW846 6020A

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
LEAD	0.01	mg/Kg	MS	SW846 3050B / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
LEAD	0.01	ug/L	MS	SW846 3010A / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code: J**

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
LEAD	0.001	mg/Kg	MS	SW846 3050B / SW846 6020A

FORM X - IN

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 6/7/2013

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	0.01	200000	MS
CALCIUM	0.03	200000	MS
IRON	0.03	100000	MS
LEAD	0.10	1000	MS
MAGNESIUM	0.05	200000	MS
MOLYBDENUM	0.10	1000	MS
POTASSIUM	0.01	200000	MS
SODIUM	0.01	200000	MS

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK25IMS2

Matrix: SOIL **SDG Name:** SG8903

Method: MS **Prep Date:** 11/25/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LC2OGK25IMS2	LC2OGK25IMS2	1	0.1	
LCSOGK25IMS2	LCSOGK25IMS2	1	0.1	
PBSGK25IMS2	PBSGK25IMS2	1	0.1	
TF2-BSA-SS1090-0001	SG8903-001	1.37	0.1	A
TF2-BSA-SS1091-0001	SG8903-002	1.38	0.1	A
TF2-BSA-SB1091-0204	SG8903-003	1.23	0.1	A
TF2-BSA-SB1091-0204D	SG8903-003D	1.26	0.1	A
TF2-BSA-SB1091-0204S	SG8903-003S	1.3	0.1	A
TF2-BSA-SS1096-0001	SG8903-004	1.28	0.1	A
TF2-BSA-SB1096-0204	SG8903-005	1.41	0.1	A
TF2-SS-DUP03-1113	SG8903-006	1.25	0.1	A
TF2-BSA-SS1097-0001	SG8903-007	1.32	0.1	A
TF2-BSA-SB1097-0204	SG8903-008	1.4	0.1	A
TF2-BSA-SS1092-0001	SG8903-009	1.67	0.1	A
TF2-BSA-SB1092-0204	SG8903-010	1.28	0.1	A
TF2-BSA-SS1093-0001	SG8903-011	1.43	0.1	A
TF2-BSA-SB1093-0204	SG8903-012	1.45	0.1	A
TF2-BSA-SS1094-0001	SG8903-013	1.31	0.1	A
TF2-BSA-SB1094-0204	SG8903-014	1.3	0.1	A
TF2-BSA-SS1095-0001	SG8903-015	1.36	0.1	A
TF2-BSA-SB1095-0204	SG8903-016	1.37	0.1	A
TF2-BSA-SS1091-0204	SG8903-018	1.11	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK25IMS2

Matrix: SOIL **SDG Name:** SG8903

QC Batch ID: GK25IMS2

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
LEAD	0.011	J

Katahdin Analytical Services A0000028

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LC2OGK25IMS2

Matrix: SOIL **SDG Name:** SG8903

QC Batch ID: GK25IMS2

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
LEAD	10.00	10.47	104.7	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK25IMS2

Matrix: SOIL **SDG Name:** SG8903

QC Batch ID: GK25IMS2

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
LEAD	10.00	10.27	102.7	80	120

7D

LABORATORY CONTROL SAMPLE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: SOIL **SDG Name:** SG8903

QC Batch ID: GK25IMS2 **Lab Sample ID:** LCSOGK25IMS2

Concentration Units: mg/Kgdrywt

Analyte	Control Limit (%)	LCS Result	LCS Dup. Result	RPD(%)	Q
LEAD	20.0	10.27	10.47	1.8	

FORM VIID - IN

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SB1091-0204S

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 93.5 **Lab Sample ID:** SG8903-003S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
LEAD, TOTAL	20.0955		10.0087		8.23	122.6	N	80	120	MS

Comments:

FORM V (Part 1) - IN

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SB1091-0204S

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 93.5 **Lab Sample ID:** SG8903-003A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
LEAD, TOTAL	25.4200		23.0200		2	120.0		75	125	MS

Comments:

FORM V (Part 2) - IN

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SB1091-0204D

Matrix: SOIL **SDG Name:** SG8903

Percent Solids: 93.5 **Lab Sample ID:** SG8903-003D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M
LEAD, TOTAL		10.0087		11.7864		16.3		MS

Comments:

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-BSA-SB1091-0204L

Matrix: SOIL **SDG Name:** SG8903

Lab Sample ID: SG8903-003L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
LEAD, TOTAL	23.02		23.25		1.0		MS

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK26IMW2

Matrix: WATER **SDG Name:** SG8903

Method: MS **Prep Date:** 11/26/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWGK26IMW2	LCSWGK26IMW2	0.05	0.05	
PBWGK26IMW2	PBWGK26IMW2	0.05	0.05	
TF2-SB-RB02-1113	SG8903-017	0.05	0.05	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGK26IMW2

Matrix: WATER **SDG Name:** SG8903

QC Batch ID: GK26IMW2

Concentration Units : ug/L

Analyte	RESULT	C
LEAD	0.093	J

Katahdin Analytical Services A0000029

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGK26IMW2

Matrix: WATER **SDG Name:** SG8903

QC Batch ID: GK26IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
LEAD	100.00	105.20	105.2	80	120

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8903

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK26A

Date: 11/26/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements						
ZZZZZZ		1	16:38							
ZZZZZZ		1	16:41							
Cal Blank		1	17:06	Al	Ca	Fe	Pb	Mg	Mo	K	Na
Cal Std 1		1	17:09	Al	Ca	Fe	Pb	Mg	Mo	K	Na
Cal Std 2		1	17:12	Al	Ca	Fe	Pb	Mg	Mo	K	Na
Cal Std 3		1	17:15	Al	Ca	Fe	Pb	Mg	Mo	K	Na
Cal Std 4		1	17:19	Al	Ca	Fe	Pb	Mg	Mo	K	Na
ICV		1	17:22	Al	Ca	Fe	Pb	Mg	Mo	K	Na
ICB		1	17:25	Al	Ca	Fe	Pb	Mg	Mo	K	Na
PQL		1	17:28	Al	Ca	Fe	Pb	Mg	Mo	K	Na
ICSA		1	17:32	Al	Ca	Fe	Pb	Mg	Mo	K	Na
ICSAB		1	17:35	Al	Ca	Fe	Pb	Mg	Mo	K	Na
CCV		1	17:39	Al	Ca	Fe	Pb	Mg	Mo	K	Na
CCB		1	17:42	Al	Ca	Fe	Pb	Mg	Mo	K	Na
ZZZZZZ		20	17:45							
ZZZZZZ		5	17:48							
PBSGK25IMS2		5	17:51				Pb			
LCSOGK25IMS2		5	17:55				Pb			
LC2OGK25IMS2		5	17:58				Pb			
SG8903-001	TF2-BSA-SS1090-0001	5	18:01				Pb			
SG8903-002	TF2-BSA-SS1091-0001	5	18:04				Pb			
SG8903-003	TF2-BSA-SB1091-0204	5	18:08				Pb			
SG8903-003L	TF2-BSA-SB1091-0204L	25	18:11				Pb			
SG8903-003D	TF2-BSA-SB1091-0204D	5	18:15				Pb			
CCV		1	18:18	Al	Ca	Fe	Pb	Mg	Mo	K	Na
CCB		1	18:21	Al	Ca	Fe	Pb	Mg	Mo	K	Na
SG8903-003A	TF2-BSA-SB1091-0204A	5	18:25				Pb			
SG8903-003S	TF2-BSA-SB1091-0204S	5	18:28				Pb			
SG8903-004	TF2-BSA-SS1096-0001	5	18:31				Pb			
SG8903-005	TF2-BSA-SB1096-0204	5	18:35				Pb			
SG8903-006	TF2-SS-DUP03-1113	5	18:38				Pb			
SG8903-007	TF2-BSA-SS1097-0001	5	18:42				Pb			
SG8903-008	TF2-BSA-SB1097-0204	5	18:45				Pb			
SG8903-009	TF2-BSA-SS1092-0001	5	18:48				Pb			
SG8903-010	TF2-BSA-SB1092-0204	5	18:52				Pb			
SG8903-011	TF2-BSA-SS1093-0001	5	18:55				Pb			
CCV		1	18:59	Al	Ca	Fe	Pb	Mg	Mo	K	Na
CCB		1	19:02	Al	Ca	Fe	Pb	Mg	Mo	K	Na
SG8903-012	TF2-BSA-SB1093-0204	5	19:05				Pb			
SG8903-013	TF2-BSA-SS1094-0001	5	19:09				Pb			
SG8903-014	TF2-BSA-SB1094-0204	5	19:13				Pb			
SG8903-015	TF2-BSA-SS1095-0001	5	19:16				Pb			
SG8903-016	TF2-BSA-SB1095-0204	5	19:20				Pb			
SG8903-018	TF2-BSA-SS1091-0204	5	19:23				Pb			
ZZZZZZ		20	19:27							
ZZZZZZ		5	19:30							
ZZZZZZ		5	19:33							
LCSWGK26IMW2		5	19:37				Pb			
CCV		1	19:40	Al	Ca	Fe	Pb	Mg	Mo	K	Na
CCB		1	19:43	Al	Ca	Fe	Pb	Mg	Mo	K	Na

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8903

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK26A

Date: 11/26/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements					
PBWGK26IMW2		5	19:47	Pb					
SG8903-017	TF2-SB-RB02-1113	5	19:50	Pb					
ZZZZZZ		5	19:54						
ZZZZZZ		5	19:57						
ZZZZZZ		5	20:00						
ZZZZZZ		10	20:04						
ZZZZZZ		5	20:07						
ZZZZZZ		5	20:11						
ZZZZZZ		5	20:14						
ZZZZZZ		5	20:18						
CCV		1	20:21	Al	Ca	Fe Pb Mg	Mo	K	Na
CCB		1	20:25	Al	Ca	Fe Pb Mg	Mo	K	Na
ZZZZZZ		20	20:28						
ZZZZZZ		5	20:32						
ZZZZZZ		5	20:36						
ZZZZZZ		20	20:39						
ZZZZZZ		5	20:43						
ZZZZZZ		25	20:46						
ZZZZZZ		5	20:49						
ZZZZZZ		5	20:53						
ZZZZZZ		5	20:56						
ZZZZZZ		5	21:00						
CCV		1	21:03	Al	Ca	Fe Pb Mg	Mo	K	Na
CCB		1	21:07	Al	Ca	Fe Pb Mg	Mo	K	Na
ZZZZZZ		20	21:10						
ZZZZZZ		1	21:14						
ZZZZZZ		5	21:17						
ZZZZZZ		1	21:21						
ZZZZZZ		1	21:24						
ZZZZZZ		1	21:28						
ZZZZZZ		1	21:31						
ZZZZZZ		1	21:35						
ZZZZZZ		1	21:38						
ZZZZZZ		5	21:42						
CCV		1	21:45	Al	Ca	Fe Pb Mg	Mo	K	Na
CCB		1	21:49	Al	Ca	Fe Pb Mg	Mo	K	Na
ZZZZZZ		5	21:52						
ZZZZZZ		5	21:56						
ZZZZZZ		1	21:59						
ZZZZZZ		1	22:03						
CCV		1	22:07	Al	Ca	Fe Pb Mg	Mo	K	Na
CCB		1	22:10	Al	Ca	Fe Pb Mg	Mo	K	Na
PQL		1	22:14	Al	Ca	Fe Pb Mg	Mo	K	Na
CCV		1	22:17	Al	Ca	Fe Pb Mg	Mo	K	Na
CCB		1	22:20	Al	Ca	Fe Pb Mg	Mo	K	Na

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8903

Concentration Units: ug/L

SAMPLE: ICV

File: JGK26A Nov 26, 2013 17:22

Analyte	True	Found	%R (1)
ALUMINUM	400.0	414.30	103.6
CALCIUM	4000.0	3916.00	97.9
IRON	4000.0	3930.00	98.3
LEAD	20.0	20.46	102.3
MAGNESIUM	4000.0	3958.00	99.0
MOLYBDENUM	40.0	42.31	105.8
POTASSIUM	4000.0	3974.00	99.4
SODIUM	4000.0	3974.00	99.4

SAMPLE: CCV

File: JGK26A Nov 26, 2013 17:39

Analyte	True	Found	%R (1)
ALUMINUM	500.0	501.20	100.2
CALCIUM	5000.0	5054.00	101.1
IRON	5000.0	5012.00	100.2
LEAD	25.0	25.25	101.0
MAGNESIUM	5000.0	4978.00	99.6
MOLYBDENUM	25.0	26.62	106.5
POTASSIUM	5000.0	4981.00	99.6
SODIUM	5000.0	4975.00	99.5

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8903

Concentration Units: ug/L

SAMPLE: CCV

File: JGK26A Nov 26, 2013 18:18

Analyte	True	Found	%R (1)
ALUMINUM	500.0	502.20	100.4
CALCIUM	5000.0	5040.00	100.8
IRON	5000.0	4962.00	99.2
LEAD	25.0	25.20	100.8
MAGNESIUM	5000.0	5042.00	100.8
MOLYBDENUM	25.0	25.19	100.8
POTASSIUM	5000.0	5108.00	102.2
SODIUM	5000.0	5084.00	101.7

SAMPLE: CCV

File: JGK26A Nov 26, 2013 18:59

Analyte	True	Found	%R (1)
ALUMINUM	500.0	511.10	102.2
CALCIUM	5000.0	5070.00	101.4
IRON	5000.0	4940.00	98.8
LEAD	25.0	25.48	101.9
MAGNESIUM	5000.0	5055.00	101.1
MOLYBDENUM	25.0	25.12	100.5
POTASSIUM	5000.0	5175.00	103.5
SODIUM	5000.0	5116.00	102.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8903

Concentration Units: ug/L

SAMPLE: CCV

File: JGK26A Nov 26, 2013 19:40

Analyte	True	Found	%R (1)
ALUMINUM	500.0	496.50	99.3
CALCIUM	5000.0	4983.00	99.7
IRON	5000.0	4909.00	98.2
LEAD	25.0	25.20	100.8
MAGNESIUM	5000.0	4894.00	97.9
MOLYBDENUM	25.0	24.99	100.0
POTASSIUM	5000.0	5054.00	101.1
SODIUM	5000.0	4927.00	98.5

SAMPLE: CCV

File: JGK26A Nov 26, 2013 20:21

Analyte	True	Found	%R (1)
ALUMINUM	500.0	497.40	99.5
CALCIUM	5000.0	4955.00	99.1
IRON	5000.0	4908.00	98.2
LEAD	25.0	24.81	99.2
MAGNESIUM	5000.0	4876.00	97.5
MOLYBDENUM	25.0	25.16	100.6
POTASSIUM	5000.0	4991.00	99.8
SODIUM	5000.0	4915.00	98.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8903

Concentration Units: ug/L

SAMPLE: PQL

File: JGK26A Nov 26, 2013 17:28

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	61.78	103.0
CALCIUM	20.0	18.39	92.0
IRON	20.0	20.91	104.6
LEAD	0.2	0.19	95.0
MAGNESIUM	20.0	20.67	103.4
MOLYBDENUM	1.0	1.04	104.0
POTASSIUM	200.0	221.70	110.9
SODIUM	200.0	215.50	107.7

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8903

Concentration Units: ug/L

SAMPLE: ICB

File: JGK26A Nov 26, 2013 17:25

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	4.100	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.123	J
POTASSIUM	8.200	U
SODIUM	3.900	U

SAMPLE: CCB

File: JGK26A Nov 26, 2013 17:42

Analyte	Result	C
ALUMINUM	0.372	J
CALCIUM	4.573	J
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.478	B
POTASSIUM	8.200	U
SODIUM	4.916	J

SAMPLE: CCB

File: JGK26A Nov 26, 2013 18:21

Analyte	Result	C
ALUMINUM	0.752	J
CALCIUM	4.100	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8903

Concentration Units: ug/L

SAMPLE: CCB

File: JGK26A Nov 26, 2013 19:02

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	4.100	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U

SAMPLE: CCB

File: JGK26A Nov 26, 2013 19:43

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	4.100	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U

SAMPLE: CCB

File: JGK26A Nov 26, 2013 20:25

Analyte	Result	C
ALUMINUM	0.636	J
CALCIUM	4.100	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8903

Concentration Units: ug/L

SAMPLE: ICSA

File: JGK26A Nov 26, 2013 17:32

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	94090	94.1
CALCIUM	100000	92730	92.7
IRON	100000	87260	87.3
LEAD	0	0	
MAGNESIUM	100000	93390	93.4
MOLYBDENUM	2000	1885	94.3
POTASSIUM	100000	95420	95.4
SODIUM	100000	95300	95.3

SAMPLE: ICSAB

File: JGK26A Nov 26, 2013 17:35

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	95950	96.0
CALCIUM	100000	93900	93.9
IRON	100000	89330	89.3
LEAD	20	21	105.0
MAGNESIUM	100000	94680	94.7
MOLYBDENUM	2000	1960	98.0
POTASSIUM	100000	96550	96.5
SODIUM	100000	96420	96.4

Tetra Tech INC **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 23, 2014**

FROM: **JOSEPH KALINYAK** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PAH / GRO / PRO**
NAVSTA NEWPORT, CTO WE30
SAMPLE DELIVERY GROUP (SDG) SG9002

SAMPLES: 14 / Soil / PAH

TF2-003-SB1011-0204	TF2-003-SB1012-0204	TF2-003-SB1012-0810
TF2-003-SB1014-0204	TF2-003-SB1014-0810	TF2-003-SB1015-0204
TF2-003-SB1015-0810	TF2-003-SB1016-0204	TF2-003-SB1016-0810
TF2-003-SB1017-011.6	TF2-003-SB1017-0204	TF2-003-SB1017-0810
TF2-003-SB1018-0204	TF2-SB-DUP08-1113	

1 / Aqueous / PAH / GRO / PRO

TF2-SB-RB04-1113

1 / Soil / GRO / PRO

TF2-003-SB1017-011.6

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG SG9002 consisted of fourteen (14) soil samples and one (1) aqueous rinse blank sample. All samples were analyzed for Polynuclear Aromatic Hydrocarbons (PAH) as listed above. One (1) soil sample and the one (1) rinse blank sample were analyzed for Gasoline Range Organics (GRO) (TPH C05-C12) and Petroleum Range Organics (PRO) (EPH C08-C44) as listed above. One (1) field duplicate sample pair was included in this sample delivery group (SDG): TF2-SB-DUP08-1113 / TF2-003-SB1011-0204.

The samples were collected by Tetra Tech on November 15, 2013 and analyzed by Katahdin Analytical Services, Inc. All analyses were conducted in accordance with EPA SW-846 Method 8270D for PAHs, Method 8015B for GRO, and FL-PRO for PRO, analytical and reporting protocols.

The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • GC/MS Instrument Tuning and System Performance
• Initial and Continuing Calibration Verification Results
* • Laboratory Method Blank Results
• Blank Spike/Blank Spike Duplicate Results
• Matrix Spike/Matrix Spike Duplicate Recoveries
* • Surrogate Spike Recoveries
* • Internal Standard Recoveries
* • Field Duplicate Precision
* • Compound Identification and Quantification

* • Detection Limits

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

HOLD TIME

No issues were identified.

BLANKS

No issues were identified.

CALIBRATIONS

The PAH continuing calibration verification (CCV) percent difference (%D) was greater than the 20% quality control limit for 2-methylnaphthalene on 12/03/13 @ 12:49 on instrument GCMS-N.

Affected Samples:

TF2-003-SB1012-0810 TF2-003-SB1014-0810 TF2-003-SB1015-0810
TF2-003-SB1016-0204 TF2-003-SB1016-0810

Actions: The sample detected and non-detected 2-methylnaphthalene results were qualified estimated, (J) and (UJ), respectively.

LABORATORY CONTROL SPIKE (LCS) /LABORATORY CONTROL SPIKE DUPLICATE (LCSD)

The PAH LCS and LCSD percent recoveries (%Rs) were less than the quality control limit for benzo(a)pyrene and benzo(g,h,i)perylene for batch WG135096.

Affected Samples: All PAH soil samples

Actions: The detected and non-detected benzo(a)pyrene and benzo(g,h,i)perylene sample results were qualified estimated, (J) and (UJ), respectively.

The PRO LCSD %R was less than the quality control limit for batch WG134896. The PRO LCS %R was compliant.

Affected Sample: TF2-003-SB1017-011.6

Actions: The sample PRO result was qualified estimated, (J).

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

The spiked sample TF2-003-SB1012-0204 had PAH MS and/or MSD %Rs for phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene which were non-compliant. Additionally, the relative percent differences (RPDs) for the analytes acenaphthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)-anthracene, and benzo(g,h,i)perylene were non-compliant.

Affected Sample: TF2-003-SB1012-0204

Actions: The spiked samples were analyzed at a 1X dilution only resulting in the analyte concentrations exceeding the highest calibration level for both the MS and MSD results (verified by examining the raw data) for phenanthrene, fluoranthene, pyrene, benzo(a)anthracene, and chrysene, and the MSD result for benzo(b)fluoranthene. The results for these analytes were not

qualified as the actual concentrations could not be accurately determined. The acenaphthene result was not qualified as the MS and MSD %Rs were compliant. The sample results for benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene were qualified estimated, (J).

SURROGATE SPIKE RECOVERIES

No issues were identified.

INTERNAL STANDARD RECOVERY

No issues were identified.

FIELD DUPLICATE PRECISION

The PAH analyte result RPDs were greater than the quality control limit for acenaphthene, benzo(a)anthracene, benzo(a)pyrene, chrysene, fluoranthene, phenanthrene, and pyrene for field duplicate samples TF2-SB-DUP08-1113 / TF2-003-SB1011-0204.

Affected Samples: TF2-SB-DUP08-1113 / TF2-003-SB1011-0204
Actions: The PAH analyte results were qualified estimated, (J).

COMPOUND QUANTIFICATION

No issues were identified.

ADDITIONAL COMMENTS

Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J).

The GRO method blank for batch WG134904-1RA had a detected GRO result. No action was required as the affected sample, TF2-003-SB1017-011.6, had a non-detected GRO result.

The PAH LCSD %Rs were greater than the quality control limit for anthracene and chrysene for batch WG1346039. Additionally the LCS/LCSD result RPD (relative percent difference) was greater than the quality control limit for 2-methylnaphthalene.

Affected Sample: TF2-SB-RB04-1113
Actions: The anthracene and chrysene sample results were not qualified as the LCS %Rs and the LCS/LCSD RPDs for the analytes were compliant and the sample analyte results were non-detected. The 2-methylnaphthalene results were not qualified as the analyte LCS and LCSD %Rs were compliant.

The PAH CCV %D was greater than the 20% quality control limit for benzo(b)fluoranthene on 11/25/13 @ 11:12 on instrument GCMS-N. No action was necessary as only LCS/LCSD and method blank samples were affected.

Sample TF2-003-SB1014-0204 had %Rs for the surrogate pyrene-d10 less than the quality control limit (>10%) for both the undiluted and diluted PAH sample analysis.

Affected Samples: TF2-003-SB1014-0204
Actions: No validation action was necessary for sample single surrogate non-compliances.

Samples TF2-003-SB1012-0810 and TF2-003-SB1015-0810 (undiluted analyses) had %Rs for the internal standard perylene-d12 less than the quality control limit.

Affected Samples: TF2-003-SB1012-0810 and TF2-003-SB1015-0810

Affected Analytes: benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene

Actions: The samples were re-analyzed at dilutions. No validation action was taken for the analytes as the sample results for these analytes were reported from the dilution analyses.

Samples were analyzed at dilutions for PAHs as listed below. Analyte results that exceeded the highest calibration standard in the undiluted sample analyses were reported from the dilution analyses.

Samples	Dilution
TF2-003-SB1012-0204	4X
TF2-003-SB1012-0810	4X
TF2-003-SB1014-0204	2X
TF2-003-SB1014-0810	8X
TF2-003-SB1015-0204	6X
TF2-003-SB1015-0810	2X
TF2-003-SB1016-0204	5X
TF2-003-SB1017-011.6	10X

The rinse blank sample TF2-SB-RB04-1113 had positive detections for the PAHs benzo(b)fluoranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Soil sample PAH results were not qualified using these PAH detections.

PRO sample results were reported as EPH (C08-C44) in the electronic database (EDD).

GRO sample results were reported as TPH (C05-C12) in the EDD.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: PAH results were qualified for a CCV %D non-compliance. PAH results were qualified for LCS/LCSD %R and MS/MSD %R non-compliances. A PRO result was qualified for a LCSD %R non-compliance.

Other Factors Affecting Data Quality: Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J). Field duplicate sample PAH results were qualified for field duplicate imprecision.

The data for these analyses were reviewed with reference to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Guidance/Procedures Attachment 2-3b: Example Organic Data Review Worksheets (1/13) and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Joseph Kalinyak
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Value Qualifier Key (Val Qual)

J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The result is an estimated non-detected quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U - Value is a non-detect as reported by the laboratory.

UR – Non-detected result is considered rejected, (UR), as a result of technical non-compliances.

DATA QUALIFICATION CODE (QUAL CODE)

Qualifier Codes:

A	=	Lab Blank Contamination
B	=	Field Blank Contamination
C	=	Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01	=	GC/MS Tuning Noncompliance
D	=	MS/MSD Recovery Noncompliance
E	=	LCS/LCSD Recovery Noncompliance
F	=	Lab Duplicate Imprecision
G	=	Field Duplicate Imprecision
H	=	Holding Time Exceedance
I	=	ICP Serial Dilution Noncompliance
J	=	ICP PDS Recovery Noncompliance; MSA's r < 0.995
K	=	ICP Interference - includes ICS % R Noncompliance
L	=	Instrument Calibration Range Exceedance
M	=	Sample Preservation Noncompliance
N	=	Internal Standard Noncompliance
N01	=	Internal Standard Recovery Noncompliance Dioxins
N02	=	Recovery Standard Noncompliance Dioxins
N03	=	Clean-up Standard Noncompliance Dioxins
O	=	Poor Instrument Performance (i.e., base-time drifting)
P	=	Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q	=	Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R	=	Surrogates Recovery Noncompliance
S	=	Pesticide/PCB Resolution
T	=	% Breakdown Noncompliance for DDT and Endrin
U	=	RPD between columns/detectors >40% for positive results determined via GC/HPLC
V	=	Non-linear calibrations; correlation coefficient r < 0.995
W	=	EMPC result
X	=	Signal to noise response drop
Y	=	Percent solids <30%
Z	=	Uncertainty at 2 sigma deviation is less than sample activity
Z1	=	Tentatively Identified Compound considered presumptively present
Z2	=	Tentatively Identified Compound column bleed

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1011-0204			TF2-003-SB1012-0204			TF2-003-SB1012-0204DL			TF2-003-SB1012-0810		
SDG: SG9002	LAB_ID	SG9002-6			SG9002-4			SG9002-4DL			SG9002-5		
FRACTION: PAH	SAMP_DATE	11/15/2013			11/15/2013			11/15/2013			11/15/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	82.0			91.3			91.3			91.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		12	U		10	U					7.7	J	CP
ACENAPHTHENE		51	J	G	28						190		
ACENAPHTHYLENE		12	U		2.2	J	P				16	J	P
ANTHRACENE		26			50						200		
BENZO(A)ANTHRACENE		77	J	G	300						330		
BENZO(A)PYRENE		54	J	EG	180	J	DE						
BENZO(B)FLUORANTHENE		63	J		250								
BENZO(G,H,I)PERYLENE		25	J	E	87	J	DE						
BENZO(K)FLUORANTHENE		22	J	P	79	J	D						
CHRYSENE		74	J	G	300						300		
DIBENZO(A,H)ANTHRACENE		15	J	P	36	J	D						
FLUORANTHENE		130	J	G				480					
FLUORENE		18	J	P	12	J	P				56		
INDENO(1,2,3-CD)PYRENE		52			160	J	D						
NAPHTHALENE		20	J	P	10	U					6.7	J	P
PHENANTHRENE		130	J	G				520					
PYRENE		190	J	G				750					

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1012-0810DL			TF2-003-SB1014-0204			TF2-003-SB1014-0204DL			TF2-003-SB1014-0810		
SDG: SG9002	LAB_ID	SG9002-5DL			SG9002-7			SG9002-7DL			SG9002-8		
FRACTION: PAH	SAMP_DATE	11/15/2013			11/15/2013			11/15/2013			11/15/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.0			92.8			92.8			94.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE					10	U					32	J	C
ACENAPHTHENE					20	J	P				320		
ACENAPHTHYLENE					2.7	J	P				20	J	P
ANTHRACENE					34								
BENZO(A)ANTHRACENE					140								
BENZO(A)PYRENE		240	J	E	52	J	E				240	J	E
BENZO(B)FLUORANTHENE		340			82						260		
BENZO(G,H,I)PERYLENE		150	J	E	14	J	EP				95	J	E
BENZO(K)FLUORANTHENE		93			26						100		
CHRYSENE					150								
DIBENZO(A,H)ANTHRACENE		59	J	P	15	J	P				34		
FLUORANTHENE		500			320								
FLUORENE					8	J	P				170		
INDENO(1,2,3-CD)PYRENE		240			38						170		
NAPHTHALENE					10	U					9.9	J	P
PHENANTHRENE		600			280								
PYRENE		770						410					

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1014-0810DL			TF2-003-SB1015-0204			TF2-003-SB1015-0204DL			TF2-003-SB1015-0810		
SDG: SG9002	LAB_ID	SG9002-8DL			SG9002-9			SG9002-9DL			SG9002-11		
FRACTION: PAH	SAMP_DATE	11/15/2013			11/15/2013			11/15/2013			11/15/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	94.4			93.0			93.0			89.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE					6.7	J	P				9.2	J	CP
ACENAPHTHENE					54						9	J	P
ACENAPHTHYLENE					3.2	J	P				11	U	
ANTHRACENE		410			92						13	J	P
BENZO(A)ANTHRACENE		510						420			76		
BENZO(A)PYRENE					240	J	E						
BENZO(B)FLUORANTHENE					320								
BENZO(G,H,I)PERYLENE					100	J	E						
BENZO(K)FLUORANTHENE					110								
CHRYSENE		480						460			120		
DIBENZO(A,H)ANTHRACENE					48								
FLUORANTHENE		750						640			76		
FLUORENE					32						5.1	J	P
INDENO(1,2,3-CD)PYRENE					190								
NAPHTHALENE					7.2	J	P				3.4	J	P
PHENANTHRENE		1500						720			100		
PYRENE		1100						1000					

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1015-0810DL	TF2-003-SB1016-0204	TF2-003-SB1016-0204DL	TF2-003-SB1016-0810
SDG: SG9002	LAB_ID	SG9002-11DL	SG9002-13	SG9002-13DL	SG9002-14
FRACTION: PAH	SAMP_DATE	11/15/2013	11/15/2013	11/15/2013	11/15/2013
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM
	UNITS	UG/KG	UG/KG	UG/KG	UG/KG
	PCT_SOLIDS	89.3	92.5	92.5	92.8
	DUP_OF				

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE				11	UJ	C				11	UJ	C
ACENAPHTHENE				22						6.9	J	P
ACENAPHTHYLENE				11	U					1.8	J	P
ANTHRACENE				67						17	J	P
BENZO(A)ANTHRACENE							480			120		
BENZO(A)PYRENE	84	J	E	260	J	E				74	J	E
BENZO(B)FLUORANTHENE	89						450			110		
BENZO(G,H,I)PERYLENE	69	J	E	100	J	E				29	J	E
BENZO(K)FLUORANTHENE	26	J	P	130						39		
CHRYSENE							500			110		
DIBENZO(A,H)ANTHRACENE	31	J	P	49						19	J	P
FLUORANTHENE							680			180		
FLUORENE				7.9	J	P				4	J	P
INDENO(1,2,3-CD)PYRENE	59			190						64		
NAPHTHALENE				4.8	J	P				11	U	
PHENANTHRENE							590			140		
PYRENE	330						960			250		

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1017-011.6			TF2-003-SB1017-011.6DL			TF2-003-SB1017-0204			TF2-003-SB1017-0810		
SDG: SG9002	LAB_ID	SG9002-1			SG9002-1DL			SG9002-2			SG9002-3		
FRACTION: PAH	SAMP_DATE	11/15/2013			11/15/2013			11/15/2013			11/15/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	79.8			79.8			92.6			89.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		6.5	J	P				10	U		11	U	
ACENAPHTHENE		66						10	U		1.9	J	P
ACENAPHTHYLENE		2.4	J	P				10	U		11	U	
ANTHRACENE		150						1.7	J	P	11	U	
BENZO(A)ANTHRACENE					1100			6.6	J	P	3.7	J	P
BENZO(A)PYRENE					570	J	E	3.6	J	EP	11	UJ	E
BENZO(B)FLUORANTHENE					980			12	J	P	10	J	P
BENZO(G,H,I)PERYLENE		240	J	E				10	UJ	E	11	UJ	E
BENZO(K)FLUORANTHENE		240						10	U		11	U	
CHRYSENE					1100			7.3	J	P	4.4	J	P
DIBENZO(A,H)ANTHRACENE		98						8.8	J	P	8.7	J	P
FLUORANTHENE					1600			15	J	P	6.5	J	P
FLUORENE		31						10	U		11	U	
INDENO(1,2,3-CD)PYRENE		400						7.2	J	P	5.8	J	P
NAPHTHALENE		6.5	J	P				10	U		11	U	
PHENANTHRENE					1500			9.1	J	P	3.5	J	P
PYRENE					2500			14	J	P	7.4	J	P

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1018-0204			TF2-SB-DUP08-1113		
SDG: SG9002	LAB_ID	SG9002-15			SG9002-10		
FRACTION: PAH	SAMP_DATE	11/15/2013			11/15/2013		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	94.6			91.0		
	DUP_OF				TF2-003-SB1011-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		3.8	J	P	11	U	
ACENAPHTHENE		34			5	J	GP
ACENAPHTHYLENE		10	U		11	U	
ANTHRACENE		31			9.6	J	P
BENZO(A)ANTHRACENE		87			34	J	G
BENZO(A)PYRENE		44	J	E	28	J	EG
BENZO(B)FLUORANTHENE		58			39		
BENZO(G,H,I)PERYLENE		18	J	EP	18	J	EP
BENZO(K)FLUORANTHENE		19	J	P	15	J	P
CHRYSENE		82			38	J	G
DIBENZO(A,H)ANTHRACENE		12	J	P	14	J	P
FLUORANTHENE		160			70	J	G
FLUORENE		20	J	P	4	J	P
INDENO(1,2,3-CD)PYRENE		39			36		
NAPHTHALENE		10	U		4.2	J	P
PHENANTHRENE		290			53	J	G
PYRENE		270			83	J	G

PROJ_NO: 03019	NSAMPLE	TF2-SB-RB04-1113		
SDG: SG9002	LAB_ID	SG9002-12		
FRACTION: PET	SAMP_DATE	11/15/2013		
MEDIA: WATER	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
EPH (C08-C44)		240	U	
TPH (C05-C12)		11		

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1017-011.6		
SDG: SG9002	LAB_ID	SG9002-1		
FRACTION: PET	SAMP_DATE	11/15/2013		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	MG/KG		
	PCT_SOLIDS	79.8		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
EPH (C08-C44)		250	J	E
TPH (C05-C12)		3.4	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

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Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-12
Client ID: TF2-SB-RB04-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1009.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 18-NOV-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG134603

Analysis Date: 02-DEC-13
Analyst: jJCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
2-Methylnaphthalene	U	0.097	ug/L	1	.2	0.19	0.075	0.097
Acenaphthylene	U	0.097	ug/L	1	.2	0.19	0.052	0.097
Acenaphthene	U	0.097	ug/L	1	.2	0.19	0.062	0.097
Fluorene	U	0.097	ug/L	1	.2	0.19	0.059	0.097
Phenanthrene	U	0.097	ug/L	1	.2	0.19	0.050	0.097
Anthracene	U	0.097	ug/L	1	.2	0.19	0.043	0.097
Fluoranthene	U	0.097	ug/L	1	.2	0.19	0.071	0.097
Pyrene	U	0.097	ug/L	1	.2	0.19	0.057	0.097
Benzo(a)anthracene	U	0.097	ug/L	1	.2	0.19	0.045	0.097
Chrysene	U	0.097	ug/L	1	.2	0.19	0.035	0.097
Benzo(b)Fluoranthene		0.22	ug/L	1	.2	0.19	0.086	0.097
Benzo(k)fluoranthene	U	0.097	ug/L	1	.2	0.19	0.048	0.097
Benzo(a)pyrene	U	0.097	ug/L	1	.2	0.19	0.064	0.097
Indeno(1,2,3-cd)pyrene	J	0.12	ug/L	1	.2	0.19	0.050	0.097
Dibenzo(a,h)anthracene		0.22	ug/L	1	.2	0.19	0.068	0.097
Benzo(g,h,i)perylene	U	0.097	ug/L	1	.2	0.19	0.063	0.097
2-Methylnaphthalene-D10		58.0	%					
Fluorene-D10		72.6	%					
pyrene-d10		100.	%					

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nelac
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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-6
Client ID: TF2-003-SB1011-0204
Project: NAVSTA Newport CTO WE.
SDG: SG9002
Lab File ID: N1019.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 02-DEC-13
Analyst: jJCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 82.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	20.	ug/Kgdrywt	1	20	23.	3.0	12.
2-Methylnaphthalene	U	12.	ug/Kgdrywt	1	20	23.	2.5	12.
Acenaphthylene	U	12.	ug/Kgdrywt	1	20	23.	1.4	12.
Acenaphthene		51.	ug/Kgdrywt	1	20	23.	1.7	12.
Fluorene	J	18.	ug/Kgdrywt	1	20	23.	3.7	12.
Phenanthrene		130	ug/Kgdrywt	1	20	23.	2.1	12.
Anthracene		26.	ug/Kgdrywt	1	20	23.	1.4	12.
Fluoranthene		130	ug/Kgdrywt	1	20	23.	2.1	12.
Pyrene		190	ug/Kgdrywt	1	20	23.	2.4	12.
Benzo(a)anthracene		77.	ug/Kgdrywt	1	20	23.	2.2	12.
Chrysene		74.	ug/Kgdrywt	1	20	23.	2.0	12.
Benzo(b)Fluoranthene		63.	ug/Kgdrywt	1	20	23.	2.8	12.
Benzo(k)fluoranthene	J	22.	ug/Kgdrywt	1	20	23.	3.6	12.
Benzo(a)pyrene	LL	54.	ug/Kgdrywt	1	20	23.	3.8	12.
Indeno(1,2,3-cd)pyrene		52.	ug/Kgdrywt	1	20	23.	2.2	12.
Dibenzo(a,h)anthracene	J	15.	ug/Kgdrywt	1	20	23.	2.1	12.
Benzo(g,h,i)perylene	LL	25.	ug/Kgdrywt	1	20	23.	2.3	12.
2-Methylnaphthalene-D10		57.9	%					
Fluorene-D10		58.4	%					
Pyrene-D10		61.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-4
Client ID: TF2-003-SB1012-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1016.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 02-DEC-13
Analyst: jJCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	J	2.2	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene		28.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	J	12.	ug/Kgdrywt	1	20	21.	3.4	10.
Phenanthrene	EMM	480	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene		50.	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	EM	530	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	EMM	740	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	M	300	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	M	300	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	MM	250	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	M	79.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	LLMM	180	ug/Kgdrywt	1	20	21.	3.5	10.
Indeno(1,2,3-cd)pyrene	M	160	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	MM	36.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	LLMM	87.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		64.8	%					
Fluorene-D10		67.8	%					
Pyrene-D10		68.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-4DL
Client ID: TF2-003-SB1012-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1037.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 03-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	42.	ug/Kgdrywt	4	20	84.	11.	42.
2-Methylnaphthalene	U	42.	ug/Kgdrywt	4	20	84.	9.2	42.
Acenaphthylene	U	42.	ug/Kgdrywt	4	20	84.	5.0	42.
Acenaphthene	J	30.	ug/Kgdrywt	4	20	84.	6.3	42.
Fluorene	U	42.	ug/Kgdrywt	4	20	84.	13.	42.
Phenanthrene	MM	520	ug/Kgdrywt	4	20	84.	7.6	42.
Anthracene	J	70.	ug/Kgdrywt	4	20	84.	5.0	42.
Fluoranthene	M	480	ug/Kgdrywt	4	20	84.	7.6	42.
Pyrene	MM	750	ug/Kgdrywt	4	20	84.	8.8	42.
Benzo(a)anthracene	M	320	ug/Kgdrywt	4	20	84.	8.0	42.
Chrysene	M	340	ug/Kgdrywt	4	20	84.	7.1	42.
Benzo(b)Fluoranthene	MM	300	ug/Kgdrywt	4	20	84.	10.	42.
Benzo(k)fluoranthene	M	87.	ug/Kgdrywt	4	20	84.	13.	42.
Benzo(a)pyrene	LLMM	190	ug/Kgdrywt	4	20	84.	14.	42.
Indeno(1,2,3-cd)pyrene	M	180	ug/Kgdrywt	4	20	84.	8.0	42.
Dibenzo(a,h)anthracene	JMM	55.	ug/Kgdrywt	4	20	84.	7.6	42.
Benzo(g,h,i)perylene	JLLMM	72.	ug/Kgdrywt	4	20	84.	8.4	42.
2-Methylnaphthalene-D10		79.7	%					
Fluorene-D10		67.7	%					
Pyrene-D10		67.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-5
Client ID: TF2-003-SB1012-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1031.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 03-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	6.7	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	J	7.7	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	J	16.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene		190	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene		56.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	E	560	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene		200	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	E	460	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	E	940	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene		330	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene		300	ug/Kgdrywt	1	20	22.	1.8	11.
Benzo(b)Fluoranthene		240	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene		94.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	LL	220	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene		180	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene		34.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	LL	170	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		85.6	%					
Fluorene-D10		65.4	%					
Pyrene-D10		96.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-5DL
Client ID: TF2-003-SB1012-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1040.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 03-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	44.	ug/Kgdrywt	4	20	87.	11.	44.
2-Methylnaphthalene	U	44.	ug/Kgdrywt	4	20	87.	9.6	44.
Acenaphthylene	J	18.	ug/Kgdrywt	4	20	87.	5.2	44.
Acenaphthene		190	ug/Kgdrywt	4	20	87.	6.5	44.
Fluorene	J	57.	ug/Kgdrywt	4	20	87.	14.	44.
Phenanthrene		600	ug/Kgdrywt	4	20	87.	7.8	44.
Anthracene		220	ug/Kgdrywt	4	20	87.	5.2	44.
Fluoranthene		500	ug/Kgdrywt	4	20	87.	7.8	44.
Pyrene		770	ug/Kgdrywt	4	20	87.	9.1	44.
Benzo(a)anthracene		350	ug/Kgdrywt	4	20	87.	8.3	44.
Chrysene		320	ug/Kgdrywt	4	20	87.	7.4	44.
Benzo(b)Fluoranthene		340	ug/Kgdrywt	4	20	87.	10.	44.
Benzo(k)fluoranthene		93.	ug/Kgdrywt	4	20	87.	13.	44.
Benzo(a)pyrene	LL	240	ug/Kgdrywt	4	20	87.	14.	44.
Indeno(1,2,3-cd)pyrene		240	ug/Kgdrywt	4	20	87.	8.3	44.
Dibenzo(a,h)anthracene	J	59.	ug/Kgdrywt	4	20	87.	7.8	44.
Benzo(g,h,i)perylene	LL	150	ug/Kgdrywt	4	20	87.	8.7	44.
2-Methylnaphthalene-D10		82.1	%					
Fluorene-D10		69.6	%					
Pyrene-D10		74.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-7
Client ID: TF2-003-SB1014-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1020.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 02-DEC-13
Analyst: jJCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	2.7	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	20.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	8.0	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		280	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		34.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		320	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	E	430	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		140	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		150	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		82.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		26.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	LL	52.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		38.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	15.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	14.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		55.1	%					
Fluorene-D10		45.5	%					
Pyrene-D10	*	27.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-7DL
Client ID: TF2-003-SB1014-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1038.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 03-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	20.	ug/Kgdrywt	2	20	40.	5.2	20.
2-Methylnaphthalene	U	20.	ug/Kgdrywt	2	20	40.	4.4	20.
Acenaphthylene	U	20.	ug/Kgdrywt	2	20	40.	2.4	20.
Acenaphthene	J	19.	ug/Kgdrywt	2	20	40.	3.0	20.
Fluorene	J	6.8	ug/Kgdrywt	2	20	40.	6.4	20.
Phenanthrene		270	ug/Kgdrywt	2	20	40.	3.6	20.
Anthracene	J	36.	ug/Kgdrywt	2	20	40.	2.4	20.
Fluoranthene		250	ug/Kgdrywt	2	20	40.	3.6	20.
Pyrene		410	ug/Kgdrywt	2	20	40.	4.2	20.
Benzo(a)anthracene		140	ug/Kgdrywt	2	20	40.	3.8	20.
Chrysene		150	ug/Kgdrywt	2	20	40.	3.4	20.
Benzo(b)Fluoranthene		99.	ug/Kgdrywt	2	20	40.	4.8	20.
Benzo(k)fluoranthene	J	27.	ug/Kgdrywt	2	20	40.	6.2	20.
Benzo(a)pyrene	LL	52.	ug/Kgdrywt	2	20	40.	6.6	20.
Indeno(1,2,3-cd)pyrene		43.	ug/Kgdrywt	2	20	40.	3.8	20.
Dibenzo(a,h)anthracene	J	21.	ug/Kgdrywt	2	20	40.	3.6	20.
Benzo(g,h,i)perylene	JLL	13.	ug/Kgdrywt	2	20	40.	4.0	20.
2-Methylnaphthalene-D10		61.0	%					
Fluorene-D10		45.5	%					
Pyrene-D10	*	26.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-8
Client ID: TF2-003-SB1014-0810
Project: NAVSTA Newport CTO WE.
SDG: SG9002
Lab File ID: N1032.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 03-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	9.9	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene		32.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	J	20.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene		320	ug/Kgdrywt	1	20	21.	1.5	10.
Fluorene		170	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	E	1200	ug/Kgdrywt	1	20	21.	1.8	10.
Anthracene	E	370	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	E	670	ug/Kgdrywt	1	20	21.	1.8	10.
Pyrene	E	1500	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	E	490	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	E	460	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene		260	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene		100	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	LL	240	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene		170	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene		34.	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(g,h,i)perylene	LL	95.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		78.2	%					
Fluorene-D10		62.8	%					
Pyrene-D10		88.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-8DL
Client ID: TF2-003-SB1014-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1041.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 03-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	82.	ug/Kgdrywt	8	20	160	21.	82.
2-Methylnaphthalene	J	30.	ug/Kgdrywt	8	20	160	18.	82.
Acenaphthylene	J	23.	ug/Kgdrywt	8	20	160	9.9	82.
Acenaphthene		340	ug/Kgdrywt	8	20	160	12.	82.
Fluorene		180	ug/Kgdrywt	8	20	160	26.	82.
Phenanthrene		1500	ug/Kgdrywt	8	20	160	15.	82.
Anthracene		410	ug/Kgdrywt	8	20	160	9.9	82.
Fluoranthene		750	ug/Kgdrywt	8	20	160	15.	82.
Pyrene		1100	ug/Kgdrywt	8	20	160	17.	82.
Benzo(a)anthracene		510	ug/Kgdrywt	8	20	160	16.	82.
Chrysene		480	ug/Kgdrywt	8	20	160	14.	82.
Benzo(b)Fluoranthene		380	ug/Kgdrywt	8	20	160	20.	82.
Benzo(k)fluoranthene	J	160	ug/Kgdrywt	8	20	160	26.	82.
Benzo(a)pyrene	LL	300	ug/Kgdrywt	8	20	160	27.	82.
Indeno(1,2,3-cd)pyrene		270	ug/Kgdrywt	8	20	160	16.	82.
Dibenzo(a,h)anthracene	J	93.	ug/Kgdrywt	8	20	160	15.	82.
Benzo(g,h,i)perylene	JLL	110	ug/Kgdrywt	8	20	160	16.	82.
2-Methylnaphthalene-D10		75.9	%					
Fluorene-D10		76.0	%					
Pyrene-D10		59.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-9
Client ID: TF2-003-SB1015-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1021.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 02-DEC-13
Analyst: jJCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	7.2	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	J	6.7	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	J	3.2	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene		54.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene		32.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	E	690	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene		92.	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	E	660	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	E	970	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	E	430	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	E	430	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene		320	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene		110	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	LL	240	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene		190	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene		48.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	LL	100	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		64.6	%					
Fluorene-D10		60.5	%					
Pyrene-D10		52.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-9DL
Client ID: TF2-003-SB1015-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1039.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 03-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	62.	ug/Kgdrywt	6	20	120	16.	62.
2-Methylnaphthalene	U	62.	ug/Kgdrywt	6	20	120	14.	62.
Acenaphthylene	U	62.	ug/Kgdrywt	6	20	120	7.5	62.
Acenaphthene	J	55.	ug/Kgdrywt	6	20	120	9.4	62.
Fluorene	J	29.	ug/Kgdrywt	6	20	120	20.	62.
Phenanthrene		720	ug/Kgdrywt	6	20	120	11.	62.
Anthracene	J	120	ug/Kgdrywt	6	20	120	7.5	62.
Fluoranthene		640	ug/Kgdrywt	6	20	120	11.	62.
Pyrene		1000	ug/Kgdrywt	6	20	120	13.	62.
Benzo(a)anthracene		420	ug/Kgdrywt	6	20	120	12.	62.
Chrysene		460	ug/Kgdrywt	6	20	120	11.	62.
Benzo(b)Fluoranthene		380	ug/Kgdrywt	6	20	120	15.	62.
Benzo(k)fluoranthene	J	120	ug/Kgdrywt	6	20	120	19.	62.
Benzo(a)pyrene	LL	240	ug/Kgdrywt	6	20	120	21.	62.
Indeno(1,2,3-cd)pyrene		230	ug/Kgdrywt	6	20	120	12.	62.
Dibenzo(a,h)anthracene	J	78.	ug/Kgdrywt	6	20	120	11.	62.
Benzo(g,h,i)perylene	JLL	93.	ug/Kgdrywt	6	20	120	12.	62.
2-Methylnaphthalene-D10		76.8	%					
Fluorene-D10		59.2	%					
Pyrene-D10		52.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-11
Client ID: TF2-003-SB1015-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1033.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 03-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	3.4	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	J	9.2	ug/Kgdrywt	1	20	22.	2.5	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	J	9.0	ug/Kgdrywt	1	20	22.	1.7	11.
Fluorene	J	5.1	ug/Kgdrywt	1	20	22.	3.6	11.
Phenanthrene		100	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	J	13.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene		76.	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	E	400	ug/Kgdrywt	1	20	22.	2.4	11.
Benzo(a)anthracene		76.	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene		120	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene		74.	ug/Kgdrywt	1	20	22.	2.7	11.
Benzo(k)fluoranthene	J	18.	ug/Kgdrywt	1	20	22.	3.5	11.
Benzo(a)pyrene	LL	76.	ug/Kgdrywt	1	20	22.	3.7	11.
Indeno(1,2,3-cd)pyrene		50.	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	22.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	LL	68.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		83.9	%					
Fluorene-D10		63.8	%					
Pyrene-D10		122.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-11DL
Client ID: TF2-003-SB1015-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1042.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 03-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	22.	ug/Kgdrywt	2	20	45.	5.8	22.
2-Methylnaphthalene	J	9.9	ug/Kgdrywt	2	20	45.	4.9	22.
Acenaphthylene	U	22.	ug/Kgdrywt	2	20	45.	2.7	22.
Acenaphthene	J	11.	ug/Kgdrywt	2	20	45.	3.4	22.
Fluorene	J	7.6	ug/Kgdrywt	2	20	45.	7.2	22.
Phenanthrene		100	ug/Kgdrywt	2	20	45.	4.0	22.
Anthracene	J	18.	ug/Kgdrywt	2	20	45.	2.7	22.
Fluoranthene		96.	ug/Kgdrywt	2	20	45.	4.0	22.
Pyrene		330	ug/Kgdrywt	2	20	45.	4.7	22.
Benzo(a)anthracene		69.	ug/Kgdrywt	2	20	45.	4.2	22.
Chrysene		110	ug/Kgdrywt	2	20	45.	3.8	22.
Benzo(b)Fluoranthene		89.	ug/Kgdrywt	2	20	45.	5.4	22.
Benzo(k)fluoranthene	J	26.	ug/Kgdrywt	2	20	45.	6.9	22.
Benzo(a)pyrene	LL	84.	ug/Kgdrywt	2	20	45.	7.4	22.
Indeno(1,2,3-cd)pyrene		59.	ug/Kgdrywt	2	20	45.	4.2	22.
Dibenzo(a,h)anthracene	J	31.	ug/Kgdrywt	2	20	45.	4.0	22.
Benzo(g,h,i)perylene	LL	69.	ug/Kgdrywt	2	20	45.	4.5	22.
2-Methylnaphthalene-D10		87.8	%					
Fluorene-D10		66.4	%					
Pyrene-D10		95.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-13
Client ID: TF2-003-SB1016-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1034.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 03-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	4.8	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene		22.	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	J	7.9	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene	E	550	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene		67.	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene	E	690	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene	E	1000	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene	E	460	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene	E	440	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene	E	380	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene		130	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	LL	260	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene		190	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene		49.	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	LL	100	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		82.7	%					
Fluorene-D10		64.0	%					
Pyrene-D10		63.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-13DL
Client ID: TF2-003-SB1016-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1043.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 03-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	54.	ug/Kgdrywt	5	20	110	14.	54.
2-Methylnaphthalene	U	54.	ug/Kgdrywt	5	20	110	12.	54.
Acenaphthylene	U	54.	ug/Kgdrywt	5	20	110	6.4	54.
Acenaphthene	J	24.	ug/Kgdrywt	5	20	110	8.0	54.
Fluorene	U	54.	ug/Kgdrywt	5	20	110	17.	54.
Phenanthrene		590	ug/Kgdrywt	5	20	110	9.7	54.
Anthracene	J	82.	ug/Kgdrywt	5	20	110	6.4	54.
Fluoranthene		680	ug/Kgdrywt	5	20	110	9.7	54.
Pyrene		960	ug/Kgdrywt	5	20	110	11.	54.
Benzo(a)anthracene		480	ug/Kgdrywt	5	20	110	10.	54.
Chrysene		500	ug/Kgdrywt	5	20	110	9.1	54.
Benzo(b)Fluoranthene		450	ug/Kgdrywt	5	20	110	13.	54.
Benzo(k)fluoranthene		140	ug/Kgdrywt	5	20	110	17.	54.
Benzo(a)pyrene	LL	270	ug/Kgdrywt	5	20	110	18.	54.
Indeno(1,2,3-cd)pyrene		220	ug/Kgdrywt	5	20	110	10.	54.
Dibenzo(a,h)anthracene	J	70.	ug/Kgdrywt	5	20	110	9.7	54.
Benzo(g,h,i)perylene	JLL	82.	ug/Kgdrywt	5	20	110	11.	54.
2-Methylnaphthalene-D10		84.4	%					
Fluorene-D10		73.0	%					
Pyrene-D10		55.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-14
Client ID: TF2-003-SB1016-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1035.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 03-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.3	11.
Acenaphthylene	J	1.8	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	J	6.9	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	J	4.0	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene		140	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene	J	17.	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene		180	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene		250	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene		120	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene		110	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene		110	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene		39.	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	LL	74.	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene		64.	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	J	19.	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	LL	29.	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		81.9	%					
Fluorene-D10		68.0	%					
Pyrene-D10		70.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-1
Client ID: F2-003-SB1017-011.6
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1013.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 02-DEC-13
Analyst: jJCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 80.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	6.5	ug/Kgdrywt	1	20	24.	3.1	12.
2-Methylnaphthalene	J	6.5	ug/Kgdrywt	1	20	24.	2.6	12.
Acenaphthylene	J	2.4	ug/Kgdrywt	1	20	24.	1.4	12.
Acenaphthene		66.	ug/Kgdrywt	1	20	24.	1.8	12.
Fluorene		31.	ug/Kgdrywt	1	20	24.	3.9	12.
Phenanthrene	E	1300	ug/Kgdrywt	1	20	24.	2.2	12.
Anthracene		150	ug/Kgdrywt	1	20	24.	1.4	12.
Fluoranthene	E	1700	ug/Kgdrywt	1	20	24.	2.2	12.
Pyrene	E	2100	ug/Kgdrywt	1	20	24.	2.5	12.
Benzo(a)anthracene	E	970	ug/Kgdrywt	1	20	24.	2.3	12.
Chrysene	E	970	ug/Kgdrywt	1	20	24.	2.0	12.
Benzo(b)Fluoranthene	E	740	ug/Kgdrywt	1	20	24.	2.9	12.
Benzo(k)fluoranthene		240	ug/Kgdrywt	1	20	24.	3.7	12.
Benzo(a)pyrene	ELL	530	ug/Kgdrywt	1	20	24.	4.0	12.
Indeno(1,2,3-cd)pyrene		400	ug/Kgdrywt	1	20	24.	2.3	12.
Dibenzo(a,h)anthracene		98.	ug/Kgdrywt	1	20	24.	2.2	12.
Benzo(g,h,i)perylene	LL	240	ug/Kgdrywt	1	20	24.	2.4	12.
2-Methylnaphthalene-D10		81.9	%					
Fluorene-D10		76.6	%					
Pyrene-D10		66.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-1DL
Client ID: F2-003-SB1017-011.6
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1036.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 03-DEC-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 80.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	120	ug/Kgdrywt	10	20	240	31.	120
2-Methylnaphthalene	U	120	ug/Kgdrywt	10	20	240	26.	120
Acenaphthylene	U	120	ug/Kgdrywt	10	20	240	14.	120
Acenaphthene	J	68.	ug/Kgdrywt	10	20	240	18.	120
Fluorene	U	120	ug/Kgdrywt	10	20	240	39.	120
Phenanthrene		1500	ug/Kgdrywt	10	20	240	22.	120
Anthracene	J	200	ug/Kgdrywt	10	20	240	14.	120
Fluoranthene		1600	ug/Kgdrywt	10	20	240	22.	120
Pyrene		2500	ug/Kgdrywt	10	20	240	25.	120
Benzo(a)anthracene		1100	ug/Kgdrywt	10	20	240	23.	120
Chrysene		1100	ug/Kgdrywt	10	20	240	20.	120
Benzo(b)Fluoranthene		980	ug/Kgdrywt	10	20	240	29.	120
Benzo(k)fluoranthene		300	ug/Kgdrywt	10	20	240	37.	120
Benzo(a)pyrene	LL	570	ug/Kgdrywt	10	20	240	40.	120
Indeno(1,2,3-cd)pyrene		480	ug/Kgdrywt	10	20	240	23.	120
Dibenzo(a,h)anthracene	J	160	ug/Kgdrywt	10	20	240	22.	120
Benzo(g,h,i)perylene	JLL	180	ug/Kgdrywt	10	20	240	24.	120
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-2
Client ID: TF2-003-SB1017-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1014.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 02-DEC-13
Analyst: jJCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.3	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Phenanthrene	J	9.1	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	J	1.7	ug/Kgdrywt	1	20	21.	1.3	10.
Fluoranthene	J	15.	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	J	14.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	J	6.6	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	J	7.3	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	J	12.	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Benzo(a)pyrene	JLL	3.6	ug/Kgdrywt	1	20	21.	3.5	10.
Indeno(1,2,3-cd)pyrene	J	7.2	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	J	8.8	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	ULL	10.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		78.9	%					
Fluorene-D10		71.5	%					
Pyrene-D10		83.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-3
Client ID: TF2-003-SB1017-0810
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1015.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 02-DEC-13
Analyst: jJCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene	J	1.9	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene	U	11.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	J	3.5	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene	U	11.	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	J	6.5	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	J	7.4	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene	J	3.7	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene	J	4.4	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	J	10.	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene	U	11.	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	ULL	11.	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	J	5.8	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene	J	8.7	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	ULL	11.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		73.0	%					
Fluorene-D10		68.8	%					
Pyrene-D10		81.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-15
Client ID: TF2-003-SB1018-0204
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1023.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 02-DEC-13
Analyst: jJCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	J	3.8	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene		34.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	20.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		290	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		31.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		160	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		270	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		87.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		82.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		58.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	J	19.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	LL	44.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		39.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	12.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	18.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		74.4	%					
Fluorene-D10		67.9	%					
Pyrene-D10		80.9	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-10
Client ID: TF2-SB-DUP08-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: N1022.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 02-DEC-13
Analyst: jJCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	4.2	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	U	11.	ug/Kgdrywt	1	20	21.	2.4	11.
Acenaphthylene	U	11.	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	J	5.0	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	J	4.0	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene		53.	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene	J	9.6	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene		70.	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene		83.	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene		34.	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene		38.	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene		39.	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene	J	15.	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	LL	28.	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene		36.	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	J	14.	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	JLL	18.	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		61.2	%					
Fluorene-D10		53.4	%					
Pyrene-D10		61.9	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-12
Client ID: TF2-SB-RB04-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: AGK10417.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 19-NOV-13
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG134676

Analysis Date: 28-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: AQ
% Solids: NA
Report Date: 02-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	240	ug/L	1	500	470	140	240
o-Terphenyl		106.	%					
n-Triacontane-D62		98.9	%					

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Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-12
Client ID: TF2-SB-RB04-1113
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: 9GK4052.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 26-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135144

Analysis Date: 26-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics		11	ug/l	1	10	10.	6.7	8.0
p-Bromofluorobenzene		86.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-1
Client ID: F2-003-SB1017-011.6
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: AGK10420.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896

Analysis Date: 28-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 80.
Report Date: 02-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		250	mg/Kgdrywt	1	20	24.	6.8	12.
o-Terphenyl		71.6	%					
n-Triacontane-D62		80.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG9002-1RA
Client ID: F2-003-SB1017-011.6
Project: NAVSTA Newport CTO WE:
SDG: SG9002
Lab File ID: 9GK4023.D

Sample Date: 15-NOV-13
Received Date: 15-NOV-13
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904

Analysis Date: 25-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 80.
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	3.4	mg/Kgdrywt	1	2.5	4.2	3.1	3.4
p-Bromofluorobenzene		95.6	%					

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APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: 03019 SDG: SG9002

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: See DV Report

Missing Information	Date Lab Contacted	Date Received

Validator: JK Date: 12/18/13

EPA-NE - Data Validation
VOA/SV/Pest/PCB-1

See DV Report

Case: _____ SDG: _____

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: _____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG: See DV Report

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator:_____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: _____

Date: 12/18/13

1/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator:_____

Date: 12/18/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: JK

Date: 12/18/13

1/13

EPA NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator:_____

Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: JK

Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator:_____

Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)

Comments:

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: _____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: _____

Date: 12/18/13

1/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: _____

Date: 12/18/13

1/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Validator: JK Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: _____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: JK

Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits

Method		Semi-Volatile Method QC Acceptance Criteria													
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methyhlphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: _____

Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____

Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery				% Recovery			
				Fluoranthene				Naphthalene	
				Pyrene				2-Methylnaphthalene	
				Benzo(a)anthracene				Acenaphthylene	
				Chrysene				Acenaphthene	
				Benzo(b)fluoranthene				Fluorene	
				Benzo(k)fluoranthene				Pentachlorophenol	
				Benzo(a)pyrene				Phenanthrene	
				Indeno(1.2.2-cd)pyrene				Anthracene	
				Dibenzo(a,h)anthracene					
				Benzo(g,h,i)perylene					

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1.2-Dichloroethane-d_4

Validator: _____ Date: 12/18/13

1/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator:_____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

_____

_____

_____

Validator: _____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator:_____

Date: 12/18/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: _____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: _____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

*For Pest/PCB only.

Validator: _____

Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: _____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: _____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: _____

Date: 12/18/13

Case:_____ SDG:_____

See DV Report

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: _____

Date: 12/18/13

EPA NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: _____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: _____

Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: _____ Date: 12/18/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: _____ Date: 12/18/13

Case:_____ SDG:_____ See DV Report

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: _____

Date: 12/18/13

APPENDIX D

SUPPORT DOCUMENTATION

SDG	SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SG9002	TS	%	TF2-003-SB1017-0204	SG9002-2	NM	11/15/2013	11/20/2013	11/21/2013	5	1	6
SG9002	TS	%	TF2-003-SB1018-0204	SG9002-15	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-SB-DUP08-1113	SG9002-10	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-003-SB1017-011.6	SG9002-1	NM	11/15/2013	11/20/2013	11/21/2013	5	1	6
SG9002	TS	%	TF2-003-SB1016-0810	SG9002-14	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-003-SB1012-0204	SG9002-4	NM	11/15/2013	11/20/2013	11/21/2013	5	1	6
SG9002	TS	%	TF2-003-SB1011-0204	SG9002-6	NM	11/15/2013	11/20/2013	11/21/2013	5	1	6
SG9002	TS	%	TF2-003-SB1016-0204	SG9002-13	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-003-SB1015-0810	SG9002-11	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-003-SB1014-0204	SG9002-7	NM	11/15/2013	11/20/2013	11/21/2013	5	1	6
SG9002	TS	%	TF2-003-SB1014-0810	SG9002-8	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-003-SB1015-0204	SG9002-9	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-003-SB1017-0810	SG9002-3	NM	11/15/2013	11/20/2013	11/21/2013	5	1	6
SG9002	SIM	%	TF2-003-SB1014-0204	SG9002-7	SUR	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	%	TF2-003-SB1014-0204	SG9002-7DL	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1017-011.6	SG9002-1DL	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1017-011.6	SG9002-1	SUR	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	%	TF2-003-SB1011-0204	SG9002-6	SUR	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	%	TF2-003-SB1014-0810	SG9002-8	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18

SDG	SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SG9002	SIM	%	TF2-003-SB1016-0810	SG9002-14	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1015-0810DL	SG9002-11DL	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1016-0204	SG9002-13DL	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1012-0204	SG9002-4	SUR	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	%	TF2-003-SB1016-0204	SG9002-13	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1012-0204	SG9002-4DL	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1015-0204	SG9002-9DL	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1015-0204	SG9002-9	SUR	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	%	TF2-003-SB1012-0810	SG9002-5DL	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1015-0810	SG9002-11	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1012-0810	SG9002-5	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1014-0810	SG9002-8DL	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1017-0810	SG9002-3	SUR	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	%	TF2-003-SB1017-0204	SG9002-2	SUR	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	%	TF2-003-SB1018-0204	SG9002-15	SUR	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	%	TF2-SB-DUP08-1113	SG9002-10	SUR	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	%	TF2-SB-RB04-1113	SG9002-12	SUR	11/15/2013	11/18/2013	12/02/2013	3	14	17
SG9002	SIM	UG/KG	TF2-003-SB1012-0810DL	SG9002-5DL	NM	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	UG/KG	TF2-003-SB1015-0204DL	SG9002-9DL	NM	11/15/2013	11/25/2013	12/03/2013	10	8	18

SDG	SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SG9002	SIM	UG/KG	TF2-003-SB1015-0204	SG9002-9	NM	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	UG/KG	TF2-003-SB1014-0810DL	SG9002-8DL	NM	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	UG/KG	TF2-003-SB1011-0204	SG9002-6	NM	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	UG/KG	TF2-003-SB1012-0204	SG9002-4	NM	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	UG/KG	TF2-003-SB1015-0810	SG9002-11	NM	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	UG/KG	TF2-003-SB1012-0810	SG9002-5	NM	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	UG/KG	TF2-003-SB1016-0204DL	SG9002-13DL	NM	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	UG/KG	TF2-003-SB1014-0204	SG9002-7	NM	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	UG/KG	TF2-003-SB1014-0204DL	SG9002-7DL	NM	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	UG/KG	TF2-003-SB1012-0204DL	SG9002-4DL	NM	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	UG/KG	TF2-SB-DUP08-1113	SG9002-10	NM	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	UG/KG	TF2-003-SB1016-0204	SG9002-13	NM	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	UG/KG	TF2-003-SB1016-0810	SG9002-14	NM	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	UG/KG	TF2-003-SB1017-011.6	SG9002-1	NM	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	UG/KG	TF2-003-SB1017-011.6DL	SG9002-1DL	NM	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	UG/KG	TF2-003-SB1017-0204	SG9002-2	NM	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	UG/KG	TF2-003-SB1017-0810	SG9002-3	NM	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	UG/KG	TF2-003-SB1018-0204	SG9002-15	NM	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	UG/KG	TF2-003-SB1014-0810	SG9002-8	NM	11/15/2013	11/25/2013	12/03/2013	10	8	18

SDG	SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SG9002	SIM	UG/KG	TF2-003-SB1015-0810DL	SG9002-11DL	NM	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	UG/L	TF2-SB-RB04-1113	SG9002-12	NM	11/15/2013	11/18/2013	12/02/2013	3	14	17
SG9002	GRO	MG/KG	TF2-003-SB1017-011.6	SG9002-1RA	NM	11/15/2013	11/22/2013	11/25/2013	7	3	10
SG9002	GRO	UG/L	TF2-SB-RB04-1113	SG9002-12	NM	11/15/2013	11/26/2013	11/26/2013	11	0	11
SG9002	TPH	MG/KG	TF2-003-SB1017-011.6	SG9002-1	NM	11/15/2013	11/22/2013	11/28/2013	7	6	13
SG9002	TPH	UG/L	TF2-SB-RB04-1113	SG9002-12	NM	11/15/2013	11/19/2013	11/28/2013	4	9	13

TETRA TECH NUS, INC. | **CHAIN OF CUSTODY** | **NUMBER** NE 1904 | **PAGE** 3 **OF** 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington MA	Debra Seiken	978 474 8465	Katahdin Analytical Services / J. Obrien
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
		Kayleen Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier pick up RI - hand deliver		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: PAH/METALS, TOTAL SCMS 6860	4oz jar	40 ml vials EXTR	4oz jar	COMMENTS
11/14	1445	TF2-004/5-SB1005-0608	SB1005	6	8	SO	G	4	G	4oz	X	X	X		
11/14	0000	TF2-SB-DUP07-1113	—	—	—	SO	G	3	G	4oz	—	X	X		
11/15	0915	TF2-003-SB1017-0116	SB1017	1	1.6	SO	G	4	G	4oz	X	X	X		
11/15	0930	TF2-003-SB1017-0204	SB1017	2	4	SO	G	1	G	4oz	X	—	—		
11/15	0940	TF2-003-SB1017-0810	SB1017	8	10	SO	G	1	G	4oz	X	—	—		
11/15	1160	TF2-003-SB1012-0204	SB1012	2	4	SO	G	2	G	4oz	X	—	—		CMBAC
11/15	1145	TF2-003-SB1012-0810	SB1012	8	10	SO	G	1	G	4oz	X	—	—		
11/15	1025	TF2-003-SB1011-0204	SB1011	2	4	SO	G	1	G	4oz	X	—	—		
11/15	1145	TF2-003-SB1014-0204	SB1014	2	4	SO	G	1	G	4oz	X	—	—		
11/15	1200	TF2-003-SB1014-0810	SB1014	8	10	SO	G	1	G	4oz	X	—	—		
11/15	1100	TF2-003-SB1015-0204	SB1015	2	4	SO	G	1	G	4oz	X	—	—		
11/15	0000	TF2-~~SB~~ 003-DUP09-1113	—	—	—	SO	G	1	G	4oz	X	—	—		
11/15	1120	TF2-003-SB1015-0810	SB1015	8	10	SO	G	1	G	4oz	X	—	—		

1. RELINQUISHED BY	DATE 11-15-13	TIME 1345	1. RECEIVED BY	DATE	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

TETRA TECH NUS, INC. SG9002 CHAIN OF CUSTODY | NUMBER Nº 1908 | PAGE 4 OF 4

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603.19	Wilmington, MA	D. Seiken	978 474 8445	Katahdin Analytical Services / J Cobin
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
KJalkut		K Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		CITY, STATE
		Courier p/u in RI - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: GRO 40 ml vials	DRH 1L amber	Metals 250 ml poly	EXTPH 1L amber	3 AH, metals, total solids 4oz jar	COMMENTS
									G	10% H2SO4 ≤6°C						
									G	HNO3 ≤6°C						
									P	HCl ≤6°C						
									G	≤6°C						
									G	≤6°C						
11/15	1200	TF2-SB-RB04-1113	—	—	—	QC	G	7			X	X	X	X	—	
11/15	1015	TF2-003-SB1016-0204	SB 1016	2	4	SO	G	1			—	—	—	—	X	
11/15	1025	TF2-003-SB1016-0810	SB 1016	8	10	SO	G	1			—	—	—	—	X	
11/15	1000	TF2-003-SB1018-0204	SB 1018	2	4	SO	G	1			—	—	—	-	X	

KJalkut 11/13/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-15-13	1345	1. RECEIVED BY	11-15-13	1345
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TINUS-001

000003

Katahdin Analytical Services, Inc. **Sample Receipt Condition Report**

Client: Tetra Tech	KAS PM: JD	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SG8999 + SG9006	KIMS Review By: JD	Received By: DM
SDG #:	Cooler: 1 of 2	Date/Time Rec.: 11/5/13 1700

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?		✓			
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 1.4
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?	✓				
Soil/Sediment:					
Received in airtight container?	✓				
Received in methanol?	✓				
Methanol covering soil?	✓				
D.I. Water - Received within 48 hour HT?	✓				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

0000010

Katahdin Analytical Services, Inc. **Sample Receipt Condition Report**

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SG8999 + SG9006 2	KIMS Review By:	Received By: DM
SDG #:	Cooler: 2 of 2	Date/Time Rec.: 11-15-13 1700

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?		✓			
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 2.0
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:				✓	
Aqueous: No bubble larger than a pea?					
Soil/Sediment:				✓	
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

extra jars (not on chain) provided for TF2-003-SB102-0204 (3 total) + TF2-003-SB1011-0204 (2 total).

0000011

Katahdin
ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Nov. 18, 2013
08:22 AM

Login Number: SG9002

Account: TETRAT001 Web
Tetra Tech NUS, Inc.

Project: TETRATWE30
NAVSTA Newport CTO WE30 &WE59

Primary Report Address:
Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
661 Anderson Drive
Pittsburgh,PA 15220
vanessa.good@tetratech.com

Primary Invoice Address:
Accounts Payable
Tetra Tech NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh,PA 15220

Report CC Addresses:
Invoice CC Addresses:

Quote/Incoming: TETRATWE30

Login Information:

ANALYSIS INSTRUCTIONS	:	DoD QSM with DoD limits. ND to LOD. "J" flag between DL and LOQ. Metals run MS/lab dup, if ms outside limits run post dig spike. Metals run serial dilution on field QC sample. VOA soils NaHSO4/MeOH. TPH range=C8-C44. GRO=C5-C12. Decant any standing water, homogenize and determine %solids before analysis. Aliquots must be increased to comp. for moisture. Centrifuging may also be used. Report=dry weight basis. 8260C/8015D/8270D/7471B/7470A. 8082=30/40 days--Final Vol=1ml for AQ.
CHECK NO.	:	
CLIENT PO#	:	1045366 40-CTO WE30 (01) 112G03019
CLIENT PROJECT MANAGE	:	Dabra Seiken
CONTRACT	:	N62470-08-D-1001
COOLER TEMPERATURE	:	1.4, 2.0
DELIVERY SERVICES	:	KAS
EDD FORMAT	:	KAS119QC-CSV
LOGIN INITIALS	:	GN
PM	:	JQ
PROJECT NAME	:	NAVSTA Newport CTO WE30 &WE59
QC LEVEL	:	IV
REGULATORY LIST	:	
REPORT INSTRUCTIONS	:	Summary package needs all forms. Send HC & EDD to Vanessa.
SDG ID	:	
SDG STATUS	:	

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG9002-1	F2-003-SB1017-011.6	15-NOV-13 09:15	15-NOV-13			06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Order	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			**TF2-003-SB1017-011.6**
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8015M-FLPRO	29-NOV-13			
Solid	S	SW8015M-GRO	29-NOV-13	100g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

11.18.13

Login Number: SG9002

Quote/Incoming: TETRATWE30

Account: TETRAT001 Web

Tetra Tech NUS, Inc.

Project: TETRATWE30

NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG9002-2	TF2-003-SB1017-0204	15-NOV-13 09:20	15-NOV-13			06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG9002-3	TF2-003-SB1017-0810	15-NOV-13 09:40	15-NOV-13			06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

11.18.13

Login Number: SG9002

Quote/Incoming: TETRATWE30

Account: TETRAT001 Web

Tetra Tech NUS, Inc.

Project: TETRATWE30

NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG9002-4	TF2-003-SB1012-0204	15-NOV-13 11:10	15-NOV-13			06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			**MS/MSD**
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

SG9002-5	TF2-003-SB1012-0810	15-NOV-13 11:45	15-NOV-13		06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

11.18.13

Login Number: SG9002

Quote/Incoming: TETRATWE30

Account: TETRAT001 Web

Tetra Tech NUS, Inc.

Project: TETRATWE30

NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG9002-6	TF2-003-SB1011-0204	15-NOV-13 10:25	15-NOV-13			06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG9002-7	TF2-003-SB1014-0204	15-NOV-13 11:45	15-NOV-13			06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

11.18.13

Katahdin ANALYTICAL SERVICES

Katahdin Analytical Services

Login Chain of Custody Report (lno1)

Nov. 18, 2013

08:22 AM

Login Number: SG9002

Quote/Incoming: TETRATWE30

Account: TETRAT001 Web

Tetra Tech NUS, Inc.

Project: TETRATWE30

NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG9002-8	TF2-003-SB1014-0810	15-NOV-13 12:00	15-NOV-13			06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

SG9002-9	TF2-003-SB1015-0204	15-NOV-13 11:00	15-NOV-13			06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

11.18.13

Login Number: SG9002 **Quote/Incoming:** TETRATWE30

Account: TETRAT001 Web

Tetra Tech NUS, Inc.

Project: TETRATWE30

NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG9002-10	TF2-SB-DUP08-1113	15-NOV-13 00:00	15-NOV-13			06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

SG9002-11	TF2-003-SB1015-0810	15-NOV-13 11:20	15-NOV-13			06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

11.18.13

Login Number: SG9002 **Quote/Incoming:** TETRATWE30

Account: TETRAT001 Web

Tetra Tech NUS, Inc.

Project: TETRATWE30

NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG9002-12	TF2-SB-RB04-1113	15-NOV-13 12:00	15-NOV-13			06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Aqueous	S	SW3010MS-PREP	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-ALUMINUM	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-ANTIMONY	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-ARSENIC	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-BARIUM	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-BERYLLIUM	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-CADMIUM	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-CALCIUM	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-CHROMIUM	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-COBALT	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-COPPER	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-IRON	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-LEAD	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-MAGNESIUM	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-MANGANESE	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-NICKEL	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-POTASSIUM	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-SELENIUM	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-SILVER	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-SODIUM	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-THALLIUM	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-VANADIUM	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW6020-ZINC	14-MAY-14	250mL Plastic+HNO3		
Aqueous	S	SW7470-MERCURY	13-DEC-13	500mL Plastic+HNO3		
Aqueous	S	SW8015M-FLPRO	22-NOV-13	1L N-AmberG+HCl		
Aqueous	S	SW8015M-GRO	29-NOV-13	40mL Vial+HCl		
Aqueous	S	SW8270SIM-S	22-NOV-13	1L N-Amber Glass		

SG9002-13	TF2-003-SB1016-0204	15-NOV-13 10:15	15-NOV-13		06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

11.18.13

Login Number: SG9002 **Quote/Incoming:** TETRATWE30

Account: TETRAT001 Web

Tetra Tech NUS, Inc.

Project: TETRATWE30

NAVSTA Newport CTO WE30 &WE59

Laboratory Sample ID	Client Sample Number	Collect Date/Time	Receive Date	PR	Verbal Date	Due Date	Mailed
SG9002-14	TF2-003-SB1016-0810	15-NOV-13 10:25	15-NOV-13			06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

SG9002-15	TF2-003-SB1018-0204	15-NOV-13 10:00	15-NOV-13			06-DEC-13	

Matrix		Product	Hold Date (shortest)	Bottle Type	Bottle Count	Comments
Solid	S	SW3050MS-PREP	14-MAY-14			
Solid	S	SW6020-ALUMINUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ANTIMONY	14-MAY-14	4oz Glass		
Solid	S	SW6020-ARSENIC	14-MAY-14	4oz Glass		
Solid	S	SW6020-BARIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-BERYLLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CADMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CALCIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-CHROMIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-COBALT	14-MAY-14	4oz Glass		
Solid	S	SW6020-COPPER	14-MAY-14	4oz Glass		
Solid	S	SW6020-IRON	14-MAY-14	4oz Glass		
Solid	S	SW6020-LEAD	14-MAY-14	4oz Glass		
Solid	S	SW6020-MAGNESIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-MANGANESE	14-MAY-14	4oz Glass		
Solid	S	SW6020-NICKEL	14-MAY-14	4oz Glass		
Solid	S	SW6020-POTASSIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SELENIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-SILVER	14-MAY-14	4oz Glass		
Solid	S	SW6020-SODIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-THALLIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-VANADIUM	14-MAY-14	4oz Glass		
Solid	S	SW6020-ZINC	14-MAY-14	4oz Glass		
Solid	S	SW7471-MERCURY	13-DEC-13	50g Glass		
Solid	S	SW8270SIM-S	29-NOV-13	100g Glass		
Solid	S	TS	15-DEC-13			

Total Samples: ***15*** ***Total Analyses:*** ***393***

11.18.13

0000021

Katahdin
ANALYTICAL SERVICES

nelac
Cert. No. E87654

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT CTO WE30 & WE59
SG9002

Sample Receipt

The following sample was received on November 15, 2013 and was logged in under Katahdin Analytical Services work order number SG9002 for a hardcopy due date of December 06, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG9002-1	TF2-003-SB1017-011.6
SG9002-2	TF2-003-SB1017-0204
SG9002-3	TF2-003-SB1017-0810
SG9002-4	TF2-003-SB1012-0204
SG9002-5	TF2-003-SB1012-0810
SG9002-6	TF2-003-SB1011-0204
SG9002-7	TF2-003-SB1014-0204
SG9002-8	TF2-003-SB1014-0810
SG9002-9	TF2-003-SB1015-0204
SG9002-10	TF2-SB-DUP08-1113
SG9002-11	TF2-003-SB1015-0810
SG9002-12	TF2-SB-RB04-1113
SG9002-13	TF2-003-SB1016-0204
SG9002-14	TF2-003-SB1016-0810
SG9002-15	TF2-003-SB1018-0204

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

One of the client IDs on the Chain of Custody exceeds the 19-character limit of the Katahdin Analytical Information Management System. Therefore, the first character "T" in the client ID for sample SG9002-1 was omitted on all forms.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG9002 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8270D SIM Analysis

Sample SG9002-4 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

All soil samples and associated QC were subjected to the GPC sample clean-up process.

Samples SG9002-7 and 7DL had low recoveries for the surrogate pyrene-d10 which were outside of the laboratory established acceptance limits. The client was contacted and informed the laboratory to proceed with narration.

Samples SG9002-1, 1DL, 2, 3, 4, 4DL, 5, 5DL, 6, 7, 8, 8DL, 9, 9DL, 10, 11, 11DL, 12, 13, 13DL, 14 and 15 were manually integrated for benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene, chrysene-d12, fluorene-d10 and/or acenaphthylene. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Although DoD QSM acceptance limits were requested for this project, laboratory established acceptance limits were used because the DoD QSM does not list acceptance limits for 8270SIM. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these statistical acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

The LCSD WG134603-3 had two spiked target analytes with recoveries that were high and outside of the laboratory established acceptance limits. The DoD QSM allowable number of exceedances for 17 target analytes is one analyte. Since the LCS WG134603-2 was acceptable, no further action was taken.

The LCS and LCSD WG135096-2 and 3 had two spiked target analytes with recoveries that were low and outside of the laboratory established acceptance limits. The DoD QSM allowable number of exceedances for 17 target analytes is one analyte. If the DoD QSM acceptance limits are applied, the LCS and LCSD had acceptable recoveries for these analytes. Therefore, no further action was taken.

The MS WG135096-4 had two spiked target analytes with recoveries that were non-calculable and reported as 0% recovery due to the concentration in the native sample being higher than in the MS. This is likely due to a non-homogeneous sample.

The independent check standard (file N0808) associated with the initial calibration on the N instrument on 11/19/2013 had a low concentration for the target analyte benzo(k)fluoranthene , which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The CV (file N0914) had a high response for the target analyte benzo(b)fluoranthene. The CV (file N1030) had a high response for the target analyte 2-methylnaphthalene. These responses resulted in %D's that were greater than the acceptance limit of 20% from DoD QSM Version 4.1.

Samples SG9002-5 and 11 had low responses for the internal standard perylene-d12 that resulted in a %D which was outside the laboratory acceptance limit of -50% to +100% of the response of the internal standard of the ICAL midpoint standard. The samples were reanalyzed at dilution with acceptable internal standard responses.

FL-PRO Analysis

Sample SG9002-1 was manually integrated for the petroleum range organics, surrogates o-terphenyl and n-triacontane-d62. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The LCS WG134676-2 had a recovery for the surrogate o-terphenyl that was low and outside of the method acceptance limits. Since the LCSD had acceptable surrogate recovery and the LCS/LCSD had acceptable spike recoveries, no further action was taken.

The LCSD WG134896-3 had a recovery for petroleum range organics that was low and outside of the method acceptance limits. Since the LCS had an acceptable recovery, no further action was taken.

8015 GRO Analysis

Sample SG9002-12 was manually integrated for the GRO range. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The GRO range was detected above the MDL, but below the LOQ, in the method blank WG134904-1RA. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since the range was not detected above the MDL in the associated sample, no further action was taken.

The closing CV (file 9GK4015) had a high response for naphthalene, which was greater than 20%. Since the method requirement applies to only the GRO range response, which was acceptable, the associated samples were not reanalyzed.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG9002 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Soil-matrix Katahdin Sample Nos. SG9002-(1-11, 13-15) were digested for ICP-MS analysis on 11/27/13 (QC Batch GK27IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG9002-4 was prepared in duplicate and with a matrix spike in this digestion batch.

Aqueous-matrix Katahdin Sample No. SG9002-12 was digested for ICP-MS analysis on 11/27/13 (QC Batch GK27IMW2) in accordance with USEPA Method 3010A. Duplicate laboratory control samples were prepared in this batch. The measured manganese concentration (8.79 ug/L) of the preparation blank that was digested in this batch is greater than the laboratory's reporting limit. However, because the measured manganese concentration of Katahdin Sample No. SG9002-12 is less than the laboratory's Method Detection Limit for manganese, no corrective action was required.

ICP-MS analyses of Work Order SG9002 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	Associated Analytes
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Solid-matrix Katahdin Sample Numbers SG9002-(1-10) were digested for mercury analysis on 12/02/13 (QC Batch GL02HGS3) in accordance with USEPA Method 7471B. Katahdin Sample No. SG9002-4 was prepared in duplicate and with a matrix spike in this digestion batch.

Solid-matrix Katahdin Sample Numbers SG9002-(11,13-15) were digested for mercury analysis on 12/02/13 (QC Batch GL02HGS4) in accordance with USEPA Method 7471B. Duplicate laboratory control samples were prepared in this batch.

Aqueous-matrix Katahdin Sample Number SG9002-12 was digested for mercury analysis on 12/04/13 (QC Batch GL04HGW2) in accordance with USEPA Method 7470A..

Mercury analysis of the Katahdin Work Order SG9002 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG9002-4 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for barium, copper, and mercury.

The measured recoveries of antimony, copper, and potassium in the matrix-spiked aliquot of Katahdin Sample No. SG9002-4 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The serial dilution analysis of Katahdin Sample No. SG9002-4 is within the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for all analytes.

The measured recoveries of all analytes in a post-digestion matrix spike aliquot of Katahdin Sample No. SG9002-4 are within the laboratory's acceptance limits (75% - 125% recovery of the added element, if the native concentration is less than four times the amount added).

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the laboratory's limits of quantitation (LOQ) are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQ's, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the

laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG9002 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
12.09.13

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

Jennifer Obrin

From: Carper, Kelly [Kelly.Carper@tetratech.com]
Sent: Wednesday, December 04, 2013 1:06 PM
To: Jennifer Obrin; Jalkut, Kayleen; Seiken, Dabra
Cc: Samchuck, Joseph
Subject: RE: COC for the samples received 11/15- Newport WE30 - SG8999 and SG9002

Narrate

From: Jennifer Obrin [mailto:jobrin@katahdinlab.com]
Sent: Wednesday, December 04, 2013 11:04 AM
To: Carper, Kelly; Jalkut, Kayleen; Seiken, Dabra
Subject: RE: COC for the samples received 11/15- Newport WE30 - SG8999 and SG9002

Good Morning,

The lab has come to me with a non-conformance regarding TF2-003-SB1014-0204 8270SIM. One surrogate failed slightly low. The hold time was 11/29. Please let me know if you want the lab to re-extract or if they can proceed with narration.

Thank you,

Jennifer Obrin
Federal Programs Project Manager
Katahdin Analytical Services
A Woman-Owned Small Business Enterprise
DoD ELAP Accredited
600 Technology Way
Scarborough, Maine 04074
Direct - 207.874.2400 x17
Cell - 207.333.7469
Fax - 207.775.4029

PLEASE NOTE: This message, including any attachments, may include privileged, confidential and/or inside information. Any distribution or use of this communication by anyone other than the intended recipient is strictly prohibited and may be unlawful. If you are not the intended recipient, please notify the sender by replying to this message and then delete it from your system.

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	Spiked sample recovery not within control limits.
*	Duplicate sample analysis not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS
(Refer to BOD Qualifiers Page for BOD footnotes)

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

- H1 pH
- H2 DO
- H3 sulfite
- H4 residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

SIM DATA

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : ND640.D
Instrument ID : GCMS-N

SDG : SG9002
Date Analyzed : 19-NOV-13
Time Analyzed : 08:29

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	35.9		
68	Less than 2.0% of mass 69	0.7	1.42	1
69	Less than 100.0% of mass 198	49.1		
70	Less than 2.0% of mass 69	0.2	0.43	1
127	40.0 - 60.0% of mass 198	59.7		
197	Less than 1.0% of mass 198	0.6		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.4		
275	10.0 - 30.0% of mass 198	20.9		
365	1.0 - 100.0% of mass 198	2.6		
441	0.0 - 100.0% of mass 443	8.0	72.23	2
442	40.0 - 100.0% of mass 198	55.2		
443	17.0 - 23.0% of mass 442	11.1	20.09	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG134654-4	N0799.D	11/19/13	09:18
Initial Calibration	WG134654-2	N0800.D	11/19/13	10:02
Initial Calibration	WG134654-3	N0801.D	11/19/13	10:45
Initial Calibration	WG134654-5	N0805.D	11/19/13	13:41
Initial Calibration	WG134654-6	N0806.D	11/19/13	14:25
Initial Calibration	WG134654-7	N0807.D	11/19/13	15:09
Independent Source	WG134654-8	N0808.D	11/19/13	15:54

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG9002
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GCMS-N
Lab File IDs : N0800.D N0801.D N0799.D **Column ID:**
N0805.D N0806.D N0807.D **Calibration Date(s):** 19-NOV-13 09:18
19-NOV-13 15:09

	0.200000(Level 1	0.500000(Level 2	1.0000 Level 3	3.0000 Level 4	7.0000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	0.97773	0.98289	0.98535	0.97168	0.98919	0.95511	AVG		0.97699		1.26271	15.00000	O
2-Methylnaphthalene	0.66933	0.69987	0.63442	0.62910	0.58835	0.57197	AVG		0.63217		7.59365	15.00000	O
Acenaphthylene	1.95357	2.10140	2.22526	2.07543	2.30450	2.38188	AVG		2.17367		7.31605	15.00000	O
Acenaphthene	1.26421	1.32992	1.33838	1.30431	1.42186	1.45294	AVG		1.35194		5.30555	15.00000	O
Fluorene	1.26808	1.27226	1.32524	1.33670	1.51952	1.55085	AVG		1.37877		9.03869	15.00000	O
Phenanthrene	1.13837	1.20920	1.24817	1.21552	1.31497	1.33922	AVG		1.24424		5.93887	15.00000	O
Anthracene	1.05711	1.22999	1.26973	1.22753	1.33986	1.37728	AVG		1.25025		8.96203	15.00000	O
Fluoranthene	0.94398	0.96933	1.07254	1.05949	1.13367	1.13623	AVG		1.05254		7.68859	15.00000	O
Pyrene	2.68252	2.53019	2.21937	2.12973	2.36990	2.32656	AVG		2.37638		8.52883	15.00000	O
Benzo(a)anthracene	1.14259	1.13994	1.27906	1.13571	1.29209	1.33338	AVG		1.22046		7.42369	15.00000	O
Chrysene	1.57750	1.52247	1.48308	1.37164	1.43466	1.41445	AVG		1.46730		5.14060	15.00000	O
Benzo(b)fluoranthene	2649	6889	25358	57673	158719	225272	LNR	0.24464	1.40779		0.99783	0.99000	O
Benzo(k)fluoranthene	2.13696	1.91831	1.75092	1.75653	1.83417	1.83678	AVG		1.87228		7.66652	15.00000	O
Benzo(a)pyrene	1.24255	1.18713	1.19834	1.18148	1.31406	1.34505	AVG		1.24477		5.60583	15.00000	O
Indeno(1,2,3-cd)pyrene	1260	3203	13355	24317	73776	109771	QUA	0.10476	1.87762	-0.05034	0.99795	0.99000	O
Dibenzo(a,h)anthracene	1347	3418	14921	27665	79946	117418	LNR	0.27329	0.72711		0.99566	0.99000	O
Benzo(g,h,i)perylene	0.67017	0.78524	0.91171	0.85671	0.95818	0.96821	AVG		0.85837		13.34841	15.00000	O
2-Methylnaphthalene-D10	1.08489	1.18658	1.16058	1.07917	1.16348	1.19944	AVG		1.14569		4.48829	15.00000	
Fluorene-D10	0.94534	0.81224	0.78076	0.78150	0.88428	0.89501	AVG		0.84986		8.01587	15.00000	
Pyrene-D10	1.30797	1.44867	1.29046	1.23317	1.37769	1.36406	AVG		1.33700		5.66149	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : ND646.D
Instrument ID : GCMS-N

SDG : SG9002
Date Analyzed : 25-NOV-13
Time Analyzed : 10:48

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	31.6		
68	Less than 2.0% of mass 69	0.7	1.61	1
69	Less than 100.0% of mass 198	42.9		
70	Less than 2.0% of mass 69	0.4	0.89	1
127	40.0 - 60.0% of mass 198	56.6		
197	Less than 1.0% of mass 198	0.8		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.2		
275	10.0 - 30.0% of mass 198	20.4		
365	1.0 - 100.0% of mass 198	2.4		
441	0.0 - 100.0% of mass 443	8.4	68.88	2
442	40.0 - 100.0% of mass 198	60.3		
443	17.0 - 23.0% of mass 442	12.2	20.16	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG135106-2	N0914.D	11/25/13	11:12
Method Blank Sample	WG134603-1	N0915.D	11/25/13	11:56
Laboratory Control S	WG134603-2	N0916.D	11/25/13	12:40
Laboratory Control S	WG134603-3	N0917.D	11/25/13	13:24

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab ID : WG135106-2
Lab File ID : N0914.D
Initial Calibration Date(s): 11/19/13 09:18 11/19/13 15:09

SDG: SG9002
Analytical Date: 11/25/13 11:12
Instrument ID: GCMS-N
Column ID:

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.97699	1.14015	1.14015	0.010	16.70036	20.00000	Averaged	
31 2-Methylnaphthalene	0.63217	0.71175	0.71175	0.010	12.58864	20.00000	Averaged	
42 Acenaphthylene	2.17367	2.42839	2.42839	0.010	11.71817	20.00000	Averaged	
45 Acenaphthene	1.35194	1.47476	1.47476	0.010	9.08490	20.01000	Averaged	
54 Fluorene	1.37877	1.50883	1.50883	0.010	9.43239	20.00000	Averaged	
64 Phenanthrene	1.24424	1.37950	1.37950	0.010	10.87110	20.00000	Averaged	
65 Anthracene	1.25025	1.41462	1.41462	0.010	13.14677	20.00000	Averaged	
68 Fluoranthene	1.05254	1.20030	1.20030	0.010	14.03822	20.01000	Averaged	
70 Pyrene	2.37638	2.44911	2.44911	0.010	3.06051	20.00000	Averaged	
72 Benzo(a)anthracene	1.22046	1.37874	1.37874	0.010	12.96899	20.00000	Averaged	
74 Chrysene	1.46730	1.74771	1.74771	0.010	19.11050	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.00000	1.28491	1.53336	0.010	28.49099	20.00000	Linear	*
79 Benzo(k)fluoranthene	1.87228	2.08900	2.08900	0.010	11.57534	20.00000	Averaged	
80 Benzo(a)pyrene	1.24477	1.34071	1.34071	0.010	7.70769	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	1.00000	0.95662	0.47233	0.010	-4.33759	20.00000	Quadratic	
83 Dibenzo(a,h)anthracene	1.00000	1.00358	0.57074	0.010	0.35817	20.00000	Linear	
84 Benzo(g,h,i)perylene	0.85837	0.95343	0.95343	0.010	11.07450	20.00000	Averaged	
30 2-Methylnaphthalene-D10	1.14569	1.31584	1.31584	0.010	14.85088	20.00000	Averaged	
52 Fluorene-D10	0.84986	0.87947	0.87947	0.010	3.48466	20.00000	Averaged	
69 Pyrene-D10	1.33700	1.42296	1.42296	0.010	6.42869	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : ND650.D
Instrument ID : GCMS-N

SDG : SG9002
Date Analyzed : 01-DEC-13
Time Analyzed : 09:10

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	33.1		
68	Less than 2.0% of mass 69	0.8	1.92	1
69	Less than 100.0% of mass 198	41.9		
70	Less than 2.0% of mass 69	0.1	0.35	1
127	40.0 - 60.0% of mass 198	56.9		
197	Less than 1.0% of mass 198	0.5		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.4		
275	10.0 - 30.0% of mass 198	21.1		
365	1.0 - 100.0% of mass 198	2.1		
441	0.0 - 100.0% of mass 443	9.2	77.43	2
442	40.0 - 100.0% of mass 198	62.3		
443	17.0 - 23.0% of mass 442	11.9	19.07	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG135382-2	N0988.D	12/01/13	09:28
Method Blank Sample	WG135096-1	N0990.D	12/01/13	10:53
Laboratory Control S	WG135096-2	N0991.D	12/01/13	11:36
Laboratory Control S	WG135096-3	N0992.D	12/01/13	12:18

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab ID : WG135382-2
Lab File ID : N0988.D
Initial Calibration Date(s): 11/19/13 09:18 11/19/13 15:09

SDG: SG9002
Analytical Date: 12/01/13 09:28
Instrument ID: GCMS-N
Column ID:

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
25 Naphthalene	0.97699	1.03954	1.03954	0.010	6.40227	20.00000	Averaged
31 2-Methylnaphthalene	0.63217	0.71581	0.71581	0.010	13.23072	20.00000	Averaged
42 Acenaphthylene	2.17367	2.15432	2.15432	0.010	-0.89028	20.00000	Averaged
45 Acenaphthene	1.35194	1.34223	1.34223	0.010	-0.71770	20.01000	Averaged
54 Fluorene	1.37877	1.44120	1.44120	0.010	4.52779	20.00000	Averaged
64 Phenanthrene	1.24424	1.24415	1.24415	0.010	-0.00770	20.00000	Averaged
65 Anthracene	1.25025	1.28368	1.28368	0.010	2.67354	20.00000	Averaged
68 Fluoranthene	1.05254	1.14777	1.14777	0.010	9.04796	20.01000	Averaged
70 Pyrene	2.37638	2.04252	2.04252	0.010	-14.04914	20.00000	Averaged
72 Benzo(a)anthracene	1.22046	1.30861	1.30861	0.010	7.22227	20.00000	Averaged
74 Chrysene	1.46730	1.44292	1.44292	0.010	-1.66168	20.00000	Averaged
78 Benzo(b)fluoranthene	1.00000	1.07472	1.23746	0.010	7.47244	20.00000	Linear
79 Benzo(k)fluoranthene	1.87228	1.64854	1.64854	0.010	-11.95001	20.00000	Averaged
80 Benzo(a)pyrene	1.24477	1.18045	1.18045	0.010	-5.16715	20.01000	Averaged
82 Indeno(1,2,3-cd)pyrene	1.00000	1.06949	0.53454	0.010	6.94944	20.00000	Quadratic
83 Dibenzo(a,h)anthracene	1.00000	1.02997	0.58993	0.010	2.99703	20.00000	Linear
84 Benzo(g,h,i)perylene	0.85837	0.75336	0.75336	0.010	-12.23370	20.00000	Averaged
30 2-Methylnaphthalene-D10	1.14569	1.21749	1.21749	0.010	6.26717	20.00000	Averaged
52 Fluorene-D10	0.84986	0.89265	0.89265	0.010	5.03589	20.00000	Averaged
69 Pyrene-D10	1.33700	1.26685	1.26685	0.010	-5.24743	20.00000	Averaged

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : ND652.D
Instrument ID : GCMS-N

SDG : SG9002
Date Analyzed : 02-DEC-13
Time Analyzed : 11:39

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	36.3		
68	Less than 2.0% of mass 69	0.6	1.25	1
69	Less than 100.0% of mass 198	45.9		
70	Less than 2.0% of mass 69	0.6	1.36	1
127	40.0 - 60.0% of mass 198	57.2		
197	Less than 1.0% of mass 198	1.0		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.3		
275	10.0 - 30.0% of mass 198	19.3		
365	1.0 - 100.0% of mass 198	2.3		
441	0.0 - 100.0% of mass 443	6.6	68.62	2
442	40.0 - 100.0% of mass 198	49.3		
443	17.0 - 23.0% of mass 442	9.6	19.54	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG135427-2	N1007.D	12/02/13	12:02
TF2-SB-RB04-1113	SG9002-12	N1009.D	12/02/13	13:30
F2-003-SB1017-011.6	SG9002-1	N1013.D	12/02/13	16:26
TF2-003-SB1017-0204	SG9002-2	N1014.D	12/02/13	17:10
TF2-003-SB1017-0810	SG9002-3	N1015.D	12/02/13	17:54
TF2-003-SB1012-0204	SG9002-4	N1016.D	12/02/13	18:36
Matrix Spike	WG135096-4	N1017.D	12/02/13	19:19
Matrix Spike Duplica	WG135096-5	N1018.D	12/02/13	20:02
TF2-003-SB1011-0204	SG9002-6	N1019.D	12/02/13	20:45
TF2-003-SB1014-0204	SG9002-7	N1020.D	12/02/13	21:28
TF2-003-SB1015-0204	SG9002-9	N1021.D	12/02/13	22:11
TF2-SB-DUP08-1113	SG9002-10	N1022.D	12/02/13	22:54
TF2-003-SB1018-0204	SG9002-15	N1023.D	12/02/13	23:37

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab ID : WG135427-2
Lab File ID : N1007.D
Initial Calibration Date(s): 11/19/13 09:18 11/19/13 15:09

SDG: SG9002
Analytical Date: 12/02/13 12:02
Instrument ID: GCMS-N
Column ID:

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
25 Naphthalene	0.97699	1.06944	1.06944	0.010	9.46260	20.00000	Averaged
31 2-Methylnaphthalene	0.63217	0.70438	0.70438	0.010	11.42274	20.00000	Averaged
42 Acenaphthylene	2.17367	2.16828	2.16828	0.010	-0.24810	20.00000	Averaged
45 Acenaphthene	1.35194	1.35575	1.35575	0.010	0.28167	20.01000	Averaged
54 Fluorene	1.37877	1.38990	1.38990	0.010	0.80661	20.00000	Averaged
64 Phenanthrene	1.24424	1.30738	1.30738	0.010	5.07429	20.00000	Averaged
65 Anthracene	1.25025	1.32167	1.32167	0.010	5.71222	20.00000	Averaged
68 Fluoranthene	1.05254	1.13152	1.13152	0.010	7.50380	20.01000	Averaged
70 Pyrene	2.37638	2.34317	2.34317	0.010	-1.39747	20.00000	Averaged
72 Benzo(a)anthracene	1.22046	1.30111	1.30111	0.010	6.60781	20.00000	Averaged
74 Chrysene	1.46730	1.53960	1.53960	0.010	4.92757	20.00000	Averaged
78 Benzo(b)fluoranthene	1.00000	1.16327	1.36211	0.010	16.32664	20.00000	Linear
79 Benzo(k)fluoranthene	1.87228	1.72687	1.72687	0.010	-7.76663	20.00000	Averaged
80 Benzo(a)pyrene	1.24477	1.25195	1.25195	0.010	0.57714	20.01000	Averaged
82 Indeno(1,2,3-cd)pyrene	1.00000	1.11060	0.55727	0.010	11.06048	20.00000	Quadratic
83 Dibenzo(a,h)anthracene	1.00000	1.02806	0.58854	0.010	2.80600	20.00000	Linear
84 Benzo(g,h,i)perylene	0.85837	0.84949	0.84949	0.010	-1.03501	20.00000	Averaged
30 2-Methylnaphthalene-D10	1.14569	1.22220	1.22220	0.010	6.67820	20.00000	Averaged
52 Fluorene-D10	0.84986	0.84336	0.84336	0.010	-0.76400	20.00000	Averaged
69 Pyrene-D10	1.33700	1.39592	1.39592	0.010	4.40675	20.00000	Averaged

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : ND653.D
Instrument ID : GCMS-N

SDG : SG9002
Date Analyzed : 03-DEC-13
Time Analyzed : 12:29

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	35.2		
68	Less than 2.0% of mass 69	0.7	1.65	1
69	Less than 100.0% of mass 198	43.6		
70	Less than 2.0% of mass 69	0.2	0.40	1
127	40.0 - 60.0% of mass 198	58.9		
197	Less than 1.0% of mass 198	0.9		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.1		
275	10.0 - 30.0% of mass 198	20.1		
365	1.0 - 100.0% of mass 198	2.0		
441	0.0 - 100.0% of mass 443	7.2	71.43	2
442	40.0 - 100.0% of mass 198	49.5		
443	17.0 - 23.0% of mass 442	10.1	20.36	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG135477-2	N1030.D	12/03/13	12:49
TF2-003-SB1012-0810	SG9002-5	N1031.D	12/03/13	13:33
TF2-003-SB1014-0810	SG9002-8	N1032.D	12/03/13	14:17
TF2-003-SB1015-0810	SG9002-11	N1033.D	12/03/13	15:01
TF2-003-SB1016-0204	SG9002-13	N1034.D	12/03/13	15:45
TF2-003-SB1016-0810	SG9002-14	N1035.D	12/03/13	16:29
F2-003-SB1017-011.6	SG9002-1DL	N1036.D	12/03/13	17:13
TF2-003-SB1012-0204	SG9002-4DL	N1037.D	12/03/13	17:57
TF2-003-SB1014-0204	SG9002-7DL	N1038.D	12/03/13	18:41
TF2-003-SB1015-0204	SG9002-9DL	N1039.D	12/03/13	19:24
TF2-003-SB1012-0810	SG9002-5DL	N1040.D	12/03/13	20:07
TF2-003-SB1014-0810	SG9002-8DL	N1041.D	12/03/13	20:50
TF2-003-SB1015-0810	SG9002-11DL	N1042.D	12/03/13	21:33
TF2-003-SB1016-0204	SG9002-13DL	N1043.D	12/03/13	22:16

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG9002
Lab ID : WG135477-2 **Analytical Date:** 12/03/13 12:49
Lab File ID : N1030.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 11/19/13 09:18 11/19/13 15:09 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.97699	1.08810	1.08810	0.010	11.37241	20.00000	Averaged	
31 2-Methylnaphthalene	0.63217	0.78788	0.78788	0.010	24.63038	20.00000	Averaged	*
42 Acenaphthylene	2.17367	2.21404	2.21404	0.010	1.85685	20.00000	Averaged	
45 Acenaphthene	1.35194	1.36212	1.36212	0.010	0.75281	20.01000	Averaged	
54 Fluorene	1.37877	1.42339	1.42339	0.010	3.23608	20.00000	Averaged	
64 Phenanthrene	1.24424	1.26270	1.26270	0.010	1.48332	20.00000	Averaged	
65 Anthracene	1.25025	1.31422	1.31422	0.010	5.11696	20.00000	Averaged	
68 Fluoranthene	1.05254	1.11288	1.11288	0.010	5.73309	20.01000	Averaged	
70 Pyrene	2.37638	2.45271	2.45271	0.010	3.21208	20.00000	Averaged	
72 Benzo(a)anthracene	1.22046	1.30147	1.30147	0.010	6.63737	20.00000	Averaged	
74 Chrysene	1.46730	1.52245	1.52245	0.010	3.75891	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.00000	1.00063	1.13316	0.010	0.06336	20.00000	Linear	
79 Benzo(k)fluoranthene	1.87228	1.96837	1.96837	0.010	5.13222	20.00000	Averaged	
80 Benzo(a)pyrene	1.24477	1.26842	1.26842	0.010	1.90047	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	1.00000	1.02763	0.51144	0.010	2.76338	20.00000	Quadratic	
83 Dibenzo(a,h)anthracene	1.00000	1.03022	0.59011	0.010	3.02179	20.00000	Linear	
84 Benzo(g,h,i)perylene	0.85837	0.82533	0.82533	0.010	-3.84866	20.00000	Averaged	
30 2-Methylnaphthalene-D10	1.14569	1.19513	1.19513	0.010	4.31488	20.00000	Averaged	
52 Fluorene-D10	0.84986	0.85022	0.85022	0.010	0.04321	20.00000	Averaged	
69 Pyrene-D10	1.33700	1.42486	1.42486	0.010	6.57136	20.00000	Averaged	

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : N0915.D
Instrument ID : GCMS-N
Matrix : AQ

SDG : SG9002
Lab Sample ID : WG134603-1
Date Extracted : 18-NOV-13
Date Analyzed : 25-NOV-13
Time Analyzed : 11:56

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134603-2	N0916.D	11/25/13	12:40
Laboratory Control S	WG134603-3	N0917.D	11/25/13	13:24
TF2-SB-RB04-1113	SG9002-12	N1009.D	12/02/13	13:30

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Report of Analytical Results

Client:
Lab ID: WG134603-1
Client ID: Method Blank Sample
Project:
SDG: SG9002
Lab File ID: N0915.D

Sample Date:
Received Date:
Extract Date: 18-NOV-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG134603

Analysis Date: 25-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	U	0.10	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	U	0.10	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		76.4	%					
Fluorene-D10		83.6	%					
pyrene-d10		106.	%					

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LCS/LCSD Recovery Report

LCS ID: WG134603-2
LCSD ID: WG134603-3
Project:
SDG: SG9002
Report Date: 04-DEC-13
LCS File ID: N0916.D

Received Date:
Extract Date: 18-NOV-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG134603
LCSD File ID: N0917.D

Analysis Date: 25-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	2.00	1.27	63.5	1.39	69.5	ug/L	9	20	46-84
2-Methylnaphthalene	2.00	1.54	77.0	1.26	63.0	ug/L	20*	20	51-114
Acenaphthylene	2.00	1.26	63.0	1.28	64.0	ug/L	2	20	55-105
Acenaphthene	2.00	1.33	66.5	1.34	67.0	ug/L	1	20	53-90
Fluorene	2.00	1.31	65.5	1.35	67.5	ug/L	3	20	53-95
Phenanthrene	2.00	1.68	84.0	1.87	93.5	ug/L	11	20	73-100
Anthracene	2.00	1.79	89.5	1.92	96.0*	ug/L	7	20	70-95
Fluoranthene	2.00	1.86	93.0	2.15	108.	ug/L	14	20	81-109
Pyrene	2.00	1.62	81.0	1.48	74.0	ug/L	9	20	71-104
Benzo(a)anthracene	2.00	1.56	78.0	1.63	81.5	ug/L	4	20	70-110
Chrysene	2.00	1.89	94.5	1.97	98.5*	ug/L	4	20	70-95
Benzo(b)Fluoranthene	2.00	1.72	86.0	1.46	73.0	ug/L	16	20	67-102
Benzo(k)fluoranthene	2.00	1.64	82.0	1.82	91.0	ug/L	10	20	68-103
Benzo(a)pyrene	2.00	1.62	81.0	1.64	82.0	ug/L	1	20	63-98
Indeno(1,2,3-cd)pyrene	2.00	1.66	83.0	1.75	87.5	ug/L	5	20	61-112
Dibenzo(a,h)anthracene	2.00	1.68	84.0	1.70	85.0	ug/L	1	20	66-108
Benzo(g,h,i)perylene	2.00	1.94	97.0	1.94	97.0	ug/L	0	20	62-106
2-Methylnaphthalene-D10			65.5		56.9				43-92
Fluorene-D10			67.9		71.6				29-101
Pyrene-d10			90.1		81.8				53-166

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : N0990.D
Instrument ID : GCMS-N
Matrix : SL

SDG : SG9002
Lab Sample ID : WG135096-1
Date Extracted : 25-NOV-13
Date Analyzed : 01-DEC-13
Time Analyzed : 10:53

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135096-2	N0991.D	12/01/13	11:36
Laboratory Control S	WG135096-3	N0992.D	12/01/13	12:18
F2-003-SB1017-011.6	SG9002-1	N1013.D	12/02/13	16:26
TF2-003-SB1017-0204	SG9002-2	N1014.D	12/02/13	17:10
TF2-003-SB1017-0810	SG9002-3	N1015.D	12/02/13	17:54
TF2-003-SB1012-0204	SG9002-4	N1016.D	12/02/13	18:36
Matrix Spike	WG135096-4	N1017.D	12/02/13	19:19
Matrix Spike Duplica	WG135096-5	N1018.D	12/02/13	20:02
TF2-003-SB1011-0204	SG9002-6	N1019.D	12/02/13	20:45
TF2-003-SB1014-0204	SG9002-7	N1020.D	12/02/13	21:28
TF2-003-SB1015-0204	SG9002-9	N1021.D	12/02/13	22:11
TF2-SB-DUP08-1113	SG9002-10	N1022.D	12/02/13	22:54
TF2-003-SB1018-0204	SG9002-15	N1023.D	12/02/13	23:37
TF2-003-SB1012-0810	SG9002-5	N1031.D	12/03/13	13:33
TF2-003-SB1014-0810	SG9002-8	N1032.D	12/03/13	14:17
TF2-003-SB1015-0810	SG9002-11	N1033.D	12/03/13	15:01
TF2-003-SB1016-0204	SG9002-13	N1034.D	12/03/13	15:45
TF2-003-SB1016-0810	SG9002-14	N1035.D	12/03/13	16:29
F2-003-SB1017-011.6	SG9002-1DL	N1036.D	12/03/13	17:13
TF2-003-SB1012-0204	SG9002-4DL	N1037.D	12/03/13	17:57
TF2-003-SB1014-0204	SG9002-7DL	N1038.D	12/03/13	18:41
TF2-003-SB1015-0204	SG9002-9DL	N1039.D	12/03/13	19:24
TF2-003-SB1012-0810	SG9002-5DL	N1040.D	12/03/13	20:07
TF2-003-SB1014-0810	SG9002-8DL	N1041.D	12/03/13	20:50
TF2-003-SB1015-0810	SG9002-11DL	N1042.D	12/03/13	21:33
TF2-003-SB1016-0204	SG9002-13DL	N1043.D	12/03/13	22:16

Katahdin
ANALYTICAL SERVICES

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Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG135096-1
Client ID: Method Blank Sample
Project:
SDG: SG9002
Lab File ID: N0990.D

Sample Date:
Received Date:
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096

Analysis Date: 01-DEC-13
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 04-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		62.3	%					
Fluorene-D10		53.6	%					
Pyrene-D10		74.2	%					

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ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG135096-2
LCSD ID: WG135096-3
Project:
SDG: SG9002
Report Date: 04-DEC-13
LCS File ID: N0991.D

Received Date:
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096
LCSD File ID: N0992.D

Analysis Date: 01-DEC-13
Analyst: WAS
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	36.0	54.0	31.4	47.1	ug/Kgdrywt	14	30	10-129
2-Methylnaphthalene	66.7	37.4	56.1	29.5	44.2	ug/Kgdrywt	24	30	10-152
Acenaphthylene	66.7	32.8	49.2	27.2	40.8	ug/Kgdrywt	19	30	25-94
Acenaphthene	66.7	35.0	52.5	28.9	43.3	ug/Kgdrywt	19	30	33-98
Fluorene	66.7	39.5	59.2	31.4	47.1	ug/Kgdrywt	23	30	40-92
Phenanthrene	66.7	46.4	69.6	40.6	60.9	ug/Kgdrywt	13	30	46-96
Anthracene	66.7	44.7	67.0	40.7	61.0	ug/Kgdrywt	9	30	34-96
Fluoranthene	66.7	50.8	76.2	48.0	72.0	ug/Kgdrywt	6	30	38-116
Pyrene	66.7	41.5	62.2	38.0	57.0	ug/Kgdrywt	9	30	35-111
Benzo(a)anthracene	66.7	46.3	69.4	43.8	65.7	ug/Kgdrywt	6	30	48-100
Chrysene	66.7	46.4	69.6	45.3	67.9	ug/Kgdrywt	2	30	46-101
Benzo(b)Fluoranthene	66.7	52.0	78.0	48.1	72.1	ug/Kgdrywt	8	30	53-100
Benzo(k)fluoranthene	66.7	43.1	64.6	41.7	62.5	ug/Kgdrywt	3	30	49-96
Benzo(a)pyrene	66.7	39.8	59.7*	37.4	56.1*	ug/Kgdrywt	6	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	45.5	68.2	47.2	70.8	ug/Kgdrywt	4	30	50-105
Dibenzo(a,h)anthracene	66.7	44.3	66.4	44.7	67.0	ug/Kgdrywt	1	30	55-105
Benzo(g,h,i)perylene	66.7	30.9	46.3*	31.2	46.8*	ug/Kgdrywt	1	30	53-103
2-Methylnaphthalene-D10			64.6		50.9				19-94
Fluorene-D10			61.5		46.8				20-96
Pyrene-D10			70.4		61.9				31-128

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MS/MSD Recovery Report

MS ID: WG135096-4
MSD ID: WG135096-5
Sample ID: SG9002-4
Client ID: TF2-003-SB1012-0204
Project:
SDG: SG9002
MS File ID: N1017.D

Received Date:
Extract Date: 25-NOV-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG135096
Report Date: 04-DEC-13
MSD File ID: N1018.D

Analysis Date: 02-DEC-13
Analyst: jJCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	66.0	69.3	ug/Kgdrywt	U10.	37.	48.	56.2	69.7	26	30	10-129
2-Methylnaphthalene	66.0	69.3	ug/Kgdrywt	U10.	40.	47.	61.4	67.8	15	30	10-152
Acenaphthylene	66.0	69.3	ug/Kgdrywt	J2.2	31.	41.	44.0	55.9	27	30	25-94
Acenaphthene	66.0	69.3	ug/Kgdrywt	28.	67.	92.	58.8	91.6	31*	30	33-98
Fluorene	66.0	69.3	ug/Kgdrywt	J12.	49.	66.	56.2	77.0	28	30	40-92
Phenanthrene — E.E >5x	66.0	69.3	ug/KgdrywtEMM480		610	750	200.*	395.*	21	30	46-96
Anthracene	66.0	69.3	ug/Kgdrywt	50.	83.	110	50.3	85.0	27	30	34-96
Fluoranthene — E E >5X	66.0	69.3	ug/Kgdrywt	EM530	590	720	97.0	274.*	19	30	38-116
Pyrene — E E >5X	66.0	69.3	ug/KgdrywtEMM740		820	1000	123.*	398.*	21	30	35-111
Benzo(a)anthracene - E E	66.0	69.3	ug/Kgdrywt	M300	350	470	72.7	234.*	28	30	48-100
Chrysene — E E	66.0	69.3	ug/Kgdrywt	M300	350	460	77.3	228.*	26	30	46-101
Benzo(b)Fluoranthene — E (MSD)	66.0	69.3	ug/Kgdrywt	MM250	260	370	19.7*	183.*	36*	30	53-100
Benzo(k)fluoranthene *	66.0	69.3	ug/Kgdrywt	M79.	93.	140	20.2*	86.0	40*	30	49-96
Benzo(a)pyrene *	66.0	69.3	ug/KgdrywtLLMM	18	180	260	0*	118.*	38*	30	61-101
Indeno(1,2,3-cd)pyrene *	66.0	69.3	ug/Kgdrywt	M160	160	230	6.06*	102.	34*	30	50-105
Dibenzo(a,h)anthracene *	66.0	69.3	ug/Kgdrywt	MM36.	41.	71.	7.88*	50.3*	53*	30	55-105
Benzo(g,h,i)perylene *	66.0	69.3	ug/KgdrywtLLMM	87	84.	120	0*	41.7*	32*	30	53-103
2-Methylnaphthalene-D10							57.4	78.5			19-94
Fluorene-D10							52.0	73.0			20-96
Pyrene-D10							52.0	74.3			31-128

* validated / qualified

E - exceeded highest level in MS or MSD

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG9002

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
F2-003-SB1017-011.6	SG9002-1		81.9		76.6		66.8	
TF2-SB-DUP08-1113	SG9002-10		61.2		53.4		61.9	
TF2-003-SB1015-0810	SG9002-11		83.9		63.8		122.	
TF2-003-SB1015-0810	SG9002-11DL		87.8		66.4		95.6	
TF2-003-SB1016-0204	SG9002-13		82.7		64.0		63.3	
TF2-003-SB1016-0204	SG9002-13DL		84.4		73.0		55.3	
TF2-003-SB1016-0810	SG9002-14		81.9		68.0		70.1	
TF2-003-SB1018-0204	SG9002-15		74.4		67.9		80.9	
F2-003-SB1017-011.6	SG9002-1DL		0.00	D	0.00	D	0.00	D
TF2-003-SB1017-0204	SG9002-2		78.9		71.5		83.6	
TF2-003-SB1017-0810	SG9002-3		73.0		68.8		81.7	
TF2-003-SB1012-0204	SG9002-4		64.8		67.8		68.1	
TF2-003-SB1012-0204	SG9002-4DL		79.7		67.7		67.1	
TF2-003-SB1012-0810	SG9002-5		85.6		65.4		96.3	
TF2-003-SB1012-0810	SG9002-5DL		82.1		69.6		74.8	
TF2-003-SB1011-0204	SG9002-6		57.9		58.4		61.9	
TF2-003-SB1014-0204	SG9002-7		55.1		45.5		27.9	*
TF2-003-SB1014-0204	SG9002-7DL		61.0		45.5		26.4	*
TF2-003-SB1014-0810	SG9002-8		78.2		62.8		88.8	
TF2-003-SB1014-0810	SG9002-8DL		75.9		76.0		59.3	
TF2-003-SB1015-0204	SG9002-9		64.6		60.5		52.3	
TF2-003-SB1015-0204	SG9002-9DL		76.8		59.2		52.4	
Method Blank Sample	WG135096-1		62.3		53.6		74.2	
Laboratory Control S	WG135096-2		64.6		61.5		70.4	
Laboratory Control S	WG135096-3		50.9		46.8		61.9	
Matrix Spike	WG135096-4		57.4		52.0		52.0	
Matrix Spike Duplica	WG135096-5		78.5		73.0		74.3	

		QC Limits
PYR	PYRENE-D10	31-128
FLO	FLUORENE-D10	20-96
2MN	2-METHYLNAPHTHALENE-D10	19-94

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG9002

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** AQ
Lab Code: KAS **SDG:** SG9002

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
TF2-SB-RB04-1113	SG9002-12		58.0		72.6		100.	
Method Blank Sample	WG134603-1		76.4		83.6		106.	
Laboratory Control S	WG134603-2		65.5		67.9		90.1	
Laboratory Control S	WG134603-3		56.9		71.6		81.8	

		QC Limits
2MN	2-METHYLNAPHTHALENE-D10	43-92
FLO	FLUORENE-D10	29-101
PYR	PYRENE-D10	53-166

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134654-4
Lab File ID : N0799.D

SDG: SG9002
Analytical Date: 11/19/13 09:18
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4		NAPHTHALENE-D8		ACENAPHTHENE-D10	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	32791	9.04	97502	11.82	38165	15.92
	Upper Limit	65582	9.54	195004	12.32	76330	16.42
	Lower Limit	16395.5	8.54	48751	11.32	19082.5	15.42
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG135106-2	35665	9.02	117769	11.81	48189	15.90
Method Blank Sample	WG134603-1	31210	9.04	96618	11.84	31211	15.92
Laboratory Control S	WG134603-2	30499	9.02	98190	11.81	40888	15.90
Laboratory Control S	WG134603-3	31440	9.02	106017	11.81	49482	15.90
Continuing Calibrati	WG135382-2	22894	9.01	83527	11.79	36998	15.88
Method Blank Sample	WG135096-1	25941	9.00	89839	11.81	41968	15.89
Laboratory Control S	WG135096-2	25114	9.00	91925	11.79	42470	15.88
Laboratory Control S	WG135096-3	26933	9.00	98063	11.79	45319	15.88
Continuing Calibrati	WG135427-2	25053	9.00	84662	11.79	36123	15.88
TF2-SB-RB04-1113	SG9002-12	25726	9.01	86667	11.79	38679	15.88
F2-003-SB1017-011.6	SG9002-1	18692	9.00	66177	11.79	30050	15.86
TF2-003-SB1017-0204	SG9002-2	22721	9.00	79585	11.79	35625	15.88
TF2-003-SB1017-0810	SG9002-3	23793	9.00	84458	11.79	38284	15.88
TF2-003-SB1012-0204	SG9002-4	23349	9.00	83083	11.79	38847	15.88
Matrix Spike	WG135096-4	21477	9.00	74812	11.79	35673	15.86
Matrix Spike Duplica	WG135096-5	23054	9.00	81817	11.79	38701	15.86
TF2-003-SB1011-0204	SG9002-6	22572	9.00	80642	11.79	37869	15.88
TF2-003-SB1014-0204	SG9002-7	21979	9.01	77465	11.81	35369	15.88
TF2-003-SB1015-0204	SG9002-9	22939	9.00	81019	11.79	38755	15.88
TF2-SB-DUP08-1113	SG9002-10	24455	9.00	85701	11.79	38734	15.88
TF2-003-SB1018-0204	SG9002-15	24824	9.00	87239	11.79	39026	15.88
Continuing Calibrati	WG135477-2	23799	9.00	82686	11.79	36764	15.88
TF2-003-SB1012-0810	SG9002-5	33105	9.00	115747	11.77	46927	15.86
TF2-003-SB1014-0810	SG9002-8	38843	9.00	136579	11.77	59299	15.86
TF2-003-SB1015-0810	SG9002-11	42135	9.00	152401	11.77	71442	15.88
TF2-003-SB1016-0204	SG9002-13	33683	9.00	123511	11.79	54754	15.88
TF2-003-SB1016-0810	SG9002-14	34374	9.00	128574	11.79	56684	15.88
F2-003-SB1017-011.6	SG9002-1DL	30028	9.04	107663	11.93	48057	15.92
TF2-003-SB1012-0204	SG9002-4DL	27385	9.02	103569	11.91	45712	15.92
TF2-003-SB1014-0204	SG9002-7DL	26517	9.02	102565	11.88	46285	15.90
TF2-003-SB1015-0204	SG9002-9DL	27607	9.08	100959	11.94	45643	15.92
TF2-003-SB1012-0810	SG9002-5DL	31412	9.02	116046	11.82	55980	15.89
TF2-003-SB1014-0810	SG9002-8DL	27737	9.07	98876	11.86	46578	15.89
TF2-003-SB1015-0810	SG9002-11DL	38922	9.00	145680	11.79	67475	15.88
TF2-003-SB1016-0204	SG9002-13DL	30855	9.07	111455	11.96	50004	15.93

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ·
Lab ID : WG134654-4
Lab File ID : N0799.D

SDG: SG9002
Analytical Date: 11/19/13 09:18
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	50068	19.40	24899	25.68	19035	28.83
	Upper Limit	100136	19.90	49798	26.18	38070	29.33
	Lower Limit	25034	18.90	12449.5	25.18	9517.5	28.33
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG135106-2	61654	19.39	32697	25.66	19339	28.80
Method Blank Sample	WG134603-1	40052	19.39	25928	25.66	14110	28.80
Laboratory Control S	WG134603-2	45174	19.39	25119	25.66	23486	28.80
Laboratory Control S	WG134603-3	59522	19.39	37636	25.66	18723	28.80
Continuing Calibrati	WG135382-2	53368	19.36	32355	25.63	23139	28.76
Method Blank Sample	WG135096-1	54679	19.36	28993	25.63	18212	28.76
Laboratory Control S	WG135096-2	62749	19.36	36272	25.63	20535	28.76
Laboratory Control S	WG135096-3	60494	19.36	36278	25.63	22157	28.76
Continuing Calibrati	WG135427-2	49440	19.36	25802	25.62	17524	28.76
TF2-SB-RB04-1113	SG9002-12	52792	19.36	24198	25.62	14691	28.76
F2-003-SB1017-011.6	SG9002-1	45536	19.35	21055	25.62	14780	28.75
TF2-003-SB1017-0204	SG9002-2	50968	19.36	24744	25.62	16052	28.76
TF2-003-SB1017-0810	SG9002-3	53738	19.36	25189	25.63	16086	28.76
TF2-003-SB1012-0204	SG9002-4	59261	19.35	24721	25.62	15791	28.76
Matrix Spike	WG135096-4	52594	19.35	23329	25.62	16178	28.76
Matrix Spike Duplica	WG135096-5	59557	19.35	25834	25.62	16571	28.75
TF2-003-SB1011-0204	SG9002-6	54880	19.35	22413	25.62	16082	28.76
TF2-003-SB1014-0204	SG9002-7	52591	19.35	23076	25.62	16993	28.76
TF2-003-SB1015-0204	SG9002-9	51577	19.35	20515	25.62	13937	28.76
TF2-SB-DUP08-1113	SG9002-10	53587	19.36	20304	25.63	15033	28.76
TF2-003-SB1018-0204	SG9002-15	54123	19.35	19565	25.63	13416	28.76
Continuing Calibrati	WG135477-2	49373	19.36	24027	25.63	16199	28.78
TF2-003-SB1012-0810	SG9002-5	57282	19.35	16300	25.63	8957 *	28.78
TF2-003-SB1014-0810	SG9002-8	75257	19.36	19945	25.65	11247	28.78
TF2-003-SB1015-0810	SG9002-11	78188	19.36	15842	25.65	7828 *	28.80
TF2-003-SB1016-0204	SG9002-13	65856	19.36	25542	25.63	11733	28.78
TF2-003-SB1016-0810	SG9002-14	69326	19.36	29676	25.63	13960	28.78
F2-003-SB1017-011.6	SG9002-1DL	57783	19.38	22680	25.65	10798	28.80
TF2-003-SB1012-0204	SG9002-4DL	55023	19.39	20511	25.65	12423	28.78
TF2-003-SB1014-0204	SG9002-7DL	53565	19.38	18958	25.65	12728	28.78
TF2-003-SB1015-0204	SG9002-9DL	53307	19.39	19235	25.65	11964	28.78
TF2-003-SB1012-0810	SG9002-5DL	69178	19.38	27990	25.65	12479	28.78
TF2-003-SB1014-0810	SG9002-8DL	57382	19.38	25029	25.65	13302	28.78
TF2-003-SB1015-0810	SG9002-11DL	90936	19.36	30409	25.66	11377	28.80
TF2-003-SB1016-0204	SG9002-13DL	59688	19.39	24959	25.66	12785	28.80

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 ,
Lab ID : WG134654-4
Lab File ID : N0799.D

SDG: SG9002
Analytical Date: 11/19/13 09:18
Instrument ID: GCMS-N

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Data File: \\target_server\GG\chem\gcms-n.i\N111913.b\N0799.D
Report Date: 20-Nov-2013 15:25

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
	76 bis(2-Ethylhexyl)phthalate	149	26.102	26.102	(1.016)	239442	3.00000	3.54	
	77 Di-n-octylphthalate	149	27.556	27.557	(0.956)	336773	3.00000	3.31	
	78 Benzo(b)fluoranthene	252	28.053	28.037	(0.973)	25358	1.00000	0.953	
	79 Benzo(k)fluoranthene	252	28.105	28.105	(0.975)	41661	1.00000	0.935	(H)
	80 Benzo(a)pyrene	252	28.688	28.688	(0.995)	28513	1.00000	0.963	
*	81 Perylene-D12	264	28.825	28.808	(1.000)	19035	0.80000	(a)	
	82 Indeno(1,2,3-cd)pyrene	276	30.937	30.924	(1.073)	13355	1.00000	1.12	
	83 Dibenzo(a,h)anthracene	278	31.019	31.006	(1.076)	14921	1.00000	1.08	
	84 Benzo(g,h,i)perylene	276	31.527	31.514	(1.094)	21693	1.00000	1.06	
M	85 Total PAHs	100				1021989	17.0000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
H - Operator selected an alternate compound hit.

FL-PRO DATA

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG9002
Project : NAVSTA Newport CTO WE30 &WE59 **Column ID :** A
Instrument ID : GC10

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	OTP	NTD	
Initial Calibration	WG135417-3	11/27/13	18:47	9.82	14.72	
Initial Calibration	WG135417-5	11/27/13	19:26	9.819	14.72	
Initial Calibration	WG135417-4	11/27/13	20:05	9.82	14.72	
Initial Calibration	WG135417-2	11/27/13	20:44	9.821	14.72	
Initial Calibration	WG135417-1	11/27/13	21:23	9.822	14.72	
Independent Source	WG135417-6	11/27/13	22:02	9.819	14.72	
Method Blank Sample	WG134676-1	11/27/13	22:41	9.8	14.71	
Laboratory Control S	WG134676-2	11/27/13	23:20	9.8	14.71	
Laboratory Control S	WG134676-3	11/27/13	23:59	9.8	14.71	
Method Blank Sample	WG134896-1	11/28/13	00:38	9.799	14.71	
Laboratory Control S	WG134896-2	11/28/13	01:17	9.799	14.71	
Laboratory Control S	WG134896-3	11/28/13	01:56	9.799	14.71	
TF2-SB-RB04-1113	SG9002-12	11/28/13	02:35	9.8	14.71	
F2-003-SB1017-011.6	SG9002-1	11/28/13	04:32	9.807	14.71	
Continuing Calibrati	WG135417-7	11/28/13	05:49	9.817	14.72	

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File IDs : AGK10409.DAGK10408.DAGK10405.D AGK10407.DAGK10406.D

SDG: SG9002
Instrument ID: GC10
Column ID: A
Calibration Date(s): 27-NOV-13 18:47 27-NOV-13 21:23

	5.0000 Level 1	20.0000 Level 2	50.0000 Level 3	100.0000 Level 4	200.0000 Level 5		New Crv	b	m1	m2	%RSD	Max %RSD	
Petroleum Range Organic	3207401	11948369	27679023	57859927	111741030		LNR	-13.04539	32919		0.99964	0.99000	M
C-8	121120	558480	1472757	3322274	6528682		LNR	1.93175	33030		0.99918	0.99000	O
C-10	160678	683433	1634466	3407465	6722680		LNR	0.13169	33694		0.99987	0.99000	O
C-12	162526	706230	1651958	3437478	6748957		LNR	-0.13544	33812		0.99983	0.99000	O
C-14	166896	693775	1638710	3428968	6710379		LNR	-0.12142	33638		0.99980	0.99000	O
C-16	172145	697117	1644337	3433083	6683547		LNR	-0.33321	33502		0.99976	0.99000	O
C-18	195302	718285	1686904	3509892	6811160		LNR	-0.65127	34102		0.99973	0.99000	O
C-20	195203	730680	1695812	3514886	6760313		LNR	-0.99214	33854		0.99960	0.99000	O
C-22	203588	720719	1703069	3537520	6793044		LNR	-0.96059	34031		0.99957	0.99000	O
C-24	209421	709959	1579161	3570011	6734469		LNR	-0.46183	33891		0.99855	0.99000	O
C-26	210392	712774	1577799	3275178	6197846		LNR	-1.90914	30984		0.99919	0.99000	O
C-28	220739	741653	1627095	3348042	6342775		LNR	-2.12681	31670		0.99922	0.99000	O
C-30	204421	711161	1590346	3361671	6370018		LNR	-1.42418	31907		0.99919	0.99000	O
C-32	177802	705436	1616693	3364549	6473168		LNR	-0.91008	32428		0.99957	0.99000	O
C-34	191630	711417	1644515	3384457	6565358		LNR	-0.94350	32831		0.99974	0.99000	O
C-36	212813	744703	1719951	3434607	6645531		LNR	-1.64403	33148		0.99970	0.99000	O
C-38	183763	691910	1617310	3318770	6418918		LNR	-0.96332	32120		0.99971	0.99000	O
C-40	218956	710628	1578140	3211069	6234178		LNR	-1.67468	31043		0.99970	0.99000	O
O-Terphenyl	9478875	9480027	9159104	9354207	8933467		LNR	0.63587	37238		0.99695	0.99000	
n-Triacontane-D62	8469343	8548927	7964650	8243019	7927193		LNR	1.41469	27592		0.99434	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Data File: \\target_server\gg\chem\gc10.i\GC10GK27A.b\AGK10410.D
Report Date: 02-Dec-2013 13:41

Katahdin Analytical Services

RECOVERY REPORT

Client Name: Client SDG: SDGa02536
Sample Matrix: LIQUID Fraction: FL-PRO
Lab Smp Id: WG135417-6
Level: LOW Operator: AC
Data Type: GC DATA SampleType: LCS
SpikeList File: PRO-IND.spk Quant Type: ESTD
Sublist File: indcomp.sub
Method File: \\target_server\gg\chem\gc10.i\GC10GK27A.b\flp01a.m
Misc Info: WG135417,WG135417,WG135417-3,SG9002-12

	SPIKE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
	2 C-8	100	110	108.71	80-120
	3 C-10	100	100	104.95	80-120
	4 C-12	100	100	103.71	80-120
	5 C-14	100	100	103.58	80-120
	6 C-16	100	100	104.81	80-120
	8 C-18	100	100	104.20	80-120
	10 C-20	100	100	103.36	80-120
	11 C-22	100	110	106.37	80-120
	12 C-24	100	100	99.69	80-120
	13 C-26	100	110	106.56	80-120
	14 C-28	100	100	105.36	80-120
	16 C-30	100	110	106.84	80-120
	17 C-32	100	100	101.18	80-120
	18 C-34	100	100	102.64	80-120
	19 C-36	100	110	107.94	80-120
	20 C-38	100	100	100.26	80-120
	21 C-40	100	100	101.39	80-120
M	1 Petroleum Range Or	1700	1800	104.21	80-120

	SURROGATE COMPOUND	CONC ADDED ug/L	CONC RECOVERED ug/L	% RECOVERED	LIMITS
$	9 O-Terphenyl	40	490	1231.99*	0-142
$	15 n-Triacontane-D62	600	610	101.71	0-130

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab ID : WG135417-7
Lab File ID : AGK10422.D
Initial Calibration Date(s): 11/27/13 18:47 11/27/13 21:23

SDG: SG9002
Analytical Date: 11/28/13 05:49
Instrument ID: GC10
Column ID: A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	878	34524	0.010	3.34593	25.00000	Linear
2 C-8	50.00000	50.79563	32279	0.010	1.59125	25.00000	Linear
3 C-10	50.00000	51.10112	34348	0.010	2.20225	25.00000	Linear
4 C-12	50.00000	51.17435	34698	0.010	2.34869	25.00000	Linear
5 C-14	50.00000	51.47712	34713	0.010	2.95425	25.00000	Linear
6 C-16	50.00000	51.34084	34624	0.010	2.68168	25.00000	Linear
8 C-18	50.00000	51.80017	35774	0.010	3.60035	25.00000	Linear
10 C-20	50.00000	52.85735	36461	0.010	5.71469	25.00000	Linear
11 C-22	50.00000	53.17476	36846	0.010	6.34951	25.00000	Linear
12 C-24	50.00000	49.82075	34083	0.010	-0.35849	25.00000	Linear
13 C-26	50.00000	52.69358	33836	0.010	5.38717	25.00000	Linear
14 C-28	50.00000	52.66203	34703	0.010	5.32406	25.00000	Linear
16 C-30	50.00000	51.43649	33732	0.010	2.87298	25.00000	Linear
17 C-32	50.00000	51.92998	34270	0.010	3.85996	25.00000	Linear
18 C-34	50.00000	51.58385	34490	0.010	3.16770	25.00000	Linear
19 C-36	50.00000	51.46142	35207	0.010	2.92284	25.00000	Linear
20 C-38	50.00000	53.62177	35066	0.010	7.24354	25.00000	Linear
21 C-40	50.00000	49.50917	31778	0.010	-0.98167	25.00000	Linear
9 O-Terphenyl	250	260	38627	0.010	3.98443	25.00000	Linear
15 n-Triacontane-D62	300	307	28120	0.010	2.38563	25.00000	Linear

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : AGK10411.D
Instrument ID : GC10
Matrix : AQ

SDG : SG9002
Lab Sample ID : WG134676-1
Date Extracted : 19-NOV-13
Date Analyzed : 27-NOV-13
Time Analyzed : 22:41

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134676-2	AGK10412	11/27/13	23:20
Laboratory Control S	WG134676-3	AGK10413	11/27/13	23:59
TF2-SB-RB04-1113	SG9002-12	AGK10417	11/28/13	02:35

Report of Analytical Results

Client:
Lab ID: WG134676-1
Client ID: Method Blank Sample
Project:
SDG: SG9002
Lab File ID: AGK10411.D

Sample Date:
Received Date:
Extract Date: 19-NOV-13
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG134676

Analysis Date: 27-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: AQ
% Solids: NA
Report Date: 02-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	250	ug/L	1	500	500	150	250
o-Terphenyl		90.0	%					
n-Triacontane-D62		107.	%					

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LCS/LCSD Recovery Report

LCS ID: WG134676-2
LCSD ID: WG134676-3
Project:
SDG: SG9002
Report Date: 02-DEC-13
LCS File ID: AGK10412.D

Received Date:
Extract Date: 19-NOV-13
Extracted By: JMS
Extraction Method: SW846 3510
Lab Prep Batch: WG134676
LCSD File ID: AGK10413.D

Analysis Date: 27-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	1800	1300	72.2	1400	77.8	ug/L	7	30	55-118
o-Terphenyl			78.0*		84.0				82-142
n-Triacontane-D62			90.0		96.7				70-130

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : AGK10414.D
Instrument ID : GC10
Matrix : SL

SDG : SG9002
Lab Sample ID : WG134896-1
Date Extracted : 22-NOV-13
Date Analyzed : 28-NOV-13
Time Analyzed : 00:38

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134896-2	AGK10415	11/28/13	01:17
Laboratory Control S	WG134896-3	AGK10416	11/28/13	01:56
F2-003-SB1017-011.6	SG9002-1	AGK10420	11/28/13	04:32

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG134896-1
Client ID: Method Blank Sample
Project:
SDG: SG9002
Lab File ID: AGK10414.D

Sample Date:
Received Date:
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896

Analysis Date: 28-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA
Report Date: 02-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		84.8	%					
n-Triacontane-D62		95.0	%					

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LCS/LCSD Recovery Report

LCS ID: WG134896-2
LCSD ID: WG134896-3
Project:
SDG: SG9002
Report Date: 04-DEC-13
LCS File ID: AGK10415.D

Received Date:
Extract Date: 22-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134896
LCSD File ID: AGK10416.D

Analysis Date: 28-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	60.0	42.0	70.0	37.0	61.7*	mg/Kgdrywt	13	30	63-153
o-Terphenyl			81.8		72.7				62-109
n-Triacontane-D62			92.0		79.0				70-130

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** AQ
Lab Code: KAS **SDG:** SG9002

Client Sample ID	Lab Sample ID	Col. ID	NTD	#	OTP	#
TF2-SB-RB04-1113	SG9002-12	A	98.9		106.	
Method Blank Sample	WG134676-1	A	107.		90.0	
Laboratory Control S	WG134676-2	A	90.0		78.0	*
Laboratory Control S	WG134676-3	A	96.7		84.0	

		QC Limits
OTP	O-TERPHENYL	82-142
NTD	N-TRIACONTANE-D62	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG9002

Client Sample ID	Lab Sample ID	Col. ID	NTD	#	OTP	#
F2-003-SB1017-011.6	SG9002-1	A	80.5		71.6	
Method Blank Sample	WG134896-1	A	95.0		84.8	
Laboratory Control S	WG134896-2	A	92.0		81.8	
Laboratory Control S	WG134896-3	A	79.0		72.7	

		QC Limits
OTP	O-TERPHENYL	62-109
NTD	N-TRIACONTANE-D62	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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GASOLINE RANGE ORGANICS DATA

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG9002
Project : NAVSTA Newport CTO WE30 &WE59 **Column ID :** A
Instrument ID : GC09

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	BFB	BFB
Initial Calibration	WG127983-2	07/26/13	10:52	31.92	
Initial Calibration	WG127983-3	07/26/13	11:46	31.84	
Initial Calibration	WG127983-4	07/26/13	12:39	31.82	
Initial Calibration	WG127983-5	07/26/13	13:32	31.84	
Initial Calibration	WG127983-6	07/26/13	14:25	31.85	
Initial Calibration	WG127983-1	07/26/13	17:56	31.89	
INDEPENDENT SOURCE	WG127983-7	07/26/13	18:50	31.91	
Continuing Calibrati	WG134904-6	11/23/13	10:15	31.68	
Method Blank Sample	WG134904-1	11/23/13	13:43	31.68	
Laboratory Control S	WG134904-2	11/23/13	14:38	31.67	
Laboratory Control S	WG134904-3	11/23/13	15:32	31.67	
Continuing Calibrati	WG134904-7	11/23/13	23:45	31.68	
Continuing Calibrati	WG134904-9	11/25/13	08:06	31.61	
Method Blank Sample	WG134904-1RA	11/25/13	10:08	31.61	
F2-003-SB1017-011.6	SG9002-1RA	11/25/13	11:01	31.61	
Continuing Calibrati	WG134904-10	11/25/13	20:43	31.63	
Continuing Calibrati	WG135144-6	11/26/13	08:35	31.62	
Method Blank Sample	WG135144-1	11/26/13	11:24	31.63	
Laboratory Control S	WG135144-2	11/26/13	14:25	31.63	
Laboratory Control S	WG135144-3	11/26/13	15:19	31.63	
TF2-SB-RB04-1113	SG9002-12	11/26/13	20:43	31.66	
Continuing Calibrati	WG135144-7	11/26/13	21:38	31.66	

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG9002
Project : NAVSTA Newport CTO WE30 &WE59 **Instrument ID:** GC09
Lab File IDs : 9GG2130.d 9GG2123.d 9GG2124.d **Column ID:** A
9GG2125.d 9GG2126.d 9GG2127.d **Calibration Date(s):** 26-JUL-13 09:58
26-JUL-13 17:56

	10.0000 Level 1	100.0000 Level 2	250.0000 Level 3	500.0000 Level 4	1000.0000 Level 5	2000.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Gasoline Range Organic	12176	12675	12913	12768	12910	13282	AVG		12787		2.84495	20.00000	M C
Methyl tert-butyl ether	6010	8181	8380	7569	7477	8149	AVG		7628		11.40841	20.00000	O
Benzene	15826	15860	16448	16739	17015	17326	AVG		16536		3.69285	20.00000	O
Toluene	15470	16041	16286	16166	16555	16718	AVG		16206		2.70556	20.00000	O
Ethylbenzene	14185	14823	15058	15019	15114	15298	AVG		14916		2.61143	20.00000	O
m+p-Xylenes	14785	15435	15552	15559	15638	15874	AVG		15474		2.37846	20.00000	O
o-Xylene	16358	14889	14896	15443	15410	15788	AVG		15464		3.61301	20.00000	O
1,2,4-trimethylbenzene	11095	12102	12347	12071	12262	12757	AVG		12106		4.56871	20.00000	O
1,3,5-trimethylbenzene	9784	10620	10743	10552	10765	11352	AVG		10636		4.74665	20.00000	O
Naphthalene	3461	3359	3870	3000	3223	3680	AVG		3432		9.12376	20.00000	O
p-Bromofluorobenzene	6432	6935	7300	7023	6937	7145	AVG		6962		4.23260	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab ID : WG134904-6
Lab File ID : 9GK4001.d
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56

SDG: SG9002
Analytical Date: 11/23/13 10:15
Instrument ID: GC09
Column ID: A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	12161	12161	0.100	-4.89459	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7523	7523	0.100	-1.37164	20.00000	Averaged
4 Benzene	16536	15133	15133	0.100	-8.48600	20.00000	Averaged
5 Toluene	16206	14609	14609	0.100	-9.85537	20.00000	Averaged
7 Ethylbenzene	14916	13823	13823	0.100	-7.33015	20.00000	Averaged
8 m+p-Xylenes	15474	14442	14442	0.100	-6.67008	20.00000	Averaged
9 o-Xylene	15464	15063	15063	0.100	-2.59297	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11809	11809	0.100	-2.45352	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10969	10969	0.100	3.12661	20.00000	Averaged
13 Naphthalene	3432	3802	3802	0.100	10.78747	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6230	6230	0.100	-10.51954	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59 **SDG:** SG9002
Lab ID : WG134904-7 **Analytical Date:** 11/23/13 23:45
Lab File ID : 9GK4015.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1 Gasoline Range Organic	12787	11625	11625	0.100	-9.09249	20.00000	Averaged	
3 Methyl tert-butyl ether	7628	8033	8033	0.100	5.30882	20.00000	Averaged	
4 Benzene	16536	14109	14109	0.100	-14.67345	20.00000	Averaged	
5 Toluene	16206	13716	13716	0.100	-15.36669	20.00000	Averaged	
7 Ethylbenzene	14916	12920	12920	0.100	-13.38130	20.00000	Averaged	
8 m+p-Xylenes	15474	13271	13271	0.100	-14.23702	20.00000	Averaged	
9 o-Xylene	15464	13513	13513	0.100	-12.61892	20.00000	Averaged	
11 1,2,4-trimethylbenzene	12106	11144	11144	0.100	-7.94123	20.00000	Averaged	
12 1,3,5-trimethylbenzene	10636	9926	9926	0.100	-6.67402	20.00000	Averaged	
13 Naphthalene	3432	6342	6342	0.100	84.79944	20.00000	Averaged	*
10 p-Bromofluorobenzene	6962	5854	5854	0.100	-15.91074	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab ID : WG134904-9
Lab File ID : 9GK4020.d
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56

SDG: SG9002
Analytical Date: 11/25/13 08:06
Instrument ID: GC09
Column ID: A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	13055	13055	0.100	2.09200	20.00000	Averaged
3 Methyl tert-butyl ether	7628	8000	8000	0.100	4.87802	20.00000	Averaged
4 Benzene	16536	16560	16560	0.100	0.14622	20.00000	Averaged
5 Toluene	16206	16044	16044	0.100	-1.00325	20.00000	Averaged
7 Ethylbenzene	14916	15136	15136	0.100	1.47639	20.00000	Averaged
8 m+p-Xylenes	15474	15932	15932	0.100	2.96009	20.00000	Averaged
9 o-Xylene	15464	15285	15285	0.100	-1.15674	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	12929	12929	0.100	6.79921	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	11167	11167	0.100	4.99008	20.00000	Averaged
13 Naphthalene	3432	3563	3563	0.100	3.80626	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6689	6689	0.100	-3.91934	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab ID : WG134904-10
Lab File ID : 9GK4032.d
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56

SDG: SG9002
Analytical Date: 11/25/13 20:43
Instrument ID: GC09
Column ID: A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11925	11925	0.100	-6.74642	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7528	7528	0.100	-1.30766	20.00000	Averaged
4 Benzene	16536	14997	14997	0.100	-9.30495	20.00000	Averaged
5 Toluene	16206	14857	14857	0.100	-8.32473	20.00000	Averaged
7 Ethylbenzene	14916	13771	13771	0.100	-7.67742	20.00000	Averaged
8 m+p-Xylenes	15474	14302	14302	0.100	-7.57323	20.00000	Averaged
9 o-Xylene	15464	13774	13774	0.100	-10.92829	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11513	11513	0.100	-4.89371	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10114	10114	0.100	-4.90645	20.00000	Averaged
13 Naphthalene	3432	4087	4087	0.100	19.07927	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6239	6239	0.100	-10.38754	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab ID : WG135144-6
Lab File ID : 9GK4041.d
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56

SDG: SG9002
Analytical Date: 11/26/13 08:35
Instrument ID: GC09
Column ID: A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11600	11600	0.100	-9.28802	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7341	7341	0.100	-3.75770	20.00000	Averaged
4 Benzene	16536	14616	14616	0.100	-11.60893	20.00000	Averaged
5 Toluene	16206	14286	14286	0.100	-11.85028	20.00000	Averaged
7 Ethylbenzene	14916	13217	13217	0.100	-11.39419	20.00000	Averaged
8 m+p-Xylenes	15474	14046	14046	0.100	-9.22990	20.00000	Averaged
9 o-Xylene	15464	13892	13892	0.100	-10.16924	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11178	11178	0.100	-7.66433	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10050	10050	0.100	-5.51382	20.00000	Averaged
13 Naphthalene	3432	3325	3325	0.100	-3.10794	20.00000	Averaged
10 p-Bromofluorobenzene	6962	5856	5856	0.100	-15.88517	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab ID : WG135144-7
Lab File ID : 9GK4053.d
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56

SDG: SG9002
Analytical Date: 11/26/13 21:38
Instrument ID: GC09
Column ID: A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	11667	11667	0.100	-8.76323	20.00000	Averaged
3 Methyl tert-butyl ether	7628	7848	7848	0.100	2.88395	20.00000	Averaged
4 Benzene	16536	15088	15088	0.100	-8.75245	20.00000	Averaged
5 Toluene	16206	14405	14405	0.100	-11.11229	20.00000	Averaged
7 Ethylbenzene	14916	13452	13452	0.100	-9.81470	20.00000	Averaged
8 m+p-Xylenes	15474	13983	13983	0.100	-9.63284	20.00000	Averaged
9 o-Xylene	15464	13639	13639	0.100	-11.79999	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11083	11083	0.100	-8.45107	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	9544	9544	0.100	-10.27047	20.00000	Averaged
13 Naphthalene	3432	3641	3641	0.100	6.07603	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6019	6019	0.100	-13.54673	20.00000	Averaged

*** = Compound out of QC criteria**

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : 9GK4022.D
Instrument ID : GC09
Heated Purge : No

SDG : SG9002
Lab Sample ID : WG134904-1RA
Date Analyzed : 25-NOV-13
Time Analyzed : 10:08

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
F2-003-SB1017-011.6	SG9002-1RA	9GK4023.D	11/25/13	11:01

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Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG134904-1RA
Client ID: Method Blank Sample
Project:
SDG: SG9002
Lab File ID: 9GK4022.D

Sample Date:
Received Date:
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904

Analysis Date: 25-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	J	1.8	mg/Kgdrywt	1	2.5	2.5	1.8	2
p-Bromofluorobenzene		87.2	%					

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : 9GK4044.D
Instrument ID : GC09
Heated Purge : No

SDG : SG9002
Lab Sample ID : WG135144-1
Date Analyzed : 26-NOV-13
Time Analyzed : 11:24

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG135144-2	9GK4045.D	11/26/13	14:25
Laboratory Control S	WG135144-3	9GK4046.D	11/26/13	15:19
TF2-SB-RB04-1113	SG9002-12	9GK4052.D	11/26/13	20:43

Report of Analytical Results

Client:
Lab ID: WG135144-1
Client ID: Method Blank Sample
Project:
SDG: SG9002
Lab File ID: 9GK4044.D

Sample Date:
Received Date:
Extract Date: 26-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG135144

Analysis Date: 26-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	8.0	ug/l	1	10	10.	6.7	8.0
p-Bromofluorobenzene		94.0	%					

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LCS/LCSD Recovery Report

LCS ID: WG135144-2
LCSD ID: WG135144-3
Project:
SDG: SG9002
Report Date: 05-DEC-13
LCS File ID: 9GK4045.D

Received Date:
Extract Date: 26-NOV-13
Extracted By: JLP
Extraction Method: SW846 M8015B
Lab Prep Batch: WG135144
LCSD File ID: 9GK4046.d

Analysis Date: 26-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	100.	90.1	90.1	103.	103.	ug/l	13	30	73-126
-Bromofluorobenzene			83.0		92.0				79-121

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Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport CTO WE30 &WE59
Lab File ID : 9GK4004.D
Instrument ID : GC09
Heated Purge : No

SDG : SG9002
Lab Sample ID : WG134904-1
Date Analyzed : 23-NOV-13
Time Analyzed : 13:43

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134904-2	9GK4005.D	11/23/13	14:38
Laboratory Control S	WG134904-3	9GK4006.D	11/23/13	15:32

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ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG134904-1
Client ID: Method Blank Sample
Project:
SDG: SG9002
Lab File ID: 9GK4004.D

Sample Date:
Received Date:
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904

Analysis Date: 23-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA
Report Date: 05-DEC-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		95.0	%					

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Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG134904-2
LCSD ID: WG134904-3
Project:
SDG: SG9002
Report Date: 05-DEC-13
LCS File ID: 9GK4005.D

Received Date:
Extract Date: 22-NOV-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG134904
LCSD File ID: 9GK4006.d

Analysis Date: 23-NOV-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	25.0	26.3	105.	24.0	96.0	mg/Kgdrywt	9	30	67-137
-Bromofluorobenzene			93.8		94.6				81-119

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** SL
Lab Code: KAS **SDG:** SG9002

Client Sample ID	Lab Sample ID	Col. ID	BFB	#
F2-003-SB1017-011.6	SG9002-1RA	A	95.6	
Method Blank Sample	WG134904-1	A	95.0	
Method Blank Sample	WG134904-1RA	A	87.2	
Laboratory Control S	WG134904-2	A	93.8	
Laboratory Control S	WG134904-3	A	94.6	

		QC Limits
BFB	P-BROMOFLUOROBENZENE	81-119

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport CTO WE30 &WE59 **Matrix:** AQ
Lab Code: KAS **SDG:** SG9002

Client Sample ID	Lab Sample ID	Col. ID	BFB	#
TF2-SB-RB04-1113	SG9002-12	A	86.0	
Method Blank Sample	WG135144-1	A	94.0	
Laboratory Control S	WG135144-2	A	83.0	
Laboratory Control S	WG135144-3	A	92.0	

		QC Limits
BFB	P-BROMOFLUOROBENZENE	79-121

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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NAVSTA NEWPORT
SOIL DATA
SG9002

FRACTION	CHEMICAL	TF2-SB-DUP08-1113	UNITS	TF2-003-SB1011-0204	RPD	2X LOQ	D	2X LOQ
PAH	ACENAPHTHENE	5 J	UG/KG	51	164.29	42	46.00	46
PAH	ANTHRACENE	9.6 J	UG/KG	26	92.13		16.40	N/A<2XR.L.
PAH	BENZO(A)ANTHRACENE	34	UG/KG	77	77.48		43.00	
PAH	BENZO(A)PYRENE	28 J	UG/KG	54 J	63.41		26.00	N/A<2XR.L.
PAH	BENZO(B)FLUORANTHENE	39	UG/KG	63	47.06		24.00	
PAH	BENZO(G,H,I)PERYLENE	18 J	UG/KG	25 J	32.56		7.00	
PAH	BENZO(K)FLUORANTHENE	15 J	UG/KG	22 J	37.84		7.00	
PAH	CHRYSENE	38	UG/KG	74	64.29		36.00	
PAH	DIBENZO(A,H)ANTHRACENE	14 J	UG/KG	15 J	6.90		1.00	
PAH	FLUORANTHENE	70	UG/KG	130	60.00		60.00	
PAH	FLUORENE	4 J	UG/KG	18 J	127.27		14.00	N/A<2XR.L.
PAH	INDENO(1,2,3-CD)PYRENE	36	UG/KG	52	36.36		16.00	
PAH	NAPHTHALENE	4.2 J	UG/KG	20 J	130.58		15.80	N/A<2XR.L.
PAH	PHENANTHRENE	53	UG/KG	130	84.15		77.00	
PAH	PYRENE	83	UG/KG	190	78.39		107.00	

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

Tetra Tech INC **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 10, 2014**

FROM: **JOSEPH KALINYAK** **COPIES:**

SUBJECT: **INORGANIC DATA VALIDATION – TOTAL METALS**
NAVSTA NEWPORT, CTO WE30
SAMPLE DELIVERY GROUP (SDG) SG9002

SAMPLES: 14 / Soil / Total Metals

TF2-003-SB1011-0204	TF2-003-SB1012-0204	TF2-003-SB1012-0810
TF2-003-SB1014-0204	TF2-003-SB1014-0810	TF2-003-SB1015-0204
TF2-003-SB1015-0810	TF2-003-SB1016-0204	TF2-003-SB1016-0810
TF2-003-SB1017-011.6	TF2-003-SB1017-0204	TF2-003-SB1017-0810
TF2-003-SB1018-0204	TF2-SB-DUP08-1113	

1 / Aqueous / Total Metals

TF2-SB-RB04-1113

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG SG9002 consisted of fourteen (14) soil samples and one (1) aqueous rinse blank sample. All samples were analyzed for Total Metals as listed above. One (1) field duplicate sample pair was included in this sample delivery group (SDG): TF2-SB-DUP08-1113 / TF2-003-SB1011-0204.

The samples were collected by Tetra Tech on November 15, 2013 and analyzed by Katahdin Analytical Services, Inc. All analyses were conducted in accordance with EPA SW-846 Method 6020A for metals and Method 7471B for mercury, analytical and reporting protocols.

The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Initial and Continuing Calibration Verification Results
• Laboratory Method/Preparation Blank Results
* • ICP Interference Results
• Laboratory Duplicate Results
* • Blank Spike/Blank Spike Duplicate Results
• Matrix Spike/Matrix Spike Duplicate Recoveries
* • Internal Standard Recoveries
* • Field Duplicate Precision
* • ICP Serial Dilution
* • Compound Identification and Quantification
* • Detection Limits

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

HOLD TIME

No issues were identified.

BLANKS

The following metal analytes were detected in the laboratory method and preparation blanks at the following maximum concentrations:

Analyte	Maximum Conc.	Action Level
Mercury [1]	0.045 ug/L	0.0375 mg/Kg
Antimony [2]	0.023 µg/L	0.0575 mg/Kg or 0.115 µg/L
Beryllium [2]	0.004 µg/L	0.010 mg/Kg or 0.040 µg/L
Cadmium [2]	0.014 µg/L	0.035 mg/Kg or 0.070 µg/L
Calcium [2]	9.443 µg/L	23.61 mg/Kg or 47.215 µg/L
Iron [2]	4.934 µg/L	12.335 mg/Kg or 24.67 µg/L
Lead [2]	0.051 µg/L	0.1275 mg/Kg or 0.255 µg/L
Magnesium [2]	2.520 µg/L	6.30 mg/Kg or 12.60 µg/L
Nickel [2]	0.375 µg/L	0.938 mg/Kg or 1.875 µg/L
Thallium [2]	0.005 µg/L	0.0125 mg/Kg or 0.025 µg/L
Zinc [2]	0.162 µg/L	0.405 mg/Kg or 0.810 µg/L
Beryllium [3]	0.003 µg/L	0.0075 mg/Kg or 0.015 µg/L
Manganese [3]	0.039 µg/L	0.195 mg/Kg or 0.390 µg/L
Aluminum [4]	1.271 mg/Kg	6.355 mg/Kg
Barium [4]	0.051 mg/Kg	0.255 mg/Kg
Chromium [4]	0.140 mg/Kg	0.700 mg/Kg
Copper [4]	0.138 mg/Kg	0.690 mg/Kg
Manganese [4]	0.065 mg/Kg	0.325 mg/Kg
Potassium [4]	4.779 mg/Kg	23.895 mg/Kg
Sodium [4]	12.810 mg/Kg	64.05 mg/Kg
Zinc [4]	0.397 mg/Kg	1.985 mg/Kg
Mercury [5]	0.005 mg/Kg	0.025 mg/Kg

(1) Maximum concentration found in the continuing calibration blank from 12/06/13 affecting all the soil samples.

(2) Maximum concentration found in the continuing calibration blank from 12/02/13 affecting all the samples (with the exception of the Mn result for sample TF2-003-SB1017-0810 and the Be result which affects only samples TF2-003-SB1017-0204 and TF2-003-SB1017-0810).

(3) Maximum concentration found in the continuing calibration blank from 12/04/13 affecting all the samples.

(4) Maximum concentration detected in the soil preparation blank associated with preparation batch GK271MS1 affecting all soil samples.

(5) Maximum concentration found in the preparation blank for batch GL02HGS4 affecting the soil samples TF2-003-SB1015-0810, TF2-003-SB1016-0204, TF2-003-SB1016-0810, and TF2-003-SB1018-0204.

An action level of 5X the maximum contaminant concentration was established to evaluate for blank contamination. Percent moisture, dilution factors, and sample aliquots were taken into consideration during the application of the action level. Detected results reported for analytes below the established action levels were qualified as non-detected, (U). Results reported greater than the Method Detection Limit (MDL) but less than the

Limit of Detection (LOD) were raised to the LOD.

CALIBRATIONS

No issues were identified.

LABORATORY CONTROL SPIKE (LCS) /LABORATORY CONTROL SPIKE DUPLICATE (LCSD)

No issues were identified.

MATRIX SPIKE %R

The Matrix Spike (MS) sample TF2-003-SB1012-0204 had %Rs for antimony and copper less than the 80%, and potassium greater than the 120%, quality control limits. The post digestion spike yielded acceptable %Rs for the antimony and potassium results. The copper %R was less than the quality control limit but the concentration of the sample was >4X the spike concentration added to the sample.

Affected Samples: All samples were affected

Actions: The sample detected antimony, copper, and potassium results were qualified estimated, (J), with the exception of an antimony result qualified for blank contamination.

LABORATORY DUPLICATE RPD

No issues were identified.

INTERNAL STANDARD RECOVERY

No issues were identified.

COMPOUND QUANTIFICATION

No issues were identified.

ADDITIONAL COMMENTS

Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J).
All samples were diluted 5X for the Method 6020A metals analysis. Additionally, the sample TF2-003-SB1017-0810 was analyzed at a 10X dilution for manganese only.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: Metal analyte results were qualified for blank contamination.

Other Factors Affecting Data Quality: Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J). Metal results were qualified for MS %R non-compliances.

The data for these analyses were reviewed with reference to the USEPA National Functional Guidelines for Inorganic Data Validation" (January 2010), and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Joseph Kalinyak
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Value Qualifier Key (Val Qual)

J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The result is an estimated non-detected quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U - Value is a non-detect as reported by the laboratory.

UR – Non-detected result is considered rejected, (UR), as a result of technical non-compliances.

DATA QUALIFICATION CODE (QUAL CODE)

Qualifier Codes:

A	=	Lab Blank Contamination
B	=	Field Blank Contamination
C	=	Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01	=	GC/MS Tuning Noncompliance
D	=	MS/MSD Recovery Noncompliance
E	=	LCS/LCSD Recovery Noncompliance
F	=	Lab Duplicate Imprecision
G	=	Field Duplicate Imprecision
H	=	Holding Time Exceedance
I	=	ICP Serial Dilution Noncompliance
J	=	ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K	=	ICP Interference - includes ICS % R Noncompliance
L	=	Instrument Calibration Range Exceedance
M	=	Sample Preservation Noncompliance
N	=	Internal Standard Noncompliance
N01	=	Internal Standard Recovery Noncompliance Dioxins
N02	=	Recovery Standard Noncompliance Dioxins
N03	=	Clean-up Standard Noncompliance Dioxins
O	=	Poor Instrument Performance (i.e., base-time drifting)
P	=	Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q	=	Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R	=	Surrogates Recovery Noncompliance
S	=	Pesticide/PCB Resolution
T	=	% Breakdown Noncompliance for DDT and Endrin
U	=	RPD between columns/detectors >40% for positive results determined via GC/HPLC
V	=	Non-linear calibrations; correlation coefficient $r < 0.995$
W	=	EMPC result
X	=	Signal to noise response drop
Y	=	Percent solids <30%
Z	=	Uncertainty at 2 sigma deviation is less than sample activity
Z1	=	Tentatively Identified Compound considered presumptively present
Z2	=	Tentatively Identified Compound column bleed

PROJ_NO: 03019	NSAMPLE	TF2-SB-RB04-1113					
SDG: SG9002	LAB_ID	SG9002-012					
FRACTION: M	SAMP_DATE	11/15/2013					
MEDIA: WATER	QC_TYPE	NM					
	UNITS	UG/L					
	PCT_SOLIDS	0.0			91.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		15.6	U	A			
ANTIMONY		0.5	U				
ARSENIC		4	U				
BARIUM		0.58	U	A			
BERYLLIUM		0.2	U				
CADMIUM		0.2	U				
CALCIUM		80	U				
CHROMIUM		0.81	U	A			
COBALT		0.3	U				
COPPER		0.22	U	A			
IRON		19.6	U	A			
LEAD		0.5	U				
MAGNESIUM		80	U				
MANGANESE		1	U				
MERCURY					0.1	U	
NICKEL		1.2	U				
POTASSIUM		400	U				
SELENIUM		3	U				
SILVER		0.4	U				
SODIUM		400	U				
THALLIUM		0.4	U				
VANADIUM		4	U				
ZINC		8	U				

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1011-0204			TF2-003-SB1012-0204			TF2-003-SB1012-0810			TF2-003-SB1014-0204		
SDG: SG9002	LAB_ID	SG9002-006			SG9002-004			SG9002-005			SG9002-007		
FRACTION: M	SAMP_DATE	11/15/2013			11/15/2013			11/15/2013			11/15/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	82.0			91.3			91.0			92.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		14700			11700			12200			10400		
ANTIMONY		0.17	J	D	0.18	J	D	0.06	U	A	0.31	J	D
ARSENIC		7.7			6.5			4.7			7.8		
BARIUM		17.9			23.8			11.6			19.4		
BERYLLIUM		0.4			0.5			0.3			0.33		
CADMIUM		0.14			0.19			0.09	J	P	0.15		
CALCIUM		853			1170			939			1520		
CHROMIUM		19.2			15			16.4			13.7		
COBALT		12.9			10			10.2			10.6		
COPPER		20.8	J	D	34.3	J	D	15.2	J	D	25.4	J	D
IRON		29400			24100			24700			24100		
LEAD		25.4			18.4			11			21.3		
MAGNESIUM		5130			3570			4370			3560		
MANGANESE		346			314			284			403		
MERCURY		0.04	U	A	0.07			0.05			0.04	U	A
NICKEL		24.2			19.1			21.6			18.6		
POTASSIUM		402	J	D	428	J	D	284	J	D	398	J	D
SELENIUM		0.29	J	P	0.3	J	P	0.24	J	P	0.31	J	P
SILVER		0.05	J	P	0.05	J	P	0.03	J	P	0.04	J	P
SODIUM		39	U	A	42.8	U	A	36	U	A	39	U	A
THALLIUM		0.04	J	P	0.04	J	P	0.02	J	P	0.04	J	P
VANADIUM		18.2			15.2			14.6			13.9		
ZINC		67.1			56.2			48.6			52.4		

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1014-0810			TF2-003-SB1015-0204			TF2-003-SB1015-0810			TF2-003-SB1016-0204		
SDG: SG9002	LAB_ID	SG9002-008			SG9002-009			SG9002-011			SG9002-013		
FRACTION: M	SAMP_DATE	11/15/2013			11/15/2013			11/15/2013			11/15/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	94.4			93.0			89.3			92.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		11400			12000			12700			11000		
ANTIMONY		0.1	J	D	0.14	J	D	0.07	J	DP	0.18	J	D
ARSENIC		4.9			6.2			5.2			6.4		
BARIUM		13.7			19.2			11.6			20.5		
BERYLLIUM		0.31			0.34			0.32			0.38		
CADMIUM		0.16			0.16			0.15			0.17		
CALCIUM		1110			1110			801			1010		
CHROMIUM		17			15.1			14.3			14.1		
COBALT		9.6			11			9.3			10.1		
COPPER		15.6	J	D	21	J	D	11.7	J	D	19.6	J	D
IRON		22900			24700			25400			22700		
LEAD		14.8			17.2			11.8			26.4		
MAGNESIUM		4200			4360			4520			3790		
MANGANESE		318			339			292			351		
MERCURY		0.03	U	A	0.04	U	A	0.04	U	A	0.04	U	A
NICKEL		19.9			20.5			20			18.4		
POTASSIUM		346	J	D	410	J	D	264	J	D	418	J	D
SELENIUM		0.24	J	P	0.26	J	P	0.25	J	P	0.29	J	P
SILVER		0.03	J	P	0.04	J	P	0.03	J	P	0.04	J	P
SODIUM		37	U	A	37	U	A	38	U	A	32.9	U	A
THALLIUM		0.03	J	P	0.04	J	P	0.03	J	P	0.05	J	P
VANADIUM		14.9			15.2			15			14.8		
ZINC		50.3			56			47.8			55.9		

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1016-0810			TF2-003-SB1017-011.6			TF2-003-SB1017-0204			TF2-003-SB1017-0810		
SDG: SG9002	LAB_ID	SG9002-014			SG9002-001			SG9002-002			SG9002-003		
FRACTION: M	SAMP_DATE	11/15/2013			11/15/2013			11/15/2013			11/15/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	92.8			79.8			92.6			89.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		13200			14500			10500			14500		
ANTIMONY		0.11	J	D	0.21	J	D	0.1	J	D	0.09	J	D
ARSENIC		5.7			8.8			5.3			8.7		
BARIUM		15			23			13			16.6		
BERYLLIUM		0.32			0.44			0.31			0.61		
CADMIUM		0.11			0.13			0.1			0.07	J	P
CALCIUM		1070			1270			511			946		
CHROMIUM		17			18.1			13			19		
COBALT		10			15.2			9.5			13.1		
COPPER		15.7	J	D	46	J	D	17.5	J	D	20.4	J	D
IRON		27000			32000			21000			31200		
LEAD		16.4			16.4			11			14.1		
MAGNESIUM		4580			4800			3530			3920		
MANGANESE		309			387			276			464		
MERCURY		0.02	U	A	0.09			0.02	U	A	0.03	U	A
NICKEL		21.6			27.5			17.9			24.3		
POTASSIUM		336	J	D	518	J	D	354	J	D	349	J	D
SELENIUM		0.16	J	P	0.45	J	P	0.2	J	P	0.47		
SILVER		0.03	J	P	0.04	J	P	0.04	J	P	0.05	J	P
SODIUM		38	U	A	41	U	A	39	U	A	31	U	A
THALLIUM		0.03	J	P	0.05	J	P	0.04	J	P	0.04	J	P
VANADIUM		15.5			17.2			12.8			19.6		
ZINC		60.1			63.3			38			56.2		

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1018-0204			TF2-SB-DUP08-1113		
SDG: SG9002	LAB_ID	SG9002-015			SG9002-010		
FRACTION: M	SAMP_DATE	11/15/2013			11/15/2013		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	MG/KG			MG/KG		
	PCT_SOLIDS	94.6			91.0		
	DUP_OF				TF2-003-SB1011-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		10400			13400		
ANTIMONY		0.08	J	DP	0.17	J	D
ARSENIC		5.6			6.7		
BARIUM		11.5			28		
BERYLLIUM		0.32			0.34		
CADMIUM		0.14			0.12		
CALCIUM		654			1280		
CHROMIUM		13.1			16.4		
COBALT		9.1			11.1		
COPPER		15.3	J	D	17.5	J	D
IRON		23100			28400		
LEAD		12			27.4		
MAGNESIUM		3790			4380		
MANGANESE		273			298		
MERCURY		0.016	U	A	0.04	U	A
NICKEL		17			20.1		
POTASSIUM		359	J	D	499	J	D
SELENIUM		0.16	J	P	0.32	J	P
SILVER		0.02	J	P	0.04	J	P
SODIUM		36	U	A	38	U	A
THALLIUM		0.03	J	P	0.03	J	P
VANADIUM		14.2			17		
ZINC		39			69.5		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SB-RB04-1113

Matrix: WATER **SDG Name:** SG9002

Percent Solids: 0.00 **Lab Sample ID:** SG9002-012

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15.6	J		MS	5	300	4.40	40
7440-36-0	ANTIMONY, TOTAL	0.50	U		MS	5	1.0	0.05	0.50
7440-38-2	ARSENIC, TOTAL	4.0	U		MS	5	5.0	2.25	4.0
7440-39-3	BARIUM, TOTAL	0.58	J		MS	5	2.0	0.25	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	U		MS	5	1.0	0.04	0.20
7440-43-9	CADMIUM, TOTAL	0.20	U		MS	5	1.0	0.03	0.20
7440-70-2	CALCIUM, TOTAL	80	U		MS	5	100	20.45	80
7440-47-3	CHROMIUM, TOTAL	0.81	J		MS	5	5.0	0.20	4.0
7440-48-4	COBALT, TOTAL	0.30	U		MS	5	1.0	0.05	0.30
7440-50-8	COPPER, TOTAL	0.22	J		MS	5	3.0	0.20	2.0
7439-89-6	IRON, TOTAL	19.6	J		MS	5	100	12.75	60
7439-92-1	LEAD, TOTAL	0.50	U		MS	5	1.0	0.05	0.50
7439-95-4	MAGNESIUM, TOTAL	80	U		MS	5	100	7.80	80
7439-96-5	MANGANESE, TOTAL	1.0	U		MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.01	0.10
7440-02-0	NICKEL, TOTAL	1.2	U		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	400	U		MS	5	1000	30.70	400
7782-49-2	SELENIUM, TOTAL	3.0	U		MS	5	5.0	0.20	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-23-5	SODIUM, TOTAL	400	U		MS	5	1000	18.50	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-62-2	VANADIUM, TOTAL	4.0	U		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	8.0	U		MS	5	10	3.90	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1011-0204

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 82.0 **Lab Sample ID:** SG9002-006

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14700			MS	5	30	0.50	3.9
7440-36-0	ANTIMONY, TOTAL	0.17		N	MS	5	0.098	0.02	0.049
7440-38-2	ARSENIC, TOTAL	7.7			MS	5	0.49	0.15	0.39
7440-39-3	BARIUM, TOTAL	17.9		*	MS	5	0.20	0.03	0.098
7440-41-7	BERYLLIUM, TOTAL	0.40			MS	5	0.098	0.004	0.020
7440-43-9	CADMIUM, TOTAL	0.14			MS	5	0.098	0.010	0.020
7440-70-2	CALCIUM, TOTAL	853			MS	5	9.8	3.76	7.9
7440-47-3	CHROMIUM, TOTAL	19.2			MS	5	0.49	0.05	0.39
7440-48-4	COBALT, TOTAL	12.9			MS	5	0.098	0.005	0.030
7440-50-8	COPPER, TOTAL	20.8		N*	MS	5	0.30	0.07	0.20
7439-89-6	IRON, TOTAL	29400			MS	5	9.8	2.36	5.9
7439-92-1	LEAD, TOTAL	25.4			MS	5	0.098	0.005	0.049
7439-95-4	MAGNESIUM, TOTAL	5130			MS	5	9.8	1.34	7.9
7439-96-5	MANGANESE, TOTAL	346			MS	5	0.20	0.04	0.098
7439-97-6	MERCURY, TOTAL	0.04		*	CV	1	0.038	0.006	0.019
7440-02-0	NICKEL, TOTAL	24.2			MS	5	0.20	0.02	0.12
7440-09-7	POTASSIUM, TOTAL	402		N	MS	5	98	4.48	39
7782-49-2	SELENIUM, TOTAL	0.29	J		MS	5	0.49	0.04	0.30
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.098	0.005	0.039
7440-23-5	SODIUM, TOTAL	24.6	J		MS	5	98	2.52	39
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.098	0.010	0.039
7440-62-2	VANADIUM, TOTAL	18.2			MS	5	0.49	0.11	0.39
7440-66-6	ZINC, TOTAL	67.1			MS	5	0.98	0.13	0.79

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1012-0204

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 91.3 **Lab Sample ID:** SG9002-004

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11700			MS	5	26	0.44	3.4
7440-36-0	ANTIMONY, TOTAL	0.18		N	MS	5	0.086	0.02	0.043
7440-38-2	ARSENIC, TOTAL	6.5			MS	5	0.43	0.13	0.34
7440-39-3	BARIUM, TOTAL	23.8		*	MS	5	0.17	0.03	0.086
7440-41-7	BERYLLIUM, TOTAL	0.50			MS	5	0.086	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.19			MS	5	0.086	0.009	0.017
7440-70-2	CALCIUM, TOTAL	1170			MS	5	8.6	3.27	6.8
7440-47-3	CHROMIUM, TOTAL	15.0			MS	5	0.43	0.04	0.34
7440-48-4	COBALT, TOTAL	10.0			MS	5	0.086	0.004	0.026
7440-50-8	COPPER, TOTAL	34.3		N*	MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	24100			MS	5	8.6	2.05	5.1
7439-92-1	LEAD, TOTAL	18.4			MS	5	0.086	0.004	0.043
7439-95-4	MAGNESIUM, TOTAL	3570			MS	5	8.6	1.17	6.8
7439-96-5	MANGANESE, TOTAL	314			MS	5	0.17	0.03	0.086
7439-97-6	MERCURY, TOTAL	0.07		*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	19.1			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	428		N	MS	5	86	3.90	34
7782-49-2	SELENIUM, TOTAL	0.30	J		MS	5	0.43	0.03	0.26
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.086	0.004	0.034
7440-23-5	SODIUM, TOTAL	42.8	J		MS	5	86	2.19	34
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.086	0.009	0.034
7440-62-2	VANADIUM, TOTAL	15.2			MS	5	0.43	0.09	0.34
7440-66-6	ZINC, TOTAL	56.2			MS	5	0.86	0.11	0.68

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1012-0810

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 91.0 **Lab Sample ID:** SG9002-005

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12200			MS	5	27	0.46	3.6
7440-36-0	ANTIMONY, TOTAL	0.06	J	N	MS	5	0.090	0.02	0.045
7440-38-2	ARSENIC, TOTAL	4.7			MS	5	0.45	0.14	0.36
7440-39-3	BARIUM, TOTAL	11.6		*	MS	5	0.18	0.03	0.090
7440-41-7	BERYLLIUM, TOTAL	0.30			MS	5	0.090	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.09	J		MS	5	0.090	0.009	0.018
7440-70-2	CALCIUM, TOTAL	939			MS	5	9.0	3.45	7.2
7440-47-3	CHROMIUM, TOTAL	16.4			MS	5	0.45	0.05	0.36
7440-48-4	COBALT, TOTAL	10.2			MS	5	0.090	0.005	0.027
7440-50-8	COPPER, TOTAL	15.2		N*	MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	24700			MS	5	9.0	2.16	5.4
7439-92-1	LEAD, TOTAL	11.0			MS	5	0.090	0.005	0.045
7439-95-4	MAGNESIUM, TOTAL	4370			MS	5	9.0	1.23	7.2
7439-96-5	MANGANESE, TOTAL	284			MS	5	0.18	0.04	0.090
7439-97-6	MERCURY, TOTAL	0.05		*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	21.6			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	284		N	MS	5	90	4.11	36
7782-49-2	SELENIUM, TOTAL	0.24	J		MS	5	0.45	0.04	0.27
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.090	0.005	0.036
7440-23-5	SODIUM, TOTAL	20.9	J		MS	5	90	2.31	36
7440-28-0	THALLIUM, TOTAL	0.02	J		MS	5	0.090	0.009	0.036
7440-62-2	VANADIUM, TOTAL	14.6			MS	5	0.45	0.10	0.36
7440-66-6	ZINC, TOTAL	48.6			MS	5	0.90	0.12	0.72

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1014-0204

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 92.8 **Lab Sample ID:** SG9002-007

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	10400			MS	5	29	0.50	3.9
7440-36-0	ANTIMONY, TOTAL	0.31		N	MS	5	0.098	0.02	0.049
7440-38-2	ARSENIC, TOTAL	7.8			MS	5	0.49	0.15	0.39
7440-39-3	BARIUM, TOTAL	19.4		*	MS	5	0.20	0.03	0.098
7440-41-7	BERYLLIUM, TOTAL	0.33			MS	5	0.098	0.004	0.020
7440-43-9	CADMIUM, TOTAL	0.15			MS	5	0.098	0.010	0.020
7440-70-2	CALCIUM, TOTAL	1520			MS	5	9.8	3.75	7.8
7440-47-3	CHROMIUM, TOTAL	13.7			MS	5	0.49	0.05	0.39
7440-48-4	COBALT, TOTAL	10.6			MS	5	0.098	0.005	0.029
7440-50-8	COPPER, TOTAL	25.4		N*	MS	5	0.29	0.07	0.20
7439-89-6	IRON, TOTAL	24100			MS	5	9.8	2.35	5.9
7439-92-1	LEAD, TOTAL	21.3			MS	5	0.098	0.005	0.049
7439-95-4	MAGNESIUM, TOTAL	3560			MS	5	9.8	1.34	7.8
7439-96-5	MANGANESE, TOTAL	403			MS	5	0.20	0.04	0.098
7439-97-6	MERCURY, TOTAL	0.04		*	CV	1	0.034	0.005	0.017
7440-02-0	NICKEL, TOTAL	18.6			MS	5	0.20	0.02	0.12
7440-09-7	POTASSIUM, TOTAL	398		N	MS	5	98	4.47	39
7782-49-2	SELENIUM, TOTAL	0.31	J		MS	5	0.49	0.04	0.29
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.098	0.005	0.039
7440-23-5	SODIUM, TOTAL	38.3	J		MS	5	98	2.51	39
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.098	0.010	0.039
7440-62-2	VANADIUM, TOTAL	13.9			MS	5	0.49	0.11	0.39
7440-66-6	ZINC, TOTAL	52.4			MS	5	0.98	0.13	0.78

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1014-0810

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 94.4 **Lab Sample ID:** SG9002-008

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11400			MS	5	28	0.47	3.7
7440-36-0	ANTIMONY, TOTAL	0.10		N	MS	5	0.093	0.02	0.046
7440-38-2	ARSENIC, TOTAL	4.9			MS	5	0.46	0.14	0.37
7440-39-3	BARIUM, TOTAL	13.7		*	MS	5	0.18	0.03	0.093
7440-41-7	BERYLLIUM, TOTAL	0.31			MS	5	0.093	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.16			MS	5	0.093	0.009	0.018
7440-70-2	CALCIUM, TOTAL	1110			MS	5	9.3	3.55	7.4
7440-47-3	CHROMIUM, TOTAL	17.0			MS	5	0.46	0.05	0.37
7440-48-4	COBALT, TOTAL	9.6			MS	5	0.093	0.005	0.028
7440-50-8	COPPER, TOTAL	15.6		N*	MS	5	0.28	0.07	0.18
7439-89-6	IRON, TOTAL	22900			MS	5	9.3	2.23	5.6
7439-92-1	LEAD, TOTAL	14.8			MS	5	0.093	0.005	0.046
7439-95-4	MAGNESIUM, TOTAL	4200			MS	5	9.3	1.27	7.4
7439-96-5	MANGANESE, TOTAL	318			MS	5	0.18	0.04	0.093
7439-97-6	MERCURY, TOTAL	0.03	J	*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	19.9			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	346		N	MS	5	93	4.24	37
7782-49-2	SELENIUM, TOTAL	0.24	J		MS	5	0.46	0.04	0.28
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.093	0.005	0.037
7440-23-5	SODIUM, TOTAL	26.3	J		MS	5	93	2.38	37
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.093	0.009	0.037
7440-62-2	VANADIUM, TOTAL	14.9			MS	5	0.46	0.10	0.37
7440-66-6	ZINC, TOTAL	50.3			MS	5	0.93	0.12	0.74

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1015-0204

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 93.0 **Lab Sample ID:** SG9002-009

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	12000			MS	5	28	0.47	3.7
7440-36-0	ANTIMONY, TOTAL	0.14		N	MS	5	0.092	0.02	0.046
7440-38-2	ARSENIC, TOTAL	6.2			MS	5	0.46	0.14	0.37
7440-39-3	BARIUM, TOTAL	19.2		*	MS	5	0.18	0.03	0.092
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.092	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.16			MS	5	0.092	0.009	0.018
7440-70-2	CALCIUM, TOTAL	1110			MS	5	9.2	3.52	7.4
7440-47-3	CHROMIUM, TOTAL	15.1			MS	5	0.46	0.05	0.37
7440-48-4	COBALT, TOTAL	11.0			MS	5	0.092	0.005	0.028
7440-50-8	COPPER, TOTAL	21.0		N*	MS	5	0.28	0.06	0.18
7439-89-6	IRON, TOTAL	24700			MS	5	9.2	2.21	5.5
7439-92-1	LEAD, TOTAL	17.2			MS	5	0.092	0.005	0.046
7439-95-4	MAGNESIUM, TOTAL	4360			MS	5	9.2	1.26	7.4
7439-96-5	MANGANESE, TOTAL	339			MS	5	0.18	0.04	0.092
7439-97-6	MERCURY, TOTAL	0.04		*	CV	1	0.026	0.004	0.014
7440-02-0	NICKEL, TOTAL	20.5			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	410		N	MS	5	92	4.19	37
7782-49-2	SELENIUM, TOTAL	0.26	J		MS	5	0.46	0.04	0.28
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.092	0.005	0.037
7440-23-5	SODIUM, TOTAL	28.3	J		MS	5	92	2.36	37
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.092	0.009	0.037
7440-62-2	VANADIUM, TOTAL	15.2			MS	5	0.46	0.10	0.37
7440-66-6	ZINC, TOTAL	56.0			MS	5	0.92	0.12	0.74

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1015-0810

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 89.3 **Lab Sample ID:** SG9002-011

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12700			MS	5	28	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.07	J	N	MS	5	0.094	0.02	0.047
7440-38-2	ARSENIC, TOTAL	5.2			MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	11.6		*	MS	5	0.19	0.03	0.094
7440-41-7	BERYLLIUM, TOTAL	0.32			MS	5	0.094	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.15			MS	5	0.094	0.009	0.019
7440-70-2	CALCIUM, TOTAL	801			MS	5	9.4	3.60	7.5
7440-47-3	CHROMIUM, TOTAL	14.3			MS	5	0.47	0.05	0.38
7440-48-4	COBALT, TOTAL	9.3			MS	5	0.094	0.005	0.028
7440-50-8	COPPER, TOTAL	11.7		N*	MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	25400			MS	5	9.4	2.26	5.6
7439-92-1	LEAD, TOTAL	11.8			MS	5	0.094	0.005	0.047
7439-95-4	MAGNESIUM, TOTAL	4520			MS	5	9.4	1.28	7.5
7439-96-5	MANGANESE, TOTAL	292			MS	5	0.19	0.04	0.094
7439-97-6	MERCURY, TOTAL	0.04		*	CV	1	0.034	0.005	0.018
7440-02-0	NICKEL, TOTAL	20.0			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	264		N	MS	5	94	4.29	38
7782-49-2	SELENIUM, TOTAL	0.25	J		MS	5	0.47	0.04	0.28
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.094	0.005	0.038
7440-23-5	SODIUM, TOTAL	17.8	J		MS	5	94	2.41	38
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.094	0.009	0.038
7440-62-2	VANADIUM, TOTAL	15.0			MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	47.8			MS	5	0.94	0.12	0.75

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1016-0204

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 92.5 **Lab Sample ID:** SG9002-013

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11000			MS	5	23	0.39	3.1
7440-36-0	ANTIMONY, TOTAL	0.18		N	MS	5	0.077	0.02	0.038
7440-38-2	ARSENIC, TOTAL	6.4			MS	5	0.38	0.12	0.31
7440-39-3	BARIUM, TOTAL	20.5		*	MS	5	0.15	0.03	0.077
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.077	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.17			MS	5	0.077	0.008	0.015
7440-70-2	CALCIUM, TOTAL	1010			MS	5	7.7	2.95	6.2
7440-47-3	CHROMIUM, TOTAL	14.1			MS	5	0.38	0.04	0.31
7440-48-4	COBALT, TOTAL	10.1			MS	5	0.077	0.004	0.023
7440-50-8	COPPER, TOTAL	19.6		N*	MS	5	0.23	0.05	0.15
7439-89-6	IRON, TOTAL	22700			MS	5	7.7	1.85	4.6
7439-92-1	LEAD, TOTAL	26.4			MS	5	0.077	0.004	0.038
7439-95-4	MAGNESIUM, TOTAL	3790			MS	5	7.7	1.05	6.2
7439-96-5	MANGANESE, TOTAL	351			MS	5	0.15	0.03	0.077
7439-97-6	MERCURY, TOTAL	0.04		*	CV	1	0.028	0.004	0.014
7440-02-0	NICKEL, TOTAL	18.4			MS	5	0.15	0.02	0.093
7440-09-7	POTASSIUM, TOTAL	418		N	MS	5	77	3.52	31
7782-49-2	SELENIUM, TOTAL	0.29	J		MS	5	0.38	0.03	0.23
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.077	0.004	0.031
7440-23-5	SODIUM, TOTAL	32.9	J		MS	5	77	1.98	31
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.077	0.008	0.031
7440-62-2	VANADIUM, TOTAL	14.8			MS	5	0.38	0.08	0.31
7440-66-6	ZINC, TOTAL	55.9			MS	5	0.77	0.10	0.62

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1016-0810

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 92.8 **Lab Sample ID:** SG9002-014

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13200			MS	5	29	0.49	3.8
7440-36-0	ANTIMONY, TOTAL	0.11		N	MS	5	0.095	0.02	0.048
7440-38-2	ARSENIC, TOTAL	5.7			MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	15.0		*	MS	5	0.19	0.03	0.095
7440-41-7	BERYLLIUM, TOTAL	0.32			MS	5	0.095	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.11			MS	5	0.095	0.010	0.019
7440-70-2	CALCIUM, TOTAL	1070			MS	5	9.5	3.65	7.6
7440-47-3	CHROMIUM, TOTAL	17.0			MS	5	0.48	0.05	0.38
7440-48-4	COBALT, TOTAL	10			MS	5	0.095	0.005	0.029
7440-50-8	COPPER, TOTAL	15.7		N*	MS	5	0.29	0.07	0.19
7439-89-6	IRON, TOTAL	27000			MS	5	9.5	2.29	5.7
7439-92-1	LEAD, TOTAL	16.4			MS	5	0.095	0.005	0.048
7439-95-4	MAGNESIUM, TOTAL	4580			MS	5	9.5	1.30	7.6
7439-96-5	MANGANESE, TOTAL	309			MS	5	0.19	0.04	0.095
7439-97-6	MERCURY, TOTAL	0.02	J	*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	21.6			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	336		N	MS	5	95	4.35	38
7782-49-2	SELENIUM, TOTAL	0.16	J		MS	5	0.48	0.04	0.29
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.095	0.005	0.038
7440-23-5	SODIUM, TOTAL	24.6	J		MS	5	95	2.45	38
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.095	0.010	0.038
7440-62-2	VANADIUM, TOTAL	15.5			MS	5	0.48	0.10	0.38
7440-66-6	ZINC, TOTAL	60.1			MS	5	0.95	0.12	0.76

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** F2-003-SB1017-011.6

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 79.8 **Lab Sample ID:** SG9002-001

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14500			MS	5	30	0.51	4.0
7440-36-0	ANTIMONY, TOTAL	0.21		N	MS	5	0.10	0.02	0.050
7440-38-2	ARSENIC, TOTAL	8.8			MS	5	0.50	0.15	0.40
7440-39-3	BARIUM, TOTAL	23.0		*	MS	5	0.20	0.04	0.10
7440-41-7	BERYLLIUM, TOTAL	0.44			MS	5	0.10	0.004	0.020
7440-43-9	CADMIUM, TOTAL	0.13			MS	5	0.10	0.01	0.020
7440-70-2	CALCIUM, TOTAL	1270			MS	5	10	3.83	8.0
7440-47-3	CHROMIUM, TOTAL	18.1			MS	5	0.50	0.05	0.40
7440-48-4	COBALT, TOTAL	15.2			MS	5	0.10	0.005	0.030
7440-50-8	COPPER, TOTAL	46.0		N*	MS	5	0.30	0.07	0.20
7439-89-6	IRON, TOTAL	32000			MS	5	10	2.40	6.0
7439-92-1	LEAD, TOTAL	16.4			MS	5	0.10	0.005	0.050
7439-95-4	MAGNESIUM, TOTAL	4800			MS	5	10	1.37	8.0
7439-96-5	MANGANESE, TOTAL	387			MS	5	0.20	0.04	0.10
7439-97-6	MERCURY, TOTAL	0.09		*	CV	1	0.036	0.005	0.018
7440-02-0	NICKEL, TOTAL	27.5			MS	5	0.20	0.03	0.12
7440-09-7	POTASSIUM, TOTAL	518		N	MS	5	100	4.57	40
7782-49-2	SELENIUM, TOTAL	0.45	J		MS	5	0.50	0.04	0.30
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.10	0.005	0.040
7440-23-5	SODIUM, TOTAL	41.0	J		MS	5	100	2.57	40
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.10	0.01	0.040
7440-62-2	VANADIUM, TOTAL	17.2			MS	5	0.50	0.11	0.40
7440-66-6	ZINC, TOTAL	63.3			MS	5	1.0	0.13	0.80

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1017-0204

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 92.6 **Lab Sample ID:** SG9002-002

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	10500			MS	5	29	0.50	3.9
7440-36-0	ANTIMONY, TOTAL	0.10		N	MS	5	0.098	0.02	0.049
7440-38-2	ARSENIC, TOTAL	5.3			MS	5	0.49	0.15	0.39
7440-39-3	BARIUM, TOTAL	13.0		*	MS	5	0.20	0.03	0.098
7440-41-7	BERYLLIUM, TOTAL	0.31			MS	5	0.098	0.004	0.020
7440-43-9	CADMIUM, TOTAL	0.10			MS	5	0.098	0.010	0.020
7440-70-2	CALCIUM, TOTAL	511			MS	5	9.8	3.76	7.8
7440-47-3	CHROMIUM, TOTAL	13.0			MS	5	0.49	0.05	0.39
7440-48-4	COBALT, TOTAL	9.5			MS	5	0.098	0.005	0.029
7440-50-8	COPPER, TOTAL	17.5		N*	MS	5	0.29	0.07	0.20
7439-89-6	IRON, TOTAL	21000			MS	5	9.8	2.36	5.9
7439-92-1	LEAD, TOTAL	11.0			MS	5	0.098	0.005	0.049
7439-95-4	MAGNESIUM, TOTAL	3530			MS	5	9.8	1.34	7.8
7439-96-5	MANGANESE, TOTAL	276			MS	5	0.20	0.04	0.098
7439-97-6	MERCURY, TOTAL	0.02	J	*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	17.9			MS	5	0.20	0.02	0.12
7440-09-7	POTASSIUM, TOTAL	354		N	MS	5	98	4.48	39
7782-49-2	SELENIUM, TOTAL	0.20	J		MS	5	0.49	0.04	0.29
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.098	0.005	0.039
7440-23-5	SODIUM, TOTAL	22.3	J		MS	5	98	2.52	39
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.098	0.010	0.039
7440-62-2	VANADIUM, TOTAL	12.8			MS	5	0.49	0.11	0.39
7440-66-6	ZINC, TOTAL	38.0			MS	5	0.98	0.13	0.78

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1017-0810

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 89.0 **Lab Sample ID:** SG9002-003

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	14500			MS	5	23	0.39	3.1
7440-36-0	ANTIMONY, TOTAL	0.09		N	MS	5	0.077	0.02	0.038
7440-38-2	ARSENIC, TOTAL	8.7			MS	5	0.38	0.12	0.31
7440-39-3	BARIUM, TOTAL	16.6		*	MS	5	0.15	0.03	0.077
7440-41-7	BERYLLIUM, TOTAL	0.61			MS	5	0.077	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.077	0.008	0.015
7440-70-2	CALCIUM, TOTAL	946			MS	5	7.7	2.94	6.2
7440-47-3	CHROMIUM, TOTAL	19.0			MS	5	0.38	0.04	0.31
7440-48-4	COBALT, TOTAL	13.1			MS	5	0.077	0.004	0.023
7440-50-8	COPPER, TOTAL	20.4		N*	MS	5	0.23	0.05	0.15
7439-89-6	IRON, TOTAL	31200			MS	5	7.7	1.85	4.6
7439-92-1	LEAD, TOTAL	14.1			MS	5	0.077	0.004	0.038
7439-95-4	MAGNESIUM, TOTAL	3920			MS	5	7.7	1.05	6.2
7439-96-5	MANGANESE, TOTAL	464			MS	10	0.31	0.06	0.15
7439-97-6	MERCURY, TOTAL	0.03		*	CV	1	0.025	0.004	0.013
7440-02-0	NICKEL, TOTAL	24.3			MS	5	0.15	0.02	0.092
7440-09-7	POTASSIUM, TOTAL	349		N	MS	5	77	3.51	31
7782-49-2	SELENIUM, TOTAL	0.47			MS	5	0.38	0.03	0.23
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.077	0.004	0.031
7440-23-5	SODIUM, TOTAL	30.9	J		MS	5	77	1.97	31
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.077	0.008	0.031
7440-62-2	VANADIUM, TOTAL	19.6			MS	5	0.38	0.08	0.31
7440-66-6	ZINC, TOTAL	56.2			MS	5	0.77	0.10	0.62

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1018-0204

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 94.6 **Lab Sample ID:** SG9002-015

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	10400			MS	5	27	0.45	3.6
7440-36-0	ANTIMONY, TOTAL	0.08	J	N	MS	5	0.089	0.02	0.044
7440-38-2	ARSENIC, TOTAL	5.6			MS	5	0.44	0.13	0.36
7440-39-3	BARIUM, TOTAL	11.5		*	MS	5	0.18	0.03	0.089
7440-41-7	BERYLLIUM, TOTAL	0.32			MS	5	0.089	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.14			MS	5	0.089	0.009	0.018
7440-70-2	CALCIUM, TOTAL	654			MS	5	8.9	3.40	7.1
7440-47-3	CHROMIUM, TOTAL	13.1			MS	5	0.44	0.04	0.36
7440-48-4	COBALT, TOTAL	9.1			MS	5	0.089	0.004	0.027
7440-50-8	COPPER, TOTAL	15.3		N*	MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	23100			MS	5	8.9	2.13	5.3
7439-92-1	LEAD, TOTAL	12.0			MS	5	0.089	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	3790			MS	5	8.9	1.21	7.1
7439-96-5	MANGANESE, TOTAL	273			MS	5	0.18	0.04	0.089
7439-97-6	MERCURY, TOTAL	0.01	J	*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	17.0			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	359		N	MS	5	89	4.05	36
7782-49-2	SELENIUM, TOTAL	0.16	J		MS	5	0.44	0.04	0.27
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.089	0.004	0.036
7440-23-5	SODIUM, TOTAL	19.1	J		MS	5	89	2.28	36
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.089	0.009	0.036
7440-62-2	VANADIUM, TOTAL	14.2			MS	5	0.44	0.10	0.36
7440-66-6	ZINC, TOTAL	39.0			MS	5	0.89	0.12	0.71

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SB-DUP08-1113

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 91.0 **Lab Sample ID:** SG9002-010

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	13400			MS	5	29	0.49	3.8
7440-36-0	ANTIMONY, TOTAL	0.17		N	MS	5	0.096	0.02	0.048
7440-38-2	ARSENIC, TOTAL	6.7			MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	28.0		*	MS	5	0.19	0.03	0.096
7440-41-7	BERYLLIUM, TOTAL	0.34			MS	5	0.096	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.12			MS	5	0.096	0.010	0.019
7440-70-2	CALCIUM, TOTAL	1280			MS	5	9.6	3.65	7.6
7440-47-3	CHROMIUM, TOTAL	16.4			MS	5	0.48	0.05	0.38
7440-48-4	COBALT, TOTAL	11.1			MS	5	0.096	0.005	0.029
7440-50-8	COPPER, TOTAL	17.5		N*	MS	5	0.29	0.07	0.19
7439-89-6	IRON, TOTAL	28400			MS	5	9.6	2.29	5.7
7439-92-1	LEAD, TOTAL	27.4			MS	5	0.096	0.005	0.048
7439-95-4	MAGNESIUM, TOTAL	4380			MS	5	9.6	1.30	7.6
7439-96-5	MANGANESE, TOTAL	298			MS	5	0.19	0.04	0.096
7439-97-6	MERCURY, TOTAL	0.04		*	CV	1	0.028	0.004	0.014
7440-02-0	NICKEL, TOTAL	20.1			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	499		N	MS	5	96	4.36	38
7782-49-2	SELENIUM, TOTAL	0.32	J		MS	5	0.48	0.04	0.29
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.096	0.005	0.038
7440-23-5	SODIUM, TOTAL	26.0	J		MS	5	96	2.45	38
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.096	0.010	0.038
7440-62-2	VANADIUM, TOTAL	17.0			MS	5	0.48	0.11	0.38
7440-66-6	ZINC, TOTAL	69.5			MS	5	0.96	0.12	0.76

Comments:

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-6
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1011-0204	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	82. %	1		N/A	SM2540G	WG134768	21-NOV-13 07:08:29	SM2540G	20-NOV-13	

Katahdin Analytical Services 5000013

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-4
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1012-0204	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	91. %	1		N/A	SM2540G	WG134768	21-NOV-13 07:08:09	SM2540G	20-NOV-13	

Katahdin Analytical Services 500011

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-5
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1012-0810	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	91. %	1		N/A	SM2540G	WG134768	21-NOV-13 07:08:18	SM2540G	20-NOV-13	

Katahdin Analytical Services 500012

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-7
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1014-0204	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	93. %	1		N/A	SM2540G	WG134768	21-NOV-13 07:08:39	SM2540G	20-NOV-13	

Katahdin Analytical Services 5000014

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-8
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1014-0810	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	94. %	1		N/A	SM2540G	WG134807	22-NOV-13 07:31:12	SM2540G	21-NOV-13	

Katahdin Analytical Services 5000015

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-9
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1015-0204	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	93. %	1		N/A	SM2540G	WG134815	22-NOV-13 07:34:03	SM2540G	21-NOV-13	

Katahdin Analytical Services 5000 16

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-11
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1015-0810	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	89. %	1		N/A	SM2540G	WG134815	22-NOV-13 07:34:19	SM2540G	21-NOV-13	

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-13
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1016-0204	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	92. %	1		N/A	SM2540G	WG134815	22-NOV-13 07:34:28	SM2540G	21-NOV-13	

Katahdin Analytical Services 5000019

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-14
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1016-0810	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	93. %	1		N/A	SM2540G	WG134815	22-NOV-13 07:34:36	SM2540G	21-NOV-13	

Katahdin Analytical Services 5000020

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-1
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
F2-003-SB1017-011.6	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	80. %	1		N/A	SM2540G	WG134768	21-NOV-13 07:07:36	SM2540G	20-NOV-13	

Katahdin Analytical Services 5000008

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-2
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1017-0204	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	93. %	1		N/A	SM2540G	WG134768	21-NOV-13 07:07:49	SM2540G	20-NOV-13	

Katahdin Analytical Services 5000009

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-3
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1017-0810	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	89. %	1		N/A	SM2540G	WG134768	21-NOV-13 07:07:58	SM2540G	20-NOV-13	

Katahdin Analytical Services 5000 f0

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-15
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
TF2-003-SB1018-0204	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	95. %	1		N/A	SM2540G	WG134815	22-NOV-13 07:34:45	SM2540G	21-NOV-13	

Katahdin Analytical Services 5000021

Report of Analytical Results

Client: Vanessa Good
Tetra Tech NUS, Inc.
Foster Plaza 7
Pittsburgh,PA 15220

Lab Sample ID: SG9002-10
Report Date: 05-DEC-13
Client PO: 1045366 40-CTO WE30
Project: NAVSTA Newport CTO W
SDG: SG9002

Sample Description	Matrix	Date Sampled	Date Received
TF2-SB-DUP08-1113	SL	15-NOV-13	15-NOV-13

Parameter	Result	Adj LOQ	Adj MDL	Adj LOD	Anal. Method	QC.Batch	Anal. Date	Prep. Method	Prep. Date	Footnotes
Total Solids	91. %	1		N/A	SM2540G	WG134815	22-NOV-13 07:34:12	SM2540G	21-NOV-13	

Katahdin Analytical Services 500017

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet
INORG
Case: _____ SDG: _____

COMPLETE SDG FILE (CSF) AUDIT

Inorganic Parameters: See DV Report

Missing Information	Date Lab Contacted	Date Received

Validator: _____ Date: 12/24/13

EPA-NE - Data Validation Worksheet
INORG-1
Case: _____ SDG: _____ See DV Report

I. PRESERVATION AND HOLDING TIMES

Circle sample numbers with exceeded technical holding times or omitted preservation.
Circle all exceeded technical holding times.

Sample No.	Matrix	Pres. Code		Date Sampled	Metals		Hg		CN		Action
		Metals	CN		Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	

Preservation Code:
1. Cool (≤ 6°C)
2. pH < 2 with HNO_3
3. pH > 12 with NaOH
4. Room Temperature
5. Freeze
6. Reducing agent (for oxidants)
7. Treated for sulfides
8. Other - _____

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Sampler: _____ Company: _____ Contacted: Y N Date: _____

Validator: _____ Date: 12/24/13

EPA-NE - Data Validation Worksheet
INORG-II
Case: _____ SDG: _____ See DV Report

II. ICP-MS TUNE

List all Tunes that are outside method QC acceptance criteria. Use a separate sheet if more than one instrument was used for sample analysis.

Method:_____Instrument ID: _____

Method QC acceptance criteria for mass calibration:_____

Method QC acceptance criteria for resolution check/peak width:_____ at_____% peak height.

Method QC acceptance criteria for % RSD:_____

Analysis Date and Time	Analyte	Mass Calibration			Mass Resolution		% RSD of Absolute Signals	Analyte/Samples Affected	Action
		True Mass (amu)	Measured Mass (amu)	Absolute Difference of Masses (amu)	Peak Width (amu)	% Peak Height			
Comments:									

Validator: _____ Date: 12/24/13

EPA-NE - Data Validation Worksheet
INORG-III-C/D
Case: _____ SDG: _____ See DV Report

III. CALIBRATIONS

C. Initial and Continuing Calibration Verifications - List all ICV and CCV analyte recoveries that are outside the method QC acceptance criteria.

ICV method QC acceptance criteria: _____ CCV method QC acceptance criteria: _____

Date/Time	Instrument ID	Analyte	ICV/CCV #	% R	Samples Affected	Action

D. Quantitation Limit Check Standard - List all QL Check Standard analytes that are outside method QC acceptance criteria (for non-CLP methods).

QL Check Standard method QC acceptance criteria: _____

Date	Instr.	Analyte	QL Check Std. #	% R	Affected Range	Samples Affected	Action

Comments: _____

12/24/13

EPA-NE - Data Validation Worksheet
INORG-III-A/B
Case: _____ SDG: _____

See DV Report

III. CALIBRATIONS

A. Initial Calibration - List all calibration correlation coefficients that are outside the method QC acceptance criteria and/or the y-intercept of the calibration curve that is >CRQL.

Calibration correlation QC acceptance criteria: _____ Calibration Type: _____

Date/Time	Instrument ID	Analyte	Correlation Coefficient.	y-Intercept	CRQL	Samples Affected	Action

B. Initial Calibration Standard Concentration Verifications – Review CLP Form 16-IN and list all calculated %Ds that are >30 of the true value of any non-zero standard.

Date/time	Instrument ID	Analyte	True Conc.	Found Conc.	%D	Samples Affected	Action

Comments: _____

Validator: _____ Date: 12/24/13

EPA-NE - Data Validation Worksheet
INORG-IV-C.2
Case: _____ SDG: _____

See DV Report

IV. BLANKS

C.2 Blank Actions - List the maximum concentrations of each analyte among all blanks associated with each sample.

Analyte	Type of Blank	Date Blank Originated	Max. Conc. (units)	MDL or (-MDL) (units)	CRQL or (-CRQL) (units)	10xCRQL	Samples Affected	Action

Comments:

Refer to EPA New England Data Review Program Supplemental guidance for blank contamination actions (Section 2.6).

Validator: _____ Date: 12/24/13

EPA-NE - Data Validation Worksheet
INORG-IV-A/B
Case: _____ SDG: _____

See DV Report

IV. BLANKS - List the blank contamination and negative blank results below.

Sampler: _____ Company: _____ Contacted: Y N Date: _____

A. Laboratory: Preparation (Method) and Calibration (Instrument) Blanks

Date Prepared	Date Analyzed	Blank Type (ICB/CCB#/Prep Blank)	Matrix	Instrument	Analyte	Concentration	Units

B. Field: Equipment (Rinsate) and Bottle Blanks

Date Sampled	Date Analyzed	Sample No. (Blank Type)	Matrix	Instrument	Analyte	Concentration	Units

Were the proper number of blanks analyzed at the proper frequency? Y N

For ICP MS - Are internal standard responses in all blanks within method QC acceptance criteria? Y N

Comments: _____

Validator: _____ Date: 12/24/13

EPA-NE - Data Validation Worksheet
INORG-IV-C.1
Case: _____ SDG: _____
IV. BLANKS **C.1 Blank Contamination Worksheet**

See DV Report

Circle or list the highest concentration of each contaminant.

Analyte	Date Analyzed	ICB	CCB							PBW	PBS	EB	BB	Max. Conc.	CRQL
			1	2	3	4	5	6	7						
Aluminum															
Antimony															
Arsenic															
Barium															
Beryllium															
Cadmium															
Calcium															
Chromium															
Cobalt															
Copper															
Iron															
Lead															
Magnesium															
Manganese															
Mercury															
Nickel															
Potassium															
Selenium															
Silver															
Sodium															
Thallium															
Vanadium															
Zinc															
Cyanide															

Validator: _____ Date: 12/24/13

EPA NE - Data Validation Worksheet
INORG-V-A
Case: _____ SDG: _____

See DV Report

V. A. ICP-AES INTERFERENCE CHECK SAMPLE - ICSAB

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: _____

Date: 12/24/13

2/13

EPA NE - Data Validation Worksheet
INORG-V-B
Case: _____ SDG: _____

See DV Report

V. B. ICP-AES INTERFERENCE CHECK SAMPLE - ICSA

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: _____

Date: 12/24/13

EPA NE - Data Validation Worksheet
INORG-VI-A
Case: _____ SDG: _____

See DV Report

VI. A. ICP-MS INTERFERENCE CHECK SAMPLE - ICSAB

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: _____

Date: 12/24/13

EPA NE - Data Validation Worksheet
INORG-VI-B
Case: _____ SDG: _____

See DV Report

VI. B. ICP-MS INTERFERENCE CHECK SAMPLE - ICSA

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: _____

Date: 12/24/13

EPA-NE - Data Validation Worksheet
INORG-VII
Case: _____ SDG: _____

See DV Report

VII. ICP-MS INTERNAL STANDARDS

List all internal standards that are outside method QC acceptance criteria.

Method: _____ Method QC acceptance criteria: _____

Sample Number	Date and Time Analyzed	IS, amu	% RI	Analytes Affected (amu)	Action
Comments:					

Validator: _____ Date: 12/24/13

EPA-NE - Data Validation Worksheet
INORG-VIII
Case: _____ SDG: _____

See DV Report

VIII. MATRIX SPIKES - List all matrix spike analytes that are outside method QC acceptance criteria.

Use a separate worksheet for each matrix spike sample.

Sample No.: _____ Matrix: _____

Method	Analyte	Spiked Sample Result	Sample Result	Amount of Spike Added	MS % Recovery	Method QC Limits % Recovery	Post-Digest Spike % Recovery	Action
Comments:								

Refer to EPA New England Data Review Program Supplemental guidance for additional matrix spike actions (Section 2.12).

Validator: _____ Date: 12/24/13

2/13

EPA-NE - Data Validation Worksheet
INORG-IX
Case: _____ SDG: _____

See DV Report

IX. LABORATORY DUPLICATE SAMPLES - List all analytes that are outside method QC acceptance criteria for the specific matrix.

Use a separate worksheet for each laboratory duplicate sample.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Laboratory duplicate sample method QC acceptance criteria:_____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the field duplicate sample data indicate acceptable field precision? Y N

Comments:_____

Validator: _____ Date: 12/24/13

EPA-NE - Data Validation Worksheet
INORG-X
Case: _____ SDG: _____

See DV Report

X. FIELD DUPLICATES - List all field duplicate analytes that are outside criteria.

Use a separate worksheet for each field duplicate pair.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the laboratory duplicate sample data indicate acceptable laboratory precision? Y N
Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.9).

Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for contact and resolution obtained: _____

Validator: _____ Date: 12/24/13

EPA-NE - Data Validation Worksheet
INORG-XI
Case: _____ SDG: _____

See DV Report

XI. ICP SERIAL DILUTIONS

Use a separate worksheet for each serial dilution sample.

Sample No.:_____ Matrix:_____ Method:_____

List all serial dilution analytes that are outside method QC acceptance criteria.

% Difference method QC acceptance criteria: _____
Minimum concentration required to apply the % D criteria (e.g., 50x MDL): _____

Analyte	MDL	Min. Conc. Required	Sample Result	Serial Dilution Sample Result (corrected for dilution)	% D	Action
Comments:						

Validator: _____

Date: 12/24/13

EPA-NE - Data Validation Worksheet
INORG-XII
Case: _____ SDG: _____

See DV Report

XII. LABORATORY CONTROL SAMPLES

List all analytes that are outside criteria.

SDG No.:_____ Case:_____

Are more than one-half of the LCS analytes within criteria for each parameter and method? **Y** **N**

Date Prepared	Date Analyzed	Parameter/ Method	Matrix	Analyte	% Recovery (or Observed Conc.)	Method QC Acceptance Criteria	Samples Affected	Action

Comments:

Validator: _____

Date: 12/24/13

EPA-NE - Data Validation Worksheet

INORG-XIII

Case: _____ SDG: _____

See DV Report

XIII. PERFORMANCE EVALUATION SAMPLES

List all analytes that are outside criteria.

Indicate the source of the PES: Region 1 EPA PES Non-EPA PES

Are more than one-half of the PES analytes within criteria for each parameter and method? **Y** **N**

PE Sample Number	Ampule Number	Parameter/ Method	Type of PES	Matrix	Analyte	Conc.	PES Score*	Samples Affected	Action

* For Region 1 PESs indicate the Region 1 PES Score Report Result: Action High, Action Low, Analyte Missed, Contaminant.
For Non-EPA PESs indicate the Non-EPA PES Score: PES Analyte Missed; PES Analyte Contaminant; PES Analyte Hit (% Recovery Limits).
Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Comments: _____

Validator: JK

Date: 12/24/13

EPA-NE - Data Validation Worksheet

INORG-XIV

Case: _____ SDG: _____ See DV Report

XIV. ANALYTE QUANTITATION, REPORTED QUANTITATION LIMITS AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per analytical method

Do all soil/sediment samples have % solids greater than 30%? **Y** **N**

- If no, were any steps employed to address the high moisture content? _____
- Indicate the action and list the affected sample nos.: _____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Method		Calculation
ICP-AES		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
ICP-MS		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
Mercury		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		
Cyanide		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		

Validator: _____ Date: 12/24/13

APPENDIX D

SUPPORT DOCUMENTATION

HOLDTIME

PROJ_NO 03019

SDG	SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SG9002		%	TF2-003-SB1017-011.6	SG9002-1	SUR	11/15/2013	11/22/2013	11/28/2013	7	6	13
SG9002		%	TF2-003-SB1017-011.6	SG9002-1RA	SUR	11/15/2013	11/22/2013	11/25/2013	7	3	10
SG9002		%	TF2-SB-RB04-1113	SG9002-12	SUR	11/15/2013	11/19/2013	11/28/2013	4	9	13
SG9002		%	TF2-SB-RB04-1113	SG9002-12	SUR	11/15/2013	11/26/2013	11/26/2013	11	0	11
SG9002	HG	MG/KG	TF2-003-SB1014-0204	SG9002-007	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21
SG9002	HG	MG/KG	TF2-003-SB1018-0204	SG9002-015	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21
SG9002	HG	MG/KG	TF2-003-SB1017-0810	SG9002-003	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21
SG9002	HG	MG/KG	TF2-003-SB1017-0204	SG9002-002	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21
SG9002	HG	MG/KG	TF2-003-SB1017-011.6	SG9002-001	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21
SG9002	HG	MG/KG	TF2-003-SB1016-0810	SG9002-014	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21
SG9002	HG	MG/KG	TF2-003-SB1016-0204	SG9002-013	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21
SG9002	HG	MG/KG	TF2-SB-DUP08-1113	SG9002-010	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21
SG9002	HG	MG/KG	TF2-003-SB1015-0204	SG9002-009	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21
SG9002	HG	MG/KG	TF2-003-SB1014-0810	SG9002-008	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21
SG9002	HG	MG/KG	TF2-003-SB1012-0810	SG9002-005	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21
SG9002	HG	MG/KG	TF2-003-SB1012-0204	SG9002-004	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21

SDG	SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SG9002	HG	MG/KG	TF2-003-SB1011-0204	SG9002-006	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21
SG9002	HG	MG/KG	TF2-003-SB1015-0810	SG9002-011	NM	11/15/2013	12/02/2013	12/06/2013	17	4	21
SG9002	M	MG/KG	TF2-003-SB1016-0204	SG9002-013	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-003-SB1014-0204	SG9002-007	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-003-SB1011-0204	SG9002-006	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-003-SB1012-0204	SG9002-004	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-003-SB1012-0810	SG9002-005	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-003-SB1014-0810	SG9002-008	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-003-SB1015-0204	SG9002-009	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-003-SB1015-0810	SG9002-011	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-003-SB1016-0810	SG9002-014	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-003-SB1017-011.6	SG9002-001	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-003-SB1017-0204	SG9002-002	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-003-SB1017-0810	SG9002-003	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-003-SB1018-0204	SG9002-015	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-SB-DUP08-1113	SG9002-010	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	M	MG/KG	TF2-003-SB1017-0810	SG9002-003	NM	11/15/2013	11/27/2013	12/04/2013	12	7	19
SG9002	M	UG/L	TF2-SB-RB04-1113	SG9002-012	NM	11/15/2013	11/27/2013	12/02/2013	12	5	17
SG9002	TS	%	TF2-003-SB1012-0810	SG9002-5	NM	11/15/2013	11/20/2013	11/21/2013	5	1	6

SDG	SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SG9002	TS	%	TF2-003-SB1017-0204	SG9002-2	NM	11/15/2013	11/20/2013	11/21/2013	5	1	6
SG9002	TS	%	TF2-003-SB1018-0204	SG9002-15	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-SB-DUP08-1113	SG9002-10	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-003-SB1017-011.6	SG9002-1	NM	11/15/2013	11/20/2013	11/21/2013	5	1	6
SG9002	TS	%	TF2-003-SB1016-0810	SG9002-14	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-003-SB1012-0204	SG9002-4	NM	11/15/2013	11/20/2013	11/21/2013	5	1	6
SG9002	TS	%	TF2-003-SB1011-0204	SG9002-6	NM	11/15/2013	11/20/2013	11/21/2013	5	1	6
SG9002	TS	%	TF2-003-SB1016-0204	SG9002-13	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-003-SB1015-0810	SG9002-11	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-003-SB1014-0204	SG9002-7	NM	11/15/2013	11/20/2013	11/21/2013	5	1	6
SG9002	TS	%	TF2-003-SB1014-0810	SG9002-8	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-003-SB1015-0204	SG9002-9	NM	11/15/2013	11/21/2013	11/22/2013	6	1	7
SG9002	TS	%	TF2-003-SB1017-0810	SG9002-3	NM	11/15/2013	11/20/2013	11/21/2013	5	1	6
SG9002	SIM	%	TF2-003-SB1014-0204	SG9002-7	SUR	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	%	TF2-003-SB1014-0204	SG9002-7DL	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1017-011.6	SG9002-1DL	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18
SG9002	SIM	%	TF2-003-SB1017-011.6	SG9002-1	SUR	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	%	TF2-003-SB1011-0204	SG9002-6	SUR	11/15/2013	11/25/2013	12/02/2013	10	7	17
SG9002	SIM	%	TF2-003-SB1014-0810	SG9002-8	SUR	11/15/2013	11/25/2013	12/03/2013	10	8	18

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Instrument ID: CETAC M6100 **File Name:** HGL04B

Date: 12/4/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	16:36	Hg
Standard #1 (0.2 p		1	16:38	Hg
Standard #2 (0.5 p		1	16:40	Hg
Standard #3 (1.0 p		1	16:43	Hg
Standard #4 (5.0 p		1	16:45	Hg
Standard #5 (10.0		1	16:47	Hg
ICV		1	16:49	HG
ICB		1	16:51	HG
PQL		1	16:53	HG
CCV		1	16:55	HG
CCB		1	16:57	HG
ZZZZZZ		1	16:59	
ZZZZZZ		1	17:02	
ZZZZZZ		1	17:04	
ZZZZZZ		1	17:06	
ZZZZZZ		1	17:08	
ZZZZZZ		1	17:10	
ZZZZZZ		1	17:12	
ZZZZZZ		1	17:14	
ZZZZZZ		1	17:16	
CCV		1	17:19	HG
CCB		1	17:21	HG
ZZZZZZ		1	17:23	
ZZZZZZ		1	17:25	
ZZZZZZ		1	17:27	
ZZZZZZ		1	17:29	
LCSWGL04HGW2		1	17:31	HG
PBWGL04HGW2		1	17:33	HG
ZZZZZZ		1	17:36	
ZZZZZZ		1	17:38	
SG9002-012	TF2-SB-RB04-1113	1	17:40	HG
ZZZZZZ		1	17:42	
CCV		1	17:44	HG
CCB		1	17:46	HG

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: ICV

File: HGL04B Dec 04, 2013 16:49

Analyte	True	Found	%R (1)
MERCURY	6.0	5.40	90.0

SAMPLE: CCV

File: HGL04B Dec 04, 2013 16:55

Analyte	True	Found	%R (1)
MERCURY	5.0	5.02	100.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCV

File: HGL04B ~~Dec 04, 2013~~ 17:19

Analyte	True	Found	%R (1)
MERCURY	5.0	5.02	100.4

SAMPLE: CCV

File: HGL04B Dec 04, 2013 17:44

Analyte	True	Found	%R (1)
MERCURY	5.0	5.05	101.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: ICB

File: HGL04B Dec 04, 2013 16:51

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL04B Dec 04, 2013 16:57

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL04B Dec 04, 2013 17:21

Analyte	Result	C
MERCURY	0.030	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCB

File: HGL04B Dec 04, 2013 17:46

Analyte	Result	C
MERCURY	0.030	U

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL04HGW2

Matrix: WATER **SDG Name:** SG9002

Method: CV **Prep Date:** 12/04/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWGL04HGW2	LCSWGL04HGW2	0.025	0.025	
PBWGL04HGW2	PBWGL04HGW2	0.025	0.025	
TF2-SB-RB04-1113	SG9002-012	0.025	0.025	C

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGL04HGW2

Matrix: WATER **SDG Name:** SG9002

QC Batch ID: GL04HGW2

Concentration Units : ug/L

Analyte	RESULT	C
MERCURY	0.010	J

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGL04HGW2

Matrix: WATER **SDG Name:** SG9002

QC Batch ID: GL04HGW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	5.00	5.13	102.6	80	120

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Instrument ID: CETAC M6100 **File Name:** HGL03A

Date: 12/3/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	14:52	Hg
Standard #1 (0.2 p		1	14:54	Hg
Standard #2 (0.5 p		1	14:59	Hg
Standard #3 (1.0 p		1	15:01	Hg
Standard #4 (5.0 p		1	15:03	Hg
Standard #5 (10.0		1	15:05	Hg
ICV		1	15:08	HG
ICV		1	15:24	HG
ICB		1	15:27	HG
PQL		1	15:29	HG
ZZZZZZ		1	15:31	
ZZZZZZ		1	15:33	
ZZZZZZ		1	15:35	
ZZZZZZ		1	15:37	
ZZZZZZ		1	15:39	
ZZZZZZ		1	15:41	
ZZZZZZ		1	15:43	
ZZZZZZ		1	15:46	
ZZZZZZ		1	15:48	
CCV		1	15:50	HG
CCB		1	15:52	HG
ZZZZZZ		1	15:54	
ZZZZZZ		1	15:56	
ZZZZZZ		5	16:08	
ZZZZZZ		1	16:10	
ZZZZZZ		1	16:12	
ZZZZZZ		1	16:14	
ZZZZZZ		1	16:16	
ZZZZZZ		1	16:19	
ZZZZZZ		1	16:21	
CCV		1	16:27	HG
CCB		1	16:29	HG
ZZZZZZ		1	16:31	
ZZZZZZ		1	16:33	
ZZZZZZ		1	16:35	
ZZZZZZ		1	16:37	
CCV		1	16:39	HG
CCB		1	16:42	HG
ZZZZZZ		1	16:44	
ZZZZZZ		1	16:46	
ZZZZZZ		1	16:48	
CCV		1	17:09	HG
CCB		1	17:11	HG
ZZZZZZ		1	17:13	
ZZZZZZ		1	17:15	
ZZZZZZ		1	17:17	
ZZZZZZ		1	17:20	
ZZZZZZ		1	17:22	
ZZZZZZ		1	17:24	
ZZZZZZ		1	17:26	

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Instrument ID: CETAC M6100 **File Name:** HGL03A

Date: 12/3/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
LCSOGL02HGS3		1	17:28	HG
PBSGL02HGS3		1	17:30	HG
ZZZZZZ		1	17:32	
CCV		1	17:35	HG
CCB		1	17:37	HG

FORM XIV - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: ICV

File: HGL03A Dec 03, 2013 15:08

Analyte	True	Found	%R (1)
MERCURY	6.0	5.29	88.2

SAMPLE: ICV

File: HGL03A Dec 03, 2013 15:24

Analyte	True	Found	%R (1)
MERCURY	6.0	5.65	94.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCV

File: HGL03A Dec 03, 2013 16:39

Analyte	True	Found	%R (1)
MERCURY	5.0	4.44	88.8

SAMPLE: CCV

File: HGL03A Dec 03, 2013 17:09

Analyte	True	Found	%R (1)
MERCURY	5.0	4.58	91.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCV

File: HGL03A Dec 03, 2013 17:35

Analyte	True	Found	%R (1)
MERCURY	5.0	4.88	97.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: ICB

File: HGL03A Dec 03, 2013 15:27

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL03A Dec 03, 2013 15:52

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL03A Dec 03, 2013 16:29

Analyte	Result	C
MERCURY	0.030	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCB

File: HGL03A Dec 03, 2013 16:42

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL03A Dec 03, 2013 17:11

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGL03A Dec 03, 2013 17:37

Analyte	Result	C
MERCURY	0.030	U

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Instrument ID: CETAC M6100 **File Name:** HGL06A

Date: 12/6/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	10:55	Hg
Standard #1 (0.2 p		1	10:57	Hg
Standard #2 (0.5 p		1	10:59	Hg
Standard #3 (1.0 p		1	11:01	Hg
Standard #4 (5.0 p		1	11:05	Hg
Standard #5 (10.0		1	11:10	Hg
ICV		1	11:14	HG
ICB *		1	11:16	HG
PQL		1	11:18	HG
ZZZZZZ		1	11:20	
ZZZZZZ		1	11:22	
ZZZZZZ		1	11:24	
ZZZZZZ		1	11:26	
ZZZZZZ		1	11:29	
ZZZZZZ		1	11:31	
ZZZZZZ		1	11:33	
ZZZZZZ		1	11:35	
ZZZZZZ		1	11:37	
CCV		1	11:41	HG
CCB *		1	11:43	HG
SG9002-001	F2-003-SB1017-011.6	1	11:45	HG
SG9002-002	TF2-003-SB1017-0204	1	11:48	HG
SG9002-003	TF2-003-SB1017-0810	1	11:50	HG
SG9002-004	TF2-003-SB1012-0204	1	11:52	HG
SG9002-004L	TF2-003-SB1012-0204L	5	11:54	HG
SG9002-004D	TF2-003-SB1012-0204D	1	11:56	HG
SG9002-004A	TF2-003-SB1012-0204A	1	11:58	HG
SG9002-004S	TF2-003-SB1012-0204S	1	12:00	HG
SG9002-005	TF2-003-SB1012-0810	1	12:02	HG
SG9002-006	TF2-003-SB1011-0204	1	12:05	HG
CCV		1	12:07	HG
CCB *		1	12:09	HG
SG9002-007	TF2-003-SB1014-0204	1	12:11	HG
SG9002-008	TF2-003-SB1014-0810	1	12:13	HG
SG9002-009	TF2-003-SB1015-0204	1	12:15	HG
SG9002-010	TF2-SB-DUP08-1113	1	12:17	HG
LCSOGL02HGS4		1	12:27	HG
LC2OGL02HGS4		1	12:29	HG
PBSGL02HGS4		1	12:31	HG
SG9002-011	TF2-003-SB1015-0810	1	12:33	HG
SG9002-013	TF2-003-SB1016-0204	1	12:36	HG
SG9002-014	TF2-003-SB1016-0810	1	12:38	HG
CCV		1	12:40	HG
CCB *		1	12:42	HG
SG9002-015	TF2-003-SB1018-0204	1	12:44	HG
ZZZZZZ		1	12:46	
ZZZZZZ		1	12:48	
ZZZZZZ		1	12:51	
ZZZZZZ		1	12:56	
ZZZZZZ		1	12:58	

* Hg blank contamination

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Instrument ID: CETAC M6100 **File Name:** HGL06A

Date: 12/6/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	13:00	
ZZZZZZ		1	13:02	
ZZZZZZ		1	13:05	
ZZZZZZ		5	13:07	
CCV		1	13:09	HG
CCB		1	13:11	HG

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: ICV

File: HGL06A Dec 06, 2013 11:14

Analyte	True	Found	%R (1)
MERCURY	6.0	5.42	90.3

SAMPLE: CCV

File: HGL06A Dec 06, 2013 11:41

Analyte	True	Found	%R (1)
MERCURY	5.0	5.49	109.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCV

File: HGL06A Dec 06, 2013 12:07

Analyte	True	Found	%R (1)
MERCURY	5.0	4.80	96.0

SAMPLE: CCV

File: HGL06A Dec 06, 2013 12:40

Analyte	True	Found	%R (1)
MERCURY	5.0	5.26	105.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCV

File: HGL06A Dec 06, 2013 13:09

Analyte	True	Found	%R (1)
MERCURY	5.0	5.29	105.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: ICB

File: HGL06A Dec 06, 2013 11:16

Analyte	Result	C
MERCURY	0.031	J

SAMPLE: CCB

File: HGL06A Dec 06, 2013 11:43

Analyte	Result	C
MERCURY	0.037	J

SAMPLE: CCB

File: HGL06A Dec 06, 2013 12:09

Analyte	Result	C
MERCURY	0.036	J

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCB

File: HGL06A Dec 06, 2013 12:42

Analyte	Result	C
MERCURY	0.042	J

SAMPLE: CCB

File: HGL06AC Dec 06, 2013 13:11

Analyte	Result	C
MERCURY	0.045	J

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL02HGS4

Matrix: SOIL **SDG Name:** SG9002

Method: CV **Prep Date:** 12/02/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LC2OGL02HGS4	LC2OGL02HGS4	0.6	0.1	
LCSOGL02HGS4	LCSOGL02HGS4	0.6	0.1	
PBSGL02HGS4	PBSGL02HGS4	0.6	0.1	
TF2-003-SB1015-0810	SG9002-011	0.65	0.1	A
TF2-003-SB1016-0204	SG9002-013	0.77	0.1	A
TF2-003-SB1016-0810	SG9002-014	0.67	0.1	A
TF2-003-SB1018-0204	SG9002-015	0.67	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL02HGS4

Matrix: SOIL **SDG Name:** SG9002

QC Batch ID: GL02HGS4

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.005	J

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LC2OGL02HGS4

Matrix: SOIL **SDG Name:** SG9002

QC Batch ID: GL02HGS4

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.93	112.0	80	120

Katahdin Analytical Services A0000139

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL02HGS4

Matrix: SOIL **SDG Name:** SG9002

QC Batch ID: GL02HGS4

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.94	113.3	80	120

7D

LABORATORY CONTROL SAMPLE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: SOIL

SDG Name: SG9002

QC Batch ID: GL02HGS4

Lab Sample ID: LCSOGL02HGS4

Concentration Units: mg/Kgdrywt

Analyte	Control Limit (%)	LCS Result	LCS Dup. Result	RPD(%)	Q
MERCURY	20.0	0.94	0.93	1.7	

FORM VIID - IN

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GL02HGS3

Matrix: SOIL **SDG Name:** SG9002

Method: CV **Prep Date:** 12/02/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGL02HGS3	LCSOGL02HGS3	0.6	0.1	
PBSGL02HGS3	PBSGL02HGS3	0.6	0.1	
F2-003-SB1017-011.6	SG9002-001	0.69	0.1	D
TF2-003-SB1017-0204	SG9002-002	0.68	0.1	A
TF2-003-SB1017-0810	SG9002-003	0.89	0.1	A
TF2-003-SB1012-0204	SG9002-004	0.67	0.1	A
TF2-003-SB1012-0204D	SG9002-004D	0.65	0.1	A
TF2-003-SB1012-0204S	SG9002-004S	0.71	0.1	A
TF2-003-SB1012-0810	SG9002-005	0.71	0.1	A
TF2-003-SB1011-0204	SG9002-006	0.64	0.1	A
TF2-003-SB1014-0204	SG9002-007	0.64	0.1	A
TF2-003-SB1014-0810	SG9002-008	0.68	0.1	A
TF2-003-SB1015-0204	SG9002-009	0.81	0.1	A
TF2-SB-DUP08-1113	SG9002-010	0.79	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGL02HGS3

Matrix: SOIL **SDG Name:** SG9002

QC Batch ID: GL02HGS3

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.017	U

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGL02HGS3

Matrix: SOIL **SDG Name:** SG9002

QC Batch ID: GL02HGS3

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.89	107.2	80	120

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: PQL

File: HGL03A Dec 03, 2013 15:29

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.18	90.0

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: PQL

File: HGL04B Dec 04, 2013 16:53

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.20	100.0

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: PQL

File: HGL06A Dec 06, 2013 11:18

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.24	120.0

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/30/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
MERCURY	0.20	0.03	CV

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/7/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.02	mg/Kg	CV	SW846 7471A / 7471

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 2/9/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.10	ug/L	CV	SW846 7470A / 7470

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 1/7/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.005	mg/Kg	CV	SW846 7471A / SW846 7471A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name CETAC M6100 **Date:** 2/9/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.01	ug/L	CV	SW846 7470A / SW846 7470A

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL02A

Date: 12/2/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	15:40	
ZZZZZZ		1	15:43	
Cal Blank		1	16:08	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 1		1	16:11	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 2		1	16:14	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 3		1	16:17	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
Cal Std 4		1	16:21	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICV		1	16:24	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICB		1	16:27	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
PQL		1	16:30	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSA		1	16:33	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ICSAB		1	16:37	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCV		1	16:40	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	16:43	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	16:47	
ZZZZZZ		5	16:50	
ZZZZZZ		5	16:53	
ZZZZZZ		5	16:57	
ZZZZZZ		25	17:00	
PBSGK27IMS1		5	17:03	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
LCSOGK27IMS1		5	17:06	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-001	F2-003-SB1017-011.6	5	17:10	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-002	TF2-003-SB1017-0204	5	17:13	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-003	TF2-003-SB1017-0810	5	17:16	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Ni K Se Ag Na Tl V Zn
CCV		1	17:20	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	17:23	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG9002-004	TF2-003-SB1012-0204	5	17:26	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-004L	TF2-003-SB1012-0204L	25	17:30	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-004A	TF2-003-SB1012-0204A	5	17:33	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-004D	TF2-003-SB1012-0204D	5	17:36	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-004S	TF2-003-SB1012-0204S	5	17:40	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-005	TF2-003-SB1012-0810	5	17:43	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-006	TF2-003-SB1011-0204	5	17:46	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-007	TF2-003-SB1014-0204	5	17:50	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-008	TF2-003-SB1014-0810	5	17:53	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-009	TF2-003-SB1015-0204	5	17:57	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
CCV		1	18:00	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:03	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
SG9002-010	TF2-SB-DUP08-1113	5	18:07	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-011	TF2-003-SB1015-0810	5	18:10	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-013	TF2-003-SB1016-0204	5	18:14	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-014	TF2-003-SB1016-0810	5	18:17	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
SG9002-015	TF2-003-SB1018-0204	5	18:21	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		1	18:24	
ZZZZZZ		5	18:27	
ZZZZZZ		50	18:31	
PBWGK27IMW2		5	18:34	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
LCSWGK27IMW2		5	18:38	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
CCV		1	18:41	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	18:45	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL02A

Date: 12/2/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
LC2WGK27IMW2		5	18:48	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	18:51	
SG9002-012	TF2-SB-RB04-1113	5	18:55	Al Sb As Ba Cd Ca Cr Co Cu Fe Pb Mg Mn Ni K Se Ag Na Tl V Zn
ZZZZZZ		5	18:58	
CCV		1	19:01	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn
CCB		1	19:05	Al Sb As Ba Be Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag Na Tl V Zn

FORM XIV - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: ICV

File: JGL02A Dec 02, 2013 16:24

Analyte	True	Found	%R (1)
ALUMINUM	400.0	415.20	103.8
ANTIMONY	20.0	20.14	100.7
ARSENIC	20.0	20.61	103.1
BARIUM	20.0	20.76	103.8
BERYLLIUM	20.0	20.19	101.0
CADMIUM	20.0	21.03	105.2
CALCIUM	4000.0	3831.00	95.8
CHROMIUM	20.0	20.74	103.7
COBALT	20.0	21.42	107.1
COPPER	20.0	20.81	104.1
IRON	4000.0	3931.00	98.3
LEAD	20.0	20.60	103.0
MAGNESIUM	4000.0	3995.00	99.9
MANGANESE	20.0	19.33	96.6
MOLYBDENUM	40.0	42.20	105.5
NICKEL	20.0	20.97	104.8
POTASSIUM	4000.0	3939.00	98.5
SELENIUM	20.0	20.93	104.7
SILVER	20.0	21.52	107.6
SODIUM	4000.0	3857.00	96.4
THALLIUM	20.0	21.62	108.1
VANADIUM	20.0	20.37	101.8
ZINC	20.0	21.20	106.0

SAMPLE: CCV

File: JGL02A Dec 02, 2013 16:40

Analyte	True	Found	%R (1)
ALUMINUM	500.0	487.20	97.4
ANTIMONY	25.0	24.83	99.3
ARSENIC	25.0	24.89	99.6
BARIUM	25.0	24.52	98.1
BERYLLIUM	10.0	9.61	96.1
CADMIUM	10.0	9.90	99.0
CALCIUM	5000.0	4906.00	98.1
CHROMIUM	25.0	24.59	98.4
COBALT	10.0	10.00	100.0
COPPER	25.0	24.70	98.8
IRON	5000.0	4960.00	99.2
LEAD	25.0	24.51	98.0
MAGNESIUM	5000.0	4944.00	98.9
MANGANESE	25.0	24.83	99.3
MOLYBDENUM	25.0	26.04	104.2
NICKEL	25.0	24.72	98.9
POTASSIUM	5000.0	4796.00	95.9
SELENIUM	25.0	24.92	99.7
SILVER	10.0	9.69	96.9
SODIUM	5000.0	4888.00	97.8
THALLIUM	10.0	9.70	97.0
VANADIUM	25.0	24.67	98.7
ZINC	25.0	24.99	100.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCV

File: JGL02A Dec 02, 2013 17:20

Analyte	True	Found	%R (1)
ALUMINUM	500.0	496.40	99.3
ANTIMONY	25.0	24.91	99.6
ARSENIC	25.0	25.13	100.5
BARIUM	25.0	24.25	97.0
BERYLLIUM	10.0	10.05	100.5
CADMIUM	10.0	10.43	104.3
CALCIUM	5000.0	4981.00	99.6
CHROMIUM	25.0	24.51	98.0
COBALT	10.0	10.02	100.2
COPPER	25.0	25.14	100.6
IRON	5000.0	4983.00	99.7
LEAD	25.0	25.16	100.6
MAGNESIUM	5000.0	4893.00	97.9
MANGANESE	25.0	25.32	101.3
MOLYBDENUM	25.0	25.55	102.2
NICKEL	25.0	24.95	99.8
POTASSIUM	5000.0	4926.00	98.5
SELENIUM	25.0	24.86	99.4
SILVER	10.0	9.98	99.8
SODIUM	5000.0	4824.00	96.5
THALLIUM	10.0	9.99	99.9
VANADIUM	25.0	23.92	95.7
ZINC	25.0	25.78	103.1

SAMPLE: CCV

File: JGL02A Dec 02, 2013 18:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	500.40	100.1
ANTIMONY	25.0	24.52	98.1
ARSENIC	25.0	25.05	100.2
BARIUM	25.0	24.14	96.6
BERYLLIUM	10.0	10.89	108.9
CADMIUM	10.0	10.64	106.4
CALCIUM	5000.0	4773.00	95.5
CHROMIUM	25.0	24.66	98.6
COBALT	10.0	10.19	101.9
COPPER	25.0	25.11	100.4
IRON	5000.0	4868.00	97.4
LEAD	25.0	25.30	101.2
MAGNESIUM	5000.0	4898.00	98.0
MANGANESE	25.0	25.82	103.3
MOLYBDENUM	25.0	25.80	103.2
NICKEL	25.0	25.12	100.5
POTASSIUM	5000.0	4846.00	96.9
SELENIUM	25.0	25.03	100.1
SILVER	10.0	10.14	101.4
SODIUM	5000.0	4689.00	93.8
THALLIUM	10.0	10.09	100.9
VANADIUM	25.0	24.31	97.2
ZINC	25.0	25.96	103.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCV

File: JGL02A Dec 02, 2013 18:41

Analyte	True	Found	%R (1)
ALUMINUM	500.0	497.20	99.4
ANTIMONY	25.0	24.10	96.4
ARSENIC	25.0	25.01	100.0
BARIUM	25.0	23.73	94.9
BERYLLIUM	10.0	10.03	100.3
CADMIUM	10.0	10.76	107.6
CALCIUM	5000.0	4725.00	94.5
CHROMIUM	25.0	24.88	99.5
COBALT	10.0	10.27	102.7
COPPER	25.0	24.98	99.9
IRON	5000.0	4907.00	98.1
LEAD	25.0	25.13	100.5
MAGNESIUM	5000.0	4904.00	98.1
MANGANESE	25.0	25.50	102.0
MOLYBDENUM	25.0	26.05	104.2
NICKEL	25.0	25.02	100.1
POTASSIUM	5000.0	4940.00	98.8
SELENIUM	25.0	25.61	102.4
SILVER	10.0	10.24	102.4
SODIUM	5000.0	4768.00	95.4
THALLIUM	10.0	10.13	101.3
VANADIUM	25.0	24.42	97.7
ZINC	25.0	25.94	103.8

SAMPLE: CCV

File: JGL02A Dec 02, 2013 19:01

Analyte	True	Found	%R (1)
ALUMINUM	500.0	487.70	97.5
ANTIMONY	25.0	24.28	97.1
ARSENIC	25.0	24.85	99.4
BARIUM	25.0	23.63	94.5
BERYLLIUM	10.0	9.94	99.4
CADMIUM	10.0	10.56	105.6
CALCIUM	5000.0	4733.00	94.7
CHROMIUM	25.0	24.37	97.5
COBALT	10.0	10.15	101.5
COPPER	25.0	24.75	99.0
IRON	5000.0	4821.00	96.4
LEAD	25.0	24.71	98.8
MAGNESIUM	5000.0	4732.00	94.6
MANGANESE	25.0	25.38	101.5
MOLYBDENUM	25.0	25.83	103.3
NICKEL	25.0	24.96	99.8
POTASSIUM	5000.0	4936.00	98.7
SELENIUM	25.0	24.97	99.9
SILVER	10.0	10.10	101.0
SODIUM	5000.0	4659.00	93.2
THALLIUM	10.0	9.80	98.0
VANADIUM	25.0	23.80	95.2
ZINC	25.0	25.21	100.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: ICB
File: JGL02A Dec 02, 2013 16:27

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.014	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.004	U
CALCIUM	4.100	U
CHROMIUM	-0.055	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	-0.021	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.005	J
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB
File: JGL02A Dec 02, 2013 16:43

Analyte	Result	C
ALUMINUM	1.508	J
ANTIMONY	0.022	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.004	J
CADMIUM	0.014	J
CALCIUM	9.443	J
CHROMIUM	-0.062	U
COBALT	0.006	U
COPPER	-0.086	U
IRON	4.700	U
LEAD	0.042	J
MAGNESIUM	2.520	J
MANGANESE	0.020	U
MOLYBDENUM	0.505	J
NICKEL	0.280	J
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	7.723	J
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.162	J

SAMPLE: CCB
File: JGL02A Dec 02, 2013 17:23

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.023	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.011	J
CALCIUM	5.789	J
CHROMIUM	-0.073	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
LEAD	0.051	J
MAGNESIUM	1.108	J
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.375	J
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCB

File: JGL02A Dec 02, 2013 18:03

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.015	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.013	J
CALCIUM	4.100	U
CHROMIUM	-0.071	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.934	J
LEAD	0.048	J
MAGNESIUM	1.051	J
MANGANESE	0.062	J
MOLYBDENUM	0.120	U
NICKEL	0.340	J
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

SAMPLE: CCB

File: JGL02A Dec 02, 2013 18:45

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.020	J
ARSENIC	0.410	U
BARIUM	0.020	U
BERYLLIUM	0.003	U
CADMIUM	0.010	J
CALCIUM	4.100	U
CHROMIUM	-0.071	U
COBALT	0.006	U
COPPER	-0.093	U
IRON	4.700	U
LEAD	0.045	J
MAGNESIUM	0.937	J
MANGANESE	0.026	J
MOLYBDENUM	0.120	U
NICKEL	0.335	J
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
VANADIUM	0.150	U
ZINC	0.130	U

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK27IMS1

Matrix: SOIL **SDG Name:** SG9002

Method: MS **Prep Date:** 11/27/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK27IMS1	LCSOGK27IMS1	1	0.1	
PBSGK27IMS1	PBSGK27IMS1	1	0.1	
F2-003-SB1017-011.6	SG9002-001	1.25	0.1	C
TF2-003-SB1017-0204	SG9002-002	1.1	0.1	A
TF2-003-SB1017-0810	SG9002-003	1.46	0.1	A
TF2-003-SB1012-0204	SG9002-004	1.28	0.1	A
TF2-003-SB1012-0204D	SG9002-004D	1.28	0.1	A
TF2-003-SB1012-0204S	SG9002-004S	1.24	0.1	A
TF2-003-SB1012-0810	SG9002-005	1.22	0.1	A
TF2-003-SB1011-0204	SG9002-006	1.24	0.1	A
TF2-003-SB1014-0204	SG9002-007	1.1	0.1	A
TF2-003-SB1014-0810	SG9002-008	1.14	0.1	A
TF2-003-SB1015-0204	SG9002-009	1.17	0.1	A
TF2-SB-DUP08-1113	SG9002-010	1.15	0.1	A
TF2-003-SB1015-0810	SG9002-011	1.19	0.1	A
TF2-003-SB1016-0204	SG9002-013	1.4	0.1	A
TF2-003-SB1016-0810	SG9002-014	1.13	0.1	A
TF2-003-SB1018-0204	SG9002-015	1.19	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK27IMS1

Matrix: SOIL **SDG Name:** SG9002

QC Batch ID: GK27IMS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	1.271	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.051	J
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	3.953	J
CHROMIUM	0.140	J
COBALT	0.030	U
COPPER	0.138	J
IRON	6.0	U
LEAD	0.050	U
MAGNESIUM	8.0	U
MANGANESE	0.065	J
NICKEL	0.030	J
POTASSIUM	4.779	J
SELENIUM	0.30	U
SILVER	0.040	U
SODIUM	12.810	J
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.397	J

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK27IMS1

Matrix: SOIL **SDG Name:** SG9002

QC Batch ID: GK27IMS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	205.35	102.7	80	120
ANTIMONY	10.00	10.15	101.5	80	120
ARSENIC	10.00	10.51	105.1	80	120
BARIUM	200.00	199.40	99.7	80	120
BERYLLIUM	5.00	4.92	98.4	80	120
CADMIUM	25.00	26.59	106.4	80	120
CALCIUM	250.00	226.55	90.6	80	120
CHROMIUM	20.00	20.72	103.6	80	120
COBALT	50.00	54.25	108.5	80	120
COPPER	25.00	26.08	104.3	80	120
IRON	100.00	101.00	101.0	80	120
LEAD	10.00	10.36	103.6	80	120
MAGNESIUM	500.00	523.50	104.7	80	120
MANGANESE	50.00	49.77	99.5	80	120
NICKEL	50.00	51.65	103.3	80	120
POTASSIUM	1000.00	1021.50	102.2	80	120
SELENIUM	10.00	9.97	99.7	80	120
SILVER	5.00	5.41	108.2	80	120
SODIUM	750.00	760.50	101.4	80	120
THALLIUM	10.00	10.27	102.7	80	120
VANADIUM	50.00	51.55	103.1	80	120
ZINC	50.00	51.45	102.9	80	120

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: PQL

File: JGL02A Dec 02, 2013 16:30

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	61.38	102.3
ANTIMONY	0.2	0.17	85.0
ARSENIC	1.0	0.97	97.0
BARIUM	0.4	0.43	107.5
BERYLLIUM	0.2	0.18	90.0
CADMIUM	0.2	0.19	95.0
CALCIUM	20.0	21.24	106.2
CHROMIUM	1.0	0.98	98.0
COBALT	0.2	0.20	100.0
COPPER	0.6	0.58	96.7
IRON	20.0	19.30	96.5
LEAD	0.2	0.19	95.0
MAGNESIUM	20.0	20.85	104.3
MANGANESE	0.4	0.36	90.0
MOLYBDENUM	1.0	1.03	103.0
NICKEL	0.4	0.41	102.5
POTASSIUM	200.0	214.40	107.2
SELENIUM	1.0	1.02	102.0
SILVER	0.2	0.21	105.0
SODIUM	200.0	210.30	105.2
THALLIUM	0.2	0.18	90.0
VANADIUM	1.0	1.00	100.0
ZINC	2.0	2.30	115.0

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1012-0204L

Matrix: SOIL **SDG Name:** SG9002

Lab Sample ID: SG9002-004L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	27290.00		26580.00		2.6		MS
ANTIMONY, TOTAL	0.43		0.46	J N/A	7.0		MS
ARSENIC, TOTAL	15.26		15.71		2.9		MS
BARIUM, TOTAL	55.69		54.00		3.0		MS
BERYLLIUM, TOTAL	1.18		1.13		4.2		MS
CADMIUM, TOTAL	0.44		0.43	J N/A	2.3		MS
CALCIUM, TOTAL	2735.00		2724.50		0.4		MS
CHROMIUM, TOTAL	34.99		34.80		0.5		MS
COBALT, TOTAL	23.51		23.06		1.9		MS
COPPER, TOTAL	80.15		83.15		3.7		MS
IRON, TOTAL	56240.00		59150.00		5.2		MS
LEAD, TOTAL	43.01		41.50		3.5		MS
MAGNESIUM, TOTAL	8343.00		8635.00		3.5		MS
MANGANESE, TOTAL	734.20		784.00		6.8		MS
MERCURY, TOTAL	0.43		0.59	J N/A	37.2		CV
NICKEL, TOTAL	44.72		45.54		1.8		MS
POTASSIUM, TOTAL	1001.00		1029.50		2.8		MS
SELENIUM, TOTAL	0.70	J	1.11	J N/A	58.6		MS
SILVER, TOTAL	0.12	J	0.12	J	0.0		MS
SODIUM, TOTAL	100.10	J	92.05	J	8.0		MS
THALLIUM, TOTAL	0.10	J	0.08	U N/A	100.0		MS
VANADIUM, TOTAL	35.43		35.47		0.1		MS
ZINC, TOTAL	131.30		136.00		3.6		MS

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGL04A

Date: 12/4/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	11:50	
ZZZZZZ		1	11:58	
Cal Blank		1	12:17	Al Be Ca Fe Mg Mn Mo K Na
Cal Std 1		1	12:20	Al Be Ca Fe Mg Mn Mo K Na
Cal Std 2		1	12:23	Al Be Ca Fe Mg Mn Mo K Na
Cal Std 3		1	12:26	Al Be Ca Fe Mg Mn Mo K Na
Cal Std 4		1	12:29	Al Be Ca Fe Mg Mn Mo K Na
ICV		1	12:32	Al Be Ca Fe Mg Mn Mo K Na
ICB		1	12:36	Al Be Ca Fe Mg Mn Mo K Na
PQL		1	12:39	Al Be Ca Fe Mg Mn Mo K Na
ICSA		1	12:42	Al Be Ca Fe Mg Mn Mo K Na
ICSAB		1	12:45	Al Be Ca Fe Mg Mn Mo K Na
CCV		1	12:49	Al Be Ca Fe Mg Mn Mo K Na
CCB		1	12:52	Al Be Ca Fe Mg Mn Mo K Na
ZZZZZZ		5	12:55	
ZZZZZZ		25	12:59	
ZZZZZZ		5	13:02	
ZZZZZZ		5	13:05	
ZZZZZZ		5	13:08	
ZZZZZZ		5	13:12	
SG9002-003	TF2-003-SB1017-0810	10	13:15	Mn
SG9002-004	TF2-003-SB1012-0204	5	13:18	Be
SG9002-004L	TF2-003-SB1012-0204L	25	13:22	Be
SG9002-004A	TF2-003-SB1012-0204A	5	13:25	Be
CCV		1	13:28	Al Be Ca Fe Mg Mn Mo K Na
CCB		1	13:32	Al Be Ca Fe Mg Mn Mo K Na
SG9002-004D	TF2-003-SB1012-0204D	5	13:35	Be
SG9002-004S	TF2-003-SB1012-0204S	5	13:38	Be
SG9002-005	TF2-003-SB1012-0810	5	13:42	Be
SG9002-006	TF2-003-SB1011-0204	5	13:45	Be
SG9002-007	TF2-003-SB1014-0204	5	13:48	Be
SG9002-008	TF2-003-SB1014-0810	5	13:52	Be
SG9002-009	TF2-003-SB1015-0204	5	13:55	Be
SG9002-010	TF2-SB-DUP08-1113	5	13:59	Be
SG9002-011	TF2-003-SB1015-0810	5	14:02	Be
SG9002-013	TF2-003-SB1016-0204	5	14:05	Be
CCV		1	14:09	Al Be Ca Fe Mg Mn Mo K Na
CCB		1	14:12	Al Be Ca Fe Mg Mn Mo K Na
SG9002-014	TF2-003-SB1016-0810	5	14:16	Be
SG9002-015	TF2-003-SB1018-0204	5	14:19	Be
PBWGK27IMW2		5	14:23	Be
LCSWGK27IMW2		5	14:26	Be
ZZZZZZ		5	14:29	
ZZZZZZ		5	14:33	
SG9002-012	TF2-SB-RB04-1113	5	14:36	Be
ZZZZZZ		5	14:39	
ZZZZZZ		1	14:43	
ZZZZZZ		1	14:46	
CCV		1	14:49	Al Be Ca Fe Mg Mn Mo K Na
CCB		1	14:52	Al Be Ca Fe Mg Mn Mo K Na

FORM XIV - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: ICV

File: JGL04A Dec 04, 2013 12:32

Analyte	True	Found	%R (1)
ALUMINUM	400.0	414.00	103.5
BERYLLIUM	20.0	21.31	106.5
CALCIUM	4000.0	3817.00	95.4
IRON	4000.0	3896.00	97.4
MAGNESIUM	4000.0	3895.00	97.4
MANGANESE	20.0	19.54	97.7
MOLYBDENUM	40.0	42.05	105.1
POTASSIUM	4000.0	3906.00	97.7
SODIUM	4000.0	3914.00	97.9

SAMPLE: CCV

File: JGL04A Dec 04, 2013 12:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	499.00	99.8
BERYLLIUM	10.0	10.34	103.4
CALCIUM	5000.0	4988.00	99.8
IRON	5000.0	5024.00	100.5
MAGNESIUM	5000.0	4908.00	98.2
MANGANESE	25.0	25.53	102.1
MOLYBDENUM	25.0	26.57	106.3
POTASSIUM	5000.0	4904.00	98.1
SODIUM	5000.0	4954.00	99.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCV

File: JGL04A Dec 04, 2013 13:28

Analyte	True	Found	%R (1)
ALUMINUM	500.0	502.90	100.6
BERYLLIUM	10.0	10.28	102.8
CALCIUM	5000.0	4932.00	98.6
IRON	5000.0	4935.00	98.7
MAGNESIUM	5000.0	4998.00	100.0
MANGANESE	25.0	25.08	100.3
MOLYBDENUM	25.0	24.93	99.7
POTASSIUM	5000.0	4986.00	99.7
SODIUM	5000.0	5006.00	100.1

SAMPLE: CCV

File: JGL04A Dec 04, 2013 14:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	524.80	105.0
BERYLLIUM	10.0	10.36	103.6
CALCIUM	5000.0	4896.00	97.9
IRON	5000.0	4867.00	97.3
MAGNESIUM	5000.0	5096.00	101.9
MANGANESE	25.0	25.55	102.2
MOLYBDENUM	25.0	24.81	99.2
POTASSIUM	5000.0	4944.00	98.9
SODIUM	5000.0	5039.00	100.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCV

File: JGL04A Dec 04, 2013 14:49

Analyte	True	Found	%R (1)
ALUMINUM	500.0	508.90	101.8
BERYLLIUM	10.0	9.98	99.8
CALCIUM	5000.0	4949.00	99.0
IRON	5000.0	5027.00	100.5
MAGNESIUM	5000.0	5079.00	101.6
MANGANESE	25.0	25.66	102.6
MOLYBDENUM	25.0	25.05	100.2
POTASSIUM	5000.0	4921.00	98.4
SODIUM	5000.0	5051.00	101.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: ICB

File: JGL04A Dec 04, 2013 12:36

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	J
CALCIUM	4.100	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.123	J
POTASSIUM	8.200	U
SODIUM	3.900	U

SAMPLE: CCB

File: JGL04A Dec 04, 2013 12:52

Analyte	Result	C
ALUMINUM	0.441	J
BERYLLIUM	0.003	U
CALCIUM	6.370	J
IRON	-10.140	U
MAGNESIUM	0.938	J
MANGANESE	-0.026	U
MOLYBDENUM	0.476	J
POTASSIUM	8.200	U
SODIUM	7.725	J

SAMPLE: CCB

File: JGL04A Dec 04, 2013 13:32

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.039	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: CCB
File: JGL04A Dec 04, 2013 14:12

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.105	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U

SAMPLE: CCB
File: JGL04A Dec 04, 2013 14:52

Analyte	Result	C
ALUMINUM	0.340	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK27IMW2

Matrix: WATER **SDG Name:** SG9002

Method: MS **Prep Date:** 11/27/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LC2WGK27IMW2	LC2WGK27IMW2	0.05	0.05	
LCSWGK27IMW2	LCSWGK27IMW2	0.05	0.05	
PBWGK27IMW2	PBWGK27IMW2	0.05	0.05	
TF2-SB-RB04-1113	SG9002-012	0.05	0.05	C

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGK27IMW2

Matrix: WATER **SDG Name:** SG9002

QC Batch ID: GK27IMW2

Concentration Units: ug/L

Analyte	RESULT	C
ALUMINUM	11.950	J
ANTIMONY	0.50	U
ARSENIC	4.0	U
BARIUM	0.558	J
BERYLLIUM	0.20	U
CADMIUM	0.20	U
CALCIUM	25.360	J
CHROMIUM	0.541	J
COBALT	0.30	U
COPPER	0.686	J
IRON	60	U
LEAD	0.134	J
MAGNESIUM	80	U
MANGANESE	8.790	
NICKEL	1.2	U
POTASSIUM	37.675	J
SELENIUM	0.190	J
SILVER	0.40	U
SODIUM	21.745	J
THALLIUM	0.40	U
VANADIUM	4.0	U
ZINC	8.0	U

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LC2WGK27IMW2

Matrix: WATER **SDG Name:** SG9002

QC Batch ID: GK27IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000.00	2070.50	103.5	80	120
ANTIMONY	100.00	96.50	96.5	80	120
ARSENIC	100.00	100.20	100.2	80	120
BARIUM	2000.00	1934.00	96.7	80	120
BERYLLIUM	50.00	48.86	97.7	80	120
CADMIUM	250.00	277.45	111.0	80	120
CALCIUM	2500.00	2218.00	88.7	80	120
CHROMIUM	200.00	208.60	104.3	80	120
COBALT	500.00	535.00	107.0	80	120
COPPER	250.00	258.60	103.4	80	120
IRON	1000.00	1045.00	104.5	80	120
LEAD	100.00	103.75	103.8	80	120
MAGNESIUM	5000.00	5055.00	101.1	80	120
MANGANESE	500.00	487.85	97.6	80	120
NICKEL	500.00	526.00	105.2	80	120
POTASSIUM	10000.00	10330.00	103.3	80	120
SELENIUM	100.00	98.45	98.5	80	120
SILVER	50.00	55.65	111.3	80	120
SODIUM	7500.00	7570.00	100.9	80	120
THALLIUM	100.00	102.45	102.5	80	120
VANADIUM	500.00	492.25	98.5	80	120
ZINC	500.00	521.00	104.2	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGK27IMW2

Matrix: WATER **SDG Name:** SG9002

QC Batch ID: GK27IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000.00	2127.50	106.4	80	120
ANTIMONY	100.00	101.00	101.0	80	120
ARSENIC	100.00	107.60	107.6	80	120
BARIUM	2000.00	1985.50	99.3	80	120
BERYLLIUM	50.00	51.70	103.4	80	120
CADMIUM	250.00	285.85	114.3	80	120
CALCIUM	2500.00	2332.00	93.3	80	120
CHROMIUM	200.00	213.65	106.8	80	120
COBALT	500.00	547.00	109.4	80	120
COPPER	250.00	268.10	107.2	80	120
IRON	1000.00	1056.50	105.7	80	120
LEAD	100.00	107.35	107.3	80	120
MAGNESIUM	5000.00	5190.00	103.8	80	120
MANGANESE	500.00	510.00	102.0	80	120
NICKEL	500.00	541.50	108.3	80	120
POTASSIUM	10000.00	10330.00	103.3	80	120
SELENIUM	100.00	102.15	102.2	80	120
SILVER	50.00	58.10	116.2	80	120
SODIUM	7500.00	7620.00	101.6	80	120
THALLIUM	100.00	105.35	105.3	80	120
VANADIUM	500.00	508.00	101.6	80	120
ZINC	500.00	535.00	107.0	80	120

LABORATORY CONTROL SAMPLE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: WATER **SDG Name:** SG9002

QC Batch ID: GK27IMW2 **Lab Sample ID:** LCSWGK27IMW2

Concentration Units: ug/L

Analyte	Control Limit (%)	LCS Result	LCS Dup. Result	RPD(%)	Q
ALUMINUM	20.0	2127.50	2070.50	2.7	
ANTIMONY	20.0	101.00	96.50	4.6	
ARSENIC	20.0	107.60	100.20	7.1	
BARIUM	20.0	1985.50	1934.00	2.6	
BERYLLIUM	20.0	51.70	48.86	5.6	
CADMIUM	20.0	285.85	277.45	3.0	
CALCIUM	20.0	2332.00	2218.00	5.0	
CHROMIUM	20.0	213.65	208.60	2.4	
COBALT	20.0	547.00	535.00	2.2	
COPPER	20.0	268.10	258.60	3.6	
IRON	20.0	1056.50	1045.00	1.1	
LEAD	20.0	107.35	103.75	3.4	
MAGNESIUM	20.0	5190.00	5055.00	2.6	
MANGANESE	20.0	510.00	487.85	4.4	
NICKEL	20.0	541.50	526.00	2.9	
POTASSIUM	20.0	10330.00	10330.00	0.0	
SELENIUM	20.0	102.15	98.45	3.7	
SILVER	20.0	58.10	55.65	4.3	
SODIUM	20.0	7620.00	7570.00	0.7	
THALLIUM	20.0	105.35	102.45	2.8	
VANADIUM	20.0	508.00	492.25	3.1	
ZINC	20.0	535.00	521.00	2.7	

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: PQL

File: JGL04A Dec 04, 2013 12:39

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	63.31	105.5
BERYLLIUM	0.2	0.20	100.0
CALCIUM	20.0	21.03	105.2
IRON	20.0	18.23	91.1
MAGNESIUM	20.0	21.58	107.9
MANGANESE	0.4	0.36	90.0
MOLYBDENUM	1.0	1.05	105.0
POTASSIUM	200.0	207.90	104.0
SODIUM	200.0	212.50	106.3

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL04A Dec 04, 2013 12:42

Analyte	TRUE	FOUND	% R
~~ALUMINUM~~	~~100000~~	~~94810~~	~~94.8~~
BERYLLIUM	0	0	
CALCIUM	100000	93390	93.4
IRON	100000	88780	88.8
MAGNESIUM	100000	93030	93.0
MANGANESE	0	0	
MOLYBDENUM	2000	1942	97.1
POTASSIUM	100000	96530	96.5
SODIUM	100000	98240	98.2

SAMPLE: ICSAB

File: JGL04A Dec 04, 2013 12:45

Analyte	TRUE	FOUND	% R
~~ALUMINUM~~	~~100000~~	~~91670~~	~~91.7~~
BERYLLIUM	20	20	100.0
CALCIUM	100000	90660	90.7
IRON	100000	87290	87.3
MAGNESIUM	100000	90880	90.9
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1919	96.0
POTASSIUM	100000	91890	91.9
SODIUM	100000	93860	93.9

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services | **Client Field ID:** TF2-003-SB1012-0204S

Matrix: SOIL | **SDG Name:** SG9002

Percent Solids: 91.3 | **Lab Sample ID:** SG9002-004S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	12847.7183		11676.0931	>4X	176.66	663.2	N/A	80	120	MS
ANTIMONY, TOTAL	4.2439		0.1829		8.83	46.0	N	80	120	MS
ARSENIC, TOTAL	14.1153		6.5290		8.83	85.9		80	120	MS
BARIUM, TOTAL	192.3404		23.8271		176.66	95.4		80	120	MS
BERYLLIUM, TOTAL	4.7345		0.5032		4.42	95.7		80	120	MS
CADMIUM, TOTAL	21.9767		0.1898		22.08	98.7		80	120	MS
CALCIUM, TOTAL	1653.5530		1170.1764	>4X	220.83	218.9	N/A	80	120	MS
CHROMIUM, TOTAL	31.5209		14.9706		17.67	93.7		80	120	MS
COBALT, TOTAL	53.4843		10.0588		44.17	98.3		80	120	MS
COPPER, TOTAL	46.0204		34.2924		22.08	53.1	N	80	120	MS
IRON, TOTAL	22820.2683		24062.4212	>4X	88.33	-1406.3	>4X N/A	80	120	MS
LEAD, TOTAL	27.4930		18.4019		8.83	103.0		80	120	MS
MAGNESIUM, TOTAL	4139.1824		3569.5729	>4X	441.65	129.0	>4X N/A	80	120	MS
MANGANESE, TOTAL	361.8472		314.1293		44.17	108.0		80	120	MS
MERCURY, TOTAL	0.2245		0.0703		0.15	102.8		80	120	CV
NICKEL, TOTAL	60.1091		19.1336		44.17	92.8		80	120	MS
POTASSIUM, TOTAL	1495.4408		428.2803		883.31	120.8	N	80	120	MS
SELENIUM, TOTAL	8.2192		0.2996	J	8.83	89.7		80	120	MS
SILVER, TOTAL	4.4607		0.0497	J	4.42	99.8		80	120	MS
SODIUM, TOTAL	665.5728		42.8280	J	662.48	94.0		80	120	MS
THALLIUM, TOTAL	8.8110		0.0425	J	8.83	99.3		80	120	MS
VANADIUM, TOTAL	57.5917		15.1588		44.17	96.1		80	120	MS
ZINC, TOTAL	92.8799		56.1770		44.17	83.1		80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services | **Client Field ID:** TF2-003-SB1012-0204S

Matrix: SOIL | **SDG Name:** SG9002

Percent Solids: 91.3 | **Lab Sample ID:** SG9002-004A

Concentration Units : ug/L

Analyte	Spiked Sample	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	26560.0000		27290.0000		600	-121.7		75	125	MS
ANTIMONY, TOTAL ok	2.5670		0.4275		2	107.0	ok J	75	125	MS
ARSENIC, TOTAL	25.5000		15.2600		10	102.4		75	125	MS
BARIUM, TOTAL	57.8000		55.6900		4	52.7		75	125	MS
BERYLLIUM, TOTAL	3.3350		1.1760		2	108.0		75	125	MS
CADMIUM, TOTAL	2.5830		0.4435		2	107.0		75	125	MS
CALCIUM, TOTAL	2903.0000		2735.0000		200	84.0		75	125	MS
CHROMIUM, TOTAL	45.1100		34.9900		10	101.2		75	125	MS
COBALT, TOTAL	24.9500		23.5100		2	72.0		75	125	MS
COPPER, TOTAL	84.3800		80.1500		6	70.5 ?		75	125	MS
IRON, TOTAL	55650.0000		56240.0000		200	-295.0		75	125	MS
LEAD, TOTAL	45.0900		43.0100		2	104.0		75	125	MS
MAGNESIUM, TOTAL	8406.0000		8343.0000		200	31.5		75	125	MS
MANGANESE, TOTAL	725.7000		734.2000		4	-212.5		75	125	MS
MERCURY, TOTAL	1.4270		0.4300		1	99.7		75	125	CV
NICKEL, TOTAL	48.0600		44.7200		4	83.5		75	125	MS
POTASSIUM, TOTAL	3037.0000		1001.0000		2000	101.8	ok J	75	125	MS
SELENIUM, TOTAL	10.7900		0.7002	J	10	100.9		75	125	MS
SILVER, TOTAL	2.4020		0.1161	J	2	114.3		75	125	MS
SODIUM, TOTAL	2108.0000		100.1000	J	2000	100.4		75	125	MS
THALLIUM, TOTAL	2.3320		0.0992	J	2	111.6		75	125	MS
VANADIUM, TOTAL	43.6200		35.4300		10	81.9		75	125	MS
ZINC, TOTAL	150.3000		131.3000		20	95.0		75	125	MS

Comments:

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-003-SB1012-0204D

Matrix: SOIL **SDG Name:** SG9002

Percent Solids: 91.3 **Lab Sample ID:** SG9002-004D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M
ALUMINUM, TOTAL		11676.0931		11154.1131		4.6		MS
ANTIMONY, TOTAL	0.086	0.1829		0.1109		49.0		MS
ARSENIC, TOTAL		6.5290		6.6403		1.7		MS
BARIUM, TOTAL		23.8271		19.2448		21.3	*	MS
BERYLLIUM, TOTAL		0.5032		0.4736		6.1		MS
CADMIUM, TOTAL	0.086	0.1898		0.1506		23.0		MS
CALCIUM, TOTAL		1170.1764		982.7771		17.4		MS
CHROMIUM, TOTAL		14.9706		15.2914		2.1		MS
COBALT, TOTAL		10.0588		11.3766		12.3		MS
COPPER, TOTAL		34.2924		43.5126		23.7	*	MS
IRON, TOTAL		24062.4212		23056.9680		4.3		MS
LEAD, TOTAL		18.4019		17.3024		6.2		MS
MAGNESIUM, TOTAL		3569.5729		3639.7407		1.9		MS
MANGANESE, TOTAL		314.1293		349.4699		10.7		MS
MERCURY, TOTAL	0.034	0.0703		0.0345		68.3	*	CV
NICKEL, TOTAL		19.1336		19.2961		0.8		MS
POTASSIUM, TOTAL	86	428.2803		411.3373		4.0		MS
SELENIUM, TOTAL		0.2996	J	0.2633	J	12.9		MS
SILVER, TOTAL		0.0497	J	0.0548	J	9.8		MS
SODIUM, TOTAL		42.8280	J	29.7229	J	36.1		MS
THALLIUM, TOTAL		0.0425	J	0.0436	J	2.6		MS
VANADIUM, TOTAL		15.1588		14.8336		2.2		MS
ZINC, TOTAL		56.1770		53.5671		4.8		MS

Comments:

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG9002

Concentration Units: ug/L

SAMPLE: ICSA

File: JGL02A Dec 02, 2013 16:33

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	93510	93.5
ANTIMONY	0	0	
ARSENIC	0	0	
BARIUM	0	0	
BERYLLIUM	0	0	
CADMIUM	0	0	
CALCIUM	100000	93650	93.7
CHROMIUM	0	1	
COBALT	0	0	
COPPER	0	0	
IRON	100000	88830	88.8
LEAD	0	0	
MAGNESIUM	100000	91640	91.6
MANGANESE	0	0	
MOLYBDENUM	2000	1938	96.9
NICKEL	0	1	
POTASSIUM	100000	96590	96.6
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	94090	94.1
THALLIUM	0	0	
VANADIUM	0	0	
ZINC	0	2	

SAMPLE: ICSAB

File: JGL02A Dec 02, 2013 16:37

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	92980	93.0
ANTIMONY	20	20	100.0
ARSENIC	20	20	100.0
BARIUM	21	20	95.2
BERYLLIUM	20	21	105.0
CADMIUM	20	19	95.0
CALCIUM	100000	93010	93.0
CHROMIUM	20	20	100.0
COBALT	20	19	95.0
COPPER	20	18	90.0
IRON	100000	89430	89.4
LEAD	20	21	105.0
MAGNESIUM	100000	91960	92.0
MANGANESE	20	19	95.0
MOLYBDENUM	2000	1969	98.5
NICKEL	20	19	95.0
POTASSIUM	100000	96260	96.3
SELENIUM	20	19	95.0
SILVER	20	18	90.0
SODIUM	100000	93500	93.5
THALLIUM	20	21	105.0
VANADIUM	20	20	100.0
ZINC	20	20	100.0

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 6/11/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
ALUMINUM	60	0.34	MS
ANTIMONY	0.20	0.006	MS
ARSENIC	1.0	0.41	MS
BARIUM	0.40	0.02	MS
BERYLLIUM	0.20	0.003	MS
CADMIUM	0.20	0.004	MS
CALCIUM	20	4.10	MS
CHROMIUM	1.0	0.03	MS
COBALT	0.20	0.006	MS
COPPER	0.60	0.03	MS
IRON	20	4.70	MS
LEAD	0.20	0.009	MS
MAGNESIUM	20	0.69	MS
MANGANESE	0.40	0.02	MS
MOLYBDENUM	1.0	0.12	MS
NICKEL	0.40	0.02	MS
POTASSIUM	200	8.20	MS
SELENIUM	1.0	0.64	MS
SILVER	0.20	0.004	MS
SODIUM	200	3.90	MS
THALLIUM	0.20	0.003	MS
VANADIUM	1.0	0.15	MS
ZINC	2.0	0.13	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	8.00	ug/L	MS	
ANTIMONY	0.10	ug/L	MS	
ARSENIC	0.80	ug/L	MS	
BARIUM	0.20	ug/L	MS	
BERYLLIUM	0.04	ug/L	MS	
CADMIUM	0.04	ug/L	MS	
CALCIUM	16.00	ug/L	MS	
CHROMIUM	0.80	ug/L	MS	
COBALT	0.06	ug/L	MS	
COPPER	0.40	ug/L	MS	
IRON	12.00	ug/L	MS	
LEAD	0.10	ug/L	MS	
MAGNESIUM	16.00	ug/L	MS	
MANGANESE	0.20	ug/L	MS	
NICKEL	0.24	ug/L	MS	
POTASSIUM	80.00	ug/L	MS	
SELENIUM	0.60	ug/L	MS	
SILVER	0.08	ug/L	MS	
SODIUM	80.00	ug/L	MS	
THALLIUM	0.08	ug/L	MS	
VANADIUM	0.80	ug/L	MS	
ZINC	1.60	ug/L	MS	

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.80	mg/kg	MS	SW846 3050B / 6010/200.7
ANTIMONY	0.01	mg/kg	MS	SW846 3050B / 6010/200.7
ARSENIC	0.08	mg/kg	MS	SW846 3050B / 6010/200.7
BARIUM	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
BERYLLIUM	0.004	mg/Kg	MS	SW846 3050B / 6010/200.7
CADMIUM	0.004	mg/kg	MS	SW846 3050B / 6010/200.7
CALCIUM	1.60	mg/kg	MS	SW846 3050B / 6010/200.7
CHROMIUM	0.08	mg/kg	MS	SW846 3050B / 6010/200.7
COBALT	0.006	mg/kg	MS	SW846 3050B / 6010/200.7
COPPER	0.04	mg/kg	MS	SW846 3050B / 6010/200.7
IRON	1.20	mg/kg	MS	SW846 3050B / 6010/200.7
LEAD	0.01	mg/Kg	MS	SW846 3050B / 6010/200.7
MAGNESIUM	1.60	mg/kg	MS	SW846 3050B / 6010/200.7
MANGANESE	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
NICKEL	0.02	mg/kg	MS	SW846 3050B / 6010/200.7
POTASSIUM	8.00	mg/Kg	MS	SW846 3050B / 6010/200.7
SELENIUM	0.06	mg/kg	MS	SW846 3050B / 6010/200.7
SILVER	0.008	mg/kg	MS	SW846 3050B / 6010/200.7
SODIUM	8.00	mg/kg	MS	SW846 3050B / 6010/200.7
THALLIUM	0.008	mg/kg	MS	SW846 3050B / 6010/200.7
VANADIUM	0.08	mg/Kg	MS	SW846 3050B / 6010/200.7
ZINC	0.16	mg/kg	MS	SW846 3050B / 6010/200.7

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.88	ug/L	MS	SW846 3010A / SW846 6020
ANTIMONY	0.01	ug/L	MS	SW846 3010A / SW846 6020
ARSENIC	0.45	ug/L	MS	SW846 3010A / SW846 6020
BARIUM	0.05	ug/L	MS	SW846 3010A / SW846 6020
BERYLLIUM	0.007	ug/L	MS	SW846 3010A / SW846 6020
CADMIUM	0.006	ug/L	MS	SW846 3010A / SW846 6020
CALCIUM	4.09	ug/L	MS	SW846 3010A / SW846 6020
CHROMIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020
COBALT	0.01	ug/L	MS	SW846 3010A / SW846 6020
COPPER	0.04	ug/L	MS	SW846 3010A / SW846 6020
IRON	2.55	ug/L	MS	SW846 3010A / SW846 6020
LEAD	0.01	ug/L	MS	SW846 3010A / SW846 6020
MAGNESIUM	1.56	ug/L	MS	SW846 3010A / SW846 6020
MANGANESE	0.07	ug/L	MS	SW846 3010A / SW846 6020
NICKEL	0.03	ug/L	MS	SW846 3010A / SW846 6020
POTASSIUM	6.14	ug/L	MS	SW846 3010A / SW846 6020
SELENIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020
SILVER	0.01	ug/L	MS	SW846 3010A / SW846 6020
SODIUM	3.70	ug/L	MS	SW846 3010A / SW846 6020
THALLIUM	0.01	ug/L	MS	SW846 3010A / SW846 6020
VANADIUM	0.10	ug/L	MS	SW846 3010A / SW846 6020
ZINC	0.78	ug/L	MS	SW846 3010A / SW846 6020

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.10	mg/kg	MS	SW846 3050B / SW846 6020
ANTIMONY	0.004	mg/kg	MS	SW846 3050B / SW846 6020
ARSENIC	0.03	mg/kg	MS	SW846 3050B / SW846 6020
BARIUM	0.007	mg/kg	MS	SW846 3050B / SW846 6020
BERYLLIUM	0.0008	mg/kg	MS	SW846 3050B / SW846 6020
CADMIUM	0.002	mg/kg	MS	SW846 3050B / SW846 6020
CALCIUM	0.77	mg/kg	MS	SW846 3050B / SW846 6020
CHROMIUM	0.010	mg/kg	MS	SW846 3050B / SW846 6020
COBALT	0.001	mg/kg	MS	SW846 3050B / SW846 6020
COPPER	0.01	mg/kg	MS	SW846 3050B / SW846 6020
IRON	0.48	mg/kg	MS	SW846 3050B / SW846 6020
LEAD	0.001	mg/kg	MS	SW846 3050B / SW846 6020
MAGNESIUM	0.27	mg/kg	MS	SW846 3050B / SW846 6020
MANGANESE	0.008	mg/kg	MS	SW846 3050B / SW846 6020
NICKEL	0.005	mg/kg	MS	SW846 3050B / SW846 6020
POTASSIUM	0.91	mg/kg	MS	SW846 3050B / SW846 6020
SELENIUM	0.008	mg/kg	MS	SW846 3050B / SW846 6020
SILVER	0.001	mg/kg	MS	SW846 3050B / SW846 6020
SODIUM	0.51	mg/kg	MS	SW846 3050B / SW846 6020
THALLIUM	0.002	mg/kg	MS	SW846 3050B / SW846 6020
VANADIUM	0.02	mg/kg	MS	SW846 3050B / SW846 6020
ZINC	0.03	mg/kg	MS	SW846 3050B / SW846 6020

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name AGILENT 7500 ICP-MS **Date:** 6/7/2013

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	0.01	200000	MS
ANTIMONY	0.10	1000	MS
ARSENIC	0.30	1000	MS
BARIUM	0.10	1000	MS
BERYLLIUM	0.30	100	MS
CADMIUM	0.10	500	MS
CALCIUM	0.03	200000	MS
CHROMIUM	0.10	1000	MS
COBALT	0.10	1000	MS
COPPER	0.10	500	MS
IRON	0.03	100000	MS
LEAD	0.10	1000	MS
MAGNESIUM	0.05	200000	MS
MANGANESE	0.10	1000	MS
MOLYBDENUM	0.10	1000	MS
NICKEL	0.10	500	MS
POTASSIUM	0.01	200000	MS
SELENIUM	0.30	500	MS
SILVER	0.10	250	MS
SODIUM	0.01	200000	MS
THALLIUM	0.10	1000	MS
VANADIUM	0.10	1000	MS
ZINC	0.10	500	MS

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\031SMPL.D\031SMPL.D#
Date Acquired: Dec 2 2013 05:10 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-001
Misc Info: DILUTION 1.6/8
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.389	0.8778	ppb	2.15	100.	
11 B	14.19	2.838	ppb	9.02	1000.	
23 Na	409.25	81.85	ppb	0.62	200000.	
25 Mg	47,905.	9,581.	ppb	1.46	200000.	
27 Al	144,750.	28,950.	ppb	1.20	200000.	
28 Si	9,680.	1,936.	ppb	1.16	#VALUE!	
29 Si	7,900.	1,580.	ppb	0.88	10000.	
39 K	5,175.	1,035.	ppb	0.63	200000.	
43 Ca	13,560.	2,712.	ppb	1.50	200000.	
44 Ca	12,660.	2,532.	ppb	1.33	200000.	
51 V	171.45	34.29	ppb	0.88	1000.	
52 Cr	180.3	36.06	ppb	1.61	1000.	
53 Cr	228.2	45.64	ppb	1.48	1000.	
55 Mn	3,859.5	771.9	ppb	1.54	1000.	
56 Fe	336,800.	67,360.	ppb	1.20	200000.	
57 Fe	319,950.	63,990.	ppb	0.93	100000.	
59 Co	151.5	30.3	ppb	2.66	1000.	
60 Ni	274.65	54.93	ppb	1.02	500.	
63 Cu	460.35	92.07	ppb	2.04	1000.	
65 Cu	458.85	91.77	ppb	1.48	500.	
66 Zn	632.	126.4	ppb	0.85	500.	
68 Zn	622.5	124.5	ppb	2.85	1000.	
75 As	87.6	17.52	ppb	1.34	1000.	
82 Se	4.492	0.8984	ppb	10.37	500.	
88 Sr	162.8	32.56	ppb	0.91	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.82	1.764	ppb	3.42	1000.	
107 Ag	0.4317	0.0863	ppb	13.74	250.	
109 Ag	0.3941	0.0788	ppb	2.02	100.	
111 Cd	1.2035	0.2407	ppb	7.22	500.	
114 Cd	1.332	0.2664	ppb	6.67	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	33.195	6.639	ppb	1.24	500.	
120 Sn	32.885	6.577	ppb	0.71	1000.	
121 Sb	2.1045	0.4209	ppb	2.98	1000.	
123 Sb	2.0865	0.4173	ppb	5.34	1000.	
135 Ba	229.6	45.92	ppb	1.69	1000.	
137 Ba	231.15	46.23	ppb	1.05	#VALUE!	
182 W	1.126	0.2252	ppb ---		#VALUE!	
203 Tl	0.546	0.1092	ppb	11.70	1000.	
205 Tl	0.5505	0.1101	ppb	6.86	#VALUE!	
208 Pb	164.05	32.81	ppb	0.64	1000.	
232 Th	63.1	12.62	ppb	0.30	1000.	
238 U	9.455	1.891	ppb	1.92	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3583358.30	0.90	3486896.50	102.8	69.5 - 130	
45 Sc	2174799.80	0.58	2074112.50	104.9	69.5 - 130	
72 Ge	464931.22	1.82	436809.81	106.4	69.5 - 130	
159 Tb	4796918.50	0.78	4429938.50	108.3	69.5 - 130	
209 Bi	2947240.30	0.44	2848036.80	103.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000153

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\032SMPL.D\032SMPL.D#
Date Acquired: Dec 2 2013 05:13 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-002
Misc Info: DILUTION 1.6/8
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.187	0.6374	ppb	2.01	100.	
11 B	7.56	1.512	ppb	2.59	1000.	
23 Na	227.4	45.48	ppb	3.65	200000.	
25 Mg	35,975.	7,195.	ppb	3.58	200000.	
27 Al	106,700.	21,340.	ppb	6.52	200000.	
28 Si	10,000.	2,000.	ppb	5.59	#VALUE!	
29 Si	8,180.	1,636.	ppb	7.00	10000.	
39 K	3,605.5	721.1	ppb	4.62	200000.	
43 Ca	5,810.	1,162.	ppb	4.12	200000.	
44 Ca	5,210.	1,042.	ppb	1.54	200000.	
51 V	130.65	26.13	ppb	1.44	1000.	
52 Cr	132.55	26.51	ppb	0.80	1000.	
53 Cr	180.45	36.09	ppb	2.86	1000.	
55 Mn	2,811.	562.2	ppb	0.86	1000.	
56 Fe	222,550.	44,510.	ppb	1.01	200000.	
57 Fe	213,400.	42,680.	ppb	2.56	100000.	
59 Co	97.1	19.42	ppb	1.06	1000.	
60 Ni	182.7	36.54	ppb	1.44	500.	
63 Cu	175.7	35.14	ppb	0.74	1000.	
65 Cu	178.35	35.67	ppb	0.49	500.	
66 Zn	387.5	77.5	ppb	0.70	500.	
68 Zn	382.	76.4	ppb	0.59	1000.	
75 As	53.95	10.79	ppb	1.22	1000.	
82 Se	2.008	0.4016	ppb	66.68	500.	
88 Sr	63.25	12.65	ppb	1.62	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.9935	0.9987	ppb	2.57	1000.	
107 Ag	0.3656	0.0731	ppb	8.77	250.	
109 Ag	0.3649	0.073	ppb	17.91	100.	
111 Cd	1.042	0.2084	ppb	9.62	500.	
114 Cd	1.0685	0.2137	ppb	5.36	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	28.9	5.78	ppb	0.97	500.	
120 Sn	28.93	5.786	ppb	1.30	1000.	
121 Sb	0.984	0.1968	ppb	11.70	1000.	
123 Sb	1.0775	0.2155	ppb	7.92	1000.	
135 Ba	132.4	26.48	ppb	0.29	1000.	
137 Ba	132.9	26.58	ppb	2.04	#VALUE!	
182 W	0.6515	0.1303	ppb ---		#VALUE!	
203 Tl	0.3829	0.0766	ppb	3.33	1000.	
205 Tl	0.3475	0.0695	ppb	1.58	#VALUE!	
208 Pb	112.35	22.47	ppb	0.18	1000.	
232 Th	56.	11.2	ppb	0.34	1000.	
238 U	7.285	1.457	ppb	1.24	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3613152.00	4.61	3486896.50	103.6	69.5 - 130	
45 Sc	2156638.80	4.42	2074112.50	104.0	69.5 - 130	
72 Ge	461962.69	2.04	436809.81	105.8	69.5 - 130	
159 Tb	4809166.00	0.21	4429938.50	108.6	69.5 - 130	
209 Bi	2996860.30	1.25	2848036.80	105.2	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000154

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\033SMPL.D\033SMPL.D#
Date Acquired: Dec 2 2013 05:16 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-003
Misc Info: DILUTION 1.6/8
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	7.905	1.581	ppb	1.24	100.	
11 B	10.61	2.122	ppb	1.98	1000.	
23 Na	401.1	80.22	ppb	2.86	200000.	
25 Mg	50,900.	10,180.	ppb	1.80	200000.	
27 Al	188,900.	37,780.	ppb	1.74	200000.	
28 Si	12,200.	2,440.	ppb	1.60	#VALUE!	
29 Si	9,380.	1,876.	ppb	3.47	10000.	
39 K	4,531.	906.2	ppb	1.12	200000.	
43 Ca	13,150.	2,630.	ppb	0.70	200000.	
44 Ca	12,290.	2,458.	ppb	0.28	200000.	
51 V	254.85	50.97	ppb	1.76	1000.	
52 Cr	247.6	49.52	ppb	1.58	1000.	
53 Cr	290.8	58.16	ppb	0.83	1000.	
55 Mn	5,600.	1,120.	ppb	1.21	1000.	>LDR
56 Fe	425,050.	85,010.	ppb	0.63	200000.	
57 Fe	405,800.	81,160.	ppb	1.36	100000.	
59 Co	169.8	33.96	ppb	1.23	1000.	
60 Ni	315.95	63.19	ppb	1.00	500.	
63 Cu	266.25	53.25	ppb	1.44	1000.	
65 Cu	265.75	53.15	ppb	0.97	500.	
66 Zn	731.	146.2	ppb	1.31	500.	
68 Zn	726.5	145.3	ppb	2.27	1000.	
75 As	113.7	22.74	ppb	1.31	1000.	
82 Se	6.15	1.23	ppb	10.37	500.	
88 Sr	126.	25.2	ppb	2.26	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.055	2.211	ppb	2.85	1000.	
107 Ag	0.61	0.122	ppb	6.39	250.	
109 Ag	0.5915	0.1183	ppb	5.57	100.	
111 Cd	0.696	0.1392	ppb	9.25	500.	
114 Cd	0.885	0.177	ppb	4.30	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	30.86	6.172	ppb	0.72	500.	
120 Sn	30.43	6.086	ppb	2.06	1000.	
121 Sb	1.2255	0.2451	ppb	2.35	1000.	
123 Sb	1.151	0.2302	ppb	8.59	1000.	
135 Ba	216.	43.2	ppb	0.15	1000.	
137 Ba	219.45	43.89	ppb	2.40	#VALUE!	
182 W	0.791	0.1582	ppb ---		#VALUE!	
203 Tl	0.5555	0.1111	ppb	9.43	1000.	
205 Tl	0.6495	0.1299	ppb	3.09	#VALUE!	
208 Pb	183.	36.6	ppb	0.72	1000.	
232 Th	75.5	15.1	ppb	0.85	1000.	
238 U	11.965	2.393	ppb	1.57	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3311439.80	2.92	3486896.50	95.0	69.5 - 130	
45 Sc	2085429.10	1.86	2074112.50	100.5	69.5 - 130	
72 Ge	447379.50	1.55	436809.81	102.4	69.5 - 130	
159 Tb	4648602.50	0.95	4429938.50	104.9	69.5 - 130	
209 Bi	2874014.50	0.95	2848036.80	100.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

1 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Fail
ISTD: Pass

Katahdin Analytical Services 4000155

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\036SMPL.D\036SMPL.D#
Date Acquired: Dec 2 2013 05:26 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-004
Misc Info: DILUTION 1.6/8
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.705	1.141	ppb	3.36	100.	
11 B	8.79	1.758	ppb	12.95	1000.	
23 Na	500.5	100.1	ppb	3.46	200000.	
25 Mg	41,715.	8,343.	ppb	1.84	200000.	
27 Al	136,450.	27,290.	ppb	1.31	200000.	
28 Si	10,145.	2,029.	ppb	2.54	#VALUE!	
29 Si	8,855.	1,771.	ppb	4.41	10000.	
39 K	5,005.	1,001.	ppb	3.09	200000.	
43 Ca	14,100.	2,820.	ppb	1.93	200000.	
44 Ca	13,675.	2,735.	ppb	1.16	200000.	
51 V	177.15	35.43	ppb	0.87	1000.	
52 Cr	174.95	34.99	ppb	1.56	1000.	
53 Cr	217.7	43.54	ppb	1.80	1000.	
55 Mn	3,671.	734.2	ppb	0.38	1000.	
56 Fe	295,100.	59,020.	ppb	0.34	200000.	
57 Fe	281,200.	56,240.	ppb	1.19	100000.	
59 Co	117.55	23.51	ppb	0.36	1000.	
60 Ni	223.6	44.72	ppb	0.38	500.	
63 Cu	399.95	79.99	ppb	1.48	1000.	
65 Cu	400.75	80.15	ppb	0.20	500.	
66 Zn	656.5	131.3	ppb	1.01	500.	
68 Zn	648.5	129.7	ppb	1.75	1000.	
75 As	76.3	15.26	ppb	0.47	1000.	
82 Se	3.501	0.7002	ppb	27.02	500.	
88 Sr	162.75	32.55	ppb	0.20	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.31	1.662	ppb	2.12	1000.	
107 Ag	0.5805	0.1161	ppb	4.93	250.	
109 Ag	0.607	0.1214	ppb	8.15	100.	
111 Cd	2.231	0.4462	ppb	7.74	500.	
114 Cd	2.2175	0.4435	ppb	3.11	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	32.485	6.497	ppb	0.66	500.	
120 Sn	32.08	6.416	ppb	2.25	1000.	
121 Sb	2.322	0.4644	ppb	2.44	1000.	
123 Sb	2.1375	0.4275	ppb	1.91	1000.	
135 Ba	278.45	55.69	ppb	2.55	1000.	
137 Ba	280.9	56.18	ppb	1.28	#VALUE!	
182 W	4.1955	0.8391	ppb ---		#VALUE!	
203 Tl	0.4962	0.0992	ppb	4.15	1000.	
205 Tl	0.4718	0.0944	ppb	4.27	#VALUE!	
208 Pb	215.05	43.01	ppb	0.69	1000.	
232 Th	73.85	14.77	ppb	0.94	1000.	
238 U	12.955	2.591	ppb	1.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3363971.50	2.04	3486896.50	96.5	69.5 - 130	
45 Sc	2015590.00	1.50	2074112.50	97.2	69.5 - 130	
72 Ge	434036.41	0.79	436809.81	99.4	69.5 - 130	
159 Tb	4604217.50	1.00	4429938.50	103.9	69.5 - 130	
209 Bi	2890790.30	0.12	2848036.80	101.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000158

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\041SMPL.D\041SMPL.D#
Date Acquired: Dec 2 2013 05:43 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-005
Misc Info: DILUTION 1.6/8
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.247	0.6494	ppb	3.34	100.	
11 B	9.59	1.918	ppb	14.68	1000.	
23 Na	232.55	46.51	ppb	4.84	200000.	
25 Mg	48,550.	9,710.	ppb	3.00	200000.	
27 Al	135,800.	27,160.	ppb	2.47	200000.	
28 Si	7,230.	1,446.	ppb	3.58	#VALUE!	
29 Si	7,945.	1,589.	ppb	5.25	10000.	
39 K	3,147.5	629.5	ppb	2.34	200000.	
43 Ca	11,305.	2,261.	ppb	2.77	200000.	
44 Ca	10,425.	2,085.	ppb	1.87	200000.	
51 V	162.45	32.49	ppb	2.63	1000.	
52 Cr	182.15	36.43	ppb	2.46	1000.	
53 Cr	230.8	46.16	ppb	1.57	1000.	
55 Mn	3,152.	630.4	ppb	0.96	1000.	
56 Fe	287,550.	57,510.	ppb	0.93	200000.	
57 Fe	274,150.	54,830.	ppb	1.74	100000.	
59 Co	113.5	22.7	ppb	1.23	1000.	
60 Ni	239.35	47.87	ppb	1.20	500.	
63 Cu	167.	33.4	ppb	0.96	1000.	
65 Cu	169.15	33.83	ppb	1.28	500.	
66 Zn	540.	108.	ppb	1.85	500.	
68 Zn	529.	105.8	ppb	1.58	1000.	
75 As	51.95	10.39	ppb	2.20	1000.	
82 Se	2.7	0.54	ppb	13.54	500.	
88 Sr	91.6	18.32	ppb	1.49	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.085	1.217	ppb	5.35	1000.	
107 Ag	0.33	0.066	ppb	19.23	250.	
109 Ag	0.2659	0.0532	ppb	13.24	100.	
111 Cd	1.404	0.2808	ppb	22.89	500.	
114 Cd	0.975	0.195	ppb	4.63	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	28.91	5.782	ppb	2.35	500.	
120 Sn	29.11	5.822	ppb	1.54	1000.	
121 Sb	0.7865	0.1573	ppb	10.52	1000.	
123 Sb	0.7195	0.1439	ppb	13.11	1000.	
135 Ba	129.3	25.86	ppb	1.07	1000.	
137 Ba	130.45	26.09	ppb	2.63	#VALUE!	
182 W	0.675	0.135	ppb ---		#VALUE!	
203 Tl	0.2613	0.0523	ppb	9.14	1000.	
205 Tl	0.2674	0.0535	ppb	5.52	#VALUE!	
208 Pb	121.95	24.39	ppb	1.49	1000.	
232 Th	53.95	10.79	ppb	2.02	1000.	
238 U	6.63	1.326	ppb	2.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3386144.00	1.81	3486896.50	97.1	69.5 - 130	
45 Sc	1982482.30	2.62	2074112.50	95.6	69.5 - 130	
72 Ge	423503.84	1.02	436809.81	97.0	69.5 - 130	
159 Tb	4513886.50	0.60	4429938.50	101.9	69.5 - 130	
209 Bi	2856622.80	1.50	2848036.80	100.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000163

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\042SMPL.D\042SMPL.D#
Date Acquired: Dec 2 2013 05:46 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-006
Misc Info: DILUTION 1.6/8
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.984	0.7968	ppb	2.34	100.	
11 B	7.495	1.499	ppb	4.30	1000.	
23 Na	250.55	50.11	ppb	3.59	200000.	
25 Mg	52,200.	10,440.	ppb	1.13	200000.	
27 Al	149,950.	29,990.	ppb	2.95	200000.	
28 Si	10,070.	2,014.	ppb	3.80	#VALUE!	
29 Si	9,445.	1,889.	ppb	3.21	10000.	
39 K	4,093.5	818.7	ppb	3.18	200000.	
43 Ca	9,520.	1,904.	ppb	2.94	200000.	
44 Ca	8,675.	1,735.	ppb	0.84	200000.	
51 V	184.75	36.95	ppb	0.12	1000.	
52 Cr	194.8	38.96	ppb	0.80	1000.	
53 Cr	235.3	47.06	ppb	3.33	1000.	
55 Mn	3,514.5	702.9	ppb	1.68	1000.	
56 Fe	310,200.	62,040.	ppb	1.78	200000.	
57 Fe	299,350.	59,870.	ppb	2.08	100000.	
59 Co	131.25	26.25	ppb	1.07	1000.	
60 Ni	245.95	49.19	ppb	0.42	500.	
63 Cu	209.75	41.95	ppb	2.09	1000.	
65 Cu	211.65	42.33	ppb	1.52	500.	
66 Zn	682.5	136.5	ppb	0.80	500.	
68 Zn	670.5	134.1	ppb	2.38	1000.	
75 As	78.2	15.64	ppb	3.64	1000.	
82 Se	2.9355	0.5871	ppb	34.70	500.	
88 Sr	139.25	27.85	ppb	1.28	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.34	1.268	ppb	2.68	1000.	
107 Ag	0.5205	0.1041	ppb	14.16	250.	
109 Ag	0.4449	0.089	ppb	5.85	100.	
111 Cd	1.7275	0.3455	ppb	10.53	500.	
114 Cd	1.446	0.2892	ppb	4.47	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	37.67	7.534	ppb	1.87	500.	
120 Sn	37.725	7.545	ppb	2.55	1000.	
121 Sb	1.622	0.3244	ppb	4.14	1000.	
123 Sb	1.701	0.3402	ppb	3.54	1000.	
135 Ba	182.1	36.42	ppb	2.00	1000.	
137 Ba	186.4	37.28	ppb	0.64	#VALUE!	
182 W	0.74	0.148	ppb ---		#VALUE!	
203 Tl	0.427	0.0854	ppb	3.98	1000.	
205 Tl	0.4049	0.081	ppb	2.77	#VALUE!	
208 Pb	258.35	51.67	ppb	0.39	1000.	
232 Th	68.3	13.66	ppb	1.51	1000.	
238 U	9.595	1.919	ppb	0.88	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3214838.50	2.70	3486896.50	92.2	69.5 - 130	
45 Sc	1914559.10	0.97	2074112.50	92.3	69.5 - 130	
72 Ge	411121.03	1.68	436809.81	94.1	69.5 - 130	
159 Tb	4457576.00	1.60	4429938.50	100.6	69.5 - 130	
209 Bi	2827651.30	0.80	2848036.80	99.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000164

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\043SMPL.D\043SMPL.D#
Date Acquired: Dec 2 2013 05:50 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-007
Misc Info: DILUTION 1.6/8
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.461	0.6922	ppb	6.94	100.	
11 B	7.16	1.432	ppb	18.03	1000.	
23 Na	391.25	78.25	ppb	0.95	200000.	
25 Mg	36,355.	7,271.	ppb	2.04	200000.	
27 Al	106,200.	21,240.	ppb	3.61	200000.	
28 Si	8,050.	1,610.	ppb	3.76	#VALUE!	
29 Si	9,225.	1,845.	ppb	4.18	10000.	
39 K	4,061.5	812.3	ppb	4.08	200000.	
43 Ca	16,170.	3,234.	ppb	1.15	200000.	
44 Ca	15,535.	3,107.	ppb	0.44	200000.	
51 V	142.2	28.44	ppb	2.81	1000.	
52 Cr	139.8	27.96	ppb	1.40	1000.	
53 Cr	181.05	36.21	ppb	0.76	1000.	
55 Mn	4,110.	822.	ppb	1.77	1000.	
56 Fe	253,050.	50,610.	ppb	2.02	200000.	
57 Fe	246,100.	49,220.	ppb	1.74	100000.	
59 Co	108.	21.6	ppb	2.64	1000.	
60 Ni	189.55	37.91	ppb	0.80	500.	
63 Cu	253.1	50.62	ppb	1.19	1000.	
65 Cu	259.55	51.91	ppb	2.39	500.	
66 Zn	534.5	106.9	ppb	1.42	500.	
68 Zn	515.5	103.1	ppb	1.94	1000.	
75 As	79.55	15.91	ppb	0.83	1000.	
82 Se	3.195	0.639	ppb	39.20	500.	
88 Sr	165.25	33.05	ppb	1.79	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.525	1.705	ppb	4.47	1000.	
107 Ag	0.4054	0.0811	ppb	11.54	250.	
109 Ag	0.4201	0.084	ppb	8.67	100.	
111 Cd	2.039	0.4078	ppb	19.02	500.	
114 Cd	1.517	0.3034	ppb	12.11	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	30.55	6.11	ppb	3.77	500.	
120 Sn	30.525	6.105	ppb	2.24	1000.	
121 Sb	3.056	0.6112	ppb	4.41	1000.	
123 Sb	3.1705	0.6341	ppb	0.48	1000.	
135 Ba	198.05	39.61	ppb	2.28	1000.	
137 Ba	199.9	39.98	ppb	1.77	#VALUE!	
182 W	0.818	0.1636	ppb ---		#VALUE!	
203 Tl	0.4176	0.0835	ppb	8.05	1000.	
205 Tl	0.3933	0.0787	ppb	16.89	#VALUE!	
208 Pb	217.55	43.51	ppb	2.60	1000.	
232 Th	50.	10.	ppb	3.31	1000.	
238 U	7.95	1.59	ppb	2.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3125138.80	3.34	3486896.50	89.6	69.5 - 130	
45 Sc	1838673.30	1.02	2074112.50	88.6	69.5 - 130	
72 Ge	398547.13	1.70	436809.81	91.2	69.5 - 130	
159 Tb	4438738.00	2.03	4429938.50	100.2	69.5 - 130	
209 Bi	2820427.80	2.18	2848036.80	99.0	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000165

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\044SMPL.D\044SMPL.D#
Date Acquired: Dec 2 2013 05:53 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-008
Misc Info: DILUTION 1.6/8
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.357	0.6714	ppb	2.10	100.	
11 B	5.815	1.163	ppb	5.32	1000.	
23 Na	283.2	56.64	ppb	3.63	200000.	
25 Mg	45,260.	9,052.	ppb	1.51	200000.	
27 Al	122,850.	24,570.	ppb	1.13	200000.	
28 Si	9,005.	1,801.	ppb	0.03	#VALUE!	
29 Si	9,205.	1,841.	ppb	1.38	10000.	
39 K	3,721.	744.2	ppb	2.84	200000.	
43 Ca	12,590.	2,518.	ppb	1.48	200000.	
44 Ca	11,920.	2,384.	ppb	1.15	200000.	
51 V	160.45	32.09	ppb	2.12	1000.	
52 Cr	183.4	36.68	ppb	1.04	1000.	
53 Cr	227.35	45.47	ppb	2.23	1000.	
55 Mn	3,419.	683.8	ppb	2.24	1000.	
56 Fe	256,200.	51,240.	ppb	0.58	200000.	
57 Fe	246,700.	49,340.	ppb	1.08	100000.	
59 Co	103.6	20.72	ppb	0.77	1000.	
60 Ni	214.5	42.9	ppb	2.78	500.	
63 Cu	169.2	33.84	ppb	1.66	1000.	
65 Cu	168.3	33.66	ppb	1.39	500.	
66 Zn	541.5	108.3	ppb	1.82	500.	
68 Zn	534.	106.8	ppb	1.10	1000.	
75 As	53.05	10.61	ppb	2.88	1000.	
82 Se	2.6435	0.5287	ppb	6.43	500.	
88 Sr	99.35	19.87	ppb	3.09	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	10.7	2.14	ppb	2.84	1000.	
107 Ag	0.3564	0.0713	ppb	7.84	250.	
109 Ag	0.3216	0.0643	ppb	3.75	100.	
111 Cd	2.0005	0.4001	ppb	6.72	500.	
114 Cd	1.7355	0.3471	ppb	4.85	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	29.595	5.919	ppb	1.85	500.	
120 Sn	29.165	5.833	ppb	0.65	1000.	
121 Sb	1.188	0.2376	ppb	8.54	1000.	
123 Sb	1.14	0.228	ppb	7.78	1000.	
135 Ba	147.35	29.47	ppb	0.93	1000.	
137 Ba	148.9	29.78	ppb	0.96	#VALUE!	
182 W	0.6125	0.1225	ppb ---		#VALUE!	
203 Tl	0.2859	0.0572	ppb	14.68	1000.	
205 Tl	0.2764	0.0553	ppb	4.60	#VALUE!	
208 Pb	159.5	31.9	ppb	0.60	1000.	
232 Th	56.65	11.33	ppb	0.47	1000.	
238 U	7.14	1.428	ppb	1.09	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3138725.30	1.92	3486896.50	90.0	69.5 - 130	
45 Sc	1853384.10	0.66	2074112.50	89.4	69.5 - 130	
72 Ge	400282.84	1.49	436809.81	91.6	69.5 - 130	
159 Tb	4405016.50	0.05	4429938.50	99.4	69.5 - 130	
209 Bi	2809787.30	0.71	2848036.80	98.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000166

Sample QC Report

Data File:	C:\ICPCHEM\1\DATA\JGL02A.B\045SMPL.D\045SMPL.D#
Date Acquired:	Dec 2 2013 05:57 pm
Acq. Method:	K2008ESW.M
Operator:	EAM
Sample Name:	SG9002-009
Misc Info:	DILUTION 1.6/8
Vial Number:	2208
Current Method:	C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File:	C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update:	Dec 02 2013 04:23 pm
Sample Type:	Sample
Dilution Factor:	5.00
Autodil Factor:	Undiluted
Final Dil Factor:	5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.844	0.7688	ppb	1.05	100.	
11 B	6.5	1.3	ppb	2.61	1000.	
23 Na	307.95	61.59	ppb	2.54	200000.	
25 Mg	47,430.	9,486.	ppb	2.14	200000.	
27 Al	130,350.	26,070.	ppb	3.57	200000.	
28 Si	8,760.	1,752.	ppb	1.92	#VALUE!	
29 Si	9,000.	1,800.	ppb	0.81	10000.	
39 K	4,460.	892.	ppb	3.23	200000.	
43 Ca	12,925.	2,585.	ppb	1.44	200000.	
44 Ca	12,090.	2,418.	ppb	0.35	200000.	
51 V	165.75	33.15	ppb	1.94	1000.	
52 Cr	163.85	32.77	ppb	1.09	1000.	
53 Cr	204.7	40.94	ppb	0.46	1000.	
55 Mn	3,689.	737.8	ppb	2.46	1000.	
56 Fe	280,100.	56,020.	ppb	0.68	200000.	
57 Fe	268,800.	53,760.	ppb	1.74	100000.	
59 Co	119.7	23.94	ppb	1.89	1000.	
60 Ni	223.1	44.62	ppb	1.67	500.	
63 Cu	225.65	45.13	ppb	0.97	1000.	
65 Cu	228.	45.6	ppb	0.55	500.	
66 Zn	609.5	121.9	ppb	1.05	500.	
68 Zn	603.5	120.7	ppb	0.69	1000.	
75 As	67.05	13.41	ppb	1.63	1000.	
82 Se	2.8345	0.5669	ppb	21.49	500.	
88 Sr	130.6	26.12	ppb	1.80	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.83	1.166	ppb	0.91	1000.	
107 Ag	0.4622	0.0924	ppb	12.88	250.	
109 Ag	0.4123	0.0825	ppb	6.30	100.	
111 Cd	2.116	0.4232	ppb	10.16	500.	
114 Cd	1.754	0.3508	ppb	7.78	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	29.97	5.994	ppb	0.53	500.	
120 Sn	30.555	6.111	ppb	0.36	1000.	
121 Sb	1.4795	0.2959	ppb	3.62	1000.	
123 Sb	1.491	0.2982	ppb	3.96	1000.	
135 Ba	209.45	41.89	ppb	2.07	1000.	
137 Ba	212.55	42.51	ppb	1.13	#VALUE!	
182 W	0.604	0.1208	ppb ---		#VALUE!	
203 Tl	0.4319	0.0864	ppb	8.83	1000.	
205 Tl	0.4852	0.097	ppb	1.34	#VALUE!	
208 Pb	187.5	37.5	ppb	0.79	1000.	
232 Th	63.4	12.68	ppb	1.29	1000.	
238 U	8.77	1.754	ppb	1.31	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2984101.50	0.28	3486896.50	85.6	69.5 - 130	
45 Sc	1817317.50	0.31	2074112.50	87.6	69.5 - 130	
72 Ge	388207.09	2.49	436809.81	88.9	69.5 - 130	
159 Tb	4347532.00	1.56	4429938.50	98.1	69.5 - 130	
209 Bi	2771238.30	1.36	2848036.80	97.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed

0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass

ISTD: Pass

Katahdin Analytical Services 4000167

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\048SMPL.D\048SMPL.D#
Date Acquired: Dec 2 2013 06:07 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-010
Misc Info: DILUTION 1.6/8
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.513	0.7026	ppb	1.99	100.	
11 B	6.44	1.288	ppb	10.34	1000.	
23 Na	271.75	54.35	ppb	4.99	200000.	
25 Mg	45,885.	9,177.	ppb	2.37	200000.	
27 Al	140,100.	28,020.	ppb	2.24	200000.	
28 Si	8,560.	1,712.	ppb	2.55	#VALUE!	
29 Si	8,975.	1,795.	ppb	6.90	10000.	
39 K	5,220.	1,044.	ppb	2.23	200000.	
43 Ca	14,515.	2,903.	ppb	0.43	200000.	
44 Ca	13,365.	2,673.	ppb	0.59	200000.	
51 V	177.7	35.54	ppb	2.37	1000.	
52 Cr	171.9	34.38	ppb	1.99	1000.	
53 Cr	213.5	42.7	ppb	2.71	1000.	
55 Mn	3,124.	624.8	ppb	2.54	1000.	
56 Fe	308,550.	61,710.	ppb	2.07	200000.	
57 Fe	296,750.	59,350.	ppb	1.78	100000.	
59 Co	116.4	23.28	ppb	2.89	1000.	
60 Ni	210.85	42.17	ppb	2.52	500.	
63 Cu	182.9	36.58	ppb	1.80	1000.	
65 Cu	183.55	36.71	ppb	2.55	500.	
66 Zn	727.	145.4	ppb	1.36	500.	
68 Zn	705.	141.	ppb	2.92	1000.	
75 As	70.	14.	ppb	3.38	1000.	
82 Se	3.336	0.6672	ppb	14.78	500.	
88 Sr	129.1	25.82	ppb	2.54	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.	1.2	ppb	5.04	1000.	
107 Ag	0.373	0.0746	ppb	12.02	250.	
109 Ag	0.3469	0.0694	ppb	4.79	100.	
111 Cd	1.4535	0.2907	ppb	21.83	500.	
114 Cd	1.3085	0.2617	ppb	5.18	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	30.555	6.111	ppb	2.49	500.	
120 Sn	30.39	6.078	ppb	1.52	1000.	
121 Sb	1.7235	0.3447	ppb	9.93	1000.	
123 Sb	1.758	0.3516	ppb	8.04	1000.	
135 Ba	293.6	58.72	ppb	2.28	1000.	
137 Ba	297.35	59.47	ppb	1.97	#VALUE!	
182 W	0.918	0.1836	ppb ---		#VALUE!	
203 Tl	0.3658	0.0732	ppb	8.15	1000.	
205 Tl	0.444	0.0888	ppb	4.97	#VALUE!	
208 Pb	286.8	57.36	ppb	0.75	1000.	
232 Th	57.45	11.49	ppb	0.50	1000.	
238 U	8.885	1.777	ppb	0.13	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3028249.00	0.33	3486896.50	86.8	69.5 - 130	
45 Sc	1816971.90	2.83	2074112.50	87.6	69.5 - 130	
72 Ge	383434.81	1.49	436809.81	87.8	69.5 - 130	
159 Tb	4273268.50	0.96	4429938.50	96.5	69.5 - 130	
209 Bi	2712795.30	0.67	2848036.80	95.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000170

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\049SMPL.D\049SMPL.D#
Date Acquired: Dec 2 2013 06:10 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-011
Misc Info: DILUTION 1.6/8
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.3065	0.6613	ppb	2.60	100.	
11 B	5.205	1.041	ppb	15.23	1000.	
23 Na	188.65	37.73	ppb	3.84	200000.	
25 Mg	48,050.	9,610.	ppb	3.02	200000.	
27 Al	134,700.	26,940.	ppb	1.39	200000.	
28 Si	8,175.	1,635.	ppb	9.09	#VALUE!	
29 Si	9,250.	1,850.	ppb	3.16	10000.	
39 K	2,810.	562.	ppb	3.01	200000.	
43 Ca	8,800.	1,760.	ppb	5.72	200000.	
44 Ca	8,515.	1,703.	ppb	1.87	200000.	
51 V	159.85	31.97	ppb	1.72	1000.	
52 Cr	151.85	30.37	ppb	1.33	1000.	
53 Cr	189.35	37.87	ppb	2.93	1000.	
55 Mn	3,099.	619.8	ppb	1.59	1000.	
56 Fe	281,650.	56,330.	ppb	1.17	200000.	
57 Fe	270,250.	54,050.	ppb	2.14	100000.	
59 Co	98.75	19.75	ppb	2.77	1000.	
60 Ni	212.45	42.49	ppb	1.91	500.	
63 Cu	125.	25.	ppb	1.82	1000.	
65 Cu	124.75	24.95	ppb	2.95	500.	
66 Zn	508.	101.6	ppb	0.39	500.	
68 Zn	499.8	99.96	ppb	2.06	1000.	
75 As	55.8	11.16	ppb	3.39	1000.	
82 Se	2.6475	0.5295	ppb	17.89	500.	
88 Sr	75.4	15.08	ppb	2.87	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.8945	0.7789	ppb	7.01	1000.	
107 Ag	0.3194	0.0639	ppb	9.73	250.	
109 Ag	0.3088	0.0618	ppb	2.35	100.	
111 Cd	1.872	0.3744	ppb	7.82	500.	
114 Cd	1.61	0.322	ppb	2.68	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	27.505	5.501	ppb	1.18	500.	
120 Sn	27.285	5.457	ppb	1.93	1000.	
121 Sb	0.662	0.1324	ppb	17.05	1000.	
123 Sb	0.7185	0.1437	ppb	13.12	1000.	
135 Ba	123.	24.6	ppb	2.17	1000.	
137 Ba	125.6	25.12	ppb	3.02	#VALUE!	
182 W	0.642	0.1284	ppb ---		#VALUE!	
203 Tl	0.2881	0.0576	ppb	6.72	1000.	
205 Tl	0.316	0.0632	ppb	8.00	#VALUE!	
208 Pb	125.4	25.08	ppb	1.60	1000.	
232 Th	62.	12.4	ppb	1.21	1000.	
238 U	6.55	1.31	ppb	1.91	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2942893.50	1.73	3486896.50	84.4	69.5 - 130	
45 Sc	1727578.40	1.20	2074112.50	83.3	69.5 - 130	
72 Ge	377774.59	1.58	436809.81	86.5	69.5 - 130	
159 Tb	4309571.50	1.78	4429938.50	97.3	69.5 - 130	
209 Bi	2764696.00	1.14	2848036.80	97.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000171

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\050SMPL.D\050SMPL.D#
Date Acquired: Dec 2 2013 06:14 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-013
Misc Info: DILUTION 1.6/8
Vial Number: 2211
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.6565	0.9313	ppb	1.01	100.	
11 B	8.35	1.67	ppb	9.37	1000.	
23 Na	426.8	85.36	ppb	0.98	200000.	
25 Mg	49,045.	9,809.	ppb	1.63	200000.	
27 Al	143,150.	28,630.	ppb	2.00	200000.	
28 Si	10,835.	2,167.	ppb	2.56	#VALUE!	
29 Si	10,410.	2,082.	ppb	1.03	10000.	
39 K	5,420.	1,084.	ppb	2.41	200000.	
43 Ca	13,790.	2,758.	ppb	4.71	200000.	
44 Ca	13,045.	2,609.	ppb	1.36	200000.	
51 V	191.5	38.3	ppb	1.58	1000.	
52 Cr	182.4	36.48	ppb	1.42	1000.	
53 Cr	223.25	44.65	ppb	4.15	1000.	
55 Mn	4,546.	909.2	ppb	0.38	1000.	
56 Fe	303,000.	60,600.	ppb	0.83	200000.	
57 Fe	294,150.	58,830.	ppb	0.68	100000.	
59 Co	131.	26.2	ppb	1.45	1000.	
60 Ni	237.75	47.55	ppb	1.03	500.	
63 Cu	253.7	50.74	ppb	0.55	1000.	
65 Cu	254.1	50.82	ppb	0.53	500.	
66 Zn	724.	144.8	ppb	1.31	500.	
68 Zn	715.5	143.1	ppb	1.10	1000.	
75 As	82.8	16.56	ppb	1.22	1000.	
82 Se	3.721	0.7442	ppb	37.19	500.	
88 Sr	145.35	29.07	ppb	1.03	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.605	1.721	ppb	2.27	1000.	
107 Ag	0.584	0.1168	ppb	14.45	250.	
109 Ag	0.6025	0.1205	ppb	3.48	100.	
111 Cd	2.643	0.5286	ppb	5.25	500.	
114 Cd	2.1595	0.4319	ppb	3.09	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.37	9.474	ppb	0.50	500.	
120 Sn	47.395	9.479	ppb	2.10	1000.	
121 Sb	2.3895	0.4779	ppb	3.54	1000.	
123 Sb	2.276	0.4552	ppb	0.40	1000.	
135 Ba	265.45	53.09	ppb	1.61	1000.	
137 Ba	270.8	54.16	ppb	1.30	#VALUE!	
182 W	0.9345	0.1869	ppb ---		#VALUE!	
203 Tl	0.5965	0.1193	ppb	5.42	1000.	
205 Tl	0.5535	0.1107	ppb	3.22	#VALUE!	
208 Pb	341.85	68.37	ppb	0.22	1000.	
232 Th	61.6	12.32	ppb	0.42	1000.	
238 U	10.18	2.036	ppb	0.34	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3019481.00	1.54	3486896.50	86.6	69.5 - 130	
45 Sc	1795099.50	0.59	2074112.50	86.5	69.5 - 130	
72 Ge	384285.06	0.78	436809.81	88.0	69.5 - 130	
159 Tb	4291553.00	0.59	4429938.50	96.9	69.5 - 130	
209 Bi	2761044.30	0.46	2848036.80	96.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000172

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\051SMPL.D\051SMPL.D#
Date Acquired: Dec 2 2013 06:17 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-014
Misc Info: DILUTION 1.6/8
Vial Number: 2212
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.4375	0.6875	ppb	3.46	100.	
11 B	4.7015	0.9403	ppb	16.14	1000.	
23 Na	258.4	51.68	ppb	3.36	200000.	
25 Mg	47,990.	9,598.	ppb	3.24	200000.	
27 Al	138,650.	27,730.	ppb	2.36	200000.	
28 Si	9,680.	1,936.	ppb	2.66	#VALUE!	
29 Si	9,755.	1,951.	ppb	1.84	10000.	
39 K	3,525.5	705.1	ppb	0.33	200000.	
43 Ca	11,910.	2,382.	ppb	3.28	200000.	
44 Ca	11,205.	2,241.	ppb	0.64	200000.	
51 V	162.7	32.54	ppb	0.33	1000.	
52 Cr	178.25	35.65	ppb	0.41	1000.	
53 Cr	216.75	43.35	ppb	0.54	1000.	
55 Mn	3,242.	648.4	ppb	1.05	1000.	
56 Fe	294,200.	58,840.	ppb	0.52	200000.	
57 Fe	283,500.	56,700.	ppb	0.85	100000.	
59 Co	104.55	20.91	ppb	0.37	1000.	
60 Ni	226.25	45.25	ppb	0.25	500.	
63 Cu	167.85	33.57	ppb	0.82	1000.	
65 Cu	165.	33.	ppb	1.06	500.	
66 Zn	630.	126.	ppb	1.11	500.	
68 Zn	612.5	122.5	ppb	0.58	1000.	
75 As	59.65	11.93	ppb	1.07	1000.	
82 Se	1.7285	0.3457	ppb	19.92	500.	
88 Sr	101.1	20.22	ppb	1.17	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.9855	0.9971	ppb	7.46	1000.	
107 Ag	0.3168	0.0634	ppb	8.20	250.	
109 Ag	0.2959	0.0592	ppb	10.26	100.	
111 Cd	1.772	0.3544	ppb	8.51	500.	
114 Cd	1.197	0.2394	ppb	6.58	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	29.89	5.978	ppb	1.14	500.	
120 Sn	30.085	6.017	ppb	0.86	1000.	
121 Sb	0.922	0.1844	ppb	12.34	1000.	
123 Sb	1.1345	0.2269	ppb	7.88	1000.	
135 Ba	157.3	31.46	ppb	0.19	1000.	
137 Ba	156.25	31.25	ppb	1.43	#VALUE!	
182 W	0.582	0.1164	ppb ---		#VALUE!	
203 Tl	0.3391	0.0678	ppb	9.68	1000.	
205 Tl	0.3417	0.0683	ppb	2.86	#VALUE!	
208 Pb	172.2	34.44	ppb	0.63	1000.	
232 Th	64.6	12.92	ppb	1.29	1000.	
238 U	7.35	1.47	ppb	0.67	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3017678.50	1.53	3486896.50	86.5	69.5 - 130	
45 Sc	1794088.10	1.80	2074112.50	86.5	69.5 - 130	
72 Ge	384431.59	1.39	436809.81	88.0	69.5 - 130	
159 Tb	4261704.50	0.85	4429938.50	96.2	69.5 - 130	
209 Bi	2726006.50	0.49	2848036.80	95.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000173

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\052SMPL.D\052SMPL.D#
Date Acquired: Dec 2 2013 06:21 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-015
Misc Info: DILUTION 1.6/8
Vial Number: 2301
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.505	0.701	ppb	2.62	100.	
11 B	4.4195	0.8839	ppb	5.04	1000.	
23 Na	215.6	43.12	ppb	4.26	200000.	
25 Mg	42,650.	8,530.	ppb	4.38	200000.	
27 Al	117,700.	23,540.	ppb	2.57	200000.	
28 Si	10,185.	2,037.	ppb	1.41	#VALUE!	
29 Si	10,115.	2,023.	ppb	0.64	10000.	
39 K	4,042.	808.4	ppb	2.34	200000.	
43 Ca	7,925.	1,585.	ppb	7.10	200000.	
44 Ca	7,360.	1,472.	ppb	0.55	200000.	
51 V	159.6	31.92	ppb	1.41	1000.	
52 Cr	147.7	29.54	ppb	0.84	1000.	
53 Cr	183.1	36.62	ppb	2.51	1000.	
55 Mn	3,077.	615.4	ppb	2.13	1000.	
56 Fe	273,300.	54,660.	ppb	2.43	200000.	
57 Fe	259,650.	51,930.	ppb	2.84	100000.	
59 Co	102.55	20.51	ppb	1.77	1000.	
60 Ni	192.05	38.41	ppb	1.43	500.	
63 Cu	170.25	34.05	ppb	1.23	1000.	
65 Cu	172.45	34.49	ppb	0.98	500.	
66 Zn	438.9	87.78	ppb	1.75	500.	
68 Zn	433.9	86.78	ppb	1.45	1000.	
75 As	63.7	12.74	ppb	0.50	1000.	
82 Se	1.828	0.3656	ppb	58.67	500.	
88 Sr	82.4	16.48	ppb	1.13	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.609	0.9218	ppb	6.08	1000.	
107 Ag	0.2673	0.0535	ppb	5.56	250.	
109 Ag	0.2387	0.0477	ppb	24.30	100.	
111 Cd	1.736	0.3472	ppb	16.31	500.	
114 Cd	1.531	0.3062	ppb	8.50	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	27.86	5.572	ppb	0.72	500.	
120 Sn	28.565	5.713	ppb	2.35	1000.	
121 Sb	0.8835	0.1767	ppb	1.75	1000.	
123 Sb	0.927	0.1854	ppb	5.38	1000.	
135 Ba	129.15	25.83	ppb	1.87	1000.	
137 Ba	129.5	25.9	ppb	2.23	#VALUE!	
182 W	0.5905	0.1181	ppb ---		#VALUE!	
203 Tl	0.3141	0.0628	ppb	12.87	1000.	
205 Tl	0.3105	0.0621	ppb	7.90	#VALUE!	
208 Pb	134.75	26.95	ppb	1.77	1000.	
232 Th	67.	13.4	ppb	2.48	1000.	
238 U	11.175	2.235	ppb	2.55	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2963519.30	1.68	3486896.50	85.0	69.5 - 130	
45 Sc	1741228.90	1.77	2074112.50	84.0	69.5 - 130	
72 Ge	377146.91	1.41	436809.81	86.3	69.5 - 130	
159 Tb	4199246.00	0.81	4429938.50	94.8	69.5 - 130	
209 Bi	2718376.80	1.32	2848036.80	95.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000174

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL02A.B\062SMPL.D\062SMPL.D#
Date Acquired: Dec 2 2013 06:55 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-012
Misc Info: DILUTION 1.6/8
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 02 2013 04:23 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0018	0.0004	ppb	85.16	100.	
11 B	1.4865	0.2973	ppb	24.74	1000.	
23 Na	14.87	2.974	ppb	19.16	200000.	
25 Mg	5.995	1.199	ppb	3.20	200000.	
27 Al	15.565	3.113	ppb	2.08	200000.	
28 Si	260.6	52.12	ppb	13.44	#VALUE!	
29 Si	1,782.5	356.5	ppb	9.12	10000.	
39 K	23.795	4.759	ppb	42.66	200000.	
43 Ca	59.65	11.93	ppb	117.27	200000.	
44 Ca	18.73	3.746	ppb	42.58	200000.	
51 V	0.2207	0.0441	ppb	260.31	1000.	
52 Cr	0.8145	0.1629	ppb	17.39	1000.	
53 Cr	46.21	9.242	ppb	2.67	1000.	
55 Mn	0.2822	0.0564	ppb	11.28	1000.	
56 Fe	-9.59	-1.918	ppb	21.62	200000.	
57 Fe	19.61	3.922	ppb	22.30	100000.	
59 Co	-0.0135	-0.0027	ppb	92.74	1000.	
60 Ni	0.0126	0.0025	ppb	401.99	500.	
63 Cu	0.2599	0.052	ppb	46.85	1000.	
65 Cu	0.2191	0.0438	ppb	27.48	500.	
66 Zn	0.082	0.0164	ppb	347.26	500.	
68 Zn	0.1695	0.0339	ppb	675.13	1000.	
75 As	-0.0461	-0.0092	ppb	816.88	1000.	
82 Se	-0.615	-0.123	ppb	58.20	500.	
88 Sr	0.0796	0.0159	ppb	89.63	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.1555	0.0311	ppb	24.87	1000.	
107 Ag	0.0133	0.0027	ppb	15.47	250.	
109 Ag	-0.0056	-0.0011	ppb	132.82	100.	
111 Cd	-0.1604	-0.0321	ppb	35.07	500.	
114 Cd	0.0254	0.0051	ppb	56.52	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2243	0.0449	ppb	18.71	500.	
120 Sn	0.2165	0.0433	ppb	1.83	1000.	
121 Sb	0.0437	0.0087	ppb	52.12	1000.	
123 Sb	0.0482	0.0096	ppb	20.78	1000.	
135 Ba	0.5765	0.1153	ppb	9.13	1000.	
137 Ba	0.6295	0.1259	ppb	12.57	#VALUE!	
182 W	0.1508	0.0302	ppb ---		#VALUE!	
203 Tl	0.008	0.0016	ppb	184.97	1000.	
205 Tl	0.0012	0.0002	ppb	341.27	#VALUE!	
208 Pb	0.0465	0.0093	ppb	43.78	1000.	
232 Th	0.0285	0.0057	ppb	13.61	1000.	
238 U	-0.0006	-0.0001	ppb	169.49	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	2995054.30	3.97	3486896.50	85.9	69.5 - 130	
45 Sc	1772076.30	1.06	2074112.50	85.4	69.5 - 130	
72 Ge	376909.38	0.41	436809.81	86.3	69.5 - 130	
159 Tb	4318414.00	0.84	4429938.50	97.5	69.5 - 130	
209 Bi	2828512.80	1.43	2848036.80	99.3	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL02A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000184

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\030SMPL.D\030SMPL.D#
Date Acquired: Dec 4 2013 01:15 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-003
Misc Info: DILUTION 0.8/8
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 10.00
Autodil Factor: Undiluted
Final Dil Factor: 10.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	8.253	0.8253	ppb	3.32	100.	
11 B	14.43	1.443	ppb	7.23	1000.	
23 Na	364.3	36.43	ppb	2.81	200000.	
25 Mg	56,260.	5,626.	ppb	0.56	200000.	
27 Al	202,300.	20,230.	ppb	1.74	200000.	
28 Si	14,540.	1,454.	ppb	1.52	#VALUE!	
29 Si	10,150.	1,015.	ppb	3.28	10000.	
39 K	4,608.	460.8	ppb	3.77	200000.	
43 Ca	13,970.	1,397.	ppb	1.89	200000.	
44 Ca	13,260.	1,326.	ppb	0.42	200000.	
51 V	284.3	28.43	ppb	0.64	1000.	
52 Cr	270.9	27.09	ppb	0.42	1000.	
53 Cr	327.5	32.75	ppb	0.80	1000.	
55 Mn	6,032.	603.2	ppb	1.66	1000.	
56 Fe	461,700.	46,170.	ppb	2.59	200000.	
57 Fe	435,500.	43,550.	ppb	1.88	100000.	
59 Co	181.1	18.11	ppb	1.48	1000.	
60 Ni	341.	34.1	ppb	1.35	500.	
63 Cu	300.5	30.05	ppb	0.61	1000.	
65 Cu	303.5	30.35	ppb	0.23	500.	
66 Zn	801.3	80.13	ppb	2.02	500.	
68 Zn	778.1	77.81	ppb	1.42	1000.	
75 As	122.8	12.28	ppb	1.97	1000.	
82 Se	7.251	0.7251	ppb	36.12	500.	
88 Sr	135.6	13.56	ppb	1.68	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.84	1.184	ppb	1.03	1000.	
107 Ag	0.6612	0.0661	ppb	11.50	250.	
109 Ag	0.6542	0.0654	ppb	24.84	100.	
111 Cd	0.2265	0.0227	ppb	210.73	500.	
114 Cd	1.076	0.1076	ppb	11.20	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	31.94	3.194	ppb	2.29	500.	
120 Sn	32.4	3.24	ppb	2.23	1000.	
121 Sb	1.286	0.1286	ppb	11.00	1000.	
123 Sb	1.186	0.1186	ppb	6.41	1000.	
135 Ba	231.5	23.15	ppb	1.30	1000.	
137 Ba	234.6	23.46	ppb	1.12	#VALUE!	
182 W	1.006	0.1006	ppb ---		#VALUE!	
203 Tl	0.6371	0.0637	ppb	4.95	1000.	
205 Tl	0.7152	0.0715	ppb	3.88	#VALUE!	
208 Pb	191.5	19.15	ppb	1.17	1000.	
232 Th	80.2	8.02	ppb	1.82	1000.	
238 U	12.49	1.249	ppb	1.76	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3348122.50	1.62	3134288.50	106.8	69.5 - 130	
45 Sc	2141992.00	0.22	2003066.00	106.9	69.5 - 130	
72 Ge	469012.59	0.19	442079.53	106.1	69.5 - 130	
159 Tb	5123113.50	0.17	4801135.00	106.7	69.5 - 130	
209 Bi	3227615.80	0.72	3117805.30	103.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:

Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000217

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\031SMPL.D\031SMPL.D#
Date Acquired: Dec 4 2013 01:18 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-004
Misc Info: DILUTION 1.6/8
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	5.88	1.176	ppb	1.97	100.	
11 B	9.475	1.895	ppb	5.30	1000.	
23 Na	500.	100.	ppb	1.07	200000.	
25 Mg	42,990.	8,598.	ppb	1.19	200000.	
27 Al	135,700.	27,140.	ppb	1.50	200000.	
28 Si	11,425.	2,285.	ppb	3.00	#VALUE!	
29 Si	6,810.	1,362.	ppb	2.73	10000.	
39 K	4,707.	941.4	ppb	3.78	200000.	
43 Ca	14,090.	2,818.	ppb	4.07	200000.	
44 Ca	13,525.	2,705.	ppb	0.46	200000.	
51 V	184.3	36.86	ppb	2.18	1000.	
52 Cr	179.75	35.95	ppb	1.39	1000.	
53 Cr	229.45	45.89	ppb	4.11	1000.	
55 Mn	3,663.	732.6	ppb	0.55	1000.	
56 Fe	293,250.	58,650.	ppb	1.35	200000.	
57 Fe	281,300.	56,260.	ppb	1.23	100000.	
59 Co	115.6	23.12	ppb	2.68	1000.	
60 Ni	225.35	45.07	ppb	0.89	500.	
63 Cu	404.1	80.82	ppb	1.53	1000.	
65 Cu	405.45	81.09	ppb	2.60	500.	
66 Zn	652.5	130.5	ppb	1.51	500.	
68 Zn	642.5	128.5	ppb	1.93	1000.	
75 As	77.35	15.47	ppb	1.71	1000.	
82 Se	3.6315	0.7263	ppb	36.47	500.	
88 Sr	162.95	32.59	ppb	1.50	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.915	1.583	ppb	4.12	1000.	
107 Ag	0.5735	0.1147	ppb	6.80	250.	
109 Ag	0.5185	0.1037	ppb	4.10	100.	
111 Cd	2.229	0.4458	ppb	9.64	500.	
114 Cd	2.0555	0.4111	ppb	3.14	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	32.46	6.492	ppb	1.55	500.	
120 Sn	32.38	6.476	ppb	1.62	1000.	
121 Sb	2.3295	0.4659	ppb	7.39	1000.	
123 Sb	2.1345	0.4269	ppb	5.41	1000.	
135 Ba	282.75	56.55	ppb	1.53	1000.	
137 Ba	288.45	57.69	ppb	1.09	#VALUE!	
182 W	4.015	0.803	ppb ---		#VALUE!	
203 Tl	0.5015	0.1003	ppb	5.45	1000.	
205 Tl	0.4775	0.0955	ppb	5.59	#VALUE!	
208 Pb	214.8	42.96	ppb	0.47	1000.	
232 Th	73.7	14.74	ppb	0.15	1000.	
238 U	13.035	2.607	ppb	0.66	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3323691.80	0.93	3134288.50	106.0	69.5 - 130	
45 Sc	2156373.00	1.62	2003066.00	107.7	69.5 - 130	
72 Ge	467000.25	1.52	442079.53	105.6	69.5 - 130	
159 Tb	5020824.00	1.54	4801135.00	104.6	69.5 - 130	
209 Bi	3132633.50	1.53	3117805.30	100.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000218

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\038SMPL.D\038SMPL.D#
Date Acquired: Dec 4 2013 01:42 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-005
Misc Info: DILUTION 1.6/8
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.3285	0.6657	ppb	1.87	100.	
11 B	9.455	1.891	ppb	13.30	1000.	
23 Na	247.35	49.47	ppb	0.38	200000.	
25 Mg	50,100.	10,020.	ppb	2.11	200000.	
27 Al	142,450.	28,490.	ppb	3.68	200000.	
28 Si	8,565.	1,713.	ppb	4.36	#VALUE!	
29 Si	6,715.	1,343.	ppb	7.87	10000.	
39 K	3,028.	605.6	ppb	4.75	200000.	
43 Ca	11,015.	2,203.	ppb	1.71	200000.	
44 Ca	10,420.	2,084.	ppb	0.97	200000.	
51 V	173.8	34.76	ppb	2.91	1000.	
52 Cr	190.25	38.05	ppb	2.61	1000.	
53 Cr	238.35	47.67	ppb	2.79	1000.	
55 Mn	3,211.5	642.3	ppb	0.91	1000.	
56 Fe	291,400.	58,280.	ppb	1.99	200000.	
57 Fe	279,550.	55,910.	ppb	0.94	100000.	
59 Co	114.75	22.95	ppb	2.36	1000.	
60 Ni	244.5	48.9	ppb	2.59	500.	
63 Cu	172.5	34.5	ppb	0.93	1000.	
65 Cu	170.85	34.17	ppb	2.93	500.	
66 Zn	534.5	106.9	ppb	1.66	500.	
68 Zn	529.	105.8	ppb	0.99	1000.	
75 As	54.1	10.82	ppb	1.11	1000.	
82 Se	2.152	0.4304	ppb	57.20	500.	
88 Sr	93.3	18.66	ppb	2.05	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.99	1.198	ppb	3.16	1000.	
107 Ag	0.2981	0.0596	ppb	13.60	250.	
109 Ag	0.306	0.0612	ppb	9.42	100.	
111 Cd	1.186	0.2372	ppb	19.94	500.	
114 Cd	0.95	0.19	ppb	9.89	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	29.54	5.908	ppb	0.98	500.	
120 Sn	29.935	5.987	ppb	0.82	1000.	
121 Sb	0.684	0.1368	ppb	6.16	1000.	
123 Sb	0.751	0.1502	ppb	5.48	1000.	
135 Ba	132.8	26.56	ppb	2.66	1000.	
137 Ba	135.05	27.01	ppb	0.36	#VALUE!	
182 W	0.709	0.1418	ppb ---		#VALUE!	
203 Tl	0.2417	0.0483	ppb	3.31	1000.	
205 Tl	0.2574	0.0515	ppb	6.04	#VALUE!	
208 Pb	122.55	24.51	ppb	2.31	1000.	
232 Th	54.45	10.89	ppb	2.79	1000.	
238 U	6.755	1.351	ppb	2.94	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3169175.80	3.11	3134288.50	101.1	69.5 - 130	
45 Sc	2005728.80	2.51	2003066.00	100.1	69.5 - 130	
72 Ge	433495.19	0.89	442079.53	98.1	69.5 - 130	
159 Tb	4838241.00	0.08	4801135.00	100.8	69.5 - 130	
209 Bi	3072789.50	1.32	3117805.30	98.6	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000225

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\039SMPL.D\039SMPL.D#
Date Acquired: Dec 4 2013 01:45 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-006
Misc Info: DILUTION 1.6/8
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.1165	0.8233	ppb	2.54	100.	
11 B	8.2	1.64	ppb	4.42	1000.	
23 Na	273.4	54.68	ppb	5.13	200000.	
25 Mg	54,050.	10,810.	ppb	1.44	200000.	
27 Al	154,800.	30,960.	ppb	3.96	200000.	
28 Si	11,935.	2,387.	ppb	1.64	#VALUE!	
29 Si	8,510.	1,702.	ppb	1.65	10000.	
39 K	4,008.5	801.7	ppb	1.28	200000.	
43 Ca	9,080.	1,816.	ppb	3.36	200000.	
44 Ca	8,685.	1,737.	ppb	1.19	200000.	
51 V	195.1	39.02	ppb	2.62	1000.	
52 Cr	202.1	40.42	ppb	2.05	1000.	
53 Cr	245.45	49.09	ppb	1.05	1000.	
55 Mn	3,550.5	710.1	ppb	1.26	1000.	
56 Fe	318,750.	63,750.	ppb	2.29	200000.	
57 Fe	301,400.	60,280.	ppb	2.03	100000.	
59 Co	133.35	26.67	ppb	0.69	1000.	
60 Ni	251.3	50.26	ppb	1.44	500.	
63 Cu	211.45	42.29	ppb	0.23	1000.	
65 Cu	215.8	43.16	ppb	1.10	500.	
66 Zn	680.5	136.1	ppb	0.45	500.	
68 Zn	659.5	131.9	ppb	0.37	1000.	
75 As	78.05	15.61	ppb	3.09	1000.	
82 Se	3.7725	0.7545	ppb	27.69	500.	
88 Sr	141.2	28.24	ppb	0.86	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	6.35	1.27	ppb	2.78	1000.	
107 Ag	0.4831	0.0966	ppb	3.73	250.	
109 Ag	0.4631	0.0926	ppb	2.93	100.	
111 Cd	1.656	0.3312	ppb	13.16	500.	
114 Cd	1.5035	0.3007	ppb	5.04	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	38.765	7.753	ppb	1.55	500.	
120 Sn	38.515	7.703	ppb	2.50	1000.	
121 Sb	1.549	0.3098	ppb	3.32	1000.	
123 Sb	1.681	0.3362	ppb	5.30	1000.	
135 Ba	189.95	37.99	ppb	0.97	1000.	
137 Ba	191.4	38.28	ppb	2.63	#VALUE!	
182 W	0.732	0.1464	ppb ---		#VALUE!	
203 Tl	0.4211	0.0842	ppb	7.09	1000.	
205 Tl	0.4643	0.0929	ppb	9.42	#VALUE!	
208 Pb	259.75	51.95	ppb	0.93	1000.	
232 Th	68.95	13.79	ppb	0.78	1000.	
238 U	9.615	1.923	ppb	0.58	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3152364.00	2.76	3134288.50	100.6	69.5 - 130	
45 Sc	1971345.80	0.74	2003066.00	98.4	69.5 - 130	
72 Ge	435902.09	0.49	442079.53	98.6	69.5 - 130	
159 Tb	4830134.00	0.90	4801135.00	100.6	69.5 - 130	
209 Bi	3058950.80	0.60	3117805.30	98.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000226

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\040SMPL.D\040SMPL.D#
Date Acquired: Dec 4 2013 01:48 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-007
Misc Info: DILUTION 1.6/8
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.3365	0.6673	ppb	3.07	100.	
11 B	7.825	1.565	ppb	5.88	1000.	
23 Na	410.65	82.13	ppb	4.55	200000.	
25 Mg	36,980.	7,396.	ppb	1.56	200000.	
27 Al	107,750.	21,550.	ppb	1.73	200000.	
28 Si	9,455.	1,891.	ppb	1.87	#VALUE!	
29 Si	6,950.	1,390.	ppb	3.39	10000.	
39 K	3,857.	771.4	ppb	3.63	200000.	
43 Ca	15,285.	3,057.	ppb	2.88	200000.	
44 Ca	15,140.	3,028.	ppb	1.05	200000.	
51 V	149.4	29.88	ppb	0.28	1000.	
52 Cr	141.8	28.36	ppb	0.69	1000.	
53 Cr	188.25	37.65	ppb	2.59	1000.	
55 Mn	4,114.5	822.9	ppb	1.60	1000.	
56 Fe	254,200.	50,840.	ppb	0.48	200000.	
57 Fe	243,600.	48,720.	ppb	1.56	100000.	
59 Co	105.3	21.06	ppb	0.98	1000.	
60 Ni	188.75	37.75	ppb	1.03	500.	
63 Cu	258.8	51.76	ppb	1.37	1000.	
65 Cu	259.35	51.87	ppb	1.76	500.	
66 Zn	519.	103.8	ppb	2.20	500.	
68 Zn	504.	100.8	ppb	2.36	1000.	
75 As	78.6	15.72	ppb	1.04	1000.	
82 Se	3.8945	0.7789	ppb	20.16	500.	
88 Sr	168.5	33.7	ppb	2.59	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	7.89	1.578	ppb	2.55	1000.	
107 Ag	0.4126	0.0825	ppb	5.40	250.	
109 Ag	0.372	0.0744	ppb	8.67	100.	
111 Cd	1.672	0.3344	ppb	6.77	500.	
114 Cd	1.5055	0.3011	ppb	9.31	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	31.215	6.243	ppb	1.29	500.	
120 Sn	31.315	6.263	ppb	0.78	1000.	
121 Sb	3.0805	0.6161	ppb	3.71	1000.	
123 Sb	3.1425	0.6285	ppb	5.53	1000.	
135 Ba	200.75	40.15	ppb	1.40	1000.	
137 Ba	201.65	40.33	ppb	0.31	#VALUE!	
182 W	0.743	0.1486	ppb ---		#VALUE!	
203 Tl	0.3849	0.077	ppb	7.96	1000.	
205 Tl	0.3856	0.0771	ppb	7.89	#VALUE!	
208 Pb	215.7	43.14	ppb	0.70	1000.	
232 Th	49.015	9.803	ppb	2.14	1000.	
238 U	7.835	1.567	ppb	1.25	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3197846.00	2.36	3134288.50	102.0	69.5 - 130	
45 Sc	1966456.40	1.24	2003066.00	98.2	69.5 - 130	
72 Ge	427644.03	1.31	442079.53	96.7	69.5 - 130	
159 Tb	4837101.00	0.67	4801135.00	100.7	69.5 - 130	
209 Bi	3082087.50	1.59	3117805.30	98.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000227

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\041SMPL.D\041SMPL.D#
Date Acquired: Dec 4 2013 01:52 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-008
Misc Info: DILUTION 1.6/8
Vial Number: 2204
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.3275	0.6655	ppb	3.06	100.	
11 B	6.31	1.262	ppb	11.40	1000.	
23 Na	294.5	58.9	ppb	4.43	200000.	
25 Mg	46,155.	9,231.	ppb	2.99	200000.	
27 Al	124,400.	24,880.	ppb	2.02	200000.	
28 Si	10,745.	2,149.	ppb	3.08	#VALUE!	
29 Si	8,045.	1,609.	ppb	5.13	10000.	
39 K	3,621.	724.2	ppb	2.35	200000.	
43 Ca	12,105.	2,421.	ppb	4.94	200000.	
44 Ca	11,975.	2,395.	ppb	3.83	200000.	
51 V	166.6	33.32	ppb	1.54	1000.	
52 Cr	188.15	37.63	ppb	1.23	1000.	
53 Cr	232.3	46.46	ppb	0.68	1000.	
55 Mn	3,411.5	682.3	ppb	0.67	1000.	
56 Fe	259,150.	51,830.	ppb	0.71	200000.	
57 Fe	242,800.	48,560.	ppb	1.03	100000.	
59 Co	102.95	20.59	ppb	1.85	1000.	
60 Ni	215.85	43.17	ppb	1.92	500.	
63 Cu	170.1	34.02	ppb	1.88	1000.	
65 Cu	168.85	33.77	ppb	0.65	500.	
66 Zn	534.5	106.9	ppb	0.95	500.	
68 Zn	521.5	104.3	ppb	0.93	1000.	
75 As	52.3	10.46	ppb	1.45	1000.	
82 Se	3.0135	0.6027	ppb	17.67	500.	
88 Sr	99.9	19.98	ppb	1.21	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	9.98	1.996	ppb	3.49	1000.	
107 Ag	0.352	0.0704	ppb	12.89	250.	
109 Ag	0.313	0.0626	ppb	12.19	100.	
111 Cd	1.767	0.3534	ppb	9.54	500.	
114 Cd	1.6325	0.3265	ppb	8.19	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	30.485	6.097	ppb	7.06	500.	
120 Sn	29.885	5.977	ppb	2.22	1000.	
121 Sb	1.129	0.2258	ppb	9.63	1000.	
123 Sb	1.084	0.2168	ppb	9.95	1000.	
135 Ba	152.4	30.48	ppb	2.24	1000.	
137 Ba	151.7	30.34	ppb	1.76	#VALUE!	
182 W	0.622	0.1244	ppb ---		#VALUE!	
203 Tl	0.2872	0.0574	ppb	17.50	1000.	
205 Tl	0.2915	0.0583	ppb	6.87	#VALUE!	
208 Pb	157.05	31.41	ppb	0.10	1000.	
232 Th	56.15	11.23	ppb	0.21	1000.	
238 U	7.055	1.411	ppb	2.81	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3016618.00	0.26	3134288.50	96.2	69.5 - 130	
45 Sc	1843402.50	1.05	2003066.00	92.0	69.5 - 130	
72 Ge	409944.94	0.70	442079.53	92.7	69.5 - 130	
159 Tb	4647792.00	0.52	4801135.00	96.8	69.5 - 130	
209 Bi	2995455.00	0.03	3117805.30	96.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000228

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\042SMPL.D\042SMPL.D#
Date Acquired: Dec 4 2013 01:55 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-009
Misc Info: DILUTION 1.6/8
Vial Number: 2205
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.7155	0.7431	ppb	4.74	100.	
11 B	7.205	1.441	ppb	4.57	1000.	
23 Na	310.7	62.14	ppb	5.40	200000.	
25 Mg	49,075.	9,815.	ppb	1.97	200000.	
27 Al	133,600.	26,720.	ppb	3.18	200000.	
28 Si	10,260.	2,052.	ppb	2.06	#VALUE!	
29 Si	7,745.	1,549.	ppb	1.38	10000.	
39 K	4,328.5	865.7	ppb	0.30	200000.	
43 Ca	12,545.	2,509.	ppb	0.68	200000.	
44 Ca	11,960.	2,392.	ppb	1.38	200000.	
51 V	177.35	35.47	ppb	0.68	1000.	
52 Cr	173.7	34.74	ppb	0.26	1000.	
53 Cr	215.5	43.1	ppb	2.93	1000.	
55 Mn	3,714.5	742.9	ppb	1.14	1000.	
56 Fe	282,450.	56,490.	ppb	2.74	200000.	
57 Fe	266,950.	53,390.	ppb	0.51	100000.	
59 Co	119.95	23.99	ppb	1.19	1000.	
60 Ni	229.	45.8	ppb	2.12	500.	
63 Cu	230.25	46.05	ppb	1.70	1000.	
65 Cu	229.85	45.97	ppb	0.26	500.	
66 Zn	612.	122.4	ppb	1.80	500.	
68 Zn	603.	120.6	ppb	1.22	1000.	
75 As	69.5	13.9	ppb	1.43	1000.	
82 Se	2.979	0.5958	ppb	21.43	500.	
88 Sr	131.85	26.37	ppb	2.36	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.695	1.139	ppb	4.89	1000.	
107 Ag	0.4298	0.086	ppb	7.75	250.	
109 Ag	0.4363	0.0873	ppb	15.64	100.	
111 Cd	1.7295	0.3459	ppb	14.93	500.	
114 Cd	1.713	0.3426	ppb	2.50	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	31.355	6.271	ppb	2.28	500.	
120 Sn	31.35	6.27	ppb	1.29	1000.	
121 Sb	1.5225	0.3045	ppb	5.10	1000.	
123 Sb	1.548	0.3096	ppb	4.56	1000.	
135 Ba	219.65	43.93	ppb	2.84	1000.	
137 Ba	222.85	44.57	ppb	1.85	#VALUE!	
182 W	0.6	0.12	ppb ---		#VALUE!	
203 Tl	0.4602	0.092	ppb	7.09	1000.	
205 Tl	0.4493	0.0899	ppb	5.33	#VALUE!	
208 Pb	188.25	37.65	ppb	1.68	1000.	
232 Th	63.7	12.74	ppb	0.81	1000.	
238 U	8.765	1.753	ppb	1.71	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3120555.50	4.13	3134288.50	99.6	69.5 - 130	
45 Sc	1927198.30	2.75	2003066.00	96.2	69.5 - 130	
72 Ge	418235.84	2.96	442079.53	94.6	69.5 - 130	
159 Tb	4702841.00	3.57	4801135.00	98.0	69.5 - 130	
209 Bi	3007951.80	3.01	3117805.30	96.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000229

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\043SMPL.D\043SMPL.D#
Date Acquired: Dec 4 2013 01:59 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-010
Misc Info: DILUTION 1.6/8
Vial Number: 2206
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.621	0.7242	ppb	4.48	100.	
11 B	7.31	1.462	ppb	6.68	1000.	
23 Na	304.45	60.89	ppb	0.98	200000.	
25 Mg	48,200.	9,640.	ppb	3.55	200000.	
27 Al	145,850.	29,170.	ppb	3.33	200000.	
28 Si	10,120.	2,024.	ppb	1.80	#VALUE!	
29 Si	7,395.	1,479.	ppb	4.28	10000.	
39 K	3,769.5	753.9	ppb	2.35	200000.	
43 Ca	13,675.	2,735.	ppb	3.85	200000.	
44 Ca	13,310.	2,662.	ppb	1.33	200000.	
51 V	185.45	37.09	ppb	0.83	1000.	
52 Cr	175.8	35.16	ppb	1.10	1000.	
53 Cr	221.95	44.39	ppb	1.04	1000.	
55 Mn	3,036.	607.2	ppb	0.89	1000.	
56 Fe	302,700.	60,540.	ppb	0.60	200000.	
57 Fe	288,100.	57,620.	ppb	1.49	100000.	
59 Co	114.7	22.94	ppb	1.90	1000.	
60 Ni	209.85	41.97	ppb	2.07	500.	
63 Cu	181.95	36.39	ppb	1.08	1000.	
65 Cu	182.45	36.49	ppb	2.48	500.	
66 Zn	710.5	142.1	ppb	0.74	500.	
68 Zn	692.	138.4	ppb	0.81	1000.	
75 As	68.75	13.75	ppb	1.62	1000.	
82 Se	4.095	0.819	ppb	28.23	500.	
88 Sr	126.85	25.37	ppb	0.80	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	5.725	1.145	ppb	2.53	1000.	
107 Ag	0.3407	0.0681	ppb	4.75	250.	
109 Ag	0.3087	0.0617	ppb	4.23	100.	
111 Cd	1.392	0.2784	ppb	13.73	500.	
114 Cd	1.291	0.2582	ppb	4.12	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	31.405	6.281	ppb	2.39	500.	
120 Sn	31.36	6.272	ppb	3.62	1000.	
121 Sb	1.8365	0.3673	ppb	2.01	1000.	
123 Sb	1.891	0.3782	ppb	4.06	1000.	
135 Ba	301.65	60.33	ppb	2.83	1000.	
137 Ba	305.4	61.08	ppb	1.69	#VALUE!	
182 W	0.669	0.1338	ppb ---		#VALUE!	
203 Tl	0.4282	0.0856	ppb	17.13	1000.	
205 Tl	0.4378	0.0876	ppb	3.61	#VALUE!	
208 Pb	281.5	56.3	ppb	1.51	1000.	
232 Th	56.55	11.31	ppb	1.12	1000.	
238 U	8.64	1.728	ppb	2.36	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3225533.00	5.03	3134288.50	102.9	69.5 - 130	
45 Sc	1996516.30	1.75	2003066.00	99.7	69.5 - 130	
72 Ge	441324.72	0.73	442079.53	99.8	69.5 - 130	
159 Tb	4865446.50	1.83	4801135.00	101.3	69.5 - 130	
209 Bi	3103568.00	1.27	3117805.30	99.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000230

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\044SMPL.D\044SMPL.D#
Date Acquired: Dec 4 2013 02:02 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-011
Misc Info: DILUTION 1.6/8
Vial Number: 2207
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.402	0.6804	ppb	4.13	100.	
11 B	6.09	1.218	ppb	7.76	1000.	
23 Na	207.65	41.53	ppb	3.73	200000.	
25 Mg	50,450.	10,090.	ppb	2.78	200000.	
27 Al	138,250.	27,650.	ppb	3.48	200000.	
28 Si	8,570.	1,714.	ppb	2.93	#VALUE!	
29 Si	7,035.	1,407.	ppb	3.84	10000.	
39 K	2,621.5	524.3	ppb	4.14	200000.	
43 Ca	8,880.	1,776.	ppb	2.37	200000.	
44 Ca	8,470.	1,694.	ppb	2.82	200000.	
51 V	173.3	34.66	ppb	1.47	1000.	
52 Cr	155.9	31.18	ppb	1.44	1000.	
53 Cr	199.	39.8	ppb	0.46	1000.	
55 Mn	3,076.	615.2	ppb	1.64	1000.	
56 Fe	284,950.	56,990.	ppb	0.54	200000.	
57 Fe	270,900.	54,180.	ppb	0.23	100000.	
59 Co	98.2	19.64	ppb	1.00	1000.	
60 Ni	209.4	41.88	ppb	0.42	500.	
63 Cu	127.9	25.58	ppb	0.71	1000.	
65 Cu	128.05	25.61	ppb	1.12	500.	
66 Zn	505.5	101.1	ppb	1.41	500.	
68 Zn	491.65	98.33	ppb	1.72	1000.	
75 As	57.45	11.49	ppb	0.99	1000.	
82 Se	3.4485	0.6897	ppb	23.33	500.	
88 Sr	76.7	15.34	ppb	1.63	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	3.7525	0.7505	ppb	4.53	1000.	
107 Ag	0.3327	0.0665	ppb	20.04	250.	
109 Ag	0.3156	0.0631	ppb	3.18	100.	
111 Cd	1.884	0.3768	ppb	14.34	500.	
114 Cd	1.6115	0.3223	ppb	4.81	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	28.085	5.617	ppb	3.87	500.	
120 Sn	28.415	5.683	ppb	2.40	1000.	
121 Sb	0.656	0.1312	ppb	5.38	1000.	
123 Sb	0.6795	0.1359	ppb	5.99	1000.	
135 Ba	129.5	25.9	ppb	3.67	1000.	
137 Ba	130.3	26.06	ppb	1.07	#VALUE!	
182 W	0.5485	0.1097	ppb ---		#VALUE!	
203 Tl	0.3452	0.069	ppb	30.96	1000.	
205 Tl	0.3308	0.0662	ppb	6.63	#VALUE!	
208 Pb	126.7	25.34	ppb	1.45	1000.	
232 Th	62.65	12.53	ppb	1.54	1000.	
238 U	6.51	1.302	ppb	1.70	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3167061.50	4.09	3134288.50	101.0	69.5 - 130	
45 Sc	1965672.00	2.57	2003066.00	98.1	69.5 - 130	
72 Ge	432406.75	1.60	442079.53	97.8	69.5 - 130	
159 Tb	4867125.50	2.36	4801135.00	101.4	69.5 - 130	
209 Bi	3088643.50	1.52	3117805.30	99.1	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000231

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\045SMPL.D\045SMPL.D#
Date Acquired: Dec 4 2013 02:05 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-013
Misc Info: DILUTION 1.6/8
Vial Number: 2208
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	4.8835	0.9767	ppb	4.96	100.	
11 B	9.255	1.851	ppb	12.79	1000.	
23 Na	450.35	90.07	ppb	4.59	200000.	
25 Mg	49,685.	9,937.	ppb	3.25	200000.	
27 Al	144,050.	28,810.	ppb	2.17	200000.	
28 Si	12,800.	2,560.	ppb	4.69	#VALUE!	
29 Si	8,750.	1,750.	ppb	8.08	10000.	
39 K	5,250.	1,050.	ppb	6.64	200000.	
43 Ca	13,415.	2,683.	ppb	6.13	200000.	
44 Ca	12,960.	2,592.	ppb	2.83	200000.	
51 V	202.25	40.45	ppb	0.27	1000.	
52 Cr	187.35	37.47	ppb	2.44	1000.	
53 Cr	227.65	45.53	ppb	2.42	1000.	
55 Mn	4,470.5	894.1	ppb	3.31	1000.	
56 Fe	300,100.	60,020.	ppb	2.33	200000.	
57 Fe	284,800.	56,960.	ppb	4.50	100000.	
59 Co	130.6	26.12	ppb	3.57	1000.	
60 Ni	242.55	48.51	ppb	0.71	500.	
63 Cu	252.85	50.57	ppb	1.07	1000.	
65 Cu	253.5	50.7	ppb	1.63	500.	
66 Zn	715.5	143.1	ppb	4.03	500.	
68 Zn	701.5	140.3	ppb	2.53	1000.	
75 As	82.25	16.45	ppb	2.00	1000.	
82 Se	4.207	0.8414	ppb	7.92	500.	
88 Sr	143.9	28.78	ppb	1.36	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	8.28	1.656	ppb	4.25	1000.	
107 Ag	0.5495	0.1099	ppb	5.38	250.	
109 Ag	0.5815	0.1163	ppb	11.09	100.	
111 Cd	2.464	0.4928	ppb	4.11	500.	
114 Cd	2.2485	0.4497	ppb	5.96	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	47.77	9.554	ppb	3.06	500.	
120 Sn	47.895	9.579	ppb	3.24	1000.	
121 Sb	2.37	0.474	ppb	8.93	1000.	
123 Sb	2.3665	0.4733	ppb	3.37	1000.	
135 Ba	267.9	53.58	ppb	3.45	1000.	
137 Ba	276.05	55.21	ppb	1.68	#VALUE!	
182 W	0.828	0.1656	ppb ---		#VALUE!	
203 Tl	0.6615	0.1323	ppb	6.28	1000.	
205 Tl	0.5995	0.1199	ppb	4.25	#VALUE!	
208 Pb	341.2	68.24	ppb	2.45	1000.	
232 Th	61.2	12.24	ppb	3.06	1000.	
238 U	9.98	1.996	ppb	4.53	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3049415.30	3.73	3134288.50	97.3	69.5 - 130	
45 Sc	1929219.50	3.58	2003066.00	96.3	69.5 - 130	
72 Ge	421404.97	2.18	442079.53	95.3	69.5 - 130	
159 Tb	4693369.50	2.83	4801135.00	97.8	69.5 - 130	
209 Bi	2957507.30	2.60	3117805.30	94.9	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000232

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\048SMPL.D\048SMPL.D#
Date Acquired: Dec 4 2013 02:16 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-014
Misc Info: DILUTION 1.6/8
Vial Number: 2209
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.4065	0.6813	ppb	5.10	100.	
11 B	5.71	1.142	ppb	9.84	1000.	
23 Na	280.7	56.14	ppb	4.60	200000.	
25 Mg	50,400.	10,080.	ppb	1.39	200000.	
27 Al	142,800.	28,560.	ppb	1.54	200000.	
28 Si	12,010.	2,402.	ppb	1.28	#VALUE!	
29 Si	8,385.	1,677.	ppb	2.58	10000.	
39 K	3,460.5	692.1	ppb	1.75	200000.	
43 Ca	11,465.	2,293.	ppb	3.78	200000.	
44 Ca	11,055.	2,211.	ppb	0.79	200000.	
51 V	172.2	34.44	ppb	2.58	1000.	
52 Cr	181.5	36.3	ppb	0.72	1000.	
53 Cr	224.1	44.82	ppb	3.01	1000.	
55 Mn	3,195.5	639.1	ppb	0.58	1000.	
56 Fe	294,150.	58,830.	ppb	1.17	200000.	
57 Fe	284,000.	56,800.	ppb	1.56	100000.	
59 Co	103.7	20.74	ppb	0.52	1000.	
60 Ni	223.05	44.61	ppb	2.41	500.	
63 Cu	165.1	33.02	ppb	1.22	1000.	
65 Cu	166.65	33.33	ppb	0.73	500.	
66 Zn	609.	121.8	ppb	0.85	500.	
68 Zn	599.	119.8	ppb	2.56	1000.	
75 As	61.15	12.23	ppb	3.71	1000.	
82 Se	2.625	0.525	ppb	38.15	500.	
88 Sr	100.1	20.02	ppb	0.97	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.6885	0.9377	ppb	2.59	1000.	
107 Ag	0.3118	0.0624	ppb	18.02	250.	
109 Ag	0.2767	0.0553	ppb	8.10	100.	
111 Cd	1.3975	0.2795	ppb	21.04	500.	
114 Cd	1.223	0.2446	ppb	4.82	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	30.29	6.058	ppb	2.03	500.	
120 Sn	30.99	6.198	ppb	1.59	1000.	
121 Sb	1.035	0.207	ppb	10.69	1000.	
123 Sb	0.9875	0.1975	ppb	4.88	1000.	
135 Ba	159.25	31.85	ppb	0.63	1000.	
137 Ba	161.65	32.33	ppb	2.52	#VALUE!	
182 W	0.68	0.136	ppb ---		#VALUE!	
203 Tl	0.3393	0.0679	ppb	5.86	1000.	
205 Tl	0.3219	0.0644	ppb	8.07	#VALUE!	
208 Pb	169.	33.8	ppb	1.08	1000.	
232 Th	63.55	12.71	ppb	1.10	1000.	
238 U	7.195	1.439	ppb	1.68	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3280773.30	3.12	3134288.50	104.7	69.5 - 130	
45 Sc	1977406.60	0.78	2003066.00	98.7	69.5 - 130	
72 Ge	440156.69	0.89	442079.53	99.6	69.5 - 130	
159 Tb	4841480.50	0.94	4801135.00	100.8	69.5 - 130	
209 Bi	3107001.50	0.90	3117805.30	99.7	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000235

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\049SMPL.D\049SMPL.D#
Date Acquired: Dec 4 2013 02:19 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-015
Misc Info: DILUTION 1.6/8
Vial Number: 2210
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	3.6005	0.7201	ppb	5.50	100.	
11 B	6.02	1.204	ppb	10.22	1000.	
23 Na	236.45	47.29	ppb	2.27	200000.	
25 Mg	44,140.	8,828.	ppb	0.80	200000.	
27 Al	119,250.	23,850.	ppb	2.90	200000.	
28 Si	11,935.	2,387.	ppb	3.93	#VALUE!	
29 Si	8,045.	1,609.	ppb	2.28	10000.	
39 K	3,991.5	798.3	ppb	0.07	200000.	
43 Ca	7,745.	1,549.	ppb	2.03	200000.	
44 Ca	7,360.	1,472.	ppb	0.70	200000.	
51 V	167.85	33.57	ppb	0.63	1000.	
52 Cr	151.1	30.22	ppb	0.64	1000.	
53 Cr	195.4	39.08	ppb	2.30	1000.	
55 Mn	3,099.5	619.9	ppb	0.58	1000.	
56 Fe	271,350.	54,270.	ppb	0.97	200000.	
57 Fe	258,350.	51,670.	ppb	1.67	100000.	
59 Co	101.35	20.27	ppb	1.35	1000.	
60 Ni	193.3	38.66	ppb	0.94	500.	
63 Cu	172.9	34.58	ppb	0.85	1000.	
65 Cu	172.9	34.58	ppb	1.40	500.	
66 Zn	439.85	87.97	ppb	0.75	500.	
68 Zn	431.4	86.28	ppb	1.98	1000.	
75 As	64.2	12.84	ppb	1.29	1000.	
82 Se	2.9625	0.5925	ppb	37.00	500.	
88 Sr	82.1	16.42	ppb	1.17	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	4.559	0.9118	ppb	5.06	1000.	
107 Ag	0.3268	0.0654	ppb	15.65	250.	
109 Ag	0.2569	0.0514	ppb	8.53	100.	
111 Cd	1.697	0.3394	ppb	11.36	500.	
114 Cd	1.4295	0.2859	ppb	11.31	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	28.49	5.698	ppb	0.26	500.	
120 Sn	29.15	5.83	ppb	0.84	1000.	
121 Sb	0.9095	0.1819	ppb	4.44	1000.	
123 Sb	0.966	0.1932	ppb	9.75	1000.	
135 Ba	131.55	26.31	ppb	2.88	1000.	
137 Ba	135.35	27.07	ppb	1.94	#VALUE!	
182 W	0.5625	0.1125	ppb ---		#VALUE!	
203 Tl	0.3424	0.0685	ppb	9.69	1000.	
205 Tl	0.3359	0.0672	ppb	9.46	#VALUE!	
208 Pb	134.25	26.85	ppb	1.78	1000.	
232 Th	66.6	13.32	ppb	1.27	1000.	
238 U	11.06	2.212	ppb	0.55	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3320469.30	2.96	3134288.50	105.9	69.5 - 130	
45 Sc	2015110.10	1.43	2003066.00	100.6	69.5 - 130	
72 Ge	445495.09	0.85	442079.53	100.8	69.5 - 130	
159 Tb	4890110.00	0.47	4801135.00	101.9	69.5 - 130	
209 Bi	3103428.50	0.98	3117805.30	99.5	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000236

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGL04A.B\054SMPL.D\054SMPL.D#
Date Acquired: Dec 4 2013 02:36 pm
Acq. Method: K2008ESW.M
Operator: EAM
Sample Name: SG9002-012
Misc Info: DILUTION 1.6/8
Vial Number: 2303
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Dec 04 2013 12:31 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	0.0094	0.0019	ppb	58.87	100.	
11 B	2.86	0.572	ppb	30.18	1000.	
23 Na	22.23	4.446	ppb	3.78	200000.	
25 Mg	7.44	1.488	ppb	8.44	200000.	
27 Al	15.2	3.04	ppb	7.30	200000.	
28 Si	56.1	11.22	ppb	47.52	#VALUE!	
29 Si	2,294.	458.8	ppb	3.20	10000.	
39 K	-0.4564	-0.0913	ppb	1736.40	200000.	
43 Ca	9.02	1.804	ppb	215.08	200000.	
44 Ca	39.56	7.912	ppb	21.49	200000.	
51 V	0.8435	0.1687	ppb	129.76	1000.	
52 Cr	1.2015	0.2403	ppb	8.51	1000.	
53 Cr	53.3	10.66	ppb	8.62	1000.	
55 Mn	0.644	0.1288	ppb	11.77	1000.	
56 Fe	22.955	4.591	ppb	29.84	200000.	
57 Fe	-4.698	-0.9396	ppb	200.30	100000.	
59 Co	0.0391	0.0078	ppb	93.53	1000.	
60 Ni	0.0853	0.0171	ppb	102.64	500.	
63 Cu	0.095	0.019	ppb	72.79	1000.	
65 Cu	0.1596	0.0319	ppb	6.61	500.	
66 Zn	1.2125	0.2425	ppb	14.69	500.	
68 Zn	4.819	0.9638	ppb	14.44	1000.	
75 As	0.1585	0.0317	ppb	290.19	1000.	
82 Se	0.3341	0.0668	ppb	250.11	500.	
88 Sr	0.0891	0.0178	ppb	47.40	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	0.223	0.0446	ppb	10.52	1000.	
107 Ag	0.0072	0.0014	ppb	21.23	250.	
109 Ag	0.0107	0.0021	ppb	62.58	100.	
111 Cd	-0.2685	-0.0537	ppb	71.43	500.	
114 Cd	0.0475	0.0095	ppb	36.61	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	0.2452	0.049	ppb	37.28	500.	
120 Sn	0.2237	0.0447	ppb	12.49	1000.	
121 Sb	0.0239	0.0048	ppb	36.57	1000.	
123 Sb	0.0733	0.0147	ppb	27.18	1000.	
135 Ba	0.606	0.1212	ppb	25.76	1000.	
137 Ba	0.5595	0.1119	ppb	17.78	#VALUE!	
182 W	0.1278	0.0256	ppb ---		#VALUE!	
203 Tl	0.0118	0.0024	ppb	47.85	1000.	
205 Tl	-0.003	-0.0006	ppb	339.59	#VALUE!	
208 Pb	0.1257	0.0251	ppb	8.06	1000.	
232 Th	0.0303	0.0061	ppb	30.99	1000.	
238 U	0.003	0.0006	ppb	35.00	1000.	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	3301047.00	2.82	3134288.50	105.3	69.5 - 130	
45 Sc	2036008.30	1.20	2003066.00	101.6	69.5 - 130	
72 Ge	444304.53	0.86	442079.53	100.5	69.5 - 130	
159 Tb	4954419.00	0.90	4801135.00	103.2	69.5 - 130	
209 Bi	3223342.80	0.41	3117805.30	103.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGL04A.B\012CALB.D\012CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000241

CONVENTIONAL AND PHYSICAL ANALYTICAL DATA

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Blank Sample Summary Report

Total Solids

Samp Type	QC Batch	Anal. Method	Anal. Date	Prep. Date	Result	PQL	LOD
MBLANK	WG134768	SM2540	21-NOV-13	20-NOV-13	U 1 %	1 %	N/A
MBLANK	WG134807	SM2540	22-NOV-13	21-NOV-13	U 1 %	1 %	N/A
MBLANK	WG134815	SM2540	22-NOV-13	21-NOV-13	U 1 %	1 %	N/A

Katahdin Analytical Services 5000003

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Laboratory Control Sample Summary Report

Total Solids

Lab Sample Id	Samp Type	QC Batch	Analysis Date	Prep Date	Units	Spike Amt.	Result	Recovery	Acceptance Range	RPD
WG134768-2	LCS	WG134768	21-NOV-13	20-NOV-13	%	90	87.	97	80-120	
WG134807-2	LCS	WG134807	22-NOV-13	21-NOV-13	%	90	87.	97	80-120	
WG134815-2	LCS	WG134815	22-NOV-13	21-NOV-13	%	90	90.	100	80-120	

Katahdin Analytical Services 5000004

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Quality Control Report

Duplicate Sample Summary Report

Total Solids

Duplicate Sample ID	Original Sample ID	QC Batch	Analysis Date	Result Units	Sample Result	Duplicate Result	RPD(%)	RPD Limit
WG134815-3	SG9002-9	WG134815	22-NOV-13	%	93.	93.	0	20

Katahdin Analytical Services 5000005

NAVSTA NEWPORT
SOIL DATA
SG9002

FRACTION	CHEMICAL	TF2-SB-DUP08-1113	UNITS	TF2-003-SB1011-0204	RPD	D
M	ALUMINUM	13400	MG/KG	14700	9.25	1300.00
M	ANTIMONY	0.17 J	MG/KG	0.17 J	0.00	0.00
M	ARSENIC	6.7	MG/KG	7.7	13.89	1.00
M	BARIUM	28 J	MG/KG	17.9 J	44.01	10.10
M	BERYLLIUM	0.34	MG/KG	0.4	16.22	0.06
M	CADMIUM	0.12	MG/KG	0.14	15.38	0.02
M	CALCIUM	1280	MG/KG	853	40.04	427.00
M	CHROMIUM	16.4	MG/KG	19.2	15.73	2.80
M	COBALT	11.1	MG/KG	12.9	15.00	1.80
M	COPPER	17.5 J	MG/KG	20.8 J	17.23	3.30
M	IRON	28400	MG/KG	29400	3.46	1000.00
M	LEAD	27.4	MG/KG	25.4	7.58	2.00
M	MAGNESIUM	4380	MG/KG	5130	15.77	750.00
M	MANGANESE	298	MG/KG	346	14.91	48.00
M	NICKEL	20.1	MG/KG	24.2	18.51	4.10
M	POTASSIUM	499 J	MG/KG	402 J	21.53	97.00
M	SELENIUM	0.32 J	MG/KG	0.29 J	9.84	0.03
M	SILVER	0.04 J	MG/KG	0.05 J	22.22	0.01
M	THALLIUM	0.03 J	MG/KG	0.04 J	28.57	0.01
M	VANADIUM	17	MG/KG	18.2	6.82	1.20
M	ZINC	69.5	MG/KG	67.1	3.51	2.40

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG9002

FRACTION	CHEMICAL	TF2-SB-DUP08-1113	UNITS	TF2-003-SB1011-0204	RPD	D
MISC	TOTAL SOLIDS	91	%	82	10.40	9.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

Tetra Tech **INTERNAL CORRESPONDENCE**

TO:	**D. SEIKEN**	**DATE:**	**FEBRUARY 18, 2014**
FROM:	**EDWARD SEDLMYER**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PCDD/PCDF**
NAVSTA NEWPORT, CTO WE30
SAMPLE DELIVERY GROUP (SDG) 320-5001-2

SAMPLES: 2 / Water / PCDD/PCDF

TF2-003-RB04-1113	TF2-SB-RB03-1113

9 / Soil / PCDD/PCDF

TF2-003-DUP08-1113	TF2-003-SB1011-0204	TF2-003-SB1012-0204
TF2-003-SB1014-0204	TF2-003-SB1015-0204	TF2-003-SB1016-0204
TF2-003-SB1017-011.6	TF2-003-SB1017-0204	TF2-003-SB1018-0204

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG 320-5001-2 consisted of nine (9) soil samples and two (2) rinse blanks. All samples were analyzed for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs), as indicated above. One (1) field duplicate sample pair was included in this sample delivery group (SDG): TF2-003-SB1011-0204 / TF2-003-DUP08-1113.

The samples were collected by Tetra Tech on November 14 and 15, 2013 and analyzed by TestAmerica Laboratories Inc. All analyses were conducted in accordance with EPA SW-846 Method 8290A for PCDDs and PCDFs, analytical and reporting protocols.

The data contained in this SDG were fully validated Tier II with regard to the following parameters:

*	•	Data completeness
*	•	Hold times
*	•	Mass Calibration
*	•	HRGC/HRMS Tuning and System Performance
*	•	Chromatographic Resolution /Window Defining Mixtures
	•	Initial and continuing calibration
	•	Method Blank results
*	•	Blank Spike/Blank Spike Duplicate Results
*	•	Matrix Spike/Matrix Spike Duplicate Results
*	•	Clean-up Standard Recoveries
*	•	Internal Standard Recoveries
*	•	Field Duplicate Precision
*	•	Estimated Detection Limits
	•	Compound Quantitation
*	•	Compound Identification

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in

Appendix B.

BLANKS

The following compounds were detected in the method blanks at the maximum concentrations indicated below.

Compound	Maximum Conc. ng/kg	Action Level
1,2,3,4,7,8-HxCDF[(1)]	0.235	1.175 ng/kg
1,2,3,4,6,7,8-HpCDD[(1)]	0.239	1.195 ng/kg
1,2,3,4,6,7,8-HpCDF[(1)]	0.496	2.48 ng/kg
1,2,3,4,7,8, 9-HpCDF[(1)]	0.117	0.585 ng/kg
OCDD[(1)]	2.4	24 ng/kg
OCDF[(1)]	0.940	9.4 ng/kg
Total HxCDF[(1)]	0.294	1.47 ng/kg
Total HpCDD[(1)]	0.501	2.505 ng/kg
Total HpCDF[(1)]	0.614	3.07 ng/kg

1 - Method blank 320-30809 affecting all soil samples.

An action level of 10X for the maximum level for OCDD and OCDF, 5X for the other PCDD/PCDFs has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination for each individual sample. Detected results less than the blank action level were qualified (U) as a result of laboratory blank contamination.

CALIBRATIONS

The continuing calibration verification (CCV) analyzed on instrument 9D5 on 12/17/13 @08:44 had a percent difference (%D) greater than the 20% quality control limit for 1,2,3,4,7,8-HxCDD. The nondetected 1,2,3,4,7,8-HxCDD results for samples TF2-003-RB04-1113 and TF2-SB-RB03-1113 were qualified as estimated (UJ).

The continuing calibration verification (CCV) analyzed on instrument 10D5 on 12/26/13 @23:39 had a %D greater than the 20% quality control limit for 1,2,3,6,7,8-HxCDF. The detected 1,2,3,6,7,8-HxCDF results for samples TF2-003-DUP08-1113 and TF2-003-SB1018-0204 were qualified as estimated (J).

The continuing calibration verification (CCV) analyzed on instrument 11D5 on 01/03/14 @22:13 had a %D greater than the 20% quality control limit for 2,3,7,8-TCDF. The detected and nondetected 2,3,7,8-TCDF results for samples TF2-003-DUP08-1113, TF2-003-SB1015-0204, TF2-003-SB1016-0204 were qualified as estimated (J) and (UJ), respectively.

COMPOUND QUANTIFICATION

Positive sample analyte results with ion ratios outside of the limits were reported as EMPC (estimated maximum possible concentration) results and were qualified estimated, (J).

ADDITIONAL COMMENTS

Positive sample analyte results below the reporting limit (RL) but above the estimated detection limit (EDL) were qualified estimated, (J).

The continuing calibration verification (CCV) analyzed on instrument 9D5 on 12/18/13 @04:58 had a %D

greater than the 20% quality control limit for 1,2,3,4,7,8-HxCDD. No action was taken on this basis because only laboratory QC samples were associated with this CCV and laboratory QC samples are not qualified.

The matrix spike (MS) / matrix spike duplicate (MSD) performed on sample TF2-003-SB1012-0204 had a relative percent difference (RPD) for 1,2,3,4,7,8,9-HpCDF that exceeded the laboratory control limit. No action was taken on this basis because the percent recoveries in the MS and MSD were acceptable.

The laboratory control sample (LCS) / laboratory control sample duplicate (LCSD) associated with batch 320-30260 had an RPD for 1,2,3,4,7,8-HxCDD that exceeded the laboratory control limit and a percent recovery for 1,2,3,6,7,8-HxCDF greater than the laboratory control limit. No action was taken on this basis because the percent recoveries for 1,2,3,4,7,8-HxCDD were acceptable in the LCS and LCSD and 1,2,3,6,7,8-HxCDF was not detected in the associated samples.

Non-detected sample analyte results were reported at the EDL.

EXECUTIVE SUMMARY

Laboratory Performance: Blank contamination resulted in the qualification of results. Calibration %D noncompliances resulted in the qualification of data.

Other Factors Affecting Data Quality: Positive results reported below the RL but above the EDL were qualified as estimated, (J). Positive sample analyte results reported as EMPC (estimated maximum possible concentration) results were qualified estimated, (J).

The data for these analyses were reviewed with reference to the EPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans (Sept. 2011), to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Guidance/Procedures Attachment 2-3b: Example Organic Data Review Worksheets (1/13) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Edward Sedlmyer
Chemist/Data Validator

Tetra Tech
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Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-003-RB04-1113			TF2-SB-RB03-1113		
SDG: 320-5001-2	LAB_ID	320-5001-30			320-5001-21		
FRACTION: DIOX	SAMP_DATE	11/15/2013			11/14/2013		
MEDIA: WATER	QC_TYPE	NM			NM		
	UNITS	PG/L			PG/L		
	PCT_SOLIDS	0.0			0.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		2.9	J	P	2.8	J	PW
1,2,3,4,6,7,8,9-OCDF		0.74	U		2	J	PW
1,2,3,4,6,7,8-HPCDD		0.54	U		1.4	J	P
1,2,3,4,6,7,8-HPCDF		0.48	U		2.6	J	P
1,2,3,4,7,8,9-HPCDF		0.57	U		0.59	U	
1,2,3,4,7,8-HXCDD		0.77	UJ	C	0.66	UJ	C
1,2,3,4,7,8-HXCDF		0.77	U		0.8	U	
1,2,3,6,7,8-HXCDD		0.81	U		0.7	U	
1,2,3,6,7,8-HXCDF		0.75	U		0.77	U	
1,2,3,7,8,9-HXCDD		0.67	U		0.57	U	
1,2,3,7,8,9-HXCDF		0.81	U		0.84	U	
1,2,3,7,8-PECDD		2	U		1.5	U	
1,2,3,7,8-PECDF		3.5	U		2.9	U	
2,3,4,6,7,8-HXCDF		0.77	U		0.8	U	
2,3,4,7,8-PECDF		3.7	U		3.1	U	
2,3,7,8-TCDD		0.6	U		0.69	U	
2,3,7,8-TCDF		1.1	U		0.98	U	
TOTAL HPCDD		1.3	J	PW	2.9	J	PW
TOTAL HPCDF		0.57	U		2.6	J	P
TOTAL HXCDD		0.81	U		0.7	U	
TOTAL HXCDF		0.81	U		0.84	U	
TOTAL PECDD		2	U		1.5	U	
TOTAL PECDF		3.7	U		3.1	U	
TOTAL TCDD		1.8	U		1.4	U	
TOTAL TCDF		1.1	U		0.98	U	

PROJ_NO: 03019	NSAMPLE	TF2-003-DUP08-1113			TF2-003-DUP08-1113-RE			TF2-003-SB1011-0204			TF2-003-SB1012-0204		
SDG: 320-5001-2	LAB_ID	320-5001-31			320-5001-31			320-5001-22			320-5001-23		
FRACTION: DIOX	SAMP_DATE	11/15/2013			11/15/2013			11/15/2013			11/15/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	90.8			90.8			90.6			91.3		
	DUP_OF	TF2-003-SB1011-0204			TF2-003-SB1011-0204								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		2900						3100			3200		
1,2,3,4,6,7,8,9-OCDF		5.7	U	A				2.8	U	A	4.3	U	A
1,2,3,4,6,7,8-HPCDD		18	J	W				20			27		
1,2,3,4,6,7,8-HPCDF		5.7						4.2	J	P	5.3		
1,2,3,4,7,8,9-HPCDF		0.054	U					0.033	U		0.44	U	A
1,2,3,4,7,8-HXCDD		0.088	U					0.22	J	PW	0.73	J	P
1,2,3,4,7,8-HXCDF		1.5	J	P				0.74	U	A	1.2	J	P
1,2,3,6,7,8-HXCDD		0.078	U					0.38	J	P	1.6	J	P
1,2,3,6,7,8-HXCDF		0.8	J	CP				0.45	J	P	0.76	J	P
1,2,3,7,8,9-HXCDD		0.39	J	P				0.53	J	P	1.5	J	P
1,2,3,7,8,9-HXCDF		0.04	U					0.022	U		0.037	U	
1,2,3,7,8-PECDD		0.098	U					0.14	J	PW	0.59	J	P
1,2,3,7,8-PECDF		0.27	J	PW				0.029	U		0.43	J	PW
2,3,4,6,7,8-HXCDF		0.23	J	PW				0.29	J	P	0.53	J	P
2,3,4,7,8-PECDF		0.069	U					0.26	J	P	0.39	J	PW
2,3,7,8-TCDD		0.056	U					0.029	U		0.031	U	
2,3,7,8-TCDF					0.061	UJ	C	0.13	U		0.35	J	P
TOTAL HPCDD		36	J	W				36			50		
TOTAL HPCDF		8						6.8			9		
TOTAL HXCDD		3.5	J	P				4.4	J	PW	17		
TOTAL HXCDF		5.8	J	W				4.6	J	PW	6.8	J	W
TOTAL PECDD		1.4	J	PW				2.1	J	PW	16	J	W
TOTAL PECDF		3.7	J	PW				2.8	J	PW	6.1	J	W
TOTAL TCDD		0.056	U					1.5	J	W	11	J	W
TOTAL TCDF		2.9	J	W				2.4	J	W	5.4	J	W

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1014-0204			TF2-003-SB1015-0204			TF2-003-SB1015-0204-RE			TF2-003-SB1016-0204		
SDG: 320-5001-2	LAB_ID	320-5001-26			320-5001-27			320-5001-27			320-5001-28		
FRACTION: DIOX	SAMP_DATE	11/15/2013			11/15/2013			11/15/2013			11/15/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	92.2			91.7			91.7			92.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		2000			3100						3100		
1,2,3,4,6,7,8,9-OCDF		4.2	U	A	4.3	U	A				4.4	U	A
1,2,3,4,6,7,8-HPCDD		41			41						35		
1,2,3,4,6,7,8-HPCDF		12			9.1						8.2		
1,2,3,4,7,8,9-HPCDF		0.63	J	P	0.56	U	A				0.38	U	A
1,2,3,4,7,8-HXCDD		2.6	J	P	2.2	J	P				1.5	J	P
1,2,3,4,7,8-HXCDF		2.9	J	P	1.9	J	P				3.5	J	P
1,2,3,6,7,8-HXCDD		6.9			5.3	J	P				3.6	J	P
1,2,3,6,7,8-HXCDF		2.4	J	P	1.9	J	P				1.8	J	P
1,2,3,7,8,9-HXCDD		6.3			4.9	J	P				3.5	J	P
1,2,3,7,8,9-HXCDF		0.029	U		0.023	U					0.3	J	P
1,2,3,7,8-PECDD		2.9	J	P	2.3	J	P				1.3	J	P
1,2,3,7,8-PECDF		1.5	J	P	1.3	J	P				0.7	J	P
2,3,4,6,7,8-HXCDF		1.9	J	P	1.4	J	P				1.1	J	P
2,3,4,7,8-PECDF		1.9	J	P	1.5	J	P				1.3	J	P
2,3,7,8-TCDD		0.043	U		0.039	U					0.098	U	
2,3,7,8-TCDF		1.1						0.87	J	CP			
TOTAL HPCDD		81			80						75		
TOTAL HPCDF		15			12						12	J	W
TOTAL HXCDD		79			60						41	J	W
TOTAL HXCDF		19			14	J	W				13	J	W
TOTAL PECDD		87	J	W	70	J	W				44	J	W
TOTAL PECDF		22	J	W	15						13	J	W
TOTAL TCDD		63	J	W	55	J	W				29	J	W
TOTAL TCDF		19	J	W	17	J	W				12	J	W

PROJ_NO: 03019	NSAMPLE	TF2-003-SB1016-0204-RE			TF2-003-SB1017-011.6			TF2-003-SB1017-0204			TF2-003-SB1018-0204		
SDG: 320-5001-2	LAB_ID	320-5001-28			320-5001-24			320-5001-25			320-5001-29		
FRACTION: DIOX	SAMP_DATE	11/15/2013			11/15/2013			11/15/2013			11/15/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	92.6			86.9			92.7			94.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD					2500			3700			1500		
1,2,3,4,6,7,8,9-OCDF					7	U	A	0.48	U	A	1	U	A
1,2,3,4,6,7,8-HPCDD					56			23			8.3		
1,2,3,4,6,7,8-HPCDF					18			0.39	U	A	0.51	U	A
1,2,3,4,7,8,9-HPCDF					0.97	J	P	0.054	U	A	0.12	U	A
1,2,3,4,7,8-HXCDD					5	J	P	0.096	J	P	0.056	U	
1,2,3,4,7,8-HXCDF					3.8	J	P	0.095	U	A	0.23	U	A
1,2,3,6,7,8-HXCDD					12			0.092	J	P	0.049	U	
1,2,3,6,7,8-HXCDF					3.3	J	P	0.24	J	P	0.29	J	CP
1,2,3,7,8,9-HXCDD					11			0.33	J	P	0.045	U	
1,2,3,7,8,9-HXCDF					0.031	U		0.014	U		0.033	U	
1,2,3,7,8-PECDD					5.2	J	P	0.035	U		0.081	U	
1,2,3,7,8-PECDF					2.4	J	P	0.02	U		0.044	U	
2,3,4,6,7,8-HXCDF					2.6	J	P	0.013	U		0.031	U	
2,3,4,7,8-PECDF					3.3	J	P	0.02	U		0.046	U	
2,3,7,8-TCDD					0.1	U		0.017	U		0.048	U	
2,3,7,8-TCDF		0.047	UJ	C	2			0.013	U		0.039	U	
TOTAL HPCDD					110			42			14		
TOTAL HPCDF					23			0.54	U	A	0.74	U	A
TOTAL HXCDD					140			1.2	J	PW	0.57	J	PW
TOTAL HXCDF					29	J	W	0.47	U	A	0.68	U	A
TOTAL PECDD					180	J	W	0.4	J	P	0.3	J	PW
TOTAL PECDF					25			0.02	U		0.046	U	
TOTAL TCDD					160			0.31	J	PW	0.048	U	
TOTAL TCDF					37			0.13	J	PW	0.21	J	PW

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-DUP08-1113 | Lab Sample ID: 320-5001-31

Matrix: Solid | Lab File ID: 26DE1310D5_14.d

Analysis Method: 8290A | Date Collected: 11/15/2013 00:00

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.41(g) | Date Analyzed: 12/26/2013 21:57

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32757 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.056
40321-76-4	1,2,3,7,8-PeCDD	ND		5.3	0.098
57117-41-6	1,2,3,7,8-PeCDF	0.27	J q	5.3	0.067
57117-31-4	2,3,4,7,8-PeCDF	ND		5.3	0.069
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.3	0.088
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.3	0.078
19408-74-3	1,2,3,7,8,9-HxCDD	0.39	J	5.3	0.072
70648-26-9	1,2,3,4,7,8-HxCDF	1.5	J B	5.3	0.039
57117-44-9	1,2,3,6,7,8-HxCDF	0.80	J	5.3	0.033
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.040
60851-34-5	2,3,4,6,7,8-HxCDF	0.23	J q	5.3	0.037
35822-46-9	1,2,3,4,6,7,8-HpCDD	18	q B	5.3	0.24
67562-39-4	1,2,3,4,6,7,8-HpCDF	5.7	B	5.3	0.046
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.3	0.054
3268-87-9	OCDD	2900	B	11	0.36
39001-02-0	OCDF	5.7	J B	11	0.069
41903-57-5	Total TCDD	ND		1.1	0.056
30402-14-3	Total TCDF	2.9	q	1.1	0.045
36088-22-9	Total PeCDD	1.4	J q	5.3	0.098
30402-15-4	Total PeCDF	3.7	J q	5.3	0.068
34465-46-8	Total HxCDD	3.5	J	5.3	0.080
55684-94-1	Total HxCDF	5.8	q B	5.3	0.037
37871-00-4	Total HpCDD	36	q B	5.3	0.24
38998-75-3	Total HpCDF	8.0	B	5.3	0.050

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-DUP08-1113 | Lab Sample ID: 320-5001-31

Matrix: Solid | Lab File ID: 26DE1310D5_14.d

Analysis Method: 8290A | Date Collected: 11/15/2013 00:00

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.41(g) | Date Analyzed: 12/26/2013 21:57

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32757 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	51		40-135
89059-46-1	13C-2,3,7,8-TCDF	52		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	47		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	46		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	58		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	51		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	51		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	50		40-135
114423-97-1	13C-OCDD	56		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1011-0204 | Lab Sample ID: 320-5001-22

Matrix: Solid | Lab File ID: 23DE1310D5_12.d

Analysis Method: 8290A | Date Collected: 11/15/2013 10:25

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.39(g) | Date Analyzed: 12/23/2013 19:17

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.029
40321-76-4	1,2,3,7,8-PeCDD	0.14	J q	5.3	0.042
57117-41-6	1,2,3,7,8-PeCDF	ND		5.3	0.029
57117-31-4	2,3,4,7,8-PeCDF	0.26	J	5.3	0.029
39227-28-6	1,2,3,4,7,8-HxCDD	0.22	J q	5.3	0.032
57653-85-7	1,2,3,6,7,8-HxCDD	0.38	J	5.3	0.028
19408-74-3	1,2,3,7,8,9-HxCDD	0.53	J	5.3	0.026
70648-26-9	1,2,3,4,7,8-HxCDF	0.74	J B	5.3	0.021
57117-44-9	1,2,3,6,7,8-HxCDF	0.45	J	5.3	0.018
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.022
60851-34-5	2,3,4,6,7,8-HxCDF	0.29	J	5.3	0.020
35822-46-9	1,2,3,4,6,7,8-HpCDD	20	B	5.3	0.16
67562-39-4	1,2,3,4,6,7,8-HpCDF	4.2	J B	5.3	0.028
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.3	0.033
3268-87-9	OCDD	3100	B	11	0.21
39001-02-0	OCDF	2.8	J B	11	0.026
41903-57-5	Total TCDD	1.5	q	1.1	0.029
30402-14-3	Total TCDF	2.4	q	1.1	0.021
36088-22-9	Total PeCDD	2.1	J q	5.3	0.042
30402-15-4	Total PeCDF	2.8	J q	5.3	0.029
34465-46-8	Total HxCDD	4.4	J q	5.3	0.029
55684-94-1	Total HxCDF	4.6	J q B	5.3	0.020
37871-00-4	Total HpCDD	36	B	5.3	0.16
38998-75-3	Total HpCDF	6.8	B	5.3	0.031

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1011-0204 | Lab Sample ID: 320-5001-22

Matrix: Solid | Lab File ID: 23DE1310D5_12.d

Analysis Method: 8290A | Date Collected: 11/15/2013 10:25

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.39(g) | Date Analyzed: 12/23/2013 19:17

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	56		40-135
89059-46-1	13C-2,3,7,8-TCDF	53		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	52		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	49		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	58		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	53		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	59		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	56		40-135
114423-97-1	13C-OCDD	65		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1011-0204 RA Lab Sample ID: 320-5001-22 RA

Matrix: Solid Lab File ID: 02JA1411D2_010.d

Analysis Method: 8290A Date Collected: 11/15/2013 10:25

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.39(g) Date Analyzed: 01/02/2014 19:46

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33115 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.13

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	46		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1012-0204 Lab Sample ID: 320-5001-23

Matrix: Solid Lab File ID: 24DE1310D5_5.d

Analysis Method: 8290A Date Collected: 11/15/2013 11:10

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.24(g) Date Analyzed: 12/24/2013 10:53

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32754 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.031
40321-76-4	1,2,3,7,8-PeCDD	0.59	J	5.3	0.065
57117-41-6	1,2,3,7,8-PeCDF	0.43	J q	5.3	0.036
57117-31-4	2,3,4,7,8-PeCDF	0.39	J q	5.3	0.037
39227-28-6	1,2,3,4,7,8-HxCDD	0.73	J	5.3	0.031
57653-85-7	1,2,3,6,7,8-HxCDD	1.6	J	5.3	0.027
19408-74-3	1,2,3,7,8,9-HxCDD	1.5	J	5.3	0.025
70648-26-9	1,2,3,4,7,8-HxCDF	1.2	J B	5.3	0.037
57117-44-9	1,2,3,6,7,8-HxCDF	0.76	J	5.3	0.031
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.037
60851-34-5	2,3,4,6,7,8-HxCDF	0.53	J	5.3	0.034
35822-46-9	1,2,3,4,6,7,8-HpCDD	27	B	5.3	0.16
67562-39-4	1,2,3,4,6,7,8-HpCDF	5.3	B	5.3	0.037
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.44	J B	5.3	0.043
3268-87-9	OCDD	3200	B	11	0.22
39001-02-0	OCDF	4.3	J B	11	0.036
41903-57-5	Total TCDD	11	q	1.1	0.031
30402-14-3	Total TCDF	5.4	q	1.1	0.025
36088-22-9	Total PeCDD	16	q	5.3	0.065
30402-15-4	Total PeCDF	6.1	q	5.3	0.037
34465-46-8	Total HxCDD	17		5.3	0.028
55684-94-1	Total HxCDF	6.8	B q	5.3	0.035
37871-00-4	Total HpCDD	50	B	5.3	0.16
38998-75-3	Total HpCDF	9.0	B	5.3	0.040

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1012-0204 | Lab Sample ID: 320-5001-23

Matrix: Solid | Lab File ID: 24DE1310D5_5.d

Analysis Method: 8290A | Date Collected: 11/15/2013 11:10

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.24(g) | Date Analyzed: 12/24/2013 10:53

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32754 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	52		40-135
89059-46-1	13C-2,3,7,8-TCDF	50		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	50		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	45		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	53		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	48		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	51		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	48		40-135
114423-97-1	13C-OCDD	62		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1012-0204 RA Lab Sample ID: 320-5001-23 RA

Matrix: Solid Lab File ID: 02JA1411D2_011.d

Analysis Method: 8290A Date Collected: 11/15/2013 11:10

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.24(g) Date Analyzed: 01/02/2014 20:25

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33115 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.35	J	1.1	0.093

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	44		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1014-0204 | Lab Sample ID: 320-5001-26

Matrix: Solid | Lab File ID: 24DE1310D5_10.d

Analysis Method: 8290A | Date Collected: 11/15/2013 11:45

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.14(g) | Date Analyzed: 12/24/2013 14:44

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32754 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.043
40321-76-4	1,2,3,7,8-PeCDD	2.9	J	5.3	0.11
57117-41-6	1,2,3,7,8-PeCDF	1.5	J	5.3	0.033
57117-31-4	2,3,4,7,8-PeCDF	1.9	J	5.3	0.034
39227-28-6	1,2,3,4,7,8-HxCDD	2.6	J	5.3	0.031
57653-85-7	1,2,3,6,7,8-HxCDD	6.9		5.3	0.027
19408-74-3	1,2,3,7,8,9-HxCDD	6.3		5.3	0.025
70648-26-9	1,2,3,4,7,8-HxCDF	2.9	J B	5.3	0.028
57117-44-9	1,2,3,6,7,8-HxCDF	2.4	J	5.3	0.024
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.029
60851-34-5	2,3,4,6,7,8-HxCDF	1.9	J	5.3	0.027
35822-46-9	1,2,3,4,6,7,8-HpCDD	41	B	5.3	0.083
67562-39-4	1,2,3,4,6,7,8-HpCDF	12	B	5.3	0.031
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.63	J B	5.3	0.036
3268-87-9	OCDD	2000	B	11	0.14
39001-02-0	OCDF	4.2	J B	11	0.037
41903-57-5	Total TCDD	63	q	1.1	0.043
30402-14-3	Total TCDF	19	q	1.1	0.026
36088-22-9	Total PeCDD	87	q	5.3	0.11
30402-15-4	Total PeCDF	22	q	5.3	0.033
34465-46-8	Total HxCDD	79		5.3	0.027
55684-94-1	Total HxCDF	19	B	5.3	0.027
37871-00-4	Total HpCDD	81	B	5.3	0.083
38998-75-3	Total HpCDF	15	B	5.3	0.033

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1014-0204 | Lab Sample ID: 320-5001-26

Matrix: Solid | Lab File ID: 24DE1310D5_10.d

Analysis Method: 8290A | Date Collected: 11/15/2013 11:45

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.14(g) | Date Analyzed: 12/24/2013 14:44

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32754 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	53		40-135
89059-46-1	13C-2,3,7,8-TCDF	53		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	50		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	50		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	55		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	53		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	50		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	50		40-135
114423-97-1	13C-OCDD	42		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1014-0204 RA Lab Sample ID: 320-5001-26 RA

Matrix: Solid Lab File ID: 02JA1411D2_015.d

Analysis Method: 8290A Date Collected: 11/15/2013 11:45

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.14(g) Date Analyzed: 01/02/2014 23:01

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33115 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.1		1.1	0.093

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	44		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1015-0204 | Lab Sample ID: 320-5001-27

Matrix: Solid | Lab File ID: 24DE1310D5_11.d

Analysis Method: 8290A | Date Collected: 11/15/2013 11:00

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.05(g) | Date Analyzed: 12/24/2013 15:30

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32754 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.039
40321-76-4	1,2,3,7,8-PeCDD	2.3	J	5.4	0.10
57117-41-6	1,2,3,7,8-PeCDF	1.3	J	5.4	0.031
57117-31-4	2,3,4,7,8-PeCDF	1.5	J	5.4	0.031
39227-28-6	1,2,3,4,7,8-HxCDD	2.2	J	5.4	0.026
57653-85-7	1,2,3,6,7,8-HxCDD	5.3	J	5.4	0.023
19408-74-3	1,2,3,7,8,9-HxCDD	4.9	J	5.4	0.022
70648-26-9	1,2,3,4,7,8-HxCDF	1.9	J B	5.4	0.023
57117-44-9	1,2,3,6,7,8-HxCDF	1.9	J	5.4	0.019
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.023
60851-34-5	2,3,4,6,7,8-HxCDF	1.4	J	5.4	0.021
35822-46-9	1,2,3,4,6,7,8-HpCDD	41	B	5.4	0.072
67562-39-4	1,2,3,4,6,7,8-HpCDF	9.1	B	5.4	0.022
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.56	J B	5.4	0.026
3268-87-9	OCDD	3100	B	11	0.16
39001-02-0	OCDF	4.3	J B	11	0.030
41903-57-5	Total TCDD	55	q	1.1	0.039
30402-14-3	Total TCDF	17	q	1.1	0.023
36088-22-9	Total PeCDD	70	q	5.4	0.10
30402-15-4	Total PeCDF	15		5.4	0.031
34465-46-8	Total HxCDD	60		5.4	0.024
55684-94-1	Total HxCDF	14	q B	5.4	0.022
37871-00-4	Total HpCDD	80	B	5.4	0.072
38998-75-3	Total HpCDF	12	B	5.4	0.024

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1015-0204 Lab Sample ID: 320-5001-27

Matrix: Solid Lab File ID: 24DE1310D5_11.d

Analysis Method: 8290A Date Collected: 11/15/2013 11:00

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.05(g) Date Analyzed: 12/24/2013 15:30

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32754 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	56		40-135
89059-46-1	13C-2,3,7,8-TCDF	57		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	53		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	53		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	61		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	57		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	53		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	52		40-135
114423-97-1	13C-OCDD	45		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1015-0204 Lab Sample ID: 320-5001-27

Matrix: Solid Lab File ID: 03JA1411D2_004.d

Analysis Method: 8290A Date Collected: 11/15/2013 11:00

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.05(g) Date Analyzed: 01/03/2014 13:03

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33217 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.87	J	1.1	0.080

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		40-135
89059-46-1	13C-2,3,7,8-TCDF	45		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1016-0204 Lab Sample ID: 320-5001-28

Matrix: Solid Lab File ID: 03JA1411D2_005.d

Analysis Method: 8290A Date Collected: 11/15/2013 10:15

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.32(g) Date Analyzed: 01/03/2014 13:42

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33217 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.047

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	66		40-135
89059-46-1	13C-2,3,7,8-TCDF	49		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1016-0204 Lab Sample ID: 320-5001-28

Matrix: Solid Lab File ID: 03JA143D5_32.d

Analysis Method: 8290A Date Collected: 11/15/2013 10:15

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.32(g) Date Analyzed: 01/04/2014 10:57

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.098
40321-76-4	1,2,3,7,8-PeCDD	1.3	J	5.2	0.19
57117-41-6	1,2,3,7,8-PeCDF	0.70	J	5.2	0.065
57117-31-4	2,3,4,7,8-PeCDF	1.3	J	5.2	0.067
39227-28-6	1,2,3,4,7,8-HxCDD	1.5	J	5.2	0.12
57653-85-7	1,2,3,6,7,8-HxCDD	3.6	J	5.2	0.086
19408-74-3	1,2,3,7,8,9-HxCDD	3.5	J	5.2	0.089
70648-26-9	1,2,3,4,7,8-HxCDF	3.5	J B	5.2	0.064
57117-44-9	1,2,3,6,7,8-HxCDF	1.8	J	5.2	0.048
72918-21-9	1,2,3,7,8,9-HxCDF	0.30	J	5.2	0.062
60851-34-5	2,3,4,6,7,8-HxCDF	1.1	J	5.2	0.056
35822-46-9	1,2,3,4,6,7,8-HpCDD	35	B	5.2	0.17
67562-39-4	1,2,3,4,6,7,8-HpCDF	8.2	B	5.2	0.072
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.38	J B	5.2	0.084
3268-87-9	OCDD	3100	B	10	0.95
39001-02-0	OCDF	4.4	J q B	10	0.11
41903-57-5	Total TCDD	29	q	1.0	0.098
30402-14-3	Total TCDF	12	q	1.0	0.039
36088-22-9	Total PeCDD	44	q	5.2	0.19
30402-15-4	Total PeCDF	13	q	5.2	0.066
34465-46-8	Total HxCDD	41	q	5.2	0.099
55684-94-1	Total HxCDF	13	q B	5.2	0.057
37871-00-4	Total HpCDD	75	B	5.2	0.17
38998-75-3	Total HpCDF	12	q B	5.2	0.078

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1016-0204 | Lab Sample ID: 320-5001-28

Matrix: Solid | Lab File ID: 03JA143D5_32.d

Analysis Method: 8290A | Date Collected: 11/15/2013 10:15

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.32(g) | Date Analyzed: 01/04/2014 10:57

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 33211 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	51		40-135
89059-46-1	13C-2,3,7,8-TCDF	45		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	50		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	45		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	50		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	44		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	55		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	50		40-135
114423-97-1	13C-OCDD	52		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1017-011.6 | Lab Sample ID: 320-5001-24

Matrix: Solid | Lab File ID: 24DE1310D5_8.d

Analysis Method: 8290A | Date Collected: 11/15/2013 09:15

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.13(g) | Date Analyzed: 12/24/2013 13:12

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 13.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32754 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.10
40321-76-4	1,2,3,7,8-PeCDD	5.2	J	5.7	0.20
57117-41-6	1,2,3,7,8-PeCDF	2.4	J	5.7	0.040
57117-31-4	2,3,4,7,8-PeCDF	3.3	J	5.7	0.041
39227-28-6	1,2,3,4,7,8-HxCDD	5.0	J	5.7	0.045
57653-85-7	1,2,3,6,7,8-HxCDD	12		5.7	0.040
19408-74-3	1,2,3,7,8,9-HxCDD	11		5.7	0.037
70648-26-9	1,2,3,4,7,8-HxCDF	3.8	J B	5.7	0.031
57117-44-9	1,2,3,6,7,8-HxCDF	3.3	J	5.7	0.026
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.7	0.031
60851-34-5	2,3,4,6,7,8-HxCDF	2.6	J	5.7	0.029
35822-46-9	1,2,3,4,6,7,8-HpCDD	56	B	5.7	0.078
67562-39-4	1,2,3,4,6,7,8-HpCDF	18	B	5.7	0.041
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.97	J B	5.7	0.048
3268-87-9	OCDD	2500	B	11	0.16
39001-02-0	OCDF	7.0	J B	11	0.038
41903-57-5	Total TCDD	160		1.1	0.10
30402-14-3	Total TCDF	37		1.1	0.040
36088-22-9	Total PeCDD	180	q	5.7	0.20
30402-15-4	Total PeCDF	25		5.7	0.040
34465-46-8	Total HxCDD	140		5.7	0.041
55684-94-1	Total HxCDF	29	q B	5.7	0.029
37871-00-4	Total HpCDD	110	B	5.7	0.078
38998-75-3	Total HpCDF	23	B	5.7	0.044

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1017-011.6 Lab Sample ID: 320-5001-24

Matrix: Solid Lab File ID: 24DE1310D5_8.d

Analysis Method: 8290A Date Collected: 11/15/2013 09:15

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.13(g) Date Analyzed: 12/24/2013 13:12

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 13.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32754 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	52		40-135
89059-46-1	13C-2,3,7,8-TCDF	52		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	50		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	50		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	55		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	53		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	48		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	47		40-135
114423-97-1	13C-OCDD	40		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1017-011.6 RA Lab Sample ID: 320-5001-24 RA

Matrix: Solid Lab File ID: 02JA1411D2_014.d

Analysis Method: 8290A Date Collected: 11/15/2013 09:15

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.13(g) Date Analyzed: 01/02/2014 22:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 13.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33115 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	2.0		1.1	0.095

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	42		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1017-0204 Lab Sample ID: 320-5001-25

Matrix: Solid Lab File ID: 24DE1310D5_9.d

Analysis Method: 8290A Date Collected: 11/15/2013 09:20

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.12(g) Date Analyzed: 12/24/2013 13:58

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32754 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.017
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.013
40321-76-4	1,2,3,7,8-PeCDD	ND		5.3	0.035
57117-41-6	1,2,3,7,8-PeCDF	ND		5.3	0.020
57117-31-4	2,3,4,7,8-PeCDF	ND		5.3	0.020
39227-28-6	1,2,3,4,7,8-HxCDD	0.096	J	5.3	0.020
57653-85-7	1,2,3,6,7,8-HxCDD	0.092	J	5.3	0.017
19408-74-3	1,2,3,7,8,9-HxCDD	0.33	J	5.3	0.016
70648-26-9	1,2,3,4,7,8-HxCDF	0.095	J q B	5.3	0.014
57117-44-9	1,2,3,6,7,8-HxCDF	0.24	J	5.3	0.012
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.014
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.3	0.013
35822-46-9	1,2,3,4,6,7,8-HpCDD	23	B	5.3	0.057
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.39	J B	5.3	0.018
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.054	J q B	5.3	0.021
3268-87-9	OCDD	3700	B	11	0.16
39001-02-0	OCDF	0.48	J q B	11	0.024
41903-57-5	Total TCDD	0.31	J q	1.1	0.017
30402-14-3	Total TCDF	0.13	J q	1.1	0.013
36088-22-9	Total PeCDD	0.40	J	5.3	0.035
30402-15-4	Total PeCDF	ND		5.3	0.020
34465-46-8	Total HxCDD	1.2	J q	5.3	0.018
55684-94-1	Total HxCDF	0.47	J q B	5.3	0.013
37871-00-4	Total HpCDD	42	B	5.3	0.057
38998-75-3	Total HpCDF	0.54	J q B	5.3	0.019

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1017-0204 | Lab Sample ID: 320-5001-25

Matrix: Solid | Lab File ID: 24DE1310D5_9.d

Analysis Method: 8290A | Date Collected: 11/15/2013 09:20

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.12(g) | Date Analyzed: 12/24/2013 13:58

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32754 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		40-135
89059-46-1	13C-2,3,7,8-TCDF	59		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	55		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	55		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	61		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	57		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	59		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	56		40-135
114423-97-1	13C-OCDD	51		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1018-0204 Lab Sample ID: 320-5001-29

Matrix: Solid Lab File ID: 26DE1310D5_13.d

Analysis Method: 8290A Date Collected: 11/15/2013 10:00

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.07(g) Date Analyzed: 12/26/2013 21:11

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32757 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.048
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.039
40321-76-4	1,2,3,7,8-PeCDD	ND		5.2	0.081
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.044
57117-31-4	2,3,4,7,8-PeCDF	ND		5.2	0.046
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.2	0.056
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.2	0.049
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.2	0.045
70648-26-9	1,2,3,4,7,8-HxCDF	0.23	J B	5.2	0.033
57117-44-9	1,2,3,6,7,8-HxCDF	0.29	J	5.2	0.028
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.033
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.2	0.031
35822-46-9	1,2,3,4,6,7,8-HpCDD	8.3	B	5.2	0.14
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.51	J B	5.2	0.026
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.12	J B	5.2	0.030
3268-87-9	OCDD	1500	B	10	0.24
39001-02-0	OCDF	1.0	J B	10	0.058
41903-57-5	Total TCDD	ND		1.0	0.048
30402-14-3	Total TCDF	0.21	J q	1.0	0.039
36088-22-9	Total PeCDD	0.30	J q	5.2	0.081
30402-15-4	Total PeCDF	ND		5.2	0.046
34465-46-8	Total HxCDD	0.57	J q	5.2	0.050
55684-94-1	Total HxCDF	0.68	J q B	5.2	0.031
37871-00-4	Total HpCDD	14	B	5.2	0.14
38998-75-3	Total HpCDF	0.74	J q B	5.2	0.028

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1018-0204 | Lab Sample ID: 320-5001-29

Matrix: Solid | Lab File ID: 26DE1310D5_13.d

Analysis Method: 8290A | Date Collected: 11/15/2013 10:00

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.07(g) | Date Analyzed: 12/26/2013 21:11

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32757 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	54		40-135
89059-46-1	13C-2,3,7,8-TCDF	55		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	52		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	53		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	62		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	57		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	57		40-135
114423-97-1	13C-OCDD	64		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-RB04-1113 | Lab Sample ID: 320-5001-30

Matrix: Water | Lab File ID: 16DE13A9D5_005.d

Analysis Method: 8290A | Date Collected: 11/15/2013 12:00

Extract. Method: 8290 | Date Extracted: 11/20/2013 12:35

Sample wt/vol: 989.4(mL) | Date Analyzed: 12/17/2013 01:37

Con. Extract Vol.: 20.00(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32053 | Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.60
51207-31-9	2,3,7,8-TCDF	ND		10	1.1
40321-76-4	1,2,3,7,8-PeCDD	ND		51	2.0
57117-41-6	1,2,3,7,8-PeCDF	ND		51	3.5
57117-31-4	2,3,4,7,8-PeCDF	ND		51	3.7
39227-28-6	1,2,3,4,7,8-HxCDD	ND	*	51	0.77
57653-85-7	1,2,3,6,7,8-HxCDD	ND		51	0.81
19408-74-3	1,2,3,7,8,9-HxCDD	ND		51	0.67
70648-26-9	1,2,3,4,7,8-HxCDF	ND		51	0.77
57117-44-9	1,2,3,6,7,8-HxCDF	ND	*	51	0.75
72918-21-9	1,2,3,7,8,9-HxCDF	ND		51	0.81
60851-34-5	2,3,4,6,7,8-HxCDF	ND		51	0.77
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		51	0.54
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		51	0.48
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		51	0.57
3268-87-9	OCDD	2.9	J B	100	0.89
39001-02-0	OCDF	ND		100	0.74
41903-57-5	Total TCDD	ND		10	1.8
30402-14-3	Total TCDF	ND		10	1.1
36088-22-9	Total PeCDD	ND		51	2.0
30402-15-4	Total PeCDF	ND		51	3.7
34465-46-8	Total HxCDD	ND		51	0.81
55684-94-1	Total HxCDF	ND		51	0.81
37871-00-4	Total HpCDD	1.3	J q B	51	0.54
38998-75-3	Total HpCDF	ND		51	0.57

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-RB04-1113 Lab Sample ID: 320-5001-30

Matrix: Water Lab File ID: 16DE13A9D5_005.d

Analysis Method: 8290A Date Collected: 11/15/2013 12:00

Extract. Method: 8290 Date Extracted: 11/20/2013 12:35

Sample wt/vol: 989.4(mL) Date Analyzed: 12/17/2013 01:37

Con. Extract Vol.: 20.00(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 32053 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		40-135
89059-46-1	13C-2,3,7,8-TCDF	67		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	63		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	83		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	62		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	67		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	66		40-135
114423-97-1	13C-OCDD	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-SB-RB03-1113 | Lab Sample ID: 320-5001-21

Matrix: Water | Lab File ID: 16DE13A9D5_004.d

Analysis Method: 8290A | Date Collected: 11/14/2013 12:00

Extract. Method: 8290 | Date Extracted: 11/20/2013 12:35

Sample wt/vol: 1042.7(mL) | Date Analyzed: 12/17/2013 00:55

Con. Extract Vol.: 20.00(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32053 | Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		9.6	0.69
51207-31-9	2,3,7,8-TCDF	ND		9.6	0.98
40321-76-4	1,2,3,7,8-PeCDD	ND		48	1.5
57117-41-6	1,2,3,7,8-PeCDF	ND		48	2.9
57117-31-4	2,3,4,7,8-PeCDF	ND		48	3.1
39227-28-6	1,2,3,4,7,8-HxCDD	ND	*	48	0.66
57653-85-7	1,2,3,6,7,8-HxCDD	ND		48	0.70
19408-74-3	1,2,3,7,8,9-HxCDD	ND		48	0.57
70648-26-9	1,2,3,4,7,8-HxCDF	ND		48	0.80
57117-44-9	1,2,3,6,7,8-HxCDF	ND	*	48	0.77
72918-21-9	1,2,3,7,8,9-HxCDF	ND		48	0.84
60851-34-5	2,3,4,6,7,8-HxCDF	ND		48	0.80
35822-46-9	1,2,3,4,6,7,8-HpCDD	1.4	J B	48	0.28
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.6	J B	48	0.50
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		48	0.59
3268-87-9	OCDD	2.8	J q B	96	0.91
39001-02-0	OCDF	2.0	J q B	96	0.71
41903-57-5	Total TCDD	ND		9.6	1.4
30402-14-3	Total TCDF	ND		9.6	0.98
36088-22-9	Total PeCDD	ND		48	1.5
30402-15-4	Total PeCDF	ND		48	3.1
34465-46-8	Total HxCDD	ND		48	0.70
55684-94-1	Total HxCDF	ND		48	0.84
37871-00-4	Total HpCDD	2.9	J q B	48	0.28
38998-75-3	Total HpCDF	2.6	J B	48	0.54

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-SB-RB03-1113 Lab Sample ID: 320-5001-21

Matrix: Water Lab File ID: 16DE13A9D5_004.d

Analysis Method: 8290A Date Collected: 11/14/2013 12:00

Extract. Method: 8290 Date Extracted: 11/20/2013 12:35

Sample wt/vol: 1042.7(mL) Date Analyzed: 12/17/2013 00:55

Con. Extract Vol.: 20.00(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 32053 Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	79		40-135
89059-46-1	13C-2,3,7,8-TCDF	75		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	73		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	62		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	91		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	69		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	71		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		40-135
114423-97-1	13C-OCDD	62		40-135

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: Dioxin

Missing Information	Date Lab Contacted	Date Received

Validator: Edward Sedlmayer Date: 2/13/14

See DV Report

EPA-NE - Data Validation
VOA/SV/Pest/PCB-I

Case: NAVSTA Newport SDG: 320-5001-2

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: Edward Kedzierski Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action

Comments:

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action

Comments:

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: Edward Sadlon Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: Edward Sedlmyer Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: Edward Sudlow Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Edward Nedlyn Date: 2/13/14

See DV Report

EPA NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Edward Kellogg Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Edward Ledbetter Date: 2/13/14

EPA-NE - Data Validation Worksheet

See DU Report

Case: NAVSTA Newport SDG: 320-5001-2

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator: Edward Dodge

Date: 2/13/14

EPA-NE - Data Validation Worksheet

See DV Report

Case: NAVSTA Newport SDG: 320-5001-2

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)
Comments:								

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: Edward Kellogg Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: Edward Stollmyer Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: Edward Sablon Date: 2/13/14

EPA-NE - Data Validation Worksheet SCDU Report

Case: NAUSTA Newport SDG: 320-5001-2

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Validator: Edward Sullivan Date: 2/15/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: Edward Bodlyn Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

VOA/SV/Pest/PCB-V-B

V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: Edward Sedlazo Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4
2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4
4MP= 4-Methylphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: Edward Hathaway Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
SOM01.2		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedlmyer Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-50012

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria							
		Fluoranthene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery				% Recovery			
				Fluoranthene				Naphthalene	
				Pyrene				2-Methylnaphthalene	
				Benzo(a)anthracene				Acenaphthylene	
				Chrysene				Acenaphthene	
				Benzo(b)fluoranthene				Fluorene	
				Benzo(k)fluoranthene				Pentachlorophenol	
				Benzo(a)pyrene				Phenanthrene	
				Indeno(1.2.2-cd)pyrene				Anthracene	
				Dibenzo(a,h)anthracene					
				Benzo(g,h,i)perylene					

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Hedbys Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1.2-Dichloroethane-d_4

Validator: Edward Sudlongen Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Sedlmyer Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Edward Bedlyn Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: Edward Sedlmyer Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sedlmyer Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: Edward Sedlmyer Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 320-5001-2

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sedlmyer Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: Edward Sedlmyer Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: Edward Sedlmyer Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-50014-2

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: Edward Ludlum Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 320-5001-2

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: Edward Redlinger Date: 2/13/14

EPA-NE - Data Validation Worksheet See DV Report

Case: NAVSTA Newport SDG: 320-5001-2

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: Edward Sedlazo Date: 2/13/14

See DV Report

EPA NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: Edward Sadlyn Date: 2/13/14

EPA-NE - Data Validation Worksheet See DV Report

Case: NAVSTA Newport SDG: 320-5001-2

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: Edward Bradley Date: 2/13/09

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-5001-2

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Sedlyar Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAVSTA Newport SDG: 320-50014-2

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Hathaway Date: 2/13/14

See DV Report

EPA-NE - Data Validation Worksheet

Case: NAUSTA Newport SDG: 320-5001-2

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: Edward Sedlyn Date: 2/13/14

APPENDIX D

SUPPORT DOCUMENTATION

HOLDTIME

PROJ_NO 03019

SDG	SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
320-5001-2	DIOX	NG/KG	TF2-003-SB1016-0204	320-5001-28	NM	11/15/2013	11/27/2013	01/04/2014	12	38	50
320-5001-2	DIOX	NG/KG	TF2-003-DUP08-1113	320-5001-31	NM	11/15/2013	01/06/2014	01/06/2014	52	0	52
320-5001-2	DIOX	NG/KG	TF2-003-DUP08-1113-RE	320-5001-31	NM	11/15/2013	11/27/2013	01/03/2014	12	37	49
320-5001-2	DIOX	NG/KG	TF2-003-SB1011-0204	320-5001-22	NM	11/15/2013	11/27/2013	12/23/2013	12	26	38
320-5001-2	DIOX	NG/KG	TF2-003-SB1011-0204	320-5001-22	NM	11/15/2013	11/27/2013	01/02/2014	12	36	48
320-5001-2	DIOX	NG/KG	TF2-003-SB1011-0204	320-5001-22	NM	11/15/2013	01/06/2014	01/06/2014	52	0	52
320-5001-2	DIOX	NG/KG	TF2-003-SB1012-0204	320-5001-23	NM	11/15/2013	11/27/2013	12/24/2013	12	27	39
320-5001-2	DIOX	NG/KG	TF2-003-SB1012-0204	320-5001-23	NM	11/15/2013	11/27/2013	01/02/2014	12	36	48
320-5001-2	DIOX	NG/KG	TF2-003-SB1012-0204	320-5001-23	NM	11/15/2013	01/06/2014	01/06/2014	52	0	52
320-5001-2	DIOX	NG/KG	TF2-003-SB1014-0204	320-5001-26	NM	11/15/2013	11/27/2013	12/24/2013	12	27	39
320-5001-2	DIOX	NG/KG	TF2-003-SB1014-0204	320-5001-26	NM	11/15/2013	11/27/2013	01/02/2014	12	36	48
320-5001-2	DIOX	NG/KG	TF2-003-SB1014-0204	320-5001-26	NM	11/15/2013	01/06/2014	01/06/2014	52	0	52
320-5001-2	DIOX	NG/KG	TF2-003-SB1015-0204	320-5001-27	NM	11/15/2013	11/27/2013	12/24/2013	12	27	39
320-5001-2	DIOX	NG/KG	TF2-003-DUP08-1113	320-5001-31	NM	11/15/2013	11/27/2013	12/26/2013	12	29	41
320-5001-2	DIOX	NG/KG	TF2-003-SB1015-0204-RE	320-5001-27	NM	11/15/2013	11/27/2013	01/03/2014	12	37	49
320-5001-2	DIOX	NG/KG	TF2-003-SB1016-0204	320-5001-28	NM	11/15/2013	01/06/2014	01/06/2014	52	0	52

SDG	SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
320-5001-2	DIOX	NG/KG	TF2-003-SB1016-0204-RE	320-5001-28	NM	11/15/2013	11/27/2013	01/03/2014	12	37	49
320-5001-2	DIOX	NG/KG	TF2-003-SB1017-011.6	320-5001-24	NM	11/15/2013	11/27/2013	12/24/2013	12	27	39
320-5001-2	DIOX	NG/KG	TF2-003-SB1017-011.6	320-5001-24	NM	11/15/2013	11/27/2013	01/02/2014	12	36	48
320-5001-2	DIOX	NG/KG	TF2-003-SB1017-011.6	320-5001-24	NM	11/15/2013	01/06/2014	01/06/2014	52	0	52
320-5001-2	DIOX	NG/KG	TF2-003-SB1017-0204	320-5001-25	NM	11/15/2013	11/27/2013	12/24/2013	12	27	39
320-5001-2	DIOX	NG/KG	TF2-003-SB1017-0204	320-5001-25	NM	11/15/2013	01/06/2014	01/06/2014	52	0	52
320-5001-2	DIOX	NG/KG	TF2-003-SB1018-0204	320-5001-29	NM	11/15/2013	11/27/2013	12/26/2013	12	29	41
320-5001-2	DIOX	NG/KG	TF2-003-SB1018-0204	320-5001-29	NM	11/15/2013	01/06/2014	01/06/2014	52	0	52
320-5001-2	DIOX	NG/KG	TF2-003-SB1015-0204	320-5001-27	NM	11/15/2013	01/06/2014	01/06/2014	52	0	52
320-5001-2	DIOX	PG/L	TF2-SB-RB03-1113	320-5001-21	NM	11/14/2013	01/06/2014	01/06/2014	53	0	53
320-5001-2	DIOX	PG/L	TF2-003-RB04-1113	320-5001-30	NM	11/15/2013	11/20/2013	12/17/2013	5	27	32
320-5001-2	DIOX	PG/L	TF2-003-RB04-1113	320-5001-30	NM	11/15/2013	01/06/2014	01/06/2014	52	0	52
320-5001-2	DIOX	PG/L	TF2-SB-RB03-1113	320-5001-21	NM	11/14/2013	11/20/2013	12/17/2013	6	27	33

NAVSTA NEWPORT
SOIL DATA
320-5001-2

FRACTION	CHEMICAL	TF2-003-SB1011-0204	UNITS	TF2-003-DUP08-1113	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	3100	NG/KG	2900	6.67	200.00
DIOX	1,2,3,4,6,7,8-HPCDD	20	NG/KG	18 J	10.53	2.00
DIOX	1,2,3,4,6,7,8-HPCDF	4.2 J	NG/KG	5.7	30.30	1.50
DIOX	1,2,3,4,7,8-HXCDD	0.22 J	NG/KG	ND	200.00	0.22
DIOX	1,2,3,4,7,8-HXCDF	ND	NG/KG	1.5 J	200.00	1.50
DIOX	1,2,3,6,7,8-HXCDD	0.38 J	NG/KG	ND	200.00	0.38
DIOX	1,2,3,6,7,8-HXCDF	0.45 J	NG/KG	0.8 J	56.00	0.35
DIOX	1,2,3,7,8,9-HXCDD	0.53 J	NG/KG	0.39 J	30.43	0.14
DIOX	1,2,3,7,8-PECDD	0.14 J	NG/KG	ND	200.00	0.14
DIOX	1,2,3,7,8-PECDF	ND	NG/KG	0.27 J	200.00	0.27
DIOX	2,3,4,6,7,8-HXCDF	0.29 J	NG/KG	0.23 J	23.08	0.06
DIOX	2,3,4,7,8-PECDF	0.26 J	NG/KG	ND	200.00	0.26
DIOX	TOTAL HPCDD	36	NG/KG	36 J	0.00	0.00
DIOX	TOTAL HXCDD	4.4 J	NG/KG	3.5 J	22.78	0.90
DIOX	TOTAL HXCDF	4.6 J	NG/KG	5.8 J	23.08	1.20
DIOX	TOTAL PECDD	2.1 J	NG/KG	1.4 J	40.00	0.70
DIOX	TOTAL PECDF	2.8 J	NG/KG	3.7 J	27.69	0.90
DIOX	TOTAL TCDD	1.5 J	NG/KG	ND	200.00	1.50
DIOX	TOTAL TCDF	2.4 J	NG/KG	2.9 J	18.87	0.50

C.K. <2xRL

O.K. <2xRL

O.K. <2xRL

O.K. <2xRL

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 320-5001-2

Job Description: TF2 Portsmouth RI, CTO WE 30

For:
Tetra Tech, Inc.
250 Andover Street
Suite 200
Wilmington, MA 01887

Attention: Dabra Seiken

Karen Sellers

Approved for release.
Karen M Sellers
Project Manager I
1/8/2014 11:07 AM

Designee for
Jill Kellmann, Senior Project Manager
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374-4402
jill.kellmann@testamericainc.com
01/08/2014

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	RPD of the LCS and LCSD exceeds the control limits
*	LCS or LCSD exceeds the control limits
q	The isomer is qualified as positively identified, but at an estimated quantity because the quantitation is based on the theoretical ratio for these samples.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F	MS/MSD Recovery and/or RPD exceeds the control limits
*	Isotope Dilution analyte exceeds control limits
I	Ion Ratio outside of limits, value is EMPC.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

Client: Tetra Tech, Inc.

Project: TF2 Portsmouth RI, CTO WE 30

Report Number: 320-5001-2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica West Sacramento attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

All parameters for which TestAmerica West Sacramento has certification were evaluated to the QSM specified reporting convention or to the client specified format if different from QSM. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Receipt
The samples were received on 11/16/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was C. Please note that the container label for the following sample did not match the inforamtion listed on the chain of custody (COC). We received 2 jars for TF2-003-SB1011-0204. The COC lists one jar for this sample. We received 3 jars for TF2-003-SB1012-0204. The COC lists 2 jars for this sample.

Dioxin - Method 8290A
The bracketing continuing calibration verification (CCV) associated with batch 32053 has analyte, 1,2,3,4,7,8-HxCDD with percent difference values that are between the method criteria of 20% to 25% deviation from the initial calibration curve. Per method guidelines, an average relative response factor (RRF) is calculated from the bracketing CCV and is used to quantitate any positive results in the associated samples for the affected analytes.

The bracketing continuing calibration verification (CCV) associated with batch 32148 has analyte, 1,2,3,4,7,8-HxCDD, with percent difference values that are between the method criteria of 20% to 25% deviation from the initial calibration curve. Per method guidelines, an average relative response factor (RRF) is calculated from the bracketing CCV and is used to quantitate any positive results in the associated samples for the affected analytes.

The bracketing continuing calibration verification (CCV) associated with batch 32326 has analytes 1,2,3,4,7,8-HxCDD and 1,2,3,7,8,9-HxCDD with percent difference values that are between the method criteria of 20% to 25% deviation from the initial calibration curve. Per method guidelines, an average relative response factor (RRF) is calculated from the bracketing CCV's and is used to quantitate any positive results in the associated samples for the affected analytes.

The bracketing continuing calibration verification (CCV) associated with analytical batch 32754 has(13C-OCDD) analyte with percent difference value that is between the method criteria of 30% to 35% deviation from the initial calibration curve. Per method guidelines, an average relative response factor (RRF) is calculated from the bracketing CCV and is used to quantitate the Isotope Dilution Analyte (IDA) recovery in the associated samples.

Ion abundance ratios are outside criteria for the following samples: TF2-003-RB04-1113 (320-5001-30), TF2-SB-RB03-1113 (320-5001-21), (MB 320-30260/1-A), TF2-003-DUP08-1113 (320-5001-31), TF2-003-SB1011-0204 (320-5001-22),

TF2-003-SB1012-0204 (320-5001-23), TF2-003-SB1014-0204 (320-5001-26), TF2-003-SB1015-0204 (320-5001-27), TF2-003-SB1016-0204 (320-5001-28), TF2-003-SB1017-011.6 (320-5001-24), TF2-003-SB1017-0204 (320-5001-25), TF2-003-SB1018-0204 (320-5001-29), (MB 320-30809/1-A). Quantitation is based on the theoretical ion abundance ratio. Therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC). The affected analytes have been flagged.

The bracketing continuing calibration verification (CCV) associated with analytical batch 32757 has the analyte 1,2,3,6,7,8-HxCDF with percent difference value that is between the method criteria of 20% to 25% deviation from the initial calibration curve. Per method guidelines, an average relative response factor (RRF) is calculated from the bracketing CCV and is used to quantitate any positive results in the associated samples for the affected analytes.

The laboratory control sample and laboratory control sample duplicate (LCS/LCSD) in preparation batch 30260 have a relative percent differences (RPD) for the analyte 1,2,3,4,7,8-HxCDD of 21%, which is above the method recommended limit of 20% for this analyte. The recovery for 1,2,3,4,7,8-HxCDD is within the limits for both the LCS and LCSD.

The laboratory control sample duplicate (LCSD) for batch 30260 recovered outside control limits for the following analyte: 1,2,3,6,7,8-HxCDF at 134% (limits: 76-133%). This analyte was biased high in the LCSD and were not detected in the associated samples. Therefore, the data have been reported.

The matrix spike / matrix spike duplicate (MS/MSD) precision for batch 30809 was outside control limits for 1,2,3,4,7,8,9-HpCDF and OCDD. Sample matrix interference and/or non-homogeneity are suspected as the cause.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 30809 were outside control limits for OCDD. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No other analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

Dioxin Prep
No analytical or quality issues were noted.

Method Summary

Client: Tetra Tech, Inc.
Project/Site: TF2 Portsmouth RI, CTO WE 30

TestAmerica Job ID: 320-5001-2

Method	Method Description	Protocol	Laboratory
8290A	Dioxins and Furans (HRGC/HRMS)	SW846	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: TF2 Portsmouth RI, CTO WE 30

TestAmerica Job ID: 320-5001-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-5001-21	TF2-SB-RB03-1113	Water	11/14/13 12:00	11/16/13 09:05
320-5001-22	TF2-003-SB1011-0204	Solid	11/15/13 10:25	11/16/13 09:05
320-5001-23	TF2-003-SB1012-0204	Solid	11/15/13 11:10	11/16/13 09:05
320-5001-24	TF2-003-SB1017-011.6	Solid	11/15/13 09:15	11/16/13 09:05
320-5001-25	TF2-003-SB1017-0204	Solid	11/15/13 09:20	11/16/13 09:05
320-5001-26	TF2-003-SB1014-0204	Solid	11/15/13 11:45	11/16/13 09:05
320-5001-27	TF2-003-SB1015-0204	Solid	11/15/13 11:00	11/16/13 09:05
320-5001-28	TF2-003-SB1016-0204	Solid	11/15/13 10:15	11/16/13 09:05
320-5001-29	TF2-003-SB1018-0204	Solid	11/15/13 10:00	11/16/13 09:05
320-5001-30	TF2-003-RB04-1113	Water	11/15/13 12:00	11/16/13 09:05
320-5001-31	TF2-003-DUP08-1113	Solid	11/15/13 00:00	11/16/13 09:05

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1906 | PAGE 1 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington MA	Debra Seiken	978 474 8445	Test America / J Kellmann
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
Kjalkut		Kayleen Jalkut	781 801 0457	880 Riverside Parkway
		CARRIER/WAYBILL NUMBER		CITY, STATE 916 373 5600
		FedEx AB# 8759 3797 5520		West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): G G
PRESERVATIVE USED: ≤6°C ≤6°C
TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS 8oz jar; DIOXIN—4oz amber glass

320-5001 Chain of Custody

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS		COMMENTS
11/13	0800	TF2-004/5-SB1032-0204	SB 1032	2	4	SO	G	1	X	
11/13	0825	TF2-004/5-SB1048-0204	SB 1048	2	4	SO	G	1	X	
11/13	1015	TF2-004/5-SB1026-0204	SB 1026	2	4	SO	G	1	X	
11/13	1045	TF2-004/5-SB1025-2.604	SB 1025	2.6	4	SO	G	1	X	
11/13	1048	TF2-004/5-SB1021-0204	SB 1021	2	4	SO	G	1	X	
11/13	1250	TF2-004/5-SB1043-0.10.5	SB 1043	0.1	0.5	SO	G	1	X	
11/13	1320	TF2-004/5-SB1041-022.5	SB 1041	2	2.5	SO	G	1	X	
11/13	1405	TF2-004/5-SB1058-0204	SB 1058	2	4	SO	G	2	X	Lab QC
11/13	1440	TF2-004/5-SB1064-0204	SB 1064	2	4	SO	G	1	X	
11/13	0000	TF2-SB-DUP04-1113	—	—	—	SO	G	1	X	
11/14	0945	TF2-SB004/5-SB1066-0203	SB 1066	2	3	SO	G	1	X	
11/14	1015	TF2-004/5-SB1057-0304 ~~0203~~	SB 1057	23	24	SO	G	1	X	
11/14	1050	TF2-004/5-SB1047-0204	SB 1047	2	4	SO	G	1	X	

Kjalkut 11-15-13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-15-13	1500	1. RECEIVED BY FedEx		
2 RELINQUISHED BY			2. RECEIVED BY	11-16-13	905
3 RELINQUISHED BY			3. RECEIVED BY		

COMMENTS: 3.8°C, 0.9°C

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Page 2455 of 2456

01/08/2014

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1905 | PAGE 2 OF 3

PROJECT NO: CTO 112G03019 WE30	FACILITY: Wilmington, MA	PROJECT MANAGER Debra Seiken	PHONE NUMBER 978 474 8445
SAMPLERS (SIGNATURE) KJalkut		FIELD OPERATIONS LEADER Kayleen Jalkut	PHONE NUMBER 781 801 0457
		CARRIER/WAYBILL NUMBER FedEx AB# 8759 3797 5520	

LABORATORY NAME AND CONTACT: Test America / J. Kellmann
ADDRESS 880 Riverside Parkway
CITY, STATE West Sacramento, CA 95605 916 373 5600

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: DIOXIN, TOTAL SOLIDS - 8oz JAR	TYPE OF ANALYSIS: DIOXIN - 1L AMBER GLASS	COMMENTS
									G	≤6°C			
									G	≤6°C			
11/14	1315	TF2-004/5-SB1038-0204	SB1038	2	4	SO	G	1	P		X	—	
11/14	1340	TF2-004/5-SB1031-0204	SB1031	2	4	SO	G	1	P		X	—	
11/14	1415	TF2-004/5-SB1040-0204	SB1040	2	4	SO	G	1	P		X	—	
11/14	1240	TF2-004/5-SB1049-0204	SB1049	2	4	SO	G	1	P		X	—	
11/14	1445	TF2-004/5-SB1065-0204	SB1065	2	4	SO	G	1	P		X	—	
11/14	1500	TF2-004/5-SB1068-0204	SB1068	2	4	SO	G	1	P		X	—	
11/14	0000	TF2-SB-DUP06-1113 *	—	—	—	SO	G	1	P		X	—	
11/14	1200	TF2-SB-RB03-1113	—	—	—	QC	G	2	P		—	X	
11/15	1025	TF2-003-SB1011-0204	SB1011	2	4	SO	G	1	P		X	—	
11/15	1110	TF2-003-SB1012-0204	SB1012	2	4	SO	G	1	P		X	—	Lab QC
11/15	0915	TF2-003-SB1017-011.6	SB1017	1	1.6	SO	G	1	P		X	—	
11/15	0920	TF2-003-SB1017-0204	SB1017	2	4	SO	G	1	P		X	—	
11/15	1145	TF2-003-SB1014-0204	SB1014	2	4	SO	G	1	P		X	—	

KJalkut 11-15-13

1 RELINQUISHED BY KJalkut	DATE 11-15-13	TIME 1500	1. RECEIVED BY FedEx	DATE	TIME
2 RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE 11-16-13	TIME 905
3. RELINQUISHED BY	DATE	TIME	3 RECEIVED BY	DATE	TIME

COMMENTS * There is no DUP05 for dioxin or DUP07 for DIOXIN

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

1 rec'd 2 jars 2 rec'd 3 jars on 11-16-13

4/02R
FORM NO TtNUS-001

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01/08/2014

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER Nº 1909 | PAGE 3 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112603019	Wilmington, MA	Debra Seiken	978 474 8445	Test America / Jill Kellmann
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
KFaibert		Kayleen Jaikut	781 801 0457	880 Riverside Parkway
		CARRIER/WAYBILL NUMBER		CITY, STATE 916-373-5600
		FedEx AB # 8759 3797 5520		West Sacramento, CA 95605

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: DIOXIN, TOTAL SO4 (D3) SO4 Gravimetric PIOXIN - IL AMBER	COMMENTS
									G	G	≤6°C ≤6°C	
11/15	1100	TF2-003-SB1015-0204	SB 1015	2	4	SO	G	1	X	—		
11/15	1015	TF2-003-SB1016-0204	SB 1016	2	4	SO	G	1	X	—		
11/15	1000	TF2-003-SB1018-0204	SB 1018	2	4	SO	G	1	X	—		
11/15	1200	TF2-SB-RB04-1113	—	—	—	QC	G	2	—	X		
11/15	0000	TF2-SB-DUP08-1113	—	—	—	SO	G	1	X	—		

K Faibert 11-15-13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	11-15-13	1500	1 RECEIVED BY FedEx		
2. RELINQUISHED BY			2. RECEIVED BY	11-16-13	905
3 RELINQUISHED BY			3. RECEIVED BY		

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

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01/08/2014

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 320-5001-2

Login Number: 5001

List Source: TestAmerica Sacramento

List Number: 1

Creator: Hytrek, Cheryl

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Method 8290A

Dioxins and Furans (HRGC/HRMS) by Method 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-225 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #
TF2-003-SB1011-0204 RA	320-5001-22 RA	46
TF2-003-SB1012-0204 RA	320-5001-23 RA	44
TF2-003-SB1017-011.6 RA	320-5001-24 RA	42
TF2-003-SB1014-0204 RA	320-5001-26 RA	44
TF2-003-SB1012-0204 MS RA	320-5001-23 MS RA	52
TF2-003-SB1012-0204 MSD RA	320-5001-23 MSD RA	59

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-225 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #
TF2-003-SB1015-0204	320-5001-27	45	58
TF2-003-SB1016-0204	320-5001-28	49	66
TF2-003-DUP08-1113	320-5001-31	41	53

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Matrix: Solid Level: Low

GC Column (1): SPB-Octyl ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-003-SB1011-0204	320-5001-22	53	56	49	52	53	58	56	59
TF2-003-SB1012-0204	320-5001-23	50	52	45	50	48	53	48	51
TF2-003-SB1017-011.6	320-5001-24	52	52	50	50	53	55	47	48
TF2-003-SB1017-0204	320-5001-25	59	58	55	55	57	61	56	59
TF2-003-SB1014-0204	320-5001-26	53	53	50	50	53	55	50	50
TF2-003-SB1015-0204	320-5001-27	57	56	53	53	57	61	52	53
TF2-003-SB1016-0204	320-5001-28	45	51	45	50	44	50	50	55
TF2-003-SB1018-0204	320-5001-29	55	54	53	52	57	62	57	58
TF2-003-DUP08-1113	320-5001-31	52	51	46	47	51	58	50	51
	MB 320-30809/1-A	55	58	57	57	59	61	62	64
	LCS 320-30809/2-A	56	59	57	58	58	62	63	65
TF2-003-SB1012-0204 MS	320-5001-23 MS	59	60	56	60	55	61	62	69
TF2-003-SB1012-0204 MSD	320-5001-23 MSD	69	71	71	70	79	78	69	71

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Matrix: Solid Level: Low

GC Column (1): SPB-Octyl ID: 0.25 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-003-SB1011-0204	320-5001-22	65
TF2-003-SB1012-0204	320-5001-23	62
TF2-003-SB1017-011.6	320-5001-24	40
TF2-003-SB1017-0204	320-5001-25	51
TF2-003-SB1014-0204	320-5001-26	42
TF2-003-SB1015-0204	320-5001-27	45
TF2-003-SB1016-0204	320-5001-28	52
TF2-003-SB1018-0204	320-5001-29	64
TF2-003-DUP08-1113	320-5001-31	56
	MB 320-30809/1-A	61
	LCS 320-30809/2-A	64
TF2-003-SB1012-0204 MS	320-5001-23 MS	96
TF2-003-SB1012-0204 MSD	320-5001-23 MSD	62

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-SB-RB03-1113	320-5001-21	75	79	62	73	69	91	68	71
TF2-003-RB04-1113	320-5001-30	67	71	57	63	62	83	66	67
	MB 320-30260/1-A	78	85	78	89	76	98	72	75
	LCS 320-30260/2-A	77	83	77	87	70	107	74	78
	LCSD 320-30260/3-A	76	83	80	88	72	98	74	80

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-SB-RB03-1113	320-5001-21	62
TF2-003-RB04-1113	320-5001-30	61
	MB 320-30260/1-A	71
	LCS 320-30260/2-A	76
	LCSD 320-30260/3-A	83

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290A

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID (1): CPS 320-33211/28 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 01/04/2014 08:11

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.18	21

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Instrument ID: 3D5 Start Date: 12/23/2013 14:57

Analysis Batch Number: 32536 End Date: 12/23/2013 20:50

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32536/1		12/23/2013 14:57	1		DB-5 0.32(mm)
ZZZZZ		12/23/2013 15:49	1		DB-5 0.32(mm)
IC 320-32536/3		12/23/2013 16:39	1	23DE13A3D5_3.d	DB-5 0.32(mm)
IC 320-32536/4		12/23/2013 17:21	1	23DE13A3D5_4.d	DB-5 0.32(mm)
IC 320-32536/5		12/23/2013 18:02	1	23DE13A3D5_5.d	DB-5 0.32(mm)
IC 320-32536/6		12/23/2013 18:44	1	23DE13A3D5_6.d	DB-5 0.32(mm)
IC 320-32536/7		12/23/2013 19:26	1	23DE13A3D5_7.d	DB-5 0.32(mm)
ZZZZZ		12/23/2013 20:08	1		DB-5 0.32(mm)
ICV 320-32536/9		12/23/2013 20:50	1		DB-5 0.32(mm)

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2 Analy Batch No.: 32536

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/23/2013 16:39 Calibration End Date: 12/23/2013 19:26 Calibration ID: 5694

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32536/3	23DE13A3D5_3.d
Level 2	IC 320-32536/4	23DE13A3D5_4.d
Level 3	IC 320-32536/5	23DE13A3D5_5.d
Level 4	IC 320-32536/6	23DE13A3D5_6.d
Level 5	IC 320-32536/7	23DE13A3D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9066	0.9848	1.0052	0.9868	1.0235	AveID		0.9814				4.6		20.0			
2,3,7,8-TCDD	1.2929	1.2631	1.2665	1.2825	1.2631	AveID		1.2736				1.1		20.0			
1,2,3,7,8-PeCDF	1.0319	1.1150	1.1719	1.1085	1.1773	AveID		1.1209				5.3		20.0			
2,3,4,7,8-PeCDF	1.0397	1.0564	1.1065	1.0522	1.1178	AveID		1.0745				3.3		20.0			
1,2,3,7,8-PeCDD	1.0076	1.1357	1.1508	1.0982	1.1482	AveID		1.1081				5.4		20.0			
1,2,3,4,7,8-HxCDF	1.0336	0.8601	1.0947	1.0240	1.0711	AveID		1.0167				9.1		20.0			
1,2,3,6,7,8-HxCDF	1.3754	1.1338	1.5017	1.4567	1.3657	AveID		1.3667				10.0		20.0			
2,3,4,6,7,8-HxCDF	1.1387	0.9758	1.2869	1.2395	1.2033	AveID		1.1689				10.0		20.0			
1,2,3,4,7,8-HxCDD	0.7237	0.6962	0.7910	0.7398	0.8674	AveID		0.7636				8.8		20.0			
1,2,3,6,7,8-HxCDD	1.0405	0.9829	1.1547	1.1068	1.1212	AveID		1.0812				6.4		20.0			
1,2,3,7,8,9-HxCDD	0.9476	0.9872	1.1371	1.0623	1.0939	AveID		1.0456				7.4		20.0			
1,2,3,7,8,9-HxCDF	1.0144	0.9379	1.1576	1.0839	1.0786	AveID		1.0545				7.8		20.0			
1,2,3,4,6,7,8-HpCDF	1.3777	1.4703	1.4554	1.4520	1.4503	AveID		1.4411				2.5		20.0			
1,2,3,4,6,7,8-HpCDD	1.0951	1.1090	1.1547	1.1146	1.1761	AveID		1.1299				3.0		20.0			
1,2,3,4,7,8,9-HpCDF	1.1037	1.2392	1.2566	1.2603	1.2699	AveID		1.2259				5.6		20.0			
OCDD	1.0941	1.1666	1.2545	1.2161	1.2701	AveID		1.2002				6.0		20.0			
OCDF	1.6686	1.6878	1.7166	1.8003	1.8499	AveID		1.7446				4.4		20.0			
13C-2,3,7,8-TCDF	2.0661	2.0256	2.0822	1.9611	1.9511	Ave		2.0172				3.0		20.0			
13C-2,3,7,8-TCDD	1.1139	1.0810	1.1103	1.0539	1.1051	Ave		1.0929				2.3		20.0			
13C-1,2,3,7,8-PeCDF	1.5781	1.5189	1.5232	1.4758	1.5160	Ave		1.5224				2.4		20.0			
13C-1,2,3,7,8-PeCDD	0.9337	0.8721	0.9016	0.8490	0.9057	Ave		0.8924				3.7		20.0			
13C-1,2,3,4,7,8-HxCDF	1.0547	1.2696	1.1009	1.0889	1.1844	Ave		1.1397				7.6		20.0			
13C-1,2,3,6,7,8-HxCDD	1.0082	1.0596	1.0336	1.0286	1.0492	Ave		1.0358				1.9		20.0			
13C-1,2,3,4,6,7,8-HpCDF	0.8164	0.7910	0.8468	0.8149	0.9081	Ave		0.8354				5.4		20.0			
13C-1,2,3,4,6,7,8-HpCDD	0.6057	0.6108	0.6648	0.6460	0.6852	Ave		0.6425				5.3		20.0			
13C-OCDD	0.3729	0.3762	0.4234	0.4004	0.4804	Ave		0.4107				11.0		20.0			
37Cl4-2,3,7,8-TCDD	1.6215	1.6288	1.6486	1.6816	1.7028	Ave		1.6567				2.1		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2 Analy Batch No.: 32536

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/23/2013 16:39 Calibration End Date: 12/23/2013 19:26 Calibration ID: 5694

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32536/3	23DE13A3D5_3.d
Level 2	IC 320-32536/4	23DE13A3D5_4.d
Level 3	IC 320-32536/5	23DE13A3D5_5.d
Level 4	IC 320-32536/6	23DE13A3D5_6.d
Level 5	IC 320-32536/7	23DE13A3D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	674374	3202466	17028736	61961087	295637038	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	580367	2393189	11673173	44979267	219349389	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	4267022	19931624	100290356	370960489	1903732254	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	4345494	18898503	94415176	352734332	1811208368	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	2489827	11414720	58157907	210681471	1101514449	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	2832410	11545413	60192871	226073468	1256566401	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	3739732	15821917	82794100	317761083	1614625519	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	3004187	13737275	71217487	276927616	1427455263	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1897118	7950489	42422505	154168006	902528175	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	2753145	11488543	60984135	232682440	1166054353	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	2373003	11214765	61121953	221215738	1124414202	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	2584345	13057023	62967266	238005702	1238608708	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	2825972	11728532	57815058	222142163	1184929725	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	1547081	6864662	36326958	134991383	737707699	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	2207049	10151016	49324510	191887150	1051552635	2.50	10.0	50.0	200	1000
OCDD		AveID	1782885	8094640	44536491	168724499	1025266991	5.00	20.0	100	400	2000
OCDF		AveID	2750500	11923655	64144843	251705071	1507682132	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	155505655	170112365	165658711	155850585	147915669	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	82477679	88248158	86364050	81386612	85673221	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	165479079	174344247	168678400	168481048	161150010	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	101157998	101983025	98855535	96813399	96098492	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	67309477	85604449	70085298	68063552	71731520	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	104558392	118369173	106828074	104869894	104576250	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	47019097	48883537	48685688	46877933	51042755	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	58469473	61684905	63714500	61909817	62590650	100	100	100	100	100
13C-OCDD	13CHx(	Ave	65090062	74014921	75134241	69920441	82262634	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	700247	3078337	14937712	61844566	293733956	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Instrument ID: 3D5 Start Date: 01/04/2014 07:20

Analysis Batch Number: 33211 End Date: 01/04/2014 16:42

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-33211/27		01/04/2014 07:20	1	03JA143D5_27.d	DB-5 0.32(mm)
CPS 320-33211/28		01/04/2014 08:11	1	03JA143D5_28.d	DB-5 0.32(mm)
ZZZZZ		01/04/2014 08:52	1		DB-5 0.32(mm)
ZZZZZ		01/04/2014 09:34	1		DB-5 0.32(mm)
ZZZZZ		01/04/2014 10:15	1		DB-5 0.32(mm)
320-5001-28	TF2-003-SB1016-0204	01/04/2014 10:57	1	03JA143D5_32.d	DB-5 0.32(mm)
ZZZZZ		01/04/2014 11:39	1		DB-5 0.32(mm)
ZZZZZ		01/04/2014 12:21	1		DB-5 0.32(mm)
ZZZZZ		01/04/2014 13:03	1		DB-5 0.32(mm)
ZZZZZ		01/04/2014 13:45	1		DB-5 0.32(mm)
ZZZZZ		01/04/2014 14:26	1		DB-5 0.32(mm)
ZZZZZ		01/04/2014 15:08	1		DB-5 0.32(mm)
ZZZZZ		01/04/2014 15:50	1		DB-5 0.32(mm)
CCV 320-33211/40		01/04/2014 16:42	1	03JA143D5_40.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-33211/27 Calibration Date: 01/04/2014 07:20

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 03JA143D5_27.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9322		9.50	10.0	-5.0	20.0
2,3,7,8-TCDD	AveID	1.274	1.168		9.17	10.0	-8.3	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.094		48.8	50.0	-2.4	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.034		48.1	50.0	-3.7	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.079		48.7	50.0	-2.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.043		51.3	50.0	2.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.516		55.4	50.0	10.9	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.284		54.9	50.0	9.9	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.7036		46.1	50.0	-7.9	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.147		53.0	50.0	6.1	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	1.096		52.4	50.0	4.8	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.171		55.5	50.0	11.0	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.428		49.5	50.0	-0.9	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.141		50.5	50.0	1.0	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.173		47.8	50.0	-4.3	20.0
OCDD	AveID	1.200	1.284		107	100	6.9	20.0
OCDF	AveID	1.745	1.692		97.0	100	-3.0	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.738		86.2	100	-13.8	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.106		101	100	1.2	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.380		90.6	100	-9.4	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8608		96.5	100	-3.5	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	0.9246		81.1	100	-18.9	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	0.9847		95.1	100	-4.9	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8002		95.8	100	-4.2	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.6593		103	100	2.6	30.0
13C-OCDD	Ave	0.4107	0.3618		176	200	-11.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.590		4.80	5.00	-4.0	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-33211/40 Calibration Date: 01/04/2014 16:42

Instrument ID: 3D5 Calib Start Date: 12/23/2013 16:39

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 12/23/2013 19:26

Lab File ID: 03JA143D5_40.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9814	0.9222		9.40	10.0	-6.0	20.0
2,3,7,8-TCDD	AveID	1.274	1.191		9.35	10.0	-6.5	20.0
1,2,3,7,8-PeCDF	AveID	1.121	1.067		47.6	50.0	-4.9	20.0
2,3,4,7,8-PeCDF	AveID	1.075	1.018		47.3	50.0	-5.3	20.0
1,2,3,7,8-PeCDD	AveID	1.108	1.088		49.1	50.0	-1.9	20.0
1,2,3,4,7,8-HxCDF	AveID	1.017	1.036		51.0	50.0	1.9	20.0
1,2,3,6,7,8-HxCDF	AveID	1.367	1.449		53.0	50.0	6.0	20.0
2,3,4,6,7,8-HxCDF	AveID	1.169	1.243		53.2	50.0	6.3	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7636	0.6911		45.3	50.0	-9.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.081	1.046		48.4	50.0	-3.3	20.0
1,2,3,7,8,9-HxCDD	AveID	1.046	0.9911		47.4	50.0	-5.2	20.0
1,2,3,7,8,9-HxCDF	AveID	1.055	1.126		53.4	50.0	6.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.441	1.424		49.4	50.0	-1.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.130	1.155		51.1	50.0	2.2	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.226	1.180		48.1	50.0	-3.8	20.0
OCDD	AveID	1.200	1.213		101	100	1.1	20.0
OCDF	AveID	1.745	1.696		97.2	100	-2.8	20.0
13C-2,3,7,8-TCDF	Ave	2.017	1.778		88.2	100	-11.8	30.0
13C-2,3,7,8-TCDD	Ave	1.093	1.099		101	100	0.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.522	1.433		94.1	100	-5.9	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8924	0.8705		97.5	100	-2.5	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.140	0.9563		83.9	100	-16.1	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	1.036	1.085		105	100	4.7	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8354	0.8524		102	100	2.0	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.6425	0.7048		110	100	9.7	30.0
13C-OCDD	Ave	0.4107	0.3959		193	200	-3.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.657	1.606		4.85	5.00	-3.0	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID (1): CPS 320-28672/1 Instrument ID (1): 9D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/28/2013 19:35

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.49	15

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID (1): CPS 320-32053/1 Instrument ID (1): 9D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/16/2013 22:42

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.20	19

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID (1): CPS 320-32148/1 Instrument ID (1): 9D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/17/2013 18:55

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.35	19

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Instrument ID: 9D5 Start Date: 10/28/2013 19:35

Analysis Batch Number: 28672 End Date: 10/29/2013 02:00

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-28672/1		10/28/2013 19:35	1	28OC139D5_001.d	DB-5 0.32(mm)
ZZZZZ		10/28/2013 20:19	1		DB-5 0.32(mm)
STD2 320-28672/3 IC		10/28/2013 21:01	1	28OC139D5_003.d	DB-5 0.32(mm)
STD3 320-28672/4 IC		10/28/2013 21:44	1	28OC139D5_004.d	DB-5 0.32(mm)
STD4 320-28672/5 IC		10/28/2013 22:27	1	28OC139D5_005.d	DB-5 0.32(mm)
STD5 320-28672/6 IC		10/28/2013 23:09	1	28OC139D5_006.d	DB-5 0.32(mm)
STD6 320-28672/7 IC		10/28/2013 23:52	1	28OC139D5_007.d	DB-5 0.32(mm)
ZZZZZ		10/29/2013 00:35	1		DB-5 0.32(mm)
ICV 320-28672/9		10/29/2013 01:18	1	28OC139D5_009.d	DB-5 0.32(mm)
CPS 320-28672/10		10/29/2013 02:00	1		DB-5 0.32(mm)

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2 Analy Batch No.: 28672

SDG No.:

Instrument ID: 9D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/28/2013 21:01 Calibration End Date: 10/28/2013 23:52 Calibration ID: 4925

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD2 320-28672/3	280C139D5_003.d
Level 2	STD3 320-28672/4	280C139D5_004.d
Level 3	STD4 320-28672/5	280C139D5_005.d
Level 4	STD5 320-28672/6	280C139D5_006.d
Level 5	STD6 320-28672/7	280C139D5_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.2548	1.1951	1.0278	0.9969	0.9786	AveID		1.0906				12.0		20.0			
2,3,7,8-TCDD	1.2811	1.2420	1.1233	1.1232	1.1307	AveID		1.1800				6.4		20.0			
1,2,3,7,8-PeCDF	1.3196	1.3816	1.2659	1.2414	1.2718	AveID		1.2960				4.3		20.0			
2,3,4,7,8-PeCDF	1.3032	1.3247	1.2065	1.1734	1.2137	AveID		1.2443				5.3		20.0			
1,2,3,7,8-PeCDD	1.1043	1.0762	0.9963	0.9967	0.9727	AveID		1.0293				5.6		20.0			
1,2,3,4,7,8-HxCDF	1.2457	1.3417	1.1769	1.1732	1.2072	AveID		1.2289				5.6		20.0			
1,2,3,6,7,8-HxCDF	1.2814	1.3831	1.2126	1.2226	1.2253	AveID		1.2650				5.6		20.0			
2,3,4,6,7,8-HxCDF	1.2921	1.2990	1.1625	1.1736	1.2047	AveID		1.2264				5.3		20.0			
1,2,3,4,7,8-HxCDD	1.4102	1.5098	1.2879	1.3021	1.2700	AveID		1.3560				7.5		20.0			
1,2,3,6,7,8-HxCDD	1.3009	1.3852	1.2536	1.2556	1.2514	AveID		1.2893				4.5		20.0			
1,2,3,7,8,9-HxCDD	1.5827	1.8036	1.3614	1.5911	1.4849	AveID		1.5647				10.0		20.0			
1,2,3,7,8,9-HxCDF	1.2216	1.2094	1.0957	1.1375	1.1435	AveID		1.1616				4.5		20.0			
1,2,3,4,6,7,8-HpCDF	1.6774	1.7199	1.5557	1.5153	1.4919	AveID		1.5920				6.3		20.0			
1,2,3,4,6,7,8-HpCDD	1.0859	1.1301	1.0278	1.0343	1.0244	AveID		1.0605				4.4		20.0			
1,2,3,4,7,8,9-HpCDF	1.3950	1.4044	1.3092	1.3072	1.2697	AveID		1.3371				4.4		20.0			
OCDD	1.3580	1.3833	1.2662	1.2435	1.2428	AveID		1.2988				5.1		20.0			
OCDF	1.7272	1.8059	1.7286	1.7109	1.7546	AveID		1.7455				2.1		20.0			
13C-2,3,7,8-TCDF	1.7317	1.7120	1.7125	1.7406	1.7426	Ave		1.7279				0.9		20.0			
13C-2,3,7,8-TCDD	1.0464	1.0349	1.0392	1.0410	1.0537	Ave		1.0430				0.7		20.0			
13C-1,2,3,7,8-PeCDF	1.2216	1.1941	1.1976	1.2172	1.2254	Ave		1.2112				1.2		20.0			
13C-1,2,3,7,8-PeCDD	0.7590	0.7743	0.7295	0.7290	0.7971	Ave		0.7578				3.9		20.0			
13C-1,2,3,4,7,8-HxCDF	1.5665	1.5308	1.7530	1.6274	1.6079	Ave		1.6171				5.2		20.0			
13C-1,2,3,6,7,8-HxCDD	0.7959	0.7192	0.8820	0.7654	0.8044	Ave		0.7934				7.5		20.0			
13C-1,2,3,4,6,7,8-HpCDF	1.0949	1.0786	1.2256	1.1492	1.1596	Ave		1.1416				5.1		20.0			
13C-1,2,3,4,6,7,8-HpCDD	0.8917	0.8675	1.0136	0.9500	0.9367	Ave		0.9319				6.1		20.0			
13C-OCDD	0.7083	0.6634	0.7710	0.7676	0.7526	Ave		0.7326				6.3		20.0			
37Cl4-2,3,7,8-TCDD	1.2606	1.1972	1.2256	1.2595	1.2813	Ave		1.2449				2.7		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2 Analy Batch No.: 28672

SDG No.:

Instrument ID: 9D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/28/2013 21:01 Calibration End Date: 10/28/2013 23:52 Calibration ID: 4925

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD2 320-28672/3	28OC139D5_003.d
Level 2	STD3 320-28672/4	28OC139D5_004.d
Level 3	STD4 320-28672/5	28OC139D5_005.d
Level 4	STD5 320-28672/6	28OC139D5_006.d
Level 5	STD6 320-28672/7	28OC139D5_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	712102	2789717	11444611	46075517	227085105	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	449863	1784608	7390703	30925262	158142853	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	3589811	15096475	66132777	275109760	1419939542	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	3438986	14428065	62914225	258422050	1355100464	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	1864429	7603107	31337040	130376149	697003403	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	2835798	12594244	52426122	223347906	1192277661	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	2938659	12863647	54004335	230528177	1215556593	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	2949278	12034772	52120144	222119141	1202567351	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1623148	6551748	28748003	115054262	625254638	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	1498026	6002739	28288053	111171019	620990950	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	1821601	7762172	30098434	140964546	735456974	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	2872231	11320151	48944454	216509663	1140265139	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	2508974	10682441	46171806	191979071	1006841241	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	1341702	5648805	24987019	107045155	557976108	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	2181514	8742024	38453892	165518206	863725115	2.50	10.0	50.0	200	1000
OCDD		AveID	2522352	9850715	44221153	197721129	1026423413	5.00	20.0	100	400	2000
OCDF		AveID	3116664	12553141	59183370	265599105	1417959659	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	113165387	115725814	109109891	116092604	115947223	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	66181617	67751697	65029891	67513476	67696085	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	108500468	108982092	103751272	110038192	110755953	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	66379133	70192107	62141172	65618641	71696968	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	57501837	57994859	55849841	59188609	62699464	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	49327201	45938563	46745374	46925230	52366600	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	37035754	37526015	36246819	39102876	42903420	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	47936866	48657584	47613982	51074086	53719866	100	100	100	100	100
13C-OCDD	13CHx(	Ave	71122140	68541511	66435200	75737795	79752473	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	457078	1790294	8712882	37301755	190387264	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: ICV 320-28672/9 Calibration Date: 10/29/2013 01:18

Instrument ID: 9D5 Calib Start Date: 10/28/2013 21:01

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/28/2013 23:52

Lab File ID: 28OC139D5_009.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.091	1.071		9.82	10.0	-1.8	30.0
2,3,7,8-TCDD	AveID	1.180	1.168		9.90	10.0	-1.0	30.0
1,2,3,7,8-PeCDF	AveID	1.296	1.388		26.8	25.0	7.1	30.0
2,3,4,7,8-PeCDF	AveID	1.244	1.306		26.2	25.0	4.9	30.0
1,2,3,7,8-PeCDD	AveID	1.029	1.051		25.5	25.0	2.1	30.0
1,2,3,4,7,8-HxCDF	AveID	1.229	1.315		26.7	25.0	7.0	30.0
1,2,3,6,7,8-HxCDF	AveID	1.265	1.365		27.0	25.0	7.9	30.0
2,3,4,6,7,8-HxCDF	AveID	1.226	1.314		26.8	25.0	7.1	30.0
1,2,3,4,7,8-HxCDD	AveID	1.356	1.502		27.7	25.0	10.7	30.0
1,2,3,6,7,8-HxCDD	AveID	1.289	1.415		27.4	25.0	9.7	30.0
1,2,3,7,8,9-HxCDD	AveID	1.565	1.683		26.9	25.0	7.6	30.0
1,2,3,7,8,9-HxCDF	AveID	1.162	1.179		25.4	25.0	1.5	30.0
1,2,3,4,6,7,8-HpCDF	AveID	1.592	1.693		26.6	25.0	6.3	30.0
1,2,3,4,6,7,8-HpCDD	AveID	1.060	1.130		26.6	25.0	6.5	30.0
1,2,3,4,7,8,9-HpCDF	AveID	1.337	1.348		25.2	25.0	0.8	30.0
OCDD	AveID	1.299	1.402		54.0	50.0	8.0	30.0
OCDF	AveID	1.745	1.922		55.0	50.0	10.1	30.0
13C-2,3,7,8-TCDF	Ave	1.728	1.732		100	100	0.2	
13C-2,3,7,8-TCDD	Ave	1.043	1.020		97.7	100	-2.3	
13C-1,2,3,7,8-PeCDF	Ave	1.211	1.117		92.2	100	-7.8	
13C-1,2,3,7,8-PeCDD	Ave	0.7578	0.6539		86.3	100	-13.7	
13C-1,2,3,4,7,8-HxCDF	Ave	1.617	1.851		114	100	14.5	
13C-1,2,3,6,7,8-HxCDD	Ave	0.7934	0.8134		103	100	2.5	
13C-1,2,3,4,6,7,8-HpCDF	Ave	1.142	1.298		114	100	13.7	
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9319	1.011		108	100	8.5	
13C-OCDD	Ave	0.7326	0.7469		204	200	1.9	
37Cl4-2,3,7,8-TCDD	Ave	1.245	1.213		19.5	20.0	-2.5	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Instrument ID: 9D5 Start Date: 12/16/2013 22:42

Analysis Batch Number: 32053 End Date: 12/17/2013 08:44

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32053/1		12/16/2013 22:42	1	16DE13A9D5_001.d	DB-5 0.32(mm)
CCV 320-32053/2		12/16/2013 23:25	1	16DE13A9D5_002.d	DB-5 0.32(mm)
320-5001-21	TF2-SB-RB03-1113	12/17/2013 00:55	1	16DE13A9D5_004.d	DB-5 0.32(mm)
320-5001-30	TF2-003-RB04-1113	12/17/2013 01:37	1	16DE13A9D5_005.d	DB-5 0.32(mm)
ZZZZZ		12/17/2013 02:20	1		DB-5 0.32(mm)
ZZZZZ		12/17/2013 03:03	1		DB-5 0.32(mm)
ZZZZZ		12/17/2013 03:45	1		DB-5 0.32(mm)
ZZZZZ		12/17/2013 04:28	1		DB-5 0.32(mm)
ZZZZZ		12/17/2013 05:10	1		DB-5 0.32(mm)
ZZZZZ		12/17/2013 05:53	1		DB-5 0.32(mm)
ZZZZZ		12/17/2013 06:36	1		DB-5 0.32(mm)
ZZZZZ		12/17/2013 07:18	1		DB-5 0.32(mm)
CCV 320-32053/15		12/17/2013 08:44	1	16DE13A9D5_015.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-32053/2 Calibration Date: 12/16/2013 23:25

Instrument ID: 9D5 Calib Start Date: 10/28/2013 21:01

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/28/2013 23:52

Lab File ID: 16DE13A9D5_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.091	1.061		9.73	10.0	-2.7	20.0
2,3,7,8-TCDD	AveID	1.180	1.178		9.98	10.0	-0.2	20.0
1,2,3,7,8-PeCDF	AveID	1.296	1.311		50.6	50.0	1.2	20.0
2,3,4,7,8-PeCDF	AveID	1.244	1.277		51.3	50.0	2.6	20.0
1,2,3,7,8-PeCDD	AveID	1.029	0.9515		46.2	50.0	-7.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.229	1.161		47.2	50.0	-5.5	20.0
1,2,3,6,7,8-HxCDF	AveID	1.265	1.395		55.1	50.0	10.3	20.0
2,3,4,6,7,8-HxCDF	AveID	1.226	1.197		48.8	50.0	-2.4	20.0
1,2,3,4,7,8-HxCDD	AveID	1.356	1.135		41.8	50.0	-16.3	20.0
1,2,3,6,7,8-HxCDD	AveID	1.289	1.259		48.8	50.0	-2.4	20.0
1,2,3,7,8,9-HxCDD	AveID	1.565	1.311		41.9	50.0	-16.2	20.0
1,2,3,7,8,9-HxCDF	AveID	1.162	1.096		47.2	50.0	-5.7	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.592	1.563		49.1	50.0	-1.8	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.060	1.096		51.7	50.0	3.4	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.337	1.280		47.9	50.0	-4.3	20.0
OCDD	AveID	1.299	1.272		97.9	100	-2.1	20.0
OCDF	AveID	1.745	1.598		91.5	100	-8.5	20.0
13C-2,3,7,8-TCDF	Ave	1.728	1.641		94.9	100	-5.1	30.0
13C-2,3,7,8-TCDD	Ave	1.043	1.051		101	100	0.7	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.211	1.023		84.5	100	-15.5	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7578	0.7619		101	100	0.5	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.617	1.413		87.4	100	-12.6	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.7934	0.9229		116	100	16.3	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	1.142	1.019		89.3	100	-10.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9319	0.8485		91.1	100	-8.9	30.0
13C-OCDD	Ave	0.7326	0.6561		179	200	-10.4	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.245	0.7149		5.74	10.0	-42.6	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-32053/15 Calibration Date: 12/17/2013 08:44

Instrument ID: 9D5 Calib Start Date: 10/28/2013 21:01

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/28/2013 23:52

Lab File ID: 16DE13A9D5_015.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.091	0.9687		8.88	10.0	-11.2	20.0
2,3,7,8-TCDD	AveID	1.180	1.082		9.17	10.0	-8.3	20.0
1,2,3,7,8-PeCDF	AveID	1.296	1.291		49.8	50.0	-0.4	20.0
2,3,4,7,8-PeCDF	AveID	1.244	1.270		51.0	50.0	2.1	20.0
1,2,3,7,8-PeCDD	AveID	1.029	0.9233		44.9	50.0	-10.3	20.0
1,2,3,4,7,8-HxCDF	AveID	1.229	1.167		47.5	50.0	-5.1	20.0
1,2,3,6,7,8-HxCDF	AveID	1.265	1.381		54.6	50.0	9.1	20.0
2,3,4,6,7,8-HxCDF	AveID	1.226	1.221		49.8	50.0	-0.4	20.0
1,2,3,4,7,8-HxCDD	AveID	1.356	1.076		39.7	50.0	-20.6*	20.0
1,2,3,6,7,8-HxCDD	AveID	1.289	1.229		47.7	50.0	-4.7	20.0
1,2,3,7,8,9-HxCDD	AveID	1.565	1.258		40.2	50.0	-19.6	20.0
1,2,3,7,8,9-HxCDF	AveID	1.162	1.153		49.6	50.0	-0.7	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.592	1.559		49.0	50.0	-2.1	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.060	1.061		50.0	50.0	0.0	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.337	1.284		48.0	50.0	-4.0	20.0
OCDD	AveID	1.299	1.299		100	100	0.0	20.0
OCDF	AveID	1.745	1.649		94.5	100	-5.5	20.0
13C-2,3,7,8-TCDF	Ave	1.728	1.621		93.8	100	-6.2	30.0
13C-2,3,7,8-TCDD	Ave	1.043	1.082		104	100	3.7	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.211	0.9731		80.3	100	-19.7	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7578	0.7652		101	100	1.0	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.617	1.463		90.4	100	-9.6	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.7934	0.9858		124	100	24.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	1.142	1.142		100	100	0.0	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9319	0.995		107	100	6.8	30.0
13C-OCDD	Ave	0.7326	0.7114		194	200	-2.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.245	0.7126		5.72	10.0	-42.8	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Instrument ID: 9D5 Start Date: 12/17/2013 18:55

Analysis Batch Number: 32148 End Date: 12/18/2013 04:58

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32148/1		12/17/2013 18:55	1	17DE13D9D5_001.d	DB-5 0.32(mm)
CCV 320-32148/2		12/17/2013 19:38	1	17DE13D9D5_002.d	DB-5 0.32(mm)
ZZZZZ		12/17/2013 20:26	1		DB-5 0.32(mm)
MB 320-30260/1-A		12/17/2013 21:09	1	17DE13D9D5_004.d	DB-5 0.32(mm)
LCS 320-30260/2-A		12/17/2013 21:51	1	17DE13D9D5_005.d	DB-5 0.32(mm)
LCSD 320-30260/3-A		12/17/2013 22:34	1	17DE13D9D5_006.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 01:25	1		DB-5 0.32(mm)
ZZZZZ		12/18/2013 02:07	1		DB-5 0.32(mm)
ZZZZZ		12/18/2013 02:50	1		DB-5 0.32(mm)
ZZZZZ		12/18/2013 03:33	1		DB-5 0.32(mm)
ZZZZZ		12/18/2013 04:15	1		DB-5 0.32(mm)
CCV 320-32148/15		12/18/2013 04:58	1	17DE13D9D5_015.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-32148/2 Calibration Date: 12/17/2013 19:38

Instrument ID: 9D5 Calib Start Date: 10/28/2013 21:01

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/28/2013 23:52

Lab File ID: 17DE13D9D5_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.091	1.066		9.78	10.0	-2.2	20.0
2,3,7,8-TCDD	AveID	1.180	1.158		9.81	10.0	-1.9	20.0
1,2,3,7,8-PeCDF	AveID	1.296	1.256		48.5	50.0	-3.1	20.0
2,3,4,7,8-PeCDF	AveID	1.244	1.224		49.2	50.0	-1.6	20.0
1,2,3,7,8-PeCDD	AveID	1.029	0.9738		47.3	50.0	-5.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.229	1.185		48.2	50.0	-3.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.265	1.318		52.1	50.0	4.2	20.0
2,3,4,6,7,8-HxCDF	AveID	1.226	1.205		49.1	50.0	-1.7	20.0
1,2,3,4,7,8-HxCDD	AveID	1.356	1.119		41.2	50.0	-17.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.289	1.194		46.3	50.0	-7.4	20.0
1,2,3,7,8,9-HxCDD	AveID	1.565	1.278		40.8	50.0	-18.3	20.0
1,2,3,7,8,9-HxCDF	AveID	1.162	1.033		44.5	50.0	-11.0	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.592	1.569		49.3	50.0	-1.4	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.060	1.082		51.0	50.0	2.0	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.337	1.267		47.4	50.0	-5.3	20.0
OCDD	AveID	1.299	1.220		94.0	100	-6.0	20.0
OCDF	AveID	1.745	1.514		86.7	100	-13.3	20.0
13C-2,3,7,8-TCDF	Ave	1.728	1.640		94.9	100	-5.1	30.0
13C-2,3,7,8-TCDD	Ave	1.043	1.033		99.0	100	-1.0	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.211	1.125		92.9	100	-7.1	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7578	0.7983		105	100	5.3	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.617	1.409		87.1	100	-12.9	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.7934	0.9392		118	100	18.4	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	1.142	0.9633		84.4	100	-15.6	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9319	0.8081		86.7	100	-13.3	30.0
13C-OCDD	Ave	0.7326	0.6526		178	200	-10.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.245	1.441		5.79	5.00	15.7	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-32148/15 Calibration Date: 12/18/2013 04:58

Instrument ID: 9D5 Calib Start Date: 10/28/2013 21:01

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/28/2013 23:52

Lab File ID: 17DE13D9D5_015.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.091	1.054		9.66	10.0	-3.4	20.0
2,3,7,8-TCDD	AveID	1.180	1.127		9.55	10.0	-4.5	20.0
1,2,3,7,8-PeCDF	AveID	1.296	1.241		47.9	50.0	-4.2	20.0
2,3,4,7,8-PeCDF	AveID	1.244	1.206		48.4	50.0	-3.1	20.0
1,2,3,7,8-PeCDD	AveID	1.029	0.9845		47.8	50.0	-4.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.229	1.163		47.3	50.0	-5.3	20.0
1,2,3,6,7,8-HxCDF	AveID	1.265	1.295		51.2	50.0	2.4	20.0
2,3,4,6,7,8-HxCDF	AveID	1.226	1.158		47.2	50.0	-5.6	20.0
1,2,3,4,7,8-HxCDD	AveID	1.356	1.040		38.4	50.0	-23.3*	20.0
1,2,3,6,7,8-HxCDD	AveID	1.289	1.250		48.5	50.0	-3.0	20.0
1,2,3,7,8,9-HxCDD	AveID	1.565	1.331		42.5	50.0	-14.9	20.0
1,2,3,7,8,9-HxCDF	AveID	1.162	1.007		43.4	50.0	-13.3	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.592	1.572		49.4	50.0	-1.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.060	1.051		49.6	50.0	-0.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.337	1.261		47.2	50.0	-5.7	20.0
OCDD	AveID	1.299	1.220		94.0	100	-6.0	20.0
OCDF	AveID	1.745	1.543		88.4	100	-11.6	20.0
13C-2,3,7,8-TCDF	Ave	1.728	1.611		93.2	100	-6.8	30.0
13C-2,3,7,8-TCDD	Ave	1.043	1.062		102	100	1.8	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.211	1.125		92.9	100	-7.1	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7578	0.7812		103	100	3.1	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.617	1.502		92.9	100	-7.1	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.7934	0.9311		117	100	17.4	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	1.142	1.001		87.7	100	-12.3	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.9319	0.8454		90.7	100	-9.3	30.0
13C-OCDD	Ave	0.7326	0.6394		175	200	-12.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.245	1.458		5.86	5.00	17.1	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID (1): CPS 320-32566/1 Instrument ID (1): 10D5

GC Column (1): SPB-Octyl ID: 0.25(mm) Date Analyzed (1): 12/22/2013 13:44

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.59	17

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID (1): CPS 320-32672/1 Instrument ID (1): 10D5

GC Column (1): SPB-Octyl ID: 0.25(mm) Date Analyzed (1): 12/23/2013 10:50

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.55	19

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID (1): CPS 320-32754/1 Instrument ID (1): 10D5

GC Column (1): SPB-Octyl ID: 0.25(mm) Date Analyzed (1): 12/24/2013 07:11

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.53	21

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID (1): CPS 320-32757/1 Instrument ID (1): 10D5

GC Column (1): SPB-Octyl ID: 0.25(mm) Date Analyzed (1): 12/26/2013 11:46

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.55	21

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Instrument ID: 10D5 Start Date: 12/22/2013 13:44

Analysis Batch Number: 32566 End Date: 12/22/2013 19:49

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32566/1		12/22/2013 13:44	1	22DE13A10D5_1.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/22/2013 14:30	1		SPB-Octyl 0.25(mm)
IC 320-32566/3		12/22/2013 15:15	1	22DE13A10D5_3.d	SPB-Octyl 0.25(mm)
IC 320-32566/4		12/22/2013 16:01	1	22DE13A10D5_4.d	SPB-Octyl 0.25(mm)
IC 320-32566/5		12/22/2013 16:47	1	22DE13A10D5_5.d	SPB-Octyl 0.25(mm)
IC 320-32566/6		12/22/2013 17:32	1	22DE13A10D5_6.d	SPB-Octyl 0.25(mm)
IC 320-32566/7		12/22/2013 18:18	1	22DE13A10D5_7.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/22/2013 19:03	1		SPB-Octyl 0.25(mm)
ICV 320-32566/9		12/22/2013 19:49	1	22DE13A10D5_9.d	SPB-Octyl 0.25(mm)

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2 Analy Batch No.: 32566

SDG No.:

Instrument ID: 10D5 GC Column: SPB-Octyl ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/22/2013 15:15 Calibration End Date: 12/22/2013 18:18 Calibration ID: 5715

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32566/3	22DE13A10D5_3.d
Level 2	IC 320-32566/4	22DE13A10D5_4.d
Level 3	IC 320-32566/5	22DE13A10D5_5.d
Level 4	IC 320-32566/6	22DE13A10D5_6.d
Level 5	IC 320-32566/7	22DE13A10D5_7.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9170	0.9431	0.9989	0.9685	1.0079	AveID		0.9671				3.9		20.0			
2,3,7,8-TCDD	0.9231	0.9517	1.0180	1.0055	1.0416	AveID		0.9880				5.0		20.0			
1,2,3,7,8-PeCDF	0.9285	0.9856	1.0360	1.0099	1.0269	AveID		0.9974				4.3		20.0			
2,3,4,7,8-PeCDF	0.9053	0.9734	1.0103	0.9776	1.0033	AveID		0.9740				4.3		20.0			
1,2,3,7,8-PeCDD	0.8501	0.9077	0.9747	0.9339	0.9514	AveID		0.9236				5.2		20.0			
1,2,3,4,7,8-HxCDF	1.0810	0.9387	1.2070	1.1524	1.1729	AveID		1.1104				9.6		20.0			
1,2,3,6,7,8-HxCDF	1.2687	1.0921	1.4095	1.3651	1.3836	AveID		1.3038				10.0		20.0			
2,3,4,6,7,8-HxCDF	1.1350	0.9992	1.2701	1.2350	1.2490	AveID		1.1777				9.5		20.0			
1,2,3,4,7,8-HxCDD	0.7815	0.8942	0.9511	0.8930	0.8976	AveID		0.8835				7.0		20.0			
1,2,3,6,7,8-HxCDD	0.9189	1.0093	1.0382	1.0122	1.0316	AveID		1.0020				4.8		20.0			
1,2,3,7,8,9-HxCDD	0.9931	1.1316	1.1287	1.0710	1.0817	AveID		1.0812				5.2		20.0			
1,2,3,7,8,9-HxCDF	1.0928	0.9490	1.1606	1.1284	1.1226	AveID		1.0907				7.6		20.0			
1,2,3,4,6,7,8-HpCDF	1.2569	1.3557	1.3687	1.3445	1.3892	AveID		1.3430				3.8		20.0			
1,2,3,4,6,7,8-HpCDD	0.9387	0.9739	1.0185	0.9850	1.0187	AveID		0.9870				3.4		20.0			
1,2,3,4,7,8,9-HpCDF	1.0641	1.1308	1.1687	1.1563	1.2249	AveID		1.1490				5.1		20.0			
OCDD	1.0549	1.0710	1.0945	1.0651	1.0943	AveID		1.0760				1.7		20.0			
OCDF	1.2454	1.3183	1.3570	1.3546	1.3888	AveID		1.3328				4.1		20.0			
13C-2,3,7,8-TCDF	1.5492	1.5245	1.4941	1.4931	1.4967	Ave		1.5115				1.6		20.0			
13C-2,3,7,8-TCDD	1.1123	1.0841	1.0850	1.0754	1.0947	Ave		1.0903				1.3		20.0			
13C-1,2,3,7,8-PeCDF	1.2346	1.1921	1.1857	1.1975	1.2683	Ave		1.2156				2.9		20.0			
13C-1,2,3,7,8-PeCDD	0.8907	0.8637	0.8462	0.8689	0.9317	Ave		0.8802				3.7		20.0			
13C-1,2,3,4,7,8-HxCDF	1.0833	1.3277	1.1295	1.1113	1.0767	Ave		1.1457				9.1		20.0			
13C-1,2,3,6,7,8-HxCDD	0.9274	0.8941	0.9346	0.9294	0.9210	Ave		0.9213				1.7		20.0			
13C-1,2,3,4,6,7,8-HpCDF	0.8496	0.8487	0.8854	0.8566	0.8339	Ave		0.8548				2.2		20.0			
13C-1,2,3,4,6,7,8-HpCDD	0.7878	0.7873	0.8222	0.8047	0.7979	Ave		0.8000				1.8		20.0			
13C-OCDD	0.6187	0.6204	0.6628	0.6610	0.6971	Ave		0.6520				5.1		20.0			
37Cl4-2,3,7,8-TCDD	1.3097	1.3047	1.4191	1.4792	1.5184	Ave		1.4062				6.9		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2 Analy Batch No.: 32566

SDG No.:

Instrument ID: 10D5 GC Column: SPB-Octyl ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/22/2013 15:15 Calibration End Date: 12/22/2013 18:18 Calibration ID: 5715

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32566/3	22DE13A10D5_3.d
Level 2	IC 320-32566/4	22DE13A10D5_4.d
Level 3	IC 320-32566/5	22DE13A10D5_5.d
Level 4	IC 320-32566/6	22DE13A10D5_6.d
Level 5	IC 320-32566/7	22DE13A10D5_7.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	863258	4021761	17769983	89190314	458907971	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	639017	2908398	13186941	66108414	345996005	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	5139164	22613347	102691034	515720215	2713946948	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	4970616	22231369	99327851	497485548	2673370214	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	3414006	15037540	68559587	346155465	1862382282	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	3927206	17649951	79718907	399638196	2133831556	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	4649809	20260450	93381170	477620463	2524582075	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	4133202	18516764	84164861	430795012	2262710181	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	2364048	11547950	51543412	259116758	1399547182	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	2799120	12300035	56246065	294991969	1616211013	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	2971724	14056872	61106943	309133062	1689663703	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	3923057	17689601	77094436	390561458	2003655882	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	3345534	14650844	64333990	328772178	1796403536	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	2213154	9822730	44926875	226405156	1266025833	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	2793374	12097767	54808453	282236394	1589646648	2.50	10.0	50.0	200	1000
OCDD		AveID	3682874	15886033	71693677	370325105	2196841952	5.00	20.0	100	400	2000
OCDF		AveID	4414215	19615134	89746190	471260302	2839057227	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	199338093	210291372	179150103	229642692	228807947	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	143823241	148978567	129862423	163986114	165279774	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	222530087	227604422	197182291	254982944	266773300	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	159497217	165917388	140449265	185183291	196969093	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	89009382	115713200	81832744	106462003	112469138	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	124076259	124197854	109762761	144771368	156781801	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	62070676	64989157	56248942	73601411	79170644	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	96860631	102213657	88624001	115126492	125258063	100	100	100	100	100
13C-OCDD	13CHx(	Ave	139618866	147845388	133314669	176292267	202025187	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	963345	4086236	19314961	103241374	523265071	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: ICV 320-32566/9 Calibration Date: 12/22/2013 19:49

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 22DE13A10D5_9.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	1.008		10.4	10.0	4.2	30.0
2,3,7,8-TCDD	AveID	0.9880	1.026		10.4	10.0	3.8	30.0
1,2,3,7,8-PeCDF	AveID	0.997	1.058		26.5	25.0	6.0	30.0
2,3,4,7,8-PeCDF	AveID	0.9740	1.018		26.1	25.0	4.6	30.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9353		25.3	25.0	1.3	30.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.309		29.5	25.0	17.9	30.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.545		29.6	25.0	18.5	30.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.400		29.7	25.0	18.9	30.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.8607		24.4	25.0	-2.6	30.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.075		26.8	25.0	7.3	30.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.126		26.0	25.0	4.2	30.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.296		29.7	25.0	18.8	30.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.456		27.1	25.0	8.4	30.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	1.039		26.3	25.0	5.3	30.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.189		25.9	25.0	3.5	30.0
OCDD	AveID	1.076	1.103		51.3	50.0	2.6	30.0
OCDF	AveID	1.333	1.331		49.9	50.0	-0.1	30.0
13C-2,3,7,8-TCDF	Ave	1.512	1.535		102	100	1.6	
13C-2,3,7,8-TCDD	Ave	1.090	1.112		102	100	2.0	
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.214		99.9	100	-0.1	
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8727		99.1	100	-0.9	
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.023		89.3	100	-10.7	
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	0.9703		105	100	5.3	
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8563		100	100	0.2	
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.7976		99.7	100	-0.3	
13C-OCDD	Ave	0.6520	0.6433		197	200	-1.3	
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.420		10.1	10.0	0.9	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Instrument ID: 10D5 Start Date: 12/23/2013 10:50

Analysis Batch Number: 32672 End Date: 12/23/2013 20:59

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32672/1		12/23/2013 10:50	1	23DE1310D5_1.d	SPB-Octyl 0.25(mm)
CCV 320-32672/2		12/23/2013 11:36	1	23DE1310D5_2.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/23/2013 12:23	1		SPB-Octyl 0.25(mm)
MB 320-30809/1-A		12/23/2013 13:09	1	23DE1310D5_4.d	SPB-Octyl 0.25(mm)
LCS 320-30809/2-A		12/23/2013 13:55	1	23DE1310D5_5.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/23/2013 14:41	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/23/2013 15:27	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/23/2013 16:13	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/23/2013 16:59	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/23/2013 17:45	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/23/2013 18:31	1		SPB-Octyl 0.25(mm)
320-5001-22	TF2-003-SB1011-0204	12/23/2013 19:17	1	23DE1310D5_12.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/23/2013 20:03	1		SPB-Octyl 0.25(mm)
CCV 320-32672/14		12/23/2013 20:59	1	23DE1310D5_14.d	SPB-Octyl 0.25(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-32672/2 Calibration Date: 12/23/2013 11:36

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 23DE1310D5_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	0.9698		10.0	10.0	0.3	20.0
2,3,7,8-TCDD	AveID	0.9880	0.9833		9.95	10.0	-0.5	20.0
1,2,3,7,8-PeCDF	AveID	0.997	1.019		51.1	50.0	2.1	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	0.9842		50.5	50.0	1.0	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9363		50.7	50.0	1.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.192		53.7	50.0	7.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.367		52.4	50.0	4.9	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.239		52.6	50.0	5.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.8986		50.9	50.0	1.7	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.020		50.9	50.0	1.8	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.091		50.5	50.0	0.9	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.142		52.4	50.0	4.7	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.353		50.4	50.0	0.7	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	0.9855		49.9	50.0	-0.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.128		49.1	50.0	-1.8	20.0
OCDD	AveID	1.076	1.106		103	100	2.8	20.0
OCDF	AveID	1.333	1.345		101	100	0.9	20.0
13C-2,3,7,8-TCDF	Ave	1.512	1.446		95.6	100	-4.4	30.0
13C-2,3,7,8-TCDD	Ave	1.090	1.097		101	100	0.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.193		98.1	100	-1.9	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8872		101	100	0.8	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.105		96.5	100	-3.5	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	0.9391		102	100	1.9	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8765		103	100	2.5	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.8208		103	100	2.6	30.0
13C-OCDD	Ave	0.6520	0.6707		206	200	2.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.414		5.03	5.00	0.6	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-32672/14 Calibration Date: 12/23/2013 20:59

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 23DE1310D5_14.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	0.9227		9.54	10.0	-4.6	20.0
2,3,7,8-TCDD	AveID	0.9880	0.9620		9.74	10.0	-2.6	20.0
1,2,3,7,8-PeCDF	AveID	0.997	0.9505		47.7	50.0	-4.7	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	0.9060		46.5	50.0	-7.0	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9201		49.8	50.0	-0.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.072		48.3	50.0	-3.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.254		48.1	50.0	-3.8	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.074		45.6	50.0	-8.8	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.8605		48.7	50.0	-2.6	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.051		52.4	50.0	4.9	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.080		50.0	50.0	-0.0	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	0.995		45.6	50.0	-8.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.206		44.9	50.0	-10.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	0.9678		49.0	50.0	-1.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.034		45.0	50.0	-10.0	20.0
OCDD	AveID	1.076	1.065		99.0	100	-1.0	20.0
OCDF	AveID	1.333	1.283		96.2	100	-3.8	20.0
13C-2,3,7,8-TCDF	Ave	1.512	1.427		94.4	100	-5.6	30.0
13C-2,3,7,8-TCDD	Ave	1.090	1.082		99.3	100	-0.7	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.176		96.8	100	-3.2	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8963		102	100	1.8	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.136		99.1	100	-0.9	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	0.998		108	100	8.4	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.9024		106	100	5.6	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.8973		112	100	12.2	30.0
13C-OCDD	Ave	0.6520	0.7544		231	200	15.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.429		5.08	5.00	1.6	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Instrument ID: 10D5 Start Date: 12/24/2013 07:11

Analysis Batch Number: 32754 End Date: 12/24/2013 17:58

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32754/1		12/24/2013 07:11	1	24DE1310D5_1.d	SPB-Octyl 0.25(mm)
CCV 320-32754/2		12/24/2013 07:57	1	24DE1310D5_2.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/24/2013 08:52	1		SPB-Octyl 0.25(mm)
320-5001-23	TF2-003-SB1012-0204	12/24/2013 10:53	1	24DE1310D5_5.d	SPB-Octyl 0.25(mm)
320-5001-23 MS	TF2-003-SB1012-0204 MS	12/24/2013 11:39	1	24DE1310D5_6.d	SPB-Octyl 0.25(mm)
320-5001-23 MSD	TF2-003-SB1012-0204 MSD	12/24/2013 12:26	1	24DE1310D5_7.d	SPB-Octyl 0.25(mm)
320-5001-24	TF2-003-SB1017-011.6	12/24/2013 13:12	1	24DE1310D5_8.d	SPB-Octyl 0.25(mm)
320-5001-25	TF2-003-SB1017-0204	12/24/2013 13:58	1	24DE1310D5_9.d	SPB-Octyl 0.25(mm)
320-5001-26	TF2-003-SB1014-0204	12/24/2013 14:44	1	24DE1310D5_10.d	SPB-Octyl 0.25(mm)
320-5001-27	TF2-003-SB1015-0204	12/24/2013 15:30	1	24DE1310D5_11.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/24/2013 16:16	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/24/2013 17:02	1		SPB-Octyl 0.25(mm)
CCV 320-32754/14		12/24/2013 17:58	1	24DE1310D5_14.d	SPB-Octyl 0.25(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-32754/2 Calibration Date: 12/24/2013 07:57

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 24DE1310D5_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	0.9704		10.0	10.0	0.3	20.0
2,3,7,8-TCDD	AveID	0.9880	0.9898		10.0	10.0	0.2	20.0
1,2,3,7,8-PeCDF	AveID	0.997	1.024		51.3	50.0	2.7	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	0.9913		50.9	50.0	1.8	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9405		50.9	50.0	1.8	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.167		52.5	50.0	5.1	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.403		53.8	50.0	7.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.261		53.5	50.0	7.1	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.8190		46.4	50.0	-7.3	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.004		50.1	50.0	0.2	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.037		48.0	50.0	-4.0	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.154		52.9	50.0	5.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.355		50.4	50.0	0.9	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	0.9935		50.3	50.0	0.7	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.143		49.7	50.0	-0.5	20.0
OCDD	AveID	1.076	1.115		104	100	3.6	20.0
OCDF	AveID	1.333	1.292		96.9	100	-3.1	20.0
13C-2,3,7,8-TCDF	Ave	1.512			0.000000	100		
13C-2,3,7,8-TCDD	Ave	1.090			0.000000	100		
13C-1,2,3,7,8-PeCDF	Ave	1.216			0.000000	100		
13C-1,2,3,7,8-PeCDD	Ave	0.8802			0.000000	100		
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.063		92.8	100	-7.2	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	0.998		108	100	8.3	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8895		104	100	4.1	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.8603		108	100	7.5	30.0
13C-OCDD	Ave	0.6520	0.7131		219	200	9.4	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406			0.000000	5.00	0	

FORM VII 8290A

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-32754/14 Calibration Date: 12/24/2013 17:58

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 24DE1310D5_14.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	0.9882		10.2	10.0	2.2	20.0
2,3,7,8-TCDD	AveID	0.9880	1.007		10.2	10.0	1.9	20.0
1,2,3,7,8-PeCDF	AveID	0.997	1.026		51.4	50.0	2.9	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	0.9727		49.9	50.0	-0.1	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9451		51.2	50.0	2.3	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.189		53.5	50.0	7.1	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.414		54.2	50.0	8.5	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.233		52.4	50.0	4.7	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.9492		53.7	50.0	7.4	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.031		51.4	50.0	2.9	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.065		49.3	50.0	-1.5	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.082		49.6	50.0	-0.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.382		51.4	50.0	2.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.042		45.3	50.0	-9.3	20.0
OCDD	AveID	1.076	1.121		104	100	4.2	20.0
OCDF	AveID	1.333	1.286		96.5	100	-3.5	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870				50.0		
13C-2,3,7,8-TCDF	Ave	1.512	1.498		99.1	100	-0.9	30.0
13C-2,3,7,8-TCDD	Ave	1.090	1.090		100	100	-0.0	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.161		95.5	100	-4.5	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8276		94.0	100	-6.0	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.169		102	100	2.0	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	0.9773		106	100	6.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8109		94.9	100	-5.1	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.7385		92.3	100	-7.7	30.0
13C-OCDD	Ave	0.6520	0.4354		134	200	-33.2*	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.451		5.16	5.00	3.2	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Instrument ID: 10D5 Start Date: 12/26/2013 11:46

Analysis Batch Number: 32757 End Date: 12/26/2013 23:39

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32757/1		12/26/2013 11:46	1	26DE1310D5_1.d	SPB-Octyl 0.25(mm)
CCV 320-32757/2		12/26/2013 12:32	1		SPB-Octyl 0.25(mm)
CCV 320-32757/3		12/26/2013 13:24	1	26DE1310D5_3.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/26/2013 14:16	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/26/2013 15:02	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/26/2013 15:48	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/26/2013 16:34	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/26/2013 17:20	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/26/2013 18:06	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/26/2013 18:52	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/26/2013 19:38	1		SPB-Octyl 0.25(mm)
ZZZZZ		12/26/2013 20:24	1		SPB-Octyl 0.25(mm)
320-5001-29	TF2-003-SB1018-0204	12/26/2013 21:11	1	26DE1310D5_13.d	SPB-Octyl 0.25(mm)
320-5001-31	TF2-003-DUP08-1113	12/26/2013 21:57	1	26DE1310D5_14.d	SPB-Octyl 0.25(mm)
ZZZZZ		12/26/2013 22:43	1		SPB-Octyl 0.25(mm)
CCV 320-32757/16		12/26/2013 23:39	1	26DE1310D5_16.d	SPB-Octyl 0.25(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-32757/3 Calibration Date: 12/26/2013 13:24

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 26DE1310D5_3.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	0.996		10.3	10.0	3.0	20.0
2,3,7,8-TCDD	AveID	0.9880	0.9857		9.98	10.0	-0.2	20.0
1,2,3,7,8-PeCDF	AveID	0.997	1.058		53.0	50.0	6.0	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	1.005		51.6	50.0	3.2	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9424		51.0	50.0	2.0	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.231		55.4	50.0	10.9	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.348		51.7	50.0	3.4	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.230		52.2	50.0	4.5	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	1.020		57.7	50.0	15.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.060		52.9	50.0	5.8	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.137		52.6	50.0	5.2	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.063		48.7	50.0	-2.6	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.417		52.7	50.0	5.5	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	1.032		52.3	50.0	4.6	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.094		47.6	50.0	-4.8	20.0
OCDD	AveID	1.076	1.093		102	100	1.6	20.0
OCDF	AveID	1.333	1.320		99.0	100	-1.0	20.0
13C-2,3,7,8-TCDF	Ave	1.512	1.497		99.0	100	-1.0	30.0
13C-2,3,7,8-TCDD	Ave	1.090	1.072		98.3	100	-1.7	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.204		99.0	100	-1.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8374		95.1	100	-4.9	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.311		114	100	14.4	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	0.9430		102	100	2.4	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.9366		110	100	9.6	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.8113		101	100	1.4	30.0
13C-OCDD	Ave	0.6520	0.6560		201	200	0.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.401		4.98	5.00	-0.4	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-32757/16 Calibration Date: 12/26/2013 23:39

Instrument ID: 10D5 Calib Start Date: 12/22/2013 15:15

GC Column: SPB-Octyl ID: 0.25(mm) Calib End Date: 12/22/2013 18:18

Lab File ID: 26DE1310D5_16.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9671	1.029		10.6	10.0	6.4	20.0
2,3,7,8-TCDD	AveID	0.9880	1.007		10.2	10.0	1.9	20.0
1,2,3,7,8-PeCDF	AveID	0.997	1.084		54.4	50.0	8.7	20.0
2,3,4,7,8-PeCDF	AveID	0.9740	1.040		53.4	50.0	6.8	20.0
1,2,3,7,8-PeCDD	AveID	0.9236	0.9599		52.0	50.0	3.9	20.0
1,2,3,4,7,8-HxCDF	AveID	1.110	1.262		56.8	50.0	13.7	20.0
1,2,3,6,7,8-HxCDF	AveID	1.304	1.613		61.9	50.0	23.7*	20.0
2,3,4,6,7,8-HxCDF	AveID	1.178	1.402		59.5	50.0	19.0	20.0
1,2,3,4,7,8-HxCDD	AveID	0.8835	0.7686		43.5	50.0	-13.0	20.0
1,2,3,6,7,8-HxCDD	AveID	1.002	1.050		52.4	50.0	4.8	20.0
1,2,3,7,8,9-HxCDD	AveID	1.081	1.017		47.0	50.0	-6.0	20.0
1,2,3,7,8,9-HxCDF	AveID	1.091	1.207		55.3	50.0	10.7	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.343	1.407		52.4	50.0	4.7	20.0
1,2,3,4,6,7,8-HpCDD	AveID	0.9870	1.033		52.3	50.0	4.6	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.149	1.121		48.8	50.0	-2.4	20.0
OCDD	AveID	1.076	1.049		97.5	100	-2.5	20.0
OCDF	AveID	1.333	1.243		93.2	100	-6.8	20.0
13C-2,3,7,8-TCDF	Ave	1.512	1.481		98.0	100	-2.0	30.0
13C-2,3,7,8-TCDD	Ave	1.090	1.064		97.6	100	-2.4	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.216	1.197		98.5	100	-1.5	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.8802	0.8611		97.8	100	-2.2	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.146	1.090		95.1	100	-4.9	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9213	1.053		114	100	14.3	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8548	0.8700		102	100	1.8	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.8000	0.7882		98.5	100	-1.5	30.0
13C-OCDD	Ave	0.6520	0.6824		209	200	4.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.406	1.396		4.97	5.00	-0.7	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID (1): CPS 320-33115/3 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 01/02/2014 15:14

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.86	21

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID (1): CPS 320-33217/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 01/03/2014 11:04

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.84	22

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Instrument ID: 11D5 Start Date: 12/19/2013 17:26

Analysis Batch Number: 32502 End Date: 12/19/2013 23:17

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32502/1		12/19/2013 17:26	1		DB-225 0.32(mm)
IC 320-32502/3		12/19/2013 18:45	1	19DE1311D2_003.d	DB-225 0.32(mm)
IC 320-32502/4		12/19/2013 19:24	1	19DE1311D2_004.d	DB-225 0.32(mm)
IC 320-32502/5		12/19/2013 20:02	1	19DE1311D2_005.d	DB-225 0.32(mm)
IC 320-32502/6		12/19/2013 20:41	1	19DE1311D2_006.d	DB-225 0.32(mm)
IC 320-32502/7		12/19/2013 21:20	1	19DE1311D2_007.d	DB-225 0.32(mm)
ICV 320-32502/9		12/19/2013 22:38	1		DB-225 0.32(mm)
CPS 320-32502/10		12/19/2013 23:17	1		DB-225 0.32(mm)

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2 Analy Batch No.: 32502

SDG No.:

Instrument ID: 11D5 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/19/2013 18:45 Calibration End Date: 12/19/2013 21:20 Calibration ID: 5676

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32502/3	19DE1311D2_003.d
Level 2	IC 320-32502/4	19DE1311D2_004.d
Level 3	IC 320-32502/5	19DE1311D2_005.d
Level 4	IC 320-32502/6	19DE1311D2_006.d
Level 5	IC 320-32502/7	19DE1311D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.2293	1.2266	1.2712	1.2371	1.2670	AveID		1.2462				1.7		20.0			
2,3,7,8-TCDF	1.1343	1.1494	1.1412	1.1011	1.1432	AveID		1.1338				1.7		20.0			
13C-2,3,7,8-TCDD	0.9802	0.9601	0.9969	0.9394	0.9777	Ave		0.9709				2.3		20.0			
13C-2,3,7,8-TCDF	1.6591	1.7043	1.7154	1.6515	1.6854	Ave		1.6831				1.6		20.0			
37Cl4-2,3,7,8-TCDD	1.5736	1.4648	1.6241	1.6014	1.6364	Ave		1.5800				4.3		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2 Analy Batch No.: 32502

SDG No.:

Instrument ID: 11D5 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 12/19/2013 18:45 Calibration End Date: 12/19/2013 21:20 Calibration ID: 5676

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-32502/3	19DE1311D2_003.d
Level 2	IC 320-32502/4	19DE1311D2_004.d
Level 3	IC 320-32502/5	19DE1311D2_005.d
Level 4	IC 320-32502/6	19DE1311D2_006.d
Level 5	IC 320-32502/7	19DE1311D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	288615	1110124	5924122	22362477	116845811	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	442816	1925656	9121618	35182839	181121900	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCl	Ave	46859665	47032082	47298421	46061130	46483387	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCl	Ave	78328887	83186601	81238564	80393098	79536331	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	416085	1607175	8593900	34885147	172747010	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Instrument ID: 11D5 Start Date: 01/02/2014 14:33

Analysis Batch Number: 33115 End Date: 01/03/2014 00:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-33115/2		01/02/2014 14:33	1	02JA1411D2_002.d	DB-225 0.32(mm)
CPS 320-33115/3		01/02/2014 15:14	1	02JA1411D2_003.d	DB-225 0.32(mm)
ZZZZZ		01/02/2014 15:53	1		DB-225 0.32(mm)
ZZZZZ		01/02/2014 16:32	1		DB-225 0.32(mm)
ZZZZZ		01/02/2014 17:11	1		DB-225 0.32(mm)
ZZZZZ		01/02/2014 17:50	1		DB-225 0.32(mm)
ZZZZZ		01/02/2014 18:29	1		DB-225 0.32(mm)
ZZZZZ		01/02/2014 19:07	1		DB-225 0.32(mm)
320-5001-22 RA	TF2-003-SB1011-0204 RA	01/02/2014 19:46	1	02JA1411D2_010.d	DB-225 0.32(mm)
320-5001-23 RA	TF2-003-SB1012-0204 RA	01/02/2014 20:25	1	02JA1411D2_011.d	DB-225 0.32(mm)
320-5001-23 MS RA	TF2-003-SB1012-0204 MS RA	01/02/2014 21:04	1	02JA1411D2_012.d	DB-225 0.32(mm)
320-5001-23 MSD RA	TF2-003-SB1012-0204 MSD RA	01/02/2014 21:43	1	02JA1411D2_013.d	DB-225 0.32(mm)
320-5001-24 RA	TF2-003-SB1017-011.6 RA	01/02/2014 22:22	1	02JA1411D2_014.d	DB-225 0.32(mm)
320-5001-26 RA	TF2-003-SB1014-0204 RA	01/02/2014 23:01	1	02JA1411D2_015.d	DB-225 0.32(mm)
ZZZZZ		01/02/2014 23:40	1		DB-225 0.32(mm)
CCV 320-33115/17		01/03/2014 00:19	1	02JA1411D2_017.d	DB-225 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-33115/2 Calibration Date: 01/02/2014 14:33

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 02JA1411D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.147		9.20	10.0	-8.0	20.0
2,3,7,8-TCDF	AveID	1.134	0.9836		8.67	10.0	-13.3	20.0
13C-2,3,7,8-TCDD	Ave	0.9709	0.9660		99.5	100	-0.5	30.0
13C-2,3,7,8-TCDF	Ave	1.683	1.427		84.8	100	-15.2	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.461		4.62	5.00	-7.5	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-33115/17 Calibration Date: 01/03/2014 00:19

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 02JA1411D2_017.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.120		8.99	10.0	-10.1	20.0
2,3,7,8-TCDF	AveID	1.134	0.9432		8.32	10.0	-16.8	20.0
13C-2,3,7,8-TCDD	Ave	0.9709	1.030		106	100	6.1	30.0
13C-2,3,7,8-TCDF	Ave	1.683	1.442		85.7	100	-14.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.522		4.82	5.00	-3.7	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Instrument ID: 11D5 Start Date: 01/03/2014 11:04

Analysis Batch Number: 33217 End Date: 01/03/2014 22:13

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-33217/1		01/03/2014 11:04	1	03JA1411D2_001.d	DB-225 0.32(mm)
CCV 320-33217/2		01/03/2014 11:43	1	03JA1411D2_002.d	DB-225 0.32(mm)
ZZZZZ		01/03/2014 12:22	1		DB-225 0.32(mm)
320-5001-27	TF2-003-SB1015-0204	01/03/2014 13:03	1	03JA1411D2_004.d	DB-225 0.32(mm)
320-5001-28	TF2-003-SB1016-0204	01/03/2014 13:42	1	03JA1411D2_005.d	DB-225 0.32(mm)
320-5001-31	TF2-003-DUP08-1113	01/03/2014 14:21	1	03JA1411D2_006.d	DB-225 0.32(mm)
ZZZZZ		01/03/2014 15:00	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 15:39	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 16:18	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 16:56	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 17:35	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 18:14	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 18:53	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 19:32	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 20:11	1		DB-225 0.32(mm)
ZZZZZ		01/03/2014 20:50	1		DB-225 0.32(mm)
CCV 320-33217/18		01/03/2014 22:13	1	03JA1411D2_018.d	DB-225 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-33217/2 Calibration Date: 01/03/2014 11:43

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 03JA1411D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.071		8.59	10.0	-14.1	20.0
2,3,7,8-TCDF	AveID	1.134	0.9120		8.04	10.0	-19.6	20.0
13C-2,3,7,8-TCDD	Ave	0.9709	1.054		109	100	8.5	30.0
13C-2,3,7,8-TCDF	Ave	1.683	1.392		82.7	100	-17.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.613		5.10	5.00	2.1	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab Sample ID: CCV 320-33217/18 Calibration Date: 01/03/2014 22:13

Instrument ID: 11D5 Calib Start Date: 12/19/2013 18:45

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 12/19/2013 21:20

Lab File ID: 03JA1411D2_018.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.246	1.097		8.81	10.0	-11.9	20.0
2,3,7,8-TCDF	AveID	1.134	0.8751		7.72	10.0	-22.8*	20.0
13C-2,3,7,8-TCDD	Ave	0.9709	1.027		106	100	5.7	30.0
13C-2,3,7,8-TCDF	Ave	1.683	1.432		85.1	100	-14.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.580	1.591		5.03	5.00	0.7	

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab File ID: 23DE1310D5_4.d Lab Sample ID: MB 320-30809/1-A

Matrix: Solid Date Extracted: 11/27/2013 11:55

Instrument ID: 10D5 Date Analyzed: 12/23/2013 13:09

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-30809/2-A	23DE1310D5_5.d	12/23/2013 13:55
TF2-003-SB1011-0204	320-5001-22	23DE1310D5_12.d	12/23/2013 19:17
TF2-003-SB1012-0204	320-5001-23	24DE1310D5_5.d	12/24/2013 10:53
TF2-003-SB1012-0204 MS	320-5001-23 MS	24DE1310D5_6.d	12/24/2013 11:39
TF2-003-SB1012-0204 MSD	320-5001-23 MSD	24DE1310D5_7.d	12/24/2013 12:26
TF2-003-SB1017-011.6	320-5001-24	24DE1310D5_8.d	12/24/2013 13:12
TF2-003-SB1017-0204	320-5001-25	24DE1310D5_9.d	12/24/2013 13:58
TF2-003-SB1014-0204	320-5001-26	24DE1310D5_10.d	12/24/2013 14:44
TF2-003-SB1015-0204	320-5001-27	24DE1310D5_11.d	12/24/2013 15:30
TF2-003-SB1018-0204	320-5001-29	26DE1310D5_13.d	12/26/2013 21:11
TF2-003-DUP08-1113	320-5001-31	26DE1310D5_14.d	12/26/2013 21:57
TF2-003-SB1011-0204 RA	320-5001-22 RA	02JA1411D2_010.d	01/02/2014 19:46
TF2-003-SB1012-0204 RA	320-5001-23 RA	02JA1411D2_011.d	01/02/2014 20:25
TF2-003-SB1012-0204 MS RA	320-5001-23 MS RA	02JA1411D2_012.d	01/02/2014 21:04
TF2-003-SB1012-0204 MSD RA	320-5001-23 MSD RA	02JA1411D2_013.d	01/02/2014 21:43
TF2-003-SB1017-011.6 RA	320-5001-24 RA	02JA1411D2_014.d	01/02/2014 22:22
TF2-003-SB1014-0204 RA	320-5001-26 RA	02JA1411D2_015.d	01/02/2014 23:01
TF2-003-SB1015-0204	320-5001-27	03JA1411D2_004.d	01/03/2014 13:03
TF2-003-SB1016-0204	320-5001-28	03JA1411D2_005.d	01/03/2014 13:42
TF2-003-DUP08-1113	320-5001-31	03JA1411D2_006.d	01/03/2014 14:21
TF2-003-SB1016-0204	320-5001-28	03JA143D5_32.d	01/04/2014 10:57

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-30809/1-A

Matrix: Solid | Lab File ID: 23DE1310D5_4.d

Analysis Method: 8290A | Date Collected:

Extract. Method: 8290 | Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10(g) | Date Analyzed: 12/23/2013 13:09

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.022
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.016
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.033
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.023
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.023
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.019
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.017
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.015
70648-26-9	1,2,3,4,7,8-HxCDF	0.235	J	5.0	0.020
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.017
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.020
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.018
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.239	J	5.0	0.021
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.496	J	5.0	0.018
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.117	J	5.0	0.021
3268-87-9	OCDD	2.40	J	10	0.022
39001-02-0	OCDF	0.940	J	10	0.023
41903-57-5	Total TCDD	ND		1.0	0.022
30402-14-3	Total TCDF	ND		1.0	0.016
36088-22-9	Total PeCDD	ND		5.0	0.033
30402-15-4	Total PeCDF	ND		5.0	0.023
34465-46-8	Total HxCDD	ND		5.0	0.019
55684-94-1	Total HxCDF	0.294	J	5.0	0.019
37871-00-4	Total HpCDD	0.501	J	5.0	0.021
38998-75-3	Total HpCDF	0.614	J	5.0	0.020

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-30809/1-A

Matrix: Solid Lab File ID: 23DE1310D5_4.d

Analysis Method: 8290A Date Collected:

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10(g) Date Analyzed: 12/23/2013 13:09

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 32672 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		40-135
89059-46-1	13C-2,3,7,8-TCDF	55		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	57		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	61		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	59		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	64		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	61		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Matrix: Solid Level: Low Lab File ID: 23DE1310D5_5.d

Lab ID: LCS 320-30809/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	19.1	95	77-130	
2,3,7,8-TCDF	20.0	19.4	97	79-137	
1,2,3,7,8-PeCDD	100	101	101	79-134	
1,2,3,7,8-PeCDF	100	100	100	81-134	
2,3,4,7,8-PeCDF	100	97.4	97	76-132	
1,2,3,4,7,8-HxCDD	100	98.4	98	65-144	
1,2,3,6,7,8-HxCDD	100	102	102	73-147	
1,2,3,7,8,9-HxCDD	100	104	104	80-143	
1,2,3,4,7,8-HxCDF	100	106	106	72-140	
1,2,3,6,7,8-HxCDF	100	108	108	63-152	
1,2,3,7,8,9-HxCDF	100	108	108	72-152	
2,3,4,6,7,8-HxCDF	100	109	109	72-151	
1,2,3,4,6,7,8-HpCDD	100	99.2	99	86-134	
1,2,3,4,6,7,8-HpCDF	100	100	100	81-137	
1,2,3,4,7,8,9-HpCDF	100	98.4	98	79-139	
OCDD	200	202	101	80-137	
OCDF	200	200	100	75-141	
13C-2,3,7,8-TCDD	200	119	59	40-135	
13C-2,3,7,8-TCDF	200	111	56	40-135	
13C-1,2,3,7,8-PeCDD	200	116	58	40-135	
13C-1,2,3,7,8-PeCDF	200	113	57	40-135	
13C-1,2,3,6,7,8-HxCDD	200	124	62	40-135	
13C-1,2,3,4,7,8-HxCDF	200	115	58	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	130	65	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	126	63	40-135	
13C-OCDD	400	254	64	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Matrix: Solid Level: Low Lab File ID: 24DE1310D5_6.d

Lab ID: 320-5001-23 MS Client ID: TF2-003-SB1012-0204 MS

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	21.0	ND	21.4	102	77-130	
1,2,3,7,8-PeCDD	105	0.59 J	107	102	79-134	
1,2,3,7,8-PeCDF	105	0.43 J	109	103	81-134	
2,3,4,7,8-PeCDF	105	0.39 J	114	108	76-132	
1,2,3,4,7,8-HxCDD	105	0.73 J	111	105	65-144	
1,2,3,6,7,8-HxCDD	105	1.6 J	114	107	73-147	
1,2,3,7,8,9-HxCDD	105	1.5 J	105	99	80-143	
1,2,3,4,7,8-HxCDF	105	1.2 J	114	107	72-140	
1,2,3,6,7,8-HxCDF	105	0.76 J	113	106	63-152	
1,2,3,7,8,9-HxCDF	105	ND	105	100	72-152	
2,3,4,6,7,8-HxCDF	105	0.53 J	111	105	72-151	
1,2,3,4,6,7,8-HpCDD	105	27	152	118	86-134	
1,2,3,4,6,7,8-HpCDF	105	5.3	125	114	81-137	
1,2,3,4,7,8,9-HpCDF	105	0.44 J	129	122	79-139	
OCDD	210	3200	2550	-291	80-137	4
OCDF	210	4.3 J	254	118	75-141	
13C-2,3,7,8-TCDD	210	110	126	60	40-135	
13C-2,3,7,8-TCDF	210	110	123	59	40-135	
13C-1,2,3,7,8-PeCDD	210	110	126	60	40-135	
13C-1,2,3,7,8-PeCDF	210	97	117	56	40-135	
13C-1,2,3,6,7,8-HxCDD	210	110	127	61	40-135	
13C-1,2,3,4,7,8-HxCDF	210	100	116	55	40-135	
13C-1,2,3,4,6,7,8-HpCDD	210	110	146	69	40-135	
13C-1,2,3,4,6,7,8-HpCDF	210	100	130	62	40-135	
13C-OCDD	421	260	406	96	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Matrix: Solid Level: Low Lab File ID: 24DE1310D5_7.d

Lab ID: 320-5001-23 MSD Client ID: TF2-003-SB1012-0204 MSD

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	21.8	22.9	105	7	20	77-130	
1,2,3,7,8-PeCDD	109	115	105	6	20	79-134	
1,2,3,7,8-PeCDF	109	115	105	5	20	81-134	
2,3,4,7,8-PeCDF	109	111	102	2	20	76-132	
1,2,3,4,7,8-HxCDD	109	124	113	11	20	65-144	
1,2,3,6,7,8-HxCDD	109	115	105	1	20	73-147	
1,2,3,7,8,9-HxCDD	109	111	101	5	20	80-143	
1,2,3,4,7,8-HxCDF	109	120	109	5	20	72-140	
1,2,3,6,7,8-HxCDF	109	118	107	4	20	63-152	
1,2,3,7,8,9-HxCDF	109	103	95	2	20	72-152	
2,3,4,6,7,8-HxCDF	109	112	103	1	20	72-151	
1,2,3,4,6,7,8-HpCDD	109	146	109	4	20	86-134	
1,2,3,4,6,7,8-HpCDF	109	120	105	5	20	81-137	
1,2,3,4,7,8,9-HpCDF	109	104	95	21	20	79-139	F
OCDD	218	3340	81	27	20	80-137	4 F
OCDF	218	217	98	16	20	75-141	
13C-2,3,7,8-TCDD	218	154	71			40-135	
13C-2,3,7,8-TCDF	218	151	69			40-135	
13C-1,2,3,7,8-PeCDD	218	153	70			40-135	
13C-1,2,3,7,8-PeCDF	218	154	71			40-135	
13C-1,2,3,6,7,8-HxCDD	218	169	78			40-135	
13C-1,2,3,4,7,8-HxCDF	218	171	79			40-135	
13C-1,2,3,4,6,7,8-HpCDD	218	154	71			40-135	
13C-1,2,3,4,6,7,8-HpCDF	218	150	69			40-135	
13C-OCDD	435	269	62			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Matrix: Solid Level: Low Lab File ID: 02JA1411D2_012.d

Lab ID: 320-5001-23 MS RA Client ID: TF2-003-SB1012-0204 MS RA

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDF	21.0	0.35 J	18.6	87	79-137	
13C-2,3,7,8-TCDF	210	94	109	52	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Matrix: Solid Level: Low Lab File ID: 02JA1411D2_013.d

Lab ID: 320-5001-23 MSD RA Client ID: TF2-003-SB1012-0204 MSD RA

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDF	21.8	19.5	88	5	20	79-137	
13C-2,3,7,8-TCDF	218	128	59			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Lab File ID: 17DE13D9D5_004.d Lab Sample ID: MB 320-30260/1-A

Matrix: Water Date Extracted: 11/20/2013 12:35

Instrument ID: 9D5 Date Analyzed: 12/17/2013 21:09

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-SB-RB03-1113	320-5001-21	16DE13A9D5_004.d	12/17/2013 00:55
TF2-003-RB04-1113	320-5001-30	16DE13A9D5_005.d	12/17/2013 01:37
	LCS 320-30260/2-A	17DE13D9D5_005.d	12/17/2013 21:51
	LCSD 320-30260/3-A	17DE13D9D5_006.d	12/17/2013 22:34

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-30260/1-A

Matrix: Water | Lab File ID: 17DE13D9D5_004.d

Analysis Method: 8290A | Date Collected:

Extract. Method: 8290 | Date Extracted: 11/20/2013 12:35

Sample wt/vol: 1000(mL) | Date Analyzed: 12/17/2013 21:09

Con. Extract Vol.: 20.00(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32148 | Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.59
51207-31-9	2,3,7,8-TCDF	ND		10	0.91
40321-76-4	1,2,3,7,8-PeCDD	ND		50	0.96
57117-41-6	1,2,3,7,8-PeCDF	ND		50	1.9
57117-31-4	2,3,4,7,8-PeCDF	ND		50	2.0
39227-28-6	1,2,3,4,7,8-HxCDD	ND		50	0.47
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.49
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.40
70648-26-9	1,2,3,4,7,8-HxCDF	0.641	J	50	0.49
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	0.66
72918-21-9	1,2,3,7,8,9-HxCDF	ND		50	0.52
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.49
35822-46-9	1,2,3,4,6,7,8-HpCDD	1.14	J	50	0.34
67562-39-4	1,2,3,4,6,7,8-HpCDF	1.86	J	50	0.40
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.47
3268-87-9	OCDD	3.80	J	100	0.52
39001-02-0	OCDF	1.81	J	100	0.49
41903-57-5	Total TCDD	ND		10	0.59
30402-14-3	Total TCDF	ND		10	0.91
36088-22-9	Total PeCDD	ND		50	0.96
30402-15-4	Total PeCDF	ND		50	2.0
34465-46-8	Total HxCDD	ND		50	0.49
55684-94-1	Total HxCDF	0.641	J	50	0.54
37871-00-4	Total HpCDD	2.86	J	50	0.34
38998-75-3	Total HpCDF	1.86	J	50	0.43

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-5001-2

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-30260/1-A

Matrix: Water | Lab File ID: 17DE13D9D5_004.d

Analysis Method: 8290A | Date Collected:

Extract. Method: 8290 | Date Extracted: 11/20/2013 12:35

Sample wt/vol: 1000(mL) | Date Analyzed: 12/17/2013 21:09

Con. Extract Vol.: 20.00(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32148 | Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	85		40-135
89059-46-1	13C-2,3,7,8-TCDF	78		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	89		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	78		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	98		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	76		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	75		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	71		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Matrix: Water Level: Low Lab File ID: 17DE13D9D5_005.d

Lab ID: LCS 320-30260/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	219	110	64-142	
2,3,7,8-TCDF	200	222	111	71-142	
1,2,3,7,8-PeCDD	1000	1100	110	71-140	
1,2,3,7,8-PeCDF	1000	1100	110	76-135	
2,3,4,7,8-PeCDF	1000	1100	110	74-137	
1,2,3,4,7,8-HxCDD	1000	1130	113	56-146	
1,2,3,6,7,8-HxCDD	1000	1080	108	73-144	
1,2,3,7,8,9-HxCDD	1000	911	91	71-151	
1,2,3,4,7,8-HxCDF	1000	1190	119	75-131	
1,2,3,6,7,8-HxCDF	1000	1280	128	76-133	
1,2,3,7,8,9-HxCDF	1000	1130	113	77-142	
2,3,4,6,7,8-HxCDF	1000	1240	124	80-137	
1,2,3,4,6,7,8-HpCDD	1000	1190	119	78-139	
1,2,3,4,6,7,8-HpCDF	1000	1160	116	79-133	
1,2,3,4,7,8,9-HpCDF	1000	1090	109	83-130	
OCDD	2000	2190	109	80-132	
OCDF	2000	2000	100	72-140	
13C-2,3,7,8-TCDD	2000	1650	83	40-135	
13C-2,3,7,8-TCDF	2000	1540	77	40-135	
13C-1,2,3,7,8-PeCDD	2000	1730	87	40-135	
13C-1,2,3,7,8-PeCDF	2000	1540	77	40-135	
13C-1,2,3,6,7,8-HxCDD	2000	2140	107	40-135	
13C-1,2,3,4,7,8-HxCDF	2000	1410	70	40-135	
13C-1,2,3,4,6,7,8-HpCDD	2000	1550	78	40-135	
13C-1,2,3,4,6,7,8-HpCDF	2000	1480	74	40-135	
13C-OCDD	4000	3040	76	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

FORM III
DIOXIN LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Matrix: Water Level: Low Lab File ID: 17DE13D9D5_006.d

Lab ID: LCSD 320-30260/3-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCSD CONCENTRATION (pg/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	200	234	117	7	20	64-142	
2,3,7,8-TCDF	200	237	119	6	20	71-142	
1,2,3,7,8-PeCDD	1000	1160	116	6	20	71-140	
1,2,3,7,8-PeCDF	1000	1130	113	3	20	76-135	
2,3,4,7,8-PeCDF	1000	1130	113	3	20	74-137	
1,2,3,4,7,8-HxCDD	1000	1390	139	21	20	56-146	*
1,2,3,6,7,8-HxCDD	1000	1140	114	5	20	73-144	
1,2,3,7,8,9-HxCDD	1000	1050	105	14	20	71-151	
1,2,3,4,7,8-HxCDF	1000	1190	119	0	20	75-131	
1,2,3,6,7,8-HxCDF	1000	1340	134	4	20	76-133	*
1,2,3,7,8,9-HxCDF	1000	1190	119	5	20	77-142	
2,3,4,6,7,8-HxCDF	1000	1230	123	1	20	80-137	
1,2,3,4,6,7,8-HpCDD	1000	1240	124	4	20	78-139	
1,2,3,4,6,7,8-HpCDF	1000	1230	123	6	20	79-133	
1,2,3,4,7,8,9-HpCDF	1000	1210	121	10	20	83-130	
OCDD	2000	2330	116	6	20	80-132	
OCDF	2000	2160	108	8	20	72-140	
13C-2,3,7,8-TCDD	2000	1660	83			40-135	
13C-2,3,7,8-TCDF	2000	1520	76			40-135	
13C-1,2,3,7,8-PeCDD	2000	1770	88			40-135	
13C-1,2,3,7,8-PeCDF	2000	1590	80			40-135	
13C-1,2,3,6,7,8-HxCDD	2000	1970	98			40-135	
13C-1,2,3,4,7,8-HxCDF	2000	1450	72			40-135	
13C-1,2,3,4,6,7,8-HpCDD	2000	1590	80			40-135	
13C-1,2,3,4,6,7,8-HpCDF	2000	1490	74			40-135	
13C-OCDD	4000	3310	83			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290A

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Batch Number: 30260 Batch Start Date: 11/20/13 12:35 Batch Analyst: Cortes, Cesar C

Batch Method: 8290 Batch End Date: 11/21/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	RotoVapID	HRDXNIDA 00104
MB 320-30260/1		8290, 8290A		1500.00 g	500.00 g	1000 mL	20.00 uL	6	1 mL
LCS 320-30260/2		8290, 8290A		1500.00 g	500.00 g	1000 mL	20.00 uL	7	1 mL
LCSD 320-30260/3		8290, 8290A		1500.00 g	500.00 g	1000 mL	20.00 uL	6	1 mL
320-5001-A-21	TF2-SB-RB03-1113	8290, 8290A	T	1565.7 g	523.00 g	1042.7 mL	20.00 uL	7	1 mL
320-5001-A-30	TF2-003-RB04-1113	8290, 8290A	T	1509.7 g	520.34 g	989.4 mL	20.00 uL	6	1 mL

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNIS 00034	HRDXNSU 00058	HRDXNTA 00027			
MB 320-30260/1		8290, 8290A		20 uL	1 mL				
LCS 320-30260/2		8290, 8290A		20 uL	1 mL	50 uL			
LCSD 320-30260/3		8290, 8290A		20 uL	1 mL	50 uL			
320-5001-A-21	TF2-SB-RB03-1113	8290, 8290A	T	20 uL	1 mL				
320-5001-A-30	TF2-003-RB04-1113	8290, 8290A	T	20 uL	1 mL				

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Batch Number: 30260 Batch Start Date: 11/20/13 12:35 Batch Analyst: Cortes, Cesar C

Batch Method: 8290 Batch End Date: 11/21/13 15:00

Batch Notes	
20% DCM:Hexane	4022-116F mL
65% DCM:Hexane	4022-119A mL
Acid Alumina	32
Balance ID	QA-65
C14	CCC/11-20-13
Hexane Lot#	0000041837 mL
IFB Clean Up	MEL 11/21/13
MeCL2 Lot #	0000055812 mL
Na2SO4 Lot Number	0000055053
IDA Reagent Drop	CCC/11-20-13
IDA Reagent Drop Witness	TGL/11-20-13
IS Reagent Drop	TGL 11/21/13
IS Reagent Drop Witness	CFR 11/21/13
SU Reagent Drop	MEL 11/21/13
SU Reagent Drop Witness	TGL 11/21/13
TA Reagent Drop	CCC/11-20-13
TA Reagent Drop Witness	TGL/11-20-13
Sep Funnel Extractions (date and time)	CCC/11-20-13
Silica Gel Lot Number	4022-119D
Storage Box	87

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Batch Number: 30809 Batch Start Date: 11/27/13 11:55 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/02/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	ExtractionID	RotoVapID	HRDXNIDA 00105	HRDXNIS 00040
MB 320-30809/1		8290, 8290A		10 g	20 uL	D3-29	9	1 mL	20 uL
LCS 320-30809/2		8290, 8290A		10 g	20 uL	D4	2	1 mL	20 uL
320-5001-A-22	TF2-003-SB1011-0 204	8290, 8290A	T	10.39 g	20 uL	E5-18	9	1 mL	20 uL
320-5001-A-23	TF2-003-SB1012-0 204	8290, 8290A	T	10.24 g	20 uL	E6-1A	2	1 mL	20 uL
320-5001-A-23 MS	TF2-003-SB1012-0 204	8290, 8290A	T	10.41 g	20 uL	F1-93	9	1 mL	20 uL
320-5001-A-23 MSD	TF2-003-SB1012-0 204	8290, 8290A	T	10.07 g	20 uL	F2-5	2	1 mL	20 uL
320-5001-A-24	TF2-003-SB1017-0 11.6	8290, 8290A	T	10.13 g	20 uL	F3	9	1 mL	20 uL
320-5001-A-25	TF2-003-SB1017-0 204	8290, 8290A	T	10.12 g	20 uL	F4-14	2	1 mL	20 uL
320-5001-A-26	TF2-003-SB1014-0 204	8290, 8290A	T	10.14 g	20 uL	F5	9	1 mL	20 uL
320-5001-A-27	TF2-003-SB1015-0 204	8290, 8290A	T	10.05 g	20 uL	F6-9	2	1 mL	20 uL
320-5001-A-28	TF2-003-SB1016-0 204	8290, 8290A	T	10.32 g	20 uL	G1	9	1 mL	20 uL
320-5001-A-29	TF2-003-SB1018-0 204	8290, 8290A	T	10.07 g	20 uL	G2-63	2	1 mL	20 uL
320-5001-A-31	TF2-003-DUP08-11 13	8290, 8290A	T	10.41 g	20 uL	G3-71	9	1 mL	20 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNSU 00058	HRDXNTA 00027				
MB 320-30809/1		8290, 8290A		1 mL					
LCS 320-30809/2		8290, 8290A		1 mL	50 uL				
320-5001-A-22	TF2-003-SB1011-0 204	8290, 8290A	T	1 mL					
320-5001-A-23	TF2-003-SB1012-0 204	8290, 8290A	T	1 mL					
320-5001-A-23 MS	TF2-003-SB1012-0 204	8290, 8290A	T	1 mL	50 uL				
320-5001-A-23 MSD	TF2-003-SB1012-0 204	8290, 8290A	T	1 mL	50 uL				
320-5001-A-24	TF2-003-SB1017-0 11.6	8290, 8290A	T	1 mL					
320-5001-A-25	TF2-003-SB1017-0 204	8290, 8290A	T	1 mL					

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Batch Number: 30809 Batch Start Date: 11/27/13 11:55 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/02/13 15:00

Lab Sample ID	Client Sample ID	Method Chain	Basis	HRDXNSU 00058	HRDXNTA 00027				
320-5001-A-26	TF2-003-SB1014-0 204	8290, 8290A	T	1 mL					
320-5001-A-27	TF2-003-SB1015-0 204	8290, 8290A	T	1 mL					
320-5001-A-28	TF2-003-SB1016-0 204	8290, 8290A	T	1 mL					
320-5001-A-29	TF2-003-SB1018-0 204	8290, 8290A	T	1 mL					
320-5001-A-31	TF2-003-DUP08-11 13	8290, 8290A	T	1 mL					

Batch Notes	
20% DCM:Hexane	4022-119C mL
65% DCM:Hexane	4022-120B mL
Acid Alumina	32
Balance ID	QA-074
C14	MEL 12/02/13
Hexane Lot#	0000041837 mL
IFB Clean Up	MEL 12/02/13
Na2SO4 Lot Number	0000055053
IDA Reagent Drop	GDB 11/27/13
IDA Reagent Drop Witness	TGL 11/27/13
IS Reagent Drop	TGL 12/02/13
IS Reagent Drop Witness	GDB 12/02/13
SU Reagent Drop	MEL 12/02/13
SU Reagent Drop Witness	TGL 12/02/13
TA Reagent Drop	GDB 11/27/13
TA Reagent Drop Witness	TGL 11/27/13
Silica Gel Lot Number	4022-119E
Soxhlet/Soxtherm End	16:55
Soxhlet/Soxtherm Start	13:55
Storage Box	91
Toluene Lot #	0000057186 mL

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

DIOXIN BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Batch Number: 30809 Batch Start Date: 11/27/13 11:55 Batch Analyst: Bogollagama, Gishan

Batch Method: 8290 Batch End Date: 12/02/13 15:00

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT		JOB NUMBER	
NAVSTA Newport			
SUBJECT	PCDF/PCDD		
BASED ON	8290A	DRAWING NUMBER	
BY E.W.S.	CHECKED BY	APPROVED BY	DATE

TF2-003-SB1017-011.6

2,3,7,8-TCDF = 2.0 NG/PG

$$\frac{582904 \times 1 \times 100 \times 20}{2000663 \times 1.1338 \times 10.13 \times 0.869} = 1.96 \text{ ng/kg}$$

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-5001-2

SDG No.:

Client Sample ID: TF2-003-SB1017-011.6 RA Lab Sample ID: 320-5001-24 RA

Matrix: Solid Lab File ID: 02JA1411D2_014.d

Analysis Method: 8290A Date Collected: 11/15/2013 09:15

Extract. Method: 8290 Date Extracted: 11/27/2013 11:55

Sample wt/vol: 10.13(g) Date Analyzed: 01/02/2014 22:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 13.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 33115 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	2.0		1.1	0.095

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	42		40-135

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\Sacchrom\ChromData\11D5\20140103-9631.b\02JA1411D2_014.d
Lims ID: 320-5001-A-24-A Lab Sample ID: 320-5001-24
Client ID: TF2-003-SB1017-011.6
Sample Type: Client
Inject. Date: 02-Jan-2014 22:22:24 ALS Bottle#: 0 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-30809
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D5

Method: \\Sacchrom\ChromData\11D5\20140103-9631.b\DXN_DB225_11D2.m
Limit Group: HR - 8290A - ICAL
Last Update: 03-Jan-2014 09:44:02 Calib Date: 19-Dec-2013 21:20:42
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\Sacchrom\ChromData\11D5\20131223-9430.b\19DE1311D2_007.d

Column 1 : DB-225 (0.32 mm) Detector F1:HRSIR
Process Host: XAWRK053

First Level Reviewer: grandfieldv Date: 03-Jan-2014 12:52:54

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.662	84806968	0.82	1.1E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	16.829	60000663	0.82	1.6831	42.0	42.0	0.0863	0.0863	42.03	
2,3,7,8-TCDF	16.842	586904	0.79	1.1338	0.8627	0.8627	0.0419	0.0419		
D 13C-2,3,7,8-TCDD	15.429	44018711	0.81	0.9709	53.5	53.5	0.1060	0.1060	53.46	
$ 37Cl4-2,3,7,8-TCDD	15.456	45176835		1.5800	33.7	33.7	0.0264	0.0264	84.29	
2,3,7,8-TCDD	15.456	421754	0.77	1.2462	0.8730	0.7688	0.0669	0.0669		RQ

QC Flag Legend

Processing Flags
R - Failed Signal Ratio Test
Q - EMPC-Estimated Max. Possible Conc.

Tetra Tech **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 27, 2014**

FROM: **EDWARD SEDLMYER** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PAH / GRO / Florida-PRO**
NAVSTA NEWPORT, CTO WE30
SDG SG8254

SAMPLES:

2/Aqueous/PAH/GRO/TPH

TF2-SS-RB03-1013	TF2-W-TB03-1013

34/Soil/PAH

TF2-003-SS-DUP06-1013	TF2-003-SS1011-000.8	TF2-003-SS1012-000.7
TF2-003-SS1013-000.7	TF2-003-SS1014-0001	TF2-003-SS1015-000.8
TF2-003-SS1016-000.9	TF2-003-SS1017-000.8	TF2-003-SS1018-000.8
TF2-003-SS1019-000.5	TF2-004/5-SS-DUP04-1013	TF2-004/5-SS-DUP05-1013
TF2-004/5-SS1050-000.6	TF2-004/5-SS1051-000.8	TF2-004/5-SS1052-000.6
TF2-004/5-SS1053-000.6	TF2-004/5-SS1054-000.6	TF2-004/5-SS1055-000.8
TF2-004/5-SS1056-000.6	TF2-004/5-SS1057-0001	TF2-004/5-SS1058-000.5
TF2-004/5-SS1059-000.6	TF2-004/5-SS1060-000.5	TF2-004/5-SS1061-000.6
TF2-004/5-SS1062-000.8	TF2-004/5-SS1063-000.6	TF2-004/5-SS1064-000.6
TF2-004/5-SS1065-000.5	TF2-004/5-SS1066-000.9	TF2-004/5-SS1067-000.7
TF2-004/5-SS1068-000.5		

5/Soil/GRO/TPH

TF2-003-SS1015-000.8	TF2-004/5-SS1051-000.8	TF2-004/5-SS1056-000.6
TF2-004/5-SS1065-000.5		

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG SG8254 consisted of thirty-one (31) soil samples, one (1) rinse blank, and one (1) trip blank. The samples were analyzed as listed above for polynuclear aromatic hydrocarbons (PAH), gasoline range organics (GRO), and Florida-PRO. Three (3) field duplicate sample pairs were included in this sample delivery group (SDG): TF2-003-SS1015-000.8 / TF2-003-SS-DUP06-1013, TF2-004/5-SS1061-000.6 / TF2-004/5-SS-DUP04-1013, and TF2-004/5-SS1065-000.5 / TF2-004/5-SS-DUP05-1013.

The samples were collected by Tetra Tech on October 21 and 22, 2013 and analyzed by Katahdin Analytical Services for all fractions. All analyses were conducted in accordance with EPA SW-846 Methods 8270D SIM, 8015B, and Florida-PRO analytical and reporting protocols. A Tier II validation was conducted on the referenced samples. The data was evaluated based on the following parameters:

* • Data Completeness
• Holding Times
* • GC/MS Instrument Tuning
• Blank Results

Tetra Tech **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 27, 2014**

FROM: **EDWARD SEDLMYER** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PAH / GRO / Florida-PRO**
NAVSTA NEWPORT, CTO WE30
SDG SG8254

SAMPLES:

2/Aqueous/PAH/GRO/TPH

TF2-SS-RB03-1013	TF2-W-TB03-1013

34/Soil/PAH

TF2-003-SS-DUP06-1013	TF2-003-SS1011-000.8	TF2-003-SS1012-000.7
TF2-003-SS1013-000.7	TF2-003-SS1014-0001	TF2-003-SS1015-000.8
TF2-003-SS1016-000.9	TF2-003-SS1017-000.8	TF2-003-SS1018-000.8
TF2-003-SS1019-000.5	TF2-004/5-SS-DUP04-1013	TF2-004/5-SS-DUP05-1013
TF2-004/5-SS1050-000.6	TF2-004/5-SS1051-000.8	TF2-004/5-SS1052-000.6
TF2-004/5-SS1053-000.6	TF2-004/5-SS1054-000.6	TF2-004/5-SS1055-000.8
TF2-004/5-SS1056-000.6	TF2-004/5-SS1057-0001	TF2-004/5-SS1058-000.5
TF2-004/5-SS1059-000.6	TF2-004/5-SS1060-000.5	TF2-004/5-SS1061-000.6
TF2-004/5-SS1062-000.8	TF2-004/5-SS1063-000.6	TF2-004/5-SS1064-000.6
TF2-004/5-SS1065-000.5	TF2-004/5-SS1066-000.9	TF2-004/5-SS1067-000.7
TF2-004/5-SS1068-000.5		

5/Soil/GRO/TPH

TF2-003-SS1015-000.8	TF2-004/5-SS1051-000.8	TF2-004/5-SS1056-000.6
TF2-004/5-SS1065-000.5		

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG SG8254 consisted of thirty-one (31) soil samples, one (1) rinse blank, and one (1) trip blank. The samples were analyzed as listed above for polynuclear aromatic hydrocarbons (PAH), gasoline range organics (GRO), and Florida-PRO. Three (3) field duplicate sample pairs were included in this sample delivery group (SDG): TF2-003-SS1015-000.8 / TF2-003-SS-DUP06-1013, TF2-004/5-SS1061-000.6 / TF2-004/5-SS-DUP04-1013, and TF2-004/5-SS1065-000.5 / TF2-004/5-SS-DUP05-1013.

The samples were collected by Tetra Tech on October 21 and 22, 2013 and analyzed by Katahdin Analytical Services for all fractions. All analyses were conducted in accordance with EPA SW-846 Methods 8270D SIM, 8015B, and Florida-PRO analytical and reporting protocols. A Tier II validation was conducted on the referenced samples. The data was evaluated based on the following parameters:

* • Data Completeness
• Holding Times
* • GC/MS Instrument Tuning
• Blank Results

- Initial and Continuing Calibration
* • Surrogate Spike Recoveries
- Internal Standard Recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Results
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
* • Field Duplicate Precision
* • Detection Limits
* • Compound Identification and Quantification

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

LABORATORY BLANKS

The following contaminants were detected in laboratory preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Benzo(a)anthracene[1]	6.6 ug/kg	33 ug/kg
Chrysene[1]	2.5 ug/kg	12.5 ug/kg
Chrysene[2]	0.044 ug/L	0.22 ug/L
Benzo(k)fluoranthene[2]	0.059 ug/L	0.259 ug/L

[1] Maximum concentration present in blank associated with batch WG133188-1 affecting samples .
[2] Maximum concentration present in blank WG133367 affecting sample TF2-SS-RB03-1013.

An action level of 5X the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the blank action level and greater than the LOD were qualified "U" as a result of laboratory blank contamination.

INITIAL AND CONTINUING CALIBRATION

The PAH continuing calibration verification analyzed on 11/01/13 @13:12 on instrument GCMS-N had %Ds greater than the 20% quality control limit for benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene. The detected results for samples TF2-SS-RB03-1013, TF2-003-SS1011-000.8, TF2-003-SS1012-000.7, TF2-003-SS1014-0001, TF2-003-SS1015-000.8, TF2-003-SS1016-000.9, TF2-003-SS1017-000.8, TF2-003-SS1018-000.8, and undiluted TF2-003-SS1019-000.5 were qualified as estimated (J).

The PAH continuing calibration verification analyzed on 11/04/13 @10:51 on instrument GCMS-N had %Ds greater than the 20% quality control limit for indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene. The detected results for samples TF2-004/5-SS1050-000.6, TF2-004/5-SS1051-000.8, TF2-004/5-SS1052-000.6, TF2-004/5-SS1053-000.6, TF2-004/5-SS1054-000.6, TF2-004/5-SS1055-000.8, TF2-004/5-SS1058-000.5, TF2-004/5-SS1059-000.6, TF2-004/5-SS1060-000.5, TF2-004/5-SS1063-000.6, and TF2-004/5-SS1065-000.5 were qualified as estimated (J).

The PAH continuing calibration verification analyzed on 11/13/13 @12:29 on instrument GCMS-N had a %D greater than the 20% quality control limit for indeno(1,2,3-cd)pyrene. The detected results for samples TF2-003-SS-DUP06-1013 and diluted TF2-003-SS1013-000.7 were qualified as estimated (J).

HOLDING TIME

The Florida-PRO surrogate recovery for O-terphenyl was less than the laboratory control limit for sample TF2-004/5-SS1056-000.6. The sample was re-extracted 7 days outside the 14 day extraction hold time with acceptable surrogate recoveries. The re-extracted result was used for validation because the re-extracted result had a higher concentration. The detected result for sample TF2-004/5-SS1056-000.6 has been qualified as estimated (J).

MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

The PAH MS/MSD performed on sample TF2-003-SS1016-000.9 had several percent recoveries outside the quality control limit. The sample results were qualified as listed below.

Analyte	%MS	%MSD	RPD	Qualifier for sample result
Benzo(k)fluoranthene	32.8	13.2	Ok	J
Dibenzo(a,h)anthracene	46.1	44.8	Ok	J
Benzo(g,h,i)perylene	23.3	14.8	Ok	J

The PAH MS/MSD performed on sample TF2-004/5-SS1054-000.6 had several percent recoveries outside the quality control limit. The sample results were qualified as listed below.

Analyte	%MS	%MSD	RPD	Qualifier for sample result
Benzo(a)pyrene	46.4	48.4	Ok	J
Benzo(g,h,i)perylene	30.0	30.3	Ok	J

The PAH MS/MSD performed on sample TF2-004/5-SS1064-000.6 had several percent recoveries outside the quality control limit. In addition, a relative percent difference (RPD) exceeded the quality control limit. The sample results were qualified as listed below.

Analyte	%MS	%MSD	RPD	Qualifier for sample result
Phenanthrene	Ok	97.0	Ok	None
Fluoranthene	Ok	130	35	None
Pyrene	Ok	115	Ok	None
Benzo(a)pyrene	47.7	54.1	Ok	J
Indeno(1,2,3-cd)pyrene	33.4	43.2	Ok	J
Dibenzo(a,h)anthracene	47.0	52.1	Ok	J
Benzo(g,h,i)perylene	24.1	25.8	Ok	J

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE (LCS/LCSD)

The PAH LCS/LCSD associated with batch WG133188 had percent recoveries outside the quality control limit. In addition, a relative percent difference (RPD) exceeded the quality control limit. The affected sample results were qualified as listed below.

Analyte	%LCS	%LCSD	RPD	Qualifier for sample result
Benzo(b)fluoranthene	51.6	42.7	Ok	J
Benzo(a)pyrene	42.4	52.9	Ok	J
Indeno(1,2,3-cd)pyrene	Ok	43.9	Ok	None
Benzo(g,h,i)perylene	49.2	32.2	42	J

The PAH LCS/LCSD associated with batch WG133361 had percent recoveries outside the quality control limit. In addition, relative percent differences (RPDs) exceeded the quality control limit. The affected sample results were qualified as listed below.

Analyte	%LCS	%LCSD	RPD	Qualifier for sample result
Naphthalene	Ok	Ok	44	None
2-Methylnaphthalene	Ok	Ok	50	None
Acenaphthylene	Ok	Ok	45	None
Acenaphthene	Ok	Ok	43	None
Fluorene	Ok	Ok	43	None
Phenanthrene	Ok	Ok	42	None
Anthracene	Ok	Ok	47	None
Fluoranthene	Ok	Ok	31	None
Benzo(a)anthracene	Ok	Ok	40	None
Chrysene	Ok	Ok	40	None
Benzo(b)fluoranthene	Ok	Ok	40	None
Benzo(k)fluoranthene	Ok	45.4	45	None
Benzo(a)pyrene	Ok	47.1	40	None
Indeno(1,2,3-cd)pyrene	Ok	Ok	54	None
Dibenzo(a,h)anthracene	Ok	53.2	46	None
Benzo(g,h,i)perylene	48.3	32.8	38	J

The Florida-PRO LCS/LCSD associated with batch WG133426 had a percent recovery outside the quality control limit. In addition, the relative percent difference (RPD) was exceeded the quality control limit. The detected results for the affected samples were qualified as listed below.

Analyte	%LCS	%LCSD	RPD	Qualifier for sample result
Florida-PRO	56.4	Ok	34	J

INTERNAL STANDARDS

The PAH internal standard perylene-d12 had recoveries less than the quality control limit for the diluted sample TF2-003-SS1013-000.7. The detected results for compounds quantified using perylene-d12 in sample TF2-003-SS1013-000.7 have been qualified as estimated (J).

FIELD DUPLICATE PRECISION

The field duplicate precision exceeded the 50% relative percent difference (RPD) quality control criteria for phenanthrene in the field duplicate pair TF2-004/5-SS1061-000.6 / TF2-004/5-SS-DUP04-1013. The

positive results for phenanthrene in the duplicate pair TF2-004/5-SS1061-000.6 / TF2-004/5-SS-DUP04-1013 were qualified as estimated (J).

ADDITIONAL COMMENTS

The PAH continuing calibration verification analyzed on 11/14/13 @10:51 on instrument GCMS-N had a %D greater than the 20% quality control limit for indeno(1,2,3-cd)pyrene. No action was taken on this basis because the diluted sample associated with this calibration did not have indeno(1,2,3-cd)pyrene reported from the dilution.

Samples TF2-003-SS1011-000.8, TF2-003-SS1012-000.7, TF2-003-SS1013-000.7, TF2-003-SS1014-0001, TF2-003-SS1019-000.5, and TF2-004/5-SS1067-000.7 required dilutions for the PAH fraction due to concentrations greater than the linear calibration range of the instrument.

Positive results reported below the quantitation limit but above the method detection limit (MDL) were qualified as estimated, (J).

Gasoline range organic results were reported as TPH C5-C12 and petroleum range organic results were reported as EPH C8 – C44.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: Extraction hold time noncompliance resulted in the qualification of data in the Florida-PRO fraction. Continuing calibration noncompliances resulted in the qualification of data in the PAH fraction. LCS/LCSD recovery noncompliances resulted in the qualification of data for the PAH and Florida-PRO fractions. MS/MSD recovery noncompliances resulted in the qualification of data in the fraction. Internal standard recovery noncompliance resulted in the qualification of data for the PAH fraction.

Other Factors Affecting Data Quality: Positive results reported below the limit of quantitation (LOQ) but above the MDL were qualified. Field duplicate precision noncompliances resulted in the qualification of data for the PAH fractions.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (June 2008), and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Edward Sedlmyer
Chemist/Data Validator

Tetra Tech
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Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1011-000.8			TF2-003-SS1011-000.8DL			TF2-003-SS1012-000.7			TF2-003-SS1012-000.7DL		
SDG: SG8254	LAB_ID	SG8254-22			SG8254-22DL			SG8254-24			SG8254-24DL		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.9			86.9			88.7			88.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		18	J	P				23					
ACENAPHTHENE		71						100					
ACENAPHTHYLENE		3	J	P				5	J	P			
ANTHRACENE		110						220					
BENZO(A)ANTHRACENE		310	J	C							670	J	C
BENZO(A)PYRENE		190	J	E							440	J	E
BENZO(B)FLUORANTHENE		280	J	CE							640	J	CE
BENZO(G,H,I)PERYLENE		77	J	E				160	J	E			
BENZO(K)FLUORANTHENE		130						170					
CHRYSENE		240									630		
DIBENZO(A,H)ANTHRACENE		52						95					
FLUORANTHENE					620						1800		
FLUORENE		62						120					
INDENO(1,2,3-CD)PYRENE		260	J	C							630	J	C
NAPHTHALENE		60						70					
PHENANTHRENE					510						1200		
PYRENE					480						1300		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1013-000.7			TF2-003-SS1013-000.7DL			TF2-003-SS1014-0001			TF2-003-SS1014-0001DL		
SDG: SG8254	LAB_ID	SG8254-25			SG8254-25DL			SG8254-26			SG8254-26DL		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.0			93.0			93.2			93.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		12	J	P				10	U				
ACENAPHTHENE		160						15	J	P			
ACENAPHTHYLENE		10	U					1.8	J	P			
ANTHRACENE		310						26					
BENZO(A)ANTHRACENE					740			180	J	C			
BENZO(A)PYRENE					580	J	EN	99	J	E			
BENZO(B)FLUORANTHENE					840	J	EN	160	J	CE			
BENZO(G,H,I)PERYLENE		200	J	E				44	J	E			
BENZO(K)FLUORANTHENE		300						52					
CHRYSENE					750			170					
DIBENZO(A,H)ANTHRACENE		110						27					
FLUORANTHENE					1900			330					
FLUORENE		140						10	J	P			
INDENO(1,2,3-CD)PYRENE					420	J	CN	130	J	C			
NAPHTHALENE		43						2.9	J	P			
PHENANTHRENE					1700			220					
PYRENE					2000						410		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1015-000.8			TF2-003-SS1016-000.9			TF2-003-SS1017-000.8			TF2-003-SS1018-000.8		
SDG: SG8254	LAB_ID	SG8254-27			SG8254-28			SG8254-29			SG8254-30		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.0			90.9			91.6			94.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.5	U		4.3	J	P	10	U		9.5	U	
ACENAPHTHENE		5.4	J	P	14	J	P	9.5	J	P	5	J	P
ACENAPHTHYLENE		2.3	J	P	4.3	J	P	1.4	J	P	9.5	U	
ANTHRACENE		16	J	P	30			20	J	P	9	J	P
BENZO(A)ANTHRACENE		120	J	C	200	J	C	140	J	C	63	J	C
BENZO(A)PYRENE		79	J	E	150	J	E	92	J	E	38	J	E
BENZO(B)FLUORANTHENE		140	J	CE	240	J	CE	140	J	CE	58	J	CE
BENZO(G,H,I)PERYLENE		39	J	E	66	J	DE	45	J	E	18	J	EP
BENZO(K)FLUORANTHENE		42			80	J	D	46			18	J	P
CHRYSENE		110			180			120			56		
DIBENZO(A,H)ANTHRACENE		24			42	J	D	28			11	J	P
FLUORANTHENE		230			340			230			100		
FLUORENE		4.7	J	P	14	J	P	5.7	J	P	9.5	U	
INDENO(1,2,3-CD)PYRENE		130	J	C	230	J	C	130	J	C	53	J	C
NAPHTHALENE		9.5	U		9.2	J	P	10	U		9.5	U	
PHENANTHRENE		120			220			160			78		
PYRENE		200			320			260			130		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1019-000.5			TF2-003-SS1019-000.5DL			TF2-003-SS-DUP06-1013			TF2-004/5-SS1050-000.6		
SDG: SG8254	LAB_ID	SG8254-31			SG8254-31DL			SG8254-32			SG8254-9		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.8			91.8			93.1			94.9		
	DUP_OF							TF2-003-SS1015-000.8					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.9	U					10	U		10	U	
ACENAPHTHENE		15	J	P				4.7	J	P	10	U	
ACENAPHTHYLENE		2.1	J	P				1.8	J	P	10	U	
ANTHRACENE		51						14	J	P	2.2	J	P
BENZO(A)ANTHRACENE					400			120			26		
BENZO(A)PYRENE		220	J	E				100	J	E	21		
BENZO(B)FLUORANTHENE		300	J	CE				170	J	E	39		
BENZO(G,H,I)PERYLENE		86	J	E				47	J	E	12	J	EP
BENZO(K)FLUORANTHENE		120						56			10	J	P
CHRYSENE					410			130			24		
DIBENZO(A,H)ANTHRACENE		59						17	J	P	7.9	J	CP
FLUORANTHENE					740			200			54		
FLUORENE		8.3	J	P				4.1	J	P	10	U	
INDENO(1,2,3-CD)PYRENE		260	J	C				84	J	C	37	J	C
NAPHTHALENE		9.9	U					10	U		10	U	
PHENANTHRENE					450			110			19	J	P
PYRENE					840			240			39		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1051-000.8			TF2-004/5-SS1052-000.6			TF2-004/5-SS1053-000.6			TF2-004/5-SS1054-000.6		
SDG: SG8254	LAB_ID	SG8254-8			SG8254-7			SG8254-6			SG8254-5		
FRACTION: PAH	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	96.5			93.8			93.9			96.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.6	U		9.9	U		10	U		9.8	U	
ACENAPHTHENE		9.6	U		2.8	J	P	1.6	J	P	9.8	U	
ACENAPHTHYLENE		9.6	U		3.6	J	P	10	U		9.8	U	
ANTHRACENE		1.6	J	P	6.7	J	P	3	J	P	1.9	J	P
BENZO(A)ANTHRACENE		18	J	P	64			33			23		
BENZO(A)PYRENE		15	J	P	59			30			19	J	DP
BENZO(B)FLUORANTHENE		26			110			50			35		
BENZO(G,H,I)PERYLENE		8.6	J	EP	31	J	E	17	J	EP	11	J	DEP
BENZO(K)FLUORANTHENE		6.5	J	P	31			20	J	P	11	J	P
CHRYSENE		15	J	P	66			34			21		
DIBENZO(A,H)ANTHRACENE		6.5	J	CP	21	J	C	9.7	J	CP	7.7	J	CP
FLUORANTHENE		33			120			76			44		
FLUORENE		9.6	U		9.9	U		10	U		9.8	U	
INDENO(1,2,3-CD)PYRENE		24	J	C	100	J	C	56	J	C	33	J	C
NAPHTHALENE		9.6	U		9.9	U		10	U		9.8	U	
PHENANTHRENE		12	J	P	46			27			15	J	P
PYRENE		24			98			58			32		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1055-000.8			TF2-004/5-SS1056-000.6			TF2-004/5-SS1057-0001			TF2-004/5-SS1058-000.5		
SDG: SG8254	LAB_ID	SG8254-4			SG8254-3			SG8254-2			SG8254-17		
FRACTION: PAH	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.4			96.0			96.4			94.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.3	U		9.8	U		10	U		10	U	
ACENAPHTHENE		9.3	U		1.6	J	P	4.2	J	P	10	U	
ACENAPHTHYLENE		9.3	U		9.8	U		10	U		10	U	
ANTHRACENE		2.8	J	P	3.2	J	P	7.4	J	P	2	J	P
BENZO(A)ANTHRACENE		22			23			37			20	J	P
BENZO(A)PYRENE		16	J	P	22			33			17	J	P
BENZO(B)FLUORANTHENE		27			40			64			30		
BENZO(G,H,I)PERYLENE		8.1	J	EP	9.8	J	EP	20	J	EP	9.1	J	EP
BENZO(K)FLUORANTHENE		7.8	J	P	13	J	P	19	J	P	8.2	J	P
CHRYSENE		18	J	P	28			47			17	J	
DIBENZO(A,H)ANTHRACENE		6.3	J	CP	3.9	J	P	10	U		7.2	J	CP
FLUORANTHENE		40			46			78			41		
FLUORENE		9.3	U		9.8	U		3.7	J	P	10	U	
INDENO(1,2,3-CD)PYRENE		22	J	C	22			35			26	J	C
NAPHTHALENE		9.3	U		9.8	U		10	U		10	U	
PHENANTHRENE		13	J	P	22			50			17	J	P
PYRENE		25			43			74			30		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1059-000.6			TF2-004/5-SS1060-000.5			TF2-004/5-SS1061-000.6			TF2-004/5-SS1062-000.8		
SDG: SG8254	LAB_ID	SG8254-16			SG8254-15			SG8254-12			SG8254-10		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.6			94.1			95.6			93.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	U		9.8	U		9.4	U		9.8	U	
ACENAPHTHENE		10	U		3.6	J	P	2.8	J	P	13	J	P
ACENAPHTHYLENE		10	U		6.4	J	P	1.9	J	P	3	J	P
ANTHRACENE		10	U		8	J	P	8.3	J	P	22		
BENZO(A)ANTHRACENE		13	J	P	91			71			140		
BENZO(A)PYRENE		12	J	P	88			61			110		
BENZO(B)FLUORANTHENE		20	J	P	170			120			200		
BENZO(G,H,I)PERYLENE		7.4	J	EP	43	J	E	32	J	E	39	J	E
BENZO(K)FLUORANTHENE		4.5	J	P	46			39			57		
CHRYSENE		9	J	P	92			82			140		
DIBENZO(A,H)ANTHRACENE		6.2	J	CP	31	J	C	14	J	P	16	J	P
FLUORANTHENE		21			170			110			260		
FLUORENE		10	U		3.5	J	P	9.4	U		12	J	P
INDENO(1,2,3-CD)PYRENE		20	J	CP	150	J	C	63			89		
NAPHTHALENE		10	U		9.8	U		9.4	U		4	J	P
PHENANTHRENE		8.2	J	P	62			49	J	G	180		
PYRENE		15	J	P	130			120			240		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1063-000.6			TF2-004/5-SS1064-000.6			TF2-004/5-SS1065-000.5			TF2-004/5-SS1066-000.9		
SDG: SG8254	LAB_ID	SG8254-20			SG8254-19			SG8254-18			SG8254-14		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	96.8			97.2			96.6			92.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.7	U		9.3	U		9.2	U		10	U	
ACENAPHTHENE		9.7	U		9.3	U		1.6	J	P	2.3	J	P
ACENAPHTHYLENE		9.7	U		9.3	U		2.4	J	P	10	U	
ANTHRACENE		2.8	J	P	1.4	J	P	3.4	J	P	6.6	J	P
BENZO(A)ANTHRACENE		25			14	J	P	39			50		
BENZO(A)PYRENE		21			13	J	DP	38			40		
BENZO(B)FLUORANTHENE		38			21			75			87		
BENZO(G,H,I)PERYLENE		10	J	EP	5.2	J	DEP	18	J	EP	21	J	EP
BENZO(K)FLUORANTHENE		10	J	P	11	J	P	21			22		
CHRYSENE		21			19			44			54		
DIBENZO(A,H)ANTHRACENE		7.7	J	CP	1.8	J	DP	12	J	CP	9.2	J	P
FLUORANTHENE		52			34			90			91		
FLUORENE		9.7	U		9.3	U		9.2	U		10	U	
INDENO(1,2,3-CD)PYRENE		33	J	C	11	J	DP	62	J	C	41		
NAPHTHALENE		9.7	U		9.3	U		9.2	U		10	U	
PHENANTHRENE		19	J	P	15	J	P	33			43		
PYRENE		35			29			66			98		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1067-000.7			TF2-004/5-SS1067-000.7DL			TF2-004/5-SS1068-000.5			TF2-004/5-SS-DUP04-1013		
SDG: SG8254	LAB_ID	SG8254-13			SG8254-13DL			SG8254-21			SG8254-11		
FRACTION: PAH	SAMP_DATE	10/21/2013			10/21/2013			10/22/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	94.3			94.3			94.4			95.7		
	DUP_OF										TF2-004/5-SS1061-000.6		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	U					10	U		9.7	U	
ACENAPHTHENE		38						10	U		12	J	P
ACENAPHTHYLENE		10	U					1.4	J	P	9.7	U	
ANTHRACENE		94						1.9	J	P	36		
BENZO(A)ANTHRACENE					350			26	U	A	80		
BENZO(A)PYRENE		190						26	J	E	64		
BENZO(B)FLUORANTHENE					380			43	J	E	100		
BENZO(G,H,I)PERYLENE		65	J	E				14	J	EP	27	J	E
BENZO(K)FLUORANTHENE		120						14	J	P	32		
CHRYSENE					370			24			86		
DIBENZO(A,H)ANTHRACENE		37						8.9	J	P	13	J	P
FLUORANTHENE					750			46			140		
FLUORENE		43						10	U		11	J	P
INDENO(1,2,3-CD)PYRENE		140						40			53		
NAPHTHALENE		13	J	P				10	U		3	J	P
PHENANTHRENE					620			18	J	P	120	J	G
PYRENE					830			38			140		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS-DUP05-1013
SDG: SG8254	LAB_ID	SG8254-23
FRACTION: PAH	SAMP_DATE	10/22/2013
MEDIA: SOIL	QC_TYPE	NM
	UNITS	UG/KG
	PCT_SOLIDS	96.4
	DUP_OF	TF2-004/5-SS1065-000.5

PARAMETER	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE	9.4	U	
ACENAPHTHENE	9.4	U	
ACENAPHTHYLENE	2	J	P
ANTHRACENE	2.5	J	P
BENZO(A)ANTHRACENE	33	U	A
BENZO(A)PYRENE	30	J	E
BENZO(B)FLUORANTHENE	55	J	E
BENZO(G,H,I)PERYLENE	16	J	EP
BENZO(K)FLUORANTHENE	19	J	P
CHRYSENE	32		
DIBENZO(A,H)ANTHRACENE	11	J	P
FLUORANTHENE	63		
FLUORENE	9.4	U	
INDENO(1,2,3-CD)PYRENE	52		
NAPHTHALENE	9.4	U	
PHENANTHRENE	24		
PYRENE	50		

PROJ_NO: 03019	NSAMPLE	TF2-SS-RB03-1013
SDG: SG8254	LAB_ID	SG8254-33RE
FRACTION: PAH	SAMP_DATE	10/22/2013
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE	0.1	U	
ACENAPHTHENE	0.1	U	
ACENAPHTHYLENE	0.1	U	
ANTHRACENE	0.1	U	
BENZO(A)ANTHRACENE	0.29	J	C
BENZO(A)PYRENE	0.1	U	
BENZO(B)FLUORANTHENE	0.1	UJ	C
BENZO(G,H,I)PERYLENE	0.1	U	
BENZO(K)FLUORANTHENE	0.1	U	
CHRYSENE	0.1	U	
DIBENZO(A,H)ANTHRACENE	0.1	U	
FLUORANTHENE	0.1	U	
FLUORENE	0.1	U	
INDENO(1,2,3-CD)PYRENE	0.1	UJ	C
NAPHTHALENE	0.1	U	
PHENANTHRENE	0.1	U	
PYRENE	0.1	U	

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1015-000.8			TF2-004/5-SS1051-000.8			TF2-004/5-SS1056-000.6			TF2-004/5-SS1056-000.6RE		
SDG: SG8254	LAB_ID	SG8254-27			SG8254-8			SG8254-3			SG8254-3RE		
FRACTION: PET	SAMP_DATE	10/22/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	93.0			96.5			96.0			96.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
EPH (C08-C44)		48	J	E	27	J	E				100	J	H
TPH (C05-C12)		2.3	U		2.6	J	P	2.1	U				

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1065-000.5		
SDG: SG8254	LAB_ID	SG8254-18		
FRACTION: PET	SAMP_DATE	10/22/2013		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	MG/KG		
	PCT_SOLIDS	96.6		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
EPH (C08-C44)		38	J	E
TPH (C05-C12)		3	U	

PROJ_NO: 03019	NSAMPLE	TF2-W-TB03-1013
SDG: SG8254	LAB_ID	SG8254-1
FRACTION: PET	SAMP_DATE	10/21/2013
MEDIA: WATER	QC_TYPE	NM
	UNITS	MG/KG
	PCT_SOLIDS	100.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
TPH (C05-C12)	2	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-32
Client ID: 003-SS-DUP06-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0727.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	1.8	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	4.7	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	4.1	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		110	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	14.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		200	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		240	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		120	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		130	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	LL	170	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		56.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	LL	100	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	L	84.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	17.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	LL	47.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		48.1	%					
Fluorene-D10		61.6	%					
Pyrene-D10		72.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-22
Client ID: 003-SS1011-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0554.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 87.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		60.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	J	18.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	J	3.0	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene		71.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene		62.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	E	480	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene		110	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	E	560	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	E	460	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene		310	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene		240	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	LL	280	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene		130	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	LL	190	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	L	260	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene		52.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	LL	77.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		44.6	%					
Fluorene-D10		59.2	%					
Pyrene-D10		65.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-22DL
Client ID: 003-SS1011-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0562.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 87.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		58.	ug/Kgdrywt	2	20	44.	5.8	22.
2-Methylnaphthalene	J	16.	ug/Kgdrywt	2	20	44.	4.9	22.
Acenaphthylene	U	22.	ug/Kgdrywt	2	20	44.	2.6	22.
Acenaphthene		68.	ug/Kgdrywt	2	20	44.	3.3	22.
Fluorene		58.	ug/Kgdrywt	2	20	44.	7.1	22.
Phenanthrene		510	ug/Kgdrywt	2	20	44.	4.0	22.
Anthracene		110	ug/Kgdrywt	2	20	44.	2.6	22.
Fluoranthene		620	ug/Kgdrywt	2	20	44.	4.0	22.
Pyrene		480	ug/Kgdrywt	2	20	44.	4.6	22.
Benzo(a)anthracene		280	ug/Kgdrywt	2	20	44.	4.2	22.
Chrysene		260	ug/Kgdrywt	2	20	44.	3.8	22.
Benzo(b)Fluoranthene	LL	290	ug/Kgdrywt	2	20	44.	5.3	22.
Benzo(k)fluoranthene		120	ug/Kgdrywt	2	20	44.	6.8	22.
Benzo(a)pyrene	LL	200	ug/Kgdrywt	2	20	44.	7.3	22.
Indeno(1,2,3-cd)pyrene	L	280	ug/Kgdrywt	2	20	44.	4.2	22.
Dibenzo(a,h)anthracene	J	35.	ug/Kgdrywt	2	20	44.	4.0	22.
Benzo(g,h,i)perylene	LL	80.	ug/Kgdrywt	2	20	44.	4.4	22.
2-Methylnaphthalene-D10		42.6	%					
Fluorene-D10		57.7	%					
Pyrene-D10		61.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-24
Client ID: 003-SS1012-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0556.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		70.	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene		23.	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	5.0	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene		100	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene		120	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene	E	990	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene		220	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene	E	1200	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene	E	1000	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene	E	650	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene	E	500	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene	ELL	430	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene		170	ug/Kgdrywt	1	20	20.	3.1	9.9
Benzo(a)pyrene	ELL	360	ug/Kgdrywt	1	20	20.	3.3	9.9
Indeno(1,2,3-cd)pyrene	EL	410	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene		95.	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene	LL	160	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		47.7	%					
Fluorene-D10		71.8	%					
Pyrene-D10		67.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-24DL
Client ID: 003-SS1012-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0563.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	77.	ug/Kgdrywt	7	20	140	18.	70.
2-Methylnaphthalene	J	22.	ug/Kgdrywt	7	20	140	15.	70.
Acenaphthylene	U	70.	ug/Kgdrywt	7	20	140	8.4	70.
Acenaphthene	J	99.	ug/Kgdrywt	7	20	140	10.	70.
Fluorene	J	110	ug/Kgdrywt	7	20	140	22.	70.
Phenanthrene		1200	ug/Kgdrywt	7	20	140	12.	70.
Anthracene		260	ug/Kgdrywt	7	20	140	8.4	70.
Fluoranthene		1800	ug/Kgdrywt	7	20	140	12.	70.
Pyrene		1300	ug/Kgdrywt	7	20	140	15.	70.
Benzo(a)anthracene		670	ug/Kgdrywt	7	20	140	13.	70.
Chrysene		630	ug/Kgdrywt	7	20	140	12.	70.
Benzo(b)Fluoranthene	LL	640	ug/Kgdrywt	7	20	140	17.	70.
Benzo(k)fluoranthene		240	ug/Kgdrywt	7	20	140	22.	70.
Benzo(a)pyrene	LL	440	ug/Kgdrywt	7	20	140	23.	70.
Indeno(1,2,3-cd)pyrene	L	630	ug/Kgdrywt	7	20	140	13.	70.
Dibenzo(a,h)anthracene	J	80.	ug/Kgdrywt	7	20	140	12.	70.
Benzo(g,h,i)perylene	LL	200	ug/Kgdrywt	7	20	140	14.	70.
2-Methylnaphthalene-D10		63.0	%					
Fluorene-D10		64.8	%					
Pyrene-D10		68.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-25
Client ID: 003-SS1013-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0564.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		43.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	J	12.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene		160	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene		140	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	E	1400	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		310	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	E	1800	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	E	1500	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	E	860	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	E	640	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	ELL	450	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		300	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	ELL	480	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	EL	440	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		110	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	LL	200	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		54.5	%					
Fluorene-D10		73.7	%					
Pyrene-D10		69.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-25DL
Client ID: 003-SS1013-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0729.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	45.	ug/Kgdrywt	10	20	200	26.	100
2-Methylnaphthalene	U	100	ug/Kgdrywt	10	20	200	22.	100
Acenaphthylene	U	100	ug/Kgdrywt	10	20	200	12.	100
Acenaphthene	J	150	ug/Kgdrywt	10	20	200	15.	100
Fluorene	J	110	ug/Kgdrywt	10	20	200	32.	100
Phenanthrene		1700	ug/Kgdrywt	10	20	200	18.	100
Anthracene		320	ug/Kgdrywt	10	20	200	12.	100
Fluoranthene		1900	ug/Kgdrywt	10	20	200	18.	100
Pyrene		2000	ug/Kgdrywt	10	20	200	21.	100
Benzo(a)anthracene		740	ug/Kgdrywt	10	20	200	19.	100
Chrysene		750	ug/Kgdrywt	10	20	200	17.	100
Benzo(b)Fluoranthene	LL	840	ug/Kgdrywt	10	20	200	24.	100
Benzo(k)fluoranthene		330	ug/Kgdrywt	10	20	200	31.	100
Benzo(a)pyrene	LL	580	ug/Kgdrywt	10	20	200	33.	100
Indeno(1,2,3-cd)pyrene	L	420	ug/Kgdrywt	10	20	200	19.	100
Dibenzo(a,h)anthracene	J	89.	ug/Kgdrywt	10	20	200	18.	100
Benzo(g,h,i)perylene	LL	210	ug/Kgdrywt	10	20	200	20.	100
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-26
Client ID: 003-SS1014-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0565.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	2.9	ug/Kgdrywt	1	20	20.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	1.8	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	15.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Phenanthrene		220	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		26.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		330	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	E	360	ug/Kgdrywt	1	20	20.	2.2	10.
Benzo(a)anthracene		180	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		170	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	LL	160	ug/Kgdrywt	1	20	20.	2.5	10.
Benzo(k)fluoranthene		52.	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene	LL	99.	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene	L	130	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		27.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	LL	44.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		48.8	%					
Fluorene-D10		68.5	%					
Pyrene-D10		63.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-26DL
Client ID: 003-SS1014-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0730.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	20.	ug/Kgdrywt	2	20	41.	5.3	20.
2-Methylnaphthalene	U	20.	ug/Kgdrywt	2	20	41.	4.5	20.
Acenaphthylene	U	20.	ug/Kgdrywt	2	20	41.	2.5	20.
Acenaphthene	J	12.	ug/Kgdrywt	2	20	41.	3.1	20.
Fluorene	J	8.1	ug/Kgdrywt	2	20	41.	6.6	20.
Phenanthrene		200	ug/Kgdrywt	2	20	41.	3.7	20.
Anthracene	J	22.	ug/Kgdrywt	2	20	41.	2.5	20.
Fluoranthene		270	ug/Kgdrywt	2	20	41.	3.7	20.
Pyrene		410	ug/Kgdrywt	2	20	41.	4.3	20.
Benzo(a)anthracene		150	ug/Kgdrywt	2	20	41.	3.9	20.
Chrysene		170	ug/Kgdrywt	2	20	41.	3.5	20.
Benzo(b)Fluoranthene	LL	150	ug/Kgdrywt	2	20	41.	4.9	20.
Benzo(k)fluoranthene		61.	ug/Kgdrywt	2	20	41.	6.4	20.
Benzo(a)pyrene	LL	110	ug/Kgdrywt	2	20	41.	6.8	20.
Indeno(1,2,3-cd)pyrene	L	76.	ug/Kgdrywt	2	20	41.	3.9	20.
Dibenzo(a,h)anthracene	J	18.	ug/Kgdrywt	2	20	41.	3.7	20.
Benzo(g,h,i)perylene	LL	44.	ug/Kgdrywt	2	20	41.	4.1	20.
2-Methylnaphthalene-D10		44.9	%					
Fluorene-D10		55.0	%					
Pyrene-D10		69.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-27
Client ID: 003-SS1015-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0566.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.5	ug/Kgdrywt	1	20	19.	2.5	9.5
2-Methylnaphthalene	U	9.5	ug/Kgdrywt	1	20	19.	2.1	9.5
Acenaphthylene	J	2.3	ug/Kgdrywt	1	20	19.	1.1	9.5
Acenaphthene	J	5.4	ug/Kgdrywt	1	20	19.	1.4	9.5
Fluorene	J	4.7	ug/Kgdrywt	1	20	19.	3.0	9.5
Phenanthrene		120	ug/Kgdrywt	1	20	19.	1.7	9.5
Anthracene	J	16.	ug/Kgdrywt	1	20	19.	1.1	9.5
Fluoranthene		230	ug/Kgdrywt	1	20	19.	1.7	9.5
Pyrene		200	ug/Kgdrywt	1	20	19.	2.0	9.5
Benzo(a)anthracene		120	ug/Kgdrywt	1	20	19.	1.8	9.5
Chrysene		110	ug/Kgdrywt	1	20	19.	1.6	9.5
Benzo(b)Fluoranthene	LL	140	ug/Kgdrywt	1	20	19.	2.3	9.5
Benzo(k)fluoranthene		42.	ug/Kgdrywt	1	20	19.	2.9	9.5
Benzo(a)pyrene	LL	79.	ug/Kgdrywt	1	20	19.	3.1	9.5
Indeno(1,2,3-cd)pyrene	L	130	ug/Kgdrywt	1	20	19.	1.8	9.5
Dibenzo(a,h)anthracene		24.	ug/Kgdrywt	1	20	19.	1.7	9.5
Benzo(g,h,i)perylene	LL	39.	ug/Kgdrywt	1	20	19.	1.9	9.5
2-Methylnaphthalene-D10		46.7	%					
Fluorene-D10		66.2	%					
Pyrene-D10		57.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-28
Client ID: 003-SS1016-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0567.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	9.2	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	J	4.3	ug/Kgdrywt	1	20	21.	2.4	11.
Acenaphthylene	J	4.3	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	J	14.	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	J	14.	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene	M	220	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene		30.	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene	M	340	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene	MM	320	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene	MM	200	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene	MM	180	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene	LLMM	240	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene	MM	80.	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	LLMM	150	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene	LMM	230	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	MM	42.	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	LLMM	66.	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		44.9	%					
Fluorene-D10		69.1	%					
Pyrene-D10		70.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-29
Client ID: 003-SS1017-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0570.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	1.4	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	9.5	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	5.7	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		160	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	20.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		230	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		260	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		140	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		120	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	LL	140	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		46.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	LL	92.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	L	130	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		28.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	LL	45.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		48.3	%					
Fluorene-D10		67.1	%					
Pyrene-D10		61.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-30
Client ID: 003-SS1018-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0571.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.5	ug/Kgdrywt	1	20	19.	2.5	9.5
2-Methylnaphthalene	U	9.5	ug/Kgdrywt	1	20	19.	2.1	9.5
Acenaphthylene	U	9.5	ug/Kgdrywt	1	20	19.	1.1	9.5
Acenaphthene	J	5.0	ug/Kgdrywt	1	20	19.	1.4	9.5
Fluorene	U	9.5	ug/Kgdrywt	1	20	19.	3.0	9.5
Phenanthrene		78.	ug/Kgdrywt	1	20	19.	1.7	9.5
Anthracene	J	9.0	ug/Kgdrywt	1	20	19.	1.1	9.5
Fluoranthene		100	ug/Kgdrywt	1	20	19.	1.7	9.5
Pyrene		130	ug/Kgdrywt	1	20	19.	2.0	9.5
Benzo(a)anthracene		63.	ug/Kgdrywt	1	20	19.	1.8	9.5
Chrysene		56.	ug/Kgdrywt	1	20	19.	1.6	9.5
Benzo(b)Fluoranthene	LL	58.	ug/Kgdrywt	1	20	19.	2.3	9.5
Benzo(k)fluoranthene	J	18.	ug/Kgdrywt	1	20	19.	2.9	9.5
Benzo(a)pyrene	LL	38.	ug/Kgdrywt	1	20	19.	3.1	9.5
Indeno(1,2,3-cd)pyrene	L	53.	ug/Kgdrywt	1	20	19.	1.8	9.5
Dibenzo(a,h)anthracene	J	11.	ug/Kgdrywt	1	20	19.	1.7	9.5
Benzo(g,h,i)perylene	JLL	18.	ug/Kgdrywt	1	20	19.	1.9	9.5
2-Methylnaphthalene-D10		33.4	%					
Fluorene-D10		62.3	%					
Pyrene-D10		58.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-31
Client ID: 003-SS1019-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0572.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 02-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	2.1	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene	J	15.	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene	J	8.3	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene	E	410	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene		51.	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene	E	620	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene	E	740	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene	E	430	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene	E	360	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene	LL	300	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene		120	ug/Kgdrywt	1	20	20.	3.0	9.9
Benzo(a)pyrene	LL	220	ug/Kgdrywt	1	20	20.	3.2	9.9
Indeno(1,2,3-cd)pyrene	L	260	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene		59.	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene	LL	86.	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		42.6	%					
Fluorene-D10		65.5	%					
Pyrene-D10		54.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-31DL
Client ID: 003-SS1019-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0745.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 14-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	49.	ug/Kgdrywt	5	20	99.	13.	49.
2-Methylnaphthalene	U	49.	ug/Kgdrywt	5	20	99.	11.	49.
Acenaphthylene	U	49.	ug/Kgdrywt	5	20	99.	5.9	49.
Acenaphthene	J	14.	ug/Kgdrywt	5	20	99.	7.4	49.
Fluorene	U	49.	ug/Kgdrywt	5	20	99.	16.	49.
Phenanthrene		450	ug/Kgdrywt	5	20	99.	8.9	49.
Anthracene	J	51.	ug/Kgdrywt	5	20	99.	5.9	49.
Fluoranthene		740	ug/Kgdrywt	5	20	99.	8.9	49.
Pyrene		840	ug/Kgdrywt	5	20	99.	10.	49.
Benzo(a)anthracene		400	ug/Kgdrywt	5	20	99.	9.4	49.
Chrysene		410	ug/Kgdrywt	5	20	99.	8.4	49.
Benzo(b)Fluoranthene	LL	390	ug/Kgdrywt	5	20	99.	12.	49.
Benzo(k)fluoranthene		120	ug/Kgdrywt	5	20	99.	15.	49.
Benzo(a)pyrene	LL	260	ug/Kgdrywt	5	20	99.	16.	49.
Indeno(1,2,3-cd)pyrene	L	200	ug/Kgdrywt	5	20	99.	9.4	49.
Dibenzo(a,h)anthracene	J	48.	ug/Kgdrywt	5	20	99.	8.9	49.
Benzo(g,h,i)perylene	LL	110	ug/Kgdrywt	5	20	99.	9.9	49.
2-Methylnaphthalene-D10		51.8	%					
Fluorene-D10		60.5	%					
Pyrene-D10		57.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-11
Client ID: 004/5-SS-DUP04-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0709.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	3.0	ug/Kgdrywt	1	20	19.	2.5	9.7
2-Methylnaphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.1	9.7
Acenaphthylene	U	9.7	ug/Kgdrywt	1	20	19.	1.2	9.7
Acenaphthene	J	12.	ug/Kgdrywt	1	20	19.	1.5	9.7
Fluorene	J	11.	ug/Kgdrywt	1	20	19.	3.1	9.7
Phenanthrene		120	ug/Kgdrywt	1	20	19.	1.8	9.7
Anthracene		36.	ug/Kgdrywt	1	20	19.	1.2	9.7
Fluoranthene		140	ug/Kgdrywt	1	20	19.	1.8	9.7
Pyrene		140	ug/Kgdrywt	1	20	19.	2.0	9.7
Benzo(a)anthracene		80.	ug/Kgdrywt	1	20	19.	1.8	9.7
Chrysene		86.	ug/Kgdrywt	1	20	19.	1.6	9.7
Benzo(b)Fluoranthene		100	ug/Kgdrywt	1	20	19.	2.3	9.7
Benzo(k)fluoranthene	L	32.	ug/Kgdrywt	1	20	19.	3.0	9.7
Benzo(a)pyrene	L	64.	ug/Kgdrywt	1	20	19.	3.2	9.7
Indeno(1,2,3-cd)pyrene		53.	ug/Kgdrywt	1	20	19.	1.8	9.7
Dibenzo(a,h)anthracene	JL	13.	ug/Kgdrywt	1	20	19.	1.8	9.7
Benzo(g,h,i)perylene	LL	27.	ug/Kgdrywt	1	20	19.	1.9	9.7
2-Methylnaphthalene-D10		45.4	%					
Fluorene-D10		58.1	%					
Pyrene-D10		62.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-23
Client ID: 004/5-SS-DUP05-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0555.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.4	9.4
2-Methylnaphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.1	9.4
Acenaphthylene	J	2.0	ug/Kgdrywt	1	20	19.	1.1	9.4
Acenaphthene	U	9.4	ug/Kgdrywt	1	20	19.	1.4	9.4
Fluorene	U	9.4	ug/Kgdrywt	1	20	19.	3.0	9.4
Phenanthrene		24.	ug/Kgdrywt	1	20	19.	1.7	9.4
Anthracene	J	2.5	ug/Kgdrywt	1	20	19.	1.1	9.4
Fluoranthene		63.	ug/Kgdrywt	1	20	19.	1.7	9.4
Pyrene		50.	ug/Kgdrywt	1	20	19.	2.0	9.4
Benzo(a)anthracene		33.	ug/Kgdrywt	1	20	19.	1.8	9.4
Chrysene		32.	ug/Kgdrywt	1	20	19.	1.6	9.4
Benzo(b)Fluoranthene	LL	55.	ug/Kgdrywt	1	20	19.	2.3	9.4
Benzo(k)fluoranthene	J	19.	ug/Kgdrywt	1	20	19.	2.9	9.4
Benzo(a)pyrene	LL	30.	ug/Kgdrywt	1	20	19.	3.1	9.4
Indeno(1,2,3-cd)pyrene	L	52.	ug/Kgdrywt	1	20	19.	1.8	9.4
Dibenzo(a,h)anthracene	J	11.	ug/Kgdrywt	1	20	19.	1.7	9.4
Benzo(g,h,i)perylene	JLL	16.	ug/Kgdrywt	1	20	19.	1.9	9.4
2-Methylnaphthalene-D10		42.8	%					
Fluorene-D10		66.0	%					
Pyrene-D10		63.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-9
Client ID: 004/5-SS1050-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0585.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Phenanthrene	J	19.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	2.2	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		54.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		39.	ug/Kgdrywt	1	20	20.	2.2	10.
Benzo(a)anthracene		26.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		24.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		39.	ug/Kgdrywt	1	20	20.	2.5	10.
Benzo(k)fluoranthene	JL	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene	L	21.	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene		37.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	JL	7.9	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	12.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		44.7	%					
Fluorene-D10		68.7	%					
Pyrene-D10		73.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-8
Client ID: 004/5-SS1051-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0584.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.6	ug/Kgdrywt	1	20	19.	2.5	9.6
2-Methylnaphthalene	U	9.6	ug/Kgdrywt	1	20	19.	2.1	9.6
Acenaphthylene	U	9.6	ug/Kgdrywt	1	20	19.	1.2	9.6
Acenaphthene	U	9.6	ug/Kgdrywt	1	20	19.	1.4	9.6
Fluorene	U	9.6	ug/Kgdrywt	1	20	19.	3.1	9.6
Phenanthrene	J	12.	ug/Kgdrywt	1	20	19.	1.7	9.6
Anthracene	J	1.6	ug/Kgdrywt	1	20	19.	1.2	9.6
Fluoranthene		33.	ug/Kgdrywt	1	20	19.	1.7	9.6
Pyrene		24.	ug/Kgdrywt	1	20	19.	2.0	9.6
Benzo(a)anthracene	J	18.	ug/Kgdrywt	1	20	19.	1.8	9.6
Chrysene	J	15.	ug/Kgdrywt	1	20	19.	1.6	9.6
Benzo(b)Fluoranthene		26.	ug/Kgdrywt	1	20	19.	2.3	9.6
Benzo(k)fluoranthene	JL	6.5	ug/Kgdrywt	1	20	19.	3.0	9.6
Benzo(a)pyrene	JL	15.	ug/Kgdrywt	1	20	19.	3.2	9.6
Indeno(1,2,3-cd)pyrene		24.	ug/Kgdrywt	1	20	19.	1.8	9.6
Dibenzo(a,h)anthracene	JL	6.5	ug/Kgdrywt	1	20	19.	1.7	9.6
Benzo(g,h,i)perylene	JLL	8.6	ug/Kgdrywt	1	20	19.	1.9	9.6
2-Methylnaphthalene-D10		43.8	%					
Fluorene-D10		66.2	%					
Pyrene-D10		72.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-7
Client ID: 004/5-SS1052-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0583.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	3.6	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene	J	2.8	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene	U	9.9	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene		46.	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene	J	6.7	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene		120	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene		98.	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene		64.	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene		66.	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene		110	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene	L	31.	ug/Kgdrywt	1	20	20.	3.1	9.9
Benzo(a)pyrene	L	59.	ug/Kgdrywt	1	20	20.	3.3	9.9
Indeno(1,2,3-cd)pyrene		100	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene	L	21.	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene	LL	31.	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		43.4	%					
Fluorene-D10		71.4	%					
Pyrene-D10		70.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-6
Client ID: 004/5-SS1053-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0582.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	1.6	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		27.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	3.0	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		76.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		58.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		33.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		34.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		50.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	JL	20.	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene	L	30.	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene		56.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	JL	9.7	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	17.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		38.0	%					
Fluorene-D10		57.7	%					
Pyrene-D10		62.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-5
Client ID: 004/5-SS1054-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0579.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.5	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	U	9.8	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	U	9.8	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	U	9.8	ug/Kgdrywt	1	20	20.	3.1	9.8
Phenanthrene	J	15.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	1.9	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		44.	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		32.	ug/Kgdrywt	1	20	20.	2.0	9.8
Benzo(a)anthracene		23.	ug/Kgdrywt	1	20	20.	1.9	9.8
Chrysene		21.	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		35.	ug/Kgdrywt	1	20	20.	2.4	9.8
Benzo(k)fluoranthene	JL	11.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	JL	19.	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		33.	ug/Kgdrywt	1	20	20.	1.9	9.8
Dibenzo(a,h)anthracene	JL	7.7	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	JLL	11.	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		40.1	%					
Fluorene-D10		61.6	%					
Pyrene-D10		64.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-4
Client ID: 004/5-SS1055-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0578.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.3	ug/Kgdrywt	1	20	19.	2.4	9.3
2-Methylnaphthalene	U	9.3	ug/Kgdrywt	1	20	19.	2.0	9.3
Acenaphthylene	U	9.3	ug/Kgdrywt	1	20	19.	1.1	9.3
Acenaphthene	U	9.3	ug/Kgdrywt	1	20	19.	1.4	9.3
Fluorene	U	9.3	ug/Kgdrywt	1	20	19.	3.0	9.3
Phenanthrene	J	13.	ug/Kgdrywt	1	20	19.	1.7	9.3
Anthracene	J	2.8	ug/Kgdrywt	1	20	19.	1.1	9.3
Fluoranthene		40.	ug/Kgdrywt	1	20	19.	1.7	9.3
Pyrene		25.	ug/Kgdrywt	1	20	19.	2.0	9.3
Benzo(a)anthracene		22.	ug/Kgdrywt	1	20	19.	1.8	9.3
Chrysene	J	18.	ug/Kgdrywt	1	20	19.	1.6	9.3
Benzo(b)Fluoranthene		27.	ug/Kgdrywt	1	20	19.	2.2	9.3
Benzo(k)fluoranthene	JL	7.8	ug/Kgdrywt	1	20	19.	2.9	9.3
Benzo(a)pyrene	JL	16.	ug/Kgdrywt	1	20	19.	3.1	9.3
Indeno(1,2,3-cd)pyrene		22.	ug/Kgdrywt	1	20	19.	1.8	9.3
Dibenzo(a,h)anthracene	JL	6.3	ug/Kgdrywt	1	20	19.	1.7	9.3
Benzo(g,h,i)perylene	JLL	8.1	ug/Kgdrywt	1	20	19.	1.9	9.3
2-Methylnaphthalene-D10		50.2	%					
Fluorene-D10		70.5	%					
Pyrene-D10		62.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0708.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.5	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.1	9.8
Acenaphthylene	U	9.8	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	J	1.6	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	U	9.8	ug/Kgdrywt	1	20	20.	3.1	9.8
Phenanthrene		22.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	3.2	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		46.	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		43.	ug/Kgdrywt	1	20	20.	2.0	9.8
Benzo(a)anthracene		23.	ug/Kgdrywt	1	20	20.	1.8	9.8
Chrysene		28.	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		40.	ug/Kgdrywt	1	20	20.	2.3	9.8
Benzo(k)fluoranthene	JL	13.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	L	22.	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		22.	ug/Kgdrywt	1	20	20.	1.8	9.8
Dibenzo(a,h)anthracene	JL	3.9	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	JLL	9.8	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		49.2	%					
Fluorene-D10		63.7	%					
Pyrene-D10		68.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-2
Client ID: 004/5-SS1057-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0714.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	1.2	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	4.2	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	3.7	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		50.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	7.4	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		78.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		74.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		37.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		47.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		64.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	JL	19.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	L	33.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		35.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	UL	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	20.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		71.0	%					
Fluorene-D10		74.0	%					
Pyrene-D10		86.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-17
Client ID: 004/5-SS1058-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0588.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	J	17.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	2.0	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		41.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		30.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	20.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	J	17.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		30.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	JL	8.2	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	JL	17.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		26.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	JL	7.2	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	9.1	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		42.5	%					
Fluorene-D10		66.3	%					
Pyrene-D10		61.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-16
Client ID: 004/5-SS1059-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0587.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	J	8.2	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		21.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	J	15.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	13.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	J	9.0	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	J	20.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	JL	4.5	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	JL	12.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	J	20.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	JL	6.2	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	7.4	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		39.0	%					
Fluorene-D10		63.2	%					
Pyrene-D10		64.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-15
Client ID: 004/5-SS1060-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0586.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.5	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	J	6.4	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	J	3.6	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	J	3.5	ug/Kgdrywt	1	20	20.	3.1	9.8
Phenanthrene		62.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	8.0	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		170	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		130	ug/Kgdrywt	1	20	20.	2.0	9.8
Benzo(a)anthracene		91.	ug/Kgdrywt	1	20	20.	1.8	9.8
Chrysene		92.	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		170	ug/Kgdrywt	1	20	20.	2.3	9.8
Benzo(k)fluoranthene	L	46.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	L	88.	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		150	ug/Kgdrywt	1	20	20.	1.8	9.8
Dibenzo(a,h)anthracene	L	31.	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	LL	43.	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		42.3	%					
Fluorene-D10		63.2	%					
Pyrene-D10		56.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-12
Client ID: 004/5-SS1061-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0710.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.4	9.4
2-Methylnaphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.1	9.4
Acenaphthylene	J	1.9	ug/Kgdrywt	1	20	19.	1.1	9.4
Acenaphthene	J	2.8	ug/Kgdrywt	1	20	19.	1.4	9.4
Fluorene	U	9.4	ug/Kgdrywt	1	20	19.	3.0	9.4
Phenanthrene		49.	ug/Kgdrywt	1	20	19.	1.7	9.4
Anthracene	J	8.3	ug/Kgdrywt	1	20	19.	1.1	9.4
Fluoranthene		110	ug/Kgdrywt	1	20	19.	1.7	9.4
Pyrene		120	ug/Kgdrywt	1	20	19.	2.0	9.4
Benzo(a)anthracene		71.	ug/Kgdrywt	1	20	19.	1.8	9.4
Chrysene		82.	ug/Kgdrywt	1	20	19.	1.6	9.4
Benzo(b)Fluoranthene		120	ug/Kgdrywt	1	20	19.	2.3	9.4
Benzo(k)fluoranthene	L	39.	ug/Kgdrywt	1	20	19.	2.9	9.4
Benzo(a)pyrene	L	61.	ug/Kgdrywt	1	20	19.	3.1	9.4
Indeno(1,2,3-cd)pyrene		63.	ug/Kgdrywt	1	20	19.	1.8	9.4
Dibenzo(a,h)anthracene	JL	14.	ug/Kgdrywt	1	20	19.	1.7	9.4
Benzo(g,h,i)perylene	LL	32.	ug/Kgdrywt	1	20	19.	1.9	9.4
2-Methylnaphthalene-D10		56.7	%					
Fluorene-D10		65.6	%					
Pyrene-D10		69.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-10
Client ID: 004/5-SS1062-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0711.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	4.0	ug/Kgdrywt	1	20	20.	2.6	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	J	3.0	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	J	13.	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	J	12.	ug/Kgdrywt	1	20	20.	3.2	9.8
Phenanthrene		180	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene		22.	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		260	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		240	ug/Kgdrywt	1	20	20.	2.1	9.8
Benzo(a)anthracene		140	ug/Kgdrywt	1	20	20.	1.9	9.8
Chrysene		140	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		200	ug/Kgdrywt	1	20	20.	2.4	9.8
Benzo(k)fluoranthene	L	57.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	L	110	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		89.	ug/Kgdrywt	1	20	20.	1.9	9.8
Dibenzo(a,h)anthracene	JL	16.	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	LL	39.	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		67.1	%					
Fluorene-D10		74.4	%					
Pyrene-D10		83.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-20
Client ID: 004/5-SS1063-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0590.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.5	9.7
2-Methylnaphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.1	9.7
Acenaphthylene	U	9.7	ug/Kgdrywt	1	20	19.	1.2	9.7
Acenaphthene	U	9.7	ug/Kgdrywt	1	20	19.	1.5	9.7
Fluorene	U	9.7	ug/Kgdrywt	1	20	19.	3.1	9.7
Phenanthrene	J	19.	ug/Kgdrywt	1	20	19.	1.8	9.7
Anthracene	J	2.8	ug/Kgdrywt	1	20	19.	1.2	9.7
Fluoranthene		52.	ug/Kgdrywt	1	20	19.	1.8	9.7
Pyrene		35.	ug/Kgdrywt	1	20	19.	2.0	9.7
Benzo(a)anthracene		25.	ug/Kgdrywt	1	20	19.	1.8	9.7
Chrysene		21.	ug/Kgdrywt	1	20	19.	1.6	9.7
Benzo(b)Fluoranthene		38.	ug/Kgdrywt	1	20	19.	2.3	9.7
Benzo(k)fluoranthene	JL	10.	ug/Kgdrywt	1	20	19.	3.0	9.7
Benzo(a)pyrene	L	21.	ug/Kgdrywt	1	20	19.	3.2	9.7
Indeno(1,2,3-cd)pyrene		33.	ug/Kgdrywt	1	20	19.	1.8	9.7
Dibenzo(a,h)anthracene	JL	7.7	ug/Kgdrywt	1	20	19.	1.8	9.7
Benzo(g,h,i)perylene	JLL	10.	ug/Kgdrywt	1	20	19.	1.9	9.7
2-Methylnaphthalene-D10		38.8	%					
Fluorene-D10		68.6	%					
Pyrene-D10		68.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-19
Client ID: 004/5-SS1064-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0705.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.3	ug/Kgdrywt	1	20	18.	2.4	9.3
2-Methylnaphthalene	U	9.3	ug/Kgdrywt	1	20	18.	2.0	9.3
Acenaphthylene	U	9.3	ug/Kgdrywt	1	20	18.	1.1	9.3
Acenaphthene	U	9.3	ug/Kgdrywt	1	20	18.	1.4	9.3
Fluorene	U	9.3	ug/Kgdrywt	1	20	18.	3.0	9.3
Phenanthrene	JM	15.	ug/Kgdrywt	1	20	18.	1.7	9.3
Anthracene	J	1.4	ug/Kgdrywt	1	20	18.	1.1	9.3
Fluoranthene	M	34.	ug/Kgdrywt	1	20	18.	1.7	9.3
Pyrene	M	29.	ug/Kgdrywt	1	20	18.	1.9	9.3
Benzo(a)anthracene	J	14.	ug/Kgdrywt	1	20	18.	1.8	9.3
Chrysene		19.	ug/Kgdrywt	1	20	18.	1.6	9.3
Benzo(b)Fluoranthene		21.	ug/Kgdrywt	1	20	18.	2.2	9.3
Benzo(k)fluoranthene	JL	11.	ug/Kgdrywt	1	20	18.	2.9	9.3
Benzo(a)pyrene	JLMM	13.	ug/Kgdrywt	1	20	18.	3.0	9.3
Indeno(1,2,3-cd)pyrene	JMM	11.	ug/Kgdrywt	1	20	18.	1.8	9.3
Dibenzo(a,h)anthracene	JLMM	1.8	ug/Kgdrywt	1	20	18.	1.7	9.3
Benzo(g,h,i)perylene	JLLMM	5.2	ug/Kgdrywt	1	20	18.	1.8	9.3
2-Methylnaphthalene-D10		35.1	%					
Fluorene-D10		50.8	%					
Pyrene-D10		60.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-18
Client ID: 004/5-SS1065-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0589.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.2	ug/Kgdrywt	1	20	18.	2.4	9.2
2-Methylnaphthalene	U	9.2	ug/Kgdrywt	1	20	18.	2.0	9.2
Acenaphthylene	J	2.4	ug/Kgdrywt	1	20	18.	1.1	9.2
Acenaphthene	J	1.6	ug/Kgdrywt	1	20	18.	1.4	9.2
Fluorene	U	9.2	ug/Kgdrywt	1	20	18.	3.0	9.2
Phenanthrene		33.	ug/Kgdrywt	1	20	18.	1.7	9.2
Anthracene	J	3.4	ug/Kgdrywt	1	20	18.	1.1	9.2
Fluoranthene		90.	ug/Kgdrywt	1	20	18.	1.7	9.2
Pyrene		66.	ug/Kgdrywt	1	20	18.	1.9	9.2
Benzo(a)anthracene		39.	ug/Kgdrywt	1	20	18.	1.8	9.2
Chrysene		44.	ug/Kgdrywt	1	20	18.	1.6	9.2
Benzo(b)Fluoranthene		75.	ug/Kgdrywt	1	20	18.	2.2	9.2
Benzo(k)fluoranthene	L	21.	ug/Kgdrywt	1	20	18.	2.9	9.2
Benzo(a)pyrene	L	38.	ug/Kgdrywt	1	20	18.	3.0	9.2
Indeno(1,2,3-cd)pyrene		62.	ug/Kgdrywt	1	20	18.	1.8	9.2
Dibenzo(a,h)anthracene	JL	12.	ug/Kgdrywt	1	20	18.	1.7	9.2
Benzo(g,h,i)perylene	JLL	18.	ug/Kgdrywt	1	20	18.	1.8	9.2
2-Methylnaphthalene-D10		42.4	%					
Fluorene-D10		66.7	%					
Pyrene-D10		62.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-14
Client ID: 004/5-SS1066-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0713.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	J	2.3	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene		43.	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	J	6.6	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene		91.	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene		98.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene		50.	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene		54.	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene		87.	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	L	22.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	L	40.	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene		41.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	JL	9.2	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	JLL	21.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		58.1	%					
Fluorene-D10		62.6	%					
Pyrene-D10		75.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-13
Client ID: 004/5-SS1067-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0712.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	13.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene		38.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene		43.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	E	620	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene		94.	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	E	760	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	E	700	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	E	370	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	E	350	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	E	380	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	L	120	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	L	190	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene		140	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	L	37.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	LL	65.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		56.7	%					
Fluorene-D10		66.4	%					
Pyrene-D10		76.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-13DL
Client ID: 004/5-SS1067-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0728.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	13.	ug/Kgdrywt	4	20	83.	11.	42.
2-Methylnaphthalene	U	42.	ug/Kgdrywt	4	20	83.	9.1	42.
Acenaphthylene	U	42.	ug/Kgdrywt	4	20	83.	5.0	42.
Acenaphthene	J	36.	ug/Kgdrywt	4	20	83.	6.2	42.
Fluorene	J	41.	ug/Kgdrywt	4	20	83.	13.	42.
Phenanthrene		620	ug/Kgdrywt	4	20	83.	7.5	42.
Anthracene		97.	ug/Kgdrywt	4	20	83.	5.0	42.
Fluoranthene		750	ug/Kgdrywt	4	20	83.	7.5	42.
Pyrene		830	ug/Kgdrywt	4	20	83.	8.7	42.
Benzo(a)anthracene		350	ug/Kgdrywt	4	20	83.	7.9	42.
Chrysene		370	ug/Kgdrywt	4	20	83.	7.1	42.
Benzo(b)Fluoranthene		380	ug/Kgdrywt	4	20	83.	10.	42.
Benzo(k)fluoranthene	L	130	ug/Kgdrywt	4	20	83.	13.	42.
Benzo(a)pyrene	L	220	ug/Kgdrywt	4	20	83.	14.	42.
Indeno(1,2,3-cd)pyrene		170	ug/Kgdrywt	4	20	83.	7.9	42.
Dibenzo(a,h)anthracene	JL	33.	ug/Kgdrywt	4	20	83.	7.5	42.
Benzo(g,h,i)perylene	JLL	77.	ug/Kgdrywt	4	20	83.	8.3	42.
2-Methylnaphthalene-D10		57.6	%					
Fluorene-D10		65.6	%					
Pyrene-D10		86.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-21
Client ID: 004/5-SS1068-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0553.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	J	1.4	ug/Kgdrywt	1	20	21.	1.3	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Phenanthrene	J	18.	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	J	1.9	ug/Kgdrywt	1	20	21.	1.3	10.
Fluoranthene		46.	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene		38.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene		26.	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene		24.	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	LL	43.	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	J	14.	ug/Kgdrywt	1	20	21.	3.3	10.
Benzo(a)pyrene	LL	26.	ug/Kgdrywt	1	20	21.	3.5	10.
Indeno(1,2,3-cd)pyrene	L	40.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	J	8.9	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	JLL	14.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		52.8	%					
Fluorene-D10		71.7	%					
Pyrene-D10		71.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-33RE
Client ID: TF2-SS-RB03-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0561.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133367

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.21	0.066	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.21	0.079	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.21	0.056	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.21	0.066	0.10
Fluorene	U	0.10	ug/L	1	.2	0.21	0.063	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.21	0.052	0.10
Anthracene	U	0.10	ug/L	1	.2	0.21	0.045	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.21	0.075	0.10
Pyrene	U	0.10	ug/L	1	.2	0.21	0.061	0.10
Benzo(a)anthracene	B	0.29	ug/L	1	.2	0.21	0.047	0.10
Chrysene	U	0.10	ug/L	1	.2	0.21	0.037	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.21	0.092	0.10
Benzo(k)fluoranthene	UL	0.10	ug/L	1	.2	0.21	0.050	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.21	0.068	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.21	0.054	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.21	0.072	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.21	0.067	0.10
2-Methylnaphthalene-D10		45.0	%					
Fluorene-D10		63.3	%					
pyrene-d10		71.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-27
Client ID: 003-SS1015-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20059.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 06-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 93.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	48.	mg/Kgdrywt	1	20	20.	5.6	9.8
o-Terphenyl		98.8	%					
n-Triacontane-D62		101.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-8
Client ID: 004/5-SS1051-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20057.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 06-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	27.	mg/Kgdrywt	1	20	19.	5.4	9.4
o-Terphenyl		87.1	%					
n-Triacontane-D62		95.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20056.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	66.	mg/Kgdrywt	1	20	19.	5.4	9.5
o-Terphenyl	*	60.9	%					
n-Triacontane-D62		70.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3RE
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20121.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		100	mg/Kgdrywt	1	20	19.	5.5	9.6
o-Terphenyl		85.4	%					
n-Triacontane-D62		93.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-18
Client ID: 004/5-SS1065-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20058.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 06-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	38.	mg/Kgdrywt	1	20	20.	5.6	9.9
o-Terphenyl		73.8	%					
n-Triacontane-D62		83.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-27
Client ID: 003-SS1015-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4080.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 93.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.3	mg/Kgdrywt	1	2.5	2.8	2.1	2.3
p-Bromofluorobenzene		95.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-8
Client ID: 004/5-SS1051-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4078.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 96.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	J	2.6	mg/Kgdrywt	1	2.5	3.3	2.4	2.6
p-Bromofluorobenzene		91.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4077.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 96.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.1	mg/Kgdrywt	1	2.5	2.6	1.9	2.1
p-Bromofluorobenzene		95.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-18
Client ID: 004/5-SS1065-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4079.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 96.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	3.0	mg/Kgdrywt	1	2.5	3.7	2.7	3.0
p-Bromofluorobenzene		92.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-1
Client ID: TF2-W-TB03-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4076.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 100
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		85.6	%					

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APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: Vavsta Newport SDG: SG 82554

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: _____

Missing Information	Date Lab Contacted	Date Received

Validator: Edward Kelly Date: 12/6/13

EPA-NE - Data Validation
VOA/SV/Pest/PCB-1

See DV Report

Case: Navsta Newport SDG: SG8254

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: Edward Ludlum Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG 8254

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: Edward Hastings Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport. SDG: SG8254

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: Edward Sedlazo

Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: Edward Modlyn Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Edward Sedlmyer Date: 12/6/13

See DV Report

EPA NE - Data Validation Worksheet

Case: Navsta Newport SDG: SDG 58254

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Edward Sudlow Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Neusta Newport SDG: SG 8254

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Edward Ludlow Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navistar Newport SDG: SG8254

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? Y / N

Did the laboratory analyze the initial calibration at the appropriate concentration levels? Y N

Validator: Edward Sedlyar Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)

Comments:

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: Edward Sudlow Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG 8254

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: Edward Sudlow Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG 8254

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: Edward Sedlmyer Date: 12/6/13

EPA-NE - Data Validation Worksheet See DV Report

Case: Navsta Newport SDG: SG8254

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. Y N

Validator: Edward Sedlmyer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navstar Newport SDG: SG8254

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: Edward Reilly Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: S68259

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: Edward Sweeney Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methylphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: Edward Sadlyn

Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NavstaNewport SDG: SG 8254

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Ludlum Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nausta Newport SDG: SG825y

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery			% Recovery		
			Fluoranthene			Naphthalene	
			Pyrene			2-Methylnaphthalene	
			Benzo(a)anthracene			Acenaphthylene	
			Chrysene			Acenaphthene	
			Benzo(b)fluoranthene			Fluorene	
			Benzo(k)fluoranthene			Pentachlorophenol	
			Benzo(a)pyrene			Phenanthrene	
			Indeno(1,2,3-cd)pyrene			Anthracene	
			Dibenzo(a,h)anthracene				
			Benzo(g,h,i)perylene				

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Hedbury Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1,2-Dichloroethane-d_4

Validator: Edward Sedlmyer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Naustu Newport SDG: 568254

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Wedlmyer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nyvsta Newport SDG: SG8254

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Edward Sedlazo Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: 568254

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: Edward Kelley Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sullivan Date: 12/6/13

See OU Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: 568254

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: Edward Sedlmayer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nauset Newport SDG: SC8254

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sedlazeck Date: 12/6/18

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nauls to Newport SDG: SG82554

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: Edward Holbrook Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nauste Newport SDG: SG8254

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: Edward Sedlazo Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nars to Newport SDG: SG8254

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: Edward Sedlmyer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Naustc Newport SDG: SG 8254

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: Edward Leathers Date: 12/6/13

EPA-NE - Data Validation Worksheet See DV Report

Case: Navsta Newport SDG: SG 8254

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: Edward Sedlyar Date: 12/6/13

See DV Report

EPA NE - Data Validation Worksheet

Case: Navsta Newport SDG: JG8254

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: Edward Sedlmayer Date: 12/6/13

EPA-NE - Data Validation Worksheet See DV Report

Case: Navsta Newport SDG: SG825-4

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: Edward Sedlmyer Date: 12/6/13

See DU Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG825-4

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Kadlubowski Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navita Newport SDG: SG 8254

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Kelly Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nouste Newport SDG: 568254

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: Edward Hedbye Date: 12/6/13

APPENDIX D

SUPPORT DOCUMENTATION

HOLDTIME

SDG SG8254

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-004/5-SS1062-000.8	SG8254-010	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS-DUP05-101	SG8254-023	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS-DUP04-101	SG8254-011	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS1068-000.5	SG8254-021	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1067-000.7	SG8254-013	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS1066-000.9	SG8254-014	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS1065-000.5	SG8254-018	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1063-000.6	SG8254-020	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1061-000.6	SG8254-012	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS1060-000.5	SG8254-015	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1059-000.6	SG8254-016	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1058-000.5	SG8254-017	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1057-0001	SG8254-002	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1056-000.6	SG8254-003	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1055-000.8	SG8254-004	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-003-SS1012-000.7	SG8254-024	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1064-000.6	SG8254-019	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1011-000.8	SG8254-022	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1054-000.6	SG8254-005	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-003-SS1013-000.7	SG8254-025	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1014-0001	SG8254-026	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1015-000.8	SG8254-027	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1016-000.9	SG8254-028	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1017-000.8	SG8254-029	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1052-000.6	SG8254-007	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1053-000.6	SG8254-006	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1051-000.8	SG8254-008	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1050-000.6	SG8254-009	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-003-SS-DUP06-1013	SG8254-032	NM	10/22/2013	11/12/2013	11/13/2013	21	1	22
HG	MG/KG	TF2-003-SS1019-000.5	SG8254-031	NM	10/22/2013	11/12/2013	11/13/2013	21	1	22
HG	MG/KG	TF2-003-SS1018-000.8	SG8254-030	NM	10/22/2013	11/12/2013	11/13/2013	21	1	22
HG	UG/L	TF2-SS-RB03-1013	SG8254-033	NM	10/22/2013	11/9/2013	11/11/2013	18	2	20
M	MG/KG	TF2-004/5-SS1055-000.8	SG8254-004	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SS1060-000.5	SG8254-015	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1057-0001	SG8254-002	NM	10/21/2013	11/6/2013	11/18/2013	16	12	28
M	MG/KG	TF2-004/5-SS1059-000.6	SG8254-016	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1059-000.6	SG8254-016	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1058-000.5	SG8254-017	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1058-000.5	SG8254-017	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1060-000.5	SG8254-015	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1057-0001	SG8254-002	NM	10/21/2013	11/6/2013	11/13/2013	16	7	23
M	MG/KG	TF2-004/5-SS1056-000.6	SG8254-003	NM	10/21/2013	11/6/2013	11/18/2013	16	12	28
M	MG/KG	TF2-004/5-SS1053-000.6	SG8254-006	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1055-000.8	SG8254-004	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1054-000.6	SG8254-005	NM	10/21/2013	11/6/2013	11/18/2013	16	12	28
M	MG/KG	TF2-004/5-SS1054-000.6	SG8254-005	NM	10/21/2013	11/6/2013	11/13/2013	16	7	23
M	MG/KG	TF2-004/5-SS1061-000.6	SG8254-012	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1056-000.6	SG8254-003	NM	10/21/2013	11/6/2013	11/13/2013	16	7	23
M	MG/KG	TF2-004/5-SS1065-000.5	SG8254-018	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1017-000.8	SG8254-029	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS-DUP05-101	SG8254-023	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SS1053-000.6	SG8254-006	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS-DUP04-101	SG8254-011	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1068-000.5	SG8254-021	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1067-000.7	SG8254-013	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS-DUP04-101	SG8254-011	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1066-000.9	SG8254-014	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1061-000.6	SG8254-012	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1065-000.5	SG8254-018	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1064-000.6	SG8254-019	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1064-000.6	SG8254-019	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1063-000.6	SG8254-020	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1063-000.6	SG8254-020	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1062-000.8	SG8254-010	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1062-000.8	SG8254-010	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1066-000.9	SG8254-014	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-003-SS1013-000.7	SG8254-025	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1016-000.9	SG8254-028	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1015-000.8	SG8254-027	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-003-SS1015-000.8	SG8254-027	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1015-000.8	SG8254-027	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1014-0001	SG8254-026	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1014-0001	SG8254-026	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1017-000.8	SG8254-029	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1013-000.7	SG8254-025	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1017-000.8	SG8254-029	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1013-000.7	SG8254-025	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1012-000.7	SG8254-024	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1012-000.7	SG8254-024	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1012-000.7	SG8254-024	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1011-000.8	SG8254-022	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1011-000.8	SG8254-022	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1014-0001	SG8254-026	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1019-000.5	SG8254-031	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-004/5-SS1052-000.6	SG8254-007	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1051-000.8	SG8254-008	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1051-000.8	SG8254-008	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SS1050-000.6	SG8254-009	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1050-000.6	SG8254-009	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-003-SS-DUP06-1013	SG8254-032	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1016-000.9	SG8254-028	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS-DUP06-1013	SG8254-032	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1068-000.5	SG8254-021	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1019-000.5	SG8254-031	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1019-000.5	SG8254-031	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1018-000.8	SG8254-030	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1018-000.8	SG8254-030	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1018-000.8	SG8254-030	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS-DUP05-101	SG8254-023	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1052-000.6	SG8254-007	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-003-SS-DUP06-1013	SG8254-032	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1067-000.7	SG8254-013	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	UG/L	TF2-SS-RB03-1013	SG8254-033	NM	10/22/2013	11/6/2013	11/18/2013	15	12	27
M	UG/L	TF2-SS-RB03-1013	SG8254-033	NM	10/22/2013	11/6/2013	11/13/2013	15	7	22
TS	%	TF2-004/5-SS1055-000.8	SG8254-4	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
TS	%	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-004/5-SS1057-0001	SG8254-2	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-004/5-SS1058-000.5	SG8254-17	NM	10/22/2013	10/28/2013	10/29/2013	6	1	7
TS	%	TF2-004/5-SS1059-000.6	SG8254-16	NM	10/22/2013	10/28/2013	10/29/2013	6	1	7
TS	%	TF2-004/5-SS1060-000.5	SG8254-15	NM	10/22/2013	10/28/2013	10/29/2013	6	1	7
TS	%	TF2-004/5-SS1061-000.6	SG8254-12	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1054-000.6	SG8254-5	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-004/5-SS1063-000.6	SG8254-20	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1064-000.6	SG8254-19	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1066-000.9	SG8254-14	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1067-000.7	SG8254-13	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1068-000.5	SG8254-21	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS-DUP04-101	SG8254-11	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1062-000.8	SG8254-10	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-003-SS1018-000.8	SG8254-30	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1011-000.8	SG8254-22	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
TS	%	TF2-003-SS1012-000.7	SG8254-24	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1013-000.7	SG8254-25	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1014-0001	SG8254-26	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1016-000.9	SG8254-28	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1053-000.6	SG8254-6	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-003-SS1017-000.8	SG8254-29	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1019-000.5	SG8254-31	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-W-TB03-1013	SG8254-1	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-003-SS-DUP06-1013	SG8254-32	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS-DUP05-101	SG8254-23	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1050-000.6	SG8254-9	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1052-000.6	SG8254-7	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
SIM	%	TF2-004/5-SS-DUP05-101	SG8254-23	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1067-000.7	SG8254-13DL	NM	10/21/2013	10/28/2013	11/13/2013	7	16	23
SIM	%	TF2-SS-RB03-1013	SG8254-33RE	NM	10/22/2013	10/28/2013	11/1/2013	6	4	10
SIM	%	TF2-003-SS1014-0001	SG8254-26	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	%	TF2-004/5-SS-DUP04-101	SG8254-11	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1050-000.6	SG8254-9	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-003-SS-DUP06-1013	SG8254-32	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	%	TF2-003-SS1019-000.5	SG8254-31DL	NM	10/22/2013	10/25/2013	11/14/2013	3	20	23
SIM	%	TF2-003-SS1019-000.5	SG8254-31	NM	10/22/2013	10/25/2013	11/2/2013	3	8	11
SIM	%	TF2-003-SS1018-000.8	SG8254-30	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1052-000.6	SG8254-7	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-003-SS1016-000.9	SG8254-28	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1053-000.6	SG8254-6	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-003-SS1014-0001	SG8254-26DL	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	%	TF2-003-SS1011-000.8	SG8254-22	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1011-000.8	SG8254-22DL	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1012-000.7	SG8254-24	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1012-000.7	SG8254-24DL	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1013-000.7	SG8254-25	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1013-000.7	SG8254-25DL	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	%	TF2-003-SS1017-000.8	SG8254-29	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1061-000.6	SG8254-12	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	%	TF2-004/5-SS1068-000.5	SG8254-21	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1067-000.7	SG8254-13	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1066-000.9	SG8254-14	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	%	TF2-004/5-SS1064-000.6	SG8254-19	NM	10/22/2013	10/28/2013	11/12/2013	6	15	21
SIM	%	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-004/5-SS1062-000.8	SG8254-10	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1060-000.5	SG8254-15	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	%	TF2-004/5-SS1059-000.6	SG8254-16	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	%	TF2-004/5-SS1058-000.5	SG8254-17	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	%	TF2-004/5-SS1057-0001	SG8254-2	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1055-000.8	SG8254-4	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-004/5-SS1054-000.6	SG8254-5	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-004/5-SS1063-000.6	SG8254-20	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-004/5-SS-DUP04-101	SG8254-11	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1057-0001	SG8254-2	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS-DUP05-101	SG8254-23	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/KG	TF2-003-SS1014-0001	SG8254-26	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS-DUP06-1013	SG8254-32	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	UG/KG	TF2-003-SS1019-000.5	SG8254-31DL	NM	10/22/2013	10/25/2013	11/14/2013	3	20	23
SIM	UG/KG	TF2-003-SS1019-000.5	SG8254-31	NM	10/22/2013	10/25/2013	11/2/2013	3	8	11
SIM	UG/KG	TF2-003-SS1018-000.8	SG8254-30	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1017-000.8	SG8254-29	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1016-000.9	SG8254-28	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-004/5-SS1050-000.6	SG8254-9	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1068-000.5	SG8254-21	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1014-0001	SG8254-26DL	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	UG/KG	TF2-004/5-SS1059-000.6	SG8254-16	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-003-SS1013-000.7	SG8254-25	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1012-000.7	SG8254-24DL	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1012-000.7	SG8254-24	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1011-000.8	SG8254-22DL	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1011-000.8	SG8254-22	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-004/5-SS1066-000.9	SG8254-14	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/KG	TF2-003-SS1013-000.7	SG8254-25DL	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	UG/KG	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1067-000.7	SG8254-13DL	NM	10/21/2013	10/28/2013	11/13/2013	7	16	23
SIM	UG/KG	TF2-004/5-SS1067-000.7	SG8254-13	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-004/5-SS1064-000.6	SG8254-19	NM	10/22/2013	10/28/2013	11/12/2013	6	15	21
SIM	UG/KG	TF2-004/5-SS1063-000.6	SG8254-20	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-004/5-SS1062-000.8	SG8254-10	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1053-000.6	SG8254-6	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1052-000.6	SG8254-7	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1061-000.6	SG8254-12	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1054-000.6	SG8254-5	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1055-000.8	SG8254-4	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1058-000.5	SG8254-17	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-004/5-SS1060-000.5	SG8254-15	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/L	TF2-SS-RB03-1013	SG8254-33RE	NM	10/22/2013	10/28/2013	11/1/2013	6	4	10
GRO	%	TF2-W-TB03-1013	SG8254-1	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
GRO	%	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/25/2013	10/26/2013	3	1	4
GRO	%	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	%	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/30/2013	11/6/2013	9	7	16
GRO	%	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	%	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/30/2013	11/5/2013	9	6	15
GRO	%	TF2-004/5-SS1056-000.6	SG8254-3RE	NM	10/21/2013	11/11/2013	11/11/2013	21	0	21
GRO	%	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/25/2013	10/26/2013	3	1	4
GRO	%	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/30/2013	11/6/2013	8	7	15
GRO	%	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/30/2013	11/6/2013	8	7	15
GRO	MG/KG	TF2-W-TB03-1013	SG8254-1	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	MG/KG	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/25/2013	10/26/2013	3	1	4
GRO	MG/KG	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/30/2013	11/6/2013	8	7	15
GRO	MG/KG	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	MG/KG	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/30/2013	11/6/2013	9	7	16
GRO	MG/KG	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	MG/KG	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/30/2013	11/5/2013	9	6	15
GRO	MG/KG	TF2-004/5-SS1056-000.6	SG8254-3RE	NM	10/21/2013	11/11/2013	11/11/2013	21	0	21
GRO	MG/KG	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/30/2013	11/6/2013	8	7	15

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
GRO	MG/KG	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/25/2013	10/26/2013	3	1	4

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-004/5-SS1061-000.6	UNITS	F2-004/5-SS-DUP04-101	RPD	D	
PAH	ACENAPHTHENE	2.8 J	UG/KG	12 J	124.32	9.20	O.K. < 2xRL
PAH	ACENAPHTHYLENE	1.9 J	UG/KG	ND	200.00	1.90	
PAH	ANTHRACENE	8.3 J	UG/KG	36	125.06	27.70	
PAH	BENZO(A)ANTHRACENE	71	UG/KG	80	11.92	9.00	
PAH	BENZO(A)PYRENE	61	UG/KG	64	4.80	3.00	
PAH	BENZO(B)FLUORANTHENE	120	UG/KG	100	18.18	20.00	
PAH	BENZO(G,H,I)PERYLENE	32 J	UG/KG	27 J	16.95	5.00	
PAH	BENZO(K)FLUORANTHENE	39	UG/KG	32	19.72	7.00	
PAH	CHRYSENE	82	UG/KG	86	4.76	4.00	
PAH	DIBENZO(A,H)ANTHRACENE	14 J	UG/KG	13 J	7.41	1.00	
PAH	FLUORANTHENE	110	UG/KG	140	24.00	30.00	
PAH	FLUORENE	ND	UG/KG	11 J	200.00	11.00	O.K. < 2xRL
PAH	INDENO(1,2,3-CD)PYRENE	63	UG/KG	53	17.24	10.00	
PAH	NAPHTHALENE	ND	UG/KG	3 J	200.00	3.00	O.K. < 2xRL
PAH	PHENANTHRENE	49	UG/KG	120	84.02	71.00	J
PAH	PYRENE	120	UG/KG	140	15.38	20.00	

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-004/5-SS1065-000.5	UNITS	F2-004/5-SS-DUP05-101	RPD	D	
PAH	ACENAPHTHENE	1.6 J	UG/KG	ND	200.00	1.60	O.K. <2RPL
PAH	ACENAPHTHYLENE	2.4 J	UG/KG	2 J	18.18	0.40	
PAH	ANTHRACENE	3.4 J	UG/KG	2.5 J	30.51	0.90	
PAH	BENZO(A)ANTHRACENE	39	UG/KG	ND	200.00	39.00	O.K <2RPL
PAH	BENZO(A)PYRENE	38	UG/KG	30 J	23.53	8.00	
PAH	BENZO(B)FLUORANTHENE	75	UG/KG	55 J	30.77	20.00	
PAH	BENZO(G,H,I)PERYLENE	18 J	UG/KG	16 J	11.76	2.00	
PAH	BENZO(K)FLUORANTHENE	21	UG/KG	19 J	10.00	2.00	
PAH	CHRYSENE	44	UG/KG	32	31.58	12.00	
PAH	DIBENZO(A,H)ANTHRACENE	12 J	UG/KG	11 J	8.70	1.00	
PAH	FLUORANTHENE	90	UG/KG	63	35.29	27.00	
PAH	INDENO(1,2,3-CD)PYRENE	62 J	UG/KG	52	17.54	10.00	
PAH	PHENANTHRENE	33	UG/KG	24	31.58	9.00	
PAH	PYRENE	66	UG/KG	50	27.59	16.00	

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-003-SS1015-000.8	UNITS	TF2-003-SS-DUP06-1013	RPD	D
PAH	ACENAPHTHENE	5.4 J	UG/KG	4.7 J	13.86	0.70
PAH	ACENAPHTHYLENE	2.3 J	UG/KG	1.8 J	24.39	0.50
PAH	ANTHRACENE	16 J	UG/KG	14 J	13.33	2.00
PAH	BENZO(A)ANTHRACENE	120 J	UG/KG	120	0.00	0.00
PAH	BENZO(A)PYRENE	79 J	UG/KG	100 J	23.46	21.00
PAH	BENZO(B)FLUORANTHENE	140 J	UG/KG	170 J	19.35	30.00
PAH	BENZO(G,H,I)PERYLENE	39 J	UG/KG	47 J	18.60	8.00
PAH	BENZO(K)FLUORANTHENE	42	UG/KG	56	28.57	14.00
PAH	CHRYSENE	110	UG/KG	130	16.67	20.00
PAH	DIBENZO(A,H)ANTHRACENE	24	UG/KG	17 J	34.15	7.00
PAH	FLUORANTHENE	230	UG/KG	200	13.95	30.00
PAH	FLUORENE	4.7 J	UG/KG	4.1 J	13.64	0.60
PAH	INDENO(1,2,3-CD)PYRENE	130 J	UG/KG	84 J	42.99	46.00
PAH	PHENANTHRENE	120	UG/KG	110	8.70	10.00
PAH	PYRENE	200	UG/KG	240	18.18	40.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

TETRA TECH NUS, INC.
NVASTA NEWPORT
TANK FARM 2 CTO WE30
SG8254

KATAHDIN ANALYTICAL SERVICES, INC.
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT TANK FARM 2 CTO WE30
SG8254

Sample Receipt

The following sample was received on October 23, 2013 and was logged in under Katahdin Analytical Services work order number SG8254 for a hardcopy due date of November 11, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG8254-1	TF2-W-TB03-1013
SG8254-2	TF2-004/5-SS1057-0001
SG8254-3	TF2-004/5-SS1056-000.6
SG8254-4	TF2-004/5-SS1055-000.8
SG8254-5	TF2-004/5-SS1054-000.6
SG8254-6	TF2-004/5-SS1053-000.6
SG8254-7	TF2-004/5-SS1052-000.6
SG8254-8	TF2-004/5-SS1051-000.8
SG8254-9	TF2-004/5-SS1050-000.6
SG8254-10	TF2-004/5-SS1062-000.8
SG8254-11	TF2-004/5-SS-DUP04-1013
SG8254-12	TF2-004/5-SS1061-000.6
SG8254-13	TF2-004/5-SS1067-000.7
SG8254-14	TF2-004/5-SS1066-000.9
SG8254-15	TF2-004/5-SS1060-000.5
SG8254-16	TF2-004/5-SS1059-000.6
SG8254-17	TF2-004/5-SS1058-000.5
SG8254-18	TF2-004/5-SS1065-000.5
SG8254-19	TF2-004/5-SS1064-000.6
SG8254-20	TF2-004/5-SS1063-000.6
SG8254-21	TF2-004/5-SS1068-000.5
SG8254-22	TF2-004/5-SS1011-000.8
SG8254-23	TF2-004/5-SS-DUP05-1013
SG8254-24	TF2-003-SS1012-000.7
SG8254-25	TF2-003-SS1013-000.7
SG8254-26	TF2-003-SS1014-0001
SG8254-27	TF2-003-SS1015-000.8
SG8254-28	TF2-003-SS1016-000.9
SG8254-29	TF2-003-SS1017-000.8
SG8254-30	TF2-003-SS1018-000.8
SG8254-31	TF2-003-SS1019-000.5
SG8254-32	TF2-003-SS-DUP06-1013
SG8254-33	TF2-SS-RB03-1013

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Some of the client IDs on the Chain of Custody exceeds the 19-character limit of the Katahdin Analytical Information Management System. Therefore, the first characters "TF2-" in the client ID all samples with the exception of samples SG8254-1 and 33 were omitted on all forms.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG8254 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8270D SIM Analysis

Sample SG8254-25DL had a low response for the internal standard perylene-d12 that resulted in a %D which was outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the ICAL midpoint standard. Since the undiluted analysis had acceptable IS responses, the sample was not reanalyzed diluted.

All soil samples were manually integrated for the analytes 2-methylnaphthalene, acenaphthylene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene, and/or indeno(1,2,3-cd)pyrene. The specific reason for the manual integration is indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The target analytes benzo(a)anthracene, chrysene, and/or benzo(k)fluoranthene were detected below ½ the reporting limit in the method blanks WG133188-1RA and WG133367-1RA. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since the method blanks were acceptable, no further action was taken.

The independent check standard (file N0529) associated with the initial calibration on the N instrument on 10/30/2013 had low concentrations for the target analytes pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The independent check standard (file N0546) associated with the initial calibration on the N instrument on 10/31/2013 had a low concentration for the target analytes benzo(a)pyrene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The independent check standard (file N0704) associated with the initial calibration on the N instrument on 11/12/2013 had a high concentration for the target analyte 2-methylnaphthalene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The CV (file N0557) had high responses for the target analyte benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene. The CV (file N0574) had high responses for the target analytes indeno(1,2,3-cd)pyrene and dibenzo(1,h)anthracene. The CV (file N0723) had a low response for the target analyte indeno(1,2,3-cd)pyrene. The CV (file N0740) had a high response for the target analyte indeno(1,2,3-cd)pyrene. These responses resulted in %D's that were greater than the acceptance limit of 20% from DoD QSM.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are statistically derived limits for the full list of spiked compounds and are statistically derived limits for the surrogates. Although DoD QSM acceptance limits were requested for this project, laboratory established acceptance limits were used because the DoD QSM does not list acceptance limits for 8270SIM. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these statistical acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

The LCS WG133188-2 had recoveries for three analytes that were low and outside of the laboratory established acceptance limits. The LCSD WG133188-3 had low recoveries for four analytes. The DoD QSM number of allowable exceedances for 17 analytes is one. If the DoD QSM acceptance limits are applied, the LCS had acceptable recoveries for the spiked analytes, after factoring in the allowable number of exceedances. Therefore, no further action was taken.

The LCSD WG133361-3 had low recoveries for four analytes that were outside of the laboratory established acceptance limits. The DoD QSM number of allowable exceedances for 17 analytes is one. Since the LCS was acceptable, after factoring in the allowable number of exceedances, no further action was taken.

The MS WG133188-4 and MSD WG133188--5 had one and seven spiked target analytes, respectively, with recoveries that were non-calculable and reported as 0% recovery due to the concentration in the native sample being higher than in the MS and MSD. This is likely due to a non-homogeneous sample.

8015M-FLPRO Analysis

All the samples in the work order were manually integrated for the extraction surrogates o-terphenyl and N-Triacontane-d62, and Petroleum Range Organics. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Sample SG8254-3 had a low recovery for the extraction surrogate o-terphenyl that was outside the method acceptance limits. The sample was reextracted seven days outside of hold time. The results of both analyses are reported.

The LCS WG133426-2 had a low recovery for Petroleum Range Organics that was outside of method acceptance limits. Since the associated LCSD had acceptable recoveries, no further action was taken.

Note: The Form VII has a column for %D that is set to 25%. The DoD QSM criterion for a CV is 20%D. All of the compounds in the CV's were evaluated to 20% criteria.

8015B GRO Analysis

Sample SG8254-8 was manually integrated for Gasoline Range Organics. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The calibration verification standard (CV) (file 9GJ4060) had a low response for naphthalene, which resulted in a %D that was greater than 20%. Since the method requirement applies to only the GRO range response, which was acceptable, the associated samples were not reanalyzed.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG8254 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Soil-matrix Katahdin Sample Nos. SG8254 -(2, 3, and 5) were digested for ICP-MS analysis on 11/06/13 (QC Batch GK06IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8254 -5 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentrations of manganese (0.133 mg/Kg), and calcium (7.59 mg/kg) in the preparation blank from this batch are more than one half the laboratory's LOQ. However, because the measured concentrations of calcium and manganese in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

Aqueous-matrix Katahdin Sample No. SG8254 -33 was digested for ICP-MS analysis on 11/06/13 (QC Batch GK06IMW2) in accordance with USEPA Method 3010A.

Soil-matrix Katahdin Sample Nos. SG8254 -(4, 6-23, and 28) were digested for ICP-MS analysis on 11/08/13 (QC Batch GK08IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8254 -28 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentration of calcium (7.04 mg/kg) in the preparation blank from this batch is more than one half the laboratory's LOQ. However, because the measured concentrations of

calcium in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

Soil-matrix Katahdin Sample Nos. SG8254 -(24-27 and 29-32) were digested for ICP-MS analysis on 11/08/13 (QC Batch GK08IMS2) in accordance with USEPA Method 3050B. The measured concentration of iron (6.65 mg/kg) in the preparation blank from this batch is more than one half the laboratory's LOQ. However, because the measured concentrations of calcium in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

ICP-MS analyses of Work Order SG8254 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	**Associated Analytes**
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Solid-matrix Katahdin Sample Numbers SG8254 -(2-9) were digested for mercury analysis on 11/07/13 (QC Batch GK07HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Number SG8254 -5 was prepared in duplicate and with a matrix spike in this digestion batch.

Solid-matrix Katahdin Sample Numbers SG8254 -(10-29) were digested for mercury analysis on 11/08/13 (QC Batch GK08HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Number SG8254 -28 was prepared in duplicate and with a matrix spike in this digestion batch.

Aqueous-matrix Katahdin Sample Number SG8254 -33 was digested for mercury analysis on 11/09/13 (QC Batch GK09HGW1) in accordance with USEPA Method 7471B.

Solid-matrix Katahdin Sample Numbers SG8254 -(30-32) were digested for mercury analysis on 11/12/13 (QC Batch GK12HGS1) in accordance with USEPA Method 7471B. Duplicate laboratory control samples were prepared in this batch.

Mercury analysis of the Katahdin Work Order SG8254 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG8254 -5 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for arsenic, copper, and lead.

The laboratory duplicate analysis of Katahdin Sample No. SG8254 -28 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for antimony, manganese, and mercury.

The measured recoveries of antimony and calcium in the matrix-spiked aliquot of Katahdin Sample No. SG8254 -5 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The measured recoveries of antimony, calcium, and mercury in the matrix-spiked aliquot of Katahdin Sample No. SG8254 -28 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The serial dilution analysis of Katahdin Sample Number SG8254 -5 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for aluminum, iron, magnesium, manganese, and zinc.

The serial dilution analysis of Katahdin Sample Number SG8254 -28 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for aluminum, iron, lead, magnesium, vanadium, and zinc.

The measured recoveries of aluminum, barium, iron, magnesium, and manganese in the post-digestion spiked aliquot of Katahdin Sample Number SG8254 -5 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

The measured recoveries of barium, cobalt, copper, iron, manganese, nickel, and zinc in the post-digestion spiked aliquot of Katahdin Sample Number SG8254 -35 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the laboratory's limits of quantitation (LOQ) are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQ's, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG8254 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
11.22.13

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

000040

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SG8254	KIMS Review By: QP	Received By: GN
SDG #:	Cooler: 1 of 3	Date/Time Rec.: 10-23-13/15:00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.7
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?				✓	
Soil/Sediment: Received in airtight container?	✓				
Received in methanol?	✓				
Methanol covering soil?	✓				
D.I. Water - Received within 48 hour HT?	✓				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

DUP05 & DUP06 - EXTPH and GRO not needed per client. QP 10/24/13

QA-048 – Revision 3 – 10/01/2013

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GW	Delivered By: KAS
KAS Work Order#: SG-8254	KIMS Review By:	Received By: GW
SDG #:	Cooler: 2 of 3	Date/Time Rec.: 10-23-13/15:00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.6
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

0000012

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SG8254/SG8262	KIMS Review By:	Received By: GN
SDG #:	Cooler: 3 of 3	Date/Time Rec.: 10-23-13/15:00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 5.4
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

Jennifer Obrin

From: Seiken, Dabra [Dabra.Seiken@tetratech.com]
Sent: Friday, November 08, 2013 10:02 AM
To: Jennifer Obrin; Jalkut, Kayleen
Cc: Carper, Kelly; Samchuck, Joseph
Subject: RE: Newport non-conformance

Please re-prepare and re-analyze the samples.

Dabra I. Seiken, CG, PG

From: Jennifer Obrin [mailto:jobrin@katahdinlab.com]
Sent: Thursday, November 07, 2013 4:04 PM
To: Seiken, Dabra; Jalkut, Kayleen
Subject: Newport non-conformance

The GC lab has come to me with a non-conformance regarding the FI-PRO analysis for 4 samples from the Newport project.

SG8254-3 (TF2-004/5-SS1056-000.6) had low surrogate OTP recovery at 60%, the window is 62-109
SG8184-17 (TF2-004/5-SS1039-000.9) had low surrogate OTP recovery at 49%, the window is 62-109
SG8184-18 (TF2-SS-RB01-1013) had low surrogate OTP recovery at 80%, the window is 82-142
SG8184-27 (TF2-004/5-SS1049-000.9) had low surrogate OTP recovery at 15%, the window is 62-109

Please let me know how you would like to have the lab proceed. Hold times were 11/1 and 11/4.

Thank you,

Jennifer Obrin
Federal Programs Project Manager
Katahdin Analytical Services
A Woman-Owned Small Business Enterprise
DoD ELAP Accredited
600 Technology Way
Scarborough, Maine 04074
Direct - 207.874.2400 x17
Cell - 207.333.7469
Fax - 207.775.4029

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26581 | PAGE 1 OF 3

PROJECT NO: 112G03019 CTO WE30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445
SAMPLERS (SIGNATURE): KJalkut, Peter Seward		FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781 801 0457
		CARRIER/WAYBILL NUMBER: Courier p/u - hand delivery	

LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J. Obrin
ADDRESS: 600 Technology Way
CITY, STATE: Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

SG-8254

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
									G	G	G	G					
									PRESERVATIVE USED		MeOH ≤6°C	≤6°C	MeOH ≤6°C	≤6°C			
									TYPE OF ANALYSIS		40ml vials w/MeOH only - GRO	8oz jar - PAHs, metals, total solids	40ml vials w/soil+MeOH (lab) GRO	4oz jar - Ext TPH + Total solids			
10/21	0900	TF2-W-TB03-1013	—	—	—	QC	G	2	2	—	—	—					
10/21	1345	TF2-004/5-SS1057-0001	SS1057	0	1	SO	G	1	—	1	—	—					
10/21	1355	TF2-004/5-SS1056-000.6	SS1056	0	0.6	SO	G	4	—	1	2	1					
10/21	1400	TF2-004/5-SS1055-000.8	SS1055	0	0.8	SO	G	1	—	1	—	—					
10/21	1405	TF2-004/5-SS1054-000.6	SS1054	0	0.6	SO	G	2	—	2	—	—					Lab QC volume #2
10/21	1415	TF2-004/5-SS1053-000.6	SS1053	0	0.6	SO	G	1	—	1	—	—					
10/21	1425	TF2-004/5-SS1052-000.6	SS1052	0	0.6	SO	G	1	—	1	—	—					
10/21	1430	TF2-004/5-SS1051-000.8	SS1051	0	0.8	SO	G	4	—	1	2	1					
10/21	1440	TF2-004/5-SS1050-000.6	SS1050	0	0.6	SO	G	1	—	1	—	—					
10/21	1450	TF2-004/5-SS1062-000.8	SS1062	0	0.8	SO	G	1	—	1	—	—					
10/21	0000	TF2-004/5-SS-DUP04-1013	—	—	—	SO	G	1	—	1	—	—					
10/21	1455	TF2-004/5-SS1061-000.6	SS1061	0	0.6	SO	G	1	—	1	—	—					
10/21	1505	TF2-004/5-SS1067-000.7	SS1067	0	0.7	SO	G	1	—	1	—	—					

9 KJ 10/23/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: KJalkut	10/23/13	1335	1. RECEIVED BY: Andrew Hale	10/23/13	1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

S10000

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26582 | PAGE 2 OF 3

PROJECT NO: 112G03019 CTO WE30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445
SAMPLERS (SIGNATURE): K Falkut, Peter Senecal		FIELD OPERATIONS LEADER: Kayleen Falkut	PHONE NUMBER: 781 801 0457
		CARRIER/WAYBILL NUMBER: Courier p/u - hand delivery	

LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J Obrin
ADDRESS: 600 Technology Way
CITY, STATE: Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

SG8254

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	G							
									PRESERVATIVE USED			≤6°C	≤6°C	MeOH ≤6°C				
									TYPE OF ANALYSIS	8021 Jan - PAHs, total solids, Metals	402 Jan - Ex TPH, total solids	40 ml vials w/ MeOH soil - GRO						
10/21	1515	TF2-004/5-SS1066-000.9	SS1066	0	0.9	SO	G	1	1	—	—							
10/22	0815	TF2-004/5-SS1060-000.5	SS1060	0	0.5	SO	G	1	1	—	—							
10/22	0825	TF2-004/5-SS1059-000.6	SS1059	0	0.6	SO	G	1	1	—	—							
10/22	0835	TF2-004/5-SS1058-000.5	SS1058	0	0.5	SO	G	1	1	—	—							
10/22	0845	TF2-004/5-SS1065-000.5	SS1065	0	0.5	SO	G	4	1	1	2							
10/22	0855	TF2-004/5-SS1064-000.6	SS1064	0	0.6	SO	G	2	2	—	—							Lab QC volume #3
10/22	0905	TF2-004/5-SS1063-000.6	SS1063	0	0.6	SO	G	1	1	—	—							
10/22	0915	TF2-004/5-SS1068-000.5	SS1068	0	0.5	SO	G	1	1	—	—							
10/22	0940	TF2-003-SS1011-000.8	SS1011	0	0.8	SO	G	1	1	—	—							
10/22	0000	TF2-004/5-SS-DUP05-1013	—	—	—	SO	G	4	1	1	2							
10/22	0950	TF2-003-SS1012-000.7	SS1012	0	0.7	SO	G	1	1	—	—							
10/22	0955	TF2-003-SS1013-000.7	SS1013	0	0.7	SO	G	1	1	—	—							
10/22	1005	TF2-003-SS1014-0001	SS1014	0	1	SO	G	1	1	—	—							

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: K Falkut	10/23/13	1355	1. RECEIVED BY:	10/23/13	1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TINUS-001

000009

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER No 027646 | PAGE 3 OF 3

PROJECT NO: 112603019 CO WE 30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445
SAMPLERS (SIGNATURE): KJalkut, Peter Seward		FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781-801-0457
		CARRIER/WAYBILL NUMBER: Carver plus - hand delivery	
LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J Obrin		ADDRESS: 600 Technology Way	
		CITY, STATE: Scarborough, ME	

STANDARD TAT [X]
RUSH TAT [ ] 24 hr. [ ] 48 hr. [ ] 72 hr. [ ] 7 day [ ] 14 day

SG#254

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)										
									G	G	G	G	P						
									PRESERVATIVE USED										
									≤6°C	≤6°C	MeOH ≤6°C	≤6°C	HNO3, ≤6°C						
									TYPE OF ANALYSIS: 8021 jar - PAHs, total solids, metals	4021 jar - EXTPH, total solids	40 ml vials w/ soil MeOH-GRO (Freeze)	1L amber - PAHs	250 ml HDPE w/ HNO3 - metals						COMMENTS
10/22	1015	TF2-003-SS1015-000.8	SS1015	0	0.8	SO	G	4	1	1	2	—	—						
* 10/22	1025	TF2-003-SS1016-000.9	SS1016	0	0.9	SO	G	1	1	—	—	—	—						Lab QC vol. #4?
10/22	1055	TF2-003-SS1017-000.8	SS1017	0	0.8	SO	G	1	1	—	—	—	—						
10/22	1105	TF2-003-SS1018-000.8	SS1018	0	0.8	SO	G	1	1	—	—	—	—						
10/22	1115	TF2-003-SS1019-000.5	SS1019	0	0.5	SO	G	1	1	—	—	—	—						
10/22	0000	TF2-003-SS-DUP06-1013	—	—	—	SO	G	4	1	1	2	—	—						
10/23	1200	TF2-SS-RB03-1013	—	—	—	QC	G	3	—	—	—	2	1						

KJ 10/23/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: KJalkut	10/23/13	1335	1. RECEIVED BY:	10/23/13	1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: * Please try to perform lab QC analysis on TF2-003-SS1016-000.9 (forgot to collect 2x802 jars) for PAH, metals analyses

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

000147

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	Spiked sample recovery not within control limits.
*	Duplicate sample analysis not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS
(Refer to BOD Qualifiers Page for BOD footnotes)

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1	pH
H2	DO
H3	sulfite
H4	residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
004/5-SS1062-000.8	SG8254-10		67.1		74.4		83.7	
004/5-SS-DUP04-1013	SG8254-11		45.4		58.1		62.7	
004/5-SS1061-000.6	SG8254-12		56.7		65.6		69.7	
004/5-SS1067-000.7	SG8254-13		56.7		66.4		76.5	
004/5-SS1067-000.7	SG8254-13DL		57.6		65.6		86.1	
004/5-SS1066-000.9	SG8254-14		58.1		62.6		75.1	
004/5-SS1060-000.5	SG8254-15		42.3		63.2		56.4	
004/5-SS1059-000.6	SG8254-16		39.0		63.2		64.9	
004/5-SS1058-000.5	SG8254-17		42.5		66.3		61.8	
004/5-SS1065-000.5	SG8254-18		42.4		66.7		62.3	
004/5-SS1064-000.6	SG8254-19		35.1		50.8		60.2	
004/5-SS1057-0001	SG8254-2		71.0		74.0		86.2	
004/5-SS1063-000.6	SG8254-20		38.8		68.6		68.9	
004/5-SS1068-000.5	SG8254-21		52.8		71.7		71.2	
003-SS1011-000.8	SG8254-22		44.6		59.2		65.1	
003-SS1011-000.8	SG8254-22DL		42.6		57.7		61.9	
004/5-SS-DUP05-1013	SG8254-23		42.8		66.0		63.4	
003-SS1012-000.7	SG8254-24		47.7		71.8		67.6	
003-SS1012-000.7	SG8254-24DL		63.0		64.8		68.0	
003-SS1013-000.7	SG8254-25		54.5		73.7		69.6	
003-SS1013-000.7	SG8254-25DL		0.00	D	0.00	D	0.00	D
003-SS1014-0001	SG8254-26		48.8		68.5		63.5	
003-SS1014-0001	SG8254-26DL		44.9		55.0		69.4	
003-SS1015-000.8	SG8254-27		46.7		66.2		57.1	
003-SS1016-000.9	SG8254-28		44.9		69.1		70.9	
003-SS1017-000.8	SG8254-29		48.3		67.1		61.0	
004/5-SS1056-000.6	SG8254-3		49.2		63.7		68.0	
003-SS1018-000.8	SG8254-30		33.4		62.3		58.4	
003-SS1019-000.5	SG8254-31		42.6		65.5		54.9	
003-SS1019-000.5	SG8254-31DL		51.8		60.5		57.6	
003-SS-DUP06-1013	SG8254-32		48.1		61.6		72.1	
004/5-SS1055-000.8	SG8254-4		50.2		70.5		62.2	
004/5-SS1054-000.6	SG8254-5		40.1		61.6		64.6	
004/5-SS1053-000.6	SG8254-6		38.0		57.7		62.2	
004/5-SS1052-000.6	SG8254-7		43.4		71.4		70.8	
004/5-SS1051-000.8	SG8254-8		43.8		66.2		72.3	

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
004/5-SS1050-000.6	SG8254-9		44.7		68.7		73.1	
Method Blank Sample	WG133188-1RA		41.8		57.7		83.3	
Laboratory Control S	WG133188-2		42.6		61.9		75.0	
Laboratory Control S	WG133188-3		36.8		47.7		86.1	
Matrix Spike	WG133188-4		48.4		72.1		70.5	
Matrix Spike Duplica	WG133188-5		46.6		72.1		69.7	
Method Blank Sample	WG133361-1		50.3		66.8		79.3	
Laboratory Control S	WG133361-2		46.8		66.2		71.5	
Laboratory Control S	WG133361-3		28.1		41.9		45.3	
Matrix Spike	WG133361-4		54.2		75.0		77.5	
Matrix Spike Duplica	WG133361-5		54.5		76.0		79.4	
Matrix Spike	WG133361-6		52.1		68.6		75.3	
Matrix Spike Duplica	WG133361-7		53.3		69.2		68.6	

		QC Limits
PYR	PYRENE-D10	31-128
FLO	FLUORENE-D10	20-96
2MN	2-METHYLNAPHTHALENE-D10	19-94

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
TF2-SS-RB03-1013	SG8254-33RE		45.0		63.3		71.7	
Method Blank Sample	WG133367-1RA		60.2		72.3		90.1	
Laboratory Control S	WG133367-2RA		51.7		69.4		79.2	
Laboratory Control S	WG133367-3RA		56.6		70.5		79.5	

		QC Limits
2MN	2-METHYLNAPHTHALENE-D10	43-92
FLO	FLUORENE-D10	29-101
PYR	PYRENE-D10	53-166

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND625.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 30-OCT-13
Time Analyzed : 11:28

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	42.2		
68	Less than 2.0% of mass 69	0.8	1.66	1
69	Less than 100.0% of mass 198	45.6		
70	Less than 2.0% of mass 69	0.4	0.97	1
127	40.0 - 60.0% of mass 198	59.3		
197	Less than 1.0% of mass 198	0.7		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.1		
275	10.0 - 30.0% of mass 198	20.1		
365	1.0 - 100.0% of mass 198	2.6		
441	0.0 - 100.0% of mass 443	8.1	81.34	2
442	40.0 - 100.0% of mass 198	51.8		
443	17.0 - 23.0% of mass 442	9.9	19.20	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG133485-4	N0523.D	10/30/13	11:51
Initial Calibration	WG133485-2	N0524.D	10/30/13	12:41
Initial Calibration	WG133485-3	N0525.D	10/30/13	13:24
Initial Calibration	WG133485-5	N0526.D	10/30/13	14:08
Initial Calibration	WG133485-6	N0527.D	10/30/13	14:52
Initial Calibration	WG133485-7	N0528.D	10/30/13	15:35
Independent Source	WG133485-8	N0529.D	10/30/13	16:19
Laboratory Control S	WG133188-2	N0531.D	10/30/13	17:45
Laboratory Control S	WG133188-3	N0532.D	10/30/13	18:28

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254

Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GCMS-N

Lab File IDs : N0524.D N0525.D N0523.D **Column ID:**
N0526.D N0527.D N0528.D **Calibration Date(s):** 30-OCT-13 11:51
30-OCT-13 15:35

	0.200000(Level 1	0.500000(Level 2	1.0000 Level 3	3.0000 Level 4	7.0000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	1.02819	0.85204	1.07267	0.96791	0.90772	0.79332	AVG		0.93697		11.3350(	15.00000	O
2-Methylnaphthalene	0.50976	0.47163	0.57816	0.60795	0.54259	0.63861	AVG		0.55812		11.1678(	15.00000	O
Acenaphthylene	18138	36668	101279	280206	411531	621590	QUA	0.17762	0.21160	0.00856	0.99671	0.99000	O
Acenaphthene	1.49807	1.41373	1.77550	1.58447	1.45902	1.38795	AVG		1.51979		9.41480	15.00000	O
Fluorene	1.31064	1.34725	1.73096	1.59662	1.48189	1.42508	AVG		1.48207		10.7059(	15.00000	O
Phenanthrene	1.30591	1.21464	1.32342	1.17208	1.24553	1.13455	AVG		1.23269		6.00394	15.00000	O
Anthracene	1.16407	1.35522	1.27676	1.19898	1.26994	1.16337	AVG		1.23806		6.13246	15.00000	O
Fluoranthene	1.22990	1.06270	1.22636	1.08385	1.17645	1.38600	AVG		1.19421		9.82849	15.00000	O
Pyrene	13320	28109	77015	159079	396165	605669	QUA	-0.00009	0.30442	0.00442	0.99912	0.99000	O
Benzo(a)anthracene	1.20167	1.13965	1.36935	1.23509	1.33367	1.22804	AVG		1.25124		6.82409	15.00000	O
Chrysene	8322	15543	43369	92983	239977	347697	QUA	0.07680	0.46230	0.01644	0.99575	0.99000	O
Benzo(b)fluoranthene	2606	3971	20721	40323	143600	207882	LNR	0.19599	1.35765		0.99703	0.99000	O
Benzo(k)fluoranthene	2.52508	2.15935	2.27383	2.29768	2.04327	1.90435	AVG		2.20059		9.83679	15.00000	O
Benzo(a)pyrene	2800	3891	31611	48351	149765	205973	QUA	0.17455	0.56704	0.01093	0.99740	0.99000	O
Indeno(1,2,3-cd)pyrene	1876	2367	7095	11106	46483	70784	QUA	0.02777	2.65959	-0.08324	0.99432	0.99000	O
Dibenzo(a,h)anthracene	1254	1135	9864	13236	61503	89372	QUA	0.24939	1.91516	-0.03170	0.99074	0.99000	O
Benzo(g,h,i)perylene	2886	3505	15341	33697	95448	136116	LNR	-0.02061	0.88523		0.99663	0.99000	O
2-Methylnaphthalene-D10	1.14203	1.23055	1.21208	1.44835	1.23528	1.22614	AVG		1.24907		8.28903	15.00000	
Fluorene-D10	0.93553	0.93986	0.93010	1.24079	1.12736	0.90390	AVG		1.01292		13.6148[	15.00000	
Pyrene-D10	6852	15201	37852	81456	199965	320300	LNR	-0.25497	1.21728		0.99780	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND626.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 31-OCT-13
Time Analyzed : 16:02

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	40.3		
68	Less than 2.0% of mass 69	0.9	1.96	1
69	Less than 100.0% of mass 198	44.5		
70	Less than 2.0% of mass 69	0.3	0.68	1
127	40.0 - 60.0% of mass 198	57.2		
197	Less than 1.0% of mass 198	0.5		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.4		
275	10.0 - 30.0% of mass 198	19.3		
365	1.0 - 100.0% of mass 198	2.3		
441	0.0 - 100.0% of mass 443	7.4	79.42	2
442	40.0 - 100.0% of mass 198	47.8		
443	17.0 - 23.0% of mass 442	9.4	19.60	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG133553-4	N0540.D	10/31/13	16:21
Initial Calibration	WG133553-2	N0541.D	10/31/13	17:06
Initial Calibration	WG133553-3	N0542.D	10/31/13	17:49
Initial Calibration	WG133553-5	N0543.D	10/31/13	18:32
Initial Calibration	WG133553-6	N0544.D	10/31/13	19:15
Initial Calibration	WG133553-7	N0545.D	10/31/13	19:59
Independent Source	WG133553-8	N0546.D	10/31/13	20:42
Method Blank Sample	WG133188-1RA	N0547.D	10/31/13	21:25
004/5-SS1068-000.5	SG8254-21	N0553.D	11/01/13	01:44
003-SS1011-000.8	SG8254-22	N0554.D	11/01/13	02:27
004/5-SS-DUP05-1013	SG8254-23	N0555.D	11/01/13	03:10
003-SS1012-000.7	SG8254-24	N0556.D	11/01/13	03:53

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254

Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GCMS-N

Lab File IDs : N0541.D N0542.D N0540.D N0543.D N0544.D N0545.D **Column ID:**

Calibration Date(s): 31-OCT-13 16:21
31-OCT-13 19:59

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.200000(	0.500000(	1.0000	3.0000	7.0000	10.0000	New	b	m1	m2	%RSD	%RSD	
Naphthalene	0.96309	0.93491	1.04185	1.00619	0.87963	0.82958	AVG		0.94254		8.36882	15.00000	O
2-Methylnaphthalene	0.60656	0.63972	0.67181	0.61985	0.59038	0.56427	AVG		0.61543		6.12837	15.00000	O
Acenaphthylene	2.00512	2.16458	2.36783	2.43372	2.29282	2.25419	AVG		2.25304		6.78065	15.00000	O
Acenaphthene	1.31578	1.38547	1.46097	1.47851	1.42802	1.37832	AVG		1.40784		4.27034	15.00000	O
Fluorene	1.28456	1.31398	1.43297	1.50232	1.45499	1.45219	AVG		1.40683		6.17628	15.00000	O
Phenanthrene	1.07564	1.17825	1.25127	1.26339	1.24235	1.23855	AVG		1.20824		5.90565	15.00000	O
Anthracene	0.94468	1.04942	1.19695	1.20190	1.19427	1.19831	AVG		1.13092		9.62801	15.00000	O
Fluoranthene	0.86167	0.94040	1.08064	1.18362	1.19368	1.27333	AVG		1.08889		14.6775(	15.00000	O
Pyrene	3.20118	3.39511	3.01779	2.80147	2.68099	2.38352	AVG		2.91335		12.5937(	15.00000	O
Benzo(a)anthracene	2244	5287	22875	58365	187111	294145	LNR	0.20520	1.31812		0.99856	0.99000	O
Chrysene	1.99809	1.90882	1.89062	1.73379	1.61128	1.58952	AVG		1.78869		9.44887	15.00000	O
Benzo(b)fluoranthene	899	2138	10247	26800	109773	181895	QUA	0.27299	0.75767	-0.00871	0.99635	0.99000	O
Benzo(k)fluoranthene	2.06130	2.41510	2.63525	3.14119	2.69446	2.68942	AVG		2.60612		13.6766(	15.00000	O
Benzo(a)pyrene	955	2284	17831	39310	116101	190332	LNR	0.20314	1.76485		0.99895	0.99000	O
Indeno(1,2,3-cd)pyrene	418	892	4302	10331	37768	64349	QUA	0.16945	2.18844	-0.07281	0.99877	0.99000	O
Dibenzo(a,h)anthracene	459	1065	5845	13465	48415	82161	QUA	0.16903	1.68946	-0.04199	0.99897	0.99000	O
Benzo(g,h,i)perylene	1061	2345	11947	29035	87925	139093	LNR	0.17172	1.29934		0.99955	0.99000	O
2-Methylnaphthalene-D10	1.40030	1.26532	1.34974	1.25948	1.21359	1.18726	AVG		1.27928		6.34869	15.00000	
Fluorene-D10	1.03386	0.86099	0.92215	0.98946	0.97488	0.95254	AVG		0.95565		6.22996	15.00000	
Pyrene-D10	1.68558	1.67106	1.52052	1.42426	1.39811	1.24017	AVG		1.48995		11.5138(	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND627.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 01-NOV-13
Time Analyzed : 12:39

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	39.9		
68	Less than 2.0% of mass 69	0.5	1.20	1
69	Less than 100.0% of mass 198	45.4		
70	Less than 2.0% of mass 69	0.2	0.34	1
127	40.0 - 60.0% of mass 198	59.2		
197	Less than 1.0% of mass 198	0.7		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.0		
275	10.0 - 30.0% of mass 198	21.0		
365	1.0 - 100.0% of mass 198	2.1		
441	0.0 - 100.0% of mass 443	7.6	70.12	2
442	40.0 - 100.0% of mass 198	51.3		
443	17.0 - 23.0% of mass 442	10.8	21.14	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG133605-2	N0557.D	11/01/13	13:12
Method Blank Sample	WG133367-1RA	N0558.D	11/01/13	14:03
Laboratory Control S	WG133367-2RA	N0559.D	11/01/13	14:46
Laboratory Control S	WG133367-3RA	N0560.D	11/01/13	15:29
TF2-SS-RB03-1013	SG8254-33RE	N0561.D	11/01/13	16:12
003-SS1011-000.8	SG8254-22DL	N0562.D	11/01/13	16:56
003-SS1012-000.7	SG8254-24DL	N0563.D	11/01/13	17:39
003-SS1013-000.7	SG8254-25	N0564.D	11/01/13	18:22
003-SS1014-0001	SG8254-26	N0565.D	11/01/13	19:05
003-SS1015-000.8	SG8254-27	N0566.D	11/01/13	19:48
003-SS1016-000.9	SG8254-28	N0567.D	11/01/13	20:32
Matrix Spike	WG133188-4	N0568.D	11/01/13	21:14
Matrix Spike Duplica	WG133188-5	N0569.D	11/01/13	21:58
003-SS1017-000.8	SG8254-29	N0570.D	11/01/13	22:40
003-SS1018-000.8	SG8254-30	N0571.D	11/01/13	23:23
003-SS1019-000.5	SG8254-31	N0572.D	11/02/13	00:06

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133605-2 **Analytical Date:** 11/01/13 13:12
Lab File ID : N0557.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 10/31/13 16:21 10/31/13 19:59 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.94254	1.09291	1.09291	0.010	15.95351	20.00000	Averaged	
31 2-Methylnaphthalene	0.61543	0.68207	0.68207	0.010	10.82772	20.00000	Averaged	
42 Acenaphthylene	2.25304	2.50754	2.50754	0.010	11.29583	20.00000	Averaged	
45 Acenaphthene	1.40784	1.51999	1.51999	0.010	7.96567	20.01000	Averaged	
54 Fluorene	1.40683	1.45901	1.45901	0.010	3.70837	20.00000	Averaged	
64 Phenanthrene	1.20824	1.25711	1.25711	0.010	4.04466	20.00000	Averaged	
65 Anthracene	1.13092	1.23039	1.23039	0.010	8.79544	20.00000	Averaged	
68 Fluoranthene	1.08889	1.18396	1.18396	0.010	8.73100	20.01000	Averaged	
70 Pyrene	2.91335	2.76134	2.76134	0.010	-5.21746	20.00000	Averaged	
72 Benzo(a)anthracene	1.00000	1.21234	1.38163	0.010	21.23447	20.00000	Linear	*
74 Chrysene	1.78869	1.67672	1.67672	0.010	-6.25970	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.00000	1.21854	1.34607	0.010	21.85429	20.00000	Quadratic	*
79 Benzo(k)fluoranthene	2.60612	2.12770	2.12770	0.010	-18.35762	20.00000	Averaged	
80 Benzo(a)pyrene	1.00000	0.96871	1.42281	0.010	-3.12946	20.01000	Linear	
82 Indeno(1,2,3-cd)pyrene	1.00000	1.23299	0.51239	0.010	23.29906	20.00000	Quadratic	*
83 Dibenzo(a,h)anthracene	1.00000	1.18145	0.63167	0.010	18.14539	20.00000	Quadratic	
84 Benzo(g,h,i)perylene	1.00000	0.91428	1.00947	0.010	-8.57177	20.00000	Linear	
30 2-Methylnaphthalene-D10	1.27928	1.32553	1.32553	0.010	3.61522	20.00000	Averaged	
52 Fluorene-D10	0.95565	0.89932	0.89932	0.010	-5.89411	20.00000	Averaged	
69 Pyrene-D10	1.48995	1.39912	1.39912	0.010	-6.09650	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND628.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 04-NOV-13
Time Analyzed : 10:32

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	40.7		
68	Less than 2.0% of mass 69	0.4	0.84	1
69	Less than 100.0% of mass 198	43.2		
70	Less than 2.0% of mass 69	0.1	0.29	1
127	40.0 - 60.0% of mass 198	59.0		
197	Less than 1.0% of mass 198	0.8		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.9		
275	10.0 - 30.0% of mass 198	19.4		
365	1.0 - 100.0% of mass 198	2.0		
441	0.0 - 100.0% of mass 443	7.1	70.40	2
442	40.0 - 100.0% of mass 198	50.2		
443	17.0 - 23.0% of mass 442	10.1	20.17	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG133661-2	N0574.D	11/04/13	10:51
Method Blank Sample	WG133361-1	N0575.D	11/04/13	11:35
Laboratory Control S	WG133361-2	N0576.D	11/04/13	12:18
Laboratory Control S	WG133361-3	N0577.D	11/04/13	13:02
004/5-SS1055-000.8	SG8254-4	N0578.D	11/04/13	13:45
004/5-SS1054-000.6	SG8254-5	N0579.D	11/04/13	14:28
Matrix Spike	WG133361-4	N0580.D	11/04/13	15:12
Matrix Spike Duplica	WG133361-5	N0581.D	11/04/13	15:55
004/5-SS1053-000.6	SG8254-6	N0582.D	11/04/13	16:38
004/5-SS1052-000.6	SG8254-7	N0583.D	11/04/13	17:22
004/5-SS1051-000.8	SG8254-8	N0584.D	11/04/13	18:05
004/5-SS1050-000.6	SG8254-9	N0585.D	11/04/13	18:47
004/5-SS1060-000.5	SG8254-15	N0586.D	11/04/13	19:30
004/5-SS1059-000.6	SG8254-16	N0587.D	11/04/13	20:13
004/5-SS1058-000.5	SG8254-17	N0588.D	11/04/13	20:56
004/5-SS1065-000.5	SG8254-18	N0589.D	11/04/13	21:38
004/5-SS1063-000.6	SG8254-20	N0590.D	11/04/13	22:21

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133661-2 **Analytical Date:** 11/04/13 10:51
Lab File ID : N0574.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 10/31/13 16:21 10/31/13 19:59 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.94254	1.00564	1.00564	0.010	6.69459	20.00000	Averaged	
31 2-Methylnaphthalene	0.61543	0.66126	0.66126	0.010	7.44610	20.00000	Averaged	
42 Acenaphthylene	2.25304	2.43409	2.43409	0.010	8.03584	20.00000	Averaged	
45 Acenaphthene	1.40784	1.48440	1.48440	0.010	5.43771	20.01000	Averaged	
54 Fluorene	1.40683	1.47231	1.47231	0.010	4.65390	20.00000	Averaged	
64 Phenanthrene	1.20824	1.21308	1.21308	0.010	0.40032	20.00000	Averaged	
65 Anthracene	1.13092	1.19044	1.19044	0.010	5.26247	20.00000	Averaged	
68 Fluoranthene	1.08889	1.20471	1.20471	0.010	10.63628	20.01000	Averaged	
70 Pyrene	2.91335	2.55543	2.55543	0.010	-12.28522	20.00000	Averaged	
72 Benzo(a)anthracene	1.00000	1.17941	1.33821	0.010	17.94069	20.00000	Linear	
74 Chrysene	1.78869	1.59927	1.59927	0.010	-10.58985	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.00000	1.04077	1.10288	0.010	4.07697	20.00000	Quadratic	
79 Benzo(k)fluoranthene	2.60612	2.34603	2.34603	0.010	-9.98007	20.00000	Averaged	
80 Benzo(a)pyrene	1.00000	0.95807	1.40405	0.010	-4.19291	20.01000	Linear	
82 Indeno(1,2,3-cd)pyrene	1.00000	1.27373	0.53185	0.010	27.37298	20.00000	Quadratic	*
83 Dibenzo(a,h)anthracene	1.00000	1.31681	0.71528	0.010	31.68110	20.00000	Quadratic	*
84 Benzo(g,h,i)perylene	1.00000	1.02482	1.15310	0.010	2.48226	20.00000	Linear	
30 2-Methylnaphthalene-D10	1.27928	1.21258	1.21258	0.010	-5.21397	20.00000	Averaged	
52 Fluorene-D10	0.95565	0.94984	0.94984	0.010	-0.60708	20.00000	Averaged	
69 Pyrene-D10	1.48995	1.29298	1.29298	0.010	-13.21987	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND635.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 12-NOV-13
Time Analyzed : 11:09

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	38.3		
68	Less than 2.0% of mass 69	0.8	1.84	1
69	Less than 100.0% of mass 198	43.0		
70	Less than 2.0% of mass 69	0.0	0.08	1
127	40.0 - 60.0% of mass 198	58.8		
197	Less than 1.0% of mass 198	0.6		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.6		
275	10.0 - 30.0% of mass 198	21.5		
365	1.0 - 100.0% of mass 198	2.8		
441	0.0 - 100.0% of mass 443	9.9	75.17	2
442	40.0 - 100.0% of mass 198	69.1		
443	17.0 - 23.0% of mass 442	13.2	19.07	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG134292-4	N0698.D	11/12/13	11:30
Initial Calibration	WG134292-2	N0699.D	11/12/13	12:13
Initial Calibration	WG134292-3	N0700.D	11/12/13	12:57
Initial Calibration	WG134292-5	N0701.D	11/12/13	13:41
Initial Calibration	WG134292-6	N0702.D	11/12/13	14:25
Initial Calibration	WG134292-7	N0703.D	11/12/13	15:09
Independent Source	WG134292-8	N0704.D	11/12/13	15:53
004/5-SS1064-000.6	SG8254-19	N0705.D	11/12/13	16:37
Matrix Spike	WG133361-6	N0706.D	11/12/13	17:20
Matrix Spike Duplica	WG133361-7	N0707.D	11/12/13	18:04
004/5-SS1056-000.6	SG8254-3	N0708.D	11/12/13	18:47
004/5-SS-DUP04-1013	SG8254-11	N0709.D	11/12/13	19:29
004/5-SS1061-000.6	SG8254-12	N0710.D	11/12/13	20:12
004/5-SS1062-000.8	SG8254-10	N0711.D	11/12/13	20:55
004/5-SS1067-000.7	SG8254-13	N0712.D	11/12/13	21:38
004/5-SS1066-000.9	SG8254-14	N0713.D	11/12/13	22:21
004/5-SS1057-0001	SG8254-2	N0714.D	11/12/13	23:04

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GCMS-N
Lab File IDs : N0699.D N0700.D N0698.D **Column ID:**
N0701.D N0702.D N0703.D **Calibration Date(s):** 12-NOV-13 11:30
12-NOV-13 15:09

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.200000(	0.500000(	1.0000	3.0000	7.0000	10.0000	New	b	m1	m2	%RSD	%RSD	
Naphthalene	0.92957	1.02110	1.02538	1.04436	0.95461	0.91696	AVG		0.98200		5.58304	15.00000	O
2-Methylnaphthalene	18174	44145	87690	190432	418848	741810	LNR	-0.24748	0.58097		0.99843	0.99000	O
Acenaphthylene	1.96175	2.28624	2.38057	2.34588	2.36292	2.45840	AVG		2.29929		7.58920	15.00000	O
Acenaphthene	1.34970	1.47878	1.50122	1.43192	1.46463	1.48315	AVG		1.45157		3.79043	15.00000	O
Fluorene	1.45615	1.39396	1.49150	1.46957	1.46212	1.52542	AVG		1.46645		2.97150	15.00000	O
Phenanthrene	1.03379	1.12307	1.15319	1.11834	1.15790	1.19751	AVG		1.13063		4.89447	15.00000	O
Anthracene	1.15900	1.25181	1.24992	1.19976	1.19404	1.21745	AVG		1.21200		2.93645	15.00000	O
Fluoranthene	1.00524	1.10712	1.16790	1.12474	1.14603	1.23316	AVG		1.13070		6.67121	15.00000	O
Pyrene	2.55703	2.73519	2.41517	2.28175	2.26639	2.15180	AVG		2.40122		8.94494	15.00000	O
Benzo(a)anthracene	1.23865	1.25096	1.27862	1.18715	1.25857	1.33114	AVG		1.25751		3.76649	15.00000	O
Chrysene	1.78980	1.66992	1.57559	1.46259	1.40420	1.37232	AVG		1.54574		10.5473(	15.00000	O
Benzo(b)fluoranthene	1.33107	1.22619	1.46248	1.10893	1.25257	1.37661	AVG		1.29298		9.60676	15.00000	O
Benzo(k)fluoranthene	2.27393	2.06907	1.81963	2.05781	2.06183	2.01122	AVG		2.04891		7.08191	15.00000	O
Benzo(a)pyrene	1.43281	1.35542	1.31400	1.28464	1.35904	1.40922	AVG		1.35919		4.10109	15.00000	O
Indeno(1,2,3-cd)pyrene	0.87488	0.69735	0.78202	0.68546	0.73364	0.77484	AVG		0.75803		9.15010	15.00000	O
Dibenzo(a,h)anthracene	0.71125	0.74833	0.72292	0.70892	0.82473	0.82806	AVG		0.75737		7.29861	15.00000	O
Benzo(g,h,i)perylene	0.94169	1.16182	1.05695	1.01939	1.08085	1.05296	AVG		1.05228		6.87263	15.00000	O
2-Methylnaphthalene-D10	1.22688	1.29882	1.27198	1.22994	1.24102	1.24589	AVG		1.25242		2.22003	15.00000	
Fluorene-D10	1.04698	0.94788	0.97745	0.96115	0.96039	0.98435	AVG		0.97970		3.61814	15.00000	
Pyrene-D10	1.41466	1.44377	1.29031	1.19822	1.18809	1.13269	AVG		1.27796		10.0129(	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND636.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 13-NOV-13
Time Analyzed : 12:03

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	37.7		
68	Less than 2.0% of mass 69	0.8	1.76	1
69	Less than 100.0% of mass 198	45.2		
70	Less than 2.0% of mass 69	0.4	0.81	1
127	40.0 - 60.0% of mass 198	58.3		
197	Less than 1.0% of mass 198	0.8		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.6		
275	10.0 - 30.0% of mass 198	22.7		
365	1.0 - 100.0% of mass 198	3.1		
441	0.0 - 100.0% of mass 443	10.6	69.48	2
442	40.0 - 100.0% of mass 198	78.0		
443	17.0 - 23.0% of mass 442	15.3	19.59	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG134331-2	N0723.D	11/13/13	12:29
003-SS-DUP06-1013	SG8254-32	N0727.D	11/13/13	15:25
004/5-SS1067-000.7	SG8254-13DL	N0728.D	11/13/13	16:09
003-SS1013-000.7	SG8254-25DL	N0729.D	11/13/13	16:53
003-SS1014-0001	SG8254-26DL	N0730.D	11/13/13	17:36

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134331-2 **Analytical Date:** 11/13/13 12:29
Lab File ID : N0723.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 11/12/13 11:30 11/12/13 15:09 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.98200	1.08487	1.08487	0.010	10.47573	20.00000	Averaged	
31 2-Methylnaphthalene	1.00000	1.03847	0.71835	0.010	3.84734	20.00000	Linear	
42 Acenaphthylene	2.29929	2.24165	2.24165	0.010	-2.50709	20.00000	Averaged	
45 Acenaphthene	1.45157	1.41952	1.41952	0.010	-2.20752	20.01000	Averaged	
54 Fluorene	1.46645	1.36430	1.36430	0.010	-6.96597	20.00000	Averaged	
64 Phenanthrene	1.13063	1.17198	1.17198	0.010	3.65714	20.00000	Averaged	
65 Anthracene	1.21200	1.14113	1.14113	0.010	-5.84685	20.00000	Averaged	
68 Fluoranthene	1.13070	1.00646	1.00646	0.010	-10.98766	20.01000	Averaged	
70 Pyrene	2.40122	2.62468	2.62468	0.010	9.30607	20.00000	Averaged	
72 Benzo(a)anthracene	1.25751	1.24538	1.24538	0.010	-0.96452	20.00000	Averaged	
74 Chrysene	1.54574	1.41471	1.41471	0.010	-8.47697	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.29298	1.16781	1.16781	0.010	-9.68033	20.00000	Averaged	
79 Benzo(k)fluoranthene	2.04891	2.12729	2.12729	0.010	3.82548	20.00000	Averaged	
80 Benzo(a)pyrene	1.35919	1.28487	1.28487	0.010	-5.46767	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	0.75803	0.53515	0.53515	0.010	-29.40270	20.00000	Averaged	*
83 Dibenzo(a,h)anthracene	0.75737	0.63364	0.63364	0.010	-16.33712	20.00000	Averaged	
84 Benzo(g,h,i)perylene	1.05228	1.03017	1.03017	0.010	-2.10087	20.00000	Averaged	
30 2-Methylnaphthalene-D10	1.25242	1.31035	1.31035	0.010	4.62487	20.00000	Averaged	
52 Fluorene-D10	0.97970	0.93623	0.93623	0.010	-4.43722	20.00000	Averaged	
69 Pyrene-D10	1.27796	1.40929	1.40929	0.010	10.27641	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND637.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 14-NOV-13
Time Analyzed : 10:30

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	35.7		
68	Less than 2.0% of mass 69	0.5	1.14	1
69	Less than 100.0% of mass 198	40.1		
70	Less than 2.0% of mass 69	0.3	0.76	1
127	40.0 - 60.0% of mass 198	58.1		
197	Less than 1.0% of mass 198	0.3		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.6		
275	10.0 - 30.0% of mass 198	22.0		
365	1.0 - 100.0% of mass 198	2.9		
441	0.0 - 100.0% of mass 443	11.1	71.93	2
442	40.0 - 100.0% of mass 198	81.1		
443	17.0 - 23.0% of mass 442	15.4	19.00	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG134395-2	N0740.D	11/14/13	10:51
003-SS1019-000.5	SG8254-31DL	N0745.D	11/14/13	14:29

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134395-2 **Analytical Date:** 11/14/13 10:51
Lab File ID : N0740.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 11/12/13 11:30 11/12/13 15:09 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.98200	0.99178	0.99178	0.010	0.99680	20.00000	Averaged	
31 2-Methylnaphthalene	1.00000	1.17360	0.79685	0.010	17.35989	20.00000	Linear	
42 Acenaphthylene	2.29929	2.25011	2.25011	0.010	-2.13898	20.00000	Averaged	
45 Acenaphthene	1.45157	1.35908	1.35908	0.010	-6.37169	20.01000	Averaged	
54 Fluorene	1.46645	1.37534	1.37534	0.010	-6.21336	20.00000	Averaged	
64 Phenanthrene	1.13063	1.10722	1.10722	0.010	-2.07063	20.00000	Averaged	
65 Anthracene	1.21200	1.18327	1.18327	0.010	-2.36995	20.00000	Averaged	
68 Fluoranthene	1.13070	1.12327	1.12327	0.010	-0.65697	20.01000	Averaged	
70 Pyrene	2.40122	2.19454	2.19454	0.010	-8.60730	20.00000	Averaged	
72 Benzo(a)anthracene	1.25751	1.23252	1.23252	0.010	-1.98735	20.00000	Averaged	
74 Chrysene	1.54574	1.40350	1.40350	0.010	-9.20164	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.29298	1.18198	1.18198	0.010	-8.58435	20.00000	Averaged	
79 Benzo(k)fluoranthene	2.04891	1.86578	1.86578	0.010	-8.93804	20.00000	Averaged	
80 Benzo(a)pyrene	1.35919	1.21841	1.21841	0.010	-10.35768	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	0.75803	0.91990	0.91990	0.010	21.35453	20.00000	Averaged	*
83 Dibenzo(a,h)anthracene	0.75737	0.63573	0.63573	0.010	-16.06122	20.00000	Averaged	
84 Benzo(g,h,i)perylene	1.05228	0.88165	0.88165	0.010	-16.21494	20.00000	Averaged	
30 2-Methylnaphthalene-D10	1.25242	1.20030	1.20030	0.010	-4.16178	20.00000	Averaged	
52 Fluorene-D10	0.97970	0.92905	0.92905	0.010	-5.16946	20.00000	Averaged	
69 Pyrene-D10	1.27796	1.26978	1.26978	0.010	-0.63961	20.00000	Averaged	

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : N0547.D
Instrument ID : GCMS-N
Matrix : SL

SDG : SG8254
Lab Sample ID : WG133188-1RA
Date Extracted : 25-OCT-13
Date Analyzed : 31-OCT-13
Time Analyzed : 21:25

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133188-2	N0531.D	10/30/13	17:45
Laboratory Control S	WG133188-3	N0532.D	10/30/13	18:28
004/5-SS1068-000.5	SG8254-21	N0553.D	11/01/13	01:44
003-SS1011-000.8	SG8254-22	N0554.D	11/01/13	02:27
004/5-SS-DUP05-1013	SG8254-23	N0555.D	11/01/13	03:10
003-SS1012-000.7	SG8254-24	N0556.D	11/01/13	03:53
003-SS1011-000.8	SG8254-22DL	N0562.D	11/01/13	16:56
003-SS1012-000.7	SG8254-24DL	N0563.D	11/01/13	17:39
003-SS1013-000.7	SG8254-25	N0564.D	11/01/13	18:22
003-SS1014-0001	SG8254-26	N0565.D	11/01/13	19:05
003-SS1015-000.8	SG8254-27	N0566.D	11/01/13	19:48
003-SS1016-000.9	SG8254-28	N0567.D	11/01/13	20:32
Matrix Spike	WG133188-4	N0568.D	11/01/13	21:14
Matrix Spike Duplica	WG133188-5	N0569.D	11/01/13	21:58
003-SS1017-000.8	SG8254-29	N0570.D	11/01/13	22:40
003-SS1018-000.8	SG8254-30	N0571.D	11/01/13	23:23
003-SS1019-000.5	SG8254-31	N0572.D	11/02/13	00:06
003-SS-DUP06-1013	SG8254-32	N0727.D	11/13/13	15:25
003-SS1013-000.7	SG8254-25DL	N0729.D	11/13/13	16:53
003-SS1014-0001	SG8254-26DL	N0730.D	11/13/13	17:36
003-SS1019-000.5	SG8254-31DL	N0745.D	11/14/13	14:29

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Report of Analytical Results

Client:
Lab ID: WG133188-1RA
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: N0547.D

Sample Date:
Received Date:
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	6.6	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	J	2.5	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		41.8	%					
Fluorene-D10		57.7	%					
Pyrene-D10		83.3	%					

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LCS/LCSD Recovery Report

LCS ID: WG133188-2
LCSD ID: WG133188-3
Project:
SDG: SG8254
Report Date: 15-NOV-13
LCS File ID: N0531.D

Received Date:
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188
LCSD File ID: N0532.D

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	36.5	54.7	34.5	51.7	ug/Kgdrywt	6	30	10-129
2-Methylnaphthalene	66.7	34.8	52.2	31.2	46.8	ug/Kgdrywt	11	30	10-152
Acenaphthylene	66.7	23.1	34.6	22.1	33.1	ug/Kgdrywt	4	30	25-94
Acenaphthene	66.7	34.9	52.3	30.0	45.0	ug/Kgdrywt	15	30	33-98
Fluorene	66.7	40.0	60.0	32.0	48.0	ug/Kgdrywt	22	30	40-92
Phenanthrene	66.7	46.9	70.3	45.2	67.8	ug/Kgdrywt	4	30	46-96
Anthracene	66.7	44.4	66.6	44.6	66.9	ug/Kgdrywt	0	30	34-96
Fluoranthene	66.7	57.8	86.6	47.8	71.7	ug/Kgdrywt	19	30	38-116
Pyrene	66.7	42.6	63.9	44.0	66.0	ug/Kgdrywt	3	30	35-111
Benzo(a)anthracene	66.7	45.6	68.4	46.6	69.9	ug/Kgdrywt	2	30	48-100
Chrysene	66.7	49.9	74.8	40.9	61.3	ug/Kgdrywt	20	30	46-101
Benzo(b)Fluoranthene	66.7	34.4	51.6*	28.5	42.7*	ug/Kgdrywt	19	30	53-100
Benzo(k)fluoranthene	66.7	54.0	81.0	48.4	72.6	ug/Kgdrywt	11	30	49-96
Benzo(a)pyrene	66.7	28.3	42.4*	35.3	52.9*	ug/Kgdrywt	22	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	35.7	53.5	29.3	43.9*	ug/Kgdrywt	20	30	50-105
Dibenzo(a,h)anthracene	66.7	45.5	68.2	38.9	58.3	ug/Kgdrywt	16	30	55-105
Benzo(g,h,i)perylene	66.7	32.8	49.2*	21.5	32.2*	ug/Kgdrywt	42*	30	53-103
2-Methylnaphthalene-D10			42.6		36.8				19-94
Fluorene-D10			61.9		47.7				20-96
Pyrene-D10			75.0		86.1				31-128

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MS/MSD Recovery Report

MS ID: WG133188-4
MSD ID: WG133188-5
Sample ID: SG8254-28
Client ID: 003-SS1016-000.9
Project:
SDG: SG8254
MS File ID: N0568.D

Received Date:
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188
Report Date: 15-NOV-13
MSD File ID: N0569.D

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits	
Naphthalene	69.2	71.0	ug/Kgdrywt	J9.2	52.	44.	61.4	49.5	15	30	10-129	
2-Methylnaphthalene	69.2	71.0	ug/Kgdrywt	J4.3	47.	46.	62.0	58.4	3	30	10-152	
Acenaphthylene	69.2	71.0	ug/Kgdrywt	J4.3	46.	49.	59.7	62.8	7	30	25-94	
Acenaphthene	69.2	71.0	ug/Kgdrywt	J14.	64.	50.	71.8	50.6	24	30	33-98	
Fluorene	69.2	71.0	ug/Kgdrywt	J14.	69.	59.	79.6	64.5	14	30	40-92	
Phenanthrene	69.2	71.0	ug/Kgdrywt	M220	260	200	63.6	0*	28	30	46-96	C, K
Anthracene	69.2	71.0	ug/Kgdrywt	30.	85.	75.	79.5	62.8	13	30	34-96	
Fluoranthene	69.2	71.0	ug/Kgdrywt	M340	380	300	49.1	0*	23	30	38-116	C, K
Pyrene	69.2	71.0	ug/Kgdrywt	MM320	320	280	0*	0*	14	30	35-111	C, K
Benzo(a)anthracene	69.2	71.0	ug/Kgdrywt	MM200	230	200	39.0*	5.63*	11	30	48-100	C, K
Chrysene	69.2	71.0	ug/Kgdrywt	MM180	200	180	26.0*	0*	12	30	46-101	C, K
Benzo(b)Fluoranthene	69.2	71.0	ug/KgdrywtLL	MM240	260	230	31.8*	0*	12	30	53-100	C, K
Benzo(k)fluoranthene	69.2	71.0	ug/Kgdrywt	MM80.	100	90.	32.8*	13.2*	14	30	49-96	J
Benzo(a)pyrene	69.2	71.0	ug/KgdrywtLL	MM150	160	140	13.0*	0*	9	30	61-101	C, K
Indeno(1,2,3-cd)pyrene	69.2	71.0	ug/KgdrywtLL	MM230	230	220	11.6*	0*	5	30	50-105	C, K
Dibenzo(a,h)anthracene	69.2	71.0	ug/Kgdrywt	MM42.	74.	74.	46.1*	44.8*	0	30	55-105	J
Benzo(g,h,i)perylene	69.2	71.0	ug/KgdrywtLL	MM66	82.	76.	23.3*	14.8*	7	30	53-103	J
2-Methylnaphthalene-D10							48.4	46.6			19-94	
Fluorene-D10							72.1	72.1			20-96	
Pyrene-D10							70.5	69.7			31-128	

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Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133361-1
Lab File ID : N0575.D
Date Extracted : 28-OCT-13
Instrument ID : GCMS-N
Date Analyzed : 04-NOV-13
Matrix : SL
Time Analyzed : 11:35

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133361-2	N0576.D	11/04/13	12:18
Laboratory Control S	WG133361-3	N0577.D	11/04/13	13:02
004/5-SS1055-000.8	SG8254-4	N0578.D	11/04/13	13:45
004/5-SS1054-000.6	SG8254-5	N0579.D	11/04/13	14:28
Matrix Spike	WG133361-4	N0580.D	11/04/13	15:12
Matrix Spike Duplica	WG133361-5	N0581.D	11/04/13	15:55
004/5-SS1053-000.6	SG8254-6	N0582.D	11/04/13	16:38
004/5-SS1052-000.6	SG8254-7	N0583.D	11/04/13	17:22
004/5-SS1051-000.8	SG8254-8	N0584.D	11/04/13	18:05
004/5-SS1050-000.6	SG8254-9	N0585.D	11/04/13	18:47
004/5-SS1060-000.5	SG8254-15	N0586.D	11/04/13	19:30
004/5-SS1059-000.6	SG8254-16	N0587.D	11/04/13	20:13
004/5-SS1058-000.5	SG8254-17	N0588.D	11/04/13	20:56
004/5-SS1065-000.5	SG8254-18	N0589.D	11/04/13	21:38
004/5-SS1063-000.6	SG8254-20	N0590.D	11/04/13	22:21
004/5-SS1064-000.6	SG8254-19	N0705.D	11/12/13	16:37
Matrix Spike	WG133361-6	N0706.D	11/12/13	17:20
Matrix Spike Duplica	WG133361-7	N0707.D	11/12/13	18:04
004/5-SS1056-000.6	SG8254-3	N0708.D	11/12/13	18:47
004/5-SS-DUP04-1013	SG8254-11	N0709.D	11/12/13	19:29
004/5-SS1061-000.6	SG8254-12	N0710.D	11/12/13	20:12
004/5-SS1062-000.8	SG8254-10	N0711.D	11/12/13	20:55
004/5-SS1067-000.7	SG8254-13	N0712.D	11/12/13	21:38
004/5-SS1066-000.9	SG8254-14	N0713.D	11/12/13	22:21
004/5-SS1057-0001	SG8254-2	N0714.D	11/12/13	23:04
004/5-SS1067-000.7	SG8254-13DL	N0728.D	11/13/13	16:09

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG133361-1
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: N0575.D

Sample Date:
Received Date:
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		50.3	%					
Fluorene-D10		66.8	%					
Pyrene-D10		79.3	%					

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LCS/LCSD Recovery Report

LCS ID: WG133361-2
LCSD ID: WG133361-3
Project:
SDG: SG8254
Report Date: 15-NOV-13
LCS File ID: N0576.D

Received Date:
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361
LCSD File ID: N0577.D

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	38.5	57.7	24.7	37.0	ug/Kgdrywt	44*	30	10-129
2-Methylnaphthalene	66.7	37.7	56.5	22.6	33.9	ug/Kgdrywt	50*	30	10-152
Acenaphthylene	66.7	36.8	55.2	23.2	34.8	ug/Kgdrywt	45*	30	25-94
Acenaphthene	66.7	39.7	59.5	25.6	38.4	ug/Kgdrywt	43*	30	33-98
Fluorene	66.7	45.0	67.5	29.1	43.6	ug/Kgdrywt	43*	30	40-92
Phenanthrene	66.7	51.2	76.8	33.6	50.4	ug/Kgdrywt	42*	30	46-96
Anthracene	66.7	52.8	79.2	32.6	48.9	ug/Kgdrywt	47*	30	34-96
Fluoranthene	66.7	62.3	93.4	45.6	68.4	ug/Kgdrywt	31*	30	38-116
Pyrene	66.7	45.4	68.1	34.1	51.1	ug/Kgdrywt	28	30	35-111
Benzo(a)anthracene	66.7	58.5	87.7	39.2	58.8	ug/Kgdrywt	40*	30	48-100
Chrysene	66.7	49.6	74.4	33.2	49.8	ug/Kgdrywt	40*	30	46-101
Benzo(b)Fluoranthene	66.7	54.6	81.8	36.2	54.3	ug/Kgdrywt	40*	30	53-100
Benzo(k)fluoranthene	66.7	47.7	71.5	30.3	45.4*	ug/Kgdrywt	45*	30	49-96
Benzo(a)pyrene	66.7	47.1	70.6	31.4	47.1*	ug/Kgdrywt	40*	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	60.9	91.3	35.0	52.5	ug/Kgdrywt	54*	30	50-105
Dibenzo(a,h)anthracene	66.7	56.6	84.8	35.5	53.2*	ug/Kgdrywt	46*	30	55-105
Benzo(g,h,i)perylene	66.7	32.2	48.3*	21.9	32.8*	ug/Kgdrywt	38*	30	53-103
2-Methylnaphthalene-D10			46.8		28.1				19-94
Fluorene-D10			66.2		41.9				20-96
Pyrene-D10			71.5		45.3				31-128

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MS/MSD Recovery Report

MS ID: WG133361-4
MSD ID: WG133361-5
Sample ID: SG8254-5
Client ID: 004/5-SS1054-000.6
Project:
SDG: SG8254
MS File ID: N0580.D

Received Date:
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361
Report Date: 15-NOV-13
MSD File ID: N0581.D

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	65.3	66.6	ug/Kgdrywt	U9.8	43.	45.	66.3	68.0	4	30	10-129
2-Methylnaphthalene	65.3	66.6	ug/Kgdrywt	U9.8	45.	46.	68.3	68.4	2	30	10-152
Acenaphthylene	65.3	66.6	ug/Kgdrywt	U9.8	41.	42.	62.2	63.4	4	30	25-94
Acenaphthene	65.3	66.6	ug/Kgdrywt	U9.8	44.	46.	67.5	68.6	4	30	33-98
Fluorene	65.3	66.6	ug/Kgdrywt	U9.8	48.	51.	73.2	77.2	7	30	40-92
Phenanthrene	65.3	66.6	ug/Kgdrywt	J15.	64.	68.	74.1	79.3	7	30	46-96
Anthracene	65.3	66.6	ug/Kgdrywt	J1.9	50.	52.	73.2	75.6	5	30	34-96
Fluoranthene	65.3	66.6	ug/Kgdrywt	44.	100	100	85.3	89.7	4	30	38-116
Pyrene	65.3	66.6	ug/Kgdrywt	32.	80.	86.	73.8	80.8	7	30	35-111
Benzo(a)anthracene	65.3	66.6	ug/Kgdrywt	23.	72.	76.	73.8	79.0	6	30	48-100
Chrysene	65.3	66.6	ug/Kgdrywt	21.	64.	67.	65.7	68.0	4	30	46-101
Benzo(b)Fluoranthene	65.3	66.6	ug/Kgdrywt	35.	72.	76.	57.4	62.0	5	30	53-100
Benzo(k)fluoranthene	65.3	66.6	ug/Kgdrywt	JL11.	44.	47.	51.4	54.4	6	30	49-96
Benzo(a)pyrene	65.3	66.6	ug/Kgdrywt	JL19.	49.	51.	46.4*	48.4*	4	30	61-101
Indeno(1,2,3-cd)pyrene	65.3	66.6	ug/Kgdrywt	33.	81.	79.	72.9	68.2	3	30	50-105
Dibenzo(a,h)anthracene	65.3	66.6	ug/Kgdrywt	JL7.7	53.	54.	68.7	69.6	3	30	55-105
Benzo(g,h,i)perylene	65.3	66.6	ug/Kgdrywt	JLL11.	31.	31.	30.0*	30.3*	2	30	53-103
2-Methylnaphthalene-D10							54.2	54.5			19-94
Fluorene-D10							75.0	76.0			20-96
Pyrene-D10							77.5	79.4			31-128

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MS/MSD Recovery Report

MS ID: WG133361-6
MSD ID: WG133361-7
Sample ID: SG8254-19
Client ID: 004/5-SS1064-000.6
Project:
SDG: SG8254
MS File ID: N0706.D

Received Date:
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361
Report Date: 15-NOV-13
MSD File ID: N0707.D

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	63.1	66.0	ug/Kgdrywt	U9.3	42.	44.	66.7	67.3	5	30	10-129
2-Methylnaphthalene	63.1	66.0	ug/Kgdrywt	U9.3	49.	51.	77.0	77.5	5	30	10-152
Acenaphthylene	63.1	66.0	ug/Kgdrywt	U9.3	34.	38.	54.6	58.4	11	30	25-94
Acenaphthene	63.1	66.0	ug/Kgdrywt	U9.3	38.	46.	60.3	69.7	19	30	33-98
Fluorene	63.1	66.0	ug/Kgdrywt	U9.3	41.	50.	64.6	75.3	20	30	40-92
Phenanthrene	63.1	66.0	ug/Kgdrywt	JM15.	64.	79.	77.1	97.0*	21	30	46-96
Anthracene	63.1	66.0	ug/Kgdrywt	J1.4	35.	39.	53.8	57.0	10	30	34-96
Fluoranthene	63.1	66.0	ug/Kgdrywt	M34.	84.	120	78.9	130.*	35*	30	38-116
Pyrene	63.1	66.0	ug/Kgdrywt	M29.	82.	100	83.9	115.*	24	30	35-111
Benzo(a)anthracene	63.1	66.0	ug/Kgdrywt	J14.	57.	68.	69.1	82.9	18	30	48-100
Chrysene	63.1	66.0	ug/Kgdrywt	19.	61.	68.	66.5	75.2	12	30	46-101
Benzo(b)Fluoranthene	63.1	66.0	ug/Kgdrywt	21.	64.	84.	69.1	96.9	27	30	53-100
Benzo(k)fluoranthene	63.1	66.0	ug/Kgdrywt	JL11.	44.	44.	52.4	50.6	1	30	49-96
Benzo(a)pyrene	63.1	66.0	ug/KgdrywtJLMM13.		43.	49.	47.7*	54.1*	12	30	61-101
Indeno(1,2,3-cd)pyrene	63.1	66.0	ug/KgdrywtJMM11.		32.	40.	33.4*	43.2*	20	30	50-105
Dibenzo(a,h)anthracene	63.1	66.0	ug/KgdrywtJLMM1.8		30.	34.	47.0*	52.1*	15	30	55-105
Benzo(g,h,i)perylene	63.1	66.0	ug/KgdrywtJLLMM5		20.	22.	24.1*	25.8*	8	30	53-103
2-Methylnaphthalene-D10							52.1	53.3			19-94
Fluorene-D10							68.6	69.2			20-96
Pyrene-D10							75.3	68.6			31-128

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : N0558.D
Instrument ID : GCMS-N
Matrix : AQ

SDG : SG8254
Lab Sample ID : WG133367-1RA
Date Extracted : 28-OCT-13
Date Analyzed : 01-NOV-13
Time Analyzed : 14:03

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133367-2RA	N0559.D	11/01/13	14:46
Laboratory Control S	WG133367-3RA	N0560.D	11/01/13	15:29
TF2-SS-RB03-1013	SG8254-33RE	N0561.D	11/01/13	16:12

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Report of Analytical Results

Client:
Lab ID: WG133367-1RA
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: N0558.D

Sample Date:
Received Date:
Extract Date: 28-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133367

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	J	0.044	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	J	0.059	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		60.2	%					
Fluorene-D10		72.3	%					
pyrene-d10		90.1	%					

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LCS/LCSD Recovery Report

LCS ID: WG133367-2RA
LCSD ID: WG133367-3RA
Project:
SDG: SG8254
Report Date: 15-NOV-13
LCS File ID: N0559.D

Received Date:
Extract Date: 28-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133367
LCSD File ID: N0560.D

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	2.00	1.27	63.5	1.29	64.5	ug/L	2	20	46-84
2-Methylnaphthalene	2.00	1.21	60.5	1.22	61.0	ug/L	1	20	51-114
Acenaphthylene	2.00	1.19	59.5	1.21	60.5	ug/L	2	20	55-105
Acenaphthene	2.00	1.24	62.0	1.27	63.5	ug/L	2	20	53-90
Fluorene	2.00	1.41	70.5	1.36	68.0	ug/L	4	20	53-95
Phenanthrene	2.00	1.58	79.0	1.53	76.5	ug/L	3	20	73-100
Anthracene	2.00	1.68	84.0	1.63	81.5	ug/L	3	20	70-95
Fluoranthene	2.00	1.67	83.5	1.68	84.0	ug/L	0	20	81-109
Pyrene	2.00	1.53	76.5	1.52	76.0	ug/L	1	20	71-104
Benzo(a)anthracene	2.00	1.67	83.5	1.58	79.0	ug/L	6	20	70-110
Chrysene	2.00	1.50	75.0	1.54	77.0	ug/L	3	20	70-95
Benzo(b)Fluoranthene	2.00	1.76	88.0	1.61	80.5	ug/L	9	20	67-102
Benzo(k)fluoranthene	2.00	1.32	66.0*	1.40	70.0	ug/L	6	20	68-103
Benzo(a)pyrene	2.00	1.42	71.0	1.41	70.5	ug/L	1	20	63-98
Indeno(1,2,3-cd)pyrene	2.00	1.76	88.0	1.79	89.5	ug/L	2	20	61-112
Dibenzo(a,h)anthracene	2.00	1.76	88.0	1.64	82.0	ug/L	7	20	66-108
Benzo(g,h,i)perylene	2.00	1.40	70.0	1.47	73.5	ug/L	5	20	62-106
2-Methylnaphthalene-D10			51.7		56.6				43-92
Fluorene-D10			69.4		70.5				29-101
Pyrene-d10			79.2		79.5				53-166

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133485-4
Lab File ID : N0523.D

SDG: SG8254
Analytical Date: 10/30/13 11:51
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	28940		9.13		80684		11.90		30691		16.00	
	Upper Limit	57880		9.63		161368		12.40		61382		16.50	
	Lower Limit	14470		8.63		40342		11.40		15345.5		15.50	
Client Sample ID	Lab Sample ID												
Laboratory Control S	WG133188-2	23271		9.13		43506		11.90		17113		16.00	
Laboratory Control S	WG133188-3	25610		9.13		71565		11.90		30436		16.00	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133485-4
Lab File ID : N0523.D

SDG: SG8254
Analytical Date: 10/30/13 11:51
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	45047	19.48	20519	25.77	16650	28.90
	Upper Limit	90094	19.98	41038	26.27	33300	29.40
	Lower Limit	22523.5	18.98	10259.5	25.27	8325	28.40
Client Sample ID	Lab Sample ID						
Laboratory Control S	WG133188-2	28286	19.48	15517	25.77	10172	28.90
Laboratory Control S	WG133188-3	36159	19.48	16544	25.77	11411	28.90

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133553-4
Lab File ID : N0540.D

SDG: SG8254
Analytical Date: 10/31/13 16:21
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT #	Area	#	RT #	Area	#	RT #
	Std .	20009		9.11	66912		11.90	27626		15.99
	Upper Limit	40018		9.61	133824		12.40	55252		16.49
	Lower Limit	10004.5		8.61	33456		11.40	13813		15.49
Client Sample ID	Lab Sample ID									
Method Blank Sample	WG133188-1RA	16588		9.11	54760		11.90	22707		15.99
004/5-SS1068-000.5	SG8254-21	23202		9.11	81870		11.90	36578		16.00
003-SS1011-000.8	SG8254-22	23228		9.11	84446		11.90	37968		15.99
004/5-SS-DUP05-1013	SG8254-23	22475		9.11	79460		11.90	36046		16.00
003-SS1012-000.7	SG8254-24	23232		9.11	84183		11.90	39206		15.99
Continuing Calibrati	WG133605-2	21038		9.11	69979		11.88	28506		15.99
Method Blank Sample	WG133367-1RA	21763		9.11	78380		11.90	32898		15.99
Laboratory Control S	WG133367-2RA	20129		9.11	67404		11.88	29457		15.99
Laboratory Control S	WG133367-3RA	16606		9.11	54693		11.90	22415		15.99
TF2-SS-RB03-1013	SG8254-33RE	14692		9.13	49649		11.90	21920		16.00
003-SS1011-000.8	SG8254-22DL	16870		9.11	58162		11.90	25559		15.99
003-SS1012-000.7	SG8254-24DL	15738		9.13	49449		11.90	21490		15.99
003-SS1013-000.7	SG8254-25	15615		9.11	52766		11.90	23737		15.99
003-SS1014-0001	SG8254-26	18751		9.11	64751		11.90	29123		15.99
003-SS1015-000.8	SG8254-27	20324		9.11	71393		11.90	32772		15.99
003-SS1016-000.9	SG8254-28	19205		9.11	65783		11.90	30856		15.99
Matrix Spike	WG133188-4	19335		9.11	66554		11.88	31539		15.99
Matrix Spike Duplica	WG133188-5	19398		9.11	68232		11.88	33274		15.99
003-SS1017-000.8	SG8254-29	22347		9.11	79172		11.90	35634		15.99
003-SS1018-000.8	SG8254-30	16315		9.11	58308		11.90	27019		15.99
003-SS1019-000.5	SG8254-31	19497		9.11	70634		11.90	33500		15.99

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133553-4
Lab File ID : N0540.D

SDG: SG8254
Analytical Date: 10/31/13 16:21
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	40884	19.48	16478	25.76	9311	28.89
	Upper Limit	81768	19.98	32956	26.26	18622	29.39
	Lower Limit	20442	18.98	8239	25.26	4655.5	28.39
Client Sample ID	Lab Sample ID						
Method Blank Sample	WG133188-1RA	38585	19.48	15519	25.76	7888	28.89
004/5-SS1068-000.5	SG8254-21	61774	19.48	25673	25.76	17138	28.89
003-SS1011-000.8	SG8254-22	64844	19.47	23704	25.76	15883	28.89
004/5-SS-DUP05-1013	SG8254-23	61075	19.48	25665	25.76	18307	28.89
003-SS1012-000.7	SG8254-24	67354	19.47	25930	25.76	17348	28.89
Continuing Calibrati	WG133605-2	40300	19.48	18801	25.76	12019	28.89
Method Blank Sample	WG133367-1RA	49091	19.48	20699	25.76	12173	28.89
Laboratory Control S	WG133367-2RA	46023	19.47	20591	25.74	12076	28.89
Laboratory Control S	WG133367-3RA	34718	19.47	15837	25.76	8880	28.89
TF2-SS-RB03-1013	SG8254-33RE	33292	19.48	16665	25.76	9114	28.89
003-SS1011-000.8	SG8254-22DL	41089	19.47	16334	25.74	10707	28.89
003-SS1012-000.7	SG8254-24DL	34251	19.47	16235	25.74	11437	28.89
003-SS1013-000.7	SG8254-25	41327	19.47	16229	25.76	9827	28.89
003-SS1014-0001	SG8254-26	50775	19.47	20866	25.74	13456	28.89
003-SS1015-000.8	SG8254-27	57420	19.47	25904	25.74	17890	28.89
003-SS1016-000.9	SG8254-28	56491	19.47	21387	25.74	12516	28.89
Matrix Spike	WG133188-4	56864	19.47	22247	25.74	13049	28.89
Matrix Spike Duplica	WG133188-5	61093	19.47	23177	25.74	14199	28.89
003-SS1017-000.8	SG8254-29	58619	19.47	23401	25.74	12886	28.89
003-SS1018-000.8	SG8254-30	47850	19.47	19653	25.76	13093	28.89
003-SS1019-000.5	SG8254-31	59799	19.47	23936	25.76	15640	28.89

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

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* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133553-4
Lab File ID : N0540.D

SDG: SG8254
Analytical Date: 10/31/13 16:21
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	20009		9.11		66912		11.90		27626		15.99	
	Upper Limit	40018		9.61		133824		12.40		55252		16.49	
	Lower Limit	10004.5		8.61		33456		11.40		13813		15.49	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG133661-2	22149		9.10		75973		11.88		31889		15.97	
Method Blank Sample	WG133361-1	16226		9.11		54075		11.90		23489		15.99	
Laboratory Control S	WG133361-2	16247		9.10		53425		11.88		23370		15.97	
Laboratory Control S	WG133361-3	15743		9.10		53634		11.88		23776		15.97	
004/5-SS1055-000.8	SG8254-4	16263		9.10		53930		11.90		23621		15.99	
004/5-SS1054-000.6	SG8254-5	17629		9.10		58230		11.90		26311		15.99	
Matrix Spike	WG133361-4	16480		9.10		55788		11.88		25441		15.97	
Matrix Spike Duplica	WG133361-5	16232		9.10		55232		11.88		25739		15.97	
004/5-SS1053-000.6	SG8254-6	15397		9.10		50735		11.90		23042		15.99	
004/5-SS1052-000.6	SG8254-7	15665		9.10		52803		11.90		24736		15.99	
004/5-SS1051-000.8	SG8254-8	17734		9.10		60111		11.90		27671		15.99	
004/5-SS1050-000.6	SG8254-9	17114		9.10		57038		11.90		27208		15.99	
004/5-SS1060-000.5	SG8254-15	16214		9.10		54224		11.90		26105		15.99	
004/5-SS1059-000.6	SG8254-16	16821		9.10		56127		11.90		25693		15.99	
004/5-SS1058-000.5	SG8254-17	16731		9.10		56605		11.90		26259		15.99	
004/5-SS1065-000.5	SG8254-18	17615		9.10		58274		11.90		27068		15.99	
004/5-SS1063-000.6	SG8254-20	16105		9.10		53861		11.90		24669		15.99	

Area Upper Limit = +100% of internal standard area
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RT Lower Limit = - 0.50 minutes of internal standard RT

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133553-4
Lab File ID : N0540.D

SDG: SG8254
Analytical Date: 10/31/13 16:21
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	40884	19.48	16478	25.76	9311	28.89
	Upper Limit	81768	19.98	32956	26.26	18622	29.39
	Lower Limit	20442	18.98	8239	25.26	4655.5	28.39
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG133661-2	50737	19.47	26177	25.74	17253	28.89
Method Blank Sample	WG133361-1	37632	19.47	19180	25.74	10762	28.89
Laboratory Control S	WG133361-2	39370	19.47	21493	25.74	12973	28.89
Laboratory Control S	WG133361-3	40684	19.47	20402	25.74	13014	28.89
004/5-SS1055-000.8	SG8254-4	40843	19.47	20985	25.74	13497	28.87
004/5-SS1054-000.6	SG8254-5	44628	19.47	20305	25.74	13152	28.87
Matrix Spike	WG133361-4	44461	19.47	20230	25.74	13483	28.87
Matrix Spike Duplica	WG133361-5	44814	19.47	19569	25.74	12478	28.87
004/5-SS1053-000.6	SG8254-6	40192	19.47	16504	25.74	11112	28.87
004/5-SS1052-000.6	SG8254-7	44569	19.47	18760	25.74	13098	28.87
004/5-SS1051-000.8	SG8254-8	47856	19.47	20549	25.74	13489	28.87
004/5-SS1050-000.6	SG8254-9	47831	19.47	20817	25.74	14916	28.87
004/5-SS1060-000.5	SG8254-15	47280	19.47	21110	25.74	13960	28.87
004/5-SS1059-000.6	SG8254-16	46660	19.47	21292	25.74	14141	28.89
004/5-SS1058-000.5	SG8254-17	47771	19.47	20267	25.74	12447	28.87
004/5-SS1065-000.5	SG8254-18	50385	19.47	22855	25.74	14799	28.87
004/5-SS1063-000.6	SG8254-20	46523	19.47	22494	25.74	13910	28.89

Area Upper Limit = +100% of internal standard area
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RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG134292-4
Lab File ID : N0698.D

SDG: SG8254
Analytical Date: 11/12/13 11:30
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4		NAPHTHALENE-D8		ACENAPHTHENE-D10	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	27788	9.08	90382	11.86	35164	15.95
	Upper Limit	55576	9.58	180764	12.36	70328	16.45
	Lower Limit	13894	8.58	45191	11.36	17582	15.45
Client Sample ID	Lab Sample ID						
004/5-SS1064-000.6	SG8254-19	26015	9.07	73941	11.86	31898	15.95
Matrix Spike	WG133361-6	29565	9.07	83706	11.84	36730	15.94
Matrix Spike Duplica	WG133361-7	29791	9.07	85367	11.84	36260	15.94
004/5-SS1056-000.6	SG8254-3	30909	9.07	93372	11.86	39837	15.95
004/5-SS-DUP04-1013	SG8254-11	26856	9.07	79420	11.86	34675	15.95
004/5-SS1061-000.6	SG8254-12	33397	9.07	101526	11.86	42046	15.95
004/5-SS1062-000.8	SG8254-10	34533	9.07	108216	11.86	45874	15.95
004/5-SS1067-000.7	SG8254-13	38201	9.07	121264	11.86	50694	15.95
004/5-SS1066-000.9	SG8254-14	40272	9.07	130499	11.86	52272	15.95
004/5-SS1057-0001	SG8254-2	36442	9.08	115295	11.86	44102	15.95
Continuing Calibrati	WG134331-2	29463	9.05	88611	11.84	36521	15.93
003-SS-DUP06-1013	SG8254-32	25090	9.05	75096	11.84	32182	15.93
004/5-SS1067-000.7	SG8254-13DL	23867	9.05	76145	11.84	32278	15.94
003-SS1013-000.7	SG8254-25DL	25022	9.07	73020	11.86	29605	15.94
003-SS1014-0001	SG8254-26DL	25202	9.07	71581	11.86	30751	15.94
Continuing Calibrati	WG134395-2	33173	9.05	117953	11.84	51761	15.94
003-SS1019-000.5	SG8254-31DL	28974	9.07	99275	11.86	44725	15.94

Area Upper Limit = +100% of internal standard area
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RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

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* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG134292-4
Lab File ID : N0698.D

SDG: SG8254
Analytical Date: 11/12/13 11:30
Instrument ID: GCMS-N

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	56213		19.44		29007		25.72		22554		28.86	
	Upper Limit	112426		19.94		58014		26.22		45108		29.36	
	Lower Limit	28106.5		18.94		14503.5		25.22		11277		28.36	
Client Sample ID	Lab Sample ID												
004/5-SS1064-000.6	SG8254-19	54132		19.43		25669		25.71		18710		28.84	
Matrix Spike	WG133361-6	60504		19.43		26129		25.71		18427		28.84	
Matrix Spike Duplica	WG133361-7	61705		19.43		29664		25.71		23264		28.86	
004/5-SS1056-000.6	SG8254-3	62594		19.43		27626		25.71		18906		28.84	
004/5-SS-DUP04-1013	SG8254-11	56313		19.43		23566		25.71		17123		28.84	
004/5-SS1061-000.6	SG8254-12	63348		19.43		23955		25.71		17177		28.86	
004/5-SS1062-000.8	SG8254-10	66403		19.43		28427		25.72		17509		28.88	
004/5-SS1067-000.7	SG8254-13	72327		19.44		29617		25.74		19652		28.88	
004/5-SS1066-000.9	SG8254-14	72948		19.44		27713		25.74		14609		28.89	
004/5-SS1057-0001	SG8254-2	64466		19.44		26864		25.74		15306		28.89	
Continuing Calibrati	WG134331-2	53891		19.43		22140		25.70		13955		28.84	
003-SS-DUP06-1013	SG8254-32	53349		19.41		21722		25.70		13201		28.83	
004/5-SS1067-000.7	SG8254-13DL	49395		19.41		16434		25.70		11352		28.83	
003-SS1013-000.7	SG8254-25DL	44003		19.41		15942		25.70		10580	*	28.83	
003-SS1014-0001	SG8254-26DL	49771		19.41		18289		25.70		11685		28.84	
Continuing Calibrati	WG134395-2	79703		19.43		43368		25.71		32833		28.86	
003-SS1019-000.5	SG8254-31DL	72368		19.43		40339		25.70		33604		28.84	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

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* Values outside of QC limits.

Data File: \\target_server\GG\chem\gcms-n.i\N103013.b\N0525.D
Report Date: 06-Nov-2013 12:15

I.S. Associations

Katahdin Analytical Services

Data file : \\target_server\GG\chem\gcms-n.i\N103013.b\N0525.D
Lab Smp Id: WG133485-3
Inj Date : 30-OCT-2013 13:24
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG133485-3
Misc Info :
Comment :
Method : \\target_server\GG\chem\gcms-n.i\N103013.b\NSPSIM76.m
Meth Date : 31-Oct-2013 10:29 gcms-n.i Quant Type: ISTD
Cal Date : 30-OCT-2013 13:24 Cal File: N0525.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.522	3.489	(0.386)	6462	0.50000	0.454(a)	
	2 1,4-Dioxane	88	3.557	3.523	(0.390)	6351	0.50000	0.402(a)	
	3 Benzaldehyde	77	8.232	8.193	(0.902)	15253	0.50000	0.513	
	4 Phenol	94	8.545	8.532	(0.936)	75273	2.00000	1.64	
	5 Bis(2-Chloroethyl)ether	93	8.662	8.636	(0.949)	23331	0.50000	0.412	
	6 2-Chlorophenol	128	8.702	8.689	(0.954)	58720	2.00000	1.57	
	7 1,3-Dichlorobenzene	146	9.002	8.989	(0.986)	18623	0.50000	0.453	
*	8 1,4-Dichlorobenzene-D4	152	9.126	9.112	(1.000)	25337	0.80000	(a)	
	9 1,4-Dichlorobenzene	146	9.153	9.153	(1.003)	18615	0.50000	0.428	
	10 1,2-Dichlorobenzene	146	9.482	9.468	(1.039)	21610	0.50000	0.426	
	11 2,2'-Oxybis(1-chloropropane)	45	9.824	9.797	(1.077)	21299	0.50000	0.356(Q)	
	12 2-Methylphenol	108	9.810	9.797	(1.075)	55811	2.00000	1.70	
	13 Acetophenone	105	10.043	10.016	(0.843)	27001	0.50000	0.453(Q)	
	14 N-Nitroso-di-n-propylamine	70	10.139	10.084	(1.111)	10630	0.50000	0.334(Q)	
	15 Hexachloroethane	117	10.194	10.180	(1.117)	9222	0.50000	0.408	
	16 3&4-Methylphenol	108	10.153	10.153	(1.113)	52246	2.00000	1.67	
	17 Nitrobenzene	77	10.386	10.345	(0.872)	19771	0.50000	0.341(Q)	
	18 Isophorone	82	10.977	10.926	(0.921)	31451	0.50000	0.376	
	19 2-Nitrophenol	139	11.096	11.079	(0.931)	24641	2.00000	1.40	
	20 2,4-Dimethylphenol	107	11.318	11.301	(0.950)	55711	2.00000	1.61	
	21 bis(2-Chloroethoxy)methane	93	11.523	11.489	(0.967)	17553	0.50000	0.386	

Data File: \\target_server\GG\chem\gcms-n.i\N103013.b\N0525.D
Report Date: 06-Nov-2013 12:15

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
	22	2,4-Dichlorophenol	162	11.676	11.659	(0.980)	55951	2.00000	1.82	
	23	1,2,4-Trichlorobenzene	180	11.813	11.796	(0.991)	17984	0.50000	0.530	
*	24	Naphthalene-D8	136	11.915	11.898	(1.000)	84490	0.80000	(a)	
	25	Naphthalene	128	11.949	11.933	(1.003)	44993	0.50000	0.455	
	26	4-Chloroaniline	127	12.188	12.154	(1.023)	12412	0.50000	0.365(a)	
	27	Hexachlorobutadiene	225	12.342	12.325	(1.036)	10650	0.50000	0.508	
	28	Caprolactam	113	13.027	12.952	(1.093)	2040	0.50000	0.236(Q)	
	29	4-Chloro-3-Methylphenol	107	13.404	13.404	(1.125)	47720	2.00000	1.69	
$	30	2-Methylnaphthalene-D10	152	13.517	13.498	(0.845)	19528	0.50000	0.492(a)	
	31	2-Methylnaphthalene	142	13.592	13.573	(1.141)	24905	0.50000	0.422	
	32	1-Methylnaphthalene	142	13.799	13.781	(1.158)	22519	0.50000	0.388	
	33	Hexachlorocyclopentadiene	237	14.007	14.007	(0.875)	5804	0.50000	0.371	
	34	1,2,4,5-Tetrachlorobenzene	216	14.007	13.988	(0.875)	10749	0.50000	0.440	
$	35	2,4-Dibromophenol	252	14.251	14.233	(0.891)	5665	0.50000	0.418(a)	
	36	2,4,6-Trichlorophenol	196	14.327	14.308	(0.895)	26395	2.00000	1.73	
	37	2,4,5-Trichlorophenol	196	14.402	14.402	(0.900)	34933	2.00000	2.03	
	38	2-Chloronaphthalene	164	14.704	14.685	(0.919)	7442	0.50000	0.475	
	39	1,1'-Biphenyl	154	14.722	14.704	(0.920)	28502	0.50000	0.478	
	40	2-Nitroaniline	65	15.024	15.005	(0.939)	3319	0.50000	0.455	
	41	Dimethyl Phthalate	163	15.551	15.538	(0.972)	90395	2.00000	1.66	
	42	Acenaphthylene	152	15.657	15.644	(0.979)	36668	0.50000	0.401	
	43	2,6-Dinitrotoluene	165	15.630	15.617	(0.977)	4486	0.50000	0.447(Q)	
*	44	Acenaphthene-D10	164	15.999	15.986	(1.000)	25391	0.80000	(a)	
	45	Acenaphthene	153	16.079	16.065	(1.005)	22435	0.50000	0.465	
	46	3-Nitroaniline	138	16.013	15.986	(1.001)	1925	0.50000	0.493	
	47	2,4-Dinitrophenol	184	16.263	16.250	(1.016)	3349	2.00000	1.07	
	48	Dibenzofuran	168	16.500	16.487	(1.031)	30932	0.50000	0.369	
	49	2,4-Dinitrotoluene	165	16.580	16.567	(1.036)	3944	0.50000	0.407	
	50	4-Nitrophenol	109	16.566	16.553	(1.035)	6309	2.00000	1.58(Q)	
	51	2,3,4,6-Tetrachlorophenol	232	16.856	16.857	(1.054)	21922	2.00000	1.61	
$	52	Fluorene-D10	174	17.231	17.231	(1.077)	14915	0.50000	0.464(a)	
	53	Diethylphthalate	149	17.247	17.231	(1.078)	112042	2.00000	1.83	
	54	Fluorene	166	17.295	17.295	(1.081)	21380	0.50000	0.454	
	55	4-Chlorophenyl-phenylether	204	17.390	17.390	(1.087)	11104	0.50000	0.459	
	56	4-Nitroaniline	138	17.453	17.438	(1.091)	954	0.50000	0.414	
	57	4,6-Dinitro-2-Methylphenol	198	17.532	17.517	(0.899)	5358	2.00000	1.62	
	58	N-Nitrosodiphenylamine	169	17.682	17.682	(0.907)	13751	0.50000	0.442	
	59	4-Bromophenyl-phenylether	248	18.536	18.521	(0.951)	5115	0.50000	0.480	
	60	Hexachlorobenzene	284	18.611	18.611	(0.955)	6823	0.50000	0.533	
	61	Atrazine	200	19.075	19.076	(0.978)	2457	0.50000	0.427	
	62	Pentachlorophenol	266	19.135	19.121	(0.982)	14332	2.00000	1.75	
*	63	Phenanthrene-D10	188	19.495	19.480	(1.000)	34918	0.80000	(a)	
	64	Phenanthrene	178	19.540	19.540	(1.002)	26508	0.50000	0.493	
	65	Anthracene	178	19.660	19.660	(1.008)	29576	0.50000	0.547	
	66	Carbazole	167	20.124	20.110	(1.032)	20050	0.50000	0.449	
	67	Di-n-butylphthalate	149	21.173	21.174	(1.086)	183175	2.00000	1.75	
	68	Fluoranthene	202	22.363	22.350	(1.147)	23192	0.50000	0.445	
$	69	Pyrene-D10	212	22.831	22.818	(0.886)	15201	0.50000	0.602(a)	
	70	Pyrene	202	22.869	22.857	(0.887)	28109	0.50000	0.571	
	71	Butylbenzylphthalate	149	24.701	24.702	(0.959)	40523	2.00000	1.82	
	72	Benzo(a)anthracene	228	25.756	25.743	(0.999)	8823	0.50000	0.455	
*	73	Chrysene-D12	240	25.770	25.770	(1.000)	12387	0.80000	(a)	
	74	Chrysene	228	25.824	25.824	(1.002)	15543	0.50000	0.546(M)	M9
	75	3,3'-Dichlorobenzidine	252	25.824	25.810	(1.002)	441	0.50000	0.528(Q)	

WAS

1:07 pm, Nov 15, 2013

Data File: \\target_server\GG\chem\gcms-n.i\N103013.b\N0525.D
Report Date: 06-Nov-2013 12:15

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
	76	bis(2-Ethylhexyl)phthalate	149	26.202	26.202	(1.017)	57297	2.00000	1.90	
	77	Di-n-octylphthalate	149	27.651	27.651	(0.957)	65089	2.00000	1.78	
	78	Benzo(b)flucranthene	252	28.131	28.131	(0.973)	3971	0.50000	0.452	
	79	Benzo(k)fluoranthene	252	28.183	28.183	(0.975)	10705	0.50000	0.491(M)	M6
	80	Benzo(a)pyrene	252	28.783	28.783	(0.996)	3891	0.50000	0.364	
*	81	Perylene-D12	264	28.903	28.903	(1.000)	7932	0.80000	(a)	
	82	Indeno(1,2,3-cd)pyrene	276	31.053	31.039	(1.074)	2367	0.50000	0.651(H)	
	83	Dibenzo(a,h)anthracene	278	31.135	31.135	(1.077)	1135	0.50000	0.418(Q)	
	84	Benzo(g,h,i)perylene	276	31.642	31.642	(1.095)	3505	0.50000	0.383(M)	M9
M	85	Total PAHs	100				330225	8.50000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

WAS
1:07 pm, Nov 15, 2013

SAMPLE ID TF2-003-SS1013-000.7

SAMPLE CALC IS AREA	DILUTION	COMPOUND OF INTEREST AREA	IS AMOUNT (NG)	Final Extract Volume (UL)	AVE RRF	CONCENTRATION PPB
15942	10	286590	0.8	1000	2.4012	2006.26
		% Solids		**Sample Volume (Grams)**		
		0.93		32.1		

Pyrene = 2,000 ug/kg

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-25DL
Client ID: 003-SS1013-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0729.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	45.	ug/Kgdrywt	10	20	200	26.	100
2-Methylnaphthalene	U	100	ug/Kgdrywt	10	20	200	22.	100
Acenaphthylene	U	100	ug/Kgdrywt	10	20	200	12.	100
Acenaphthene	J	150	ug/Kgdrywt	10	20	200	15.	100
Fluorene	J	110	ug/Kgdrywt	10	20	200	32.	100
Phenanthrene		1700	ug/Kgdrywt	10	20	200	18.	100
Anthracene		320	ug/Kgdrywt	10	20	200	12.	100
Fluoranthene		1900	ug/Kgdrywt	10	20	200	18.	100
Pyrene		2000	ug/Kgdrywt	10	20	200	21.	100
Benzo(a)anthracene		740	ug/Kgdrywt	10	20	200	19.	100
Chrysene		750	ug/Kgdrywt	10	20	200	17.	100
Benzo(b)Fluoranthene	LL	840	ug/Kgdrywt	10	20	200	24.	100
Benzo(k)fluoranthene		330	ug/Kgdrywt	10	20	200	31.	100
Benzo(a)pyrene	LL	580	ug/Kgdrywt	10	20	200	33.	100
Indeno(1,2,3-cd)pyrene	L	420	ug/Kgdrywt	10	20	200	19.	100
Dibenzo(a,h)anthracene	J	89.	ug/Kgdrywt	10	20	200	18.	100
Benzo(g,h,i)perylene	LL	210	ug/Kgdrywt	10	20	200	20.	100
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N111313.b\N0729.D
Report Date: 15-Nov-2013 12:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N111313.b\N0729.D
Lab Smp Id: SG8254-25DL Client Smp ID: 003-SS1013-000.7
Inj Date : 13-NOV-2013 16:53
Operator : JCG Inst ID: gcms-n.i
Smp Info : SG8254-25DL
Misc Info : WG134331,WG133188,WG134292-4
Comment :
Method : \\target_server\GG\chem\gcms-n.i\N111313.b\NSPSIM79.m
Meth Date : 15-Nov-2013 12:27 gcms-n.i Quant Type: ISTD
Cal Date : 12-NOV-2013 15:09 Cal File: N0703.D
Als bottle: 8
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03210	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	7.027	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW C
*	8 1,4-Dichlorobenzene-D4	152	9.065	9.051	(1.000)	25022	0.80000	(Q)	
*	24 Naphthalene-D8	136	11.858	11.841	(1.000)	73020	0.80000		
	25 Naphthalene	128	11.909	11.875	(1.004)	12043	0.13436	45.0(a)	
*	44 Acenaphthene-D10	164	15.941	15.928	(1.000)	29605	0.80000		
	45 Acenaphthene	153	16.007	16.007	(1.004)	23349	0.43467	146(a)	
	54 Fluorene	166	17.241	17.225	(1.082)	18359	0.33830	113(a)	
*	63 Phenanthrene-D10	188	19.414	19.429	(1.000)	44003	0.80000		
	64 Phenanthrene	178	19.474	19.474	(1.003)	309955	4.98408	1670	
	65 Anthracene	178	19.594	19.594	(1.009)	63874	0.95814	321	
	68 Fluoranthene	202	22.292	22.292	(1.148)	353698	5.68713	1900	
	70 Pyrene	202	22.799	22.799	(0.887)	286590	5.98930	2010	
	72 Benzo(a)anthracene	228	25.683	25.683	(0.999)	55434	2.21213	741	
*	73 Chrysene-D12	240	25.696	25.696	(1.000)	15942	0.80000		
	74 Chrysene	228	25.750	25.764	(1.002)	68544	2.22526	746	
	78 Benzo(b)fluoranthene	252	28.070	28.070	(0.974)	42798	2.50287	839(M)	M3
	79 Benzo(k)fluoranthene	252	28.122	28.122	(0.976)	26517	0.97860	328(MH)	M6
	80 Benzo(a)pyrene	252	28.705	28.705	(0.996)	30966	1.72270	577	
*	81 Perylene-D12	264	28.825	28.842	(1.000)	10580	0.80000		
	82 Indeno(1,2,3-cd)pyrene	276	30.951	30.965	(1.074)	12581	1.25497	420(H)	
	83 Dibenzo(a,h)anthracene	278	31.033	31.047	(1.077)	2657	0.26527	88.9(aQ)	
	84 Benzo(g,h,i)perylene	276	31.540	31.554	(1.094)	8539	0.61360	206	

WAS
12:55 pm, Nov 15, 2013

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	NTD	#	OTP	#
004/5-SS1065-000.5	SG8254-18	A	83.2		73.8	
003-SS1015-000.8	SG8254-27	A	101.		98.8	
004/5-SS1056-000.6	SG8254-3	A	70.7		60.9	*
004/5-SS1056-000.6	SG8254-3RE	A	93.8		85.4	
004/5-SS1051-000.8	SG8254-8	A	95.8		87.1	
Method Blank Sample	WG133426-1	A	100.		93.9	
Laboratory Control S	WG133426-2	A	79.0		63.6	
Laboratory Control S	WG133426-3	A	100.		90.9	
Method Blank Sample	WG134245-1	A	100.		87.9	
Laboratory Control S	WG134245-2	A	94.0		81.8	
Laboratory Control S	WG134245-3	A	94.0		84.8	

		QC Limits
OTP	O-TERPHENYL	62-109
NTD	N-TRIACONTANE-D62	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GC10
Lab File IDs : AGG20231.EAGG20230.EAGG20232.E AGG20229.EAGG20228.E **Column ID:** A
Calibration Date(s): 26-JUL-13 10:34 26-JUL-13 13:49

	5.0000 Level 1	20.0000 Level 2	50.0000 Level 3	100.0000 Level 4	200.0000 Level 5		New Crv	b	m1	m2	%RSD	Max %RSD	
Petroleum Range Organic	3089102	12636617	29064611	60208084	122271060		LNR	7.40184	35900		0.99976	0.99000	M (
C-8	181933	731463	1715023	3597538	7399389		LNR	1.05675	36959		0.99955	0.99000	O
C-10	179016	749462	1739250	3724105	7629535		LNR	1.27141	38167		0.99946	0.99000	O
C-12	175693	743553	1750024	3747522	7665333		LNR	1.33539	38372		0.99950	0.99000	O
C-14	180367	756314	1748066	3765084	7677765		LNR	1.22555	38427		0.99947	0.99000	O
C-16	182823	754185	1751923	3777081	7684649		LNR	1.19425	38470		0.99949	0.99000	O
C-18	188749	776459	1784336	3853299	7821892		LNR	1.09221	39150		0.99949	0.99000	O
C-20	190254	769795	1772595	2897952	5891299		LNR	-3.67435	29019		0.99674	0.99000	O
C-22	189757	766624	1814396	3037617	6260195		LNR	-2.63046	30883		0.99764	0.99000	O
C-24	188458	749611	1697810	3194570	6695340		LNR	-0.48887	33143		0.99917	0.99000	O
C-26	194578	747032	1690170	3581426	6950490		LNR	-0.53461	34805		0.99962	0.99000	O
C-28	218772	778314	1732495	3663153	7147609		LNR	-0.68229	35718		0.99964	0.99000	O
C-30	192475	795453	1747341	3679252	7257458		LNR	-0.32754	36269		0.99971	0.99000	O
C-32	182906	746924	1714008	3693105	7412365		LNR	0.75824	37115		0.99961	0.99000	O
C-34	172985	732428	1684206	3667824	7401790		LNR	1.12303	37091		0.99949	0.99000	O
C-36	169313	721822	1658556	3607947	7516848		LNR	1.89380	37605		0.99896	0.99000	O
C-38	156767	682840	1580679	3457880	7142775		LNR	1.84020	35776		0.99912	0.99000	O
C-40	144249	634331	1483724	3262729	6716319		LNR	1.90824	33672		0.99915	0.99000	O
O-Terphenyl	10302658	10032499	9941055	10236461	10225858		LNR	0.22789	40635		0.99891	0.99000	
n-Triacontane-D62	9023242	8760852	8483761	8952633	8598295		LNR	0.81290	29308		0.99675	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134295-1 **Analytical Date:** 11/05/13 13:20
Lab File ID : AGK20040.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	811	33781	0.010	-4.61735	25.00000	Linear
2 C-8	50.00000	46.40302	33519	0.010	-7.19397	25.00000	Linear
3 C-10	50.00000	45.17185	33511	0.010	-9.65630	25.00000	Linear
4 C-12	50.00000	45.75424	34089	0.010	-8.49153	25.00000	Linear
5 C-14	50.00000	45.17248	33775	0.010	-9.65504	25.00000	Linear
6 C-16	50.00000	45.21239	33868	0.010	-9.57522	25.00000	Linear
8 C-18	50.00000	44.93013	34325	0.010	-10.13974	25.00000	Linear
10 C-20	50.00000	55.20021	34170	0.010	10.40042	25.00000	Linear
11 C-22	50.00000	51.87405	33665	0.010	3.74810	25.00000	Linear
12 C-24	50.00000	50.26329	33641	0.010	0.52659	25.00000	Linear
13 C-26	50.00000	47.68628	33567	0.010	-4.62743	25.00000	Linear
14 C-28	50.00000	46.82572	33938	0.010	-6.34857	25.00000	Linear
16 C-30	50.00000	46.45576	33935	0.010	-7.08848	25.00000	Linear
17 C-32	50.00000	46.93059	34274	0.010	-6.13883	25.00000	Linear
18 C-34	50.00000	47.02578	34052	0.010	-5.94845	25.00000	Linear
19 C-36	50.00000	47.35013	34187	0.010	-5.29973	25.00000	Linear
20 C-38	50.00000	48.46532	33361	0.010	-3.06936	25.00000	Linear
21 C-40	50.00000	50.03132	32408	0.010	0.06263	25.00000	Linear
9 O-Terphenyl	250	230	37411	0.010	-7.84302	25.00000	Linear
15 n-Triacontane-D62	300	276	26915	0.010	-7.89385	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134295-2 **Analytical Date:** 11/05/13 21:07
Lab File ID : AGK20052.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	359	37058	0.010	5.62592	25.00000	Linear
2 C-8	20.00000	19.20595	33539	0.010	-3.97027	25.00000	Linear
3 C-10	20.00000	21.32254	38264	0.010	6.61272	25.00000	Linear
4 C-12	20.00000	21.75634	39180	0.010	8.78172	25.00000	Linear
5 C-14	20.00000	20.49575	37025	0.010	2.47876	25.00000	Linear
6 C-16	20.00000	20.50801	37150	0.010	2.54005	25.00000	Linear
8 C-18	20.00000	19.81225	36645	0.010	-0.93875	25.00000	Linear
10 C-20	20.00000	21.84610	37029	0.010	9.23052	25.00000	Linear
11 C-22	20.00000	21.17258	36756	0.010	5.86289	25.00000	Linear
12 C-24	20.00000	21.69020	36754	0.010	8.45102	25.00000	Linear
13 C-26	20.00000	20.71165	36974	0.010	3.55823	25.00000	Linear
14 C-28	20.00000	20.21538	37321	0.010	1.07690	25.00000	Linear
16 C-30	20.00000	21.46283	39515	0.010	7.31416	25.00000	Linear
17 C-32	20.00000	22.95457	41191	0.010	14.77287	25.00000	Linear
18 C-34	20.00000	20.87009	36622	0.010	4.35046	25.00000	Linear
19 C-36	20.00000	21.37132	36622	0.010	6.85658	25.00000	Linear
20 C-38	20.00000	21.69560	35517	0.010	8.47799	25.00000	Linear
21 C-40	20.00000	22.03694	33888	0.010	10.18472	25.00000	Linear
9 O-Terphenyl	250	242	39238	0.010	-3.34627	25.00000	Linear
15 n-Triacontane-D62	300	298	28992	0.010	-0.80590	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134295-3 **Analytical Date:** 11/06/13 03:34
Lab File ID : AGK20062.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	870	36284	0.010	2.35364	25.00000	Linear
2 C-8	50.00000	49.19740	35585	0.010	-1.60520	25.00000	Linear
3 C-10	50.00000	47.82550	35536	0.010	-4.34900	25.00000	Linear
4 C-12	50.00000	48.29941	36042	0.010	-3.40118	25.00000	Linear
5 C-14	50.00000	47.99127	35941	0.010	-4.01746	25.00000	Linear
6 C-16	50.00000	47.71446	35793	0.010	-4.57108	25.00000	Linear
8 C-18	50.00000	47.90248	36653	0.010	-4.19503	25.00000	Linear
10 C-20	50.00000	58.85995	36294	0.010	17.71989	25.00000	Linear
11 C-22	50.00000	55.32289	35796	0.010	10.64578	25.00000	Linear
12 C-24	50.00000	53.84832	36018	0.010	7.69664	25.00000	Linear
13 C-26	50.00000	51.01045	35881	0.010	2.02089	25.00000	Linear
14 C-28	50.00000	50.28974	36412	0.010	0.57949	25.00000	Linear
16 C-30	50.00000	50.18042	36637	0.010	0.36084	25.00000	Linear
17 C-32	50.00000	51.44497	37625	0.010	2.88995	25.00000	Linear
18 C-34	50.00000	53.88330	39139	0.010	7.76660	25.00000	Linear
19 C-36	50.00000	52.02630	37704	0.010	4.05259	25.00000	Linear
20 C-38	50.00000	52.08390	35950	0.010	4.16781	25.00000	Linear
21 C-40	50.00000	52.12518	33818	0.010	4.25037	25.00000	Linear
9 O-Terphenyl	250	247	40109	0.010	-1.20304	25.00000	Linear
15 n-Triacontane-D62	300	297	28921	0.010	-1.04734	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134299-1 **Analytical Date:** 11/11/13 12:25
Lab File ID : AGK20109.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	819	34117	0.010	-3.69844	25.00000	Linear
2 C-8	50.00000	47.72770	34498	0.010	-4.54461	25.00000	Linear
3 C-10	50.00000	46.77047	34731	0.010	-6.45906	25.00000	Linear
4 C-12	50.00000	47.36809	35328	0.010	-5.26383	25.00000	Linear
5 C-14	50.00000	46.71933	34964	0.010	-6.56134	25.00000	Linear
6 C-16	50.00000	46.58439	34923	0.010	-6.83122	25.00000	Linear
8 C-18	50.00000	46.16504	35292	0.010	-7.66991	25.00000	Linear
10 C-20	50.00000	56.80471	35101	0.010	13.60942	25.00000	Linear
11 C-22	50.00000	53.48571	34661	0.010	6.97141	25.00000	Linear
12 C-24	50.00000	51.41356	34404	0.010	2.82711	25.00000	Linear
13 C-26	50.00000	48.54583	34165	0.010	-2.90833	25.00000	Linear
14 C-28	50.00000	47.41775	34360	0.010	-5.16451	25.00000	Linear
16 C-30	50.00000	48.05723	35097	0.010	-3.88554	25.00000	Linear
17 C-32	50.00000	46.92264	34268	0.010	-6.15473	25.00000	Linear
18 C-34	50.00000	46.56758	33712	0.010	-6.86484	25.00000	Linear
19 C-36	50.00000	46.06843	33224	0.010	-7.86313	25.00000	Linear
20 C-38	50.00000	46.08371	31657	0.010	-7.83257	25.00000	Linear
21 C-40	50.00000	45.86113	29599	0.010	-8.27774	25.00000	Linear
9 O-Terphenyl	250	238	38674	0.010	-4.73576	25.00000	Linear
15 n-Triacontane-D62	300	277	27012	0.010	-7.56233	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134299-2 **Analytical Date:** 11/11/13 21:46
Lab File ID : AGK20122.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	349	36006	0.010	2.66964	25.00000	Linear
2 C-8	20.00000	20.41452	35772	0.010	2.07261	25.00000	Linear
3 C-10	20.00000	19.21791	34248	0.010	-3.91045	25.00000	Linear
4 C-12	20.00000	20.07995	35964	0.010	0.39974	25.00000	Linear
5 C-14	20.00000	19.18020	34497	0.010	-4.09902	25.00000	Linear
6 C-16	20.00000	19.01714	34283	0.010	-4.91430	25.00000	Linear
8 C-18	20.00000	18.79501	34653	0.010	-6.02494	25.00000	Linear
10 C-20	20.00000	20.21676	34665	0.010	1.08380	25.00000	Linear
11 C-22	20.00000	19.93740	34848	0.010	-0.31298	25.00000	Linear
12 C-24	20.00000	20.53892	34846	0.010	2.69458	25.00000	Linear
13 C-26	20.00000	19.70255	35218	0.010	-1.48724	25.00000	Linear
14 C-28	20.00000	19.47972	36007	0.010	-2.60139	25.00000	Linear
16 C-30	20.00000	22.12313	40713	0.010	10.61565	25.00000	Linear
17 C-32	20.00000	22.36468	40096	0.010	11.82340	25.00000	Linear
18 C-34	20.00000	21.45624	37709	0.010	7.28121	25.00000	Linear
19 C-36	20.00000	21.98097	37769	0.010	9.90486	25.00000	Linear
20 C-38	20.00000	21.66644	35465	0.010	8.33222	25.00000	Linear
21 C-40	20.00000	22.90521	35350	0.010	14.52605	25.00000	Linear
9 O-Terphenyl	250	235	38105	0.010	-6.13602	25.00000	Linear
15 n-Triacontane-D62	300	286	27857	0.010	-4.67829	25.00000	Linear

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133426-1
Lab File ID : AGK20044.D
Date Extracted : 30-OCT-13
Instrument ID : GC10
Date Analyzed : 05-NOV-13
Matrix : SL
Time Analyzed : 15:57

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133426-2	AGK20045	11/05/13	16:36
Laboratory Control S	WG133426-3	AGK20046	11/05/13	17:15
004/5-SS1056-000.6	SG8254-3	AGK20056	11/05/13	23:42
004/5-SS1051-000.8	SG8254-8	AGK20057	11/06/13	00:21
004/5-SS1065-000.5	SG8254-18	AGK20058	11/06/13	00:59
003-SS1015-000.8	SG8254-27	AGK20059	11/06/13	01:38

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG133426-1
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: AGK20044.D

Sample Date:
Received Date:
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		93.9	%					
n-Triacontane-D62		100.	%					

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LCS/LCSD Recovery Report

LCS ID: WG133426-2
LCSD ID: WG133426-3
Project:
SDG: SG8254
Report Date: 12-NOV-13
LCS File ID: AGK20045.D

Received Date:
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426
LCSD File ID: AGK20046.D

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	60.3	34.0	56.4*	48.0	79.6	mg/Kgdrywt	34*	30	63-153
o-Terphenyl			63.6		90.9				62-109
n-Triacontane-D62			79.0		100.				70-130

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Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG134245-1
Lab File ID : AGK20116.D
Date Extracted : 11-NOV-13
Instrument ID : GC10
Date Analyzed : 11-NOV-13
Matrix : SL
Time Analyzed : 17:53

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134245-2	AGK20117	11/11/13	18:32
Laboratory Control S	WG134245-3	AGK20118	11/11/13	19:11
004/5-SS1056-000.6	SG8254-3RE	AGK20121	11/11/13	21:07

Report of Analytical Results

Client:
Lab ID: WG134245-1
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: AGK20116.D

Sample Date:
Received Date:
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		87.9	%					
n-Triacontane-D62		100.	%					

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LCS/LCSD Recovery Report

LCS ID: WG134245-2
LCSD ID: WG134245-3
Project:
SDG: SG8254
Report Date: 12-NOV-13
LCS File ID: AGK20117.D

Received Date:
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245
LCSD File ID: AGK20118.D

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	60.3	43.0	71.3	48.0	79.6	mg/Kgdrywt	11	30	63-153
o-Terphenyl			81.8		84.8				62-109
n-Triacontane-D62			94.0		94.0				70-130

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Column ID :** A
Instrument ID : GC10

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	OTP	NTD	
Initial Calibration	WG128015-5	07/26/13	11:13	10.44	15.29	
Initial Calibration	WG128015-4	07/26/13	11:52	10.44	15.29	
Initial Calibration	WG128015-2	07/26/13	12:31	10.44	15.29	
Initial Calibration	WG128015-1	07/26/13	13:10	10.44	15.29	
Initial Calibration	WG128015-3	07/26/13	13:49	10.44	15.29	
Independent Source	WG128015-6	07/26/13	14:39	10.44	15.29	
Continuing Calibrati	WG134295-1	11/05/13	13:20	10.28	15.12	
Method Blank Sample	WG133426-1	11/05/13	15:57	10.27	15.11	
Laboratory Control S	WG133426-2	11/05/13	16:36	10.26	15.11	
Laboratory Control S	WG133426-3	11/05/13	17:15	10.27	15.11	
Continuing Calibrati	WG134295-2	11/05/13	21:07	10.28	15.12	
004/5-SS1056-000.6	SG8254-3	11/05/13	23:42	10.26	15.11	
004/5-SS1051-000.8	SG8254-8	11/06/13	00:21	10.26	15.11	
004/5-SS1065-000.5	SG8254-18	11/06/13	00:59	10.26	15.11	
003-SS1015-000.8	SG8254-27	11/06/13	01:38	10.26	15.12	
Continuing Calibrati	WG134295-3	11/06/13	03:34	10.28	15.12	
Continuing Calibrati	WG134299-1	11/11/13	12:25	10.28	15.12	
Method Blank Sample	WG134245-1	11/11/13	17:53	10.26	15.11	
Laboratory Control S	WG134245-2	11/11/13	18:32	10.26	15.11	
Laboratory Control S	WG134245-3	11/11/13	19:11	10.26	15.11	
004/5-SS1056-000.6	SG8254-3RE	11/11/13	21:07	10.26	15.12	
Continuing Calibrati	WG134299-2	11/11/13	21:46	10.28	15.12	

SDG SG8254
SAMPLE ID TF2-004/5-SS1056-000.6

SAMPLE CALC

INITIAL CF	DILUTION	COMPOUND OF INTEREST /	Final Extract Volume (UL)	CONCENTRATION PPB
35900	1	57091254	2000	101.62868
		% Solids	**Sample Volume (KG)**	
		0.96	32.6	

TRPH = 100 mg/kg

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3RE
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20121.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		100	mg/Kgdrywt	1	20	19.	5.5	9.6
o-Terphenyl		85.4	%					
n-Triacontane-D62		93.8	%					

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Data File: \\target_server\gg\chem\gc10.i\GC10GK11.b\AGK20121.D
Report Date: 12-Nov-2013 13:41

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc10.i\GC10GK11.b\AGK20121.D
Lab Smp Id: SG8254-3RE Client Smp ID: 004/5-SS1056-000.6
Inj Date : 11-NOV-2013 21:07
Operator : AC Inst ID: gc10.i
Smp Info : SG8254-3RE
Misc Info : WG134299,WG134245,WG128015-3
Comment   :
Method   : \\target_server\gg\chem\gc10.i\GC10GK11.b\flp01b.m
Meth Date : 12-Nov-2013 13:06 gc10.i Quant Type: ESTD
Cal Date : 26-JUL-2013 11:13 Cal File: AGG20228.D
Als bottle: 51
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: SW8015M-FLPRO.sub
Subtraction File: \\target_server\gg\chem\gc10.i\GC10GK11.b\AGK20111.D
Target Version: 4.12

Concentration Formula: Amt * DF * (Vt/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00200	Final Volume (L)
Ws	0.03260	Weight of Sample (Kg)
M	4.011	Moisture (%)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (mg/Kgdrywt)	
$ 9 O-Terphenyl	10.258	10.288	-0.030	1719131	42.5343	2.7(M)	M2
$ 15 n-Triacontane-D62	15.116	15.128	-0.012	4120188	141.396	9.0(RM)	
S 7 Petroleum Range Organics	1.780-24.281			57091254	1590.72	100(M)	

AC
2:08 pm, Nov 12, 2013

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	BFB	#
TF2-W-TB03-1013	SG8254-1	A	85.6	
004/5-SS1065-000.5	SG8254-18	A	92.2	
003-SS1015-000.8	SG8254-27	A	95.5	
004/5-SS1056-000.6	SG8254-3	A	95.1	
004/5-SS1051-000.8	SG8254-8	A	91.4	
Method Blank Sample	WG133171-1	A	85.8	
Laboratory Control S	WG133171-2	A	91.4	
Laboratory Control S	WG133171-3	A	98.6	

		QC Limits
BFB	P-BROMOFLUOROBENZENE	81-119

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GC09
Lab File IDs : 9GG2130.d 9GG2123.d 9GG2124.d **Column ID:** A
9GG2125.d 9GG2126.d 9GG2127.d **Calibration Date(s):** 26-JUL-13 09:58
26-JUL-13 17:56

	Level 1 10.0000	Level 2 100.0000	Level 3 250.0000	Level 4 500.0000	Level 5 1000.0000	Level 6 2000.0000	Crv New	b	m1	m2	%RSD	Max %RSD	
Gasoline Range Organic	12176	12675	12913	12768	12910	13282	AVG		12787		2.84495	20.00000	M
Methyl tert-butyl ether	6010	8181	8380	7569	7477	8149	AVG		7628		11.40841	20.00000	O
Benzene	15826	15860	16448	16739	17015	17326	AVG		16536		3.69285	20.00000	O
Toluene	15470	16041	16286	16166	16555	16718	AVG		16206		2.70556	20.00000	O
Ethylbenzene	14185	14823	15058	15019	15114	15298	AVG		14916		2.61143	20.00000	O
m+p-Xylenes	14785	15435	15552	15559	15638	15874	AVG		15474		2.37846	20.00000	O
o-Xylene	16358	14889	14896	15443	15410	15788	AVG		15464		3.61301	20.00000	O
1,2,4-trimethylbenzene	11095	12102	12347	12071	12262	12757	AVG		12106		4.56871	20.00000	O
1,3,5-trimethylbenzene	9784	10620	10743	10552	10765	11352	AVG		10636		4.74665	20.00000	O
Naphthalene	3461	3359	3870	3000	3223	3680	AVG		3432		9.12376	20.00000	O
p-Bromofluorobenzene	6432	6935	7300	7023	6937	7145	AVG		6962		4.23260	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133171-4 **Analytical Date:** 10/25/13 07:42
Lab File ID : 9GJ4060.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

	Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Gasoline Range Organic	12787	11612	11612	0.100	-9.19398	20.00000	Averaged	
3	Methyl tert-butyl ether	7628	7033	7033	0.100	-7.79828	20.00000	Averaged	
4	Benzene	16536	14595	14595	0.100	-11.73412	20.00000	Averaged	
5	Toluene	16206	14035	14035	0.100	-13.39782	20.00000	Averaged	
7	Ethylbenzene	14916	13366	13366	0.100	-10.39327	20.00000	Averaged	
8	m+p-Xylenes	15474	14444	14444	0.100	-6.65231	20.00000	Averaged	
9	o-Xylene	15464	14992	14992	0.100	-3.05469	20.00000	Averaged	
11	1,2,4-trimethylbenzene	12106	11076	11076	0.100	-8.50857	20.00000	Averaged	
12	1,3,5-trimethylbenzene	10636	9444	9444	0.100	-11.21048	20.00000	Averaged	
13	Naphthalene	3432	2686	2686	0.100	-21.73520	20.00000	Averaged	*
10	p-Bromofluorobenzene	6962	6057	6057	0.100	-13.00090	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133171-5 **Analytical Date:** 10/25/13 23:46
Lab File ID : 9GJ4074.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	12038	12038	0.100	-5.85670	20.00000	Averaged
3 Methyl tert-butyl ether	7628	8213	8213	0.100	7.67967	20.00000	Averaged
4 Benzene	16536	15374	15374	0.100	-7.02383	20.00000	Averaged
5 Toluene	16206	14867	14867	0.100	-8.26352	20.00000	Averaged
7 Ethylbenzene	14916	14020	14020	0.100	-6.00568	20.00000	Averaged
8 m+p-Xylenes	15474	14495	14495	0.100	-6.32427	20.00000	Averaged
9 o-Xylene	15464	13902	13902	0.100	-10.10367	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11245	11245	0.100	-7.10888	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10458	10458	0.100	-1.67104	20.00000	Averaged
13 Naphthalene	3432	3312	3312	0.100	-3.48672	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6158	6158	0.100	-11.54441	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133171-6 **Analytical Date:** 10/26/13 06:09
Lab File ID : 9GJ4081.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	12749	12749	0.100	-0.29624	20.00000	Averaged
3 Methyl tert-butyl ether	7628	8686	8686	0.100	13.87689	20.00000	Averaged
4 Benzene	16536	16112	16112	0.100	-2.56064	20.00000	Averaged
5 Toluene	16206	15786	15786	0.100	-2.59152	20.00000	Averaged
7 Ethylbenzene	14916	14932	14932	0.100	0.10875	20.00000	Averaged
8 m+p-Xylenes	15474	15497	15497	0.100	0.15179	20.00000	Averaged
9 o-Xylene	15464	15173	15173	0.100	-1.88165	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	12209	12209	0.100	0.85486	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10553	10553	0.100	-0.78180	20.00000	Averaged
13 Naphthalene	3432	3046	3046	0.100	-11.24590	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6749	6749	0.100	-3.05248	20.00000	Averaged

*** = Compound out of QC criteria**

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : 9GJ4065.D
Instrument ID : GC09
Heated Purge : No

SDG : SG8254
Lab Sample ID : WG133171-1
Date Analyzed : 25-OCT-13
Time Analyzed : 15:36

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133171-2	9GJ4066.D	10/25/13	16:30
Laboratory Control S	WG133171-3	9GJ4067.D	10/25/13	17:24
TF2-W-TB03-1013	SG8254-1	9GJ4076.D	10/26/13	01:35
004/5-SS1056-000.6	SG8254-3	9GJ4077.D	10/26/13	02:30
004/5-SS1051-000.8	SG8254-8	9GJ4078.D	10/26/13	03:25
004/5-SS1065-000.5	SG8254-18	9GJ4079.D	10/26/13	04:19
003-SS1015-000.8	SG8254-27	9GJ4080.D	10/26/13	05:14

Report of Analytical Results

Client:
Lab ID: WG133171-1
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: 9GJ4065.D

Sample Date:
Received Date:
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 25-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		85.8	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG133171-2
LCSD ID: WG133171-3
Project:
SDG: SG8254
Report Date: 14-NOV-13
LCS File ID: 9GJ4066.D

Received Date:
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171
LCSD File ID: 9GJ4067.d

Analysis Date: 25-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	25.0	23.9	95.6	22.8	91.2	mg/Kgdrywt	5	30	67-137
-Bromofluorobenzene			91.4		98.6				81-119

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http://www.katahdinlab.com

Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Column ID :** A
Instrument ID : GC09

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	BFB	
Initial Calibration	WG127983-2	07/26/13	10:52	31.92	
Initial Calibration	WG127983-3	07/26/13	11:46	31.84	
Initial Calibration	WG127983-4	07/26/13	12:39	31.82	
Initial Calibration	WG127983-5	07/26/13	13:32	31.84	
Initial Calibration	WG127983-6	07/26/13	14:25	31.85	
Initial Calibration	WG127983-1	07/26/13	17:56	31.89	
INDEPENDENT SOURCE	WG127983-7	07/26/13	18:50	31.91	
Continuing Calibrati	WG133171-4	10/25/13	07:42	31.70	
Method Blank Sample	WG133171-1	10/25/13	15:36	31.70	
Laboratory Control S	WG133171-2	10/25/13	16:30	31.70	
Laboratory Control S	WG133171-3	10/25/13	17:24	31.70	
Continuing Calibrati	WG133171-5	10/25/13	23:46	31.70	
TF2-W-TB03-1013	SG8254-1	10/26/13	01:35	31.70	
004/5-SS1056-000.6	SG8254-3	10/26/13	02:30	31.70	
004/5-SS1051-000.8	SG8254-8	10/26/13	03:25	31.70	
004/5-SS1065-000.5	SG8254-18	10/26/13	04:19	31.70	
003-SS1015-000.8	SG8254-27	10/26/13	05:14	31.70	
Continuing Calibrati	WG133171-6	10/26/13	06:09	31.70	

- Initial and Continuing Calibration
* • Surrogate Spike Recoveries
- Internal Standard Recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Results
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
* • Field Duplicate Precision
* • Detection Limits
* • Compound Identification and Quantification

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

LABORATORY BLANKS

The following contaminants were detected in laboratory preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Benzo(a)anthracene[1]	6.6 ug/kg	33 ug/kg
Chrysene[1]	2.5 ug/kg	12.5 ug/kg
Chrysene[2]	0.044 ug/L	0.22 ug/L
Benzo(k)fluoranthene[2]	0.059 ug/L	0.259 ug/L

[1] Maximum concentration present in blank associated with batch WG133188-1 affecting samples .
[2] Maximum concentration present in blank WG133367 affecting sample TF2-SS-RB03-1013.

An action level of 5X the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the blank action level and greater than the LOD were qualified "U" as a result of laboratory blank contamination.

INITIAL AND CONTINUING CALIBRATION

The PAH continuing calibration verification analyzed on 11/01/13 @13:12 on instrument GCMS-N had %Ds greater than the 20% quality control limit for benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene. The detected results for samples TF2-SS-RB03-1013, TF2-003-SS1011-000.8, TF2-003-SS1012-000.7, TF2-003-SS1014-0001, TF2-003-SS1015-000.8, TF2-003-SS1016-000.9, TF2-003-SS1017-000.8, TF2-003-SS1018-000.8, and undiluted TF2-003-SS1019-000.5 were qualified as estimated (J).

The PAH continuing calibration verification analyzed on 11/04/13 @10:51 on instrument GCMS-N had %Ds greater than the 20% quality control limit for indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene. The detected results for samples TF2-004/5-SS1050-000.6, TF2-004/5-SS1051-000.8, TF2-004/5-SS1052-000.6, TF2-004/5-SS1053-000.6, TF2-004/5-SS1054-000.6, TF2-004/5-SS1055-000.8, TF2-004/5-SS1058-000.5, TF2-004/5-SS1059-000.6, TF2-004/5-SS1060-000.5, TF2-004/5-SS1063-000.6, and TF2-004/5-SS1065-000.5 were qualified as estimated (J).

The PAH continuing calibration verification analyzed on 11/13/13 @12:29 on instrument GCMS-N had a %D greater than the 20% quality control limit for indeno(1,2,3-cd)pyrene. The detected results for samples TF2-003-SS-DUP06-1013 and diluted TF2-003-SS1013-000.7 were qualified as estimated (J).

HOLDING TIME

The Florida-PRO surrogate recovery for O-terphenyl was less than the laboratory control limit for sample TF2-004/5-SS1056-000.6. The sample was re-extracted 7 days outside the 14 day extraction hold time with acceptable surrogate recoveries. The re-extracted result was used for validation because the re-extracted result had a higher concentration. The detected result for sample TF2-004/5-SS1056-000.6 has been qualified as estimated (J).

MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

The PAH MS/MSD performed on sample TF2-003-SS1016-000.9 had several percent recoveries outside the quality control limit. The sample results were qualified as listed below.

Analyte	%MS	%MSD	RPD	Qualifier for sample result
Benzo(k)fluoranthene	32.8	13.2	Ok	J
Dibenzo(a,h)anthracene	46.1	44.8	Ok	J
Benzo(g,h,i)perylene	23.3	14.8	Ok	J

The PAH MS/MSD performed on sample TF2-004/5-SS1054-000.6 had several percent recoveries outside the quality control limit. The sample results were qualified as listed below.

Analyte	%MS	%MSD	RPD	Qualifier for sample result
Benzo(a)pyrene	46.4	48.4	Ok	J
Benzo(g,h,i)perylene	30.0	30.3	Ok	J

The PAH MS/MSD performed on sample TF2-004/5-SS1064-000.6 had several percent recoveries outside the quality control limit. In addition, a relative percent difference (RPD) exceeded the quality control limit. The sample results were qualified as listed below.

Analyte	%MS	%MSD	RPD	Qualifier for sample result
Phenanthrene	Ok	97.0	Ok	None
Fluoranthene	Ok	130	35	None
Pyrene	Ok	115	Ok	None
Benzo(a)pyrene	47.7	54.1	Ok	J
Indeno(1,2,3-cd)pyrene	33.4	43.2	Ok	J
Dibenzo(a,h)anthracene	47.0	52.1	Ok	J
Benzo(g,h,i)perylene	24.1	25.8	Ok	J

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE (LCS/LCSD)

The PAH LCS/LCSD associated with batch WG133188 had percent recoveries outside the quality control limit. In addition, a relative percent difference (RPD) exceeded the quality control limit. The affected sample results were qualified as listed below.

Analyte	%LCS	%LCSD	RPD	Qualifier for sample result
Benzo(b)fluoranthene	51.6	42.7	Ok	J
Benzo(a)pyrene	42.4	52.9	Ok	J
Indeno(1,2,3-cd)pyrene	Ok	43.9	Ok	None
Benzo(g,h,i)perylene	49.2	32.2	42	J

The PAH LCS/LCSD associated with batch WG133361 had percent recoveries outside the quality control limit. In addition, relative percent differences (RPDs) exceeded the quality control limit. The affected sample results were qualified as listed below.

Analyte	%LCS	%LCSD	RPD	Qualifier for sample result
Naphthalene	Ok	Ok	44	None
2-Methylnaphthalene	Ok	Ok	50	None
Acenaphthylene	Ok	Ok	45	None
Acenaphthene	Ok	Ok	43	None
Fluorene	Ok	Ok	43	None
Phenanthrene	Ok	Ok	42	None
Anthracene	Ok	Ok	47	None
Fluoranthene	Ok	Ok	31	None
Benzo(a)anthracene	Ok	Ok	40	None
Chrysene	Ok	Ok	40	None
Benzo(b)fluoranthene	Ok	Ok	40	None
Benzo(k)fluoranthene	Ok	45.4	45	None
Benzo(a)pyrene	Ok	47.1	40	None
Indeno(1,2,3-cd)pyrene	Ok	Ok	54	None
Dibenzo(a,h)anthracene	Ok	53.2	46	None
Benzo(g,h,i)perylene	48.3	32.8	38	J

The Florida-PRO LCS/LCSD associated with batch WG133426 had a percent recovery outside the quality control limit. In addition, the relative percent difference (RPD) was exceeded the quality control limit. The detected results for the affected samples were qualified as listed below.

Analyte	%LCS	%LCSD	RPD	Qualifier for sample result
Florida-PRO	56.4	Ok	34	J

INTERNAL STANDARDS

The PAH internal standard perylene-d12 had recoveries less than the quality control limit for the diluted sample TF2-003-SS1013-000.7. The detected results for compounds quantified using perylene-d12 in sample TF2-003-SS1013-000.7 have been qualified as estimated (J).

FIELD DUPLICATE PRECISION

The field duplicate precision exceeded the 50% relative percent difference (RPD) quality control criteria for phenanthrene in the field duplicate pair TF2-004/5-SS1061-000.6 / TF2-004/5-SS-DUP04-1013. The

positive results for phenanthrene in the duplicate pair TF2-004/5-SS1061-000.6 / TF2-004/5-SS-DUP04-1013 were qualified as estimated (J).

ADDITIONAL COMMENTS

The PAH continuing calibration verification analyzed on 11/14/13 @10:51 on instrument GCMS-N had a %D greater than the 20% quality control limit for indeno(1,2,3-cd)pyrene. No action was taken on this basis because the diluted sample associated with this calibration did not have indeno(1,2,3-cd)pyrene reported from the dilution.

Samples TF2-003-SS1011-000.8, TF2-003-SS1012-000.7, TF2-003-SS1013-000.7, TF2-003-SS1014-0001, TF2-003-SS1019-000.5, and TF2-004/5-SS1067-000.7 required dilutions for the PAH fraction due to concentrations greater than the linear calibration range of the instrument.

Positive results reported below the quantitation limit but above the method detection limit (MDL) were qualified as estimated, (J).

Gasoline range organic results were reported as TPH C5-C12 and petroleum range organic results were reported as EPH C8 – C44.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: Extraction hold time noncompliance resulted in the qualification of data in the Florida-PRO fraction. Continuing calibration noncompliances resulted in the qualification of data in the PAH fraction. LCS/LCSD recovery noncompliances resulted in the qualification of data for the PAH and Florida-PRO fractions. MS/MSD recovery noncompliances resulted in the qualification of data in the fraction. Internal standard recovery noncompliance resulted in the qualification of data for the PAH fraction.

Other Factors Affecting Data Quality: Positive results reported below the limit of quantitation (LOQ) but above the MDL were qualified. Field duplicate precision noncompliances resulted in the qualification of data for the PAH fractions.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (June 2008), and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Edward Sedlmyer
Chemist/Data Validator

Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1011-000.8			TF2-003-SS1011-000.8DL			TF2-003-SS1012-000.7			TF2-003-SS1012-000.7DL		
SDG: SG8254	LAB_ID	SG8254-22			SG8254-22DL			SG8254-24			SG8254-24DL		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.9			86.9			88.7			88.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		18	J	P				23					
ACENAPHTHENE		71						100					
ACENAPHTHYLENE		3	J	P				5	J	P			
ANTHRACENE		110						220					
BENZO(A)ANTHRACENE		310	J	C							670	J	C
BENZO(A)PYRENE		190	J	E							440	J	E
BENZO(B)FLUORANTHENE		280	J	CE							640	J	CE
BENZO(G,H,I)PERYLENE		77	J	E				160	J	E			
BENZO(K)FLUORANTHENE		130						170					
CHRYSENE		240									630		
DIBENZO(A,H)ANTHRACENE		52						95					
FLUORANTHENE					620						1800		
FLUORENE		62						120					
INDENO(1,2,3-CD)PYRENE		260	J	C							630	J	C
NAPHTHALENE		60						70					
PHENANTHRENE					510						1200		
PYRENE					480						1300		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1013-000.7			TF2-003-SS1013-000.7DL			TF2-003-SS1014-0001			TF2-003-SS1014-0001DL		
SDG: SG8254	LAB_ID	SG8254-25			SG8254-25DL			SG8254-26			SG8254-26DL		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.0			93.0			93.2			93.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		12	J	P				10	U				
ACENAPHTHENE		160						15	J	P			
ACENAPHTHYLENE		10	U					1.8	J	P			
ANTHRACENE		310						26					
BENZO(A)ANTHRACENE					740			180	J	C			
BENZO(A)PYRENE					580	J	EN	99	J	E			
BENZO(B)FLUORANTHENE					840	J	EN	160	J	CE			
BENZO(G,H,I)PERYLENE		200	J	E				44	J	E			
BENZO(K)FLUORANTHENE		300						52					
CHRYSENE					750			170					
DIBENZO(A,H)ANTHRACENE		110						27					
FLUORANTHENE					1900			330					
FLUORENE		140						10	J	P			
INDENO(1,2,3-CD)PYRENE					420	J	CN	130	J	C			
NAPHTHALENE		43						2.9	J	P			
PHENANTHRENE					1700			220					
PYRENE					2000						410		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1015-000.8			TF2-003-SS1016-000.9			TF2-003-SS1017-000.8			TF2-003-SS1018-000.8		
SDG: SG8254	LAB_ID	SG8254-27			SG8254-28			SG8254-29			SG8254-30		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.0			90.9			91.6			94.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.5	U		4.3	J	P	10	U		9.5	U	
ACENAPHTHENE		5.4	J	P	14	J	P	9.5	J	P	5	J	P
ACENAPHTHYLENE		2.3	J	P	4.3	J	P	1.4	J	P	9.5	U	
ANTHRACENE		16	J	P	30			20	J	P	9	J	P
BENZO(A)ANTHRACENE		120	J	C	200	J	C	140	J	C	63	J	C
BENZO(A)PYRENE		79	J	E	150	J	E	92	J	E	38	J	E
BENZO(B)FLUORANTHENE		140	J	CE	240	J	CE	140	J	CE	58	J	CE
BENZO(G,H,I)PERYLENE		39	J	E	66	J	DE	45	J	E	18	J	EP
BENZO(K)FLUORANTHENE		42			80	J	D	46			18	J	P
CHRYSENE		110			180			120			56		
DIBENZO(A,H)ANTHRACENE		24			42	J	D	28			11	J	P
FLUORANTHENE		230			340			230			100		
FLUORENE		4.7	J	P	14	J	P	5.7	J	P	9.5	U	
INDENO(1,2,3-CD)PYRENE		130	J	C	230	J	C	130	J	C	53	J	C
NAPHTHALENE		9.5	U		9.2	J	P	10	U		9.5	U	
PHENANTHRENE		120			220			160			78		
PYRENE		200			320			260			130		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1019-000.5			TF2-003-SS1019-000.5DL			TF2-003-SS-DUP06-1013			TF2-004/5-SS1050-000.6		
SDG: SG8254	LAB_ID	SG8254-31			SG8254-31DL			SG8254-32			SG8254-9		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.8			91.8			93.1			94.9		
	DUP_OF							TF2-003-SS1015-000.8					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.9	U					10	U		10	U	
ACENAPHTHENE		15	J	P				4.7	J	P	10	U	
ACENAPHTHYLENE		2.1	J	P				1.8	J	P	10	U	
ANTHRACENE		51						14	J	P	2.2	J	P
BENZO(A)ANTHRACENE					400			120			26		
BENZO(A)PYRENE		220	J	E				100	J	E	21		
BENZO(B)FLUORANTHENE		300	J	CE				170	J	E	39		
BENZO(G,H,I)PERYLENE		86	J	E				47	J	E	12	J	EP
BENZO(K)FLUORANTHENE		120						56			10	J	P
CHRYSENE					410			130			24		
DIBENZO(A,H)ANTHRACENE		59						17	J	P	7.9	J	CP
FLUORANTHENE					740			200			54		
FLUORENE		8.3	J	P				4.1	J	P	10	U	
INDENO(1,2,3-CD)PYRENE		260	J	C				84	J	C	37	J	C
NAPHTHALENE		9.9	U					10	U		10	U	
PHENANTHRENE					450			110			19	J	P
PYRENE					840			240			39		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1051-000.8			TF2-004/5-SS1052-000.6			TF2-004/5-SS1053-000.6			TF2-004/5-SS1054-000.6		
SDG: SG8254	LAB_ID	SG8254-8			SG8254-7			SG8254-6			SG8254-5		
FRACTION: PAH	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	96.5			93.8			93.9			96.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.6	U		9.9	U		10	U		9.8	U	
ACENAPHTHENE		9.6	U		2.8	J	P	1.6	J	P	9.8	U	
ACENAPHTHYLENE		9.6	U		3.6	J	P	10	U		9.8	U	
ANTHRACENE		1.6	J	P	6.7	J	P	3	J	P	1.9	J	P
BENZO(A)ANTHRACENE		18	J	P	64			33			23		
BENZO(A)PYRENE		15	J	P	59			30			19	J	DP
BENZO(B)FLUORANTHENE		26			110			50			35		
BENZO(G,H,I)PERYLENE		8.6	J	EP	31	J	E	17	J	EP	11	J	DEP
BENZO(K)FLUORANTHENE		6.5	J	P	31			20	J	P	11	J	P
CHRYSENE		15	J	P	66			34			21		
DIBENZO(A,H)ANTHRACENE		6.5	J	CP	21	J	C	9.7	J	CP	7.7	J	CP
FLUORANTHENE		33			120			76			44		
FLUORENE		9.6	U		9.9	U		10	U		9.8	U	
INDENO(1,2,3-CD)PYRENE		24	J	C	100	J	C	56	J	C	33	J	C
NAPHTHALENE		9.6	U		9.9	U		10	U		9.8	U	
PHENANTHRENE		12	J	P	46			27			15	J	P
PYRENE		24			98			58			32		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1055-000.8			TF2-004/5-SS1056-000.6			TF2-004/5-SS1057-0001			TF2-004/5-SS1058-000.5		
SDG: SG8254	LAB_ID	SG8254-4			SG8254-3			SG8254-2			SG8254-17		
FRACTION: PAH	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.4			96.0			96.4			94.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.3	U		9.8	U		10	U		10	U	
ACENAPHTHENE		9.3	U		1.6	J	P	4.2	J	P	10	U	
ACENAPHTHYLENE		9.3	U		9.8	U		10	U		10	U	
ANTHRACENE		2.8	J	P	3.2	J	P	7.4	J	P	2	J	P
BENZO(A)ANTHRACENE		22			23			37			20	J	P
BENZO(A)PYRENE		16	J	P	22			33			17	J	P
BENZO(B)FLUORANTHENE		27			40			64			30		
BENZO(G,H,I)PERYLENE		8.1	J	EP	9.8	J	EP	20	J	EP	9.1	J	EP
BENZO(K)FLUORANTHENE		7.8	J	P	13	J	P	19	J	P	8.2	J	P
CHRYSENE		18	J	P	28			47			17	J	
DIBENZO(A,H)ANTHRACENE		6.3	J	CP	3.9	J	P	10	U		7.2	J	CP
FLUORANTHENE		40			46			78			41		
FLUORENE		9.3	U		9.8	U		3.7	J	P	10	U	
INDENO(1,2,3-CD)PYRENE		22	J	C	22			35			26	J	C
NAPHTHALENE		9.3	U		9.8	U		10	U		10	U	
PHENANTHRENE		13	J	P	22			50			17	J	P
PYRENE		25			43			74			30		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1059-000.6			TF2-004/5-SS1060-000.5			TF2-004/5-SS1061-000.6			TF2-004/5-SS1062-000.8		
SDG: SG8254	LAB_ID	SG8254-16			SG8254-15			SG8254-12			SG8254-10		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.6			94.1			95.6			93.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	U		9.8	U		9.4	U		9.8	U	
ACENAPHTHENE		10	U		3.6	J	P	2.8	J	P	13	J	P
ACENAPHTHYLENE		10	U		6.4	J	P	1.9	J	P	3	J	P
ANTHRACENE		10	U		8	J	P	8.3	J	P	22		
BENZO(A)ANTHRACENE		13	J	P	91			71			140		
BENZO(A)PYRENE		12	J	P	88			61			110		
BENZO(B)FLUORANTHENE		20	J	P	170			120			200		
BENZO(G,H,I)PERYLENE		7.4	J	EP	43	J	E	32	J	E	39	J	E
BENZO(K)FLUORANTHENE		4.5	J	P	46			39			57		
CHRYSENE		9	J	P	92			82			140		
DIBENZO(A,H)ANTHRACENE		6.2	J	CP	31	J	C	14	J	P	16	J	P
FLUORANTHENE		21			170			110			260		
FLUORENE		10	U		3.5	J	P	9.4	U		12	J	P
INDENO(1,2,3-CD)PYRENE		20	J	CP	150	J	C	63			89		
NAPHTHALENE		10	U		9.8	U		9.4	U		4	J	P
PHENANTHRENE		8.2	J	P	62			49	J	G	180		
PYRENE		15	J	P	130			120			240		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1063-000.6			TF2-004/5-SS1064-000.6			TF2-004/5-SS1065-000.5			TF2-004/5-SS1066-000.9		
SDG: SG8254	LAB_ID	SG8254-20			SG8254-19			SG8254-18			SG8254-14		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	96.8			97.2			96.6			92.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.7	U		9.3	U		9.2	U		10	U	
ACENAPHTHENE		9.7	U		9.3	U		1.6	J	P	2.3	J	P
ACENAPHTHYLENE		9.7	U		9.3	U		2.4	J	P	10	U	
ANTHRACENE		2.8	J	P	1.4	J	P	3.4	J	P	6.6	J	P
BENZO(A)ANTHRACENE		25			14	J	P	39			50		
BENZO(A)PYRENE		21			13	J	DP	38			40		
BENZO(B)FLUORANTHENE		38			21			75			87		
BENZO(G,H,I)PERYLENE		10	J	EP	5.2	J	DEP	18	J	EP	21	J	EP
BENZO(K)FLUORANTHENE		10	J	P	11	J	P	21			22		
CHRYSENE		21			19			44			54		
DIBENZO(A,H)ANTHRACENE		7.7	J	CP	1.8	J	DP	12	J	CP	9.2	J	P
FLUORANTHENE		52			34			90			91		
FLUORENE		9.7	U		9.3	U		9.2	U		10	U	
INDENO(1,2,3-CD)PYRENE		33	J	C	11	J	DP	62	J	C	41		
NAPHTHALENE		9.7	U		9.3	U		9.2	U		10	U	
PHENANTHRENE		19	J	P	15	J	P	33			43		
PYRENE		35			29			66			98		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1067-000.7			TF2-004/5-SS1067-000.7DL			TF2-004/5-SS1068-000.5			TF2-004/5-SS-DUP04-1013		
SDG: SG8254	LAB_ID	SG8254-13			SG8254-13DL			SG8254-21			SG8254-11		
FRACTION: PAH	SAMP_DATE	10/21/2013			10/21/2013			10/22/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	94.3			94.3			94.4			95.7		
	DUP_OF										TF2-004/5-SS1061-000.6		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	U					10	U		9.7	U	
ACENAPHTHENE		38						10	U		12	J	P
ACENAPHTHYLENE		10	U					1.4	J	P	9.7	U	
ANTHRACENE		94						1.9	J	P	36		
BENZO(A)ANTHRACENE					350			26	U	A	80		
BENZO(A)PYRENE		190						26	J	E	64		
BENZO(B)FLUORANTHENE					380			43	J	E	100		
BENZO(G,H,I)PERYLENE		65	J	E				14	J	EP	27	J	E
BENZO(K)FLUORANTHENE		120						14	J	P	32		
CHRYSENE					370			24			86		
DIBENZO(A,H)ANTHRACENE		37						8.9	J	P	13	J	P
FLUORANTHENE					750			46			140		
FLUORENE		43						10	U		11	J	P
INDENO(1,2,3-CD)PYRENE		140						40			53		
NAPHTHALENE		13	J	P				10	U		3	J	P
PHENANTHRENE					620			18	J	P	120	J	G
PYRENE					830			38			140		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS-DUP05-1013
SDG: SG8254	LAB_ID	SG8254-23
FRACTION: PAH	SAMP_DATE	10/22/2013
MEDIA: SOIL	QC_TYPE	NM
	UNITS	UG/KG
	PCT_SOLIDS	96.4
	DUP_OF	TF2-004/5-SS1065-000.5

PARAMETER	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE	9.4	U	
ACENAPHTHENE	9.4	U	
ACENAPHTHYLENE	2	J	P
ANTHRACENE	2.5	J	P
BENZO(A)ANTHRACENE	33	U	A
BENZO(A)PYRENE	30	J	E
BENZO(B)FLUORANTHENE	55	J	E
BENZO(G,H,I)PERYLENE	16	J	EP
BENZO(K)FLUORANTHENE	19	J	P
CHRYSENE	32		
DIBENZO(A,H)ANTHRACENE	11	J	P
FLUORANTHENE	63		
FLUORENE	9.4	U	
INDENO(1,2,3-CD)PYRENE	52		
NAPHTHALENE	9.4	U	
PHENANTHRENE	24		
PYRENE	50		

PROJ_NO: 03019	NSAMPLE	TF2-SS-RB03-1013
SDG: SG8254	LAB_ID	SG8254-33RE
FRACTION: PAH	SAMP_DATE	10/22/2013
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE	0.1	U	
ACENAPHTHENE	0.1	U	
ACENAPHTHYLENE	0.1	U	
ANTHRACENE	0.1	U	
BENZO(A)ANTHRACENE	0.29	J	C
BENZO(A)PYRENE	0.1	U	
BENZO(B)FLUORANTHENE	0.1	UJ	C
BENZO(G,H,I)PERYLENE	0.1	U	
BENZO(K)FLUORANTHENE	0.1	U	
CHRYSENE	0.1	U	
DIBENZO(A,H)ANTHRACENE	0.1	U	
FLUORANTHENE	0.1	U	
FLUORENE	0.1	U	
INDENO(1,2,3-CD)PYRENE	0.1	UJ	C
NAPHTHALENE	0.1	U	
PHENANTHRENE	0.1	U	
PYRENE	0.1	U	

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1015-000.8			TF2-004/5-SS1051-000.8			TF2-004/5-SS1056-000.6			TF2-004/5-SS1056-000.6RE		
SDG: SG8254	LAB_ID	SG8254-27			SG8254-8			SG8254-3			SG8254-3RE		
FRACTION: PET	SAMP_DATE	10/22/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	93.0			96.5			96.0			96.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
EPH (C08-C44)		48	J	E	27	J	E				100	J	H
TPH (C05-C12)		2.3	U		2.6	J	P	2.1	U				

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1065-000.5		
SDG: SG8254	LAB_ID	SG8254-18		
FRACTION: PET	SAMP_DATE	10/22/2013		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	MG/KG		
	PCT_SOLIDS	96.6		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
EPH (C08-C44)		38	J	E
TPH (C05-C12)		3	U	

PROJ_NO: 03019	NSAMPLE	TF2-W-TB03-1013
SDG: SG8254	LAB_ID	SG8254-1
FRACTION: PET	SAMP_DATE	10/21/2013
MEDIA: WATER	QC_TYPE	NM
	UNITS	MG/KG
	PCT_SOLIDS	100.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
TPH (C05-C12)	2	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-32
Client ID: 003-SS-DUP06-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0727.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	1.8	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	4.7	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	4.1	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		110	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	14.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		200	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		240	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		120	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		130	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	LL	170	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		56.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	LL	100	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	L	84.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	17.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	LL	47.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		48.1	%					
Fluorene-D10		61.6	%					
Pyrene-D10		72.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-22
Client ID: 003-SS1011-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0554.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 87.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		60.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	J	18.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	J	3.0	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene		71.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene		62.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	E	480	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene		110	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	E	560	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	E	460	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene		310	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene		240	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	LL	280	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene		130	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	LL	190	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	L	260	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene		52.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	LL	77.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		44.6	%					
Fluorene-D10		59.2	%					
Pyrene-D10		65.1	%					

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-22DL
Client ID: 003-SS1011-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0562.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 87.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		58.	ug/Kgdrywt	2	20	44.	5.8	22.
2-Methylnaphthalene	J	16.	ug/Kgdrywt	2	20	44.	4.9	22.
Acenaphthylene	U	22.	ug/Kgdrywt	2	20	44.	2.6	22.
Acenaphthene		68.	ug/Kgdrywt	2	20	44.	3.3	22.
Fluorene		58.	ug/Kgdrywt	2	20	44.	7.1	22.
Phenanthrene		510	ug/Kgdrywt	2	20	44.	4.0	22.
Anthracene		110	ug/Kgdrywt	2	20	44.	2.6	22.
Fluoranthene		620	ug/Kgdrywt	2	20	44.	4.0	22.
Pyrene		480	ug/Kgdrywt	2	20	44.	4.6	22.
Benzo(a)anthracene		280	ug/Kgdrywt	2	20	44.	4.2	22.
Chrysene		260	ug/Kgdrywt	2	20	44.	3.8	22.
Benzo(b)Fluoranthene	LL	290	ug/Kgdrywt	2	20	44.	5.3	22.
Benzo(k)fluoranthene		120	ug/Kgdrywt	2	20	44.	6.8	22.
Benzo(a)pyrene	LL	200	ug/Kgdrywt	2	20	44.	7.3	22.
Indeno(1,2,3-cd)pyrene	L	280	ug/Kgdrywt	2	20	44.	4.2	22.
Dibenzo(a,h)anthracene	J	35.	ug/Kgdrywt	2	20	44.	4.0	22.
Benzo(g,h,i)perylene	LL	80.	ug/Kgdrywt	2	20	44.	4.4	22.
2-Methylnaphthalene-D10		42.6	%					
Fluorene-D10		57.7	%					
Pyrene-D10		61.9	%					

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Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-24
Client ID: 003-SS1012-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0556.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		70.	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene		23.	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	5.0	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene		100	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene		120	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene	E	990	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene		220	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene	E	1200	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene	E	1000	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene	E	650	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene	E	500	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene	ELL	430	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene		170	ug/Kgdrywt	1	20	20.	3.1	9.9
Benzo(a)pyrene	ELL	360	ug/Kgdrywt	1	20	20.	3.3	9.9
Indeno(1,2,3-cd)pyrene	EL	410	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene		95.	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene	LL	160	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		47.7	%					
Fluorene-D10		71.8	%					
Pyrene-D10		67.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-24DL
Client ID: 003-SS1012-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0563.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	77.	ug/Kgdrywt	7	20	140	18.	70.
2-Methylnaphthalene	J	22.	ug/Kgdrywt	7	20	140	15.	70.
Acenaphthylene	U	70.	ug/Kgdrywt	7	20	140	8.4	70.
Acenaphthene	J	99.	ug/Kgdrywt	7	20	140	10.	70.
Fluorene	J	110	ug/Kgdrywt	7	20	140	22.	70.
Phenanthrene		1200	ug/Kgdrywt	7	20	140	12.	70.
Anthracene		260	ug/Kgdrywt	7	20	140	8.4	70.
Fluoranthene		1800	ug/Kgdrywt	7	20	140	12.	70.
Pyrene		1300	ug/Kgdrywt	7	20	140	15.	70.
Benzo(a)anthracene		670	ug/Kgdrywt	7	20	140	13.	70.
Chrysene		630	ug/Kgdrywt	7	20	140	12.	70.
Benzo(b)Fluoranthene	LL	640	ug/Kgdrywt	7	20	140	17.	70.
Benzo(k)fluoranthene		240	ug/Kgdrywt	7	20	140	22.	70.
Benzo(a)pyrene	LL	440	ug/Kgdrywt	7	20	140	23.	70.
Indeno(1,2,3-cd)pyrene	L	630	ug/Kgdrywt	7	20	140	13.	70.
Dibenzo(a,h)anthracene	J	80.	ug/Kgdrywt	7	20	140	12.	70.
Benzo(g,h,i)perylene	LL	200	ug/Kgdrywt	7	20	140	14.	70.
2-Methylnaphthalene-D10		63.0	%					
Fluorene-D10		64.8	%					
Pyrene-D10		68.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-25
Client ID: 003-SS1013-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0564.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		43.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	J	12.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene		160	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene		140	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	E	1400	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		310	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	E	1800	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	E	1500	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	E	860	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	E	640	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	ELL	450	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		300	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	ELL	480	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	EL	440	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		110	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	LL	200	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		54.5	%					
Fluorene-D10		73.7	%					
Pyrene-D10		69.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-25DL
Client ID: 003-SS1013-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0729.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	45.	ug/Kgdrywt	10	20	200	26.	100
2-Methylnaphthalene	U	100	ug/Kgdrywt	10	20	200	22.	100
Acenaphthylene	U	100	ug/Kgdrywt	10	20	200	12.	100
Acenaphthene	J	150	ug/Kgdrywt	10	20	200	15.	100
Fluorene	J	110	ug/Kgdrywt	10	20	200	32.	100
Phenanthrene		1700	ug/Kgdrywt	10	20	200	18.	100
Anthracene		320	ug/Kgdrywt	10	20	200	12.	100
Fluoranthene		1900	ug/Kgdrywt	10	20	200	18.	100
Pyrene		2000	ug/Kgdrywt	10	20	200	21.	100
Benzo(a)anthracene		740	ug/Kgdrywt	10	20	200	19.	100
Chrysene		750	ug/Kgdrywt	10	20	200	17.	100
Benzo(b)Fluoranthene	LL	840	ug/Kgdrywt	10	20	200	24.	100
Benzo(k)fluoranthene		330	ug/Kgdrywt	10	20	200	31.	100
Benzo(a)pyrene	LL	580	ug/Kgdrywt	10	20	200	33.	100
Indeno(1,2,3-cd)pyrene	L	420	ug/Kgdrywt	10	20	200	19.	100
Dibenzo(a,h)anthracene	J	89.	ug/Kgdrywt	10	20	200	18.	100
Benzo(g,h,i)perylene	LL	210	ug/Kgdrywt	10	20	200	20.	100
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-26
Client ID: 003-SS1014-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0565.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	2.9	ug/Kgdrywt	1	20	20.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	1.8	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	15.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Phenanthrene		220	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		26.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		330	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	E	360	ug/Kgdrywt	1	20	20.	2.2	10.
Benzo(a)anthracene		180	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		170	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	LL	160	ug/Kgdrywt	1	20	20.	2.5	10.
Benzo(k)fluoranthene		52.	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene	LL	99.	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene	L	130	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		27.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	LL	44.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		48.8	%					
Fluorene-D10		68.5	%					
Pyrene-D10		63.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-26DL
Client ID: 003-SS1014-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0730.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	20.	ug/Kgdrywt	2	20	41.	5.3	20.
2-Methylnaphthalene	U	20.	ug/Kgdrywt	2	20	41.	4.5	20.
Acenaphthylene	U	20.	ug/Kgdrywt	2	20	41.	2.5	20.
Acenaphthene	J	12.	ug/Kgdrywt	2	20	41.	3.1	20.
Fluorene	J	8.1	ug/Kgdrywt	2	20	41.	6.6	20.
Phenanthrene		200	ug/Kgdrywt	2	20	41.	3.7	20.
Anthracene	J	22.	ug/Kgdrywt	2	20	41.	2.5	20.
Fluoranthene		270	ug/Kgdrywt	2	20	41.	3.7	20.
Pyrene		410	ug/Kgdrywt	2	20	41.	4.3	20.
Benzo(a)anthracene		150	ug/Kgdrywt	2	20	41.	3.9	20.
Chrysene		170	ug/Kgdrywt	2	20	41.	3.5	20.
Benzo(b)Fluoranthene	LL	150	ug/Kgdrywt	2	20	41.	4.9	20.
Benzo(k)fluoranthene		61.	ug/Kgdrywt	2	20	41.	6.4	20.
Benzo(a)pyrene	LL	110	ug/Kgdrywt	2	20	41.	6.8	20.
Indeno(1,2,3-cd)pyrene	L	76.	ug/Kgdrywt	2	20	41.	3.9	20.
Dibenzo(a,h)anthracene	J	18.	ug/Kgdrywt	2	20	41.	3.7	20.
Benzo(g,h,i)perylene	LL	44.	ug/Kgdrywt	2	20	41.	4.1	20.
2-Methylnaphthalene-D10		44.9	%					
Fluorene-D10		55.0	%					
Pyrene-D10		69.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-27
Client ID: 003-SS1015-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0566.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.5	ug/Kgdrywt	1	20	19.	2.5	9.5
2-Methylnaphthalene	U	9.5	ug/Kgdrywt	1	20	19.	2.1	9.5
Acenaphthylene	J	2.3	ug/Kgdrywt	1	20	19.	1.1	9.5
Acenaphthene	J	5.4	ug/Kgdrywt	1	20	19.	1.4	9.5
Fluorene	J	4.7	ug/Kgdrywt	1	20	19.	3.0	9.5
Phenanthrene		120	ug/Kgdrywt	1	20	19.	1.7	9.5
Anthracene	J	16.	ug/Kgdrywt	1	20	19.	1.1	9.5
Fluoranthene		230	ug/Kgdrywt	1	20	19.	1.7	9.5
Pyrene		200	ug/Kgdrywt	1	20	19.	2.0	9.5
Benzo(a)anthracene		120	ug/Kgdrywt	1	20	19.	1.8	9.5
Chrysene		110	ug/Kgdrywt	1	20	19.	1.6	9.5
Benzo(b)Fluoranthene	LL	140	ug/Kgdrywt	1	20	19.	2.3	9.5
Benzo(k)fluoranthene		42.	ug/Kgdrywt	1	20	19.	2.9	9.5
Benzo(a)pyrene	LL	79.	ug/Kgdrywt	1	20	19.	3.1	9.5
Indeno(1,2,3-cd)pyrene	L	130	ug/Kgdrywt	1	20	19.	1.8	9.5
Dibenzo(a,h)anthracene		24.	ug/Kgdrywt	1	20	19.	1.7	9.5
Benzo(g,h,i)perylene	LL	39.	ug/Kgdrywt	1	20	19.	1.9	9.5
2-Methylnaphthalene-D10		46.7	%					
Fluorene-D10		66.2	%					
Pyrene-D10		57.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-28
Client ID: 003-SS1016-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0567.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	9.2	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	J	4.3	ug/Kgdrywt	1	20	21.	2.4	11.
Acenaphthylene	J	4.3	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	J	14.	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	J	14.	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene	M	220	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene		30.	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene	M	340	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene	MM	320	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene	MM	200	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene	MM	180	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene	LLMM	240	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene	MM	80.	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	LLMM	150	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene	LMM	230	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	MM	42.	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	LLMM	66.	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		44.9	%					
Fluorene-D10		69.1	%					
Pyrene-D10		70.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-29
Client ID: 003-SS1017-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0570.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	1.4	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	9.5	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	5.7	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		160	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	20.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		230	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		260	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		140	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		120	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	LL	140	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		46.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	LL	92.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	L	130	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		28.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	LL	45.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		48.3	%					
Fluorene-D10		67.1	%					
Pyrene-D10		61.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-30
Client ID: 003-SS1018-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0571.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.5	ug/Kgdrywt	1	20	19.	2.5	9.5
2-Methylnaphthalene	U	9.5	ug/Kgdrywt	1	20	19.	2.1	9.5
Acenaphthylene	U	9.5	ug/Kgdrywt	1	20	19.	1.1	9.5
Acenaphthene	J	5.0	ug/Kgdrywt	1	20	19.	1.4	9.5
Fluorene	U	9.5	ug/Kgdrywt	1	20	19.	3.0	9.5
Phenanthrene		78.	ug/Kgdrywt	1	20	19.	1.7	9.5
Anthracene	J	9.0	ug/Kgdrywt	1	20	19.	1.1	9.5
Fluoranthene		100	ug/Kgdrywt	1	20	19.	1.7	9.5
Pyrene		130	ug/Kgdrywt	1	20	19.	2.0	9.5
Benzo(a)anthracene		63.	ug/Kgdrywt	1	20	19.	1.8	9.5
Chrysene		56.	ug/Kgdrywt	1	20	19.	1.6	9.5
Benzo(b)Fluoranthene	LL	58.	ug/Kgdrywt	1	20	19.	2.3	9.5
Benzo(k)fluoranthene	J	18.	ug/Kgdrywt	1	20	19.	2.9	9.5
Benzo(a)pyrene	LL	38.	ug/Kgdrywt	1	20	19.	3.1	9.5
Indeno(1,2,3-cd)pyrene	L	53.	ug/Kgdrywt	1	20	19.	1.8	9.5
Dibenzo(a,h)anthracene	J	11.	ug/Kgdrywt	1	20	19.	1.7	9.5
Benzo(g,h,i)perylene	JLL	18.	ug/Kgdrywt	1	20	19.	1.9	9.5
2-Methylnaphthalene-D10		33.4	%					
Fluorene-D10		62.3	%					
Pyrene-D10		58.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-31
Client ID: 003-SS1019-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0572.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 02-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	2.1	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene	J	15.	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene	J	8.3	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene	E	410	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene		51.	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene	E	620	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene	E	740	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene	E	430	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene	E	360	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene	LL	300	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene		120	ug/Kgdrywt	1	20	20.	3.0	9.9
Benzo(a)pyrene	LL	220	ug/Kgdrywt	1	20	20.	3.2	9.9
Indeno(1,2,3-cd)pyrene	L	260	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene		59.	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene	LL	86.	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		42.6	%					
Fluorene-D10		65.5	%					
Pyrene-D10		54.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-31DL
Client ID: 003-SS1019-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0745.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 14-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	49.	ug/Kgdrywt	5	20	99.	13.	49.
2-Methylnaphthalene	U	49.	ug/Kgdrywt	5	20	99.	11.	49.
Acenaphthylene	U	49.	ug/Kgdrywt	5	20	99.	5.9	49.
Acenaphthene	J	14.	ug/Kgdrywt	5	20	99.	7.4	49.
Fluorene	U	49.	ug/Kgdrywt	5	20	99.	16.	49.
Phenanthrene		450	ug/Kgdrywt	5	20	99.	8.9	49.
Anthracene	J	51.	ug/Kgdrywt	5	20	99.	5.9	49.
Fluoranthene		740	ug/Kgdrywt	5	20	99.	8.9	49.
Pyrene		840	ug/Kgdrywt	5	20	99.	10.	49.
Benzo(a)anthracene		400	ug/Kgdrywt	5	20	99.	9.4	49.
Chrysene		410	ug/Kgdrywt	5	20	99.	8.4	49.
Benzo(b)Fluoranthene	LL	390	ug/Kgdrywt	5	20	99.	12.	49.
Benzo(k)fluoranthene		120	ug/Kgdrywt	5	20	99.	15.	49.
Benzo(a)pyrene	LL	260	ug/Kgdrywt	5	20	99.	16.	49.
Indeno(1,2,3-cd)pyrene	L	200	ug/Kgdrywt	5	20	99.	9.4	49.
Dibenzo(a,h)anthracene	J	48.	ug/Kgdrywt	5	20	99.	8.9	49.
Benzo(g,h,i)perylene	LL	110	ug/Kgdrywt	5	20	99.	9.9	49.
2-Methylnaphthalene-D10		51.8	%					
Fluorene-D10		60.5	%					
Pyrene-D10		57.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-11
Client ID: 004/5-SS-DUP04-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0709.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	3.0	ug/Kgdrywt	1	20	19.	2.5	9.7
2-Methylnaphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.1	9.7
Acenaphthylene	U	9.7	ug/Kgdrywt	1	20	19.	1.2	9.7
Acenaphthene	J	12.	ug/Kgdrywt	1	20	19.	1.5	9.7
Fluorene	J	11.	ug/Kgdrywt	1	20	19.	3.1	9.7
Phenanthrene		120	ug/Kgdrywt	1	20	19.	1.8	9.7
Anthracene		36.	ug/Kgdrywt	1	20	19.	1.2	9.7
Fluoranthene		140	ug/Kgdrywt	1	20	19.	1.8	9.7
Pyrene		140	ug/Kgdrywt	1	20	19.	2.0	9.7
Benzo(a)anthracene		80.	ug/Kgdrywt	1	20	19.	1.8	9.7
Chrysene		86.	ug/Kgdrywt	1	20	19.	1.6	9.7
Benzo(b)Fluoranthene		100	ug/Kgdrywt	1	20	19.	2.3	9.7
Benzo(k)fluoranthene	L	32.	ug/Kgdrywt	1	20	19.	3.0	9.7
Benzo(a)pyrene	L	64.	ug/Kgdrywt	1	20	19.	3.2	9.7
Indeno(1,2,3-cd)pyrene		53.	ug/Kgdrywt	1	20	19.	1.8	9.7
Dibenzo(a,h)anthracene	JL	13.	ug/Kgdrywt	1	20	19.	1.8	9.7
Benzo(g,h,i)perylene	LL	27.	ug/Kgdrywt	1	20	19.	1.9	9.7
2-Methylnaphthalene-D10		45.4	%					
Fluorene-D10		58.1	%					
Pyrene-D10		62.7	%					

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Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-23
Client ID: 004/5-SS-DUP05-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0555.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.4	9.4
2-Methylnaphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.1	9.4
Acenaphthylene	J	2.0	ug/Kgdrywt	1	20	19.	1.1	9.4
Acenaphthene	U	9.4	ug/Kgdrywt	1	20	19.	1.4	9.4
Fluorene	U	9.4	ug/Kgdrywt	1	20	19.	3.0	9.4
Phenanthrene		24.	ug/Kgdrywt	1	20	19.	1.7	9.4
Anthracene	J	2.5	ug/Kgdrywt	1	20	19.	1.1	9.4
Fluoranthene		63.	ug/Kgdrywt	1	20	19.	1.7	9.4
Pyrene		50.	ug/Kgdrywt	1	20	19.	2.0	9.4
Benzo(a)anthracene		33.	ug/Kgdrywt	1	20	19.	1.8	9.4
Chrysene		32.	ug/Kgdrywt	1	20	19.	1.6	9.4
Benzo(b)Fluoranthene	LL	55.	ug/Kgdrywt	1	20	19.	2.3	9.4
Benzo(k)fluoranthene	J	19.	ug/Kgdrywt	1	20	19.	2.9	9.4
Benzo(a)pyrene	LL	30.	ug/Kgdrywt	1	20	19.	3.1	9.4
Indeno(1,2,3-cd)pyrene	L	52.	ug/Kgdrywt	1	20	19.	1.8	9.4
Dibenzo(a,h)anthracene	J	11.	ug/Kgdrywt	1	20	19.	1.7	9.4
Benzo(g,h,i)perylene	JLL	16.	ug/Kgdrywt	1	20	19.	1.9	9.4
2-Methylnaphthalene-D10		42.8	%					
Fluorene-D10		66.0	%					
Pyrene-D10		63.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-9
Client ID: 004/5-SS1050-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0585.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Phenanthrene	J	19.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	2.2	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		54.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		39.	ug/Kgdrywt	1	20	20.	2.2	10.
Benzo(a)anthracene		26.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		24.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		39.	ug/Kgdrywt	1	20	20.	2.5	10.
Benzo(k)fluoranthene	JL	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene	L	21.	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene		37.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	JL	7.9	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	12.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		44.7	%					
Fluorene-D10		68.7	%					
Pyrene-D10		73.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-8
Client ID: 004/5-SS1051-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0584.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.6	ug/Kgdrywt	1	20	19.	2.5	9.6
2-Methylnaphthalene	U	9.6	ug/Kgdrywt	1	20	19.	2.1	9.6
Acenaphthylene	U	9.6	ug/Kgdrywt	1	20	19.	1.2	9.6
Acenaphthene	U	9.6	ug/Kgdrywt	1	20	19.	1.4	9.6
Fluorene	U	9.6	ug/Kgdrywt	1	20	19.	3.1	9.6
Phenanthrene	J	12.	ug/Kgdrywt	1	20	19.	1.7	9.6
Anthracene	J	1.6	ug/Kgdrywt	1	20	19.	1.2	9.6
Fluoranthene		33.	ug/Kgdrywt	1	20	19.	1.7	9.6
Pyrene		24.	ug/Kgdrywt	1	20	19.	2.0	9.6
Benzo(a)anthracene	J	18.	ug/Kgdrywt	1	20	19.	1.8	9.6
Chrysene	J	15.	ug/Kgdrywt	1	20	19.	1.6	9.6
Benzo(b)Fluoranthene		26.	ug/Kgdrywt	1	20	19.	2.3	9.6
Benzo(k)fluoranthene	JL	6.5	ug/Kgdrywt	1	20	19.	3.0	9.6
Benzo(a)pyrene	JL	15.	ug/Kgdrywt	1	20	19.	3.2	9.6
Indeno(1,2,3-cd)pyrene		24.	ug/Kgdrywt	1	20	19.	1.8	9.6
Dibenzo(a,h)anthracene	JL	6.5	ug/Kgdrywt	1	20	19.	1.7	9.6
Benzo(g,h,i)perylene	JLL	8.6	ug/Kgdrywt	1	20	19.	1.9	9.6
2-Methylnaphthalene-D10		43.8	%					
Fluorene-D10		66.2	%					
Pyrene-D10		72.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-7
Client ID: 004/5-SS1052-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0583.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	3.6	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene	J	2.8	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene	U	9.9	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene		46.	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene	J	6.7	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene		120	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene		98.	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene		64.	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene		66.	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene		110	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene	L	31.	ug/Kgdrywt	1	20	20.	3.1	9.9
Benzo(a)pyrene	L	59.	ug/Kgdrywt	1	20	20.	3.3	9.9
Indeno(1,2,3-cd)pyrene		100	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene	L	21.	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene	LL	31.	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		43.4	%					
Fluorene-D10		71.4	%					
Pyrene-D10		70.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-6
Client ID: 004/5-SS1053-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0582.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	1.6	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		27.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	3.0	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		76.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		58.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		33.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		34.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		50.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	JL	20.	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene	L	30.	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene		56.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	JL	9.7	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	17.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		38.0	%					
Fluorene-D10		57.7	%					
Pyrene-D10		62.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-5
Client ID: 004/5-SS1054-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0579.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.5	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	U	9.8	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	U	9.8	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	U	9.8	ug/Kgdrywt	1	20	20.	3.1	9.8
Phenanthrene	J	15.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	1.9	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		44.	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		32.	ug/Kgdrywt	1	20	20.	2.0	9.8
Benzo(a)anthracene		23.	ug/Kgdrywt	1	20	20.	1.9	9.8
Chrysene		21.	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		35.	ug/Kgdrywt	1	20	20.	2.4	9.8
Benzo(k)fluoranthene	JL	11.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	JL	19.	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		33.	ug/Kgdrywt	1	20	20.	1.9	9.8
Dibenzo(a,h)anthracene	JL	7.7	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	JLL	11.	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		40.1	%					
Fluorene-D10		61.6	%					
Pyrene-D10		64.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-4
Client ID: 004/5-SS1055-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0578.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.3	ug/Kgdrywt	1	20	19.	2.4	9.3
2-Methylnaphthalene	U	9.3	ug/Kgdrywt	1	20	19.	2.0	9.3
Acenaphthylene	U	9.3	ug/Kgdrywt	1	20	19.	1.1	9.3
Acenaphthene	U	9.3	ug/Kgdrywt	1	20	19.	1.4	9.3
Fluorene	U	9.3	ug/Kgdrywt	1	20	19.	3.0	9.3
Phenanthrene	J	13.	ug/Kgdrywt	1	20	19.	1.7	9.3
Anthracene	J	2.8	ug/Kgdrywt	1	20	19.	1.1	9.3
Fluoranthene		40.	ug/Kgdrywt	1	20	19.	1.7	9.3
Pyrene		25.	ug/Kgdrywt	1	20	19.	2.0	9.3
Benzo(a)anthracene		22.	ug/Kgdrywt	1	20	19.	1.8	9.3
Chrysene	J	18.	ug/Kgdrywt	1	20	19.	1.6	9.3
Benzo(b)Fluoranthene		27.	ug/Kgdrywt	1	20	19.	2.2	9.3
Benzo(k)fluoranthene	JL	7.8	ug/Kgdrywt	1	20	19.	2.9	9.3
Benzo(a)pyrene	JL	16.	ug/Kgdrywt	1	20	19.	3.1	9.3
Indeno(1,2,3-cd)pyrene		22.	ug/Kgdrywt	1	20	19.	1.8	9.3
Dibenzo(a,h)anthracene	JL	6.3	ug/Kgdrywt	1	20	19.	1.7	9.3
Benzo(g,h,i)perylene	JLL	8.1	ug/Kgdrywt	1	20	19.	1.9	9.3
2-Methylnaphthalene-D10		50.2	%					
Fluorene-D10		70.5	%					
Pyrene-D10		62.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0708.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.5	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.1	9.8
Acenaphthylene	U	9.8	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	J	1.6	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	U	9.8	ug/Kgdrywt	1	20	20.	3.1	9.8
Phenanthrene		22.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	3.2	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		46.	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		43.	ug/Kgdrywt	1	20	20.	2.0	9.8
Benzo(a)anthracene		23.	ug/Kgdrywt	1	20	20.	1.8	9.8
Chrysene		28.	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		40.	ug/Kgdrywt	1	20	20.	2.3	9.8
Benzo(k)fluoranthene	JL	13.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	L	22.	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		22.	ug/Kgdrywt	1	20	20.	1.8	9.8
Dibenzo(a,h)anthracene	JL	3.9	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	JLL	9.8	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		49.2	%					
Fluorene-D10		63.7	%					
Pyrene-D10		68.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-2
Client ID: 004/5-SS1057-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0714.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	1.2	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	4.2	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	3.7	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		50.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	7.4	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		78.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		74.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		37.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		47.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		64.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	JL	19.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	L	33.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		35.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	UL	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	20.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		71.0	%					
Fluorene-D10		74.0	%					
Pyrene-D10		86.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-17
Client ID: 004/5-SS1058-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0588.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	J	17.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	2.0	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		41.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		30.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	20.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	J	17.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		30.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	JL	8.2	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	JL	17.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		26.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	JL	7.2	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	9.1	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		42.5	%					
Fluorene-D10		66.3	%					
Pyrene-D10		61.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-16
Client ID: 004/5-SS1059-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0587.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	J	8.2	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		21.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	J	15.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	13.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	J	9.0	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	J	20.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	JL	4.5	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	JL	12.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	J	20.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	JL	6.2	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	7.4	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		39.0	%					
Fluorene-D10		63.2	%					
Pyrene-D10		64.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-15
Client ID: 004/5-SS1060-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0586.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.5	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	J	6.4	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	J	3.6	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	J	3.5	ug/Kgdrywt	1	20	20.	3.1	9.8
Phenanthrene		62.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	8.0	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		170	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		130	ug/Kgdrywt	1	20	20.	2.0	9.8
Benzo(a)anthracene		91.	ug/Kgdrywt	1	20	20.	1.8	9.8
Chrysene		92.	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		170	ug/Kgdrywt	1	20	20.	2.3	9.8
Benzo(k)fluoranthene	L	46.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	L	88.	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		150	ug/Kgdrywt	1	20	20.	1.8	9.8
Dibenzo(a,h)anthracene	L	31.	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	LL	43.	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		42.3	%					
Fluorene-D10		63.2	%					
Pyrene-D10		56.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-12
Client ID: 004/5-SS1061-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0710.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.4	9.4
2-Methylnaphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.1	9.4
Acenaphthylene	J	1.9	ug/Kgdrywt	1	20	19.	1.1	9.4
Acenaphthene	J	2.8	ug/Kgdrywt	1	20	19.	1.4	9.4
Fluorene	U	9.4	ug/Kgdrywt	1	20	19.	3.0	9.4
Phenanthrene		49.	ug/Kgdrywt	1	20	19.	1.7	9.4
Anthracene	J	8.3	ug/Kgdrywt	1	20	19.	1.1	9.4
Fluoranthene		110	ug/Kgdrywt	1	20	19.	1.7	9.4
Pyrene		120	ug/Kgdrywt	1	20	19.	2.0	9.4
Benzo(a)anthracene		71.	ug/Kgdrywt	1	20	19.	1.8	9.4
Chrysene		82.	ug/Kgdrywt	1	20	19.	1.6	9.4
Benzo(b)Fluoranthene		120	ug/Kgdrywt	1	20	19.	2.3	9.4
Benzo(k)fluoranthene	L	39.	ug/Kgdrywt	1	20	19.	2.9	9.4
Benzo(a)pyrene	L	61.	ug/Kgdrywt	1	20	19.	3.1	9.4
Indeno(1,2,3-cd)pyrene		63.	ug/Kgdrywt	1	20	19.	1.8	9.4
Dibenzo(a,h)anthracene	JL	14.	ug/Kgdrywt	1	20	19.	1.7	9.4
Benzo(g,h,i)perylene	LL	32.	ug/Kgdrywt	1	20	19.	1.9	9.4
2-Methylnaphthalene-D10		56.7	%					
Fluorene-D10		65.6	%					
Pyrene-D10		69.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-10
Client ID: 004/5-SS1062-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0711.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	4.0	ug/Kgdrywt	1	20	20.	2.6	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	J	3.0	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	J	13.	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	J	12.	ug/Kgdrywt	1	20	20.	3.2	9.8
Phenanthrene		180	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene		22.	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		260	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		240	ug/Kgdrywt	1	20	20.	2.1	9.8
Benzo(a)anthracene		140	ug/Kgdrywt	1	20	20.	1.9	9.8
Chrysene		140	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		200	ug/Kgdrywt	1	20	20.	2.4	9.8
Benzo(k)fluoranthene	L	57.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	L	110	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		89.	ug/Kgdrywt	1	20	20.	1.9	9.8
Dibenzo(a,h)anthracene	JL	16.	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	LL	39.	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		67.1	%					
Fluorene-D10		74.4	%					
Pyrene-D10		83.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-20
Client ID: 004/5-SS1063-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0590.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.5	9.7
2-Methylnaphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.1	9.7
Acenaphthylene	U	9.7	ug/Kgdrywt	1	20	19.	1.2	9.7
Acenaphthene	U	9.7	ug/Kgdrywt	1	20	19.	1.5	9.7
Fluorene	U	9.7	ug/Kgdrywt	1	20	19.	3.1	9.7
Phenanthrene	J	19.	ug/Kgdrywt	1	20	19.	1.8	9.7
Anthracene	J	2.8	ug/Kgdrywt	1	20	19.	1.2	9.7
Fluoranthene		52.	ug/Kgdrywt	1	20	19.	1.8	9.7
Pyrene		35.	ug/Kgdrywt	1	20	19.	2.0	9.7
Benzo(a)anthracene		25.	ug/Kgdrywt	1	20	19.	1.8	9.7
Chrysene		21.	ug/Kgdrywt	1	20	19.	1.6	9.7
Benzo(b)Fluoranthene		38.	ug/Kgdrywt	1	20	19.	2.3	9.7
Benzo(k)fluoranthene	JL	10.	ug/Kgdrywt	1	20	19.	3.0	9.7
Benzo(a)pyrene	L	21.	ug/Kgdrywt	1	20	19.	3.2	9.7
Indeno(1,2,3-cd)pyrene		33.	ug/Kgdrywt	1	20	19.	1.8	9.7
Dibenzo(a,h)anthracene	JL	7.7	ug/Kgdrywt	1	20	19.	1.8	9.7
Benzo(g,h,i)perylene	JLL	10.	ug/Kgdrywt	1	20	19.	1.9	9.7
2-Methylnaphthalene-D10		38.8	%					
Fluorene-D10		68.6	%					
Pyrene-D10		68.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-19
Client ID: 004/5-SS1064-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0705.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.3	ug/Kgdrywt	1	20	18.	2.4	9.3
2-Methylnaphthalene	U	9.3	ug/Kgdrywt	1	20	18.	2.0	9.3
Acenaphthylene	U	9.3	ug/Kgdrywt	1	20	18.	1.1	9.3
Acenaphthene	U	9.3	ug/Kgdrywt	1	20	18.	1.4	9.3
Fluorene	U	9.3	ug/Kgdrywt	1	20	18.	3.0	9.3
Phenanthrene	JM	15.	ug/Kgdrywt	1	20	18.	1.7	9.3
Anthracene	J	1.4	ug/Kgdrywt	1	20	18.	1.1	9.3
Fluoranthene	M	34.	ug/Kgdrywt	1	20	18.	1.7	9.3
Pyrene	M	29.	ug/Kgdrywt	1	20	18.	1.9	9.3
Benzo(a)anthracene	J	14.	ug/Kgdrywt	1	20	18.	1.8	9.3
Chrysene		19.	ug/Kgdrywt	1	20	18.	1.6	9.3
Benzo(b)Fluoranthene		21.	ug/Kgdrywt	1	20	18.	2.2	9.3
Benzo(k)fluoranthene	JL	11.	ug/Kgdrywt	1	20	18.	2.9	9.3
Benzo(a)pyrene	JLMM	13.	ug/Kgdrywt	1	20	18.	3.0	9.3
Indeno(1,2,3-cd)pyrene	JMM	11.	ug/Kgdrywt	1	20	18.	1.8	9.3
Dibenzo(a,h)anthracene	JLMM	1.8	ug/Kgdrywt	1	20	18.	1.7	9.3
Benzo(g,h,i)perylene	JLLMM	5.2	ug/Kgdrywt	1	20	18.	1.8	9.3
2-Methylnaphthalene-D10		35.1	%					
Fluorene-D10		50.8	%					
Pyrene-D10		60.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-18
Client ID: 004/5-SS1065-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0589.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.2	ug/Kgdrywt	1	20	18.	2.4	9.2
2-Methylnaphthalene	U	9.2	ug/Kgdrywt	1	20	18.	2.0	9.2
Acenaphthylene	J	2.4	ug/Kgdrywt	1	20	18.	1.1	9.2
Acenaphthene	J	1.6	ug/Kgdrywt	1	20	18.	1.4	9.2
Fluorene	U	9.2	ug/Kgdrywt	1	20	18.	3.0	9.2
Phenanthrene		33.	ug/Kgdrywt	1	20	18.	1.7	9.2
Anthracene	J	3.4	ug/Kgdrywt	1	20	18.	1.1	9.2
Fluoranthene		90.	ug/Kgdrywt	1	20	18.	1.7	9.2
Pyrene		66.	ug/Kgdrywt	1	20	18.	1.9	9.2
Benzo(a)anthracene		39.	ug/Kgdrywt	1	20	18.	1.8	9.2
Chrysene		44.	ug/Kgdrywt	1	20	18.	1.6	9.2
Benzo(b)Fluoranthene		75.	ug/Kgdrywt	1	20	18.	2.2	9.2
Benzo(k)fluoranthene	L	21.	ug/Kgdrywt	1	20	18.	2.9	9.2
Benzo(a)pyrene	L	38.	ug/Kgdrywt	1	20	18.	3.0	9.2
Indeno(1,2,3-cd)pyrene		62.	ug/Kgdrywt	1	20	18.	1.8	9.2
Dibenzo(a,h)anthracene	JL	12.	ug/Kgdrywt	1	20	18.	1.7	9.2
Benzo(g,h,i)perylene	JLL	18.	ug/Kgdrywt	1	20	18.	1.8	9.2
2-Methylnaphthalene-D10		42.4	%					
Fluorene-D10		66.7	%					
Pyrene-D10		62.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-14
Client ID: 004/5-SS1066-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0713.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	J	2.3	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene		43.	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	J	6.6	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene		91.	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene		98.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene		50.	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene		54.	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene		87.	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	L	22.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	L	40.	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene		41.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	JL	9.2	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	JLL	21.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		58.1	%					
Fluorene-D10		62.6	%					
Pyrene-D10		75.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-13
Client ID: 004/5-SS1067-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0712.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	13.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene		38.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene		43.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	E	620	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene		94.	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	E	760	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	E	700	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	E	370	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	E	350	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	E	380	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	L	120	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	L	190	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene		140	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	L	37.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	LL	65.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		56.7	%					
Fluorene-D10		66.4	%					
Pyrene-D10		76.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-13DL
Client ID: 004/5-SS1067-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0728.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	13.	ug/Kgdrywt	4	20	83.	11.	42.
2-Methylnaphthalene	U	42.	ug/Kgdrywt	4	20	83.	9.1	42.
Acenaphthylene	U	42.	ug/Kgdrywt	4	20	83.	5.0	42.
Acenaphthene	J	36.	ug/Kgdrywt	4	20	83.	6.2	42.
Fluorene	J	41.	ug/Kgdrywt	4	20	83.	13.	42.
Phenanthrene		620	ug/Kgdrywt	4	20	83.	7.5	42.
Anthracene		97.	ug/Kgdrywt	4	20	83.	5.0	42.
Fluoranthene		750	ug/Kgdrywt	4	20	83.	7.5	42.
Pyrene		830	ug/Kgdrywt	4	20	83.	8.7	42.
Benzo(a)anthracene		350	ug/Kgdrywt	4	20	83.	7.9	42.
Chrysene		370	ug/Kgdrywt	4	20	83.	7.1	42.
Benzo(b)Fluoranthene		380	ug/Kgdrywt	4	20	83.	10.	42.
Benzo(k)fluoranthene	L	130	ug/Kgdrywt	4	20	83.	13.	42.
Benzo(a)pyrene	L	220	ug/Kgdrywt	4	20	83.	14.	42.
Indeno(1,2,3-cd)pyrene		170	ug/Kgdrywt	4	20	83.	7.9	42.
Dibenzo(a,h)anthracene	JL	33.	ug/Kgdrywt	4	20	83.	7.5	42.
Benzo(g,h,i)perylene	JLL	77.	ug/Kgdrywt	4	20	83.	8.3	42.
2-Methylnaphthalene-D10		57.6	%					
Fluorene-D10		65.6	%					
Pyrene-D10		86.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-21
Client ID: 004/5-SS1068-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0553.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	J	1.4	ug/Kgdrywt	1	20	21.	1.3	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Phenanthrene	J	18.	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	J	1.9	ug/Kgdrywt	1	20	21.	1.3	10.
Fluoranthene		46.	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene		38.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene		26.	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene		24.	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	LL	43.	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	J	14.	ug/Kgdrywt	1	20	21.	3.3	10.
Benzo(a)pyrene	LL	26.	ug/Kgdrywt	1	20	21.	3.5	10.
Indeno(1,2,3-cd)pyrene	L	40.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	J	8.9	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	JLL	14.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		52.8	%					
Fluorene-D10		71.7	%					
Pyrene-D10		71.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-33RE
Client ID: TF2-SS-RB03-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0561.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133367

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.21	0.066	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.21	0.079	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.21	0.056	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.21	0.066	0.10
Fluorene	U	0.10	ug/L	1	.2	0.21	0.063	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.21	0.052	0.10
Anthracene	U	0.10	ug/L	1	.2	0.21	0.045	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.21	0.075	0.10
Pyrene	U	0.10	ug/L	1	.2	0.21	0.061	0.10
Benzo(a)anthracene	B	0.29	ug/L	1	.2	0.21	0.047	0.10
Chrysene	U	0.10	ug/L	1	.2	0.21	0.037	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.21	0.092	0.10
Benzo(k)fluoranthene	UL	0.10	ug/L	1	.2	0.21	0.050	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.21	0.068	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.21	0.054	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.21	0.072	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.21	0.067	0.10
2-Methylnaphthalene-D10		45.0	%					
Fluorene-D10		63.3	%					
pyrene-d10		71.7	%					

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Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-27
Client ID: 003-SS1015-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20059.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 06-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 93.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	48.	mg/Kgdrywt	1	20	20.	5.6	9.8
o-Terphenyl		98.8	%					
n-Triacontane-D62		101.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-8
Client ID: 004/5-SS1051-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20057.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 06-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	27.	mg/Kgdrywt	1	20	19.	5.4	9.4
o-Terphenyl		87.1	%					
n-Triacontane-D62		95.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20056.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	66.	mg/Kgdrywt	1	20	19.	5.4	9.5
o-Terphenyl	*	60.9	%					
n-Triacontane-D62		70.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3RE
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20121.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		100	mg/Kgdrywt	1	20	19.	5.5	9.6
o-Terphenyl		85.4	%					
n-Triacontane-D62		93.8	%					

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ANALYTICAL SERVICES

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-18
Client ID: 004/5-SS1065-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20058.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 06-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	38.	mg/Kgdrywt	1	20	20.	5.6	9.9
o-Terphenyl		73.8	%					
n-Triacontane-D62		83.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-27
Client ID: 003-SS1015-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4080.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 93.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.3	mg/Kgdrywt	1	2.5	2.8	2.1	2.3
p-Bromofluorobenzene		95.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-8
Client ID: 004/5-SS1051-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4078.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 96.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	J	2.6	mg/Kgdrywt	1	2.5	3.3	2.4	2.6
p-Bromofluorobenzene		91.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4077.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 96.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.1	mg/Kgdrywt	1	2.5	2.6	1.9	2.1
p-Bromofluorobenzene		95.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-18
Client ID: 004/5-SS1065-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4079.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 96.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	3.0	mg/Kgdrywt	1	2.5	3.7	2.7	3.0
p-Bromofluorobenzene		92.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-1
Client ID: TF2-W-TB03-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4076.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 100
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		85.6	%					

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APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: Vavsta Newport SDG: SG 82554

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: _____

Missing Information	Date Lab Contacted	Date Received

Validator: Edward Kelly Date: 12/6/13

EPA-NE - Data Validation
VOA/SV/Pest/PCB-1

See DV Report

Case: Navsta Newport SDG: SG8254

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: Edward Ludlum Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG 8254

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: Edward Hadley Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport. SDG: SG8254

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: Edward Sedlazo

Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: Edward Modlyn Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Edward Sedlmyer Date: 12/6/13

See DV Report

EPA NE - Data Validation Worksheet

Case: Navsta Newport SDG: SDG 58254

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Edward Sudlow Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Neusta Newport SDG: SG 8254

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Edward Ludlow Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navistar Newport SDG: SG8254

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? Y / N

Did the laboratory analyze the initial calibration at the appropriate concentration levels? Y N

Validator: Edward Sedlyar Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)

Comments:

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: Edward Sudlow Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG 8254

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: Edward Sudlow Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG 8254

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: Edward Sedlmyer Date: 12/6/13

EPA-NE - Data Validation Worksheet See DV Report

Case: Navsta Newport SDG: SG8254

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. Y N

Validator: Edward Sedlmyer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navstar Newport SDG: SG8254

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: Edward Reilly Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: S68259

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: Edward Sweeney Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methylphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: Edward Sadlyn

Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NavstaNewport SDG: SG 8254

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Ludlum Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nausta Newport SDG: SG825y

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery			% Recovery		
			Fluoranthene			Naphthalene	
			Pyrene			2-Methylnaphthalene	
			Benzo(a)anthracene			Acenaphthylene	
			Chrysene			Acenaphthene	
			Benzo(b)fluoranthene			Fluorene	
			Benzo(k)fluoranthene			Pentachlorophenol	
			Benzo(a)pyrene			Phenanthrene	
			Indeno(1,2,3-cd)pyrene			Anthracene	
			Dibenzo(a,h)anthracene				
			Benzo(g,h,i)perylene				

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Hedbury Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1,2-Dichloroethane-d_4

Validator: Edward Sedlmyer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Naustu Newport SDG: 568254

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Wedlmyer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nyvsta Newport SDG: SG8254

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Edward Sedlazo Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: 568254

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: Edward Kelley Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sullivan Date: 12/6/13

See OU Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: 568254

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: Edward Sedlmayer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nauset Newport SDG: SC8254

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sedlazeck Date: 12/6/18

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nauls to Newport SDG: SG82554

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: Edward Holbrook Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nauste Newport SDG: SG8254

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: Edward Sedlazo Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nars to Newport SDG: SG8254

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: Edward Sedlmyer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Naustc Newport SDG: SG 8254

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: Edward Leathers Date: 12/6/13

EPA-NE - Data Validation Worksheet See DV Report

Case: Navsta Newport SDG: SG 8254

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: Edward Sedlyar Date: 12/6/13

See DV Report

EPA NE - Data Validation Worksheet

Case: Navsta Newport SDG: JG8254

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: Edward Sedlmayer Date: 12/6/13

EPA-NE - Data Validation Worksheet See DV Report

Case: Navsta Newport SDG: SG825-4

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: Edward Sedlmyer Date: 12/6/13

See DU Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG825-4

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Kadlubowski Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navita Newport SDG: SG 8254

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Kelly Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nouste Newport SDG: 568254

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: Edward Hedbye Date: 12/6/13

APPENDIX D

SUPPORT DOCUMENTATION

HOLDTIME

SDG SG8254

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-004/5-SS1062-000.8	SG8254-010	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS-DUP05-101	SG8254-023	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS-DUP04-101	SG8254-011	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS1068-000.5	SG8254-021	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1067-000.7	SG8254-013	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS1066-000.9	SG8254-014	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS1065-000.5	SG8254-018	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1063-000.6	SG8254-020	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1061-000.6	SG8254-012	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS1060-000.5	SG8254-015	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1059-000.6	SG8254-016	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1058-000.5	SG8254-017	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1057-0001	SG8254-002	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1056-000.6	SG8254-003	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1055-000.8	SG8254-004	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-003-SS1012-000.7	SG8254-024	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1064-000.6	SG8254-019	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1011-000.8	SG8254-022	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1054-000.6	SG8254-005	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-003-SS1013-000.7	SG8254-025	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1014-0001	SG8254-026	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1015-000.8	SG8254-027	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1016-000.9	SG8254-028	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1017-000.8	SG8254-029	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1052-000.6	SG8254-007	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1053-000.6	SG8254-006	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1051-000.8	SG8254-008	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1050-000.6	SG8254-009	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-003-SS-DUP06-1013	SG8254-032	NM	10/22/2013	11/12/2013	11/13/2013	21	1	22
HG	MG/KG	TF2-003-SS1019-000.5	SG8254-031	NM	10/22/2013	11/12/2013	11/13/2013	21	1	22
HG	MG/KG	TF2-003-SS1018-000.8	SG8254-030	NM	10/22/2013	11/12/2013	11/13/2013	21	1	22
HG	UG/L	TF2-SS-RB03-1013	SG8254-033	NM	10/22/2013	11/9/2013	11/11/2013	18	2	20
M	MG/KG	TF2-004/5-SS1055-000.8	SG8254-004	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SS1060-000.5	SG8254-015	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1057-0001	SG8254-002	NM	10/21/2013	11/6/2013	11/18/2013	16	12	28
M	MG/KG	TF2-004/5-SS1059-000.6	SG8254-016	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1059-000.6	SG8254-016	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1058-000.5	SG8254-017	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1058-000.5	SG8254-017	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1060-000.5	SG8254-015	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1057-0001	SG8254-002	NM	10/21/2013	11/6/2013	11/13/2013	16	7	23
M	MG/KG	TF2-004/5-SS1056-000.6	SG8254-003	NM	10/21/2013	11/6/2013	11/18/2013	16	12	28
M	MG/KG	TF2-004/5-SS1053-000.6	SG8254-006	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1055-000.8	SG8254-004	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1054-000.6	SG8254-005	NM	10/21/2013	11/6/2013	11/18/2013	16	12	28
M	MG/KG	TF2-004/5-SS1054-000.6	SG8254-005	NM	10/21/2013	11/6/2013	11/13/2013	16	7	23
M	MG/KG	TF2-004/5-SS1061-000.6	SG8254-012	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1056-000.6	SG8254-003	NM	10/21/2013	11/6/2013	11/13/2013	16	7	23
M	MG/KG	TF2-004/5-SS1065-000.5	SG8254-018	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1017-000.8	SG8254-029	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS-DUP05-101	SG8254-023	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SS1053-000.6	SG8254-006	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS-DUP04-101	SG8254-011	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1068-000.5	SG8254-021	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1067-000.7	SG8254-013	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS-DUP04-101	SG8254-011	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1066-000.9	SG8254-014	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1061-000.6	SG8254-012	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1065-000.5	SG8254-018	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1064-000.6	SG8254-019	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1064-000.6	SG8254-019	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1063-000.6	SG8254-020	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1063-000.6	SG8254-020	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1062-000.8	SG8254-010	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1062-000.8	SG8254-010	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1066-000.9	SG8254-014	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-003-SS1013-000.7	SG8254-025	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1016-000.9	SG8254-028	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1015-000.8	SG8254-027	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-003-SS1015-000.8	SG8254-027	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1015-000.8	SG8254-027	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1014-0001	SG8254-026	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1014-0001	SG8254-026	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1017-000.8	SG8254-029	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1013-000.7	SG8254-025	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1017-000.8	SG8254-029	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1013-000.7	SG8254-025	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1012-000.7	SG8254-024	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1012-000.7	SG8254-024	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1012-000.7	SG8254-024	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1011-000.8	SG8254-022	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1011-000.8	SG8254-022	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1014-0001	SG8254-026	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1019-000.5	SG8254-031	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-004/5-SS1052-000.6	SG8254-007	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1051-000.8	SG8254-008	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1051-000.8	SG8254-008	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SS1050-000.6	SG8254-009	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1050-000.6	SG8254-009	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-003-SS-DUP06-1013	SG8254-032	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1016-000.9	SG8254-028	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS-DUP06-1013	SG8254-032	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1068-000.5	SG8254-021	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1019-000.5	SG8254-031	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1019-000.5	SG8254-031	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1018-000.8	SG8254-030	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1018-000.8	SG8254-030	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1018-000.8	SG8254-030	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS-DUP05-101	SG8254-023	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1052-000.6	SG8254-007	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-003-SS-DUP06-1013	SG8254-032	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1067-000.7	SG8254-013	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	UG/L	TF2-SS-RB03-1013	SG8254-033	NM	10/22/2013	11/6/2013	11/18/2013	15	12	27
M	UG/L	TF2-SS-RB03-1013	SG8254-033	NM	10/22/2013	11/6/2013	11/13/2013	15	7	22
TS	%	TF2-004/5-SS1055-000.8	SG8254-4	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
TS	%	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-004/5-SS1057-0001	SG8254-2	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-004/5-SS1058-000.5	SG8254-17	NM	10/22/2013	10/28/2013	10/29/2013	6	1	7
TS	%	TF2-004/5-SS1059-000.6	SG8254-16	NM	10/22/2013	10/28/2013	10/29/2013	6	1	7
TS	%	TF2-004/5-SS1060-000.5	SG8254-15	NM	10/22/2013	10/28/2013	10/29/2013	6	1	7
TS	%	TF2-004/5-SS1061-000.6	SG8254-12	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1054-000.6	SG8254-5	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-004/5-SS1063-000.6	SG8254-20	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1064-000.6	SG8254-19	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1066-000.9	SG8254-14	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1067-000.7	SG8254-13	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1068-000.5	SG8254-21	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS-DUP04-101	SG8254-11	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1062-000.8	SG8254-10	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-003-SS1018-000.8	SG8254-30	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1011-000.8	SG8254-22	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
TS	%	TF2-003-SS1012-000.7	SG8254-24	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1013-000.7	SG8254-25	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1014-0001	SG8254-26	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1016-000.9	SG8254-28	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1053-000.6	SG8254-6	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-003-SS1017-000.8	SG8254-29	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1019-000.5	SG8254-31	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-W-TB03-1013	SG8254-1	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-003-SS-DUP06-1013	SG8254-32	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS-DUP05-101	SG8254-23	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1050-000.6	SG8254-9	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1052-000.6	SG8254-7	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
SIM	%	TF2-004/5-SS-DUP05-101	SG8254-23	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1067-000.7	SG8254-13DL	NM	10/21/2013	10/28/2013	11/13/2013	7	16	23
SIM	%	TF2-SS-RB03-1013	SG8254-33RE	NM	10/22/2013	10/28/2013	11/1/2013	6	4	10
SIM	%	TF2-003-SS1014-0001	SG8254-26	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	%	TF2-004/5-SS-DUP04-101	SG8254-11	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1050-000.6	SG8254-9	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-003-SS-DUP06-1013	SG8254-32	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	%	TF2-003-SS1019-000.5	SG8254-31DL	NM	10/22/2013	10/25/2013	11/14/2013	3	20	23
SIM	%	TF2-003-SS1019-000.5	SG8254-31	NM	10/22/2013	10/25/2013	11/2/2013	3	8	11
SIM	%	TF2-003-SS1018-000.8	SG8254-30	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1052-000.6	SG8254-7	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-003-SS1016-000.9	SG8254-28	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1053-000.6	SG8254-6	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-003-SS1014-0001	SG8254-26DL	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	%	TF2-003-SS1011-000.8	SG8254-22	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1011-000.8	SG8254-22DL	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1012-000.7	SG8254-24	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1012-000.7	SG8254-24DL	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1013-000.7	SG8254-25	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1013-000.7	SG8254-25DL	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	%	TF2-003-SS1017-000.8	SG8254-29	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1061-000.6	SG8254-12	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	%	TF2-004/5-SS1068-000.5	SG8254-21	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1067-000.7	SG8254-13	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1066-000.9	SG8254-14	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	%	TF2-004/5-SS1064-000.6	SG8254-19	NM	10/22/2013	10/28/2013	11/12/2013	6	15	21
SIM	%	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-004/5-SS1062-000.8	SG8254-10	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1060-000.5	SG8254-15	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	%	TF2-004/5-SS1059-000.6	SG8254-16	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	%	TF2-004/5-SS1058-000.5	SG8254-17	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	%	TF2-004/5-SS1057-0001	SG8254-2	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1055-000.8	SG8254-4	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-004/5-SS1054-000.6	SG8254-5	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-004/5-SS1063-000.6	SG8254-20	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-004/5-SS-DUP04-101	SG8254-11	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1057-0001	SG8254-2	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS-DUP05-101	SG8254-23	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/KG	TF2-003-SS1014-0001	SG8254-26	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS-DUP06-1013	SG8254-32	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	UG/KG	TF2-003-SS1019-000.5	SG8254-31DL	NM	10/22/2013	10/25/2013	11/14/2013	3	20	23
SIM	UG/KG	TF2-003-SS1019-000.5	SG8254-31	NM	10/22/2013	10/25/2013	11/2/2013	3	8	11
SIM	UG/KG	TF2-003-SS1018-000.8	SG8254-30	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1017-000.8	SG8254-29	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1016-000.9	SG8254-28	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-004/5-SS1050-000.6	SG8254-9	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1068-000.5	SG8254-21	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1014-0001	SG8254-26DL	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	UG/KG	TF2-004/5-SS1059-000.6	SG8254-16	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-003-SS1013-000.7	SG8254-25	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1012-000.7	SG8254-24DL	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1012-000.7	SG8254-24	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1011-000.8	SG8254-22DL	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1011-000.8	SG8254-22	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-004/5-SS1066-000.9	SG8254-14	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/KG	TF2-003-SS1013-000.7	SG8254-25DL	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	UG/KG	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1067-000.7	SG8254-13DL	NM	10/21/2013	10/28/2013	11/13/2013	7	16	23
SIM	UG/KG	TF2-004/5-SS1067-000.7	SG8254-13	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-004/5-SS1064-000.6	SG8254-19	NM	10/22/2013	10/28/2013	11/12/2013	6	15	21
SIM	UG/KG	TF2-004/5-SS1063-000.6	SG8254-20	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-004/5-SS1062-000.8	SG8254-10	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1053-000.6	SG8254-6	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1052-000.6	SG8254-7	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1061-000.6	SG8254-12	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1054-000.6	SG8254-5	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1055-000.8	SG8254-4	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1058-000.5	SG8254-17	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-004/5-SS1060-000.5	SG8254-15	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/L	TF2-SS-RB03-1013	SG8254-33RE	NM	10/22/2013	10/28/2013	11/1/2013	6	4	10
GRO	%	TF2-W-TB03-1013	SG8254-1	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
GRO	%	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/25/2013	10/26/2013	3	1	4
GRO	%	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	%	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/30/2013	11/6/2013	9	7	16
GRO	%	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	%	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/30/2013	11/5/2013	9	6	15
GRO	%	TF2-004/5-SS1056-000.6	SG8254-3RE	NM	10/21/2013	11/11/2013	11/11/2013	21	0	21
GRO	%	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/25/2013	10/26/2013	3	1	4
GRO	%	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/30/2013	11/6/2013	8	7	15
GRO	%	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/30/2013	11/6/2013	8	7	15
GRO	MG/KG	TF2-W-TB03-1013	SG8254-1	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	MG/KG	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/25/2013	10/26/2013	3	1	4
GRO	MG/KG	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/30/2013	11/6/2013	8	7	15
GRO	MG/KG	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	MG/KG	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/30/2013	11/6/2013	9	7	16
GRO	MG/KG	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	MG/KG	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/30/2013	11/5/2013	9	6	15
GRO	MG/KG	TF2-004/5-SS1056-000.6	SG8254-3RE	NM	10/21/2013	11/11/2013	11/11/2013	21	0	21
GRO	MG/KG	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/30/2013	11/6/2013	8	7	15

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
GRO	MG/KG	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/25/2013	10/26/2013	3	1	4

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-004/5-SS1061-000.6	UNITS	F2-004/5-SS-DUP04-101	RPD	D	
PAH	ACENAPHTHENE	2.8 J	UG/KG	12 J	124.32	9.20	O.K. < 2xRL
PAH	ACENAPHTHYLENE	1.9 J	UG/KG	ND	200.00	1.90	
PAH	ANTHRACENE	8.3 J	UG/KG	36	125.06	27.70	
PAH	BENZO(A)ANTHRACENE	71	UG/KG	80	11.92	9.00	
PAH	BENZO(A)PYRENE	61	UG/KG	64	4.80	3.00	
PAH	BENZO(B)FLUORANTHENE	120	UG/KG	100	18.18	20.00	
PAH	BENZO(G,H,I)PERYLENE	32 J	UG/KG	27 J	16.95	5.00	
PAH	BENZO(K)FLUORANTHENE	39	UG/KG	32	19.72	7.00	
PAH	CHRYSENE	82	UG/KG	86	4.76	4.00	
PAH	DIBENZO(A,H)ANTHRACENE	14 J	UG/KG	13 J	7.41	1.00	
PAH	FLUORANTHENE	110	UG/KG	140	24.00	30.00	
PAH	FLUORENE	ND	UG/KG	11 J	200.00	11.00	O.K. < 2xRL
PAH	INDENO(1,2,3-CD)PYRENE	63	UG/KG	53	17.24	10.00	
PAH	NAPHTHALENE	ND	UG/KG	3 J	200.00	3.00	O.K. < 2xRL
PAH	PHENANTHRENE	49	UG/KG	120	84.02	71.00	J
PAH	PYRENE	120	UG/KG	140	15.38	20.00	

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-004/5-SS1065-000.5	UNITS	F2-004/5-SS-DUP05-101	RPD	D	
PAH	ACENAPHTHENE	1.6 J	UG/KG	ND	200.00	1.60	O.K. <2RPL
PAH	ACENAPHTHYLENE	2.4 J	UG/KG	2 J	18.18	0.40	
PAH	ANTHRACENE	3.4 J	UG/KG	2.5 J	30.51	0.90	
PAH	BENZO(A)ANTHRACENE	39	UG/KG	ND	200.00	39.00	O.K <2RPL
PAH	BENZO(A)PYRENE	38	UG/KG	30 J	23.53	8.00	
PAH	BENZO(B)FLUORANTHENE	75	UG/KG	55 J	30.77	20.00	
PAH	BENZO(G,H,I)PERYLENE	18 J	UG/KG	16 J	11.76	2.00	
PAH	BENZO(K)FLUORANTHENE	21	UG/KG	19 J	10.00	2.00	
PAH	CHRYSENE	44	UG/KG	32	31.58	12.00	
PAH	DIBENZO(A,H)ANTHRACENE	12 J	UG/KG	11 J	8.70	1.00	
PAH	FLUORANTHENE	90	UG/KG	63	35.29	27.00	
PAH	INDENO(1,2,3-CD)PYRENE	62 J	UG/KG	52	17.54	10.00	
PAH	PHENANTHRENE	33	UG/KG	24	31.58	9.00	
PAH	PYRENE	66	UG/KG	50	27.59	16.00	

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-003-SS1015-000.8	UNITS	TF2-003-SS-DUP06-1013	RPD	D
PAH	ACENAPHTHENE	5.4 J	UG/KG	4.7 J	13.86	0.70
PAH	ACENAPHTHYLENE	2.3 J	UG/KG	1.8 J	24.39	0.50
PAH	ANTHRACENE	16 J	UG/KG	14 J	13.33	2.00
PAH	BENZO(A)ANTHRACENE	120 J	UG/KG	120	0.00	0.00
PAH	BENZO(A)PYRENE	79 J	UG/KG	100 J	23.46	21.00
PAH	BENZO(B)FLUORANTHENE	140 J	UG/KG	170 J	19.35	30.00
PAH	BENZO(G,H,I)PERYLENE	39 J	UG/KG	47 J	18.60	8.00
PAH	BENZO(K)FLUORANTHENE	42	UG/KG	56	28.57	14.00
PAH	CHRYSENE	110	UG/KG	130	16.67	20.00
PAH	DIBENZO(A,H)ANTHRACENE	24	UG/KG	17 J	34.15	7.00
PAH	FLUORANTHENE	230	UG/KG	200	13.95	30.00
PAH	FLUORENE	4.7 J	UG/KG	4.1 J	13.64	0.60
PAH	INDENO(1,2,3-CD)PYRENE	130 J	UG/KG	84 J	42.99	46.00
PAH	PHENANTHRENE	120	UG/KG	110	8.70	10.00
PAH	PYRENE	200	UG/KG	240	18.18	40.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

TETRA TECH NUS, INC.
NVASTA NEWPORT
TANK FARM 2 CTO WE30
SG8254

KATAHDIN ANALYTICAL SERVICES, INC.
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT TANK FARM 2 CTO WE30
SG8254

Sample Receipt

The following sample was received on October 23, 2013 and was logged in under Katahdin Analytical Services work order number SG8254 for a hardcopy due date of November 11, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG8254-1	TF2-W-TB03-1013
SG8254-2	TF2-004/5-SS1057-0001
SG8254-3	TF2-004/5-SS1056-000.6
SG8254-4	TF2-004/5-SS1055-000.8
SG8254-5	TF2-004/5-SS1054-000.6
SG8254-6	TF2-004/5-SS1053-000.6
SG8254-7	TF2-004/5-SS1052-000.6
SG8254-8	TF2-004/5-SS1051-000.8
SG8254-9	TF2-004/5-SS1050-000.6
SG8254-10	TF2-004/5-SS1062-000.8
SG8254-11	TF2-004/5-SS-DUP04-1013
SG8254-12	TF2-004/5-SS1061-000.6
SG8254-13	TF2-004/5-SS1067-000.7
SG8254-14	TF2-004/5-SS1066-000.9
SG8254-15	TF2-004/5-SS1060-000.5
SG8254-16	TF2-004/5-SS1059-000.6
SG8254-17	TF2-004/5-SS1058-000.5
SG8254-18	TF2-004/5-SS1065-000.5
SG8254-19	TF2-004/5-SS1064-000.6
SG8254-20	TF2-004/5-SS1063-000.6
SG8254-21	TF2-004/5-SS1068-000.5
SG8254-22	TF2-004/5-SS1011-000.8
SG8254-23	TF2-004/5-SS-DUP05-1013
SG8254-24	TF2-003-SS1012-000.7
SG8254-25	TF2-003-SS1013-000.7
SG8254-26	TF2-003-SS1014-0001
SG8254-27	TF2-003-SS1015-000.8
SG8254-28	TF2-003-SS1016-000.9
SG8254-29	TF2-003-SS1017-000.8
SG8254-30	TF2-003-SS1018-000.8
SG8254-31	TF2-003-SS1019-000.5
SG8254-32	TF2-003-SS-DUP06-1013
SG8254-33	TF2-SS-RB03-1013

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Some of the client IDs on the Chain of Custody exceeds the 19-character limit of the Katahdin Analytical Information Management System. Therefore, the first characters "TF2-" in the client ID all samples with the exception of samples SG8254-1 and 33 were omitted on all forms.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG8254 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8270D SIM Analysis

Sample SG8254-25DL had a low response for the internal standard perylene-d12 that resulted in a %D which was outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the ICAL midpoint standard. Since the undiluted analysis had acceptable IS responses, the sample was not reanalyzed diluted.

All soil samples were manually integrated for the analytes 2-methylnaphthalene, acenaphthylene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene, and/or indeno(1,2,3-cd)pyrene. The specific reason for the manual integration is indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The target analytes benzo(a)anthracene, chrysene, and/or benzo(k)fluoranthene were detected below ½ the reporting limit in the method blanks WG133188-1RA and WG133367-1RA. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since the method blanks were acceptable, no further action was taken.

The independent check standard (file N0529) associated with the initial calibration on the N instrument on 10/30/2013 had low concentrations for the target analytes pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The independent check standard (file N0546) associated with the initial calibration on the N instrument on 10/31/2013 had a low concentration for the target analytes benzo(a)pyrene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The independent check standard (file N0704) associated with the initial calibration on the N instrument on 11/12/2013 had a high concentration for the target analyte 2-methylnaphthalene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The CV (file N0557) had high responses for the target analyte benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene. The CV (file N0574) had high responses for the target analytes indeno(1,2,3-cd)pyrene and dibenzo(1,h)anthracene. The CV (file N0723) had a low response for the target analyte indeno(1,2,3-cd)pyrene. The CV (file N0740) had a high response for the target analyte indeno(1,2,3-cd)pyrene. These responses resulted in %D's that were greater than the acceptance limit of 20% from DoD QSM.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are statistically derived limits for the full list of spiked compounds and are statistically derived limits for the surrogates. Although DoD QSM acceptance limits were requested for this project, laboratory established acceptance limits were used because the DoD QSM does not list acceptance limits for 8270SIM. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these statistical acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

The LCS WG133188-2 had recoveries for three analytes that were low and outside of the laboratory established acceptance limits. The LCSD WG133188-3 had low recoveries for four analytes. The DoD QSM number of allowable exceedances for 17 analytes is one. If the DoD QSM acceptance limits are applied, the LCS had acceptable recoveries for the spiked analytes, after factoring in the allowable number of exceedances. Therefore, no further action was taken.

The LCSD WG133361-3 had low recoveries for four analytes that were outside of the laboratory established acceptance limits. The DoD QSM number of allowable exceedances for 17 analytes is one. Since the LCS was acceptable, after factoring in the allowable number of exceedances, no further action was taken.

The MS WG133188-4 and MSD WG133188--5 had one and seven spiked target analytes, respectively, with recoveries that were non-calculable and reported as 0% recovery due to the concentration in the native sample being higher than in the MS and MSD. This is likely due to a non-homogeneous sample.

8015M-FLPRO Analysis

All the samples in the work order were manually integrated for the extraction surrogates o-terphenyl and N-Triacontane-d62, and Petroleum Range Organics. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Sample SG8254-3 had a low recovery for the extraction surrogate o-terphenyl that was outside the method acceptance limits. The sample was reextracted seven days outside of hold time. The results of both analyses are reported.

The LCS WG133426-2 had a low recovery for Petroleum Range Organics that was outside of method acceptance limits. Since the associated LCSD had acceptable recoveries, no further action was taken.

Note: The Form VII has a column for %D that is set to 25%. The DoD QSM criterion for a CV is 20%D. All of the compounds in the CV's were evaluated to 20% criteria.

8015B GRO Analysis

Sample SG8254-8 was manually integrated for Gasoline Range Organics. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The calibration verification standard (CV) (file 9GJ4060) had a low response for naphthalene, which resulted in a %D that was greater than 20%. Since the method requirement applies to only the GRO range response, which was acceptable, the associated samples were not reanalyzed.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG8254 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Soil-matrix Katahdin Sample Nos. SG8254 -(2, 3, and 5) were digested for ICP-MS analysis on 11/06/13 (QC Batch GK06IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8254 -5 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentrations of manganese (0.133 mg/Kg), and calcium (7.59 mg/kg) in the preparation blank from this batch are more than one half the laboratory's LOQ. However, because the measured concentrations of calcium and manganese in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

Aqueous-matrix Katahdin Sample No. SG8254 -33 was digested for ICP-MS analysis on 11/06/13 (QC Batch GK06IMW2) in accordance with USEPA Method 3010A.

Soil-matrix Katahdin Sample Nos. SG8254 -(4, 6-23, and 28) were digested for ICP-MS analysis on 11/08/13 (QC Batch GK08IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8254 -28 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentration of calcium (7.04 mg/kg) in the preparation blank from this batch is more than one half the laboratory's LOQ. However, because the measured concentrations of

calcium in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

Soil-matrix Katahdin Sample Nos. SG8254 -(24-27 and 29-32) were digested for ICP-MS analysis on 11/08/13 (QC Batch GK08IMS2) in accordance with USEPA Method 3050B. The measured concentration of iron (6.65 mg/kg) in the preparation blank from this batch is more than one half the laboratory's LOQ. However, because the measured concentrations of calcium in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

ICP-MS analyses of Work Order SG8254 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	**Associated Analytes**
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Solid-matrix Katahdin Sample Numbers SG8254 -(2-9) were digested for mercury analysis on 11/07/13 (QC Batch GK07HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Number SG8254 -5 was prepared in duplicate and with a matrix spike in this digestion batch.

Solid-matrix Katahdin Sample Numbers SG8254 -(10-29) were digested for mercury analysis on 11/08/13 (QC Batch GK08HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Number SG8254 -28 was prepared in duplicate and with a matrix spike in this digestion batch.

Aqueous-matrix Katahdin Sample Number SG8254 -33 was digested for mercury analysis on 11/09/13 (QC Batch GK09HGW1) in accordance with USEPA Method 7471B.

Solid-matrix Katahdin Sample Numbers SG8254 -(30-32) were digested for mercury analysis on 11/12/13 (QC Batch GK12HGS1) in accordance with USEPA Method 7471B. Duplicate laboratory control samples were prepared in this batch.

Mercury analysis of the Katahdin Work Order SG8254 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG8254 -5 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for arsenic, copper, and lead.

The laboratory duplicate analysis of Katahdin Sample No. SG8254 -28 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for antimony, manganese, and mercury.

The measured recoveries of antimony and calcium in the matrix-spiked aliquot of Katahdin Sample No. SG8254 -5 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The measured recoveries of antimony, calcium, and mercury in the matrix-spiked aliquot of Katahdin Sample No. SG8254 -28 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The serial dilution analysis of Katahdin Sample Number SG8254 -5 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for aluminum, iron, magnesium, manganese, and zinc.

The serial dilution analysis of Katahdin Sample Number SG8254 -28 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for aluminum, iron, lead, magnesium, vanadium, and zinc.

The measured recoveries of aluminum, barium, iron, magnesium, and manganese in the post-digestion spiked aliquot of Katahdin Sample Number SG8254 -5 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

The measured recoveries of barium, cobalt, copper, iron, manganese, nickel, and zinc in the post-digestion spiked aliquot of Katahdin Sample Number SG8254 -35 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the laboratory's limits of quantitation (LOQ) are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQ's, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG8254 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
11.22.13

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

000040

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SG8254	KIMS Review By: QP	Received By: GN
SDG #:	Cooler: 1 of 3	Date/Time Rec.: 10-23-13/15:00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.7
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?				✓	
Soil/Sediment: Received in airtight container?	✓				
Received in methanol?	✓				
Methanol covering soil?	✓				
D.I. Water - Received within 48 hour HT?	✓				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

DUP05 & DUP06 - EXTPH and GRO not needed per client. QP 10/24/13

QA-048 – Revision 3 – 10/01/2013

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GW	Delivered By: KAS
KAS Work Order#: SG-8254	KIMS Review By:	Received By: GW
SDG #:	Cooler: 2 of 3	Date/Time Rec.: 10-23-13/15:00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.6
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

0000012

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SG8254/SG8262	KIMS Review By:	Received By: GN
SDG #:	Cooler: 3 of 3	Date/Time Rec.: 10-23-13/15:00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 5.4
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

Jennifer Obrin

From: Seiken, Dabra [Dabra.Seiken@tetratech.com]
Sent: Friday, November 08, 2013 10:02 AM
To: Jennifer Obrin; Jalkut, Kayleen
Cc: Carper, Kelly; Samchuck, Joseph
Subject: RE: Newport non-conformance

Please re-prepare and re-analyze the samples.

Dabra I. Seiken, CG, PG

From: Jennifer Obrin [mailto:jobrin@katahdinlab.com]
Sent: Thursday, November 07, 2013 4:04 PM
To: Seiken, Dabra; Jalkut, Kayleen
Subject: Newport non-conformance

The GC lab has come to me with a non-conformance regarding the FI-PRO analysis for 4 samples from the Newport project.

SG8254-3 (TF2-004/5-SS1056-000.6) had low surrogate OTP recovery at 60%, the window is 62-109
SG8184-17 (TF2-004/5-SS1039-000.9) had low surrogate OTP recovery at 49%, the window is 62-109
SG8184-18 (TF2-SS-RB01-1013) had low surrogate OTP recovery at 80%, the window is 82-142
SG8184-27 (TF2-004/5-SS1049-000.9) had low surrogate OTP recovery at 15%, the window is 62-109

Please let me know how you would like to have the lab proceed. Hold times were 11/1 and 11/4.

Thank you,

Jennifer Obrin
Federal Programs Project Manager
Katahdin Analytical Services
A Woman-Owned Small Business Enterprise
DoD ELAP Accredited
600 Technology Way
Scarborough, Maine 04074
Direct - 207.874.2400 x17
Cell - 207.333.7469
Fax - 207.775.4029

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26581 | PAGE 1 OF 3

PROJECT NO: 112G03019 CTO WE30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445
SAMPLERS (SIGNATURE): KJalkut, Peter Seward		FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781 801 0457
		CARRIER/WAYBILL NUMBER: Courier p/u - hand delivery	

LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J. Obrin
ADDRESS: 600 Technology Way
CITY, STATE: Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

SG-8254

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
									G	G	G	G					
									PRESERVATIVE USED		MeOH ≤6°C	≤6°C	MeOH ≤6°C	≤6°C			
									TYPE OF ANALYSIS		40ml vials w/MeOH only - GRO	8oz jar - PAHs, metals, total solids	40ml vials w/soil+MeOH (lab) GRO	4oz jar - Ext TPH + Total solids			
10/21	0900	TF2-W-TB03-1013	—	—	—	QC	G	2	2	—	—	—					
10/21	1345	TF2-004/5-SS1057-0001	SS1057	0	1	SO	G	1	—	1	—	—					
10/21	1355	TF2-004/5-SS1056-000.6	SS1056	0	0.6	SO	G	4	—	1	2	1					
10/21	1400	TF2-004/5-SS1055-000.8	SS1055	0	0.8	SO	G	1	—	1	—	—					
10/21	1405	TF2-004/5-SS1054-000.6	SS1054	0	0.6	SO	G	2	—	2	—	—					Lab QC volume #2
10/21	1415	TF2-004/5-SS1053-000.6	SS1053	0	0.6	SO	G	1	—	1	—	—					
10/21	1425	TF2-004/5-SS1052-000.6	SS1052	0	0.6	SO	G	1	—	1	—	—					
10/21	1430	TF2-004/5-SS1051-000.8	SS1051	0	0.8	SO	G	4	—	1	2	1					
10/21	1440	TF2-004/5-SS1050-000.6	SS1050	0	0.6	SO	G	1	—	1	—	—					
10/21	1450	TF2-004/5-SS1062-000.8	SS1062	0	0.8	SO	G	1	—	1	—	—					
10/21	0000	TF2-004/5-SS-DUP04-1013	—	—	—	SO	G	1	—	1	—	—					
10/21	1455	TF2-004/5-SS1061-000.6	SS1061	0	0.6	SO	G	1	—	1	—	—					
10/21	1505	TF2-004/5-SS1067-000.7	SS1067	0	0.7	SO	G	1	—	1	—	—					

9 KJ 10/23/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: KJalkut	10/23/13	1335	1. RECEIVED BY: Andrew Hale	10/23/13	1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

S10000

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26582 | PAGE 2 OF 3

PROJECT NO: 112G03019 CTO WE30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445
SAMPLERS (SIGNATURE): K Falkut, Peter Senecal		FIELD OPERATIONS LEADER: Kayleen Falkut	PHONE NUMBER: 781 801 0457
		CARRIER/WAYBILL NUMBER: Courier p/u - hand delivery	

LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J Obrin
ADDRESS: 600 Technology Way
CITY, STATE: Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

SG8254

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	G							
									PRESERVATIVE USED			≤6°C	≤6°C	MeOH ≤6°C				
									TYPE OF ANALYSIS	8021 Jan - PAHs, total solids, Metals	402 Jan - Ex TPH, total solids	40 ml vials w/ MeOH soil - GRO						
10/21	1515	TF2-004/5-SS1066-000.9	SS1066	0	0.9	SO	G	1	1	—	—							
10/22	0815	TF2-004/5-SS1060-000.5	SS1060	0	0.5	SO	G	1	1	—	—							
10/22	0825	TF2-004/5-SS1059-000.6	SS1059	0	0.6	SO	G	1	1	—	—							
10/22	0835	TF2-004/5-SS1058-000.5	SS1058	0	0.5	SO	G	1	1	—	—							
10/22	0845	TF2-004/5-SS1065-000.5	SS1065	0	0.5	SO	G	4	1	1	2							
10/22	0855	TF2-004/5-SS1064-000.6	SS1064	0	0.6	SO	G	2	2	—	—							Lab QC volume #3
10/22	0905	TF2-004/5-SS1063-000.6	SS1063	0	0.6	SO	G	1	1	—	—							
10/22	0915	TF2-004/5-SS1068-000.5	SS1068	0	0.5	SO	G	1	1	—	—							
10/22	0940	TF2-003-SS1011-000.8	SS1011	0	0.8	SO	G	1	1	—	—							
10/22	0000	TF2-004/5-SS-DUP05-1013	—	—	—	SO	G	4	1	1	2							
10/22	0950	TF2-003-SS1012-000.7	SS1012	0	0.7	SO	G	1	1	—	—							
10/22	0955	TF2-003-SS1013-000.7	SS1013	0	0.7	SO	G	1	1	—	—							
10/22	1005	TF2-003-SS1014-0001	SS1014	0	1	SO	G	1	1	—	—							

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: K Falkut	10/23/13	1355	1. RECEIVED BY:	10/23/13	1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TINUS-001

000006

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER No 027646 | PAGE 3 OF 3

PROJECT NO: 112603019 CO WE 30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445
SAMPLERS (SIGNATURE): KJalkut, Peter Seward		FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781-801-0457
		CARRIER/WAYBILL NUMBER: Carver plus - hand delivery	
LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J Obrin		ADDRESS: 600 Technology Way	
		CITY, STATE: Scarborough, ME	

STANDARD TAT [X]
RUSH TAT [ ] 24 hr. [ ] 48 hr. [ ] 72 hr. [ ] 7 day [ ] 14 day

SG#254

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)										
									G	G	G	G	P						
									PRESERVATIVE USED										
									≤6°C	≤6°C	MeOH ≤6°C	≤6°C	HNO3, ≤6°C						
									TYPE OF ANALYSIS: 8021 jar - PAHs, total solids, metals	4021 jar - EXTPH, total solids	40 ml vials w/ soil MeOH-GRO (Freeze)	1L amber - PAHs	250 ml HDPE w/ HNO3 - metals						COMMENTS
10/22	1015	TF2-003-SS1015-000.8	SS1015	0	0.8	SO	G	4	1	1	2	—	—						
* 10/22	1025	TF2-003-SS1016-000.9	SS1016	0	0.9	SO	G	1	1	—	—	—	—						Lab QC vol. #4?
10/22	1055	TF2-003-SS1017-000.8	SS1017	0	0.8	SO	G	1	1	—	—	—	—						
10/22	1105	TF2-003-SS1018-000.8	SS1018	0	0.8	SO	G	1	1	—	—	—	—						
10/22	1115	TF2-003-SS1019-000.5	SS1019	0	0.5	SO	G	1	1	—	—	—	—						
10/22	0000	TF2-003-SS-DUP06-1013	—	—	—	SO	G	4	1	1	2	—	—						
10/23	1200	TF2-SS-RB03-1013	—	—	—	QC	G	3	—	—	—	2	1						

KJ 10/23/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: KJalkut	10/23/13	1335	1. RECEIVED BY:	10/23/13	1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: * Please try to perform lab QC analysis on TF2-003-SS1016-000.9 (forgot to collect 2x802 jars) for PAH, metals analyses

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

000147

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	Spiked sample recovery not within control limits.
*	Duplicate sample analysis not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS
(Refer to BOD Qualifiers Page for BOD footnotes)

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1	pH
H2	DO
H3	sulfite
H4	residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
004/5-SS1062-000.8	SG8254-10		67.1		74.4		83.7	
004/5-SS-DUP04-1013	SG8254-11		45.4		58.1		62.7	
004/5-SS1061-000.6	SG8254-12		56.7		65.6		69.7	
004/5-SS1067-000.7	SG8254-13		56.7		66.4		76.5	
004/5-SS1067-000.7	SG8254-13DL		57.6		65.6		86.1	
004/5-SS1066-000.9	SG8254-14		58.1		62.6		75.1	
004/5-SS1060-000.5	SG8254-15		42.3		63.2		56.4	
004/5-SS1059-000.6	SG8254-16		39.0		63.2		64.9	
004/5-SS1058-000.5	SG8254-17		42.5		66.3		61.8	
004/5-SS1065-000.5	SG8254-18		42.4		66.7		62.3	
004/5-SS1064-000.6	SG8254-19		35.1		50.8		60.2	
004/5-SS1057-0001	SG8254-2		71.0		74.0		86.2	
004/5-SS1063-000.6	SG8254-20		38.8		68.6		68.9	
004/5-SS1068-000.5	SG8254-21		52.8		71.7		71.2	
003-SS1011-000.8	SG8254-22		44.6		59.2		65.1	
003-SS1011-000.8	SG8254-22DL		42.6		57.7		61.9	
004/5-SS-DUP05-1013	SG8254-23		42.8		66.0		63.4	
003-SS1012-000.7	SG8254-24		47.7		71.8		67.6	
003-SS1012-000.7	SG8254-24DL		63.0		64.8		68.0	
003-SS1013-000.7	SG8254-25		54.5		73.7		69.6	
003-SS1013-000.7	SG8254-25DL		0.00	D	0.00	D	0.00	D
003-SS1014-0001	SG8254-26		48.8		68.5		63.5	
003-SS1014-0001	SG8254-26DL		44.9		55.0		69.4	
003-SS1015-000.8	SG8254-27		46.7		66.2		57.1	
003-SS1016-000.9	SG8254-28		44.9		69.1		70.9	
003-SS1017-000.8	SG8254-29		48.3		67.1		61.0	
004/5-SS1056-000.6	SG8254-3		49.2		63.7		68.0	
003-SS1018-000.8	SG8254-30		33.4		62.3		58.4	
003-SS1019-000.5	SG8254-31		42.6		65.5		54.9	
003-SS1019-000.5	SG8254-31DL		51.8		60.5		57.6	
003-SS-DUP06-1013	SG8254-32		48.1		61.6		72.1	
004/5-SS1055-000.8	SG8254-4		50.2		70.5		62.2	
004/5-SS1054-000.6	SG8254-5		40.1		61.6		64.6	
004/5-SS1053-000.6	SG8254-6		38.0		57.7		62.2	
004/5-SS1052-000.6	SG8254-7		43.4		71.4		70.8	
004/5-SS1051-000.8	SG8254-8		43.8		66.2		72.3	

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
004/5-SS1050-000.6	SG8254-9		44.7		68.7		73.1	
Method Blank Sample	WG133188-1RA		41.8		57.7		83.3	
Laboratory Control S	WG133188-2		42.6		61.9		75.0	
Laboratory Control S	WG133188-3		36.8		47.7		86.1	
Matrix Spike	WG133188-4		48.4		72.1		70.5	
Matrix Spike Duplica	WG133188-5		46.6		72.1		69.7	
Method Blank Sample	WG133361-1		50.3		66.8		79.3	
Laboratory Control S	WG133361-2		46.8		66.2		71.5	
Laboratory Control S	WG133361-3		28.1		41.9		45.3	
Matrix Spike	WG133361-4		54.2		75.0		77.5	
Matrix Spike Duplica	WG133361-5		54.5		76.0		79.4	
Matrix Spike	WG133361-6		52.1		68.6		75.3	
Matrix Spike Duplica	WG133361-7		53.3		69.2		68.6	

		QC Limits
PYR	PYRENE-D10	31-128
FLO	FLUORENE-D10	20-96
2MN	2-METHYLNAPHTHALENE-D10	19-94

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
TF2-SS-RB03-1013	SG8254-33RE		45.0		63.3		71.7	
Method Blank Sample	WG133367-1RA		60.2		72.3		90.1	
Laboratory Control S	WG133367-2RA		51.7		69.4		79.2	
Laboratory Control S	WG133367-3RA		56.6		70.5		79.5	

		QC Limits
2MN	2-METHYLNAPHTHALENE-D10	43-92
FLO	FLUORENE-D10	29-101
PYR	PYRENE-D10	53-166

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND625.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 30-OCT-13
Time Analyzed : 11:28

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	42.2		
68	Less than 2.0% of mass 69	0.8	1.66	1
69	Less than 100.0% of mass 198	45.6		
70	Less than 2.0% of mass 69	0.4	0.97	1
127	40.0 - 60.0% of mass 198	59.3		
197	Less than 1.0% of mass 198	0.7		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.1		
275	10.0 - 30.0% of mass 198	20.1		
365	1.0 - 100.0% of mass 198	2.6		
441	0.0 - 100.0% of mass 443	8.1	81.34	2
442	40.0 - 100.0% of mass 198	51.8		
443	17.0 - 23.0% of mass 442	9.9	19.20	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG133485-4	N0523.D	10/30/13	11:51
Initial Calibration	WG133485-2	N0524.D	10/30/13	12:41
Initial Calibration	WG133485-3	N0525.D	10/30/13	13:24
Initial Calibration	WG133485-5	N0526.D	10/30/13	14:08
Initial Calibration	WG133485-6	N0527.D	10/30/13	14:52
Initial Calibration	WG133485-7	N0528.D	10/30/13	15:35
Independent Source	WG133485-8	N0529.D	10/30/13	16:19
Laboratory Control S	WG133188-2	N0531.D	10/30/13	17:45
Laboratory Control S	WG133188-3	N0532.D	10/30/13	18:28

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254

Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GCMS-N

Lab File IDs : N0524.D N0525.D N0523.D **Column ID:**
N0526.D N0527.D N0528.D **Calibration Date(s):** 30-OCT-13 11:51
30-OCT-13 15:35

	0.200000(Level 1	0.500000(Level 2	1.0000 Level 3	3.0000 Level 4	7.0000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	1.02819	0.85204	1.07267	0.96791	0.90772	0.79332	AVG		0.93697		11.3350(	15.00000	O
2-Methylnaphthalene	0.50976	0.47163	0.57816	0.60795	0.54259	0.63861	AVG		0.55812		11.1678(	15.00000	O
Acenaphthylene	18138	36668	101279	280206	411531	621590	QUA	0.17762	0.21160	0.00856	0.99671	0.99000	O
Acenaphthene	1.49807	1.41373	1.77550	1.58447	1.45902	1.38795	AVG		1.51979		9.41480	15.00000	O
Fluorene	1.31064	1.34725	1.73096	1.59662	1.48189	1.42508	AVG		1.48207		10.7059(	15.00000	O
Phenanthrene	1.30591	1.21464	1.32342	1.17208	1.24553	1.13455	AVG		1.23269		6.00394	15.00000	O
Anthracene	1.16407	1.35522	1.27676	1.19898	1.26994	1.16337	AVG		1.23806		6.13246	15.00000	O
Fluoranthene	1.22990	1.06270	1.22636	1.08385	1.17645	1.38600	AVG		1.19421		9.82849	15.00000	O
Pyrene	13320	28109	77015	159079	396165	605669	QUA	-0.00009	0.30442	0.00442	0.99912	0.99000	O
Benzo(a)anthracene	1.20167	1.13965	1.36935	1.23509	1.33367	1.22804	AVG		1.25124		6.82409	15.00000	O
Chrysene	8322	15543	43369	92983	239977	347697	QUA	0.07680	0.46230	0.01644	0.99575	0.99000	O
Benzo(b)fluoranthene	2606	3971	20721	40323	143600	207882	LNR	0.19599	1.35765		0.99703	0.99000	O
Benzo(k)fluoranthene	2.52508	2.15935	2.27383	2.29768	2.04327	1.90435	AVG		2.20059		9.83679	15.00000	O
Benzo(a)pyrene	2800	3891	31611	48351	149765	205973	QUA	0.17455	0.56704	0.01093	0.99740	0.99000	O
Indeno(1,2,3-cd)pyrene	1876	2367	7095	11106	46483	70784	QUA	0.02777	2.65959	-0.08324	0.99432	0.99000	O
Dibenzo(a,h)anthracene	1254	1135	9864	13236	61503	89372	QUA	0.24939	1.91516	-0.03170	0.99074	0.99000	O
Benzo(g,h,i)perylene	2886	3505	15341	33697	95448	136116	LNR	-0.02061	0.88523		0.99663	0.99000	O
2-Methylnaphthalene-D10	1.14203	1.23055	1.21208	1.44835	1.23528	1.22614	AVG		1.24907		8.28903	15.00000	
Fluorene-D10	0.93553	0.93986	0.93010	1.24079	1.12736	0.90390	AVG		1.01292		13.6148[	15.00000	
Pyrene-D10	6852	15201	37852	81456	199965	320300	LNR	-0.25497	1.21728		0.99780	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND626.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 31-OCT-13
Time Analyzed : 16:02

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	40.3		
68	Less than 2.0% of mass 69	0.9	1.96	1
69	Less than 100.0% of mass 198	44.5		
70	Less than 2.0% of mass 69	0.3	0.68	1
127	40.0 - 60.0% of mass 198	57.2		
197	Less than 1.0% of mass 198	0.5		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.4		
275	10.0 - 30.0% of mass 198	19.3		
365	1.0 - 100.0% of mass 198	2.3		
441	0.0 - 100.0% of mass 443	7.4	79.42	2
442	40.0 - 100.0% of mass 198	47.8		
443	17.0 - 23.0% of mass 442	9.4	19.60	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG133553-4	N0540.D	10/31/13	16:21
Initial Calibration	WG133553-2	N0541.D	10/31/13	17:06
Initial Calibration	WG133553-3	N0542.D	10/31/13	17:49
Initial Calibration	WG133553-5	N0543.D	10/31/13	18:32
Initial Calibration	WG133553-6	N0544.D	10/31/13	19:15
Initial Calibration	WG133553-7	N0545.D	10/31/13	19:59
Independent Source	WG133553-8	N0546.D	10/31/13	20:42
Method Blank Sample	WG133188-1RA	N0547.D	10/31/13	21:25
004/5-SS1068-000.5	SG8254-21	N0553.D	11/01/13	01:44
003-SS1011-000.8	SG8254-22	N0554.D	11/01/13	02:27
004/5-SS-DUP05-1013	SG8254-23	N0555.D	11/01/13	03:10
003-SS1012-000.7	SG8254-24	N0556.D	11/01/13	03:53

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254

Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GCMS-N

Lab File IDs : N0541.D N0542.D N0540.D N0543.D N0544.D N0545.D **Column ID:**

Calibration Date(s): 31-OCT-13 16:21
31-OCT-13 19:59

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.200000(	0.500000(	1.0000	3.0000	7.0000	10.0000	New	b	m1	m2	%RSD	%RSD	
Naphthalene	0.96309	0.93491	1.04185	1.00619	0.87963	0.82958	AVG		0.94254		8.36882	15.00000	O
2-Methylnaphthalene	0.60656	0.63972	0.67181	0.61985	0.59038	0.56427	AVG		0.61543		6.12837	15.00000	O
Acenaphthylene	2.00512	2.16458	2.36783	2.43372	2.29282	2.25419	AVG		2.25304		6.78065	15.00000	O
Acenaphthene	1.31578	1.38547	1.46097	1.47851	1.42802	1.37832	AVG		1.40784		4.27034	15.00000	O
Fluorene	1.28456	1.31398	1.43297	1.50232	1.45499	1.45219	AVG		1.40683		6.17628	15.00000	O
Phenanthrene	1.07564	1.17825	1.25127	1.26339	1.24235	1.23855	AVG		1.20824		5.90565	15.00000	O
Anthracene	0.94468	1.04942	1.19695	1.20190	1.19427	1.19831	AVG		1.13092		9.62801	15.00000	O
Fluoranthene	0.86167	0.94040	1.08064	1.18362	1.19368	1.27333	AVG		1.08889		14.6775(	15.00000	O
Pyrene	3.20118	3.39511	3.01779	2.80147	2.68099	2.38352	AVG		2.91335		12.5937(	15.00000	O
Benzo(a)anthracene	2244	5287	22875	58365	187111	294145	LNR	0.20520	1.31812		0.99856	0.99000	O
Chrysene	1.99809	1.90882	1.89062	1.73379	1.61128	1.58952	AVG		1.78869		9.44887	15.00000	O
Benzo(b)fluoranthene	899	2138	10247	26800	109773	181895	QUA	0.27299	0.75767	-0.00871	0.99635	0.99000	O
Benzo(k)fluoranthene	2.06130	2.41510	2.63525	3.14119	2.69446	2.68942	AVG		2.60612		13.6766(	15.00000	O
Benzo(a)pyrene	955	2284	17831	39310	116101	190332	LNR	0.20314	1.76485		0.99895	0.99000	O
Indeno(1,2,3-cd)pyrene	418	892	4302	10331	37768	64349	QUA	0.16945	2.18844	-0.07281	0.99877	0.99000	O
Dibenzo(a,h)anthracene	459	1065	5845	13465	48415	82161	QUA	0.16903	1.68946	-0.04199	0.99897	0.99000	O
Benzo(g,h,i)perylene	1061	2345	11947	29035	87925	139093	LNR	0.17172	1.29934		0.99955	0.99000	O
2-Methylnaphthalene-D10	1.40030	1.26532	1.34974	1.25948	1.21359	1.18726	AVG		1.27928		6.34869	15.00000	
Fluorene-D10	1.03386	0.86099	0.92215	0.98946	0.97488	0.95254	AVG		0.95565		6.22996	15.00000	
Pyrene-D10	1.68558	1.67106	1.52052	1.42426	1.39811	1.24017	AVG		1.48995		11.5138(	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND627.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 01-NOV-13
Time Analyzed : 12:39

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	39.9		
68	Less than 2.0% of mass 69	0.5	1.20	1
69	Less than 100.0% of mass 198	45.4		
70	Less than 2.0% of mass 69	0.2	0.34	1
127	40.0 - 60.0% of mass 198	59.2		
197	Less than 1.0% of mass 198	0.7		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.0		
275	10.0 - 30.0% of mass 198	21.0		
365	1.0 - 100.0% of mass 198	2.1		
441	0.0 - 100.0% of mass 443	7.6	70.12	2
442	40.0 - 100.0% of mass 198	51.3		
443	17.0 - 23.0% of mass 442	10.8	21.14	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG133605-2	N0557.D	11/01/13	13:12
Method Blank Sample	WG133367-1RA	N0558.D	11/01/13	14:03
Laboratory Control S	WG133367-2RA	N0559.D	11/01/13	14:46
Laboratory Control S	WG133367-3RA	N0560.D	11/01/13	15:29
TF2-SS-RB03-1013	SG8254-33RE	N0561.D	11/01/13	16:12
003-SS1011-000.8	SG8254-22DL	N0562.D	11/01/13	16:56
003-SS1012-000.7	SG8254-24DL	N0563.D	11/01/13	17:39
003-SS1013-000.7	SG8254-25	N0564.D	11/01/13	18:22
003-SS1014-0001	SG8254-26	N0565.D	11/01/13	19:05
003-SS1015-000.8	SG8254-27	N0566.D	11/01/13	19:48
003-SS1016-000.9	SG8254-28	N0567.D	11/01/13	20:32
Matrix Spike	WG133188-4	N0568.D	11/01/13	21:14
Matrix Spike Duplica	WG133188-5	N0569.D	11/01/13	21:58
003-SS1017-000.8	SG8254-29	N0570.D	11/01/13	22:40
003-SS1018-000.8	SG8254-30	N0571.D	11/01/13	23:23
003-SS1019-000.5	SG8254-31	N0572.D	11/02/13	00:06

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133605-2 **Analytical Date:** 11/01/13 13:12
Lab File ID : N0557.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 10/31/13 16:21 10/31/13 19:59 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.94254	1.09291	1.09291	0.010	15.95351	20.00000	Averaged	
31 2-Methylnaphthalene	0.61543	0.68207	0.68207	0.010	10.82772	20.00000	Averaged	
42 Acenaphthylene	2.25304	2.50754	2.50754	0.010	11.29583	20.00000	Averaged	
45 Acenaphthene	1.40784	1.51999	1.51999	0.010	7.96567	20.01000	Averaged	
54 Fluorene	1.40683	1.45901	1.45901	0.010	3.70837	20.00000	Averaged	
64 Phenanthrene	1.20824	1.25711	1.25711	0.010	4.04466	20.00000	Averaged	
65 Anthracene	1.13092	1.23039	1.23039	0.010	8.79544	20.00000	Averaged	
68 Fluoranthene	1.08889	1.18396	1.18396	0.010	8.73100	20.01000	Averaged	
70 Pyrene	2.91335	2.76134	2.76134	0.010	-5.21746	20.00000	Averaged	
72 Benzo(a)anthracene	1.00000	1.21234	1.38163	0.010	21.23447	20.00000	Linear	*
74 Chrysene	1.78869	1.67672	1.67672	0.010	-6.25970	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.00000	1.21854	1.34607	0.010	21.85429	20.00000	Quadratic	*
79 Benzo(k)fluoranthene	2.60612	2.12770	2.12770	0.010	-18.35762	20.00000	Averaged	
80 Benzo(a)pyrene	1.00000	0.96871	1.42281	0.010	-3.12946	20.01000	Linear	
82 Indeno(1,2,3-cd)pyrene	1.00000	1.23299	0.51239	0.010	23.29906	20.00000	Quadratic	*
83 Dibenzo(a,h)anthracene	1.00000	1.18145	0.63167	0.010	18.14539	20.00000	Quadratic	
84 Benzo(g,h,i)perylene	1.00000	0.91428	1.00947	0.010	-8.57177	20.00000	Linear	
30 2-Methylnaphthalene-D10	1.27928	1.32553	1.32553	0.010	3.61522	20.00000	Averaged	
52 Fluorene-D10	0.95565	0.89932	0.89932	0.010	-5.89411	20.00000	Averaged	
69 Pyrene-D10	1.48995	1.39912	1.39912	0.010	-6.09650	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND628.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 04-NOV-13
Time Analyzed : 10:32

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	40.7		
68	Less than 2.0% of mass 69	0.4	0.84	1
69	Less than 100.0% of mass 198	43.2		
70	Less than 2.0% of mass 69	0.1	0.29	1
127	40.0 - 60.0% of mass 198	59.0		
197	Less than 1.0% of mass 198	0.8		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.9		
275	10.0 - 30.0% of mass 198	19.4		
365	1.0 - 100.0% of mass 198	2.0		
441	0.0 - 100.0% of mass 443	7.1	70.40	2
442	40.0 - 100.0% of mass 198	50.2		
443	17.0 - 23.0% of mass 442	10.1	20.17	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG133661-2	N0574.D	11/04/13	10:51
Method Blank Sample	WG133361-1	N0575.D	11/04/13	11:35
Laboratory Control S	WG133361-2	N0576.D	11/04/13	12:18
Laboratory Control S	WG133361-3	N0577.D	11/04/13	13:02
004/5-SS1055-000.8	SG8254-4	N0578.D	11/04/13	13:45
004/5-SS1054-000.6	SG8254-5	N0579.D	11/04/13	14:28
Matrix Spike	WG133361-4	N0580.D	11/04/13	15:12
Matrix Spike Duplica	WG133361-5	N0581.D	11/04/13	15:55
004/5-SS1053-000.6	SG8254-6	N0582.D	11/04/13	16:38
004/5-SS1052-000.6	SG8254-7	N0583.D	11/04/13	17:22
004/5-SS1051-000.8	SG8254-8	N0584.D	11/04/13	18:05
004/5-SS1050-000.6	SG8254-9	N0585.D	11/04/13	18:47
004/5-SS1060-000.5	SG8254-15	N0586.D	11/04/13	19:30
004/5-SS1059-000.6	SG8254-16	N0587.D	11/04/13	20:13
004/5-SS1058-000.5	SG8254-17	N0588.D	11/04/13	20:56
004/5-SS1065-000.5	SG8254-18	N0589.D	11/04/13	21:38
004/5-SS1063-000.6	SG8254-20	N0590.D	11/04/13	22:21

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133661-2 **Analytical Date:** 11/04/13 10:51
Lab File ID : N0574.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 10/31/13 16:21 10/31/13 19:59 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.94254	1.00564	1.00564	0.010	6.69459	20.00000	Averaged	
31 2-Methylnaphthalene	0.61543	0.66126	0.66126	0.010	7.44610	20.00000	Averaged	
42 Acenaphthylene	2.25304	2.43409	2.43409	0.010	8.03584	20.00000	Averaged	
45 Acenaphthene	1.40784	1.48440	1.48440	0.010	5.43771	20.01000	Averaged	
54 Fluorene	1.40683	1.47231	1.47231	0.010	4.65390	20.00000	Averaged	
64 Phenanthrene	1.20824	1.21308	1.21308	0.010	0.40032	20.00000	Averaged	
65 Anthracene	1.13092	1.19044	1.19044	0.010	5.26247	20.00000	Averaged	
68 Fluoranthene	1.08889	1.20471	1.20471	0.010	10.63628	20.01000	Averaged	
70 Pyrene	2.91335	2.55543	2.55543	0.010	-12.28522	20.00000	Averaged	
72 Benzo(a)anthracene	1.00000	1.17941	1.33821	0.010	17.94069	20.00000	Linear	
74 Chrysene	1.78869	1.59927	1.59927	0.010	-10.58985	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.00000	1.04077	1.10288	0.010	4.07697	20.00000	Quadratic	
79 Benzo(k)fluoranthene	2.60612	2.34603	2.34603	0.010	-9.98007	20.00000	Averaged	
80 Benzo(a)pyrene	1.00000	0.95807	1.40405	0.010	-4.19291	20.01000	Linear	
82 Indeno(1,2,3-cd)pyrene	1.00000	1.27373	0.53185	0.010	27.37298	20.00000	Quadratic	*
83 Dibenzo(a,h)anthracene	1.00000	1.31681	0.71528	0.010	31.68110	20.00000	Quadratic	*
84 Benzo(g,h,i)perylene	1.00000	1.02482	1.15310	0.010	2.48226	20.00000	Linear	
30 2-Methylnaphthalene-D10	1.27928	1.21258	1.21258	0.010	-5.21397	20.00000	Averaged	
52 Fluorene-D10	0.95565	0.94984	0.94984	0.010	-0.60708	20.00000	Averaged	
69 Pyrene-D10	1.48995	1.29298	1.29298	0.010	-13.21987	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND635.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 12-NOV-13
Time Analyzed : 11:09

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	38.3		
68	Less than 2.0% of mass 69	0.8	1.84	1
69	Less than 100.0% of mass 198	43.0		
70	Less than 2.0% of mass 69	0.0	0.08	1
127	40.0 - 60.0% of mass 198	58.8		
197	Less than 1.0% of mass 198	0.6		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.6		
275	10.0 - 30.0% of mass 198	21.5		
365	1.0 - 100.0% of mass 198	2.8		
441	0.0 - 100.0% of mass 443	9.9	75.17	2
442	40.0 - 100.0% of mass 198	69.1		
443	17.0 - 23.0% of mass 442	13.2	19.07	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG134292-4	N0698.D	11/12/13	11:30
Initial Calibration	WG134292-2	N0699.D	11/12/13	12:13
Initial Calibration	WG134292-3	N0700.D	11/12/13	12:57
Initial Calibration	WG134292-5	N0701.D	11/12/13	13:41
Initial Calibration	WG134292-6	N0702.D	11/12/13	14:25
Initial Calibration	WG134292-7	N0703.D	11/12/13	15:09
Independent Source	WG134292-8	N0704.D	11/12/13	15:53
004/5-SS1064-000.6	SG8254-19	N0705.D	11/12/13	16:37
Matrix Spike	WG133361-6	N0706.D	11/12/13	17:20
Matrix Spike Duplica	WG133361-7	N0707.D	11/12/13	18:04
004/5-SS1056-000.6	SG8254-3	N0708.D	11/12/13	18:47
004/5-SS-DUP04-1013	SG8254-11	N0709.D	11/12/13	19:29
004/5-SS1061-000.6	SG8254-12	N0710.D	11/12/13	20:12
004/5-SS1062-000.8	SG8254-10	N0711.D	11/12/13	20:55
004/5-SS1067-000.7	SG8254-13	N0712.D	11/12/13	21:38
004/5-SS1066-000.9	SG8254-14	N0713.D	11/12/13	22:21
004/5-SS1057-0001	SG8254-2	N0714.D	11/12/13	23:04

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GCMS-N
Lab File IDs : N0699.D N0700.D N0698.D **Column ID:**
N0701.D N0702.D N0703.D **Calibration Date(s):** 12-NOV-13 11:30
12-NOV-13 15:09

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.200000(	0.500000(	1.0000	3.0000	7.0000	10.0000	New	b	m1	m2	%RSD	%RSD	
Naphthalene	0.92957	1.02110	1.02538	1.04436	0.95461	0.91696	AVG		0.98200		5.58304	15.00000	O
2-Methylnaphthalene	18174	44145	87690	190432	418848	741810	LNR	-0.24748	0.58097		0.99843	0.99000	O
Acenaphthylene	1.96175	2.28624	2.38057	2.34588	2.36292	2.45840	AVG		2.29929		7.58920	15.00000	O
Acenaphthene	1.34970	1.47878	1.50122	1.43192	1.46463	1.48315	AVG		1.45157		3.79043	15.00000	O
Fluorene	1.45615	1.39396	1.49150	1.46957	1.46212	1.52542	AVG		1.46645		2.97150	15.00000	O
Phenanthrene	1.03379	1.12307	1.15319	1.11834	1.15790	1.19751	AVG		1.13063		4.89447	15.00000	O
Anthracene	1.15900	1.25181	1.24992	1.19976	1.19404	1.21745	AVG		1.21200		2.93645	15.00000	O
Fluoranthene	1.00524	1.10712	1.16790	1.12474	1.14603	1.23316	AVG		1.13070		6.67121	15.00000	O
Pyrene	2.55703	2.73519	2.41517	2.28175	2.26639	2.15180	AVG		2.40122		8.94494	15.00000	O
Benzo(a)anthracene	1.23865	1.25096	1.27862	1.18715	1.25857	1.33114	AVG		1.25751		3.76649	15.00000	O
Chrysene	1.78980	1.66992	1.57559	1.46259	1.40420	1.37232	AVG		1.54574		10.5473(	15.00000	O
Benzo(b)fluoranthene	1.33107	1.22619	1.46248	1.10893	1.25257	1.37661	AVG		1.29298		9.60676	15.00000	O
Benzo(k)fluoranthene	2.27393	2.06907	1.81963	2.05781	2.06183	2.01122	AVG		2.04891		7.08191	15.00000	O
Benzo(a)pyrene	1.43281	1.35542	1.31400	1.28464	1.35904	1.40922	AVG		1.35919		4.10109	15.00000	O
Indeno(1,2,3-cd)pyrene	0.87488	0.69735	0.78202	0.68546	0.73364	0.77484	AVG		0.75803		9.15010	15.00000	O
Dibenzo(a,h)anthracene	0.71125	0.74833	0.72292	0.70892	0.82473	0.82806	AVG		0.75737		7.29861	15.00000	O
Benzo(g,h,i)perylene	0.94169	1.16182	1.05695	1.01939	1.08085	1.05296	AVG		1.05228		6.87263	15.00000	O
2-Methylnaphthalene-D10	1.22688	1.29882	1.27198	1.22994	1.24102	1.24589	AVG		1.25242		2.22003	15.00000	
Fluorene-D10	1.04698	0.94788	0.97745	0.96115	0.96039	0.98435	AVG		0.97970		3.61814	15.00000	
Pyrene-D10	1.41466	1.44377	1.29031	1.19822	1.18809	1.13269	AVG		1.27796		10.0129(	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND636.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 13-NOV-13
Time Analyzed : 12:03

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	37.7		
68	Less than 2.0% of mass 69	0.8	1.76	1
69	Less than 100.0% of mass 198	45.2		
70	Less than 2.0% of mass 69	0.4	0.81	1
127	40.0 - 60.0% of mass 198	58.3		
197	Less than 1.0% of mass 198	0.8		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.6		
275	10.0 - 30.0% of mass 198	22.7		
365	1.0 - 100.0% of mass 198	3.1		
441	0.0 - 100.0% of mass 443	10.6	69.48	2
442	40.0 - 100.0% of mass 198	78.0		
443	17.0 - 23.0% of mass 442	15.3	19.59	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG134331-2	N0723.D	11/13/13	12:29
003-SS-DUP06-1013	SG8254-32	N0727.D	11/13/13	15:25
004/5-SS1067-000.7	SG8254-13DL	N0728.D	11/13/13	16:09
003-SS1013-000.7	SG8254-25DL	N0729.D	11/13/13	16:53
003-SS1014-0001	SG8254-26DL	N0730.D	11/13/13	17:36

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134331-2 **Analytical Date:** 11/13/13 12:29
Lab File ID : N0723.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 11/12/13 11:30 11/12/13 15:09 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.98200	1.08487	1.08487	0.010	10.47573	20.00000	Averaged	
31 2-Methylnaphthalene	1.00000	1.03847	0.71835	0.010	3.84734	20.00000	Linear	
42 Acenaphthylene	2.29929	2.24165	2.24165	0.010	-2.50709	20.00000	Averaged	
45 Acenaphthene	1.45157	1.41952	1.41952	0.010	-2.20752	20.01000	Averaged	
54 Fluorene	1.46645	1.36430	1.36430	0.010	-6.96597	20.00000	Averaged	
64 Phenanthrene	1.13063	1.17198	1.17198	0.010	3.65714	20.00000	Averaged	
65 Anthracene	1.21200	1.14113	1.14113	0.010	-5.84685	20.00000	Averaged	
68 Fluoranthene	1.13070	1.00646	1.00646	0.010	-10.98766	20.01000	Averaged	
70 Pyrene	2.40122	2.62468	2.62468	0.010	9.30607	20.00000	Averaged	
72 Benzo(a)anthracene	1.25751	1.24538	1.24538	0.010	-0.96452	20.00000	Averaged	
74 Chrysene	1.54574	1.41471	1.41471	0.010	-8.47697	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.29298	1.16781	1.16781	0.010	-9.68033	20.00000	Averaged	
79 Benzo(k)fluoranthene	2.04891	2.12729	2.12729	0.010	3.82548	20.00000	Averaged	
80 Benzo(a)pyrene	1.35919	1.28487	1.28487	0.010	-5.46767	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	0.75803	0.53515	0.53515	0.010	-29.40270	20.00000	Averaged	*
83 Dibenzo(a,h)anthracene	0.75737	0.63364	0.63364	0.010	-16.33712	20.00000	Averaged	
84 Benzo(g,h,i)perylene	1.05228	1.03017	1.03017	0.010	-2.10087	20.00000	Averaged	
30 2-Methylnaphthalene-D10	1.25242	1.31035	1.31035	0.010	4.62487	20.00000	Averaged	
52 Fluorene-D10	0.97970	0.93623	0.93623	0.010	-4.43722	20.00000	Averaged	
69 Pyrene-D10	1.27796	1.40929	1.40929	0.010	10.27641	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND637.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 14-NOV-13
Time Analyzed : 10:30

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	35.7		
68	Less than 2.0% of mass 69	0.5	1.14	1
69	Less than 100.0% of mass 198	40.1		
70	Less than 2.0% of mass 69	0.3	0.76	1
127	40.0 - 60.0% of mass 198	58.1		
197	Less than 1.0% of mass 198	0.3		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.6		
275	10.0 - 30.0% of mass 198	22.0		
365	1.0 - 100.0% of mass 198	2.9		
441	0.0 - 100.0% of mass 443	11.1	71.93	2
442	40.0 - 100.0% of mass 198	81.1		
443	17.0 - 23.0% of mass 442	15.4	19.00	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG134395-2	N0740.D	11/14/13	10:51
003-SS1019-000.5	SG8254-31DL	N0745.D	11/14/13	14:29

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134395-2 **Analytical Date:** 11/14/13 10:51
Lab File ID : N0740.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 11/12/13 11:30 11/12/13 15:09 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.98200	0.99178	0.99178	0.010	0.99680	20.00000	Averaged	
31 2-Methylnaphthalene	1.00000	1.17360	0.79685	0.010	17.35989	20.00000	Linear	
42 Acenaphthylene	2.29929	2.25011	2.25011	0.010	-2.13898	20.00000	Averaged	
45 Acenaphthene	1.45157	1.35908	1.35908	0.010	-6.37169	20.01000	Averaged	
54 Fluorene	1.46645	1.37534	1.37534	0.010	-6.21336	20.00000	Averaged	
64 Phenanthrene	1.13063	1.10722	1.10722	0.010	-2.07063	20.00000	Averaged	
65 Anthracene	1.21200	1.18327	1.18327	0.010	-2.36995	20.00000	Averaged	
68 Fluoranthene	1.13070	1.12327	1.12327	0.010	-0.65697	20.01000	Averaged	
70 Pyrene	2.40122	2.19454	2.19454	0.010	-8.60730	20.00000	Averaged	
72 Benzo(a)anthracene	1.25751	1.23252	1.23252	0.010	-1.98735	20.00000	Averaged	
74 Chrysene	1.54574	1.40350	1.40350	0.010	-9.20164	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.29298	1.18198	1.18198	0.010	-8.58435	20.00000	Averaged	
79 Benzo(k)fluoranthene	2.04891	1.86578	1.86578	0.010	-8.93804	20.00000	Averaged	
80 Benzo(a)pyrene	1.35919	1.21841	1.21841	0.010	-10.35768	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	0.75803	0.91990	0.91990	0.010	21.35453	20.00000	Averaged	*
83 Dibenzo(a,h)anthracene	0.75737	0.63573	0.63573	0.010	-16.06122	20.00000	Averaged	
84 Benzo(g,h,i)perylene	1.05228	0.88165	0.88165	0.010	-16.21494	20.00000	Averaged	
30 2-Methylnaphthalene-D10	1.25242	1.20030	1.20030	0.010	-4.16178	20.00000	Averaged	
52 Fluorene-D10	0.97970	0.92905	0.92905	0.010	-5.16946	20.00000	Averaged	
69 Pyrene-D10	1.27796	1.26978	1.26978	0.010	-0.63961	20.00000	Averaged	

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : N0547.D
Instrument ID : GCMS-N
Matrix : SL

SDG : SG8254
Lab Sample ID : WG133188-1RA
Date Extracted : 25-OCT-13
Date Analyzed : 31-OCT-13
Time Analyzed : 21:25

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133188-2	N0531.D	10/30/13	17:45
Laboratory Control S	WG133188-3	N0532.D	10/30/13	18:28
004/5-SS1068-000.5	SG8254-21	N0553.D	11/01/13	01:44
003-SS1011-000.8	SG8254-22	N0554.D	11/01/13	02:27
004/5-SS-DUP05-1013	SG8254-23	N0555.D	11/01/13	03:10
003-SS1012-000.7	SG8254-24	N0556.D	11/01/13	03:53
003-SS1011-000.8	SG8254-22DL	N0562.D	11/01/13	16:56
003-SS1012-000.7	SG8254-24DL	N0563.D	11/01/13	17:39
003-SS1013-000.7	SG8254-25	N0564.D	11/01/13	18:22
003-SS1014-0001	SG8254-26	N0565.D	11/01/13	19:05
003-SS1015-000.8	SG8254-27	N0566.D	11/01/13	19:48
003-SS1016-000.9	SG8254-28	N0567.D	11/01/13	20:32
Matrix Spike	WG133188-4	N0568.D	11/01/13	21:14
Matrix Spike Duplica	WG133188-5	N0569.D	11/01/13	21:58
003-SS1017-000.8	SG8254-29	N0570.D	11/01/13	22:40
003-SS1018-000.8	SG8254-30	N0571.D	11/01/13	23:23
003-SS1019-000.5	SG8254-31	N0572.D	11/02/13	00:06
003-SS-DUP06-1013	SG8254-32	N0727.D	11/13/13	15:25
003-SS1013-000.7	SG8254-25DL	N0729.D	11/13/13	16:53
003-SS1014-0001	SG8254-26DL	N0730.D	11/13/13	17:36
003-SS1019-000.5	SG8254-31DL	N0745.D	11/14/13	14:29

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG133188-1RA
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: N0547.D

Sample Date:
Received Date:
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	6.6	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	J	2.5	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		41.8	%					
Fluorene-D10		57.7	%					
Pyrene-D10		83.3	%					

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Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG133188-2
LCSD ID: WG133188-3
Project:
SDG: SG8254
Report Date: 15-NOV-13
LCS File ID: N0531.D

Received Date:
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188
LCSD File ID: N0532.D

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	36.5	54.7	34.5	51.7	ug/Kgdrywt	6	30	10-129
2-Methylnaphthalene	66.7	34.8	52.2	31.2	46.8	ug/Kgdrywt	11	30	10-152
Acenaphthylene	66.7	23.1	34.6	22.1	33.1	ug/Kgdrywt	4	30	25-94
Acenaphthene	66.7	34.9	52.3	30.0	45.0	ug/Kgdrywt	15	30	33-98
Fluorene	66.7	40.0	60.0	32.0	48.0	ug/Kgdrywt	22	30	40-92
Phenanthrene	66.7	46.9	70.3	45.2	67.8	ug/Kgdrywt	4	30	46-96
Anthracene	66.7	44.4	66.6	44.6	66.9	ug/Kgdrywt	0	30	34-96
Fluoranthene	66.7	57.8	86.6	47.8	71.7	ug/Kgdrywt	19	30	38-116
Pyrene	66.7	42.6	63.9	44.0	66.0	ug/Kgdrywt	3	30	35-111
Benzo(a)anthracene	66.7	45.6	68.4	46.6	69.9	ug/Kgdrywt	2	30	48-100
Chrysene	66.7	49.9	74.8	40.9	61.3	ug/Kgdrywt	20	30	46-101
Benzo(b)Fluoranthene	66.7	34.4	51.6*	28.5	42.7*	ug/Kgdrywt	19	30	53-100
Benzo(k)fluoranthene	66.7	54.0	81.0	48.4	72.6	ug/Kgdrywt	11	30	49-96
Benzo(a)pyrene	66.7	28.3	42.4*	35.3	52.9*	ug/Kgdrywt	22	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	35.7	53.5	29.3	43.9*	ug/Kgdrywt	20	30	50-105
Dibenzo(a,h)anthracene	66.7	45.5	68.2	38.9	58.3	ug/Kgdrywt	16	30	55-105
Benzo(g,h,i)perylene	66.7	32.8	49.2*	21.5	32.2*	ug/Kgdrywt	42*	30	53-103
2-Methylnaphthalene-D10			42.6		36.8				19-94
Fluorene-D10			61.9		47.7				20-96
Pyrene-D10			75.0		86.1				31-128

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MS/MSD Recovery Report

MS ID: WG133188-4
MSD ID: WG133188-5
Sample ID: SG8254-28
Client ID: 003-SS1016-000.9
Project:
SDG: SG8254
MS File ID: N0568.D

Received Date:
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188
Report Date: 15-NOV-13
MSD File ID: N0569.D

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits	
Naphthalene	69.2	71.0	ug/Kgdrywt	J9.2	52.	44.	61.4	49.5	15	30	10-129	
2-Methylnaphthalene	69.2	71.0	ug/Kgdrywt	J4.3	47.	46.	62.0	58.4	3	30	10-152	
Acenaphthylene	69.2	71.0	ug/Kgdrywt	J4.3	46.	49.	59.7	62.8	7	30	25-94	
Acenaphthene	69.2	71.0	ug/Kgdrywt	J14.	64.	50.	71.8	50.6	24	30	33-98	
Fluorene	69.2	71.0	ug/Kgdrywt	J14.	69.	59.	79.6	64.5	14	30	40-92	
Phenanthrene	69.2	71.0	ug/Kgdrywt	M220	260	200	63.6	0*	28	30	46-96	C, K
Anthracene	69.2	71.0	ug/Kgdrywt	30.	85.	75.	79.5	62.8	13	30	34-96	
Fluoranthene	69.2	71.0	ug/Kgdrywt	M340	380	300	49.1	0*	23	30	38-116	C, K
Pyrene	69.2	71.0	ug/Kgdrywt	MM320	320	280	0*	0*	14	30	35-111	C, K
Benzo(a)anthracene	69.2	71.0	ug/Kgdrywt	MM200	230	200	39.0*	5.63*	11	30	48-100	C, K
Chrysene	69.2	71.0	ug/Kgdrywt	MM180	200	180	26.0*	0*	12	30	46-101	C, K
Benzo(b)Fluoranthene	69.2	71.0	ug/KgdrywtLL	MM240	260	230	31.8*	0*	12	30	53-100	C, K
Benzo(k)fluoranthene	69.2	71.0	ug/Kgdrywt	MM80.	100	90.	32.8*	13.2*	14	30	49-96	J
Benzo(a)pyrene	69.2	71.0	ug/KgdrywtLL	MM150	160	140	13.0*	0*	9	30	61-101	C, K
Indeno(1,2,3-cd)pyrene	69.2	71.0	ug/KgdrywtLL	MM230	230	220	11.6*	0*	5	30	50-105	C, K
Dibenzo(a,h)anthracene	69.2	71.0	ug/Kgdrywt	MM42.	74.	74.	46.1*	44.8*	0	30	55-105	J
Benzo(g,h,i)perylene	69.2	71.0	ug/KgdrywtLL	MM66	82.	76.	23.3*	14.8*	7	30	53-103	J
2-Methylnaphthalene-D10							48.4	46.6			19-94	
Fluorene-D10							72.1	72.1			20-96	
Pyrene-D10							70.5	69.7			31-128	

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Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133361-1
Lab File ID : N0575.D
Date Extracted : 28-OCT-13
Instrument ID : GCMS-N
Date Analyzed : 04-NOV-13
Matrix : SL
Time Analyzed : 11:35

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133361-2	N0576.D	11/04/13	12:18
Laboratory Control S	WG133361-3	N0577.D	11/04/13	13:02
004/5-SS1055-000.8	SG8254-4	N0578.D	11/04/13	13:45
004/5-SS1054-000.6	SG8254-5	N0579.D	11/04/13	14:28
Matrix Spike	WG133361-4	N0580.D	11/04/13	15:12
Matrix Spike Duplica	WG133361-5	N0581.D	11/04/13	15:55
004/5-SS1053-000.6	SG8254-6	N0582.D	11/04/13	16:38
004/5-SS1052-000.6	SG8254-7	N0583.D	11/04/13	17:22
004/5-SS1051-000.8	SG8254-8	N0584.D	11/04/13	18:05
004/5-SS1050-000.6	SG8254-9	N0585.D	11/04/13	18:47
004/5-SS1060-000.5	SG8254-15	N0586.D	11/04/13	19:30
004/5-SS1059-000.6	SG8254-16	N0587.D	11/04/13	20:13
004/5-SS1058-000.5	SG8254-17	N0588.D	11/04/13	20:56
004/5-SS1065-000.5	SG8254-18	N0589.D	11/04/13	21:38
004/5-SS1063-000.6	SG8254-20	N0590.D	11/04/13	22:21
004/5-SS1064-000.6	SG8254-19	N0705.D	11/12/13	16:37
Matrix Spike	WG133361-6	N0706.D	11/12/13	17:20
Matrix Spike Duplica	WG133361-7	N0707.D	11/12/13	18:04
004/5-SS1056-000.6	SG8254-3	N0708.D	11/12/13	18:47
004/5-SS-DUP04-1013	SG8254-11	N0709.D	11/12/13	19:29
004/5-SS1061-000.6	SG8254-12	N0710.D	11/12/13	20:12
004/5-SS1062-000.8	SG8254-10	N0711.D	11/12/13	20:55
004/5-SS1067-000.7	SG8254-13	N0712.D	11/12/13	21:38
004/5-SS1066-000.9	SG8254-14	N0713.D	11/12/13	22:21
004/5-SS1057-0001	SG8254-2	N0714.D	11/12/13	23:04
004/5-SS1067-000.7	SG8254-13DL	N0728.D	11/13/13	16:09

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ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG133361-1
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: N0575.D

Sample Date:
Received Date:
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		50.3	%					
Fluorene-D10		66.8	%					
Pyrene-D10		79.3	%					

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LCS/LCSD Recovery Report

LCS ID: WG133361-2
LCSD ID: WG133361-3
Project:
SDG: SG8254
Report Date: 15-NOV-13
LCS File ID: N0576.D

Received Date:
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361
LCSD File ID: N0577.D

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	38.5	57.7	24.7	37.0	ug/Kgdrywt	44*	30	10-129
2-Methylnaphthalene	66.7	37.7	56.5	22.6	33.9	ug/Kgdrywt	50*	30	10-152
Acenaphthylene	66.7	36.8	55.2	23.2	34.8	ug/Kgdrywt	45*	30	25-94
Acenaphthene	66.7	39.7	59.5	25.6	38.4	ug/Kgdrywt	43*	30	33-98
Fluorene	66.7	45.0	67.5	29.1	43.6	ug/Kgdrywt	43*	30	40-92
Phenanthrene	66.7	51.2	76.8	33.6	50.4	ug/Kgdrywt	42*	30	46-96
Anthracene	66.7	52.8	79.2	32.6	48.9	ug/Kgdrywt	47*	30	34-96
Fluoranthene	66.7	62.3	93.4	45.6	68.4	ug/Kgdrywt	31*	30	38-116
Pyrene	66.7	45.4	68.1	34.1	51.1	ug/Kgdrywt	28	30	35-111
Benzo(a)anthracene	66.7	58.5	87.7	39.2	58.8	ug/Kgdrywt	40*	30	48-100
Chrysene	66.7	49.6	74.4	33.2	49.8	ug/Kgdrywt	40*	30	46-101
Benzo(b)Fluoranthene	66.7	54.6	81.8	36.2	54.3	ug/Kgdrywt	40*	30	53-100
Benzo(k)fluoranthene	66.7	47.7	71.5	30.3	45.4*	ug/Kgdrywt	45*	30	49-96
Benzo(a)pyrene	66.7	47.1	70.6	31.4	47.1*	ug/Kgdrywt	40*	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	60.9	91.3	35.0	52.5	ug/Kgdrywt	54*	30	50-105
Dibenzo(a,h)anthracene	66.7	56.6	84.8	35.5	53.2*	ug/Kgdrywt	46*	30	55-105
Benzo(g,h,i)perylene	66.7	32.2	48.3*	21.9	32.8*	ug/Kgdrywt	38*	30	53-103
2-Methylnaphthalene-D10			46.8		28.1				19-94
Fluorene-D10			66.2		41.9				20-96
Pyrene-D10			71.5		45.3				31-128

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MS/MSD Recovery Report

MS ID: WG133361-4
MSD ID: WG133361-5
Sample ID: SG8254-5
Client ID: 004/5-SS1054-000.6
Project:
SDG: SG8254
MS File ID: N0580.D

Received Date:
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361
Report Date: 15-NOV-13
MSD File ID: N0581.D

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	65.3	66.6	ug/Kgdrywt	U9.8	43.	45.	66.3	68.0	4	30	10-129
2-Methylnaphthalene	65.3	66.6	ug/Kgdrywt	U9.8	45.	46.	68.3	68.4	2	30	10-152
Acenaphthylene	65.3	66.6	ug/Kgdrywt	U9.8	41.	42.	62.2	63.4	4	30	25-94
Acenaphthene	65.3	66.6	ug/Kgdrywt	U9.8	44.	46.	67.5	68.6	4	30	33-98
Fluorene	65.3	66.6	ug/Kgdrywt	U9.8	48.	51.	73.2	77.2	7	30	40-92
Phenanthrene	65.3	66.6	ug/Kgdrywt	J15.	64.	68.	74.1	79.3	7	30	46-96
Anthracene	65.3	66.6	ug/Kgdrywt	J1.9	50.	52.	73.2	75.6	5	30	34-96
Fluoranthene	65.3	66.6	ug/Kgdrywt	44.	100	100	85.3	89.7	4	30	38-116
Pyrene	65.3	66.6	ug/Kgdrywt	32.	80.	86.	73.8	80.8	7	30	35-111
Benzo(a)anthracene	65.3	66.6	ug/Kgdrywt	23.	72.	76.	73.8	79.0	6	30	48-100
Chrysene	65.3	66.6	ug/Kgdrywt	21.	64.	67.	65.7	68.0	4	30	46-101
Benzo(b)Fluoranthene	65.3	66.6	ug/Kgdrywt	35.	72.	76.	57.4	62.0	5	30	53-100
Benzo(k)fluoranthene	65.3	66.6	ug/Kgdrywt	JL11.	44.	47.	51.4	54.4	6	30	49-96
Benzo(a)pyrene	65.3	66.6	ug/Kgdrywt	JL19.	49.	51.	46.4*	48.4*	4	30	61-101
Indeno(1,2,3-cd)pyrene	65.3	66.6	ug/Kgdrywt	33.	81.	79.	72.9	68.2	3	30	50-105
Dibenzo(a,h)anthracene	65.3	66.6	ug/Kgdrywt	JL7.7	53.	54.	68.7	69.6	3	30	55-105
Benzo(g,h,i)perylene	65.3	66.6	ug/Kgdrywt	JLL11.	31.	31.	30.0*	30.3*	2	30	53-103
2-Methylnaphthalene-D10							54.2	54.5			19-94
Fluorene-D10							75.0	76.0			20-96
Pyrene-D10							77.5	79.4			31-128

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MS/MSD Recovery Report

MS ID: WG133361-6
MSD ID: WG133361-7
Sample ID: SG8254-19
Client ID: 004/5-SS1064-000.6
Project:
SDG: SG8254
MS File ID: N0706.D

Received Date:
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361
Report Date: 15-NOV-13
MSD File ID: N0707.D

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	63.1	66.0	ug/Kgdrywt	U9.3	42.	44.	66.7	67.3	5	30	10-129
2-Methylnaphthalene	63.1	66.0	ug/Kgdrywt	U9.3	49.	51.	77.0	77.5	5	30	10-152
Acenaphthylene	63.1	66.0	ug/Kgdrywt	U9.3	34.	38.	54.6	58.4	11	30	25-94
Acenaphthene	63.1	66.0	ug/Kgdrywt	U9.3	38.	46.	60.3	69.7	19	30	33-98
Fluorene	63.1	66.0	ug/Kgdrywt	U9.3	41.	50.	64.6	75.3	20	30	40-92
Phenanthrene	63.1	66.0	ug/Kgdrywt	JM15.	64.	79.	77.1	97.0*	21	30	46-96
Anthracene	63.1	66.0	ug/Kgdrywt	J1.4	35.	39.	53.8	57.0	10	30	34-96
Fluoranthene	63.1	66.0	ug/Kgdrywt	M34.	84.	120	78.9	130.*	35*	30	38-116
Pyrene	63.1	66.0	ug/Kgdrywt	M29.	82.	100	83.9	115.*	24	30	35-111
Benzo(a)anthracene	63.1	66.0	ug/Kgdrywt	J14.	57.	68.	69.1	82.9	18	30	48-100
Chrysene	63.1	66.0	ug/Kgdrywt	19.	61.	68.	66.5	75.2	12	30	46-101
Benzo(b)Fluoranthene	63.1	66.0	ug/Kgdrywt	21.	64.	84.	69.1	96.9	27	30	53-100
Benzo(k)fluoranthene	63.1	66.0	ug/Kgdrywt	JL11.	44.	44.	52.4	50.6	1	30	49-96
Benzo(a)pyrene	63.1	66.0	ug/KgdrywtJLMM13.		43.	49.	47.7*	54.1*	12	30	61-101
Indeno(1,2,3-cd)pyrene	63.1	66.0	ug/KgdrywtJMM11.		32.	40.	33.4*	43.2*	20	30	50-105
Dibenzo(a,h)anthracene	63.1	66.0	ug/KgdrywtJLMM1.8		30.	34.	47.0*	52.1*	15	30	55-105
Benzo(g,h,i)perylene	63.1	66.0	ug/KgdrywtJLLMM5		20.	22.	24.1*	25.8*	8	30	53-103
2-Methylnaphthalene-D10							52.1	53.3			19-94
Fluorene-D10							68.6	69.2			20-96
Pyrene-D10							75.3	68.6			31-128

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : N0558.D
Instrument ID : GCMS-N
Matrix : AQ

SDG : SG8254
Lab Sample ID : WG133367-1RA
Date Extracted : 28-OCT-13
Date Analyzed : 01-NOV-13
Time Analyzed : 14:03

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133367-2RA	N0559.D	11/01/13	14:46
Laboratory Control S	WG133367-3RA	N0560.D	11/01/13	15:29
TF2-SS-RB03-1013	SG8254-33RE	N0561.D	11/01/13	16:12

Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG133367-1RA
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: N0558.D

Sample Date:
Received Date:
Extract Date: 28-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133367

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	J	0.044	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	J	0.059	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		60.2	%					
Fluorene-D10		72.3	%					
pyrene-d10		90.1	%					

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LCS/LCSD Recovery Report

LCS ID: WG133367-2RA
LCSD ID: WG133367-3RA
Project:
SDG: SG8254
Report Date: 15-NOV-13
LCS File ID: N0559.D

Received Date:
Extract Date: 28-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133367
LCSD File ID: N0560.D

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	2.00	1.27	63.5	1.29	64.5	ug/L	2	20	46-84
2-Methylnaphthalene	2.00	1.21	60.5	1.22	61.0	ug/L	1	20	51-114
Acenaphthylene	2.00	1.19	59.5	1.21	60.5	ug/L	2	20	55-105
Acenaphthene	2.00	1.24	62.0	1.27	63.5	ug/L	2	20	53-90
Fluorene	2.00	1.41	70.5	1.36	68.0	ug/L	4	20	53-95
Phenanthrene	2.00	1.58	79.0	1.53	76.5	ug/L	3	20	73-100
Anthracene	2.00	1.68	84.0	1.63	81.5	ug/L	3	20	70-95
Fluoranthene	2.00	1.67	83.5	1.68	84.0	ug/L	0	20	81-109
Pyrene	2.00	1.53	76.5	1.52	76.0	ug/L	1	20	71-104
Benzo(a)anthracene	2.00	1.67	83.5	1.58	79.0	ug/L	6	20	70-110
Chrysene	2.00	1.50	75.0	1.54	77.0	ug/L	3	20	70-95
Benzo(b)Fluoranthene	2.00	1.76	88.0	1.61	80.5	ug/L	9	20	67-102
Benzo(k)fluoranthene	2.00	1.32	66.0*	1.40	70.0	ug/L	6	20	68-103
Benzo(a)pyrene	2.00	1.42	71.0	1.41	70.5	ug/L	1	20	63-98
Indeno(1,2,3-cd)pyrene	2.00	1.76	88.0	1.79	89.5	ug/L	2	20	61-112
Dibenzo(a,h)anthracene	2.00	1.76	88.0	1.64	82.0	ug/L	7	20	66-108
Benzo(g,h,i)perylene	2.00	1.40	70.0	1.47	73.5	ug/L	5	20	62-106
2-Methylnaphthalene-D10			51.7		56.6				43-92
Fluorene-D10			69.4		70.5				29-101
Pyrene-d10			79.2		79.5				53-166

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133485-4
Lab File ID : N0523.D

SDG: SG8254
Analytical Date: 10/30/13 11:51
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	28940		9.13		80684		11.90		30691		16.00	
	Upper Limit	57880		9.63		161368		12.40		61382		16.50	
	Lower Limit	14470		8.63		40342		11.40		15345.5		15.50	
Client Sample ID	Lab Sample ID												
Laboratory Control S	WG133188-2	23271		9.13		43506		11.90		17113		16.00	
Laboratory Control S	WG133188-3	25610		9.13		71565		11.90		30436		16.00	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133485-4
Lab File ID : N0523.D

SDG: SG8254
Analytical Date: 10/30/13 11:51
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	45047	19.48	20519	25.77	16650	28.90
	Upper Limit	90094	19.98	41038	26.27	33300	29.40
	Lower Limit	22523.5	18.98	10259.5	25.27	8325	28.40
Client Sample ID	Lab Sample ID						
Laboratory Control S	WG133188-2	28286	19.48	15517	25.77	10172	28.90
Laboratory Control S	WG133188-3	36159	19.48	16544	25.77	11411	28.90

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133553-4
Lab File ID : N0540.D

SDG: SG8254
Analytical Date: 10/31/13 16:21
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT #	Area	#	RT #	Area	#	RT #
	Std .	20009		9.11	66912		11.90	27626		15.99
	Upper Limit	40018		9.61	133824		12.40	55252		16.49
	Lower Limit	10004.5		8.61	33456		11.40	13813		15.49
Client Sample ID	Lab Sample ID									
Method Blank Sample	WG133188-1RA	16588		9.11	54760		11.90	22707		15.99
004/5-SS1068-000.5	SG8254-21	23202		9.11	81870		11.90	36578		16.00
003-SS1011-000.8	SG8254-22	23228		9.11	84446		11.90	37968		15.99
004/5-SS-DUP05-1013	SG8254-23	22475		9.11	79460		11.90	36046		16.00
003-SS1012-000.7	SG8254-24	23232		9.11	84183		11.90	39206		15.99
Continuing Calibrati	WG133605-2	21038		9.11	69979		11.88	28506		15.99
Method Blank Sample	WG133367-1RA	21763		9.11	78380		11.90	32898		15.99
Laboratory Control S	WG133367-2RA	20129		9.11	67404		11.88	29457		15.99
Laboratory Control S	WG133367-3RA	16606		9.11	54693		11.90	22415		15.99
TF2-SS-RB03-1013	SG8254-33RE	14692		9.13	49649		11.90	21920		16.00
003-SS1011-000.8	SG8254-22DL	16870		9.11	58162		11.90	25559		15.99
003-SS1012-000.7	SG8254-24DL	15738		9.13	49449		11.90	21490		15.99
003-SS1013-000.7	SG8254-25	15615		9.11	52766		11.90	23737		15.99
003-SS1014-0001	SG8254-26	18751		9.11	64751		11.90	29123		15.99
003-SS1015-000.8	SG8254-27	20324		9.11	71393		11.90	32772		15.99
003-SS1016-000.9	SG8254-28	19205		9.11	65783		11.90	30856		15.99
Matrix Spike	WG133188-4	19335		9.11	66554		11.88	31539		15.99
Matrix Spike Duplica	WG133188-5	19398		9.11	68232		11.88	33274		15.99
003-SS1017-000.8	SG8254-29	22347		9.11	79172		11.90	35634		15.99
003-SS1018-000.8	SG8254-30	16315		9.11	58308		11.90	27019		15.99
003-SS1019-000.5	SG8254-31	19497		9.11	70634		11.90	33500		15.99

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133553-4
Lab File ID : N0540.D

SDG: SG8254
Analytical Date: 10/31/13 16:21
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	40884	19.48	16478	25.76	9311	28.89
	Upper Limit	81768	19.98	32956	26.26	18622	29.39
	Lower Limit	20442	18.98	8239	25.26	4655.5	28.39
Client Sample ID	Lab Sample ID						
Method Blank Sample	WG133188-1RA	38585	19.48	15519	25.76	7888	28.89
004/5-SS1068-000.5	SG8254-21	61774	19.48	25673	25.76	17138	28.89
003-SS1011-000.8	SG8254-22	64844	19.47	23704	25.76	15883	28.89
004/5-SS-DUP05-1013	SG8254-23	61075	19.48	25665	25.76	18307	28.89
003-SS1012-000.7	SG8254-24	67354	19.47	25930	25.76	17348	28.89
Continuing Calibrati	WG133605-2	40300	19.48	18801	25.76	12019	28.89
Method Blank Sample	WG133367-1RA	49091	19.48	20699	25.76	12173	28.89
Laboratory Control S	WG133367-2RA	46023	19.47	20591	25.74	12076	28.89
Laboratory Control S	WG133367-3RA	34718	19.47	15837	25.76	8880	28.89
TF2-SS-RB03-1013	SG8254-33RE	33292	19.48	16665	25.76	9114	28.89
003-SS1011-000.8	SG8254-22DL	41089	19.47	16334	25.74	10707	28.89
003-SS1012-000.7	SG8254-24DL	34251	19.47	16235	25.74	11437	28.89
003-SS1013-000.7	SG8254-25	41327	19.47	16229	25.76	9827	28.89
003-SS1014-0001	SG8254-26	50775	19.47	20866	25.74	13456	28.89
003-SS1015-000.8	SG8254-27	57420	19.47	25904	25.74	17890	28.89
003-SS1016-000.9	SG8254-28	56491	19.47	21387	25.74	12516	28.89
Matrix Spike	WG133188-4	56864	19.47	22247	25.74	13049	28.89
Matrix Spike Duplica	WG133188-5	61093	19.47	23177	25.74	14199	28.89
003-SS1017-000.8	SG8254-29	58619	19.47	23401	25.74	12886	28.89
003-SS1018-000.8	SG8254-30	47850	19.47	19653	25.76	13093	28.89
003-SS1019-000.5	SG8254-31	59799	19.47	23936	25.76	15640	28.89

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133553-4
Lab File ID : N0540.D

SDG: SG8254
Analytical Date: 10/31/13 16:21
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	20009		9.11		66912		11.90		27626		15.99	
	Upper Limit	40018		9.61		133824		12.40		55252		16.49	
	Lower Limit	10004.5		8.61		33456		11.40		13813		15.49	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG133661-2	22149		9.10		75973		11.88		31889		15.97	
Method Blank Sample	WG133361-1	16226		9.11		54075		11.90		23489		15.99	
Laboratory Control S	WG133361-2	16247		9.10		53425		11.88		23370		15.97	
Laboratory Control S	WG133361-3	15743		9.10		53634		11.88		23776		15.97	
004/5-SS1055-000.8	SG8254-4	16263		9.10		53930		11.90		23621		15.99	
004/5-SS1054-000.6	SG8254-5	17629		9.10		58230		11.90		26311		15.99	
Matrix Spike	WG133361-4	16480		9.10		55788		11.88		25441		15.97	
Matrix Spike Duplica	WG133361-5	16232		9.10		55232		11.88		25739		15.97	
004/5-SS1053-000.6	SG8254-6	15397		9.10		50735		11.90		23042		15.99	
004/5-SS1052-000.6	SG8254-7	15665		9.10		52803		11.90		24736		15.99	
004/5-SS1051-000.8	SG8254-8	17734		9.10		60111		11.90		27671		15.99	
004/5-SS1050-000.6	SG8254-9	17114		9.10		57038		11.90		27208		15.99	
004/5-SS1060-000.5	SG8254-15	16214		9.10		54224		11.90		26105		15.99	
004/5-SS1059-000.6	SG8254-16	16821		9.10		56127		11.90		25693		15.99	
004/5-SS1058-000.5	SG8254-17	16731		9.10		56605		11.90		26259		15.99	
004/5-SS1065-000.5	SG8254-18	17615		9.10		58274		11.90		27068		15.99	
004/5-SS1063-000.6	SG8254-20	16105		9.10		53861		11.90		24669		15.99	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133553-4
Lab File ID : N0540.D

SDG: SG8254
Analytical Date: 10/31/13 16:21
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	40884	19.48	16478	25.76	9311	28.89
	Upper Limit	81768	19.98	32956	26.26	18622	29.39
	Lower Limit	20442	18.98	8239	25.26	4655.5	28.39
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG133661-2	50737	19.47	26177	25.74	17253	28.89
Method Blank Sample	WG133361-1	37632	19.47	19180	25.74	10762	28.89
Laboratory Control S	WG133361-2	39370	19.47	21493	25.74	12973	28.89
Laboratory Control S	WG133361-3	40684	19.47	20402	25.74	13014	28.89
004/5-SS1055-000.8	SG8254-4	40843	19.47	20985	25.74	13497	28.87
004/5-SS1054-000.6	SG8254-5	44628	19.47	20305	25.74	13152	28.87
Matrix Spike	WG133361-4	44461	19.47	20230	25.74	13483	28.87
Matrix Spike Duplica	WG133361-5	44814	19.47	19569	25.74	12478	28.87
004/5-SS1053-000.6	SG8254-6	40192	19.47	16504	25.74	11112	28.87
004/5-SS1052-000.6	SG8254-7	44569	19.47	18760	25.74	13098	28.87
004/5-SS1051-000.8	SG8254-8	47856	19.47	20549	25.74	13489	28.87
004/5-SS1050-000.6	SG8254-9	47831	19.47	20817	25.74	14916	28.87
004/5-SS1060-000.5	SG8254-15	47280	19.47	21110	25.74	13960	28.87
004/5-SS1059-000.6	SG8254-16	46660	19.47	21292	25.74	14141	28.89
004/5-SS1058-000.5	SG8254-17	47771	19.47	20267	25.74	12447	28.87
004/5-SS1065-000.5	SG8254-18	50385	19.47	22855	25.74	14799	28.87
004/5-SS1063-000.6	SG8254-20	46523	19.47	22494	25.74	13910	28.89

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG134292-4
Lab File ID : N0698.D

SDG: SG8254
Analytical Date: 11/12/13 11:30
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4		NAPHTHALENE-D8		ACENAPHTHENE-D10	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	27788	9.08	90382	11.86	35164	15.95
	Upper Limit	55576	9.58	180764	12.36	70328	16.45
	Lower Limit	13894	8.58	45191	11.36	17582	15.45
Client Sample ID	Lab Sample ID						
004/5-SS1064-000.6	SG8254-19	26015	9.07	73941	11.86	31898	15.95
Matrix Spike	WG133361-6	29565	9.07	83706	11.84	36730	15.94
Matrix Spike Duplica	WG133361-7	29791	9.07	85367	11.84	36260	15.94
004/5-SS1056-000.6	SG8254-3	30909	9.07	93372	11.86	39837	15.95
004/5-SS-DUP04-1013	SG8254-11	26856	9.07	79420	11.86	34675	15.95
004/5-SS1061-000.6	SG8254-12	33397	9.07	101526	11.86	42046	15.95
004/5-SS1062-000.8	SG8254-10	34533	9.07	108216	11.86	45874	15.95
004/5-SS1067-000.7	SG8254-13	38201	9.07	121264	11.86	50694	15.95
004/5-SS1066-000.9	SG8254-14	40272	9.07	130499	11.86	52272	15.95
004/5-SS1057-0001	SG8254-2	36442	9.08	115295	11.86	44102	15.95
Continuing Calibrati	WG134331-2	29463	9.05	88611	11.84	36521	15.93
003-SS-DUP06-1013	SG8254-32	25090	9.05	75096	11.84	32182	15.93
004/5-SS1067-000.7	SG8254-13DL	23867	9.05	76145	11.84	32278	15.94
003-SS1013-000.7	SG8254-25DL	25022	9.07	73020	11.86	29605	15.94
003-SS1014-0001	SG8254-26DL	25202	9.07	71581	11.86	30751	15.94
Continuing Calibrati	WG134395-2	33173	9.05	117953	11.84	51761	15.94
003-SS1019-000.5	SG8254-31DL	28974	9.07	99275	11.86	44725	15.94

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG134292-4
Lab File ID : N0698.D

SDG: SG8254
Analytical Date: 11/12/13 11:30
Instrument ID: GCMS-N

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	56213		19.44		29007		25.72		22554		28.86	
	Upper Limit	112426		19.94		58014		26.22		45108		29.36	
	Lower Limit	28106.5		18.94		14503.5		25.22		11277		28.36	
Client Sample ID	Lab Sample ID												
004/5-SS1064-000.6	SG8254-19	54132		19.43		25669		25.71		18710		28.84	
Matrix Spike	WG133361-6	60504		19.43		26129		25.71		18427		28.84	
Matrix Spike Duplica	WG133361-7	61705		19.43		29664		25.71		23264		28.86	
004/5-SS1056-000.6	SG8254-3	62594		19.43		27626		25.71		18906		28.84	
004/5-SS-DUP04-1013	SG8254-11	56313		19.43		23566		25.71		17123		28.84	
004/5-SS1061-000.6	SG8254-12	63348		19.43		23955		25.71		17177		28.86	
004/5-SS1062-000.8	SG8254-10	66403		19.43		28427		25.72		17509		28.88	
004/5-SS1067-000.7	SG8254-13	72327		19.44		29617		25.74		19652		28.88	
004/5-SS1066-000.9	SG8254-14	72948		19.44		27713		25.74		14609		28.89	
004/5-SS1057-0001	SG8254-2	64466		19.44		26864		25.74		15306		28.89	
Continuing Calibrati	WG134331-2	53891		19.43		22140		25.70		13955		28.84	
003-SS-DUP06-1013	SG8254-32	53349		19.41		21722		25.70		13201		28.83	
004/5-SS1067-000.7	SG8254-13DL	49395		19.41		16434		25.70		11352		28.83	
003-SS1013-000.7	SG8254-25DL	44003		19.41		15942		25.70		10580	*	28.83	
003-SS1014-0001	SG8254-26DL	49771		19.41		18289		25.70		11685		28.84	
Continuing Calibrati	WG134395-2	79703		19.43		43368		25.71		32833		28.86	
003-SS1019-000.5	SG8254-31DL	72368		19.43		40339		25.70		33604		28.84	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Data File: \\target_server\GG\chem\gcms-n.i\N103013.b\N0525.D
Report Date: 06-Nov-2013 12:15

I.S. Associations

Katahdin Analytical Services

Data file : \\target_server\GG\chem\gcms-n.i\N103013.b\N0525.D
Lab Smp Id: WG133485-3
Inj Date : 30-OCT-2013 13:24
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG133485-3
Misc Info :
Comment :
Method : \\target_server\GG\chem\gcms-n.i\N103013.b\NSPSIM76.m
Meth Date : 31-Oct-2013 10:29 gcms-n.i Quant Type: ISTD
Cal Date : 30-OCT-2013 13:24 Cal File: N0525.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.522	3.489	(0.386)	6462	0.50000	0.454(a)	
	2 1,4-Dioxane	88	3.557	3.523	(0.390)	6351	0.50000	0.402(a)	
	3 Benzaldehyde	77	8.232	8.193	(0.902)	15253	0.50000	0.513	
	4 Phenol	94	8.545	8.532	(0.936)	75273	2.00000	1.64	
	5 Bis(2-Chloroethyl)ether	93	8.662	8.636	(0.949)	23331	0.50000	0.412	
	6 2-Chlorophenol	128	8.702	8.689	(0.954)	58720	2.00000	1.57	
	7 1,3-Dichlorobenzene	146	9.002	8.989	(0.986)	18623	0.50000	0.453	
*	8 1,4-Dichlorobenzene-D4	152	9.126	9.112	(1.000)	25337	0.80000	(a)	
	9 1,4-Dichlorobenzene	146	9.153	9.153	(1.003)	18615	0.50000	0.428	
	10 1,2-Dichlorobenzene	146	9.482	9.468	(1.039)	21610	0.50000	0.426	
	11 2,2'-Oxybis(1-chloropropane)	45	9.824	9.797	(1.077)	21299	0.50000	0.356(Q)	
	12 2-Methylphenol	108	9.810	9.797	(1.075)	55811	2.00000	1.70	
	13 Acetophenone	105	10.043	10.016	(0.843)	27001	0.50000	0.453(Q)	
	14 N-Nitroso-di-n-propylamine	70	10.139	10.084	(1.111)	10630	0.50000	0.334(Q)	
	15 Hexachloroethane	117	10.194	10.180	(1.117)	9222	0.50000	0.408	
	16 3&4-Methylphenol	108	10.153	10.153	(1.113)	52246	2.00000	1.67	
	17 Nitrobenzene	77	10.386	10.345	(0.872)	19771	0.50000	0.341(Q)	
	18 Isophorone	82	10.977	10.926	(0.921)	31451	0.50000	0.376	
	19 2-Nitrophenol	139	11.096	11.079	(0.931)	24641	2.00000	1.40	
	20 2,4-Dimethylphenol	107	11.318	11.301	(0.950)	55711	2.00000	1.61	
	21 bis(2-Chloroethoxy)methane	93	11.523	11.489	(0.967)	17553	0.50000	0.386	

Data File: \\target_server\GG\chem\gcms-n.i\N103013.b\N0525.D
Report Date: 06-Nov-2013 12:15

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
	22	2,4-Dichlorophenol	162	11.676	11.659	(0.980)	55951	2.00000	1.82	
	23	1,2,4-Trichlorobenzene	180	11.813	11.796	(0.991)	17984	0.50000	0.530	
*	24	Naphthalene-D8	136	11.915	11.898	(1.000)	84490	0.80000	(a)	
	25	Naphthalene	128	11.949	11.933	(1.003)	44993	0.50000	0.455	
	26	4-Chloroaniline	127	12.188	12.154	(1.023)	12412	0.50000	0.365(a)	
	27	Hexachlorobutadiene	225	12.342	12.325	(1.036)	10650	0.50000	0.508	
	28	Caprolactam	113	13.027	12.952	(1.093)	2040	0.50000	0.236(Q)	
	29	4-Chloro-3-Methylphenol	107	13.404	13.404	(1.125)	47720	2.00000	1.69	
$	30	2-Methylnaphthalene-D10	152	13.517	13.498	(0.845)	19528	0.50000	0.492(a)	
	31	2-Methylnaphthalene	142	13.592	13.573	(1.141)	24905	0.50000	0.422	
	32	1-Methylnaphthalene	142	13.799	13.781	(1.158)	22519	0.50000	0.388	
	33	Hexachlorocyclopentadiene	237	14.007	14.007	(0.875)	5804	0.50000	0.371	
	34	1,2,4,5-Tetrachlorobenzene	216	14.007	13.988	(0.875)	10749	0.50000	0.440	
$	35	2,4-Dibromophenol	252	14.251	14.233	(0.891)	5665	0.50000	0.418(a)	
	36	2,4,6-Trichlorophenol	196	14.327	14.308	(0.895)	26395	2.00000	1.73	
	37	2,4,5-Trichlorophenol	196	14.402	14.402	(0.900)	34933	2.00000	2.03	
	38	2-Chloronaphthalene	164	14.704	14.685	(0.919)	7442	0.50000	0.475	
	39	1,1'-Biphenyl	154	14.722	14.704	(0.920)	28502	0.50000	0.478	
	40	2-Nitroaniline	65	15.024	15.005	(0.939)	3319	0.50000	0.455	
	41	Dimethyl Phthalate	163	15.551	15.538	(0.972)	90395	2.00000	1.66	
	42	Acenaphthylene	152	15.657	15.644	(0.979)	36668	0.50000	0.401	
	43	2,6-Dinitrotoluene	165	15.630	15.617	(0.977)	4486	0.50000	0.447(Q)	
*	44	Acenaphthene-D10	164	15.999	15.986	(1.000)	25391	0.80000	(a)	
	45	Acenaphthene	153	16.079	16.065	(1.005)	22435	0.50000	0.465	
	46	3-Nitroaniline	138	16.013	15.986	(1.001)	1925	0.50000	0.493	
	47	2,4-Dinitrophenol	184	16.263	16.250	(1.016)	3349	2.00000	1.07	
	48	Dibenzofuran	168	16.500	16.487	(1.031)	30932	0.50000	0.369	
	49	2,4-Dinitrotoluene	165	16.580	16.567	(1.036)	3944	0.50000	0.407	
	50	4-Nitrophenol	109	16.566	16.553	(1.035)	6309	2.00000	1.58(Q)	
	51	2,3,4,6-Tetrachlorophenol	232	16.856	16.857	(1.054)	21922	2.00000	1.61	
$	52	Fluorene-D10	174	17.231	17.231	(1.077)	14915	0.50000	0.464(a)	
	53	Diethylphthalate	149	17.247	17.231	(1.078)	112042	2.00000	1.83	
	54	Fluorene	166	17.295	17.295	(1.081)	21380	0.50000	0.454	
	55	4-Chlorophenyl-phenylether	204	17.390	17.390	(1.087)	11104	0.50000	0.459	
	56	4-Nitroaniline	138	17.453	17.438	(1.091)	954	0.50000	0.414	
	57	4,6-Dinitro-2-Methylphenol	198	17.532	17.517	(0.899)	5358	2.00000	1.62	
	58	N-Nitrosodiphenylamine	169	17.682	17.682	(0.907)	13751	0.50000	0.442	
	59	4-Bromophenyl-phenylether	248	18.536	18.521	(0.951)	5115	0.50000	0.480	
	60	Hexachlorobenzene	284	18.611	18.611	(0.955)	6823	0.50000	0.533	
	61	Atrazine	200	19.075	19.076	(0.978)	2457	0.50000	0.427	
	62	Pentachlorophenol	266	19.135	19.121	(0.982)	14332	2.00000	1.75	
*	63	Phenanthrene-D10	188	19.495	19.480	(1.000)	34918	0.80000	(a)	
	64	Phenanthrene	178	19.540	19.540	(1.002)	26508	0.50000	0.493	
	65	Anthracene	178	19.660	19.660	(1.008)	29576	0.50000	0.547	
	66	Carbazole	167	20.124	20.110	(1.032)	20050	0.50000	0.449	
	67	Di-n-butylphthalate	149	21.173	21.174	(1.086)	183175	2.00000	1.75	
	68	Fluoranthene	202	22.363	22.350	(1.147)	23192	0.50000	0.445	
$	69	Pyrene-D10	212	22.831	22.818	(0.886)	15201	0.50000	0.602(a)	
	70	Pyrene	202	22.869	22.857	(0.887)	28109	0.50000	0.571	
	71	Butylbenzylphthalate	149	24.701	24.702	(0.959)	40523	2.00000	1.82	
	72	Benzo(a)anthracene	228	25.756	25.743	(0.999)	8823	0.50000	0.455	
*	73	Chrysene-D12	240	25.770	25.770	(1.000)	12387	0.80000	(a)	
	74	Chrysene	228	25.824	25.824	(1.002)	15543	0.50000	0.546(M)	M9
	75	3,3'-Dichlorobenzidine	252	25.824	25.810	(1.002)	441	0.50000	0.528(Q)	

WAS

1:07 pm, Nov 15, 2013

Data File: \\target_server\GG\chem\gcms-n.i\N103013.b\N0525.D
Report Date: 06-Nov-2013 12:15

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
	76	bis(2-Ethylhexyl)phthalate	149	26.202	26.202	(1.017)	57297	2.00000	1.90	
	77	Di-n-octylphthalate	149	27.651	27.651	(0.957)	65089	2.00000	1.78	
	78	Benzo(b)flucranthene	252	28.131	28.131	(0.973)	3971	0.50000	0.452	
	79	Benzo(k)fluoranthene	252	28.183	28.183	(0.975)	10705	0.50000	0.491(M)	M6
	80	Benzo(a)pyrene	252	28.783	28.783	(0.996)	3891	0.50000	0.364	
*	81	Perylene-D12	264	28.903	28.903	(1.000)	7932	0.80000	(a)	
	82	Indeno(1,2,3-cd)pyrene	276	31.053	31.039	(1.074)	2367	0.50000	0.651(H)	
	83	Dibenzo(a,h)anthracene	278	31.135	31.135	(1.077)	1135	0.50000	0.418(Q)	
	84	Benzo(g,h,i)perylene	276	31.642	31.642	(1.095)	3505	0.50000	0.383(M)	M9
M	85	Total PAHs	100				330225	8.50000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

WAS
1:07 pm, Nov 15, 2013

SAMPLE ID TF2-003-SS1013-000.7

SAMPLE CALC IS AREA	DILUTION	COMPOUND OF INTEREST AREA	IS AMOUNT (NG)	Final Extract Volume (UL)	AVE RRF	CONCENTRATION PPB
15942	10	286590	0.8	1000	2.4012	2006.26
		% Solids		**Sample Volume (Grams)**		
		0.93		32.1		

Pyrene = 2,000 ug/kg

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-25DL
Client ID: 003-SS1013-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0729.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	45.	ug/Kgdrywt	10	20	200	26.	100
2-Methylnaphthalene	U	100	ug/Kgdrywt	10	20	200	22.	100
Acenaphthylene	U	100	ug/Kgdrywt	10	20	200	12.	100
Acenaphthene	J	150	ug/Kgdrywt	10	20	200	15.	100
Fluorene	J	110	ug/Kgdrywt	10	20	200	32.	100
Phenanthrene		1700	ug/Kgdrywt	10	20	200	18.	100
Anthracene		320	ug/Kgdrywt	10	20	200	12.	100
Fluoranthene		1900	ug/Kgdrywt	10	20	200	18.	100
Pyrene		2000	ug/Kgdrywt	10	20	200	21.	100
Benzo(a)anthracene		740	ug/Kgdrywt	10	20	200	19.	100
Chrysene		750	ug/Kgdrywt	10	20	200	17.	100
Benzo(b)Fluoranthene	LL	840	ug/Kgdrywt	10	20	200	24.	100
Benzo(k)fluoranthene		330	ug/Kgdrywt	10	20	200	31.	100
Benzo(a)pyrene	LL	580	ug/Kgdrywt	10	20	200	33.	100
Indeno(1,2,3-cd)pyrene	L	420	ug/Kgdrywt	10	20	200	19.	100
Dibenzo(a,h)anthracene	J	89.	ug/Kgdrywt	10	20	200	18.	100
Benzo(g,h,i)perylene	LL	210	ug/Kgdrywt	10	20	200	20.	100
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

600 Technology Way
P.O. Box 540, Scarborough, ME 04070
Tel:(207) 874-2400 Fax:(207) 775-4029

http://www.katahdinlab.com

Data File: \\target_server\gg\chem\gcms-n.i\N111313.b\N0729.D
Report Date: 15-Nov-2013 12:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N111313.b\N0729.D
Lab Smp Id: SG8254-25DL Client Smp ID: 003-SS1013-000.7
Inj Date : 13-NOV-2013 16:53
Operator : JCG Inst ID: gcms-n.i
Smp Info : SG8254-25DL
Misc Info : WG134331,WG133188,WG134292-4
Comment :
Method : \\target_server\GG\chem\gcms-n.i\N111313.b\NSPSIM79.m
Meth Date : 15-Nov-2013 12:27 gcms-n.i Quant Type: ISTD
Cal Date : 12-NOV-2013 15:09 Cal File: N0703.D
Als bottle: 8
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03210	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	7.027	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW C
*	8 1,4-Dichlorobenzene-D4	152	9.065	9.051	(1.000)	25022	0.80000	(Q)	
*	24 Naphthalene-D8	136	11.858	11.841	(1.000)	73020	0.80000		
	25 Naphthalene	128	11.909	11.875	(1.004)	12043	0.13436	45.0(a)	
*	44 Acenaphthene-D10	164	15.941	15.928	(1.000)	29605	0.80000		
	45 Acenaphthene	153	16.007	16.007	(1.004)	23349	0.43467	146(a)	
	54 Fluorene	166	17.241	17.225	(1.082)	18359	0.33830	113(a)	
*	63 Phenanthrene-D10	188	19.414	19.429	(1.000)	44003	0.80000		
	64 Phenanthrene	178	19.474	19.474	(1.003)	309955	4.98408	1670	
	65 Anthracene	178	19.594	19.594	(1.009)	63874	0.95814	321	
	68 Fluoranthene	202	22.292	22.292	(1.148)	353698	5.68713	1900	
	70 Pyrene	202	22.799	22.799	(0.887)	286590	5.98930	2010	
	72 Benzo(a)anthracene	228	25.683	25.683	(0.999)	55434	2.21213	741	
*	73 Chrysene-D12	240	25.696	25.696	(1.000)	15942	0.80000		
	74 Chrysene	228	25.750	25.764	(1.002)	68544	2.22526	746	
	78 Benzo(b)fluoranthene	252	28.070	28.070	(0.974)	42798	2.50287	839(M)	M3
	79 Benzo(k)fluoranthene	252	28.122	28.122	(0.976)	26517	0.97860	328(MH)	M6
	80 Benzo(a)pyrene	252	28.705	28.705	(0.996)	30966	1.72270	577	
*	81 Perylene-D12	264	28.825	28.842	(1.000)	10580	0.80000		
	82 Indeno(1,2,3-cd)pyrene	276	30.951	30.965	(1.074)	12581	1.25497	420(H)	
	83 Dibenzo(a,h)anthracene	278	31.033	31.047	(1.077)	2657	0.26527	88.9(aQ)	
	84 Benzo(g,h,i)perylene	276	31.540	31.554	(1.094)	8539	0.61360	206	

WAS
12:55 pm, Nov 15, 2013

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	NTD	#	OTP	#
004/5-SS1065-000.5	SG8254-18	A	83.2		73.8	
003-SS1015-000.8	SG8254-27	A	101.		98.8	
004/5-SS1056-000.6	SG8254-3	A	70.7		60.9	*
004/5-SS1056-000.6	SG8254-3RE	A	93.8		85.4	
004/5-SS1051-000.8	SG8254-8	A	95.8		87.1	
Method Blank Sample	WG133426-1	A	100.		93.9	
Laboratory Control S	WG133426-2	A	79.0		63.6	
Laboratory Control S	WG133426-3	A	100.		90.9	
Method Blank Sample	WG134245-1	A	100.		87.9	
Laboratory Control S	WG134245-2	A	94.0		81.8	
Laboratory Control S	WG134245-3	A	94.0		84.8	

		QC Limits
OTP	O-TERPHENYL	62-109
NTD	N-TRIACONTANE-D62	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GC10
Lab File IDs : AGG20231.EAGG20230.EAGG20232.E AGG20229.EAGG20228.E **Column ID:** A
Calibration Date(s): 26-JUL-13 10:34 26-JUL-13 13:49

	5.0000 Level 1	20.0000 Level 2	50.0000 Level 3	100.0000 Level 4	200.0000 Level 5		New Crv	b	m1	m2	%RSD	Max %RSD	
Petroleum Range Organic	3089102	12636617	29064611	60208084	122271060		LNR	7.40184	35900		0.99976	0.99000	M (
C-8	181933	731463	1715023	3597538	7399389		LNR	1.05675	36959		0.99955	0.99000	O
C-10	179016	749462	1739250	3724105	7629535		LNR	1.27141	38167		0.99946	0.99000	O
C-12	175693	743553	1750024	3747522	7665333		LNR	1.33539	38372		0.99950	0.99000	O
C-14	180367	756314	1748066	3765084	7677765		LNR	1.22555	38427		0.99947	0.99000	O
C-16	182823	754185	1751923	3777081	7684649		LNR	1.19425	38470		0.99949	0.99000	O
C-18	188749	776459	1784336	3853299	7821892		LNR	1.09221	39150		0.99949	0.99000	O
C-20	190254	769795	1772595	2897952	5891299		LNR	-3.67435	29019		0.99674	0.99000	O
C-22	189757	766624	1814396	3037617	6260195		LNR	-2.63046	30883		0.99764	0.99000	O
C-24	188458	749611	1697810	3194570	6695340		LNR	-0.48887	33143		0.99917	0.99000	O
C-26	194578	747032	1690170	3581426	6950490		LNR	-0.53461	34805		0.99962	0.99000	O
C-28	218772	778314	1732495	3663153	7147609		LNR	-0.68229	35718		0.99964	0.99000	O
C-30	192475	795453	1747341	3679252	7257458		LNR	-0.32754	36269		0.99971	0.99000	O
C-32	182906	746924	1714008	3693105	7412365		LNR	0.75824	37115		0.99961	0.99000	O
C-34	172985	732428	1684206	3667824	7401790		LNR	1.12303	37091		0.99949	0.99000	O
C-36	169313	721822	1658556	3607947	7516848		LNR	1.89380	37605		0.99896	0.99000	O
C-38	156767	682840	1580679	3457880	7142775		LNR	1.84020	35776		0.99912	0.99000	O
C-40	144249	634331	1483724	3262729	6716319		LNR	1.90824	33672		0.99915	0.99000	O
O-Terphenyl	10302658	10032499	9941055	10236461	10225858		LNR	0.22789	40635		0.99891	0.99000	
n-Triacontane-D62	9023242	8760852	8483761	8952633	8598295		LNR	0.81290	29308		0.99675	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134295-1 **Analytical Date:** 11/05/13 13:20
Lab File ID : AGK20040.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	811	33781	0.010	-4.61735	25.00000	Linear
2 C-8	50.00000	46.40302	33519	0.010	-7.19397	25.00000	Linear
3 C-10	50.00000	45.17185	33511	0.010	-9.65630	25.00000	Linear
4 C-12	50.00000	45.75424	34089	0.010	-8.49153	25.00000	Linear
5 C-14	50.00000	45.17248	33775	0.010	-9.65504	25.00000	Linear
6 C-16	50.00000	45.21239	33868	0.010	-9.57522	25.00000	Linear
8 C-18	50.00000	44.93013	34325	0.010	-10.13974	25.00000	Linear
10 C-20	50.00000	55.20021	34170	0.010	10.40042	25.00000	Linear
11 C-22	50.00000	51.87405	33665	0.010	3.74810	25.00000	Linear
12 C-24	50.00000	50.26329	33641	0.010	0.52659	25.00000	Linear
13 C-26	50.00000	47.68628	33567	0.010	-4.62743	25.00000	Linear
14 C-28	50.00000	46.82572	33938	0.010	-6.34857	25.00000	Linear
16 C-30	50.00000	46.45576	33935	0.010	-7.08848	25.00000	Linear
17 C-32	50.00000	46.93059	34274	0.010	-6.13883	25.00000	Linear
18 C-34	50.00000	47.02578	34052	0.010	-5.94845	25.00000	Linear
19 C-36	50.00000	47.35013	34187	0.010	-5.29973	25.00000	Linear
20 C-38	50.00000	48.46532	33361	0.010	-3.06936	25.00000	Linear
21 C-40	50.00000	50.03132	32408	0.010	0.06263	25.00000	Linear
9 O-Terphenyl	250	230	37411	0.010	-7.84302	25.00000	Linear
15 n-Triacontane-D62	300	276	26915	0.010	-7.89385	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134295-2 **Analytical Date:** 11/05/13 21:07
Lab File ID : AGK20052.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	359	37058	0.010	5.62592	25.00000	Linear
2 C-8	20.00000	19.20595	33539	0.010	-3.97027	25.00000	Linear
3 C-10	20.00000	21.32254	38264	0.010	6.61272	25.00000	Linear
4 C-12	20.00000	21.75634	39180	0.010	8.78172	25.00000	Linear
5 C-14	20.00000	20.49575	37025	0.010	2.47876	25.00000	Linear
6 C-16	20.00000	20.50801	37150	0.010	2.54005	25.00000	Linear
8 C-18	20.00000	19.81225	36645	0.010	-0.93875	25.00000	Linear
10 C-20	20.00000	21.84610	37029	0.010	9.23052	25.00000	Linear
11 C-22	20.00000	21.17258	36756	0.010	5.86289	25.00000	Linear
12 C-24	20.00000	21.69020	36754	0.010	8.45102	25.00000	Linear
13 C-26	20.00000	20.71165	36974	0.010	3.55823	25.00000	Linear
14 C-28	20.00000	20.21538	37321	0.010	1.07690	25.00000	Linear
16 C-30	20.00000	21.46283	39515	0.010	7.31416	25.00000	Linear
17 C-32	20.00000	22.95457	41191	0.010	14.77287	25.00000	Linear
18 C-34	20.00000	20.87009	36622	0.010	4.35046	25.00000	Linear
19 C-36	20.00000	21.37132	36622	0.010	6.85658	25.00000	Linear
20 C-38	20.00000	21.69560	35517	0.010	8.47799	25.00000	Linear
21 C-40	20.00000	22.03694	33888	0.010	10.18472	25.00000	Linear
9 O-Terphenyl	250	242	39238	0.010	-3.34627	25.00000	Linear
15 n-Triacontane-D62	300	298	28992	0.010	-0.80590	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134295-3 **Analytical Date:** 11/06/13 03:34
Lab File ID : AGK20062.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	870	36284	0.010	2.35364	25.00000	Linear
2 C-8	50.00000	49.19740	35585	0.010	-1.60520	25.00000	Linear
3 C-10	50.00000	47.82550	35536	0.010	-4.34900	25.00000	Linear
4 C-12	50.00000	48.29941	36042	0.010	-3.40118	25.00000	Linear
5 C-14	50.00000	47.99127	35941	0.010	-4.01746	25.00000	Linear
6 C-16	50.00000	47.71446	35793	0.010	-4.57108	25.00000	Linear
8 C-18	50.00000	47.90248	36653	0.010	-4.19503	25.00000	Linear
10 C-20	50.00000	58.85995	36294	0.010	17.71989	25.00000	Linear
11 C-22	50.00000	55.32289	35796	0.010	10.64578	25.00000	Linear
12 C-24	50.00000	53.84832	36018	0.010	7.69664	25.00000	Linear
13 C-26	50.00000	51.01045	35881	0.010	2.02089	25.00000	Linear
14 C-28	50.00000	50.28974	36412	0.010	0.57949	25.00000	Linear
16 C-30	50.00000	50.18042	36637	0.010	0.36084	25.00000	Linear
17 C-32	50.00000	51.44497	37625	0.010	2.88995	25.00000	Linear
18 C-34	50.00000	53.88330	39139	0.010	7.76660	25.00000	Linear
19 C-36	50.00000	52.02630	37704	0.010	4.05259	25.00000	Linear
20 C-38	50.00000	52.08390	35950	0.010	4.16781	25.00000	Linear
21 C-40	50.00000	52.12518	33818	0.010	4.25037	25.00000	Linear
9 O-Terphenyl	250	247	40109	0.010	-1.20304	25.00000	Linear
15 n-Triacontane-D62	300	297	28921	0.010	-1.04734	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134299-1 **Analytical Date:** 11/11/13 12:25
Lab File ID : AGK20109.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	819	34117	0.010	-3.69844	25.00000	Linear
2 C-8	50.00000	47.72770	34498	0.010	-4.54461	25.00000	Linear
3 C-10	50.00000	46.77047	34731	0.010	-6.45906	25.00000	Linear
4 C-12	50.00000	47.36809	35328	0.010	-5.26383	25.00000	Linear
5 C-14	50.00000	46.71933	34964	0.010	-6.56134	25.00000	Linear
6 C-16	50.00000	46.58439	34923	0.010	-6.83122	25.00000	Linear
8 C-18	50.00000	46.16504	35292	0.010	-7.66991	25.00000	Linear
10 C-20	50.00000	56.80471	35101	0.010	13.60942	25.00000	Linear
11 C-22	50.00000	53.48571	34661	0.010	6.97141	25.00000	Linear
12 C-24	50.00000	51.41356	34404	0.010	2.82711	25.00000	Linear
13 C-26	50.00000	48.54583	34165	0.010	-2.90833	25.00000	Linear
14 C-28	50.00000	47.41775	34360	0.010	-5.16451	25.00000	Linear
16 C-30	50.00000	48.05723	35097	0.010	-3.88554	25.00000	Linear
17 C-32	50.00000	46.92264	34268	0.010	-6.15473	25.00000	Linear
18 C-34	50.00000	46.56758	33712	0.010	-6.86484	25.00000	Linear
19 C-36	50.00000	46.06843	33224	0.010	-7.86313	25.00000	Linear
20 C-38	50.00000	46.08371	31657	0.010	-7.83257	25.00000	Linear
21 C-40	50.00000	45.86113	29599	0.010	-8.27774	25.00000	Linear
9 O-Terphenyl	250	238	38674	0.010	-4.73576	25.00000	Linear
15 n-Triacontane-D62	300	277	27012	0.010	-7.56233	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134299-2 **Analytical Date:** 11/11/13 21:46
Lab File ID : AGK20122.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	349	36006	0.010	2.66964	25.00000	Linear
2 C-8	20.00000	20.41452	35772	0.010	2.07261	25.00000	Linear
3 C-10	20.00000	19.21791	34248	0.010	-3.91045	25.00000	Linear
4 C-12	20.00000	20.07995	35964	0.010	0.39974	25.00000	Linear
5 C-14	20.00000	19.18020	34497	0.010	-4.09902	25.00000	Linear
6 C-16	20.00000	19.01714	34283	0.010	-4.91430	25.00000	Linear
8 C-18	20.00000	18.79501	34653	0.010	-6.02494	25.00000	Linear
10 C-20	20.00000	20.21676	34665	0.010	1.08380	25.00000	Linear
11 C-22	20.00000	19.93740	34848	0.010	-0.31298	25.00000	Linear
12 C-24	20.00000	20.53892	34846	0.010	2.69458	25.00000	Linear
13 C-26	20.00000	19.70255	35218	0.010	-1.48724	25.00000	Linear
14 C-28	20.00000	19.47972	36007	0.010	-2.60139	25.00000	Linear
16 C-30	20.00000	22.12313	40713	0.010	10.61565	25.00000	Linear
17 C-32	20.00000	22.36468	40096	0.010	11.82340	25.00000	Linear
18 C-34	20.00000	21.45624	37709	0.010	7.28121	25.00000	Linear
19 C-36	20.00000	21.98097	37769	0.010	9.90486	25.00000	Linear
20 C-38	20.00000	21.66644	35465	0.010	8.33222	25.00000	Linear
21 C-40	20.00000	22.90521	35350	0.010	14.52605	25.00000	Linear
9 O-Terphenyl	250	235	38105	0.010	-6.13602	25.00000	Linear
15 n-Triacontane-D62	300	286	27857	0.010	-4.67829	25.00000	Linear

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133426-1
Lab File ID : AGK20044.D
Date Extracted : 30-OCT-13
Instrument ID : GC10
Date Analyzed : 05-NOV-13
Matrix : SL
Time Analyzed : 15:57

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133426-2	AGK20045	11/05/13	16:36
Laboratory Control S	WG133426-3	AGK20046	11/05/13	17:15
004/5-SS1056-000.6	SG8254-3	AGK20056	11/05/13	23:42
004/5-SS1051-000.8	SG8254-8	AGK20057	11/06/13	00:21
004/5-SS1065-000.5	SG8254-18	AGK20058	11/06/13	00:59
003-SS1015-000.8	SG8254-27	AGK20059	11/06/13	01:38

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG133426-1
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: AGK20044.D

Sample Date:
Received Date:
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		93.9	%					
n-Triacontane-D62		100.	%					

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LCS/LCSD Recovery Report

LCS ID: WG133426-2
LCSD ID: WG133426-3
Project:
SDG: SG8254
Report Date: 12-NOV-13
LCS File ID: AGK20045.D

Received Date:
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426
LCSD File ID: AGK20046.D

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	60.3	34.0	56.4*	48.0	79.6	mg/Kgdrywt	34*	30	63-153
o-Terphenyl			63.6		90.9				62-109
n-Triacontane-D62			79.0		100.				70-130

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Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG134245-1
Lab File ID : AGK20116.D
Date Extracted : 11-NOV-13
Instrument ID : GC10
Date Analyzed : 11-NOV-13
Matrix : SL
Time Analyzed : 17:53

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134245-2	AGK20117	11/11/13	18:32
Laboratory Control S	WG134245-3	AGK20118	11/11/13	19:11
004/5-SS1056-000.6	SG8254-3RE	AGK20121	11/11/13	21:07

Report of Analytical Results

Client:
Lab ID: WG134245-1
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: AGK20116.D

Sample Date:
Received Date:
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		87.9	%					
n-Triacontane-D62		100.	%					

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LCS/LCSD Recovery Report

LCS ID: WG134245-2
LCSD ID: WG134245-3
Project:
SDG: SG8254
Report Date: 12-NOV-13
LCS File ID: AGK20117.D

Received Date:
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245
LCSD File ID: AGK20118.D

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	60.3	43.0	71.3	48.0	79.6	mg/Kgdrywt	11	30	63-153
o-Terphenyl			81.8		84.8				62-109
n-Triacontane-D62			94.0		94.0				70-130

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Column ID :** A
Instrument ID : GC10

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	OTP	NTD	
Initial Calibration	WG128015-5	07/26/13	11:13	10.44	15.29	
Initial Calibration	WG128015-4	07/26/13	11:52	10.44	15.29	
Initial Calibration	WG128015-2	07/26/13	12:31	10.44	15.29	
Initial Calibration	WG128015-1	07/26/13	13:10	10.44	15.29	
Initial Calibration	WG128015-3	07/26/13	13:49	10.44	15.29	
Independent Source	WG128015-6	07/26/13	14:39	10.44	15.29	
Continuing Calibrati	WG134295-1	11/05/13	13:20	10.28	15.12	
Method Blank Sample	WG133426-1	11/05/13	15:57	10.27	15.11	
Laboratory Control S	WG133426-2	11/05/13	16:36	10.26	15.11	
Laboratory Control S	WG133426-3	11/05/13	17:15	10.27	15.11	
Continuing Calibrati	WG134295-2	11/05/13	21:07	10.28	15.12	
004/5-SS1056-000.6	SG8254-3	11/05/13	23:42	10.26	15.11	
004/5-SS1051-000.8	SG8254-8	11/06/13	00:21	10.26	15.11	
004/5-SS1065-000.5	SG8254-18	11/06/13	00:59	10.26	15.11	
003-SS1015-000.8	SG8254-27	11/06/13	01:38	10.26	15.12	
Continuing Calibrati	WG134295-3	11/06/13	03:34	10.28	15.12	
Continuing Calibrati	WG134299-1	11/11/13	12:25	10.28	15.12	
Method Blank Sample	WG134245-1	11/11/13	17:53	10.26	15.11	
Laboratory Control S	WG134245-2	11/11/13	18:32	10.26	15.11	
Laboratory Control S	WG134245-3	11/11/13	19:11	10.26	15.11	
004/5-SS1056-000.6	SG8254-3RE	11/11/13	21:07	10.26	15.12	
Continuing Calibrati	WG134299-2	11/11/13	21:46	10.28	15.12	

SDG SG8254
SAMPLE ID TF2-004/5-SS1056-000.6

SAMPLE CALC

INITIAL CF	DILUTION	COMPOUND OF INTEREST /	Final Extract Volume (UL)	CONCENTRATION PPB
35900	1	57091254	2000	101.62868
		% Solids	**Sample Volume (KG)**	
		0.96	32.6	

TRPH = 100 mg/kg

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3RE
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20121.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		100	mg/Kgdrywt	1	20	19.	5.5	9.6
o-Terphenyl		85.4	%					
n-Triacontane-D62		93.8	%					

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Data File: \\target_server\gg\chem\gc10.i\GC10GK11.b\AGK20121.D
Report Date: 12-Nov-2013 13:41

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc10.i\GC10GK11.b\AGK20121.D
Lab Smp Id: SG8254-3RE Client Smp ID: 004/5-SS1056-000.6
Inj Date : 11-NOV-2013 21:07
Operator : AC Inst ID: gc10.i
Smp Info : SG8254-3RE
Misc Info : WG134299,WG134245,WG128015-3
Comment   :
Method   : \\target_server\gg\chem\gc10.i\GC10GK11.b\flp01b.m
Meth Date : 12-Nov-2013 13:06 gc10.i Quant Type: ESTD
Cal Date : 26-JUL-2013 11:13 Cal File: AGG20228.D
Als bottle: 51
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: SW8015M-FLPRO.sub
Subtraction File: \\target_server\gg\chem\gc10.i\GC10GK11.b\AGK20111.D
Target Version: 4.12

Concentration Formula: Amt * DF * (Vt/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00200	Final Volume (L)
Ws	0.03260	Weight of Sample (Kg)
M	4.011	Moisture (%)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (mg/Kgdrywt)	
$ 9 O-Terphenyl	10.258	10.288	-0.030	1719131	42.5343	2.7(M)	M2
$ 15 n-Triacontane-D62	15.116	15.128	-0.012	4120188	141.396	9.0(RM)	
S 7 Petroleum Range Organics	1.780-24.281			57091254	1590.72	100(M)	

AC
2:08 pm, Nov 12, 2013

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	BFB	#
TF2-W-TB03-1013	SG8254-1	A	85.6	
004/5-SS1065-000.5	SG8254-18	A	92.2	
003-SS1015-000.8	SG8254-27	A	95.5	
004/5-SS1056-000.6	SG8254-3	A	95.1	
004/5-SS1051-000.8	SG8254-8	A	91.4	
Method Blank Sample	WG133171-1	A	85.8	
Laboratory Control S	WG133171-2	A	91.4	
Laboratory Control S	WG133171-3	A	98.6	

		QC Limits
BFB	P-BROMOFLUOROBENZENE	81-119

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GC09
Lab File IDs : 9GG2130.d 9GG2123.d 9GG2124.d **Column ID:** A
9GG2125.d 9GG2126.d 9GG2127.d **Calibration Date(s):** 26-JUL-13 09:58
26-JUL-13 17:56

	Level 1 10.0000	Level 2 100.0000	Level 3 250.0000	Level 4 500.0000	Level 5 1000.0000	Level 6 2000.0000	Crv New	b	m1	m2	%RSD	Max %RSD	
Gasoline Range Organic	12176	12675	12913	12768	12910	13282	AVG		12787		2.84495	20.00000	M
Methyl tert-butyl ether	6010	8181	8380	7569	7477	8149	AVG		7628		11.40841	20.00000	O
Benzene	15826	15860	16448	16739	17015	17326	AVG		16536		3.69285	20.00000	O
Toluene	15470	16041	16286	16166	16555	16718	AVG		16206		2.70556	20.00000	O
Ethylbenzene	14185	14823	15058	15019	15114	15298	AVG		14916		2.61143	20.00000	O
m+p-Xylenes	14785	15435	15552	15559	15638	15874	AVG		15474		2.37846	20.00000	O
o-Xylene	16358	14889	14896	15443	15410	15788	AVG		15464		3.61301	20.00000	O
1,2,4-trimethylbenzene	11095	12102	12347	12071	12262	12757	AVG		12106		4.56871	20.00000	O
1,3,5-trimethylbenzene	9784	10620	10743	10552	10765	11352	AVG		10636		4.74665	20.00000	O
Naphthalene	3461	3359	3870	3000	3223	3680	AVG		3432		9.12376	20.00000	O
p-Bromofluorobenzene	6432	6935	7300	7023	6937	7145	AVG		6962		4.23260	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133171-4 **Analytical Date:** 10/25/13 07:42
Lab File ID : 9GJ4060.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

	Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Gasoline Range Organic	12787	11612	11612	0.100	-9.19398	20.00000	Averaged	
3	Methyl tert-butyl ether	7628	7033	7033	0.100	-7.79828	20.00000	Averaged	
4	Benzene	16536	14595	14595	0.100	-11.73412	20.00000	Averaged	
5	Toluene	16206	14035	14035	0.100	-13.39782	20.00000	Averaged	
7	Ethylbenzene	14916	13366	13366	0.100	-10.39327	20.00000	Averaged	
8	m+p-Xylenes	15474	14444	14444	0.100	-6.65231	20.00000	Averaged	
9	o-Xylene	15464	14992	14992	0.100	-3.05469	20.00000	Averaged	
11	1,2,4-trimethylbenzene	12106	11076	11076	0.100	-8.50857	20.00000	Averaged	
12	1,3,5-trimethylbenzene	10636	9444	9444	0.100	-11.21048	20.00000	Averaged	
13	Naphthalene	3432	2686	2686	0.100	-21.73520	20.00000	Averaged	*
10	p-Bromofluorobenzene	6962	6057	6057	0.100	-13.00090	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133171-5 **Analytical Date:** 10/25/13 23:46
Lab File ID : 9GJ4074.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	12038	12038	0.100	-5.85670	20.00000	Averaged
3 Methyl tert-butyl ether	7628	8213	8213	0.100	7.67967	20.00000	Averaged
4 Benzene	16536	15374	15374	0.100	-7.02383	20.00000	Averaged
5 Toluene	16206	14867	14867	0.100	-8.26352	20.00000	Averaged
7 Ethylbenzene	14916	14020	14020	0.100	-6.00568	20.00000	Averaged
8 m+p-Xylenes	15474	14495	14495	0.100	-6.32427	20.00000	Averaged
9 o-Xylene	15464	13902	13902	0.100	-10.10367	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11245	11245	0.100	-7.10888	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10458	10458	0.100	-1.67104	20.00000	Averaged
13 Naphthalene	3432	3312	3312	0.100	-3.48672	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6158	6158	0.100	-11.54441	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133171-6 **Analytical Date:** 10/26/13 06:09
Lab File ID : 9GJ4081.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	12749	12749	0.100	-0.29624	20.00000	Averaged
3 Methyl tert-butyl ether	7628	8686	8686	0.100	13.87689	20.00000	Averaged
4 Benzene	16536	16112	16112	0.100	-2.56064	20.00000	Averaged
5 Toluene	16206	15786	15786	0.100	-2.59152	20.00000	Averaged
7 Ethylbenzene	14916	14932	14932	0.100	0.10875	20.00000	Averaged
8 m+p-Xylenes	15474	15497	15497	0.100	0.15179	20.00000	Averaged
9 o-Xylene	15464	15173	15173	0.100	-1.88165	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	12209	12209	0.100	0.85486	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10553	10553	0.100	-0.78180	20.00000	Averaged
13 Naphthalene	3432	3046	3046	0.100	-11.24590	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6749	6749	0.100	-3.05248	20.00000	Averaged

*** = Compound out of QC criteria**

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : 9GJ4065.D
Instrument ID : GC09
Heated Purge : No

SDG : SG8254
Lab Sample ID : WG133171-1
Date Analyzed : 25-OCT-13
Time Analyzed : 15:36

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133171-2	9GJ4066.D	10/25/13	16:30
Laboratory Control S	WG133171-3	9GJ4067.D	10/25/13	17:24
TF2-W-TB03-1013	SG8254-1	9GJ4076.D	10/26/13	01:35
004/5-SS1056-000.6	SG8254-3	9GJ4077.D	10/26/13	02:30
004/5-SS1051-000.8	SG8254-8	9GJ4078.D	10/26/13	03:25
004/5-SS1065-000.5	SG8254-18	9GJ4079.D	10/26/13	04:19
003-SS1015-000.8	SG8254-27	9GJ4080.D	10/26/13	05:14

Report of Analytical Results

Client:
Lab ID: WG133171-1
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: 9GJ4065.D

Sample Date:
Received Date:
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 25-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		85.8	%					

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG133171-2
LCSD ID: WG133171-3
Project:
SDG: SG8254
Report Date: 14-NOV-13
LCS File ID: 9GJ4066.D

Received Date:
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171
LCSD File ID: 9GJ4067.d

Analysis Date: 25-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	25.0	23.9	95.6	22.8	91.2	mg/Kgdrywt	5	30	67-137
-Bromofluorobenzene			91.4		98.6				81-119

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Column ID :** A
Instrument ID : GC09

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	BFB	
Initial Calibration	WG127983-2	07/26/13	10:52	31.92	
Initial Calibration	WG127983-3	07/26/13	11:46	31.84	
Initial Calibration	WG127983-4	07/26/13	12:39	31.82	
Initial Calibration	WG127983-5	07/26/13	13:32	31.84	
Initial Calibration	WG127983-6	07/26/13	14:25	31.85	
Initial Calibration	WG127983-1	07/26/13	17:56	31.89	
INDEPENDENT SOURCE	WG127983-7	07/26/13	18:50	31.91	
Continuing Calibrati	WG133171-4	10/25/13	07:42	31.70	
Method Blank Sample	WG133171-1	10/25/13	15:36	31.70	
Laboratory Control S	WG133171-2	10/25/13	16:30	31.70	
Laboratory Control S	WG133171-3	10/25/13	17:24	31.70	
Continuing Calibrati	WG133171-5	10/25/13	23:46	31.70	
TF2-W-TB03-1013	SG8254-1	10/26/13	01:35	31.70	
004/5-SS1056-000.6	SG8254-3	10/26/13	02:30	31.70	
004/5-SS1051-000.8	SG8254-8	10/26/13	03:25	31.70	
004/5-SS1065-000.5	SG8254-18	10/26/13	04:19	31.70	
003-SS1015-000.8	SG8254-27	10/26/13	05:14	31.70	
Continuing Calibrati	WG133171-6	10/26/13	06:09	31.70	

Tetra Tech, Inc. **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 29, 2014**

FROM: **MICHELLE L. ALLEN** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – METALS**
CTO WE30, NAVSTA NEWPORT
SDG SG8254

SAMPLES: 31/Soil/Metals

TF2-003-SS-DUP06-1013	TF2-003-SS1011-000.8
TF2-003-SS1012-000.7	TF2-003-SS1013-000.7
TF2-003-SS1014-0001	TF2-003-SS1015-000.8
TF2-003-SS1016-000.9	TF2-003-SS1017-000.8
TF2-003-SS1018-000.8	TF2-003-SS1019-000.5
TF2-004/5-SS-DUP04-1013	TF2-004/5-SS-DUP05-1013
TF2-004/5-SS1050-000.6	TF2-004/5-SS1051-000.8
TF2-004/5-SS1052-000.6	TF2-004/5-SS1053-000.6
TF2-004/5-SS1054-000.6	TF2-004/5-SS1055-000.8
TF2-004/5-SS1056-000.6	TF2-004/5-SS1057-0001
TF2-004/5-SS1058-000.5	TF2-004/5-SS1059-000.6
TF2-004/5-SS1060-000.5	TF2-004/5-SS1061-000.6
TF2-004/5-SS1062-000.8	TF2-004/5-SS1063-000.6
TF2-004/5-SS1064-000.6	TF2-004/5-SS1065-000.5
TF2-004/5-SS1066-000.9	TF2-004/5-SS1067-000.7
TF2-004/5-SS1068-000.5	

1/Aqueous/Metals

TF2-SS-RB03-1013

Overview

The sample set for NAVSTA Newport, CTO WE30, SDG SG8254 consisted of thirty-one (31) soil environmental samples and one (1) rinsate blank. All thirty-two (32) samples were analyzed for total metals. Three field duplicate pairs were included in this sample delivery group (SDG): TF2-003-SS-DUP06-1013/TF2-003-SS1015-000.8, TF2-004/5-SS-DUP04-1013/TF2-004/5-SS1061-000.6, and TF2-004/5-SS-DUP05-1013/TF2-004/5-SS1065-000.5.

The samples were collected by Tetra Tech, Inc. on October 21 - 22, 2013 and analyzed by Katahdin Analytical Services. All analyses were conducted in accordance with SW846 Method 6020A, 7471B, and 7470A analytical and reporting protocols. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Initial and Continuing Calibration Verification Results
• Laboratory Method/Preparation Blank Analyses
* • ICP Interference Results
• Laboratory Duplicate Results

- Laboratory Control Sample Results
- Matrix Spike Recoveries
- * Internal Standard Recoveries
- Field Duplicate Precision
- ICP Serial Dilution
- * Detection Limits
- * Analyte Quantitation

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report. An EPA Region 1 tier II validation was performed on the data in this SDG. The text of this report has been formulated to address only those areas affecting data quality.

LABORATORY METHOD/PREPARATION BLANK ANALYSES

The following analytes were detected in the laboratory method and preparation blanks the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum [1]	1.615 mg/Kg	8.075 mg/Kg
Barium [1]	0.085 mg/Kg	0.425 mg/Kg
Calcium [1]	7.59 mg/Kg	37.95 mg/Kg
Chromium [1]	0.094 mg/Kg	0.47 mg/Kg
Magnesium [1]	1.971 mg/Kg	9.855 mg/Kg
Manganese [1]	0.133 mg/Kg	0.665 mg/Kg
Nickel [1]	0.032 mg/Kg	0.16 mg/Kg
Potassium [1]	8.9 mg/Kg	44.5 mg/Kg
Sodium [1]	8.195 mg/Kg	40.975 mg/Kg
Vanadium [1]	0.191 mg/Kg	0.955 mg/Kg
Zinc [1]	0.143 mg/Kg	0.715 mg/Kg
Aluminum [2]	1.347 mg/Kg	6.735 mg/Kg
Barium [2]	0.092 mg/Kg	0.46 mg/Kg
Calcium [2]	7.04 mg/Kg	35.2 mg/Kg
Chromium [2]	0.103 mg/Kg	0.515 mg/Kg
Iron [2]	2.832mg/Kg	14.16 mg/Kg
Lead [2]	0.007 mg/Kg	0.035 mg/Kg
Manganese [2]	0.045 mg/Kg	0.225 mg/Kg
Nickel [2]	0.040 mg/Kg	0.2 mg/Kg
Potassium [2]	5.815 mg/Kg	29.075 mg/Kg
Selenium [2]	0.099 mg/Kg	0.495 mg/Kg
Zinc [2]	0.272 mg/Kg	1.36 mg/Kg
Aluminum [3]	1.723 mg/Kg	8.615 mg/Kg
Barium [3]	0.077 mg/Kg	0.385 mg/Kg
Calcium [3]	4.199 mg/Kg	20.995 mg/Kg
Chromium [3]	0.098 mg/Kg	0.49 mg/Kg
Cobalt [3]	0.006 mg/Kg	0.03 mg/Kg
Iron [3]	6.65 mg/Kg	33.25 mg/Kg
Lead [3]	0.012 mg/Kg	0.06 mg/Kg
Magnesium [3]	1.523 mg/Kg	7.615 mg/Kg
Manganese [3]	0.099 mg/Kg	0.495 mg/Kg
Cadmium [4]	0.010 µg/L	0.5 µg/L, 0.005 mg/Kg

Analyte	Maximum Concentration	Action Level
Iron [4]	7.166 µg/L	35.83 µg/L, 3.583 mg/Kg
Lead [4]	0.009 µg/L	0.045 µg/L, 0.0045 mg/Kg
Magnesium [4]	0.747 µg/L	3.735 µg/L, 0.3735 mg/Kg
Sodium [4]	9.532 µg/L	47.66 µg/L, 4.766 mg/Kg
Potassium [4]	9.463 µg/L	47.315 µg/L, 4.7315 mg/Kg
Antimony [5]	0.021 µg/L	0.105 µg/L, 0.0105 mg/Kg
Nickel [5]	0.059 µg/L	0.295 µg/L, 0.0295 mg/Kg
Thallium [5]	0.004 µg/L	0.02 µg/L, 0.002 mg/Kg
Zinc [5]	0.403 µg/L	2.015 µg/L, 0.2015 mg/Kg
Nickel [6]	0.102 µg/L	0.51 µg/L, 0.051 mg/Kg
Mercury [7]	0.005 mg/Kg	0.025 mg/Kg
Mercury [8]	0.005 mg/Kg	0.025 mg/Kg

(1) Maximum concentration detected in the soil preparation blank associated with preparation batch #GK06IMS1 affecting the soil samples associated with this preparation batch.
(2) Maximum concentration detected in the soil preparation blank associated with preparation batch #GK08IMS1 affecting the soil samples associated with this preparation batch.
(3) Maximum concentration detected in the soil preparation blank associated with preparation batch #GK08IMS2 affecting the soil samples associated with this preparation batch.
(4) Maximum concentration found initial and/or continuing calibration blanks affecting all samples analyzed for these analytes on 11/13/13.
(5) Maximum concentration found initial and/or continuing calibration blanks affecting all samples analyzed for these analytes on 11/18/13.
(6) Maximum concentration found initial and/or continuing calibration blanks affecting all samples analyzed for this analyte on 11/19/13.
(7) Maximum concentration detected in the soil preparation blank associated with preparation batch #GK07HGS1 affecting the soil samples associated with this preparation batch.
(8) Maximum concentration detected in the soil preparation blank associated with preparation batch #GK08HGS1 affecting the soil samples associated with this preparation batch.

An action level of 5X the maximum contaminant concentration was established to evaluate blank contamination. Percent moisture, dilution factor, and sample aliquot were taken into consideration during the application of the action level. Detected results reported for selenium, sodium, thallium, and mercury below the established action levels were qualified as non-detected, (U). Results reported greater than the Method Detection Limit (MDL) but less than the Limit of Detection (LOD) were raised to the LOD.

LABORATORY DUPLICATE RESULTS

The Relative Percent Differences (RPD) between the sample and duplicate result exceeded 35% for arsenic in the sample associated with preparation batch #GK06IMS1. All samples associated with preparation batch #GK06IMS1 were affected. The detected results reported for arsenic in the affected samples were qualified as estimated, (J), due to laboratory duplicate imprecision.

The RPDs for manganese and mercury exceeded 35% for the laboratory duplicate analyses associated with preparation batches #GK08IMS1 and #GK08HGS1. All samples associated with these preparation batches were affected. The detected results reported for these analytes in the affected samples were qualified as estimated, (J).

LABORATORY CONTROL SAMPLE RESULTS

The mercury Laboratory Control Sample (LCS) associated with preparation batch #GK08HGS1 had a Percent Recovery (%R) above the 120% quality control limit. The detected mercury results reported in the samples associated with this preparation batch were qualified as estimated, (J).

MATRIX SPIKE RECOVERY

The Matrix Spike (MS) sample associated with preparation batch #GK06IMS1 had a %R for antimony below the 80% quality control limit and a %R for calcium above 120% quality control limit. The post digestion spike yielded acceptable %Rs for these analytes. Samples associated with preparation batch #GK06IMS1 were affected. Only detected results were reported for these analytes in the affected samples and these analytes were qualified as estimated, (J).

The MS sample associated with preparation batch #GK08IMS1 had %R for antimony below the 80% quality control limit. In addition, the %Rs for calcium and mercury (preparation batch #GK08HGS1) were above 120% quality control limit. The post digestion spike yielded acceptable %Rs for these analytes. Samples associated with preparation batches #GK08IMS1 and #GK08HGS1 were affected. The detected results were reported for these analytes in the affected samples were qualified as estimated, (J).

ICP SERIAL DILUTION

The ICP serial dilution associated with preparation batch #GK06IMS1 had Percent Differences (%Ds) for aluminum, iron, magnesium, manganese, and zinc above the 10% quality control limit. These results were reported 50X greater than the Limit of Quantitation (LOQ) in the initial analysis. Samples associated with preparation batch #GK06IMS1 were affected. The detected results reported for these compounds in the affected samples were qualified as estimated, (J).

The ICP serial dilution associated with preparation batch #GK08IMS1 had %Ds for aluminum, iron, lead, magnesium, vanadium, and zinc above the 10% quality control limit. These results were reported 50X greater than the LOQ in the initial analysis. Samples associated with preparation batch #GK08IMS1 were affected. The detected results reported for these compounds in the affected samples were qualified as estimated, (J).

FIELD DUPLICATE PRECISION

The difference between the detected results for antimony exceeded 4X the LOQ in the field duplicate pair, TF2-004/5-SS-DUP04-1013/TF2-004/5-SS1061-000.6. The differences for antimony in the other two field duplicate sample pairs for this site in this SDG were acceptable. The detected results reported for antimony in the field duplicate pair were qualified as estimated, (J).

The difference between the detected results for beryllium exceeded 4X the LOQ in the field duplicate pair, TF2-004/5-SS-DUP05-1013/TF2-004/5-SS1065-000.5. The differences for beryllium in the other two field duplicate sample pairs for this site in this SDG were acceptable. The detected results reported for beryllium in the field duplicate pair were qualified as estimated, (J).

NOTES

Several contaminants were detected in the laboratory preparation blank associated with rinsate blank. No action was taken because field quality control blanks are not qualified for laboratory blank contamination.

All samples and laboratory preparation blanks were analyzed at a 5X dilution.

Detected results reported above the MDL but below the LOQ were qualified as estimated, (J). Non-detected results are reported to the LOD.

EXECUTIVE SUMMARY

Laboratory Performance: Blank contamination was noted in the laboratory method and preparation blanks. Laboratory duplicate imprecision was noted. ICP serial dilutions had %Ds above 10% for some analytes.

Other Factors Affecting Data Quality: The MS samples had noncompliant %Rs. Field duplicate imprecision was noted for two field duplicate pairs.

The data for these analyses were accomplished with reference to the criteria for the "USEPA National Functional Guidelines for Inorganic Data Validation" (January 2010), and the Department of Defense (DOD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

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Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-SS-RB03-1013
SDG: SG8254	LAB_ID	SG8254-033
FRACTION: M	SAMP_DATE	10/22/2013
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
ALUMINUM	11.5	J	P
ANTIMONY	0.11	J	P
ARSENIC	4	U	
BARIUM	0.85	J	P
BERYLLIUM	0.2	U	
CADMIUM	0.06	J	P
CALCIUM	42.7	J	P
CHROMIUM	0.53	J	P
COBALT	0.05	J	P
COPPER	0.51	J	P
IRON	17.2	J	P
LEAD	0.07	J	P
MAGNESIUM	11.2	J	P
MANGANESE	0.36	J	P
MERCURY	0.1	U	
NICKEL	0.2	J	P
POTASSIUM	400	U	
SELENIUM	3	U	
SILVER	0.4	U	
SODIUM	400	U	
THALLIUM	0.4	U	
VANADIUM	0.93	J	P
ZINC	8	U	

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1011-000.8			TF2-003-SS1012-000.7			TF2-003-SS1013-000.7			TF2-003-SS1014-0001		
SDG: SG8254	LAB_ID	SG8254-022			SG8254-024			SG8254-025			SG8254-026		
FRACTION: M	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	86.9			88.7			93.0			93.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		11000	J	I	9360			9530			10900		
ANTIMONY		0.2	J	D	0.2			0.27			0.51		
ARSENIC		8.9			5.6			6			6		
BARIUM		27.4			23.5			25.6			22.7		
BERYLLIUM		0.38			0.4			0.36			0.38		
CADMIUM		0.2			0.14			0.17			0.16		
CALCIUM		520	J	D	857			914			904		
CHROMIUM		14.7			11.6			12.4			14.8		
COBALT		11.4			7.7			8.6			8.6		
COPPER		16.3			21.7			18.6			17.8		
IRON		25100	J	I	18300			17700			20800		
LEAD		79.3	J	I	33.6			57.6			36.7		
MAGNESIUM		2620	J	I	2430			2730			3260		
MANGANESE		512	J	F	263			268			311		
MERCURY		0.14	J	DEF	0.07	J	DEF	0.07	J	DEF	0.07	J	DEF
NICKEL		18.5			17.2			16			18.7		
POTASSIUM		335			429			328			443		
SELENIUM		0.26	U	A	0.2	J	P	0.26	J	P	0.19	J	P
SILVER		0.04	J	P	0.05	J	P	0.06	J	P	0.05	J	P
SODIUM		16.8	U	A	37.5	J	P	29.2	J	P	25.1	U	A
THALLIUM		0.06	J	P	0.05	J	P	0.06	J	P	0.05	J	P
VANADIUM		24.9	J	I	17.3			20			21.6		
ZINC		71.8	J	I	46.3			50			61.4		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1015-000.8			TF2-003-SS1016-000.9			TF2-003-SS1017-000.8			TF2-003-SS1018-000.8		
SDG: SG8254	LAB_ID	SG8254-027			SG8254-028			SG8254-029			SG8254-030		
FRACTION: M	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	93.0			90.9			91.6			94.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		9570			9360	J	I	8920			9630		
ANTIMONY		0.28			0.53	J	D	0.41			0.18		
ARSENIC		5.2			6			5.5			5.2		
BARIUM		31			41.5			23			26.6		
BERYLLIUM		0.42			0.51			0.38			0.38		
CADMIUM		0.16			0.28			0.23			0.1		
CALCIUM		754			719	J	D	549			576		
CHROMIUM		12.1			12.3			44.5			13.2		
COBALT		7.2			7.7			7.6			9.2		
COPPER		15.2			16.7			14.6			11.6		
IRON		15700			15800	J	I	18700			18400		
LEAD		50.8			101	J	I	62.5			16.6		
MAGNESIUM		2140			1500	J	I	2470			2720		
MANGANESE		371			658	J	F	332			649		
MERCURY		0.09	J	DEF	0.13	J	DEF	0.06	J	DEF	0.04		
NICKEL		14.3			13.4			24			16.2		
POTASSIUM		414			354			391			474		
SELENIUM		0.28	J	P	0.41	U	A	0.14	J	P	0.22	J	P
SILVER		0.07	J	P	0.08			0.06	J	P	0.04	J	P
SODIUM		27.6	J	P	28	J	P	24.5	U	A	22.2	U	A
THALLIUM		0.08			0.1			0.06	J	P	0.07	J	P
VANADIUM		19.2			21.8	J	I	19.8			17.2		
ZINC		53.6			99.1	J	I	86.7			39.6		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1019-000.5			TF2-003-SS-DUP06-1013			TF2-004/5-SS1050-000.6			TF2-004/5-SS1051-000.8		
SDG: SG8254	LAB_ID	SG8254-031			SG8254-032			SG8254-009			SG8254-008		
FRACTION: M	SAMP_DATE	10/22/2013			10/22/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	91.8			93.1			94.9			96.6		
	DUP_OF				TF2-003-SS1015-000.8								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		9340			8700			8650	J	I	11600	J	I
ANTIMONY		0.29			0.24			0.15	J	D	0.14	J	D
ARSENIC		6.2			4.9			4.8			8.1		
BARIUM		24.5			26			12.8			17.2		
BERYLLIUM		0.35			0.36			0.32			0.42		
CADMIUM		0.29			0.14			0.05	J	P	0.07	J	P
CALCIUM		1080			832			363	J	D	419	J	D
CHROMIUM		12.7			10.6			12.3			14.4		
COBALT		8.7			6.5			7.4			13.9		
COPPER		18.3			15.6			17.3			29.8		
IRON		17500			15000			17500	J	I	24100	J	I
LEAD		32.1			49.2			13.2	J	I	12.4	J	I
MAGNESIUM		2790			1980			2630	J	I	3790	J	I
MANGANESE		311			343			211	J	F	400	J	F
MERCURY		0.04			0.08			0.02	U	A	0.02	U	A
NICKEL		16.1			13			14.2			24		
POTASSIUM		501			311			341			383		
SELENIUM		0.23	J	P	0.28	J	P	0.34	U	A	0.26	U	A
SILVER		0.06	J	P	0.05	J	P	0.04	J	P	0.03	J	P
SODIUM		29.2	J	P	22.2	U	A	17	U	A	21.8	U	A
THALLIUM		0.06	J	P	0.06	J	P	0.04	J	P	0.05	J	P
VANADIUM		21.6			17.6			17.4	J	I	19.2	J	I
ZINC		55.4			46.2			34.5	J	I	51.5	J	I

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1052-000.6			TF2-004/5-SS1053-000.6			TF2-004/5-SS1054-000.6			TF2-004/5-SS1055-000.8		
SDG: SG8254	LAB_ID	SG8254-007			SG8254-006			SG8254-005			SG8254-004		
FRACTION: M	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	93.8			93.9			96.9			95.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		15700	J	I	13000	J	I	12500	J	I	16200	J	I
ANTIMONY		0.23	J	D	0.19	J	D	0.11	J	D	0.07	J	DP
ARSENIC		8.7			8			6.9	J	F	6.7		
BARIUM		17.2			12.3			15.8			13.1		
BERYLLIUM		0.56			0.39			0.39			0.39		
CADMIUM		0.07	J	P	0.06	J	P	0.08	J	P	0.08		
CALCIUM		578	J	D	573	J	D	718	J	D	1190	J	D
CHROMIUM		22.3			18.8			17.1			23.6		
COBALT		11.8			10.8			11.9			16.2		
COPPER		25.3			27.2			19.8			24.9		
IRON		31100	J	I	24800	J	I	23100	J	I	31800	J	I
LEAD		31.1	J	I	22.1	J	I	18			27.4	J	I
MAGNESIUM		4760	J	I	3970	J	I	3640	J	I	5440	J	I
MANGANESE		238	J	F	231	J	F	298	J	I	297	J	F
MERCURY		0.03			0.04			0.04			0.014	U	A
NICKEL		26.5			23.3			20.3			30.5		
POTASSIUM		332			306			363			258		
SELENIUM		0.43	U	A	0.39	U	A	0.39	J	P	0.38	U	A
SILVER		0.06	J	P	0.05	J	P	0.03	J	P	0.02	J	P
SODIUM		28.2	J	P	23.4	J	A	38	U	A	20.7	U	A
THALLIUM		0.06	J	P	0.05	J	P	0.05	J	P	0.03	J	P
VANADIUM		30.7	J	I	24.2	J	I	19.8			19	J	I
ZINC		58.8	J	I	52.1	J	I	49.3	J	I	63.4	J	I

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1056-000.6			TF2-004/5-SS1057-0001			TF2-004/5-SS1058-000.5			TF2-004/5-SS1059-000.6		
SDG: SG8254	LAB_ID	SG8254-003			SG8254-002			SG8254-017			SG8254-016		
FRACTION: M	SAMP_DATE	10/21/2013			10/21/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	96.0			96.4			94.7			95.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		12400	J	I	6960	J	I	15100	J	I	10100	J	I
ANTIMONY		6.6	J	D	0.43	J	D	0.18	J	D	0.09	J	DP
ARSENIC		7.8	J	F	3.2	J	F	8.3			5.1		
BARIUM		17.2			15.8			11.8			17.9		
BERYLLIUM		0.39			0.33			0.84			0.37		
CADMIUM		0.08			0.08	J	P	0.07	J	P	0.07	J	P
CALCIUM		739	J	D	588	J	D	653	J	D	467	J	D
CHROMIUM		18.3			9.4			21.7			12.8		
COBALT		11.7			5			16.4			9.3		
COPPER		18.1			11.5			32.6			16.1		
IRON		22900	J	I	11700	J	I	32000	J	I	19000	J	I
LEAD		30.3			47			20.2	J	I	10.3	J	I
MAGNESIUM		3750	J	I	1810	J	I	4850	J	I	3170	J	I
MANGANESE		266	J	I	195	J	I	353	J	F	297	J	F
MERCURY		0.03			0.02	U	A	0.02	U	A	0.013	U	A
NICKEL		20.8			10.7			29.6			17.5		
POTASSIUM		343			318			291			461		
SELENIUM		0.39	J	P	0.33	J	P	0.34	U	A	0.28	U	A
SILVER		0.03	J	P	0.04	J	P	0.05	J	P	0.02	J	P
SODIUM		34.4	U	A	40	U	A	25	U	A	21.6	U	A
THALLIUM		0.04	J	P	0.05	J	P	0.04	J	P	0.05	J	P
VANADIUM		18.7			18			23.1	J	I	16.8	J	I
ZINC		50.2	J	I	35.4	J	I	64.6	J	I	40.8	J	I

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1060-000.5			TF2-004/5-SS1061-000.6			TF2-004/5-SS1062-000.8			TF2-004/5-SS1063-000.6		
SDG: SG8254	LAB_ID	SG8254-015			SG8254-012			SG8254-010			SG8254-020		
FRACTION: M	SAMP_DATE	10/22/2013			10/21/2013			10/21/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	94.1			95.6			93.4			96.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		16200	J	I	9090	J	I	11400	J	I	14600	J	I
ANTIMONY		0.22	J	D	0.2	J	DG	0.36	J	D	0.23	J	D
ARSENIC		7.8			3.8			5.3			10.6		
BARIUM		15.9			12.8			17.8			14		
BERYLLIUM		0.42			0.3			0.35			0.62		
CADMIUM		0.07	J	P	0.07	J	P	0.08	J	P	0.06	J	P
CALCIUM		731	J	D	890	J	D	710	J	D	550	J	D
CHROMIUM		22.7			12.2			15			20.4		
COBALT		13.2			7.3			7.4			11.7		
COPPER		27.1			13.9			16.4			39.9		
IRON		31600	J	I	17100	J	I	18500	J	I	30600	J	I
LEAD		34.5	J	I	20.7	J	I	51.2	J	I	17.2	J	I
MAGNESIUM		5260	J	I	2740	J	I	3060	J	I	4400	J	I
MANGANESE		265	J	F	179	J	F	188	J	F	266	J	F
MERCURY		0.08	J	DEF	0.04	J	DEF	0.04	J	DEF	0.02	U	A
NICKEL		28.6			13.2			17			25		
POTASSIUM		301			260			310			296		
SELENIUM		0.29	U	A	0.26	U	A	0.28	U	A	0.48	U	A
SILVER		0.08			0.03	J	P	0.05	J	P	0.04	J	P
SODIUM		25.9	J	P	19.1	J	A	30.6	J	P	22.6	U	A
THALLIUM		0.05	J	P	0.04	J	P	0.06	J	P	0.04	J	P
VANADIUM		33.4	J	I	14.1	J	I	23.6	J	I	22	J	I
ZINC		62	J	I	36.7	J	I	45.6	J	I	60.6	J	I

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1064-000.6			TF2-004/5-SS1065-000.5			TF2-004/5-SS1066-000.9			TF2-004/5-SS1067-000.7		
SDG: SG8254	LAB_ID	SG8254-019			SG8254-018			SG8254-014			SG8254-013		
FRACTION: M	SAMP_DATE	10/22/2013			10/22/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	97.2			96.6			92.4			94.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		14000	J	I	13600	J	I	9960	J	I	9460	J	I
ANTIMONY		0.15	J	D	0.19	J	D	2	J	D	0.45	J	D
ARSENIC		6.4			6.6			6			5		
BARIUM		15.2			18.1			18.7			20.2		
BERYLLIUM		0.46			0.41	J	G	0.37			0.36		
CADMIUM		0.08	J	P	0.07	J	P	0.1			0.08	J	P
CALCIUM		428	J	D	561	J	D	656	J	D	651	J	D
CHROMIUM		19.3			18.6			13.5			13.2		
COBALT		13.3			12.7			8.5			7.6		
COPPER		35.5			25.9			14.5			14.9		
IRON		27200	J	I	26300	J	I	17000	J	I	17000	J	I
LEAD		20.9	J	I	22	J	I	60	J	I	34	J	I
MAGNESIUM		4150	J	I	4300	J	I	2390	J	I	2590	J	I
MANGANESE		262	J	F	256	J	F	189	J	F	202	J	F
MERCURY		0.03	J	DEFP	0.03	J	DEFP	0.05	J	DEF	0.03	J	DEF
NICKEL		23			22.2			14.4			14.1		
POTASSIUM		267			371			328			384		
SELENIUM		0.28	U	A	0.33	U	A	0.28	U	A	0.29	U	A
SILVER		0.05	J	P	0.06	J	P	0.04	J	P	0.03	J	P
SODIUM		23.5	U	A	27.1	J	P	27.4	J	P	28.2	J	P
THALLIUM		0.05	J	P	0.04	J	P	0.06	J	P	0.06	J	P
VANADIUM		22.8	J	I	26.4	J	I	22.7	J	I	18.7	J	I
ZINC		50.4	J	I	52.1	J	I	43.5	J	I	41.9	J	I

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1068-000.5			TF2-004/5-SS-DUP04-1013			TF2-004/5-SS-DUP05-1013		
SDG: SG8254	LAB_ID	SG8254-021			SG8254-011			SG8254-023		
FRACTION: M	SAMP_DATE	10/22/2013			10/21/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	94.4			95.7			96.4		
	DUP_OF				TF2-004/5-SS1061-000.6			TF2-004/5-SS1065-000.5		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		15600	J	I	12300	J	I	13500	J	I
ANTIMONY		0.13	J	D	0.55	J	DG	0.15	J	D
ARSENIC		8.1			5.6			10.5		
BARIUM		12.8			16.3			14.6		
BERYLLIUM		0.47			0.32			1.3	J	G
CADMIUM		0.06			0.1			0.07	J	P
CALCIUM		696	J	D	680	J	D	472	J	D
CHROMIUM		19.3			14.8			18.8		
COBALT		11.1			9			12.2		
COPPER		31.1			17.3			33.7		
IRON		29900	J	I	22300	J	I	32400	J	I
LEAD		24.7	J	I	30	J	I	24.3	J	I
MAGNESIUM		4870	J	I	3720	J	I	4210	J	I
MANGANESE		265	J	F	253	J	F	267	J	F
MERCURY		0.04	J	DEF	0.04	J	DEF	0.04	J	DEF
NICKEL		22.5			18.2			27.7		
POTASSIUM		312			310			268		
SELENIUM		0.23	U	A	0.28	U	A	0.28	U	A
SILVER		0.08			0.04	J	P	0.05	J	P
SODIUM		24.5	U	A	23.4	U	A	23.8	U	A
THALLIUM		0.04	J	P	0.04	J	P	0.04	J	P
VANADIUM		25.5	J	I	19.7	J	I	23.6	J	I
ZINC		50.4	J	I	49.3	J	I	64.9	J	I

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SS-RB03-1013

Matrix: WATER **SDG Name:** SG8254

Percent Solids: 0.00 **Lab Sample ID:** SG8254-033

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11.5	J		MS	5	300	4.40	40
7440-36-0	ANTIMONY, TOTAL	0.11	J		MS	5	1.0	0.05	0.50
7440-38-2	ARSENIC, TOTAL	4.0	U		MS	5	5.0	2.25	4.0
7440-39-3	BARIUM, TOTAL	0.85	J		MS	5	2.0	0.25	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	U		MS	5	1.0	0.04	0.20
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	1.0	0.03	0.20
7440-70-2	CALCIUM, TOTAL	42.7	J		MS	5	100	20.45	80
7440-47-3	CHROMIUM, TOTAL	0.53	J		MS	5	5.0	0.20	4.0
7440-48-4	COBALT, TOTAL	0.05	J		MS	5	1.0	0.05	0.30
7440-50-8	COPPER, TOTAL	0.51	J		MS	5	3.0	0.20	2.0
7439-89-6	IRON, TOTAL	17.2	J		MS	5	100	12.75	60
7439-92-1	LEAD, TOTAL	0.07	J		MS	5	1.0	0.05	0.50
7439-95-4	MAGNESIUM, TOTAL	11.2	J		MS	5	100	7.80	80
7439-96-5	MANGANESE, TOTAL	0.36	J		MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.01	0.10
7440-02-0	NICKEL, TOTAL	0.20	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	400	U		MS	5	1000	30.70	400
7782-49-2	SELENIUM, TOTAL	3.0	U		MS	5	5.0	0.20	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-23-5	SODIUM, TOTAL	400	U		MS	5	1000	18.50	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-62-2	VANADIUM, TOTAL	0.93	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	8.0	U		MS	5	10	3.90	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS-DUP06-1013

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.0 **Lab Sample ID:** SG8254-032

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	8700		E	MS	5	21	0.36	2.8
7440-36-0	ANTIMONY, TOTAL	0.24		N*	MS	5	0.071	0.01	0.036
7440-38-2	ARSENIC, TOTAL	4.9		*	MS	5	0.36	0.11	0.28
7440-39-3	BARIUM, TOTAL	26.0			MS	5	0.14	0.02	0.071
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.071	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.14			MS	5	0.071	0.007	0.014
7440-70-2	CALCIUM, TOTAL	832		N	MS	5	7.1	2.72	5.7
7440-47-3	CHROMIUM, TOTAL	10.6			MS	5	0.36	0.04	0.28
7440-48-4	COBALT, TOTAL	6.5			MS	5	0.071	0.004	0.021
7440-50-8	COPPER, TOTAL	15.6		*	MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	15000		E	MS	5	7.1	1.71	4.3
7439-92-1	LEAD, TOTAL	49.2		*E	MS	5	0.071	0.004	0.036
7439-95-4	MAGNESIUM, TOTAL	1980		E	MS	5	7.1	0.97	5.7
7439-96-5	MANGANESE, TOTAL	343		*E	MS	5	0.14	0.03	0.071
7439-97-6	MERCURY, TOTAL	0.08		N*	CV	1	0.032	0.005	0.017
7440-02-0	NICKEL, TOTAL	13.0			MS	5	0.14	0.02	0.085
7440-09-7	POTASSIUM, TOTAL	311			MS	5	71	3.25	28
7782-49-2	SELENIUM, TOTAL	0.25	J		MS	5	0.36	0.03	0.21
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.071	0.004	0.028
7440-23-5	SODIUM, TOTAL	22.2	J		MS	5	71	1.83	28
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.071	0.007	0.028
7440-62-2	VANADIUM, TOTAL	17.6		E	MS	5	0.36	0.08	0.28
7440-66-6	ZINC, TOTAL	46.2		E	MS	5	0.71	0.09	0.57

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1011-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 86.9 **Lab Sample ID:** SG8254-022

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11000		E	MS	5	28	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.20		N*	MS	5	0.094	0.02	0.047
7440-38-2	ARSENIC, TOTAL	8.9		*	MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	27.4			MS	5	0.19	0.03	0.094
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.094	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.20			MS	5	0.094	0.009	0.019
7440-70-2	CALCIUM, TOTAL	520		N	MS	5	9.4	3.61	7.5
7440-47-3	CHROMIUM, TOTAL	14.7			MS	5	0.47	0.05	0.38
7440-48-4	COBALT, TOTAL	11.4			MS	5	0.094	0.005	0.028
7440-50-8	COPPER, TOTAL	16.3		*	MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	25100		E	MS	5	9.4	2.26	5.6
7439-92-1	LEAD, TOTAL	79.3		*E	MS	5	0.094	0.005	0.047
7439-95-4	MAGNESIUM, TOTAL	2620		E	MS	5	9.4	1.29	7.5
7439-96-5	MANGANESE, TOTAL	512		*E	MS	10	0.38	0.08	0.19
7439-97-6	MERCURY, TOTAL	0.14		N*	CV	1	0.030	0.004	0.015
7440-02-0	NICKEL, TOTAL	18.5			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	335			MS	5	94	4.30	38
7782-49-2	SELENIUM, TOTAL	0.26	J		MS	5	0.47	0.04	0.28
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.094	0.005	0.038
7440-23-5	SODIUM, TOTAL	16.8	J		MS	5	94	2.42	38
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.094	0.009	0.038
7440-62-2	VANADIUM, TOTAL	24.9		E	MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	71.8		E	MS	5	0.94	0.12	0.75

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1012-000.7

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 88.7 **Lab Sample ID:** SG8254-024

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9360		E	MS	5	22	0.38	2.9
7440-36-0	ANTIMONY, TOTAL	0.20		N*	MS	5	0.074	0.01	0.037
7440-38-2	ARSENIC, TOTAL	5.6		*	MS	5	0.37	0.11	0.29
7440-39-3	BARIUM, TOTAL	23.5			MS	5	0.15	0.03	0.074
7440-41-7	BERYLLIUM, TOTAL	0.40			MS	5	0.074	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.14			MS	5	0.074	0.007	0.015
7440-70-2	CALCIUM, TOTAL	857		N	MS	5	7.4	2.82	5.9
7440-47-3	CHROMIUM, TOTAL	11.6			MS	5	0.37	0.04	0.29
7440-48-4	COBALT, TOTAL	7.7			MS	5	0.074	0.004	0.022
7440-50-8	COPPER, TOTAL	21.7		*	MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	18300		E	MS	5	7.4	1.77	4.4
7439-92-1	LEAD, TOTAL	33.6		*E	MS	5	0.074	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	2430		E	MS	5	7.4	1.01	5.9
7439-96-5	MANGANESE, TOTAL	263		*E	MS	5	0.15	0.03	0.074
7439-97-6	MERCURY, TOTAL	0.07		N*	CV	1	0.035	0.005	0.018
7440-02-0	NICKEL, TOTAL	17.2			MS	5	0.15	0.02	0.088
7440-09-7	POTASSIUM, TOTAL	429			MS	5	74	3.36	29
7782-49-2	SELENIUM, TOTAL	0.20	J		MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.074	0.004	0.029
7440-23-5	SODIUM, TOTAL	37.5	J		MS	5	74	1.89	29
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.074	0.007	0.029
7440-62-2	VANADIUM, TOTAL	17.3		E	MS	5	0.37	0.08	0.29
7440-66-6	ZINC, TOTAL	46.3		E	MS	5	0.74	0.10	0.59

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1013-000.7

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.0 **Lab Sample ID:** SG8254-025

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9530		E	MS	5	22	0.37	2.9
7440-36-0	ANTIMONY, TOTAL	0.27		N*	MS	5	0.072	0.01	0.036
7440-38-2	ARSENIC, TOTAL	6.0		*	MS	5	0.36	0.11	0.29
7440-39-3	BARIUM, TOTAL	25.6			MS	5	0.14	0.03	0.072
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.072	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.17			MS	5	0.072	0.007	0.014
7440-70-2	CALCIUM, TOTAL	914		N	MS	5	7.2	2.74	5.7
7440-47-3	CHROMIUM, TOTAL	12.4			MS	5	0.36	0.04	0.29
7440-48-4	COBALT, TOTAL	8.6			MS	5	0.072	0.004	0.022
7440-50-8	COPPER, TOTAL	18.6		*	MS	5	0.22	0.05	0.14
7439-89-6	IRON, TOTAL	17700		E	MS	5	7.2	1.72	4.3
7439-92-1	LEAD, TOTAL	57.6		*E	MS	5	0.072	0.004	0.036
7439-95-4	MAGNESIUM, TOTAL	2730		E	MS	5	7.2	0.98	5.7
7439-96-5	MANGANESE, TOTAL	268		*E	MS	5	0.14	0.03	0.072
7439-97-6	MERCURY, TOTAL	0.07		N*	CV	1	0.034	0.005	0.017
7440-02-0	NICKEL, TOTAL	16.0			MS	5	0.14	0.02	0.086
7440-09-7	POTASSIUM, TOTAL	328			MS	5	72	3.27	29
7782-49-2	SELENIUM, TOTAL	0.26	J		MS	5	0.36	0.03	0.22
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.072	0.004	0.029
7440-23-5	SODIUM, TOTAL	29.2	J		MS	5	72	1.84	29
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.072	0.007	0.029
7440-62-2	VANADIUM, TOTAL	20.0		E	MS	5	0.36	0.08	0.29
7440-66-6	ZINC, TOTAL	50.0		E	MS	5	0.72	0.09	0.57

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1014-0001

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.2 **Lab Sample ID:** SG8254-026

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	10900		E	MS	5	21	0.35	2.8
7440-36-0	ANTIMONY, TOTAL	0.51		N*	MS	5	0.069	0.01	0.034
7440-38-2	ARSENIC, TOTAL	6.0		*	MS	5	0.34	0.10	0.28
7440-39-3	BARIUM, TOTAL	22.7			MS	5	0.14	0.02	0.069
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.069	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.16			MS	5	0.069	0.007	0.014
7440-70-2	CALCIUM, TOTAL	904		N	MS	5	6.9	2.63	5.5
7440-47-3	CHROMIUM, TOTAL	14.8			MS	5	0.34	0.03	0.28
7440-48-4	COBALT, TOTAL	8.6			MS	5	0.069	0.003	0.021
7440-50-8	COPPER, TOTAL	17.8		*	MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	20800		E	MS	5	6.9	1.65	4.1
7439-92-1	LEAD, TOTAL	36.7		*E	MS	5	0.069	0.003	0.034
7439-95-4	MAGNESIUM, TOTAL	3260		E	MS	5	6.9	0.94	5.5
7439-96-5	MANGANESE, TOTAL	311		*E	MS	5	0.14	0.03	0.069
7439-97-6	MERCURY, TOTAL	0.07		N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	18.7			MS	5	0.14	0.02	0.082
7440-09-7	POTASSIUM, TOTAL	443			MS	5	69	3.14	28
7782-49-2	SELENIUM, TOTAL	0.19	J		MS	5	0.34	0.03	0.21
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.069	0.003	0.028
7440-23-5	SODIUM, TOTAL	25.1	J		MS	5	69	1.76	28
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.069	0.007	0.028
7440-62-2	VANADIUM, TOTAL	21.6		E	MS	5	0.34	0.08	0.28
7440-66-6	ZINC, TOTAL	61.4		E	MS	5	0.69	0.09	0.55

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1015-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.0 **Lab Sample ID:** SG8254-027

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9570		E	MS	5	23	0.39	3.1
7440-36-0	ANTIMONY, TOTAL	0.28		N*	MS	5	0.077	0.02	0.039
7440-38-2	ARSENIC, TOTAL	5.2		*	MS	5	0.39	0.12	0.31
7440-39-3	BARIUM, TOTAL	31.0			MS	5	0.15	0.03	0.077
7440-41-7	BERYLLIUM, TOTAL	0.42			MS	5	0.077	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.16			MS	5	0.077	0.008	0.015
7440-70-2	CALCIUM, TOTAL	754		N	MS	5	7.7	2.96	6.2
7440-47-3	CHROMIUM, TOTAL	12.1			MS	5	0.39	0.04	0.31
7440-48-4	COBALT, TOTAL	7.2			MS	5	0.077	0.004	0.023
7440-50-8	COPPER, TOTAL	15.2		*	MS	5	0.23	0.05	0.15
7439-89-6	IRON, TOTAL	15700		E	MS	5	7.7	1.86	4.6
7439-92-1	LEAD, TOTAL	50.8		*E	MS	5	0.077	0.004	0.039
7439-95-4	MAGNESIUM, TOTAL	2140		E	MS	5	7.7	1.06	6.2
7439-96-5	MANGANESE, TOTAL	371		*E	MS	5	0.15	0.03	0.077
7439-97-6	MERCURY, TOTAL	0.09		N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	14.3			MS	5	0.15	0.02	0.093
7440-09-7	POTASSIUM, TOTAL	414			MS	5	77	3.53	31
7782-49-2	SELENIUM, TOTAL	0.28	J		MS	5	0.39	0.03	0.23
7440-22-4	SILVER, TOTAL	0.07	J		MS	5	0.077	0.004	0.031
7440-23-5	SODIUM, TOTAL	27.6	J		MS	5	77	1.98	31
7440-28-0	THALLIUM, TOTAL	0.08			MS	5	0.077	0.008	0.031
7440-62-2	VANADIUM, TOTAL	19.2		E	MS	5	0.39	0.09	0.31
7440-66-6	ZINC, TOTAL	53.6		E	MS	5	0.77	0.10	0.62

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1016-000.9

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 90.9 **Lab Sample ID:** SG8254-028

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9360		E	MS	5	23	0.39	3.0
7440-36-0	ANTIMONY, TOTAL	0.53		N*	MS	5	0.076	0.02	0.038
7440-38-2	ARSENIC, TOTAL	6.0		*	MS	5	0.38	0.11	0.30
7440-39-3	BARIUM, TOTAL	41.5			MS	5	0.15	0.03	0.076
7440-41-7	BERYLLIUM, TOTAL	0.51			MS	5	0.076	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.28			MS	5	0.076	0.008	0.015
7440-70-2	CALCIUM, TOTAL	719		N	MS	5	7.6	2.92	6.1
7440-47-3	CHROMIUM, TOTAL	12.3			MS	5	0.38	0.04	0.30
7440-48-4	COBALT, TOTAL	7.7			MS	5	0.076	0.004	0.023
7440-50-8	COPPER, TOTAL	16.7		*	MS	5	0.23	0.05	0.15
7439-89-6	IRON, TOTAL	15800		E	MS	5	7.6	1.83	4.6
7439-92-1	LEAD, TOTAL	101		*E	MS	5	0.076	0.004	0.038
7439-95-4	MAGNESIUM, TOTAL	1500		E	MS	5	7.6	1.04	6.1
7439-96-5	MANGANESE, TOTAL	658		*E	MS	10	0.30	0.06	0.15
7439-97-6	MERCURY, TOTAL	0.13		N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	13.4			MS	5	0.15	0.02	0.092
7440-09-7	POTASSIUM, TOTAL	354			MS	5	76	3.48	30
7782-49-2	SELENIUM, TOTAL	0.41			MS	5	0.38	0.03	0.23
7440-22-4	SILVER, TOTAL	0.08			MS	5	0.076	0.004	0.030
7440-23-5	SODIUM, TOTAL	28.0	J		MS	5	76	1.96	30
7440-28-0	THALLIUM, TOTAL	0.1			MS	5	0.076	0.008	0.030
7440-62-2	VANADIUM, TOTAL	21.8		E	MS	5	0.38	0.08	0.30
7440-66-6	ZINC, TOTAL	99.1		E	MS	5	0.76	0.10	0.61

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1017-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 91.6 **Lab Sample ID:** SG8254-029

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	8920		E	MS	5	29	0.49	3.9
7440-36-0	ANTIMONY, TOTAL	0.41		N*	MS	5	0.096	0.02	0.048
7440-38-2	ARSENIC, TOTAL	5.5		*	MS	5	0.48	0.14	0.39
7440-39-3	BARIUM, TOTAL	23.0			MS	5	0.19	0.03	0.096
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.096	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.23			MS	5	0.096	0.010	0.019
7440-70-2	CALCIUM, TOTAL	549		N	MS	5	9.6	3.69	7.7
7440-47-3	CHROMIUM, TOTAL	44.5			MS	5	0.48	0.05	0.39
7440-48-4	COBALT, TOTAL	7.6			MS	5	0.096	0.005	0.029
7440-50-8	COPPER, TOTAL	14.6		*	MS	5	0.29	0.07	0.19
7439-89-6	IRON, TOTAL	18700		E	MS	5	9.6	2.32	5.8
7439-92-1	LEAD, TOTAL	62.5		*E	MS	5	0.096	0.005	0.048
7439-95-4	MAGNESIUM, TOTAL	2470		E	MS	5	9.6	1.32	7.7
7439-96-5	MANGANESE, TOTAL	332		*E	MS	5	0.19	0.04	0.096
7439-97-6	MERCURY, TOTAL	0.06		N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	24.0			MS	5	0.19	0.02	0.12
7440-09-7	POTASSIUM, TOTAL	391			MS	5	96	4.40	39
7782-49-2	SELENIUM, TOTAL	0.14	J		MS	5	0.48	0.04	0.29
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.096	0.005	0.039
7440-23-5	SODIUM, TOTAL	24.5	J		MS	5	96	2.48	39
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.096	0.010	0.039
7440-62-2	VANADIUM, TOTAL	19.8		E	MS	5	0.48	0.11	0.39
7440-66-6	ZINC, TOTAL	86.7		E	MS	5	0.96	0.13	0.77

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1018-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 94.8 **Lab Sample ID:** SG8254-030

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9630		E	MS	5	25	0.42	3.3
7440-36-0	ANTIMONY, TOTAL	0.18		N*	MS	5	0.082	0.02	0.041
7440-38-2	ARSENIC, TOTAL	5.2		*	MS	5	0.41	0.12	0.33
7440-39-3	BARIUM, TOTAL	26.6			MS	5	0.16	0.03	0.082
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.082	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.10			MS	5	0.082	0.008	0.016
7440-70-2	CALCIUM, TOTAL	576		N	MS	5	8.2	3.15	6.6
7440-47-3	CHROMIUM, TOTAL	13.2			MS	5	0.41	0.04	0.33
7440-48-4	COBALT, TOTAL	9.2			MS	5	0.082	0.004	0.025
7440-50-8	COPPER, TOTAL	11.6		*	MS	5	0.25	0.06	0.16
7439-89-6	IRON, TOTAL	18400		E	MS	5	8.2	1.98	4.9
7439-92-1	LEAD, TOTAL	16.6		*E	MS	5	0.082	0.004	0.041
7439-95-4	MAGNESIUM, TOTAL	2720		E	MS	5	8.2	1.12	6.6
7439-96-5	MANGANESE, TOTAL	649		*E	MS	10	0.33	0.07	0.16
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	16.2			MS	5	0.16	0.02	0.099
7440-09-7	POTASSIUM, TOTAL	474			MS	5	82	3.76	33
7782-49-2	SELENIUM, TOTAL	0.22	J		MS	5	0.41	0.03	0.25
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.082	0.004	0.033
7440-23-5	SODIUM, TOTAL	22.2	J		MS	5	82	2.11	33
7440-28-0	THALLIUM, TOTAL	0.07	J		MS	5	0.082	0.008	0.033
7440-62-2	VANADIUM, TOTAL	17.2		E	MS	5	0.41	0.09	0.33
7440-66-6	ZINC, TOTAL	39.6		E	MS	5	0.82	0.11	0.66

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1019-000.5

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 91.8 **Lab Sample ID:** SG8254-031

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9340		E	MS	5	29	0.49	3.8
7440-36-0	ANTIMONY, TOTAL	0.29		N*	MS	5	0.096	0.02	0.048
7440-38-2	ARSENIC, TOTAL	6.2		*	MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	24.5			MS	5	0.19	0.03	0.096
7440-41-7	BERYLLIUM, TOTAL	0.35			MS	5	0.096	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.29			MS	5	0.096	0.010	0.019
7440-70-2	CALCIUM, TOTAL	1080		N	MS	5	9.6	3.69	7.7
7440-47-3	CHROMIUM, TOTAL	12.7			MS	5	0.48	0.05	0.38
7440-48-4	COBALT, TOTAL	8.7			MS	5	0.096	0.005	0.029
7440-50-8	COPPER, TOTAL	18.3		*	MS	5	0.29	0.07	0.19
7439-89-6	IRON, TOTAL	17500		E	MS	5	9.6	2.31	5.8
7439-92-1	LEAD, TOTAL	32.1		*E	MS	5	0.096	0.005	0.048
7439-95-4	MAGNESIUM, TOTAL	2790		E	MS	5	9.6	1.32	7.7
7439-96-5	MANGANESE, TOTAL	311		*E	MS	5	0.19	0.04	0.096
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	16.1			MS	5	0.19	0.02	0.12
7440-09-7	POTASSIUM, TOTAL	501			MS	5	96	4.39	38
7782-49-2	SELENIUM, TOTAL	0.23	J		MS	5	0.48	0.04	0.29
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.096	0.005	0.038
7440-23-5	SODIUM, TOTAL	29.2	J		MS	5	96	2.47	38
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.096	0.010	0.038
7440-62-2	VANADIUM, TOTAL	21.6		E	MS	5	0.48	0.11	0.38
7440-66-6	ZINC, TOTAL	55.4		E	MS	5	0.96	0.13	0.77

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS-DUP04-1013

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 95.7 **Lab Sample ID:** SG8254-011

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12300		E	MS	5	25	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	0.55		N*	MS	5	0.084	0.02	0.042
7440-38-2	ARSENIC, TOTAL	5.6		*	MS	5	0.42	0.13	0.34
7440-39-3	BARIUM, TOTAL	16.3			MS	5	0.17	0.03	0.084
7440-41-7	BERYLLIUM, TOTAL	0.32			MS	5	0.084	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.1			MS	5	0.084	0.008	0.017
7440-70-2	CALCIUM, TOTAL	680		N	MS	5	8.4	3.22	6.7
7440-47-3	CHROMIUM, TOTAL	14.8			MS	5	0.42	0.04	0.34
7440-48-4	COBALT, TOTAL	9.0			MS	5	0.084	0.004	0.025
7440-50-8	COPPER, TOTAL	17.3		*	MS	5	0.25	0.06	0.17
7439-89-6	IRON, TOTAL	22300		E	MS	5	8.4	2.02	5.0
7439-92-1	LEAD, TOTAL	30.0		*E	MS	5	0.084	0.004	0.042
7439-95-4	MAGNESIUM, TOTAL	3720		E	MS	5	8.4	1.15	6.7
7439-96-5	MANGANESE, TOTAL	253		*E	MS	5	0.17	0.03	0.084
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	18.2			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	310			MS	5	84	3.84	34
7782-49-2	SELENIUM, TOTAL	0.28	J		MS	5	0.42	0.03	0.25
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.084	0.004	0.034
7440-23-5	SODIUM, TOTAL	23.4	J		MS	5	84	2.16	34
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.084	0.008	0.034
7440-62-2	VANADIUM, TOTAL	19.7		E	MS	5	0.42	0.09	0.34
7440-66-6	ZINC, TOTAL	49.3		E	MS	5	0.84	0.11	0.67

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS-DUP05-1013

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.4 **Lab Sample ID:** SG8254-023

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13500		E	MS	5	28	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.15		N*	MS	5	0.094	0.02	0.047
7440-38-2	ARSENIC, TOTAL	10.5		*	MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	14.6			MS	5	0.19	0.03	0.094
7440-41-7	BERYLLIUM, TOTAL	1.3			MS	5	0.094	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.094	0.009	0.019
7440-70-2	CALCIUM, TOTAL	472		N	MS	5	9.4	3.61	7.5
7440-47-3	CHROMIUM, TOTAL	18.8			MS	5	0.47	0.05	0.38
7440-48-4	COBALT, TOTAL	12.2			MS	5	0.094	0.005	0.028
7440-50-8	COPPER, TOTAL	33.7		*	MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	32400		E	MS	5	9.4	2.26	5.6
7439-92-1	LEAD, TOTAL	24.3		*E	MS	5	0.094	0.005	0.047
7439-95-4	MAGNESIUM, TOTAL	4210		E	MS	5	9.4	1.29	7.5
7439-96-5	MANGANESE, TOTAL	267		*E	MS	5	0.19	0.04	0.094
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	27.7			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	268			MS	5	94	4.30	38
7782-49-2	SELENIUM, TOTAL	0.17	J		MS	5	0.47	0.04	0.28
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.094	0.005	0.038
7440-23-5	SODIUM, TOTAL	23.8	J		MS	5	94	2.42	38
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.094	0.009	0.038
7440-62-2	VANADIUM, TOTAL	23.6		E	MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	64.9		E	MS	5	0.94	0.12	0.75

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1050-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 94.9 **Lab Sample ID:** SG8254-009

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	8650		E	MS	5	26	0.44	3.5
7440-36-0	ANTIMONY, TOTAL	0.15		N*	MS	5	0.087	0.02	0.044
7440-38-2	ARSENIC, TOTAL	4.8		*	MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	12.8			MS	5	0.17	0.03	0.087
7440-41-7	BERYLLIUM, TOTAL	0.32			MS	5	0.087	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.05	J		MS	5	0.087	0.009	0.017
7440-70-2	CALCIUM, TOTAL	363		N	MS	5	8.7	3.33	7.0
7440-47-3	CHROMIUM, TOTAL	12.3			MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	7.4			MS	5	0.087	0.004	0.026
7440-50-8	COPPER, TOTAL	17.3		*	MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	17500		E	MS	5	8.7	2.09	5.2
7439-92-1	LEAD, TOTAL	13.2		*E	MS	5	0.087	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	2630		E	MS	5	8.7	1.19	7.0
7439-96-5	MANGANESE, TOTAL	211		*E	MS	5	0.17	0.03	0.087
7439-97-6	MERCURY, TOTAL	0.02	J	N*	CV	1	0.027	0.004	0.014
7440-02-0	NICKEL, TOTAL	14.2			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	341			MS	5	87	3.97	35
7782-49-2	SELENIUM, TOTAL	0.34	J		MS	5	0.44	0.03	0.26
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.087	0.004	0.035
7440-23-5	SODIUM, TOTAL	17.0	J		MS	5	87	2.23	35
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.087	0.009	0.035
7440-62-2	VANADIUM, TOTAL	17.4		E	MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	34.5		E	MS	5	0.87	0.11	0.70

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1051-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.6 **Lab Sample ID:** SG8254-008

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11600		E	MS	5	22	0.37	2.9
7440-36-0	ANTIMONY, TOTAL	0.14		N*	MS	5	0.073	0.01	0.037
7440-38-2	ARSENIC, TOTAL	8.1		*	MS	5	0.37	0.11	0.29
7440-39-3	BARIUM, TOTAL	17.2			MS	5	0.15	0.03	0.073
7440-41-7	BERYLLIUM, TOTAL	0.42			MS	5	0.073	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.073	0.007	0.015
7440-70-2	CALCIUM, TOTAL	419		N	MS	5	7.3	2.81	5.9
7440-47-3	CHROMIUM, TOTAL	14.4			MS	5	0.37	0.04	0.29
7440-48-4	COBALT, TOTAL	13.9			MS	5	0.073	0.004	0.022
7440-50-8	COPPER, TOTAL	29.8		*	MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	24100		E	MS	5	7.3	1.76	4.4
7439-92-1	LEAD, TOTAL	12.4		*E	MS	5	0.073	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	3790		E	MS	5	7.3	1.00	5.9
7439-96-5	MANGANESE, TOTAL	400		*E	MS	10	0.29	0.06	0.15
7439-97-6	MERCURY, TOTAL	0.02	J	N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	24.0			MS	5	0.15	0.02	0.088
7440-09-7	POTASSIUM, TOTAL	383			MS	5	73	3.35	29
7782-49-2	SELENIUM, TOTAL	0.26	J		MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.073	0.004	0.029
7440-23-5	SODIUM, TOTAL	21.8	J		MS	5	73	1.88	29
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.073	0.007	0.029
7440-62-2	VANADIUM, TOTAL	19.2		E	MS	5	0.37	0.08	0.29
7440-66-6	ZINC, TOTAL	51.5		E	MS	5	0.73	0.10	0.59

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1052-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.8 **Lab Sample ID:** SG8254-007

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15700		E	MS	5	28	0.49	3.8
7440-36-0	ANTIMONY, TOTAL	0.23		N*	MS	5	0.095	0.02	0.048
7440-38-2	ARSENIC, TOTAL	8.7		*	MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	17.2			MS	5	0.19	0.03	0.095
7440-41-7	BERYLLIUM, TOTAL	0.56			MS	5	0.095	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.095	0.010	0.019
7440-70-2	CALCIUM, TOTAL	578		N	MS	5	9.5	3.64	7.6
7440-47-3	CHROMIUM, TOTAL	22.3			MS	5	0.48	0.05	0.38
7440-48-4	COBALT, TOTAL	11.8			MS	5	0.095	0.005	0.028
7440-50-8	COPPER, TOTAL	25.3		*	MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	31100		E	MS	5	9.5	2.28	5.7
7439-92-1	LEAD, TOTAL	31.1		*E	MS	5	0.095	0.005	0.048
7439-95-4	MAGNESIUM, TOTAL	4760		E	MS	5	9.5	1.30	7.6
7439-96-5	MANGANESE, TOTAL	238		*E	MS	5	0.19	0.04	0.095
7439-97-6	MERCURY, TOTAL	0.03		N*	CV	1	0.030	0.005	0.016
7440-02-0	NICKEL, TOTAL	26.5			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	332			MS	5	95	4.34	38
7782-49-2	SELENIUM, TOTAL	0.43	J		MS	5	0.48	0.04	0.28
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.095	0.005	0.038
7440-23-5	SODIUM, TOTAL	28.2	J		MS	5	95	2.44	38
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.095	0.010	0.038
7440-62-2	VANADIUM, TOTAL	30.7		E	MS	5	0.48	0.10	0.38
7440-66-6	ZINC, TOTAL	58.8		E	MS	5	0.95	0.12	0.76

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1053-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.9 **Lab Sample ID:** SG8254-006

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13000		E	MS	5	26	0.45	3.5
7440-36-0	ANTIMONY, TOTAL	0.19		N*	MS	5	0.088	0.02	0.044
7440-38-2	ARSENIC, TOTAL	8.0		*	MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	12.3			MS	5	0.18	0.03	0.088
7440-41-7	BERYLLIUM, TOTAL	0.39			MS	5	0.088	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.088	0.009	0.018
7440-70-2	CALCIUM, TOTAL	573		N	MS	5	8.8	3.37	7.0
7440-47-3	CHROMIUM, TOTAL	18.8			MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	10.8			MS	5	0.088	0.004	0.026
7440-50-8	COPPER, TOTAL	27.2		*	MS	5	0.26	0.06	0.18
7439-89-6	IRON, TOTAL	24800		E	MS	5	8.8	2.11	5.3
7439-92-1	LEAD, TOTAL	22.1		*E	MS	5	0.088	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	3970		E	MS	5	8.8	1.20	7.0
7439-96-5	MANGANESE, TOTAL	231		*E	MS	5	0.18	0.04	0.088
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.034	0.005	0.017
7440-02-0	NICKEL, TOTAL	23.3			MS	5	0.18	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	306			MS	5	88	4.01	35
7782-49-2	SELENIUM, TOTAL	0.39	J		MS	5	0.44	0.04	0.26
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.088	0.004	0.035
7440-23-5	SODIUM, TOTAL	23.4	J		MS	5	88	2.26	35
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.088	0.009	0.035
7440-62-2	VANADIUM, TOTAL	24.2		E	MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	52.1		E	MS	5	0.88	0.11	0.70

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1054-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.9 **Lab Sample ID:** SG8254-005

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12500		E	MS	5	28	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.11		N*	MS	5	0.095	0.02	0.047
7440-38-2	ARSENIC, TOTAL	6.9		*	MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	15.8			MS	5	0.19	0.03	0.095
7440-41-7	BERYLLIUM, TOTAL	0.39			MS	5	0.095	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.095	0.009	0.019
7440-70-2	CALCIUM, TOTAL	718		N	MS	5	9.5	3.62	7.6
7440-47-3	CHROMIUM, TOTAL	17.1			MS	5	0.47	0.05	0.38
7440-48-4	COBALT, TOTAL	11.9			MS	5	0.095	0.005	0.028
7440-50-8	COPPER, TOTAL	19.8		*	MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	23100		E	MS	5	9.5	2.27	5.7
7439-92-1	LEAD, TOTAL	18.0		*E	MS	5	0.095	0.005	0.047
7439-95-4	MAGNESIUM, TOTAL	3640		E	MS	5	9.5	1.29	7.6
7439-96-5	MANGANESE, TOTAL	298		*E	MS	5	0.19	0.04	0.095
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	20.3			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	363			MS	5	95	4.32	38
7782-49-2	SELENIUM, TOTAL	0.39	J		MS	5	0.47	0.04	0.28
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.095	0.005	0.038
7440-23-5	SODIUM, TOTAL	31.3	J		MS	5	95	2.43	38
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.095	0.009	0.038
7440-62-2	VANADIUM, TOTAL	19.8		E	MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	49.3		E	MS	5	0.95	0.12	0.76

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1055-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 95.4 **Lab Sample ID:** SG8254-004

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16200		E	MS	5	22	0.38	3.0
7440-36-0	ANTIMONY, TOTAL	0.07	J	N*	MS	5	0.075	0.01	0.037
7440-38-2	ARSENIC, TOTAL	6.7		*	MS	5	0.37	0.11	0.30
7440-39-3	BARIUM, TOTAL	13.1			MS	5	0.15	0.03	0.075
7440-41-7	BERYLLIUM, TOTAL	0.39			MS	5	0.075	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.08			MS	5	0.075	0.007	0.015
7440-70-2	CALCIUM, TOTAL	1190		N	MS	5	7.5	2.86	6.0
7440-47-3	CHROMIUM, TOTAL	23.6			MS	5	0.37	0.04	0.30
7440-48-4	COBALT, TOTAL	16.2			MS	5	0.075	0.004	0.022
7440-50-8	COPPER, TOTAL	24.9		*	MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	31800		E	MS	5	7.5	1.80	4.5
7439-92-1	LEAD, TOTAL	27.4		*E	MS	5	0.075	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	5440		E	MS	5	7.5	1.02	6.0
7439-96-5	MANGANESE, TOTAL	297		*E	MS	5	0.15	0.03	0.075
7439-97-6	MERCURY, TOTAL	0.01	J	N*	CV	1	0.027	0.004	0.014
7440-02-0	NICKEL, TOTAL	30.5			MS	5	0.15	0.02	0.090
7440-09-7	POTASSIUM, TOTAL	258			MS	5	75	3.42	30
7782-49-2	SELENIUM, TOTAL	0.38			MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.075	0.004	0.030
7440-23-5	SODIUM, TOTAL	20.7	J		MS	5	75	1.92	30
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.075	0.007	0.030
7440-62-2	VANADIUM, TOTAL	19.0		E	MS	5	0.37	0.08	0.30
7440-66-6	ZINC, TOTAL	63.4		E	MS	5	0.75	0.10	0.60

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1056-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.0 **Lab Sample ID:** SG8254-003

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12400		E	MS	5	25	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	6.6		N*	MS	5	0.084	0.02	0.042
7440-38-2	ARSENIC, TOTAL	7.8		*	MS	5	0.42	0.13	0.34
7440-39-3	BARIUM, TOTAL	17.2			MS	5	0.17	0.03	0.084
7440-41-7	BERYLLIUM, TOTAL	0.39			MS	5	0.084	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.08			MS	5	0.084	0.008	0.017
7440-70-2	CALCIUM, TOTAL	739		N	MS	5	8.4	3.21	6.7
7440-47-3	CHROMIUM, TOTAL	18.3			MS	5	0.42	0.04	0.34
7440-48-4	COBALT, TOTAL	11.7			MS	5	0.084	0.004	0.025
7440-50-8	COPPER, TOTAL	18.1		*	MS	5	0.25	0.06	0.17
7439-89-6	IRON, TOTAL	22900		E	MS	5	8.4	2.02	5.0
7439-92-1	LEAD, TOTAL	30.3		*E	MS	5	0.084	0.004	0.042
7439-95-4	MAGNESIUM, TOTAL	3750		E	MS	5	8.4	1.15	6.7
7439-96-5	MANGANESE, TOTAL	266		*E	MS	5	0.17	0.03	0.084
7439-97-6	MERCURY, TOTAL	0.03		N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	20.8			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	343			MS	5	84	3.83	34
7782-49-2	SELENIUM, TOTAL	0.39	J		MS	5	0.42	0.03	0.25
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.084	0.004	0.034
7440-23-5	SODIUM, TOTAL	34.4	J		MS	5	84	2.15	34
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.084	0.008	0.034
7440-62-2	VANADIUM, TOTAL	18.7		E	MS	5	0.42	0.09	0.34
7440-66-6	ZINC, TOTAL	50.2		E	MS	5	0.84	0.11	0.67

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1057-0001

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.4 **Lab Sample ID:** SG8254-002

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	6960		E	MS	5	30	0.51	4.0
7440-36-0	ANTIMONY, TOTAL	0.43		N*	MS	5	0.10	0.02	0.050
7440-38-2	ARSENIC, TOTAL	3.2		*	MS	5	0.50	0.15	0.40
7440-39-3	BARIUM, TOTAL	15.8			MS	5	0.20	0.03	0.10
7440-41-7	BERYLLIUM, TOTAL	0.33			MS	5	0.10	0.004	0.020
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.10	0.010	0.020
7440-70-2	CALCIUM, TOTAL	588		N	MS	5	10	3.81	8.0
7440-47-3	CHROMIUM, TOTAL	9.4			MS	5	0.50	0.05	0.40
7440-48-4	COBALT, TOTAL	5.0			MS	5	0.10	0.005	0.030
7440-50-8	COPPER, TOTAL	11.5		*	MS	5	0.30	0.07	0.20
7439-89-6	IRON, TOTAL	11700		E	MS	5	10	2.39	6.0
7439-92-1	LEAD, TOTAL	47.0		*E	MS	5	0.10	0.005	0.050
7439-95-4	MAGNESIUM, TOTAL	1810		E	MS	5	10	1.36	8.0
7439-96-5	MANGANESE, TOTAL	195		*E	MS	5	0.20	0.04	0.10
7439-97-6	MERCURY, TOTAL	0.02	J	N*	CV	1	0.030	0.005	0.016
7440-02-0	NICKEL, TOTAL	10.7			MS	5	0.20	0.02	0.12
7440-09-7	POTASSIUM, TOTAL	318			MS	5	100	4.55	40
7782-49-2	SELENIUM, TOTAL	0.33	J		MS	5	0.50	0.04	0.30
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.10	0.005	0.040
7440-23-5	SODIUM, TOTAL	28.9	J		MS	5	100	2.56	40
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.10	0.010	0.040
7440-62-2	VANADIUM, TOTAL	18.0		E	MS	5	0.50	0.11	0.40
7440-66-6	ZINC, TOTAL	35.4		E	MS	5	1.0	0.13	0.80

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1058-000.5

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 94.7 **Lab Sample ID:** SG8254-017

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15100		E	MS	5	27	0.45	3.5
7440-36-0	ANTIMONY, TOTAL	0.18		N*	MS	5	0.089	0.02	0.044
7440-38-2	ARSENIC, TOTAL	8.3		*	MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	11.8			MS	5	0.18	0.03	0.089
7440-41-7	BERYLLIUM, TOTAL	0.84			MS	5	0.089	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.089	0.009	0.018
7440-70-2	CALCIUM, TOTAL	653		N	MS	5	8.9	3.39	7.1
7440-47-3	CHROMIUM, TOTAL	21.7			MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	16.4			MS	5	0.089	0.004	0.027
7440-50-8	COPPER, TOTAL	32.6		*	MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	32000		E	MS	5	8.9	2.13	5.3
7439-92-1	LEAD, TOTAL	20.2		*E	MS	5	0.089	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	4850		E	MS	5	8.9	1.21	7.1
7439-96-5	MANGANESE, TOTAL	353		*E	MS	5	0.18	0.04	0.089
7439-97-6	MERCURY, TOTAL	0.02	J	N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	29.6			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	291			MS	5	89	4.05	35
7782-49-2	SELENIUM, TOTAL	0.34	J		MS	5	0.44	0.04	0.27
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.089	0.004	0.035
7440-23-5	SODIUM, TOTAL	25.0	J		MS	5	89	2.28	35
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.089	0.009	0.035
7440-62-2	VANADIUM, TOTAL	23.1		E	MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	64.6		E	MS	5	0.89	0.12	0.71

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1059-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 95.6 **Lab Sample ID:** SG8254-016

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	10100		E	MS	5	28	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.09	J	N*	MS	5	0.094	0.02	0.047
7440-38-2	ARSENIC, TOTAL	5.1		*	MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	17.9			MS	5	0.19	0.03	0.094
7440-41-7	BERYLLIUM, TOTAL	0.37			MS	5	0.094	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.094	0.009	0.019
7440-70-2	CALCIUM, TOTAL	467		N	MS	5	9.4	3.60	7.5
7440-47-3	CHROMIUM, TOTAL	12.8			MS	5	0.47	0.05	0.38
7440-48-4	COBALT, TOTAL	9.3			MS	5	0.094	0.005	0.028
7440-50-8	COPPER, TOTAL	16.1		*	MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	19000		E	MS	5	9.4	2.26	5.6
7439-92-1	LEAD, TOTAL	10.3		*E	MS	5	0.094	0.005	0.047
7439-95-4	MAGNESIUM, TOTAL	3170		E	MS	5	9.4	1.29	7.5
7439-96-5	MANGANESE, TOTAL	297		*E	MS	5	0.19	0.04	0.094
7439-97-6	MERCURY, TOTAL	0.01	J	N*	CV	1	0.026	0.004	0.013
7440-02-0	NICKEL, TOTAL	17.5			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	461			MS	5	94	4.30	38
7782-49-2	SELENIUM, TOTAL	0.18	J		MS	5	0.47	0.04	0.28
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.094	0.005	0.038
7440-23-5	SODIUM, TOTAL	21.6	J		MS	5	94	2.42	38
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.094	0.009	0.038
7440-62-2	VANADIUM, TOTAL	16.8		E	MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	40.8		E	MS	5	0.94	0.12	0.75

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1060-000.5

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 94.1 **Lab Sample ID:** SG8254-015

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16200		E	MS	5	22	0.38	3.0
7440-36-0	ANTIMONY, TOTAL	0.22		N*	MS	5	0.074	0.01	0.037
7440-38-2	ARSENIC, TOTAL	7.8		*	MS	5	0.37	0.11	0.30
7440-39-3	BARIUM, TOTAL	15.9			MS	5	0.15	0.03	0.074
7440-41-7	BERYLLIUM, TOTAL	0.42			MS	5	0.074	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.074	0.007	0.015
7440-70-2	CALCIUM, TOTAL	731		N	MS	5	7.4	2.84	5.9
7440-47-3	CHROMIUM, TOTAL	22.7			MS	5	0.37	0.04	0.30
7440-48-4	COBALT, TOTAL	13.2			MS	5	0.074	0.004	0.022
7440-50-8	COPPER, TOTAL	27.1		*	MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	31600		E	MS	5	7.4	1.78	4.4
7439-92-1	LEAD, TOTAL	34.5		*E	MS	5	0.074	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	5260		E	MS	5	7.4	1.01	5.9
7439-96-5	MANGANESE, TOTAL	265		*E	MS	5	0.15	0.03	0.074
7439-97-6	MERCURY, TOTAL	0.08		N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	28.6			MS	5	0.15	0.02	0.089
7440-09-7	POTASSIUM, TOTAL	301			MS	5	74	3.39	30
7782-49-2	SELENIUM, TOTAL	0.29	J		MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.08			MS	5	0.074	0.004	0.030
7440-23-5	SODIUM, TOTAL	25.9	J		MS	5	74	1.91	30
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.074	0.007	0.030
7440-62-2	VANADIUM, TOTAL	33.4		E	MS	5	0.37	0.08	0.30
7440-66-6	ZINC, TOTAL	62.0		E	MS	5	0.74	0.10	0.59

Comments:

Katahdin Analytical Services A0000127

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1061-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 95.6 **Lab Sample ID:** SG8254-012

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9090		E	MS	5	26	0.45	3.5
7440-36-0	ANTIMONY, TOTAL	0.20		N*	MS	5	0.088	0.02	0.044
7440-38-2	ARSENIC, TOTAL	3.8		*	MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	12.8			MS	5	0.18	0.03	0.088
7440-41-7	BERYLLIUM, TOTAL	0.30			MS	5	0.088	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.088	0.009	0.018
7440-70-2	CALCIUM, TOTAL	890		N	MS	5	8.8	3.36	7.0
7440-47-3	CHROMIUM, TOTAL	12.2			MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	7.3			MS	5	0.088	0.004	0.026
7440-50-8	COPPER, TOTAL	13.9		*	MS	5	0.26	0.06	0.18
7439-89-6	IRON, TOTAL	17100		E	MS	5	8.8	2.11	5.3
7439-92-1	LEAD, TOTAL	20.7		*E	MS	5	0.088	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	2740		E	MS	5	8.8	1.20	7.0
7439-96-5	MANGANESE, TOTAL	179		*E	MS	5	0.18	0.04	0.088
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.029	0.004	0.015
7440-02-0	NICKEL, TOTAL	13.2			MS	5	0.18	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	260			MS	5	88	4.01	35
7782-49-2	SELENIUM, TOTAL	0.20	J		MS	5	0.44	0.04	0.26
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.088	0.004	0.035
7440-23-5	SODIUM, TOTAL	19.1	J		MS	5	88	2.25	35
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.088	0.009	0.035
7440-62-2	VANADIUM, TOTAL	14.1		E	MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	36.7		E	MS	5	0.88	0.11	0.70

Comments:

Katahdin Analytical Services A0000124

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1062-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.4 **Lab Sample ID:** SG8254-010

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11400		E	MS	5	27	0.46	3.6
7440-36-0	ANTIMONY, TOTAL	0.36		N*	MS	5	0.091	0.02	0.045
7440-38-2	ARSENIC, TOTAL	5.3		*	MS	5	0.45	0.14	0.36
7440-39-3	BARIUM, TOTAL	17.8			MS	5	0.18	0.03	0.091
7440-41-7	BERYLLIUM, TOTAL	0.35			MS	5	0.091	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.091	0.009	0.018
7440-70-2	CALCIUM, TOTAL	710		N	MS	5	9.1	3.47	7.2
7440-47-3	CHROMIUM, TOTAL	15.0			MS	5	0.45	0.05	0.36
7440-48-4	COBALT, TOTAL	7.4			MS	5	0.091	0.005	0.027
7440-50-8	COPPER, TOTAL	16.4		*	MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	18500		E	MS	5	9.1	2.18	5.4
7439-92-1	LEAD, TOTAL	51.2		*E	MS	5	0.091	0.005	0.045
7439-95-4	MAGNESIUM, TOTAL	3060		E	MS	5	9.1	1.24	7.2
7439-96-5	MANGANESE, TOTAL	188		*E	MS	5	0.18	0.04	0.091
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.027	0.004	0.014
7440-02-0	NICKEL, TOTAL	17.0			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	310			MS	5	91	4.14	36
7782-49-2	SELENIUM, TOTAL	0.28	J		MS	5	0.45	0.04	0.27
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.091	0.005	0.036
7440-23-5	SODIUM, TOTAL	30.6	J		MS	5	91	2.33	36
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.091	0.009	0.036
7440-62-2	VANADIUM, TOTAL	23.6		E	MS	5	0.45	0.10	0.36
7440-66-6	ZINC, TOTAL	45.6		E	MS	5	0.91	0.12	0.72

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1063-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.8 **Lab Sample ID:** SG8254-020

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14600		E	MS	5	26	0.44	3.4
7440-36-0	ANTIMONY, TOTAL	0.23		N*	MS	5	0.086	0.02	0.043
7440-38-2	ARSENIC, TOTAL	10.6		*	MS	5	0.43	0.13	0.34
7440-39-3	BARIUM, TOTAL	14.0			MS	5	0.17	0.03	0.086
7440-41-7	BERYLLIUM, TOTAL	0.62			MS	5	0.086	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.086	0.009	0.017
7440-70-2	CALCIUM, TOTAL	550		N	MS	5	8.6	3.29	6.9
7440-47-3	CHROMIUM, TOTAL	20.4			MS	5	0.43	0.04	0.34
7440-48-4	COBALT, TOTAL	11.7			MS	5	0.086	0.004	0.026
7440-50-8	COPPER, TOTAL	39.9		*	MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	30600		E	MS	5	8.6	2.07	5.2
7439-92-1	LEAD, TOTAL	17.2		*E	MS	5	0.086	0.004	0.043
7439-95-4	MAGNESIUM, TOTAL	4400		E	MS	5	8.6	1.17	6.9
7439-96-5	MANGANESE, TOTAL	266		*E	MS	5	0.17	0.03	0.086
7439-97-6	MERCURY, TOTAL	0.02	J	N*	CV	1	0.028	0.004	0.014
7440-02-0	NICKEL, TOTAL	25.0			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	296			MS	5	86	3.93	34
7782-49-2	SELENIUM, TOTAL	0.48			MS	5	0.43	0.03	0.26
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.086	0.004	0.034
7440-23-5	SODIUM, TOTAL	22.6	J		MS	5	86	2.21	34
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.086	0.009	0.034
7440-62-2	VANADIUM, TOTAL	22.0		E	MS	5	0.43	0.09	0.34
7440-66-6	ZINC, TOTAL	60.6		E	MS	5	0.86	0.11	0.69

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1064-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 97.2 **Lab Sample ID:** SG8254-019

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14000		E	MS	5	28	0.47	3.7
7440-36-0	ANTIMONY, TOTAL	0.15		N*	MS	5	0.092	0.02	0.046
7440-38-2	ARSENIC, TOTAL	6.4		*	MS	5	0.46	0.14	0.37
7440-39-3	BARIUM, TOTAL	15.2			MS	5	0.18	0.03	0.092
7440-41-7	BERYLLIUM, TOTAL	0.46			MS	5	0.092	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.092	0.009	0.018
7440-70-2	CALCIUM, TOTAL	428		N	MS	5	9.2	3.51	7.4
7440-47-3	CHROMIUM, TOTAL	19.3			MS	5	0.46	0.05	0.37
7440-48-4	COBALT, TOTAL	13.3			MS	5	0.092	0.005	0.028
7440-50-8	COPPER, TOTAL	35.5		*	MS	5	0.28	0.06	0.18
7439-89-6	IRON, TOTAL	27200		E	MS	5	9.2	2.21	5.5
7439-92-1	LEAD, TOTAL	20.9		*E	MS	5	0.092	0.005	0.046
7439-95-4	MAGNESIUM, TOTAL	4150		E	MS	5	9.2	1.25	7.4
7439-96-5	MANGANESE, TOTAL	262		*E	MS	5	0.18	0.04	0.092
7439-97-6	MERCURY, TOTAL	0.03	J	N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	23.0			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	267			MS	5	92	4.19	37
7782-49-2	SELENIUM, TOTAL	0.26	J		MS	5	0.46	0.04	0.28
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.092	0.005	0.037
7440-23-5	SODIUM, TOTAL	23.5	J		MS	5	92	2.36	37
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.092	0.009	0.037
7440-62-2	VANADIUM, TOTAL	22.8		E	MS	5	0.46	0.10	0.37
7440-66-6	ZINC, TOTAL	50.4		E	MS	5	0.92	0.12	0.74

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1065-000.5

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.6 **Lab Sample ID:** SG8254-018

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13600		E	MS	5	27	0.46	3.6
7440-36-0	ANTIMONY, TOTAL	0.19		N*	MS	5	0.090	0.02	0.045
7440-38-2	ARSENIC, TOTAL	6.6		*	MS	5	0.45	0.14	0.36
7440-39-3	BARIUM, TOTAL	18.1			MS	5	0.18	0.03	0.090
7440-41-7	BERYLLIUM, TOTAL	0.41			MS	5	0.090	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.090	0.009	0.018
7440-70-2	CALCIUM, TOTAL	561		N	MS	5	9.0	3.44	7.2
7440-47-3	CHROMIUM, TOTAL	18.6			MS	5	0.45	0.05	0.36
7440-48-4	COBALT, TOTAL	12.7			MS	5	0.090	0.005	0.027
7440-50-8	COPPER, TOTAL	25.9		*	MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	26300		E	MS	5	9.0	2.16	5.4
7439-92-1	LEAD, TOTAL	22.0		*E	MS	5	0.090	0.005	0.045
7439-95-4	MAGNESIUM, TOTAL	4300		E	MS	5	9.0	1.23	7.2
7439-96-5	MANGANESE, TOTAL	256		*E	MS	5	0.18	0.04	0.090
7439-97-6	MERCURY, TOTAL	0.03	J	N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	22.2			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	371			MS	5	90	4.11	36
7782-49-2	SELENIUM, TOTAL	0.33	J		MS	5	0.45	0.04	0.27
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.090	0.005	0.036
7440-23-5	SODIUM, TOTAL	27.1	J		MS	5	90	2.31	36
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.090	0.009	0.036
7440-62-2	VANADIUM, TOTAL	26.4		E	MS	5	0.45	0.10	0.36
7440-66-6	ZINC, TOTAL	52.1		E	MS	5	0.90	0.12	0.72

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1066-000.9

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 92.4 **Lab Sample ID:** SG8254-014

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9960		E	MS	5	21	0.36	2.8
7440-36-0	ANTIMONY, TOTAL	2.0		N*	MS	5	0.071	0.01	0.036
7440-38-2	ARSENIC, TOTAL	6.0		*	MS	5	0.36	0.11	0.28
7440-39-3	BARIUM, TOTAL	18.7			MS	5	0.14	0.02	0.071
7440-41-7	BERYLLIUM, TOTAL	0.37			MS	5	0.071	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.1			MS	5	0.071	0.007	0.014
7440-70-2	CALCIUM, TOTAL	656		N	MS	5	7.1	2.72	5.7
7440-47-3	CHROMIUM, TOTAL	13.5			MS	5	0.36	0.04	0.28
7440-48-4	COBALT, TOTAL	8.5			MS	5	0.071	0.004	0.021
7440-50-8	COPPER, TOTAL	14.5		*	MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	17000		E	MS	5	7.1	1.71	4.3
7439-92-1	LEAD, TOTAL	60.0		*E	MS	5	0.071	0.004	0.036
7439-95-4	MAGNESIUM, TOTAL	2390		E	MS	5	7.1	0.97	5.7
7439-96-5	MANGANESE, TOTAL	189		*E	MS	5	0.14	0.03	0.071
7439-97-6	MERCURY, TOTAL	0.05		N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	14.4			MS	5	0.14	0.02	0.085
7440-09-7	POTASSIUM, TOTAL	328			MS	5	71	3.25	28
7782-49-2	SELENIUM, TOTAL	0.28	J		MS	5	0.36	0.03	0.21
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.071	0.004	0.028
7440-23-5	SODIUM, TOTAL	27.4	J		MS	5	71	1.83	28
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.071	0.007	0.028
7440-62-2	VANADIUM, TOTAL	22.7		E	MS	5	0.36	0.08	0.28
7440-66-6	ZINC, TOTAL	43.5		E	MS	5	0.71	0.09	0.57

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1067-000.7

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 94.3 **Lab Sample ID:** SG8254-013

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9460		E	MS	5	28	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.45		N*	MS	5	0.094	0.02	0.047
7440-38-2	ARSENIC, TOTAL	5.0		*	MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	20.2			MS	5	0.19	0.03	0.094
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.094	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.094	0.009	0.019
7440-70-2	CALCIUM, TOTAL	651		N	MS	5	9.4	3.59	7.5
7440-47-3	CHROMIUM, TOTAL	13.2			MS	5	0.47	0.05	0.38
7440-48-4	COBALT, TOTAL	7.6			MS	5	0.094	0.005	0.028
7440-50-8	COPPER, TOTAL	14.9		*	MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	17000		E	MS	5	9.4	2.25	5.6
7439-92-1	LEAD, TOTAL	34.0		*E	MS	5	0.094	0.005	0.047
7439-95-4	MAGNESIUM, TOTAL	2590		E	MS	5	9.4	1.28	7.5
7439-96-5	MANGANESE, TOTAL	202		*E	MS	5	0.19	0.04	0.094
7439-97-6	MERCURY, TOTAL	0.03		N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	14.1			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	384			MS	5	94	4.28	38
7782-49-2	SELENIUM, TOTAL	0.29	J		MS	5	0.47	0.04	0.28
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.094	0.005	0.038
7440-23-5	SODIUM, TOTAL	28.2	J		MS	5	94	2.41	38
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.094	0.009	0.038
7440-62-2	VANADIUM, TOTAL	18.7		E	MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	41.9		E	MS	5	0.94	0.12	0.75

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1068-000.5

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 94.4 **Lab Sample ID:** SG8254-021

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15600		E	MS	5	17	0.28	2.2
7440-36-0	ANTIMONY, TOTAL	0.13		N*	MS	5	0.056	0.01	0.028
7440-38-2	ARSENIC, TOTAL	8.1		*	MS	5	0.28	0.08	0.22
7440-39-3	BARIUM, TOTAL	12.8			MS	5	0.11	0.02	0.056
7440-41-7	BERYLLIUM, TOTAL	0.47			MS	5	0.056	0.002	0.011
7440-43-9	CADMIUM, TOTAL	0.06			MS	5	0.056	0.006	0.011
7440-70-2	CALCIUM, TOTAL	696		N	MS	5	5.6	2.13	4.4
7440-47-3	CHROMIUM, TOTAL	19.3			MS	5	0.28	0.03	0.22
7440-48-4	COBALT, TOTAL	11.1			MS	5	0.056	0.003	0.017
7440-50-8	COPPER, TOTAL	31.1		*	MS	5	0.17	0.04	0.11
7439-89-6	IRON, TOTAL	29900		E	MS	10	11	2.68	6.7
7439-92-1	LEAD, TOTAL	24.7		*E	MS	5	0.056	0.003	0.028
7439-95-4	MAGNESIUM, TOTAL	4870		E	MS	5	5.6	0.76	4.4
7439-96-5	MANGANESE, TOTAL	265		*E	MS	5	0.11	0.02	0.056
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	22.5			MS	5	0.11	0.01	0.067
7440-09-7	POTASSIUM, TOTAL	312			MS	5	56	2.54	22
7782-49-2	SELENIUM, TOTAL	0.23	J		MS	5	0.28	0.02	0.17
7440-22-4	SILVER, TOTAL	0.08			MS	5	0.056	0.003	0.022
7440-23-5	SODIUM, TOTAL	24.5	J		MS	5	56	1.43	22
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.056	0.006	0.022
7440-62-2	VANADIUM, TOTAL	25.5		E	MS	5	0.28	0.06	0.22
7440-66-6	ZINC, TOTAL	50.4		E	MS	5	0.56	0.07	0.44

Comments:

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet
INORG
Case: # 03019 CTO WE 38 SDG: SG9254

COMPLETE SDG FILE (CSF) AUDIT

Inorganic Parameters:_____

Missing Information	Date Lab Contacted	Date Received
	N/A	

Validator: Michelle Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-I
Case: _____ SDG: _____

I. PRESERVATION AND HOLDING TIMES

Circle sample numbers with exceeded technical holding times or omitted preservation.
Circle all exceeded technical holding times.

see DV Letter

Sample No.	Matrix	Pres. Code		Date Sampled	Metals		Hg		CN		Action
		Metals	CN		Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	

Preservation Code:
1. Cool (≤ 6°C)
2. pH < 2 with HNO_3
3. pH > 12 with NaOH
4. Room Temperature
5. Freeze
6. Reducing agent (for oxidants)
7. Treated for sulfides
8. Other - _____

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Sampler: _____ Company: _____ Contacted: Y N Date: _____

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-II
Case: _____ SDG: _____

II. ICP-MS TUNE

List all Tunes that are outside method QC acceptance criteria. Use a separate sheet if more than one instrument was used for sample analysis.

Method:_____Instrument ID: _____

Method QC acceptance criteria for mass calibration:_____

Method QC acceptance criteria for resolution check/peak width:_____ at_____% peak height.

Method QC acceptance criteria for % RSD:_____

see DV letter

Analysis Date and Time	Analyte	Mass Calibration			Mass Resolution		% RSD of Absolute Signals	Analyte/Samples Affected	Action
		True Mass (amu)	Measured Mass (amu)	Absolute Difference of Masses (amu)	Peak Width (amu)	% Peak Height			

Comments:

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-III-C/D
Case: _____ SDG: _____

III. CALIBRATIONS

C. Initial and Continuing Calibration Verifications - List all ICV and CCV analyte recoveries that are outside the method QC acceptance criteria.

ICV method QC acceptance criteria: _____ CCV method QC acceptance criteria: _____

Per DV Letter

Date/Time	Instrument ID	Analyte	ICV/CCV #	% R	Samples Affected	Action

D. Quantitation Limit Check Standard - List all QL Check Standard analytes that are outside method QC acceptance criteria (for non-CLP methods).

QL Check Standard method QC acceptance criteria: _____

Date	Instr.	Analyte	QL Check Std. #	% R	Affected Range	Samples Affected	Action

Comments: _____

EPA-NE - Data Validation Worksheet

INORG-III-A/B

Case: _____ SDG: _____

III. CALIBRATIONS

A. Initial Calibration - List all calibration correlation coefficients that are outside the method QC acceptance criteria and/or the y-intercept of the calibration curve that is >CRQL.

Calibration correlation QC acceptance criteria: _____ Calibration Type: _____

see DV letter

Date/Time	Instrument ID	Analyte	Correlation Coefficient.	y-Intercept	CRQL	Samples Affected	Action

B. Initial Calibration Standard Concentration Verifications – Review CLP Form 16-IN and list all calculated %Ds that are >30 of the true value of any non-zero standard.

Date/time	Instrument ID	Analyte	True Conc.	Found Conc.	%D	Samples Affected	Action

Comments: _____

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-IV-C.2
Case: _____ SDG: _____

IV. BLANKS

C.2 Blank Actions - List the maximum concentrations of each analyte among all blanks associated with each sample. See DV letter

Analyte	Type of Blank	Date Blank Originated	Max. Conc. (units)	MDL or (-MDL) (units)	CRQL or (-CRQL) (units)	10xCRQL	Samples Affected	Action

Comments:

Refer to EPA New England Data Review Program Supplemental guidance for blank contamination actions (Section 2.6).

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet

INORG-IV-A/B

Case: _____ SDG: _____

IV. BLANKS - List the blank contamination and negative blank results below.

Sampler: _____ Company: _____ Contacted: Y N Date: _____

A. Laboratory: Preparation (Method) and Calibration (Instrument) Blanks see DV Letter

Date Prepared	Date Analyzed	Blank Type (ICB/CCB#/Prep Blank)	Matrix	Instrument	Analyte	Concentration	Units

B. Field: Equipment (Rinsate) and Bottle Blanks

Date Sampled	Date Analyzed	Sample No. (Blank Type)	Matrix	Instrument	Analyte	Concentration	Units

Were the proper number of blanks analyzed at the proper frequency? Y N

For ICP MS - Are internal standard responses in all blanks within method QC acceptance criteria? Y N

Comments: _____

_____

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-IV-C.1
Case: _____ SDG: _____
IV. BLANKS **C.1 Blank Contamination Worksheet**

Circle or list the highest concentration of each contaminant. see DV Letter

Analyte	Date Analyzed	ICB	CCB							PBW	PBS	EB	BB	Max. Conc.	CRQL
			1	2	3	4	5	6	7						
Aluminum															
Antimony															
Arsenic															
Barium															
Beryllium															
Cadmium															
Calcium															
Chromium															
Cobalt															
Copper															
Iron															
Lead															
Magnesium															
Manganese															
Mercury															
Nickel															
Potassium															
Selenium															
Silver															
Sodium															
Thallium															
Vanadium															
Zinc															
Cyanide															

Validator: M. Allen Date: 12/9/13

EPA NE - Data Validation Worksheet
INORG-V-A
Case: _____ SDG: _____

V. A. ICP-AES INTERFERENCE CHECK SAMPLE - ICSAB

N/A

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen

Date: 12/9/13

EPA NE - Data Validation Worksheet
INORG-V-B
Case: _____ SDG: _____

V. B. ICP-AES INTERFERENCE CHECK SAMPLE - ICSA

N/A

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen Date: 12/9/13

EPA NE - Data Validation Worksheet
INORG-VI-A
Case: _____ SDG: _____

VI. A. ICP-MS INTERFERENCE CHECK SAMPLE - ICSAB

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

all DV letters

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		

Comments:

Validator: M. Allen Date: 12/9/13

EPA NE - Data Validation Worksheet
INORG-VI-B
Case: _____ SDG: _____

VI. B. ICP-MS INTERFERENCE CHECK SAMPLE - ICSA

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

See DV letter

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-VII
Case: _____ SDG: _____

VII. ICP-MS INTERNAL STANDARDS

List all internal standards that are outside method QC acceptance criteria. see DV letter

Method: _____ Method QC acceptance criteria: _____

Sample Number	Date and Time Analyzed	IS, amu	% RI	Analytes Affected (amu)	Action
Comments:					

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-VIII
Case: _____ SDG: _____

VIII. MATRIX SPIKES - List all matrix spike analytes that are outside method QC acceptance criteria.

Use a separate worksheet for each matrix spike sample.

Sample No.: _____ Matrix: _____ see QV Letter

Method	Analyte	Spiked Sample Result	Sample Result	Amount of Spike Added	MS % Recovery	Method QC Limits % Recovery	Post-Digest Spike % Recovery	Action

Comments:

Refer to EPA New England Data Review Program Supplemental guidance for additional matrix spike actions (Section 2.12).

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-IX
Case: _____ SDG: _____

IX. LABORATORY DUPLICATE SAMPLES - List all analytes that are outside method QC acceptance criteria for the specific matrix.

Use a separate worksheet for each laboratory duplicate sample.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Laboratory duplicate sample method QC acceptance criteria:_____ see DV Letter

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the field duplicate sample data indicate acceptable field precision? Y N

Comments:_____

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-X
Case: _____ SDG: _____

X. FIELD DUPLICATES - List all field duplicate analytes that are outside criteria.

Use a separate worksheet for each field duplicate pair. See DV letter

Sample No.: _____ Duplicate Sample No.: _____ Matrix: _____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the laboratory duplicate sample data indicate acceptable laboratory precision? Y N
Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.9).

Comments: _____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for contact and resolution obtained: _____

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-XI
Case: _____ SDG: _____

XI. ICP SERIAL DILUTIONS

Use a separate worksheet for each serial dilution sample.

Sample No.:_____ Matrix:_____ Method:_____

List all serial dilution analytes that are outside method QC acceptance criteria.

% Difference method QC acceptance criteria: _____
Minimum concentration required to apply the % D criteria (e.g., 50x MDL): _____ all DV Utter

Analyte	MDL	Min. Conc. Required	Sample Result	Serial Dilution Sample Result (corrected for dilution)	% D	Action

Comments:

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet

INORG-XII

Case: _____ SDG: _____

XII. LABORATORY CONTROL SAMPLES

List all analytes that are outside criteria.

SDG No.:_____ Case:_____

Are more than one-half of the LCS analytes within criteria for each parameter and method? **Y** **N**

see DV letter

Date Prepared	Date Analyzed	Parameter/ Method	Matrix	Analyte	% Recovery (or Observed Conc.)	Method QC Acceptance Criteria	Samples Affected	Action

Comments:

Validator: M. Allen

Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-XIII
Case: _____ SDG: _____

XIII. PERFORMANCE EVALUATION SAMPLES

List all analytes that are outside criteria.

Indicate the source of the PES: Region 1 EPA PES Non-EPA PES

Are more than one-half of the PES analytes within criteria for each parameter and method? **Y** **N**

per DV letter

PE Sample Number	Ampule Number	Parameter/ Method	Type of PES	Matrix	Analyte	Conc.	PES Score*	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High, Action Low, Analyte Missed, Contaminant.
For Non-EPA PESs indicate the Non-EPA PES Score: PES Analyte Missed; PES Analyte Contaminant; PES Analyte Hit (% Recovery Limits).
Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Comments: _____

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet

INORG-XIV

Case: _____ SDG: _____

XIV. ANALYTE QUANTITATION, REPORTED QUANTITATION LIMITS AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per analytical method

Do all soil/sediment samples have % solids greater than 30%? **Y** **N**

- If no, were any steps employed to address the high moisture content? Ree DV letter
- Indicate the action and list the affected sample nos.: _____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Method		Calculation
ICP-AES		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
ICP-MS		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
Mercury		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		
Cyanide		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		

Validator: M. Allen Date: 12/9/13

APPENDIX D

SUPPORT DOCUMENTATION

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGK13B.B\056SMPL.D\056SMPL.D#
Date Acquired: Nov 13 2013 09:50 pm
Acq. Method: K2008ESW.M
Operator: HHM
Sample Name: SG8254-023
Misc Info: DILUTION 1.6/8
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Nov 13 2013 07:15 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

TF2-004 / S-55 - DUP @S -103
1.1 g / 1L
96.4% solid

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.825	2.765	ppb	0.73	100.	
11 B	5.17	1.034	ppb	4.35	1000.	
23 Na	252.45	50.49	ppb	2.87	200000.	
25 Mg	44,615.	8,923.	ppb	0.78	200000.	
27 Al	142,950.	28,590.	ppb	0.52	200000.	
28 Si	2,237.	447.4	ppb	18.42	#VALUE!	
29 Si	2,439.	487.8	ppb	43.40	10000.	
39 K	2,841.5	568.3	ppb	0.68	200000.	
43 Ca	5,155.	1,031.	ppb	1.04	200000.	
44 Ca	4,474.	894.8	ppb	0.42	200000.	
51 V	249.85	49.97	ppb	0.78	1000.	
52 Cr	207.55	41.51	ppb	0.34	1000.	
53 Cr	230.6	46.12	ppb	1.42	1000.	
55 Mn	2,829.5	565.9	ppb	0.49	1000.	
56 Fe	356,150.	71,230.	ppb	1.10	200000.	
→ 57 Fe	343,900.	68,780.	ppb	0.51	100000.	
59 Co	133.6	26.72	ppb	0.51	1000.	
60 Ni	305.9	61.18	ppb	0.13	500.	
63 Cu	367.15	73.43	ppb	0.48	1000.	
65 Cu	368.85	73.77	ppb	0.22	500.	
66 Zn	701.5	140.3	ppb	0.26	500.	
68 Zn	692.5	138.5	ppb	0.06	1000.	
75 As	111.4	22.28	ppb	0.44	1000.	
82 Se	2.887	0.5774	ppb	28.59	500.	
88 Sr	53.75	10.75	ppb	1.40	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.395	2.279	ppb	0.68	1000.	
107 Ag	0.564	0.1128	ppb	5.68	250.	
109 Ag	0.559	0.1118	ppb	4.60	100.	
111 Cd	1.299	0.2598	ppb	19.60	500.	
114 Cd	0.7305	0.1461	ppb	7.60	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	29.535	5.907	ppb	0.72	500.	
120 Sn	29.535	5.907	ppb	1.69	1000.	
121 Sb	1.684	0.3368	ppb	4.06	1000.	
123 Sb	1.5625	0.3125	ppb	5.95	1000.	
135 Ba	147.85	29.57	ppb	2.93	1000.	
137 Ba	149.7	29.94	ppb	0.68	#VALUE!	
182 W	2.866	0.5732	ppb ---		#VALUE!	
203 Tl	0.3637	0.0727	ppb	12.39	1000.	
205 Tl	0.3915	0.0783	ppb	7.64	#VALUE!	
208 Pb	257.7	51.54	ppb	0.47	1000.	
232 Th	38.535	7.707	ppb	2.33	1000.	
238 U	8.665	1.733	ppb	1.60	1000.	

$$\frac{343{,}900\ mg}{1L} \times \frac{0.1L}{1.1g} \times \frac{1}{.964}$$

$$\times \frac{1000\ g}{1Kg} \times \frac{1mg}{1000\ ug}$$

$$= 32{,}431\ mg/Kg$$

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4228297.50	1.10	4226691.00	100.0	69.5 - 130	
45 Sc	2547463.00	1.42	2469310.50	103.2	69.5 - 130	
72 Ge	521543.81	0.74	499739.97	104.4	69.5 - 130	
159 Tb	4546729.50	0.52	4352686.00	104.5	69.5 - 130	
209 Bi	2874521.50	0.74	2807461.50	102.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGK13B.B\006CALB.D\006CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000223

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-003-SS1015-000.8	UNITS	TF2-003-SS-DUP06-101	RPD	D
M	ALUMINUM	9570	MG/KG	8700	9.52	870.00
M	ANTIMONY	0.28	MG/KG	0.24	15.38	0.04
M	ARSENIC	5.2	MG/KG	4.9	5.94	0.30
M	BARIUM	31	MG/KG	26	17.54	5.00
M	BERYLLIUM	0.42	MG/KG	0.36	15.38	0.06
M	CADMIUM	0.16	MG/KG	0.14	13.33	0.02
M	CALCIUM	754	MG/KG	832	9.84	78.00
M	CHROMIUM	12.1	MG/KG	10.6	13.22	1.50
M	COBALT	7.2	MG/KG	6.5	10.22	0.70
M	COPPER	15.2	MG/KG	15.6	2.60	0.40
M	IRON	15700	MG/KG	15000	4.56	700.00
M	LEAD	50.8	MG/KG	49.2	3.20	1.60
M	MAGNESIUM	2140	MG/KG	1980	7.77	160.00
M	MANGANESE	371	MG/KG	343	7.84	28.00
M	MERCURY	0.09 J	MG/KG	0.08	11.76	0.01
M	NICKEL	14.3	MG/KG	13	9.52	1.30
M	POTASSIUM	414	MG/KG	311	28.41	103.00
M	SELENIUM	0.28 J	MG/KG	0.28 J	0.00	0.00
M	SILVER	0.07 J	MG/KG	0.05 J	33.33	0.02
M	SODIUM	27.6 J	MG/KG	ND	200.00	27.60
M	THALLIUM	0.08	MG/KG	0.06 J	28.57	0.02
M	VANADIUM	19.2	MG/KG	17.6	8.70	1.60
M	ZINC	53.6	MG/KG	46.2	14.83	7.40

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-004/5-SS1061-000.6	UNITS	F2-004/5-SS-DUP04-101	RPD	D
M	ALUMINUM	9090 J	MG/KG	12300 J	30.01	3210.00
M	ANTIMONY LOG = 0.084	0.2 J	MG/KG	0.55 J	93.33	0.35
M	ARSENIC	3.8	MG/KG	5.6	38.30	1.80
M	BARIUM	12.8	MG/KG	16.3	24.05	3.50
M	BERYLLIUM	0.3	MG/KG	0.32	6.45	0.02
M	CADMIUM	0.07 J	MG/KG	0.1	35.29	0.03
M	CALCIUM	890 J	MG/KG	680 J	26.75	210.00
M	CHROMIUM	12.2	MG/KG	14.8	19.26	2.60
M	COBALT	7.3	MG/KG	9	20.86	1.70
M	COPPER	13.9	MG/KG	17.3	21.79	3.40
M	IRON	17100 J	MG/KG	22300 J	26.40	5200.00
M	LEAD	20.7 J	MG/KG	30 J	36.69	9.30
M	MAGNESIUM	2740 J	MG/KG	3720 J	30.34	980.00
M	MANGANESE	179 J	MG/KG	253 J	34.26	74.00
M	MERCURY	0.04 J	MG/KG	0.04 J	0.00	0.00
M	NICKEL	13.2	MG/KG	18.2	31.85	5.00
M	POTASSIUM	260	MG/KG	310	17.54	50.00
M	SILVER	0.03 J	MG/KG	0.04 J	28.57	0.01
M	SODIUM	19.1 J	MG/KG	ND	200.00	19.10
M	THALLIUM	0.04 J	MG/KG	0.04 J	0.00	0.00
M	VANADIUM	14.1 J	MG/KG	19.7 J	33.14	5.60
M	ZINC	36.7 J	MG/KG	49.3 J	29.30	12.60

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-004/5-SS1065-000.5	UNITS	F2-004/5-SS-DUP05-101	RPD	D
M	ALUMINUM	13600 J	MG/KG	13500 J	0.74	100.00
M	ANTIMONY	0.19 J	MG/KG	0.15 J	23.53	0.04
M	ARSENIC	6.6	MG/KG	10.5	45.61	3.90
M	BARIUM	18.1	MG/KG	14.6	21.41	3.50
M	BERYLLIUM LOQ = 0.094	0.41	MG/KG	1.3	104.09	0.89
M	CADMIUM	0.07 J	MG/KG	0.07 J	0.00	0.00
M	CALCIUM	561 J	MG/KG	472 J	17.23	89.00
M	CHROMIUM	18.6	MG/KG	18.8	1.07	0.20
M	COBALT	12.7	MG/KG	12.2	4.02	0.50
M	COPPER	25.9	MG/KG	33.7	26.17	7.80
M	IRON	26300 J	MG/KG	32400 J	20.78	6100.00
M	LEAD	22 J	MG/KG	24.3 J	9.94	2.30
M	MAGNESIUM	4300 J	MG/KG	4210 J	2.12	90.00
M	MANGANESE	256 J	MG/KG	267 J	4.21	11.00
M	MERCURY	0.03 J	MG/KG	0.04 J	28.57	0.01
M	NICKEL	22.2	MG/KG	27.7	22.04	5.50
M	POTASSIUM	371	MG/KG	268	32.24	103.00
M	SILVER	0.06 J	MG/KG	0.05 J	18.18	0.01
M	SODIUM	27.1 J	MG/KG	ND	200.00	27.10
M	THALLIUM	0.04 J	MG/KG	0.04 J	0.00	0.00
M	VANADIUM	26.4 J	MG/KG	23.6 J	11.20	2.80
M	ZINC	52.1 J	MG/KG	64.9 J	21.88	12.80

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT TANK FARM 2 CTO WE30
SG8254

Sample Receipt

The following sample was received on October 23, 2013 and was logged in under Katahdin Analytical Services work order number SG8254 for a hardcopy due date of November 11, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG8254-1	TF2-W-TB03-1013
SG8254-2	TF2-004/5-SS1057-0001
SG8254-3	TF2-004/5-SS1056-000.6
SG8254-4	TF2-004/5-SS1055-000.8
SG8254-5	TF2-004/5-SS1054-000.6
SG8254-6	TF2-004/5-SS1053-000.6
SG8254-7	TF2-004/5-SS1052-000.6
SG8254-8	TF2-004/5-SS1051-000.8
SG8254-9	TF2-004/5-SS1050-000.6
SG8254-10	TF2-004/5-SS1062-000.8
SG8254-11	TF2-004/5-SS-DUP04-1013
SG8254-12	TF2-004/5-SS1061-000.6
SG8254-13	TF2-004/5-SS1067-000.7
SG8254-14	TF2-004/5-SS1066-000.9
SG8254-15	TF2-004/5-SS1060-000.5
SG8254-16	TF2-004/5-SS1059-000.6
SG8254-17	TF2-004/5-SS1058-000.5
SG8254-18	TF2-004/5-SS1065-000.5
SG8254-19	TF2-004/5-SS1064-000.6
SG8254-20	TF2-004/5-SS1063-000.6
SG8254-21	TF2-004/5-SS1068-000.5
SG8254-22	TF2-004/5-SS1011-000.8
SG8254-23	TF2-004/5-SS-DUP05-1013
SG8254-24	TF2-003-SS1012-000.7
SG8254-25	TF2-003-SS1013-000.7
SG8254-26	TF2-003-SS1014-0001
SG8254-27	TF2-003-SS1015-000.8
SG8254-28	TF2-003-SS1016-000.9
SG8254-29	TF2-003-SS1017-000.8
SG8254-30	TF2-003-SS1018-000.8
SG8254-31	TF2-003-SS1019-000.5
SG8254-32	TF2-003-SS-DUP06-1013
SG8254-33	TF2-SS-RB03-1013

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Some of the client IDs on the Chain of Custody exceeds the 19-character limit of the Katahdin Analytical Information Management System. Therefore, the first characters "TF2-" in the client ID all samples with the exception of samples SG8254-1 and 33 were omitted on all forms.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin.** This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG8254 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8270D SIM Analysis

Sample SG8254-25DL had a low response for the internal standard perylene-d12 that resulted in a %D which was outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the ICAL midpoint standard. Since the undiluted analysis had acceptable IS responses, the sample was not reanalyzed diluted.

All soil samples were manually integrated for the analytes 2-methylnaphthalene, acenaphthylene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene, and/or indeno(1,2,3-cd)pyrene. The specific reason for the manual integration is indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The target analytes benzo(a)anthracene, chrysene, and/or benzo(k)fluoranthene were detected below ½ the reporting limit in the method blanks WG133188-1RA and WG133367-1RA. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since the method blanks were acceptable, no further action was taken.

The independent check standard (file N0529) associated with the initial calibration on the N instrument on 10/30/2013 had low concentrations for the target analytes pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The independent check standard (file N0546) associated with the initial calibration on the N instrument on 10/31/2013 had a low concentration for the target analytes benzo(a)pyrene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The independent check standard (file N0704) associated with the initial calibration on the N instrument on 11/12/2013 had a high concentration for the target analyte 2-methylnaphthalene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The CV (file N0557) had high responses for the target analyte benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene. The CV (file N0574) had high responses for the target analytes indeno(1,2,3-cd)pyrene and dibenzo(1,h)anthracene. The CV (file N0723) had a low response for the target analyte indeno(1,2,3-cd)pyrene. The CV (file N0740) had a high response for the target analyte indeno(1,2,3-cd)pyrene. These responses resulted in %D's that were greater than the acceptance limit of 20% from DoD QSM.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are statistically derived limits for the full list of spiked compounds and are statistically derived limits for the surrogates. Although DoD QSM acceptance limits were requested for this project, laboratory established acceptance limits were used because the DoD QSM does not list acceptance limits for 8270SIM. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these statistical acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

The LCS WG133188-2 had recoveries for three analytes that were low and outside of the laboratory established acceptance limits. The LCSD WG133188-3 had low recoveries for four analytes. The DoD QSM number of allowable exceedances for 17 analytes is one. If the DoD QSM acceptance limits are applied, the LCS had acceptable recoveries for the spiked analytes, after factoring in the allowable number of exceedances. Therefore, no further action was taken.

The LCSD WG133361-3 had low recoveries for four analytes that were outside of the laboratory established acceptance limits. The DoD QSM number of allowable exceedances for 17 analytes is one. Since the LCS was acceptable, after factoring in the allowable number of exceedances, no further action was taken.

The MS WG133188-4 and MSD WG133188--5 had one and seven spiked target analytes, respectively, with recoveries that were non-calculable and reported as 0% recovery due to the concentration in the native sample being higher than in the MS and MSD. This is likely due to a non-homogeneous sample.

8015M-FLPRO Analysis

All the samples in the work order were manually integrated for the extraction surrogates o-terphenyl and N-Triacontane-d62, and Petroleum Range Organics. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Sample SG8254-3 had a low recovery for the extraction surrogate o-terphenyl that was outside the method acceptance limits. The sample was reextracted seven days outside of hold time. The results of both analyses are reported.

The LCS WG133426-2 had a low recovery for Petroleum Range Organics that was outside of method acceptance limits. Since the associated LCSD had acceptable recoveries, no further action was taken.

Note: The Form VII has a column for %D that is set to 25%. The DoD QSM criterion for a CV is 20%D. All of the compounds in the CV's were evaluated to 20% criteria.

8015B GRO Analysis

Sample SG8254-8 was manually integrated for Gasoline Range Organics. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The calibration verification standard (CV) (file 9GJ4060) had a low response for naphthalene, which resulted in a %D that was greater than 20%. Since the method requirement applies to only the GRO range response, which was acceptable, the associated samples were not reanalyzed.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG8254 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Soil-matrix Katahdin Sample Nos. SG8254 -(2, 3, and 5) were digested for ICP-MS analysis on 11/06/13 (QC Batch GK06IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8254 -5 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentrations of manganese (0.133 mg/Kg), and calcium (7.59 mg/kg) in the preparation blank from this batch are more than one half the laboratory's LOQ. However, because the measured concentrations of calcium and manganese in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

Aqueous-matrix Katahdin Sample No. SG8254 -33 was digested for ICP-MS analysis on 11/06/13 (QC Batch GK06IMW2) in accordance with USEPA Method 3010A.

Soil-matrix Katahdin Sample Nos. SG8254 -(4, 6-23, and 28) were digested for ICP-MS analysis on 11/08/13 (QC Batch GK08IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8254 -28 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentration of calcium (7.04 mg/kg) in the preparation blank from this batch is more than one half the laboratory's LOQ. However, because the measured concentrations of

calcium in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

Soil-matrix Katahdin Sample Nos. SG8254 -(24-27 and 29-32) were digested for ICP-MS analysis on 11/08/13 (QC Batch GK08IMS2) in accordance with USEPA Method 3050B. The measured concentration of iron (6.65 mg/kg) in the preparation blank from this batch is more than one half the laboratory's LOQ. However, because the measured concentrations of calcium in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

ICP-MS analyses of Work Order SG8254 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	**Associated Analytes**
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Solid-matrix Katahdin Sample Numbers SG8254 -(2-9) were digested for mercury analysis on 11/07/13 (QC Batch GK07HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Number SG8254 -5 was prepared in duplicate and with a matrix spike in this digestion batch.

Solid-matrix Katahdin Sample Numbers SG8254 -(10-29) were digested for mercury analysis on 11/08/13 (QC Batch GK08HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Number SG8254 -28 was prepared in duplicate and with a matrix spike in this digestion batch.

Aqueous-matrix Katahdin Sample Number SG8254 -33 was digested for mercury analysis on 11/09/13 (QC Batch GK09HGW1) in accordance with USEPA Method 7471B.

Solid-matrix Katahdin Sample Numbers SG8254 -(30-32) were digested for mercury analysis on 11/12/13 (QC Batch GK12HGS1) in accordance with USEPA Method 7471B. Duplicate laboratory control samples were prepared in this batch.

Mercury analysis of the Katahdin Work Order SG8254 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG8254 -5 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for arsenic, copper, and lead.

The laboratory duplicate analysis of Katahdin Sample No. SG8254 -28 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for antimony, manganese, and mercury.

The measured recoveries of antimony and calcium in the matrix-spiked aliquot of Katahdin Sample No. SG8254 -5 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The measured recoveries of antimony, calcium, and mercury in the matrix-spiked aliquot of Katahdin Sample No. SG8254 -28 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The serial dilution analysis of Katahdin Sample Number SG8254 -5 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for aluminum, iron, magnesium, manganese, and zinc.

The serial dilution analysis of Katahdin Sample Number SG8254 -28 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for aluminum, iron, lead, magnesium, vanadium, and zinc.

The measured recoveries of aluminum, barium, iron, magnesium, and manganese in the post-digestion spiked aliquot of Katahdin Sample Number SG8254 -5 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

The measured recoveries of barium, cobalt, copper, iron, manganese, nickel, and zinc in the post-digestion spiked aliquot of Katahdin Sample Number SG8254 -35 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the laboratory's limits of quantitation (LOQ) are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQ's, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG8254 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
11.22.13

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

000040

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GW	Delivered By: KAS
KAS Work Order#: SG8254	KIMS Review By: JO	Received By: GW
SDG #:	Cooler: 1 of 3	Date/Time Rec.: 10-23-13/15.00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.7
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?				✓	
Soil/Sediment: Received in airtight container?	✓				
Received in methanol?	✓				
Methanol covering soil?	✓				
D.I. Water - Received within 48 hour HT?	✓				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

DUP05 & DUP06 - EXTPH and GRO not needed per client. JO 10/24/13

0000011

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client	
Project:	KIMS Entry By: GN	Delivered By: KAS	
KAS Work Order#: SG8254	KIMS Review By:	Received By: GN	
SDG #:	Cooler: 2 of 3	Date/Time Rec.: 10-23-13/15.70	

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.6
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?				✓	
Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

0000012

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SG8254/SG8262	KIMS Review By: JO	Received By: GN
SDG #:	Cooler: 3 of 3	Date/Time Rec.: 10-23-13/15:00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 5.4
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

0000013

Jennifer Obrin

From: Seiken, Dabra [Dabra.Seiken@tetratech.com]
Sent: Friday, November 08, 2013 10:02 AM
To: Jennifer Obrin; Jalkut, Kayleen
Cc: Carper, Kelly; Samchuck, Joseph
Subject: RE: Newport non-conformance

Please re-prepare and re-analyze the samples.

Dabra I. Seiken, CG, PG

From: Jennifer Obrin [mailto:jobrin@katahdinlab.com]
Sent: Thursday, November 07, 2013 4:04 PM
To: Seiken, Dabra; Jalkut, Kayleen
Subject: Newport non-conformance

The GC lab has come to me with a non-conformance regarding the FI-PRO analysis for 4 samples from the Newport project.

SG8254-3 (TF2-004/5-SS1056-000.6) had low surrogate OTP recovery at 60%, the window is 62-109
SG8184-17 (TF2-004/5-SS1039-000.9) had low surrogate OTP recovery at 49%, the window is 62-109
SG8184-18 (TF2-SS-RB01-1013) had low surrogate OTP recovery at 80%, the window is 82-142
SG8184-27 (TF2-004/5-SS1049-000.9) had low surrogate OTP recovery at 15%, the window is 62-109

Please let me know how you would like to have the lab proceed. Hold times were 11/1 and 11/4.

Thank you,

Jennifer Obrin
Federal Programs Project Manager
Katahdin Analytical Services
A Woman-Owned Small Business Enterprise
DoD ELAP Accredited
600 Technology Way
Scarborough, Maine 04074
Direct - 207.874.2400 x17
Cell - 207.333.7469
Fax - 207.775.4029

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26581 | PAGE 1 OF 3

PROJECT NO: 112G03019 CTO WE30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445
SAMPLERS (SIGNATURE): KJalkut, Peter Sevard		FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781 801 0457
CARRIER/WAYBILL NUMBER: Courier plu - hand delivery			
LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J. Obrin			
ADDRESS: 600 Technology Way			
CITY, STATE: Scarborough, ME			

STANDARD TAT ☒
RUSH TAT ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

SG-8254

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
									G	G	G	G					
									PRESERVATIVE USED		MeOH ≤6°C	MeOH ≤6°C					
									TYPE OF ANALYSIS: 40ml vials w/MeOH only - GRO	8oz jar - PAHs, metals, total solids	40ml vials w/soil+MeOH (lab) GRO	4oz jar - Ex TPH + Total solids					
10/21	0900	TF2-W-TB03-1013	—	—	—	QC	G	2	2	—	—	—					
10/21	1345	TF2-004/5-SS1057-0001	SS1057	0	1	SO	G	1	—	1	—	—					
10/21	1355	TF2-004/5-SS1056-000.6	SS1056	0	0.6	SO	G	4	—	1	2	1					
10/21	1400	TF2-004/5-SS1055-000.8	SS1055	0	0.8	SO	G	1	—	1	—	—					
10/21	1405	TF2-004/5-SS1054-000.6	SS1054	0	0.6	SO	G	2	—	2	—	—					Lab QC volume #2
10/21	1415	TF2-004/5-SS1053-000.6	SS1053	0	0.6	SO	G	1	—	1	—	—					
10/21	1425	TF2-004/5-SS1052-000.6	SS1052	0	0.6	SO	G	1	—	1	—	—					
10/21	1430	TF2-004/5-SS1051-000.8	SS1051	0	0.8	SO	G	4	—	1	2	1					
10/21	1440	TF2-004/5-SS1050-000.6	SS1050	0	0.6	SO	G	1	—	1	—	—					
10/21	1450	TF2-004/5-SS1062-000.8	SS1062	0	0.8	SO	G	1	—	1	—	—					
10/21	0000	TF2-004/5-SS-DUP04-1013	—	—	—	SO	G	1	—	1	—	—					
10/21	1455	TF2-004/5-SS1061-000.6	SS1061	0	0.6	SO	G	1	—	1	—	—					
10/21	1505	TF2-004/5-SS1067-000.7	SS1067	0	0.7	SO	G	1	—	1	—	—					

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: KJalkut	10/23/13	1335	1. RECEIVED BY: Andrew Hale	10/23/13	1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TINUS-001

S100000

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26582 | PAGE 2 OF 3

PROJECT NO: 112G03019 CTO WE30	FACILITY: Wilmington, MA	PROJECT MANAGER Debra Seiken	PHONE NUMBER 978 474 8445
SAMPLERS (SIGNATURE) K Jalkut, Peter Seward		FIELD OPERATIONS LEADER Kayleen Jalkut	PHONE NUMBER 781 801 0457
		CARRIER/WAYBILL NUMBER Courier plu - hand delivery	
LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J Obrin			
ADDRESS 600 Technology Way			
CITY, STATE Scarborough, ME			

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

SG8254

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)				PRESERVATIVE USED				TYPE OF ANALYSIS				COMMENTS
									G	G	G		≤6°C	≤6°C	MeOH, ≤6°C		8oz jar - PAHs, total solids, Metals	4oz jar - EXTPH, total solids	40 ml vials w/ MeOH, soil - ERO		
10/21	1515	TF2-004/5-SS1066-000.9	SS1066	0	0.9	SO	G	1	1	—	—										
10/22	0815	TF2-004/5-SS1060-000.5	SS1060	0	0.5	SO	G	1	1	—	—										
10/22	0825	TF2-004/5-SS1059-000.6	SS1059	0	0.6	SO	G	1	1	—	—										
10/22	0835	TF2-004/5-SS1058-000.5	SS1058	0	0.5	SO	G	1	1	—	—										
10/22	0845	TF2-004/5-SS1065-000.5	SS1065	0	0.5	SO	G	4	1	1	2										
10/22	0855	TF2-004/5-SS1064-000.6	SS1064	0	0.6	SO	G	2	2	—	—										Lab QC. volume #3
10/22	0905	TF2-004/5-SS1063-000.6	SS1063	0	0.6	SO	G	1	1	—	—										
10/22	0915	TF2-004/5-SS1068-000.5	SS1068	0	0.5	SO	G	1	1	—	—										
10/22	0940	TF2-003-SS1011-000.8	SS1011	0	0.8	SO	G	1	1	—	—										
10/22	0000	TF2-004/5-SS-DUP05-1013	—	—	—	SO	G	4	1	1	2										
10/22	0950	TF2-003-SS1012-000.7	SS1012	0	0.7	SO	G	1	1	—	—										
10/22	0955	TF2-003-SS1013-000.7	SS1013	0	0.7	SO	G	1	1	—	—										
10/22	1005	TF2-003-SS1014-0001	SS1014	0	1	SO	G	1	1	—	—										

YS 10/23/13

1. RELINQUISHED BY K Jalkut	DATE 10/23/13	TIME 1335	1. RECEIVED BY	DATE 10/23/13	TIME 1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME
COMMENTS					

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

9000016

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER No. 027646 | PAGE 3 OF 3

PROJECT NO: 112603019 CTO WE 30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445
SAMPLERS (SIGNATURE): Kjalkut, Peter Seward		FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781-801-0457
		CARRIER/WAYBILL NUMBER: Courier plus - hand delivery	
LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J Obrin			
ADDRESS: 600 Technology Way			
CITY, STATE: Scarborough, ME			

STANDARD TAT [X]
RUSH TAT [ ] 24 hr. [ ] 48 hr. [ ] 72 hr. [ ] 7 day [ ] 14 day

SG82254

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	G	G	G	G	P				
									PRESERVATIVE USED	≤6°C	≤6°C	MeOH ≤6°C	≤6°C	HNO3 ≤6°C				
									TYPE OF ANALYSIS	8021 jar - PAHs, total solids, metals	4oz jar - EXTPH, total solids	40 ml vials w/ soil + MeOH (lead) GRO	1 L amber - PAHs	250 ml HDPE w/ HNO3 - metals				COMMENTS
10/22	1015	TF2-003-SS1015-000.8	SS1015	0	0.8	SO	G	4		1	1	2	—	—				
* 10/22	1025	TF2-003-SS1016-000.9	SS1016	0	0.9	SO	G	1		1	—	—	—	—				Lab QC vol. #4?
10/22	1055	TF2-003-SS1017-000.8	SS1017	0	0.8	SO	G	1		1	—	—	—	—				
10/22	1105	TF2-003-SS1018-000.8	SS1018	0	0.8	SO	G	1		1	—	—	—	—				
10/22	1115	TF2-003-SS1019-000.5	SS1019	0	0.5	SO	G	1		1	—	—	—	—				
10/22	0000	TF2-003-SS-DUP06-1013	—	—	—	SO	G	4		1	1	2	—	—				
10/22	1200	TF2-SS-RB03-1013	—	—	—	QC	G	3		—	—	—	2	1				

KJ 10/23/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: K Jalkut	10/23/13	1335	1. RECEIVED BY: Cindy Hall	10/23/13	1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: * Please try to perform lab QC analysis on TF2-003-SS1016-000.9 (forgot to collect 2x8oz jars) for PAH, metals analyses

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

610000

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS
(Refer to BOD Qualifiers Page for BOD footnotes)

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1	pH
H2	DO
H3	sulfite
H4	residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/30/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
MERCURY	0.20	0.03	CV

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 6/11/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
ALUMINUM	60	0.34	MS
ANTIMONY	0.20	0.006	MS
ARSENIC	1.0	0.41	MS
BARIUM	0.40	0.02	MS
BERYLLIUM	0.20	0.003	MS
CADMIUM	0.20	0.004	MS
CALCIUM	20	4.10	MS
CHROMIUM	1.0	0.03	MS
COBALT	0.20	0.006	MS
COPPER	0.60	0.03	MS
IRON	20	4.70	MS
LEAD	0.20	0.009	MS
MAGNESIUM	20	0.69	MS
MANGANESE	0.40	0.02	MS
MOLYBDENUM	1.0	0.12	MS
NICKEL	0.40	0.02	MS
POTASSIUM	200	8.20	MS
SELENIUM	1.0	0.64	MS
SILVER	0.20	0.004	MS
SODIUM	200	3.90	MS
THALLIUM	0.20	0.003	MS
VANADIUM	1.0	0.15	MS
ZINC	2.0	0.13	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/7/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.02	mg/Kg	CV	SW846 7471B / SW846 7471B

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.10	ug/L	CV	SW846 7470A / SW846 7470A

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	8.00	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.80	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.20	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	16.00	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.06	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.40	ug/L	MS	SW846 3010A / SW846 6020A
IRON	12.00	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.10	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	16.00	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.20	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.24	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	80.00	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.60	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.08	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	80.00	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.08	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	1.60	ug/L	MS	SW846 3010A / SW846 6020A

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.80	mg/Kg	MS	SW846 3050B / SW846 6020A
ANTIMONY	0.01	mg/Kg	MS	SW846 3050B / SW846 6020A
ARSENIC	0.08	mg/Kg	MS	SW846 3050B / SW846 6020A
BARIUM	0.02	mg/Kg	MS	SW846 3050B / SW846 6020A
BERYLLIUM	0.004	mg/Kg	MS	SW846 3050B / SW846 6020A
CADMIUM	0.004	mg/Kg	MS	SW846 3050B / SW846 6020A
CALCIUM	1.60	mg/Kg	MS	SW846 3050B / SW846 6020A
CHROMIUM	0.08	mg/Kg	MS	SW846 3050B / SW846 6020A
COBALT	0.006	mg/Kg	MS	SW846 3050B / SW846 6020A
COPPER	0.04	mg/Kg	MS	SW846 3050B / SW846 6020A
IRON	1.20	mg/Kg	MS	SW846 3050B / SW846 6020A
LEAD	0.01	mg/Kg	MS	SW846 3050B / SW846 6020A
MAGNESIUM	1.60	mg/Kg	MS	SW846 3050B / SW846 6020A
MANGANESE	0.02	mg/Kg	MS	SW846 3050B / SW846 6020A
NICKEL	0.02	mg/Kg	MS	SW846 3050B / SW846 6020A
POTASSIUM	8.00	mg/Kg	MS	SW846 3050B / SW846 6020A
SELENIUM	0.06	mg/Kg	MS	SW846 3050B / SW846 6020A
SILVER	0.008	mg/Kg	MS	SW846 3050B / SW846 6020A
SODIUM	8.00	mg/Kg	MS	SW846 3050B / SW846 6020A
THALLIUM	0.008	mg/Kg	MS	SW846 3050B / SW846 6020A
VANADIUM	0.08	mg/Kg	MS	SW846 3050B / SW846 6020A
ZINC	0.16	mg/Kg	MS	SW846 3050B / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/7/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.005	mg/Kg	CV	SW846 7471B / SW846 7471B

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.01	ug/L	CV	SW846 7470A / SW846 7470A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.88	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.01	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.45	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.05	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.007	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.006	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	4.09	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.01	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.04	ug/L	MS	SW846 3010A / SW846 6020A
IRON	2.55	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.01	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	1.56	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.07	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.03	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	6.14	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.01	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	3.70	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.01	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	0.78	ug/L	MS	SW846 3010A / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.10	mg/Kg	MS	SW846 3050B / SW846 6020A
ANTIMONY	0.004	mg/Kg	MS	SW846 3050B / SW846 6020A
ARSENIC	0.03	mg/Kg	MS	SW846 3050B / SW846 6020A
BARIUM	0.007	mg/Kg	MS	SW846 3050B / SW846 6020A
BERYLLIUM	0.0008	mg/Kg	MS	SW846 3050B / SW846 6020A
CADMIUM	0.002	mg/Kg	MS	SW846 3050B / SW846 6020A
CALCIUM	0.77	mg/Kg	MS	SW846 3050B / SW846 6020A
CHROMIUM	0.010	mg/Kg	MS	SW846 3050B / SW846 6020A
COBALT	0.001	mg/Kg	MS	SW846 3050B / SW846 6020A
COPPER	0.01	mg/Kg	MS	SW846 3050B / SW846 6020A
IRON	0.48	mg/Kg	MS	SW846 3050B / SW846 6020A
LEAD	0.001	mg/Kg	MS	SW846 3050B / SW846 6020A
MAGNESIUM	0.27	mg/Kg	MS	SW846 3050B / SW846 6020A
MANGANESE	0.008	mg/Kg	MS	SW846 3050B / SW846 6020A
NICKEL	0.005	mg/Kg	MS	SW846 3050B / SW846 6020A
POTASSIUM	0.91	mg/Kg	MS	SW846 3050B / SW846 6020A
SELENIUM	0.008	mg/Kg	MS	SW846 3050B / SW846 6020A
SILVER	0.001	mg/Kg	MS	SW846 3050B / SW846 6020A
SODIUM	0.51	mg/Kg	MS	SW846 3050B / SW846 6020A
THALLIUM	0.002	mg/Kg	MS	SW846 3050B / SW846 6020A
VANADIUM	0.02	mg/Kg	MS	SW846 3050B / SW846 6020A
ZINC	0.03	mg/Kg	MS	SW846 3050B / SW846 6020A

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 6/7/2013

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	0.01	200000	MS
ANTIMONY	0.10	1000	MS
ARSENIC	0.30	1000	MS
BARIUM	0.10	1000	MS
BERYLLIUM	0.30	100	MS
CADMIUM	0.10	500	MS
CALCIUM	0.03	200000	MS
CHROMIUM	0.10	1000	MS
COBALT	0.10	1000	MS
COPPER	0.10	500	MS
IRON	0.03	100000	MS
LEAD	0.10	1000	MS
MAGNESIUM	0.05	200000	MS
MANGANESE	0.10	1000	MS
MOLYBDENUM	0.10	1000	MS
NICKEL	0.10	500	MS
POTASSIUM	0.01	200000	MS
SELENIUM	0.30	500	MS
SILVER	0.10	250	MS
SODIUM	0.01	200000	MS
THALLIUM	0.10	1000	MS
VANADIUM	0.10	1000	MS
ZINC	0.10	500	MS

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK06IMS1

Matrix: SOIL **SDG Name:** SG8254

Method: MS **Prep Date:** 11/06/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK06IMS1	LCSOGK06IMS1	1	0.1	
PBSGK06IMS1	PBSGK06IMS1	1	0.1	
004/5-SS1057-0001	SG8254-002	1.04	0.1	A
004/5-SS1056-000.6	SG8254-003	1.24	0.1	B
004/5-SS1054-000.6	SG8254-005	1.09	0.1	B
004/5-SS1054-000.6D	SG8254-005D	1.03	0.1	B
004/5-SS1054-000.6S	SG8254-005S	1.02	0.1	B

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK06IMS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK06IMS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C	
ALUMINUM	1.615	J	NA
ANTIMONY	0.050	U	
ARSENIC	0.40	U	
BARIUM	0.085	J	NA
BERYLLIUM	0.020	U	
CADMIUM	0.020	U	
CALCIUM	7.590	J	NA
CHROMIUM	0.094	J	NA
COBALT	0.030	U	
COPPER	0.20	U	
IRON	6.0	U	
LEAD	0.011	J	
MAGNESIUM	1.971	J	NA
MANGANESE	0.133	J	NA
NICKEL	0.032	J	NA
POTASSIUM	8.900	J	
SELENIUM	0.30	U	
SILVER	0.040	U	
SODIUM	8.195 ✓	J	
THALLIUM	0.040	U	
VANADIUM	0.191	J	NA
ZINC	0.143	J	NA

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK06IMS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK06IMS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	210.85	105.4	80	120
ANTIMONY	10.00	10.01	100.1	80	120
ARSENIC	10.00	11.32	113.2	80	120
BARIUM	200.00	202.40	101.2	80	120
BERYLLIUM	5.00	5.03	100.6	80	120
CADMIUM	25.00	26.65	106.6	80	120
CALCIUM	250.00	228.90	91.6	80	120
CHROMIUM	20.00	20.25	101.3	80	120
COBALT	50.00	52.75	105.5	80	120
COPPER	25.00	25.65	102.6	80	120
IRON	100.00	105.45	105.5	80	120
LEAD	10.00	11.19	111.9	80	120
MAGNESIUM	500.00	527.00	105.4	80	120
MANGANESE	50.00	53.05	106.1	80	120
NICKEL	50.00	51.45	102.9	80	120
POTASSIUM	1000.00	1011.50	101.2	80	120
SELENIUM	10.00	9.57	95.7	80	120
SILVER	5.00	5.08	101.6	80	120
SODIUM	750.00	746.00	99.5	80	120
THALLIUM	10.00	10.20	102.0	80	120
VANADIUM	50.00	56.45	112.9	80	120
ZINC	50.00	50.10	100.2	80	120

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1054-000.6S

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.9 **Lab Sample ID:** SG8254-005S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	14101.5592		12528.5831		202.32	777.5		80	120	MS
ANTIMONY, TOTAL	4.3129		0.1105		10.12	41.5	N	80	120	MS
ARSENIC, TOTAL	16.4737		6.9009		10.12	94.6		80	120	MS
BARIUM, TOTAL	219.2620		15.7566		202.32	100.6		80	120	MS
BERYLLIUM, TOTAL	5.5030		0.3907		5.06	101.0		80	120	MS
CADMIUM, TOTAL	23.0339		0.0793	J	25.29	90.8		80	120	MS
CALCIUM, TOTAL	1113.2544		717.5418		252.9	156.5	N	80	120	MS
CHROMIUM, TOTAL	37.8436		17.1481		20.23	102.3		80	120	MS
COBALT, TOTAL	61.5552		11.9417		50.58	98.1		80	120	MS
COPPER, TOTAL	42.5222		19.7608		25.29	90.0		80	120	MS
IRON, TOTAL	23524.5164		23126.0510		101.16	393.9		80	120	MS
LEAD, TOTAL	26.5441		18.0237		10.12	84.2		80	120	MS
MAGNESIUM, TOTAL	4159.1507		3639.7735		505.79	102.7		80	120	MS
MANGANESE, TOTAL	302.2630		297.5243		50.58	9.4		80	120	MS
MERCURY, TOTAL	0.1918		0.0384		0.16	95.9		80	120	CV
NICKEL, TOTAL	68.8893		20.2672		50.58	96.1		80	120	MS
POTASSIUM, TOTAL	1378.7966		363.0780		1011.59	100.4		80	120	MS
SELENIUM, TOTAL	9.2712		0.3919	J	10.12	87.7		80	120	MS
SILVER, TOTAL	4.7732		0.0328	J	5.06	93.7		80	120	MS
SODIUM, TOTAL	689.3983		31.3286	J	758.69	86.7		80	120	MS
THALLIUM, TOTAL	10.3486		0.0512	J	10.12	101.8		80	120	MS
VANADIUM, TOTAL	70.5584		19.8413		50.58	100.3		80	120	MS
ZINC, TOTAL	98.1242		49.3192		50.58	96.5		80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1054-000.6S

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.9 **Lab Sample ID:** SG8254-005A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	26840.0000		26470.0000		600	61.7		75	125	MS
ANTIMONY, TOTAL	2.3160		0.2334		2	104.1		75	125	MS
ARSENIC, TOTAL	25.4900		14.5800		10	109.1		75	125	MS
BARIUM, TOTAL	38.4600		33.2900		4	129.3		75	125	MS
BERYLLIUM, TOTAL	2.9620		0.8255		2	106.8		75	125	MS
CADMIUM, TOTAL	2.4130		0.1675	J	2	112.3		75	125	MS
CALCIUM, TOTAL	1706.0000		1516.0000		200	95.0		75	125	MS
CHROMIUM, TOTAL	45.8700		36.2300		10	96.4		75	125	MS
COBALT, TOTAL	27.0800		25.2300		2	92.5		75	125	MS
COPPER, TOTAL	47.6000		41.7500		6	97.5		75	125	MS
IRON, TOTAL	48990.0000		48860.0000		200	65.0		75	125	MS
LEAD, TOTAL	40.1400		38.0800		2	103.0		75	125	MS
MAGNESIUM, TOTAL	7785.0000		7690.0000		200	47.5		75	125	MS
MANGANESE, TOTAL	630.6000		628.6000		4	50.0		75	125	MS
MERCURY, TOTAL	1.3370		0.2420		1	109.5		75	125	CV
NICKEL, TOTAL	46.6100		42.8200		4	94.7		75	125	MS
POTASSIUM, TOTAL	2845.0000		767.1000		2000	103.9		75	125	MS
SELENIUM, TOTAL	9.9730		0.8280	J	10	91.5		75	125	MS
SILVER, TOTAL	2.0800		0.0693	J	2	100.5		75	125	MS
SODIUM, TOTAL	2116.0000		66.1900	J	2000	102.5		75	125	MS
THALLIUM, TOTAL	2.2490		0.1081	J	2	107.0		75	125	MS
VANADIUM, TOTAL	52.8400		41.9200		10	109.2		75	125	MS
ZINC, TOTAL	121.1000		104.2000		20	84.5		75	125	MS

Comments:

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1054-000.6D

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.9 **Lab Sample ID:** SG8254-005D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M	
ALUMINUM, TOTAL		12528.5831		14109.9074		11.9		MS	
ANTIMONY, TOTAL	0.1	0.1105		0.1234		11.0		MS	
ARSENIC, TOTAL		6.9009		11.2999		48.3	*	MS	
BARIUM, TOTAL		15.7566		15.6777		0.5		MS	
BERYLLIUM, TOTAL	0.1	0.3907		0.4661		17.6		MS	
CADMIUM, TOTAL		0.0793	J	0.0795	J	0.3		MS	
CALCIUM, TOTAL		717.5418		733.2944		2.2		MS	
CHROMIUM, TOTAL		17.1481		20.2758		16.7		MS	
COBALT, TOTAL		11.9417		11.9511		0.1		MS	
COPPER, TOTAL		19.7608		26.7172		29.9	* OK	MS	
IRON, TOTAL		23126.0510		26642.0295		14.1		MS	
LEAD, TOTAL		18.0237		25.6553		34.9	* OK	MS	
MAGNESIUM, TOTAL		3639.7735		4241.9881		15.3		MS	
MANGANESE, TOTAL		297.5243		308.5947		3.7		MS	
MERCURY, TOTAL	0.033	0.0384		0.0341		11.9		CV	
NICKEL, TOTAL		20.2672		23.5816		15.1		MS	
POTASSIUM, TOTAL	100	363.0780		346.4115		4.7		MS	
SELENIUM, TOTAL	0.5	0.3919	J	0.5415		32.1	-	MS	Diff ✓
SILVER, TOTAL		0.0328	J	0.0347	J	5.6		MS	
SODIUM, TOTAL		31.3286	J	31.3854	J	0.2		MS	
THALLIUM, TOTAL		0.0512	J	0.0448	J	13.3		MS	
VANADIUM, TOTAL		19.8413		20.7817		4.6		MS	
ZINC, TOTAL		49.3192		55.4479		11.7		MS	

Comments:

RPD > 35%

FORM VI - IN

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1054-000.6L

Matrix: SOIL **SDG Name:** SG8254

Lab Sample ID: SG8254-005L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	26470.00		29735.00		12.3	E	MS
ANTIMONY, TOTAL	0.23		0.27	J	17.4		MS
ARSENIC, TOTAL	14.58		17.29		18.6		MS
BARIUM, TOTAL	33.29		35.07		5.3		MS
BERYLLIUM, TOTAL	0.83		0.91	J	9.6		MS
CADMIUM, TOTAL	0.17	J	0.20	J	17.6		MS
CALCIUM, TOTAL	1516.00		1581.00		4.3		MS
CHROMIUM, TOTAL	36.23		37.37		3.1		MS
COBALT, TOTAL	25.23		25.82		2.3		MS
COPPER, TOTAL	41.75		43.79		4.9		MS
IRON, TOTAL	48860.00		57600.00		17.9	E	MS
LEAD, TOTAL	38.08		41.87		10.0		MS
MAGNESIUM, TOTAL	7690.00		9020.00		17.3	E	MS
MANGANESE, TOTAL	628.60		743.50		18.3	E	MS
MERCURY, TOTAL	0.24		-0.01	U	100.0		CV
NICKEL, TOTAL	42.82		44.81		4.6		MS
POTASSIUM, TOTAL	767.10		940.00	J	22.5		MS
SELENIUM, TOTAL	0.83	J	1.59	J	91.6		MS
SILVER, TOTAL	0.07	J	0.08	J	14.3		MS
SODIUM, TOTAL	66.19	J	66.05	J	0.2		MS
THALLIUM, TOTAL	0.11	J	0.11	J	0.0		MS
VANADIUM, TOTAL	41.92		45.11		7.6		MS
ZINC, TOTAL	104.20		115.50		10.8	E	MS

use
LOQ - 50X

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK06IMW2

Matrix: WATER **SDG Name:** SG8254

Method: MS **Prep Date:** 11/06/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWGK06IMW2	LCSWGK06IMW2	0.05	0.05	
PBWGK06IMW2	PBWGK06IMW2	0.05	0.05	
TF2-SS-RB03-1013	SG8254-033	0.05	0.05	C

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGK06IMW2

Matrix: WATER **SDG Name:** SG8254

QC Batch ID: GK06IMW2

Concentration Units : ug/L

Analyte	RESULT	C
ALUMINUM	11.850	J
ANTIMONY	0.060	J
ARSENIC	4.0	U
BARIUM	0.500	J
BERYLLIUM	0.20	U
CADMIUM	0.074	J
CALCIUM	80	U
CHROMIUM	0.316	J
COBALT	0.30	U
COPPER	0.355	J
IRON	60	U
LEAD	0.102	J
MAGNESIUM	8.635	J
MANGANESE	1.0	U
NICKEL	1.2	U
POTASSIUM	36.035	J
SELENIUM	0.439	J
SILVER	0.40	U
SODIUM	400	U
THALLIUM	0.40	U
VANADIUM	4.0	U
ZINC	8.0	U

NA - RB

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGK06IMW2

Matrix: WATER **SDG Name:** SG8254

QC Batch ID: GK06IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000.00	1898.00	94.9	80	120
ANTIMONY	100.00	102.75	102.8	80	120
ARSENIC	100.00	99.85	99.8	80	120
BARIUM	2000.00	2059.50	103.0	80	120
BERYLLIUM	50.00	52.55	105.1	80	120
CADMIUM	250.00	240.30	96.1	80	120
CALCIUM	2500.00	2293.00	91.7	80	120
CHROMIUM	200.00	204.30	102.2	80	120
COBALT	500.00	539.00	107.8	80	120
COPPER	250.00	262.15	104.9	80	120
IRON	1000.00	936.50	93.7	80	120
LEAD	100.00	100.75	100.8	80	120
MAGNESIUM	5000.00	4718.50	94.4	80	120
MANGANESE	500.00	475.95	95.2	80	120
NICKEL	500.00	522.00	104.4	80	120
POTASSIUM	10000.00	9185.00	91.8	80	120
SELENIUM	100.00	97.55	97.5	80	120
SILVER	50.00	52.05	104.1	80	120
SODIUM	7500.00	6735.00	89.8	80	120
THALLIUM	100.00	103.60	103.6	80	120
VANADIUM	500.00	494.85	99.0	80	120
ZINC	500.00	516.00	103.2	80	120

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK08IMS1

Matrix: SOIL **SDG Name:** SG8254

Method: MS **Prep Date:** 11/08/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK08IMS1	LCSOGK08IMS1	1	0.1	
PBSGK08IMS1	PBSGK08IMS1	1	0.1	
004/5-SS1055-000.8	SG8254-004	1.4	0.1	A
004/5-SS1053-000.6	SG8254-006	1.21	0.1	A
004/5-SS1052-000.6	SG8254-007	1.12	0.1	A
004/5-SS1051-000.8	SG8254-008	1.41	0.1	A
004/5-SS1050-000.6	SG8254-009	1.21	0.1	A
004/5-SS1062-000.8	SG8254-010	1.18	0.1	A
004/5-SS-DUP04-1013	SG8254-011	1.24	0.1	A
004/5-SS1061-000.6	SG8254-012	1.19	0.1	A
004/5-SS1067-000.7	SG8254-013	1.13	0.1	A
004/5-SS1066-000.9	SG8254-014	1.52	0.1	A
004/5-SS1060-000.5	SG8254-015	1.43	0.1	A
004/5-SS1059-000.6	SG8254-016	1.11	0.1	A
004/5-SS1058-000.5	SG8254-017	1.19	0.1	A
004/5-SS1065-000.5	SG8254-018	1.15	0.1	A
004/5-SS1064-000.6	SG8254-019	1.12	0.1	A
004/5-SS1063-000.6	SG8254-020	1.2	0.1	A
004/5-SS1068-000.5	SG8254-021	1.9	0.1	A
003-SS1011-000.8	SG8254-022	1.22	0.1	A
004/5-SS-DUP05-1013	SG8254-023	1.1	0.1	A
003-SS1016-000.9	SG8254-028	1.44	0.1	A
003-SS1016-000.9D	SG8254-028D	1.41	0.1	A
003-SS1016-000.9S	SG8254-028S	1.45	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK08IMS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK08IMS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	1.347	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.092	J
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	7.040	J
CHROMIUM	0.103	J
COBALT	0.030	U
COPPER	0.20	U
IRON	2.832	J
LEAD	0.007	J
MAGNESIUM	8.0	U
MANGANESE	0.045	J
NICKEL	0.040	J
POTASSIUM	5.815	J
SELENIUM	0.099	J
SILVER	0.040	U
SODIUM	40	U
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.272	J

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK08IMS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK08IMS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	188.65	94.3	80	120
ANTIMONY	10.00	9.93	99.3	80	120
ARSENIC	10.00	9.98	99.8	80	120
BARIUM	200.00	201.30	100.6	80	120
BERYLLIUM	5.00	5.17	103.4	80	120
CADMIUM	25.00	23.85	95.4	80	120
CALCIUM	250.00	224.55	89.8	80	120
CHROMIUM	20.00	20.19	101.0	80	120
COBALT	50.00	52.80	105.6	80	120
COPPER	25.00	25.56	102.2	80	120
IRON	100.00	93.80	93.8	80	120
LEAD	10.00	10.01	100.1	80	120
MAGNESIUM	500.00	466.90	93.4	80	120
MANGANESE	50.00	46.85	93.7	80	120
NICKEL	50.00	51.00	102.0	80	120
POTASSIUM	1000.00	912.50	91.3	80	120
SELENIUM	10.00	9.22	92.2	80	120
SILVER	5.00	5.07	101.4	80	120
SODIUM	750.00	669.50	89.3	80	120
THALLIUM	10.00	10.26	102.6	80	120
VANADIUM	50.00	49.83	99.7	80	120
ZINC	50.00	49.71	99.4	80	120

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services | **Client Field ID:** 003-SS1016-000.9S

Matrix: SOIL | **SDG Name:** SG8254

Percent Solids: 90.9 | **Lab Sample ID:** SG8254-028S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	11064.7171		9361.0461		151.78	1122.5		80	120	MS
ANTIMONY, TOTAL	3.7087		0.5261		7.59	41.9	N	80	120	MS
ARSENIC, TOTAL	12.8178		5.9796		7.59	90.1		80	120	MS
BARIUM, TOTAL	203.7259		41.5325		151.78	106.9		80	120	MS
BERYLLIUM, TOTAL	4.1398		0.5070		3.79	95.9		80	120	MS
CADMIUM, TOTAL	17.6026		0.2795		18.97	91.3		80	120	MS
CALCIUM, TOTAL	1019.1986		718.6991		189.72	158.4	N	80	120	MS
CHROMIUM, TOTAL	29.0316		12.3184		15.18	110.1		80	120	MS
COBALT, TOTAL	42.6121		7.7181		37.94	92.0		80	120	MS
COPPER, TOTAL	36.6775		16.7123		18.97	105.2		80	120	MS
IRON, TOTAL	15432.1688		15806.7950		75.89	-493.6		80	120	MS
LEAD, TOTAL	101.8819		101.1375		7.59	9.8		80	120	MS
MAGNESIUM, TOTAL	1852.0879		1502.3524		379.45	92.2		80	120	MS
MANGANESE, TOTAL	699.0959		658.4827		37.94	107.0		80	120	MS
MERCURY, TOTAL	0.3504		0.1294		0.17	130.0	N	80	120	CV
NICKEL, TOTAL	51.5670		13.4455		37.94	100.5		80	120	MS
POTASSIUM, TOTAL	1197.1599		353.9622		758.9	111.1		80	120	MS
SELENIUM, TOTAL	6.6214		0.4065		7.59	81.9		80	120	MS
SILVER, TOTAL	3.4560		0.0776		3.79	89.1		80	120	MS
SODIUM, TOTAL	519.8444		28.0564	J	569.17	86.4		80	120	MS
THALLIUM, TOTAL	7.5586		0.0995		7.59	98.3		80	120	MS
VANADIUM, TOTAL	60.5979		21.8284		37.94	102.2		80	120	MS
ZINC, TOTAL	131.0615		99.1125		37.94	84.2		80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1016-000.9S

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 90.9 **Lab Sample ID:** SG8254-028A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	25010.0000		24500.0000		600	85.0		75	125	MS
ANTIMONY, TOTAL	3.3570		1.3770		2	99.0		75	125	MS
ARSENIC, TOTAL	26.0100		15.6500		10	103.6		75	125	MS
BARIUM, TOTAL	110.5000		108.7000		4	45.0		75	125	MS
BERYLLIUM, TOTAL	3.3340		1.3270		2	100.4		75	125	MS
CADMIUM, TOTAL	2.9960		0.7316		2	113.2		75	125	MS
CALCIUM, TOTAL	2059.0000		1881.0000		200	89.0		75	125	MS
CHROMIUM, TOTAL	43.9800		32.2400		10	117.4		75	125	MS
COBALT, TOTAL	21.5800		20.2000		2	69.0		75	125	MS
COPPER, TOTAL	48.0700		43.7400		6	72.2		75	125	MS
IRON, TOTAL	40880.0000		41370.0000		200	-245.0		75	125	MS
LEAD, TOTAL	267.2000		264.7000		2	125.0		75	125	MS
MAGNESIUM, TOTAL	4142.0000		3932.0000		200	105.0		75	125	MS
MANGANESE, TOTAL	845.2000		861.7000		4	-412.5		75	125	MS
MERCURY, TOTAL	1.9600		0.7880		1	117.2		75	125	CV
NICKEL, TOTAL	40.8800		35.1900		4	142.3		75	125	MS
POTASSIUM, TOTAL	2999.0000		926.4000		2000	103.6		75	125	MS
SELENIUM, TOTAL	9.9780		1.0640		10	89.1		75	125	MS
SILVER, TOTAL	2.0740		0.2030		2	93.5		75	125	MS
SODIUM, TOTAL	2116.0000		73.4300	J	2000	102.1		75	125	MS
THALLIUM, TOTAL	2.2750		0.2605		2	100.7		75	125	MS
VANADIUM, TOTAL	67.7400		57.1300		10	106.1		75	125	MS
ZINC, TOTAL	270.3000		259.4000		20	54.5		75	125	MS

Comments:

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1016-000.9D

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 90.9 **Lab Sample ID:** SG8254-028D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M
ALUMINUM, TOTAL		9361.0461		9029.5283		3.6		MS
ANTIMONY, TOTAL		0.5261		0.4222		21.9	* OK	MS
ARSENIC, TOTAL		5.9796		5.0416		17.0		MS
BARIUM, TOTAL		41.5325		38.8886		6.6		MS
BERYLLIUM, TOTAL		0.5070		0.4234		18.0		MS
CADMIUM, TOTAL	0.078	0.2795		0.2525		10.2		MS
CALCIUM, TOTAL		718.6991		682.0923		5.2		MS
CHROMIUM, TOTAL		12.3184		11.7532		4.7		MS
COBALT, TOTAL		7.7181		6.3839		18.9		MS
COPPER, TOTAL		16.7123		18.4532		9.9		MS
IRON, TOTAL		15806.7950		13899.3862		12.8		MS
LEAD, TOTAL		101.1375		89.2417		12.5		MS
MAGNESIUM, TOTAL		1502.3524		1517.9285		1.0		MS
MANGANESE, TOTAL		658.4827		407.6165		47.1	*	MS
MERCURY, TOTAL	0.034	0.1294		0.2182		51.1	*	CV
NICKEL, TOTAL		13.4455		13.0058		3.3		MS
POTASSIUM, TOTAL	78	353.9622		352.4794		0.4		MS
SELENIUM, TOTAL	0.39	0.4065		0.4179		2.8		MS
SILVER, TOTAL		0.0776		0.0711	J	8.7		MS
SODIUM, TOTAL		28.0564	J	26.9364	J	4.1		MS
THALLIUM, TOTAL	0.078	0.0995		0.0908		9.1		MS
VANADIUM, TOTAL		21.8284		19.4833		11.4		MS
ZINC, TOTAL		99.1125		94.7827		4.5		MS

Comments:

RPD > 35%

Katahdin Analytical Services A0000200

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1016-000.9L

Matrix: SOIL **SDG Name:** SG8254

Lab Sample ID: SG8254-028L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	24500.00		27885.00		13.8	E	MS
ANTIMONY, TOTAL	1.38		1.46		5.8		MS
ARSENIC, TOTAL	15.65		16.81		7.4		MS
BARIUM, TOTAL	108.70		115.00		5.8		MS
BERYLLIUM, TOTAL	1.33		1.35		1.5		MS
CADMIUM, TOTAL	0.73		0.87	J	19.2		MS
CALCIUM, TOTAL	1881.00		1957.00		4.0		MS
CHROMIUM, TOTAL	32.24		33.31		3.3		MS
COBALT, TOTAL	20.20		20.60		2.0		MS
COPPER, TOTAL	43.74		45.89		4.9		MS
IRON, TOTAL	41370.00		48695.00		17.7	E	MS
LEAD, TOTAL	264.70		293.30		10.8	E	MS
MAGNESIUM, TOTAL	3932.00		4662.50		18.6	E	MS
MANGANESE, TOTAL	861.70		931.50		8.1		MS
MERCURY, TOTAL	0.79		0.59	J	25.3		CV
NICKEL, TOTAL	35.19		36.17		2.8		MS
POTASSIUM, TOTAL	926.40		1126.50		21.6		MS
SELENIUM, TOTAL	1.06		0.21	U	100.0		MS
SILVER, TOTAL	0.20		0.22	J	10.0		MS
SODIUM, TOTAL	73.43	J	51.20	J	30.3		MS
THALLIUM, TOTAL	0.26		0.23	J	11.5		MS
VANADIUM, TOTAL	57.13		64.05		12.1	E	MS
ZINC, TOTAL	259.40		288.15		11.1	E	MS

use
LOQ >50x

FORM IX - IN

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK08IMS2

Matrix: SOIL **SDG Name:** SG8254

Method: MS **Prep Date:** 11/08/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK08IMS2	LCSOGK08IMS2	1	0.1	
PBSGK08IMS2	PBSGK08IMS2	1	0.1	
003-SS1012-000.7	SG8254-024	1.53	0.1	A
003-SS1013-000.7	SG8254-025	1.5	0.1	A
003-SS1014-0001	SG8254-026	1.56	0.1	A
003-SS1015-000.8	SG8254-027	1.39	0.1	B
003-SS1017-000.8	SG8254-029	1.13	0.1	A
003-SS1018-000.8	SG8254-030	1.28	0.1	A
003-SS1019-000.5	SG8254-031	1.13	0.1	A
003-SS-DUP06-1013	SG8254-032	1.51	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK08IMS2

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK08IMS2

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	1.723	J NA
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.077	J NA
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	4.199	J NA
CHROMIUM	0.098	J NA
COBALT	0.006	J NA
COPPER	0.20	U
IRON	6.650	J NA
LEAD	0.012	J NA
MAGNESIUM	1.523	J NA
MANGANESE	0.099	J NA
NICKEL	0.12	U
POTASSIUM	40	U
SELENIUM	0.30	U
SILVER	0.040	U
SODIUM	40	U
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.80	U

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK08IMS2

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK08IMS2

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	191.10	95.5	80	120
ANTIMONY	10.00	9.88	98.8	80	120
ARSENIC	10.00	10.00	100.0	80	120
BARIUM	200.00	206.40	103.2	80	120
BERYLLIUM	5.00	5.09	101.8	80	120
CADMIUM	25.00	24.22	96.9	80	120
CALCIUM	250.00	222.60	89.0	80	120
CHROMIUM	20.00	20.58	102.9	80	120
COBALT	50.00	49.51	99.0	80	120
COPPER	25.00	23.76	95.0	80	120
IRON	100.00	95.50	95.5	80	120
LEAD	10.00	10.01	100.1	80	120
MAGNESIUM	500.00	455.65	91.1	80	120
MANGANESE	50.00	47.97	95.9	80	120
NICKEL	50.00	52.40	104.8	80	120
POTASSIUM	1000.00	904.50	90.5	80	120
SELENIUM	10.00	8.61	86.1	80	120
SILVER	5.00	4.84	96.8	80	120
SODIUM	750.00	661.50	88.2	80	120
THALLIUM	10.00	10.09	100.9	80	120
VANADIUM	50.00	50.70	101.4	80	120
ZINC	50.00	46.72	93.4	80	120

ANALYSIS RUN LOG all samples

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254 Al, As, Cd, Fe, Pb Mg, Mn, K, Na, V

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK13B

Date: 11/13/2013 **Method:** MS no mn - 151, 11, 16, 18

Lab Sample ID	Client ID	D.F.	Time	Elements								
ZZZZZZ		1	17:13									
ZZZZZZ		1	17:15									
Cal Blank		1	19:00	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
Cal Std 1		1	19:04	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
Cal Std 2		1	19:07	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
Cal Std 3		1	19:10	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
Cal Std 4		1	19:13	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
ICV		1	19:16	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
ICB		1	19:20	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
PQL		1	19:23	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
ICSA		1	19:26	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
ICSAB		1	19:30	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
CCV		1	19:33	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
CCB		1	19:36	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
PBSGK06IMS1		5	19:40	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
LCSOGK06IMS1		5	19:43	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-002	004/5-SS1057-0001	5	19:46	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-003	004/5-SS1056-000.6	5	19:50	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-005	004/5-SS1054-000.6	5	19:53	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-005L	004/5-SS1054-000.6L	25	19:56	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-005D	004/5-SS1054-000.6D	5	20:00	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-005A	004/5-SS1054-000.6A	5	20:03	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-005S	004/5-SS1054-000.6S	5	20:07	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
LCSWGK06IMW2		5	20:10	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
CCV		1	20:13	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
CCB		1	20:17	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
PBWGK06IMW2		5	20:20	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-033	TF2-SS-RB03-1013	5	20:23	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
PBSGK08IMS1		5	20:27	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
LCSOGK08IMS1		5	20:30	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-004	004/5-SS1055-000.8	5	20:33	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-006	004/5-SS1053-000.6	5	20:37	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-007	004/5-SS1052-000.6	5	20:41	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-008	004/5-SS1051-000.8	5	20:44	Al	As	Cd	Fe Pb Mg		K	Na	V	
SG8254-009	004/5-SS1050-000.6	5	20:48	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-010	004/5-SS1062-000.8	5	20:51	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
CCV		1	20:54	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
CCB		1	20:58	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
SG8254-011	004/5-SS-DUP04-1013	5	21:01	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-012	004/5-SS1061-000.6	5	21:05	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-013	004/5-SS1067-000.7	5	21:08	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-014	004/5-SS1066-000.9	5	21:12	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-015	004/5-SS1060-000.5	5	21:16	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-016	004/5-SS1059-000.6	5	21:19	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-017	004/5-SS1058-000.5	5	21:23	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-018	004/5-SS1065-000.5	5	21:26	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-019	004/5-SS1064-000.6	5	21:30	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-020	004/5-SS1063-000.6	5	21:33	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
CCV		1	21:37	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
CCB		1	21:40	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK13B

Date: 11/13/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements								
SG8254-021	004/5-SS1068-000.5	5	21:43	Al	As	Cd	Pb	Mg		K	Na	V
SG8254-022	003-SS1011-000.8	5	21:47	Al	As	Cd	Fe	Pb	Mg	K	Na	V
SG8254-023	004/5-SS-DUP05-1013	5	21:50	Al	As	Cd	Fe	Pb	Mg Mn	K	Na	V
SG8254-028	003-SS1016-000.9	5	21:54	Al	As	Cd	Fe	Pb	Mg	K	Na	V
SG8254-028L	003-SS1016-000.9L	25	21:57	Al	As	Cd	Fe	Pb	Mg	K	Na	V
SG8254-028D	003-SS1016-000.9D	5	22:01	Al	As	Cd	Fe	Pb	Mg	K	Na	V
SG8254-028A	003-SS1016-000.9A	5	22:04	Al	As	Cd	Fe	Pb	Mg	K	Na	V
SG8254-028S	003-SS1016-000.9S	5	22:08	Al	As	Cd	Fe	Pb	Mg	K	Na	V
LCSOGK08IMS2		5	22:11	Al	As	Cd	Fe	Pb	Mg Mn	K	Na	V
SG8254-024	003-SS1012-000.7	5	22:15	Al	As	Cd	Fe	Pb	Mg Mn	K	Na	V
CCV		1	22:18	Al	As	Cd Ca	Fe	Pb	Mg Mn Mo	K	Na	V
CCB		1	22:22	Al	As	Cd Ca	Fe	Pb	Mg Mn Mo	K	Na	V
PBSGK08IMS2		5	22:25	Al	As	Cd	Fe	Pb	Mg Mn	K	Na	V
SG8254-025	003-SS1013-000.7	5	22:29	Al	As	Cd	Fe	Pb	Mg Mn	K	Na	V
SG8254-026	003-SS1014-0001	5	22:32	Al	As	Cd	Fe	Pb	Mg Mn	K	Na	V
SG8254-027	003-SS1015-000.8	5	22:36	Al	As	Cd	Fe	Pb	Mg Mn	K	Na	V
SG8254-029	003-SS1017-000.8	5	22:39	Al	As	Cd	Fe	Pb	Mg Mn	K	Na	V
SG8254-030	003-SS1018-000.8	5	22:43	Al	As	Cd	Fe	Pb	Mg	K	Na	V
SG8254-031	003-SS1019-000.5	5	22:46	Al	As	Cd	Fe	Pb	Mg Mn	K	Na	V
SG8254-032	003-SS-DUP06-1013	5	22:50	Al	As	Cd	Fe	Pb	Mg Mn	K	Na	V
ZZZZZZ		5	22:53									
ZZZZZZ		5	22:57									
CCV		1	23:00	Al	As	Cd Ca	Fe	Pb	Mg Mn Mo	K	Na	V
CCB		1	23:03	Al	As	Cd Ca	Fe	Pb	Mg Mn Mo	K	Na	V

FORM XIV - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICV

File: JGK13B Nov 13, 2013 19:16

Analyte	True	Found	%R (1)
ALUMINUM	400.0	414.70	103.7
ARSENIC	20.0	21.75	108.7
CADMIUM	20.0	21.94	109.7
CALCIUM	4000.0	3543.00	88.6•
IRON	4000.0	3616.00	90.4
LEAD	20.0	21.56	107.8
MAGNESIUM	4000.0	3680.00	92.0
MANGANESE	20.0	20.65	103.3
MOLYBDENUM	40.0	44.53	111.3•
POTASSIUM	4000.0	3618.00	90.5
SODIUM	4000.0	3632.00	90.8
VANADIUM	20.0	21.97	109.9

SAMPLE: CCV

File: JGK13B Nov 13, 2013 19:33

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.20	101.2
ARSENIC	25.0	27.12	108.5
CADMIUM	10.0	10.89	108.9
CALCIUM	5000.0	5094.00	101.9
IRON	5000.0	5045.00	100.9
LEAD	25.0	26.76	107.0
MAGNESIUM	5000.0	4955.00	99.1
MANGANESE	25.0	26.93	107.7
MOLYBDENUM	25.0	28.67	114.7•
POTASSIUM	5000.0	5014.00	100.3
SODIUM	5000.0	4950.00	99.0
VANADIUM	25.0	26.72	106.9

no samples

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK13B Nov 13, 2013 20:13

Analyte	True	Found	%R (1)
ALUMINUM	500.0	503.60	100.7
ARSENIC	25.0	27.51	110.0
CADMIUM	10.0	10.86	108.6
CALCIUM	5000.0	5055.00	101.1
IRON	5000.0	5093.00	101.9
LEAD	25.0	26.80	107.2
MAGNESIUM	5000.0	4964.00	99.3
MANGANESE	25.0	26.93	107.7
MOLYBDENUM	25.0	27.28	109.1
POTASSIUM	5000.0	5009.00	100.2
SODIUM	5000.0	4938.00	98.8
VANADIUM	25.0	27.20	108.8

SAMPLE: CCV

File: JGK13B Nov 13, 2013 20:54

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.40	101.1
ARSENIC	25.0	26.96	107.8
CADMIUM	10.0	11.02	110.2
CALCIUM	5000.0	5049.00	101.0
IRON	5000.0	5120.00	102.4
LEAD	25.0	26.68	106.7
MAGNESIUM	5000.0	4958.00	99.2
MANGANESE	25.0	27.06	108.2
MOLYBDENUM	25.0	27.52	110.1
POTASSIUM	5000.0	5043.00	100.9
SODIUM	5000.0	4921.00	98.4
VANADIUM	25.0	26.94	107.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK13B Nov 13, 2013 21:37

Analyte	True	Found	%R (1)
ALUMINUM	500.0	513.20	102.6
ARSENIC	25.0	27.19	108.8
CADMIUM	10.0	10.97	109.7
CALCIUM	5000.0	5101.00	102.0
IRON	5000.0	5044.00	100.9
LEAD	25.0	27.05	108.2
MAGNESIUM	5000.0	5051.00	101.0
MANGANESE	25.0	27.05	108.2
MOLYBDENUM	25.0	27.44	109.8
POTASSIUM	5000.0	5040.00	100.8
SODIUM	5000.0	5027.00	100.5
VANADIUM	25.0	27.01	108.0

SAMPLE: CCV

File: JGK13B Nov 13, 2013 22:18

Analyte	True	Found	%R (1)
ALUMINUM	500.0	509.70	101.9
ARSENIC	25.0	26.97	107.9
CADMIUM	10.0	11.04	110.4
CALCIUM	5000.0	5049.00	101.0
IRON	5000.0	5049.00	101.0
LEAD	25.0	26.45	105.8
MAGNESIUM	5000.0	4967.00	99.3
MANGANESE	25.0	27.16	108.6
MOLYBDENUM	25.0	27.49	110.0
POTASSIUM	5000.0	4959.00	99.2
SODIUM	5000.0	4906.00	98.1
VANADIUM	25.0	26.99	108.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK13B Nov 13, 2013 23:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.50	101.3
ARSENIC	25.0	27.00	108.0
CADMIUM	10.0	11.00	110.0
CALCIUM	5000.0	5038.00	100.8
IRON	5000.0	5110.00	102.2
LEAD	25.0	26.71	106.8
MAGNESIUM	5000.0	4946.00	98.9
MANGANESE	25.0	27.27	109.1
MOLYBDENUM	25.0	27.58	110.3
POTASSIUM	5000.0	4947.00	98.9
SODIUM	5000.0	4877.00	97.5
VANADIUM	25.0	27.17	108.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: PQL

File: JGK13B Nov 13, 2013 19:23

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	60.88	101.5
ARSENIC	1.0	1.09	109.0
CADMIUM	0.2	0.22	110.0
CALCIUM	20.0	17.47	87.3
IRON	20.0	19.96	99.8
LEAD	0.2	0.22	110.0
MAGNESIUM	20.0	20.31	101.5
MANGANESE	0.4	0.44	110.0
MOLYBDENUM	1.0	1.11	111.0
POTASSIUM	200.0	213.50	106.7
SODIUM	200.0	207.30	103.6
VANADIUM	1.0	0.98	98.0

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICB
File: JGK13B Nov 13, 2013 19:20

Analyte	Result	C
ALUMINUM	0.340	U
ARSENIC	0.410	U
CADMIUM	0.004	U
CALCIUM	-7.697	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.139	J
POTASSIUM	8.200	U
SODIUM	3.900	U
VANADIUM	0.150	U

SAMPLE: CCB
File: JGK13B Nov 13, 2013 19:36

Analyte	Result	C
ALUMINUM	0.520	J
ARSENIC	0.410	U
CADMIUM	0.010	J
CALCIUM	4.100	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.747	J
MANGANESE	0.020	U
MOLYBDENUM	0.521	B
POTASSIUM	8.200	U
SODIUM	9.532	J
VANADIUM	0.150	U

SAMPLE: CCB
File: JGK13B Nov 13, 2013 20:17

Analyte	Result	C
ALUMINUM	0.340	U
ARSENIC	0.410	U
CADMIUM	0.007	J
CALCIUM	4.100	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
POTASSIUM	9.463	J
SODIUM	3.900	U
VANADIUM	0.150	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB
File: JGK13B Nov 13, 2013 20:58

Analyte	Result	C
ALUMINUM	0.340	U
ARSENIC	0.410	U
CADMIUM	0.006	J
CALCIUM	-5.616	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U
VANADIUM	0.150	U

SAMPLE: CCB
File: JGK13B Nov 13, 2013 21:40

Analyte	Result	C
ALUMINUM	0.763	J
ARSENIC	0.410	U
CADMIUM	0.004	U
CALCIUM	-8.009	U
IRON	6.860	J
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.035	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	-4.091	U
VANADIUM	0.150	U

SAMPLE: CCB
File: JGK13B Nov 13, 2013 22:22

Analyte	Result	C
ALUMINUM	0.385	J
ARSENIC	0.410	U
CADMIUM	0.008	J
CALCIUM	-10.860	U
IRON	7.166	J
LEAD	0.009	J
MAGNESIUM	0.690	U
MANGANESE	0.078	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	-5.308	U
VANADIUM	0.150	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB

File: JGK13B Nov 13, 2013 23:03

Analyte	Result	C
ALUMINUM	0.340	U
ARSENIC	0.410	U
CADMIUM	0.004	U
CALCIUM	-12.650	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.082	U
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	-5.044	U
VANADIUM	0.150	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICSA

File: JGK13B Nov 13, 2013 19:26

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	91370	91.4
ARSENIC	0	0	
CADMIUM	0	0	
CALCIUM	100000	89950	90.0
IRON	100000	85210	85.2
LEAD	0	0	
MAGNESIUM	100000	89760	89.8
MANGANESE	0	0	
MOLYBDENUM	2000	1969	98.5
POTASSIUM	100000	92210	92.2
SODIUM	100000	92250	92.3
VANADIUM	0	0	

SAMPLE: ICSAB

File: JGK13B Nov 13, 2013 19:30

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	89330	89.3
ARSENIC	20	20	100.0
CADMIUM	20	19	95.0
CALCIUM	100000	87950	87.9
IRON	100000	84110	84.1
LEAD	20	22	110.0
MAGNESIUM	100000	87780	87.8
MANGANESE	20	20	100.0
MOLYBDENUM	2000	1975	98.8
POTASSIUM	100000	89950	90.0
SODIUM	100000	89750	89.8
VANADIUM	20	21	105.0

ANALYSIS RUN LOG

All samples Sb, Ba, Be, Ca, *Cr, Co, Cu, *Ni, Se, Ag, Th, Zn

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK18A

Date: 11/18/2013 **Method:** MS Mn-(10x) 1st, 11, 16, 18

Elements *no Cr, Ni - 12, 13, 14, 15, 17, 18, 19 DUP b

Lab Sample ID	Client ID	D.F.	Time														
ZZZZZZ		1	15:25														
ZZZZZZ		1	15:28														
Cal Blank		1	15:53	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
Cal Std 1		1	15:56	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
Cal Std 2		1	16:00	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
Cal Std 3		1	16:03	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
Cal Std 4		1	16:06	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
ICV		1	16:09	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
ICB		1	16:12	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
PQL		1	16:15	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
ICSA		1	16:19	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
ICSAB		1	16:22	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
CCV		1	16:25	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
CCB		1	16:29	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
ZZZZZZ		1	16:32																			
ZZZZZZ		1	16:35																			
ZZZZZZ		1	16:38																			
ZZZZZZ		1	16:42																			
ZZZZZZ		1	16:45																			
CCV		1	16:48	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
CCB		1	16:51	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
ZZZZZZ		5	16:55																			
ZZZZZZ		5	16:58																			
ZZZZZZ		5	17:01																			
ZZZZZZ		5	17:05																			
PBSGK06IMS1		5	17:08		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
LCSOGK06IMS1		5	17:11		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-002	004/5-SS1057-0001	5	17:15		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-003	004/5-SS1056-000.6	5	17:18		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
CCV		1	17:21	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
CCB		1	17:25	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
SG8254-005	004/5-SS1054-000.6	5	17:28		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-005L	004/5-SS1054-000.6L	25	17:31		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-005D	004/5-SS1054-000.6D	5	17:35		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-005A	004/5-SS1054-000.6A	5	17:38		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-005S	004/5-SS1054-000.6S	5	17:42		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
PBSGK08IMS1		5	17:45		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
LCSOGK08IMS1		5	17:49		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-004	004/5-SS1055-000.8	5	17:52		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-006	004/5-SS1053-000.6	5	17:55		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-007	004/5-SS1052-000.6	5	17:59		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
CCV		1	18:02	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
CCB		1	18:06	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
PBWGK06IMW2		5	18:09		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
LCSWGK06IMW2		5	18:12		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-033	TF2-SS-RB03-1013	5	18:16		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-008	004/5-SS1051-000.8	10	18:19											Mn								
SG8254-008	004/5-SS1051-000.8	5	18:23		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-009	004/5-SS1050-000.6	5	18:26		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-010	004/5-SS1062-000.8	5	18:30		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK18A

Date: 11/18/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
SG8254-011	004/5-SS-DUP04-1013	5	18:34	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-012	004/5-SS1061-000.6	5	18:37	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-013	004/5-SS1067-000.7	5	18:41	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
CCV		1	18:44	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
CCB		1	18:48	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
SG8254-014	004/5-SS1066-000.9	5	18:51	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-015	004/5-SS1060-000.5	5	18:55	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-016	004/5-SS1059-000.6	5	18:58	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-017	004/5-SS1058-000.5	5	19:02	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-018	004/5-SS1065-000.5	5	19:06	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-019	004/5-SS1064-000.6	5	19:09	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-020	004/5-SS1063-000.6	5	19:13	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-021	004/5-SS1068-000.5	10	19:16	Fe
SG8254-021	004/5-SS1068-000.5	5	19:20	Sb Ba Be Ca Cr Co Cu Mn Ni Se Ag Tl Zn
SG8254-022	003-SS1011-000.8	10	19:24	Mn
CCV		1	19:27	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
CCB		1	19:31	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
SG8254-022	003-SS1011-000.8	5	19:34	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-023	004/5-SS-DUP05-1013	5	19:38	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-028	003-SS1016-000.9	10	19:41	Mn
SG8254-028L	003-SS1016-000.9L	50	19:45	Mn
SG8254-028D	003-SS1016-000.9D	10	19:48	Mn
SG8254-028A	003-SS1016-000.9A	10	19:52	Mn
SG8254-028S	003-SS1016-000.9S	10	19:55	Mn
SG8254-028	003-SS1016-000.9	5	19:59	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-028L	003-SS1016-000.9L	25	20:02	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-028D	003-SS1016-000.9D	5	20:06	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
CCV		1	20:09	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
CCB		1	20:13	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
SG8254-028A	003-SS1016-000.9A	5	20:16	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-028S	003-SS1016-000.9S	5	20:20	Sb Ba Be Ca Co Cu Se Ag Tl Zn
PBSGK08IMS2		5	20:24	Sb Ba Be Ca Co Cu Se Ag Tl Zn
LCSOGK08IMS2		5	20:27	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-024	003-SS1012-000.7	5	20:31	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-025	003-SS1013-000.7	5	20:34	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-026	003-SS1014-0001	5	20:38	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-027	003-SS1015-000.8	5	20:42	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-029	003-SS1017-000.8	5	20:45	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-030	003-SS1018-000.8	10	20:49	Mn
CCV		1	20:53	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
CCB		1	20:56	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
SG8254-030	003-SS1018-000.8	5	20:59	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-031	003-SS1019-000.5	5	21:03	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-032	003-SS-DUP06-1013	5	21:07	Sb Ba Be Ca Co Cu Se Ag Tl Zn
ZZZZZZ		5	21:10	
ZZZZZZ		5	21:14	
ZZZZZZ		5	21:17	
ZZZZZZ		5	21:20	
ZZZZZZ		5	21:24	
ZZZZZZ		25	21:28	
ZZZZZZ		5	21:31	

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK18A

Date: 11/18/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	21:35	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
CCB		1	21:38	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn

FORM XIV - IN

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICV

File: JGK18A Nov 18, 2013 16:09

Analyte	True	Found	%R (1)
ALUMINUM	400.0	405.40	101.3
ANTIMONY	20.0	20.62	103.1
BARIUM	20.0	21.03	105.2
BERYLLIUM	20.0	20.62	103.1
CALCIUM	4000.0	4190.00	104.8
CHROMIUM	20.0	20.58	102.9
COBALT	20.0	20.88	104.4
COPPER	20.0	20.78	103.9
IRON	4000.0	4142.00	103.6
MAGNESIUM	4000.0	4101.00	102.5
MANGANESE	20.0	19.22	96.1
MOLYBDENUM	40.0	41.55	103.9
NICKEL	20.0	21.18	105.9
POTASSIUM	4000.0	4089.00	102.2
SELENIUM	20.0	20.81	104.1
SILVER	20.0	20.43	102.2
SODIUM	4000.0	4100.00	102.5
THALLIUM	20.0	21.72	108.6
ZINC	20.0	21.27	106.3

SAMPLE: CCV

File: JGK18A Nov 18, 2013 16:25

Analyte	True	Found	%R (1)
ALUMINUM	500.0	489.40	97.9
ANTIMONY	25.0	24.62	98.5
BARIUM	25.0	24.88	99.5
BERYLLIUM	10.0	10.03	100.3
CALCIUM	5000.0	4991.00	99.8
CHROMIUM	25.0	24.20	96.8
COBALT	10.0	9.74	97.4
COPPER	25.0	24.79	99.2
IRON	5000.0	4879.00	97.6
MAGNESIUM	5000.0	4822.00	96.4
MANGANESE	25.0	24.69	98.8
MOLYBDENUM	25.0	26.18	104.7
NICKEL	25.0	24.57	98.3
POTASSIUM	5000.0	4951.00	99.0
SELENIUM	25.0	25.52	102.1
SILVER	10.0	10.02	100.2
SODIUM	5000.0	4870.00	97.4
THALLIUM	10.0	9.92	99.2
ZINC	25.0	25.28	101.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK18A Nov 18, 2013 16:48

Analyte	True	Found	%R (1)
ALUMINUM	500.0	472.30	94.5
ANTIMONY	25.0	24.99	100.0
BARIUM	25.0	25.22	100.9
BERYLLIUM	10.0	10.21	102.1
CALCIUM	5000.0	4999.00	100.0
CHROMIUM	25.0	24.09	96.4
COBALT	10.0	9.79	97.9
COPPER	25.0	24.57	98.3
IRON	5000.0	4894.00	97.9
MAGNESIUM	5000.0	4710.00	94.2
MANGANESE	25.0	24.66	98.6
MOLYBDENUM	25.0	24.87	99.5
NICKEL	25.0	24.66	98.6
POTASSIUM	5000.0	4925.00	98.5
SELENIUM	25.0	24.61	98.4
SILVER	10.0	10.03	100.3
SODIUM	5000.0	4800.00	96.0
THALLIUM	10.0	9.78	97.8
ZINC	25.0	25.09	100.4

SAMPLE: CCV

File: JGK18A Nov 18, 2013 17:21

Analyte	True	Found	%R (1)
ALUMINUM	500.0	484.70	96.9
ANTIMONY	25.0	25.47	101.9
BARIUM	25.0	25.58	102.3
BERYLLIUM	10.0	10.33	103.3
CALCIUM	5000.0	5002.00	100.0
CHROMIUM	25.0	24.20	96.8
COBALT	10.0	9.92	99.2
COPPER	25.0	24.95	99.8
IRON	5000.0	4983.00	99.7
MAGNESIUM	5000.0	4803.00	96.1
MANGANESE	25.0	24.92	99.7
MOLYBDENUM	25.0	24.98	99.9
NICKEL	25.0	24.86	99.4
POTASSIUM	5000.0	4943.00	98.9
SELENIUM	25.0	24.11	96.4
SILVER	10.0	10.06	100.6
SODIUM	5000.0	4861.00	97.2
THALLIUM	10.0	9.93	99.3
ZINC	25.0	25.58	102.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK18A Nov 18, 2013 18:02

Analyte	True	Found	%R (1)
ALUMINUM	500.0	477.30	95.5
ANTIMONY	25.0	25.31	101.2
BARIUM	25.0	25.11	100.4
BERYLLIUM	10.0	10.54	105.4
CALCIUM	5000.0	4988.00	99.8
CHROMIUM	25.0	24.31	97.2
COBALT	10.0	9.90	99.0
COPPER	25.0	24.98	99.9
IRON	5000.0	4974.00	99.5
MAGNESIUM	5000.0	4755.00	95.1
MANGANESE	25.0	24.77	99.1
MOLYBDENUM	25.0	25.37	101.5
NICKEL	25.0	24.80	99.2
POTASSIUM	5000.0	4939.00	98.8
SELENIUM	25.0	24.30	97.2
SILVER	10.0	10.13	101.3
SODIUM	5000.0	4832.00	96.6
THALLIUM	10.0	10.05	100.5
ZINC	25.0	25.54	102.2

SAMPLE: CCV

File: JGK18A Nov 18, 2013 18:44

Analyte	True	Found	%R (1)
ALUMINUM	500.0	479.80	96.0
ANTIMONY	25.0	25.14	100.6
BARIUM	25.0	25.01	100.0
BERYLLIUM	10.0	10.29	102.9
CALCIUM	5000.0	5010.00	100.2
CHROMIUM	25.0	23.95	95.8
COBALT	10.0	9.73	97.3
COPPER	25.0	24.61	98.4
IRON	5000.0	4911.00	98.2
MAGNESIUM	5000.0	4697.00	93.9
MANGANESE	25.0	24.56	98.2
MOLYBDENUM	25.0	25.00	100.0
NICKEL	25.0	24.48	97.9
POTASSIUM	5000.0	4924.00	98.5
SELENIUM	25.0	24.31	97.2
SILVER	10.0	10.03	100.3
SODIUM	5000.0	4796.00	95.9
THALLIUM	10.0	9.78	97.8
ZINC	25.0	24.98	99.9

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK18A Nov 18, 2013 19:27

Analyte	True	Found	%R (1)
ALUMINUM	500.0	474.70	94.9
ANTIMONY	25.0	24.95	99.8
BARIUM	25.0	25.30	101.2
BERYLLIUM	10.0	10.32	103.2
CALCIUM	5000.0	4953.00	99.1
CHROMIUM	25.0	22.91	91.6
COBALT	10.0	9.24	92.4
COPPER	25.0	23.44	93.8
IRON	5000.0	4727.00	94.5
MAGNESIUM	5000.0	4664.00	93.3
MANGANESE	25.0	23.61	94.4
MOLYBDENUM	25.0	24.02	96.1
NICKEL	25.0	23.15	92.6
POTASSIUM	5000.0	4965.00	99.3
SELENIUM	25.0	23.12	92.5
SILVER	10.0	9.70	97.0
SODIUM	5000.0	4724.00	94.5
THALLIUM	10.0	9.71	97.1
ZINC	25.0	24.12	96.5

SAMPLE: CCV

File: JGK18A Nov 18, 2013 20:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	471.00	94.2
ANTIMONY	25.0	24.74	99.0
BARIUM	25.0	25.67	102.7
BERYLLIUM	10.0	10.06	100.6
CALCIUM	5000.0	5029.00	100.6
CHROMIUM	25.0	22.67	90.7
COBALT	10.0	9.19	91.9
COPPER	25.0	23.32	93.3
IRON	5000.0	4735.00	94.7
MAGNESIUM	5000.0	4677.00	93.5
MANGANESE	25.0	23.62	94.5
MOLYBDENUM	25.0	24.17	96.7
NICKEL	25.0	22.79	91.2
POTASSIUM	5000.0	5041.00	100.8
SELENIUM	25.0	23.62	94.5
SILVER	10.0	9.59	95.9
SODIUM	5000.0	4761.00	95.2
THALLIUM	10.0	9.59	95.9
ZINC	25.0	23.75	95.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK18A Nov 18, 2013 20:53

Analyte	True	Found	%R (1)
ALUMINUM	500.0	469.60	93.9
ANTIMONY	25.0	24.74	99.0
BARIUM	25.0	25.43	101.7
BERYLLIUM	10.0	10.17	101.7
CALCIUM	5000.0	5006.00	100.1
CHROMIUM	25.0	22.06	88.2•
COBALT	10.0	8.98	89.8
COPPER	25.0	22.58	90.3
IRON	5000.0	4552.00	91.0
MAGNESIUM	5000.0	4634.00	92.7
MANGANESE	25.0	23.07	92.3
MOLYBDENUM	25.0	23.53	94.1
NICKEL	25.0	22.15	88.6•
POTASSIUM	5000.0	5009.00	100.2
SELENIUM	25.0	22.86	91.4
SILVER	10.0	9.36	93.6
SODIUM	5000.0	4707.00	94.1
THALLIUM	10.0	9.70	97.0
ZINC	25.0	23.20	92.8

SAMPLE: CCV

File: JGK18A Nov 18, 2013 21:35

Analyte	True	Found	%R (1)
ALUMINUM	500.0	482.80	96.6
ANTIMONY	25.0	24.28	97.1
BARIUM	25.0	25.35	101.4
BERYLLIUM	10.0	9.66	96.6
CALCIUM	5000.0	5003.00	100.1
CHROMIUM	25.0	23.33	93.3
COBALT	10.0	9.43	94.3
COPPER	25.0	23.79	95.2
IRON	5000.0	4802.00	96.0
MAGNESIUM	5000.0	4736.00	94.7
MANGANESE	25.0	24.24	97.0
MOLYBDENUM	25.0	24.22	96.9
NICKEL	25.0	23.57	94.3
POTASSIUM	5000.0	5012.00	100.2
SELENIUM	25.0	25.66	102.6
SILVER	10.0	9.83	98.3
SODIUM	5000.0	4902.00	98.0
THALLIUM	10.0	9.65	96.5
ZINC	25.0	24.95	99.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: PQL

File: JGK18A Nov 18, 2013 16:15

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	62.34	103.9
ANTIMONY	0.2	0.19	95.0
BARIUM	0.4	0.43	107.5
BERYLLIUM	0.2	0.20	100.0
CALCIUM	20.0	18.12	90.6
CHROMIUM	1.0	1.00	100.0
COBALT	0.2	0.19	95.0
COPPER	0.6	0.62	103.3
IRON	20.0	17.09	85.5
MAGNESIUM	20.0	20.01	100.1
MANGANESE	0.4	0.33	82.5
MOLYBDENUM	1.0	1.03	103.0
NICKEL	0.4	0.39	97.5
POTASSIUM	200.0	209.00	104.5
SELENIUM	1.0	1.15	115.0
SILVER	0.2	0.18	90.0
SODIUM	200.0	207.60	103.8
THALLIUM	0.2	0.20	100.0
ZINC	2.0	2.12	106.0

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICB

File: JGK18A Nov 18, 2013 16:12

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.021	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.159	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
ZINC	0.130	U

SAMPLE: CCB

File: JGK18A Nov 18, 2013 16:29

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.018	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	-0.011	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	-0.048	U
MOLYBDENUM	0.570	B
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	4.196	J
THALLIUM	0.003	U
ZINC	0.130	U

SAMPLE: CCB

File: JGK18A Nov 18, 2013 16:51

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.014	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	-0.009	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	-0.038	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB
File: JGK18A Nov 18, 2013 17:25

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.018	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	-0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	-0.025	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK18A Nov 18, 2013 18:06

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.012	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK18A Nov 18, 2013 18:48

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.011	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.029	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB
File: JGK18A Nov 18, 2013 19:31

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.008	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.040	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK18A Nov 18, 2013 20:13

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.009	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	-4.622	U
CHROMIUM	-0.045	U
COBALT	-0.008	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.148	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK18A Nov 18, 2013 20:56

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.014	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	-4.940	U
CHROMIUM	-0.047	U
COBALT	-0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.205	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
ZINC	0.336	J

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB

File: JGK18A Nov 18, 2013 21:38

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.019	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	-0.033	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	2.043	J
MANGANESE	0.070	J
MOLYBDENUM	0.120	U
NICKEL	0.059	J
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	105.700	B
THALLIUM	0.003	U
ZINC	0.403	J

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICSA

File: JGK18A Nov 18, 2013 16:19

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	93870	93.9
ANTIMONY	0	0	
BARIUM	0	0	
BERYLLIUM	0	0	
CALCIUM	100000	94330	94.3
CHROMIUM	0	(1)	
COBALT	0	0	
COPPER	0	0	
IRON	100000	90960	91.0
MAGNESIUM	100000	92890	92.9
MANGANESE	0	0	
MOLYBDENUM	2000	1997	99.9
NICKEL	0	0	
POTASSIUM	100000	96820	96.8
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	94930	94.9
THALLIUM	0	0	
ZINC	0	(2)	

SAMPLE: ICSAB

File: JGK18A Nov 18, 2013 16:22

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	93600	93.6
ANTIMONY	20	20	100.0
BARIUM	21	21	100.0
BERYLLIUM	20	20	100.0
CALCIUM	100000	94880	94.9
CHROMIUM	20	20	100.0
COBALT	20	19	95.0
COPPER	20	19	95.0
IRON	100000	90720	90.7
MAGNESIUM	100000	91790	91.8
MANGANESE	20	19	95.0
MOLYBDENUM	2000	2017	100.8
NICKEL	20	19	95.0
POTASSIUM	100000	96210	96.2
SELENIUM	20	18	90.0
SILVER	20	18	90.0
SODIUM	100000	95340	95.3
THALLIUM	20	21	105.0
ZINC	20	19	95.0

ICSA / ICSAB — 1X

Samples — 5X

N/A

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK19A

Date: 11/19/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	16:46	
ZZZZZZ		1	16:49	
Cal Blank		1	17:14	Al Ca Cr Fe Mg Mo Ni K Na
Cal Std 1		1	17:18	Al Ca Cr Fe Mg Mo Ni K Na
Cal Std 2		1	17:21	Al Ca Cr Fe Mg Mo Ni K Na
Cal Std 3		1	17:24	Al Ca Cr Fe Mg Mo Ni K Na
Cal Std 4		1	17:27	Al Ca Cr Fe Mg Mo Ni K Na
ICV		1	17:30	Al Ca Cr Fe Mg Mo Ni K Na
ICB		1	17:33	Al Ca Cr Fe Mg Mo Ni K Na
PQL		1	17:36	Al Ca Cr Fe Mg Mo Ni K Na
ICSA		1	17:39	Al Ca Cr Fe Mg Mo Ni K Na
ICSAB		1	17:43	Al Ca Cr Fe Mg Mo Ni K Na
CCV		1	17:46	Al Ca Cr Fe Mg Mo Ni K Na
CCB		1	17:49	Al Ca Cr Fe Mg Mo Ni K Na
PBSGK08IMS2		5	17:53	Cr Ni
LCSOGK08IMS2		5	17:56	Cr Ni
SG8254-028A	003-SS1016-000.9A	5	17:59	Cr Ni
SG8254-028S	003-SS1016-000.9S	5	18:02	Cr Ni
SG8254-024	003-SS1012-000.7	5	18:06	Cr Ni
SG8254-025	003-SS1013-000.7	5	18:09	Cr Ni
SG8254-026	003-SS1014-0001	5	18:12	Cr Ni
SG8254-027	003-SS1015-000.8	5	18:16	Cr Ni
SG8254-029	003-SS1017-000.8	5	18:19	Cr Ni
SG8254-030	003-SS1018-000.8	5	18:22	Cr Ni
CCV		1	18:26	Al Ca Cr Fe Mg Mo Ni K Na
CCB		1	18:29	Al Ca Cr Fe Mg Mo Ni K Na
SG8254-031	003-SS1019-000.5	5	18:32	Cr Ni
SG8254-032	003-SS-DUP06-1013	5	18:36	Cr Ni
ZZZZZZ		5	18:39	
ZZZZZZ		5	18:43	
ZZZZZZ		5	18:46	
ZZZZZZ		5	18:49	
ZZZZZZ		5	18:52	
ZZZZZZ		25	18:56	
ZZZZZZ		5	18:59	
ZZZZZZ		5	19:03	
CCV		1	19:06	Al Ca Cr Fe Mg Mo Ni K Na
CCB		1	19:09	Al Ca Cr Fe Mg Mo Ni K Na

FORM XIV - IN

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICV

File: JGK19A Nov 19, 2013 17:30

Analyte	True	Found	%R (1)
ALUMINUM	400.0	398.00	99.5
CALCIUM	4000.0	4094.00	102.4
CHROMIUM	20.0	20.42	102.1
IRON	4000.0	4099.00	102.5
MAGNESIUM	4000.0	4079.00	102.0
MOLYBDENUM	40.0	40.96	102.4
NICKEL	20.0	20.71	103.6
POTASSIUM	4000.0	4068.00	101.7
SODIUM	4000.0	4077.00	101.9

SAMPLE: CCV

File: JGK19A Nov 19, 2013 17:46

Analyte	True	Found	%R (1)
ALUMINUM	500.0	489.10	97.8
CALCIUM	5000.0	4948.00	99.0
CHROMIUM	25.0	24.49	98.0
IRON	5000.0	4919.00	98.4
MAGNESIUM	5000.0	4821.00	96.4
MOLYBDENUM	25.0	26.13	104.5
NICKEL	25.0	24.70	98.8
POTASSIUM	5000.0	4918.00	98.4
SODIUM	5000.0	4848.00	97.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK19A Nov 19, 2013 18:26

Analyte	True	Found	%R (1)
ALUMINUM	500.0	488.20	97.6
CALCIUM	5000.0	4984.00	99.7
CHROMIUM	25.0	24.54	98.2
IRON	5000.0	5001.00	100.0
MAGNESIUM	5000.0	4887.00	97.7
MOLYBDENUM	25.0	25.05	100.2
NICKEL	25.0	25.01	100.0
POTASSIUM	5000.0	4971.00	99.4
SODIUM	5000.0	4902.00	98.0

SAMPLE: CCV

File: JGK19A Nov 19, 2013 19:06

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.30	98.9
CALCIUM	5000.0	4973.00	99.5
CHROMIUM	25.0	24.81	99.2
IRON	5000.0	4941.00	98.8
MAGNESIUM	5000.0	4928.00	98.6
MOLYBDENUM	25.0	24.72	98.9
NICKEL	25.0	25.17	100.7
POTASSIUM	5000.0	4916.00	98.3
SODIUM	5000.0	5055.00	101.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: PQL

File: JGK19A Nov 19, 2013 17:36

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	62.60	104.3
CALCIUM	20.0	21.07	105.4
CHROMIUM	1.0	1.01	101.0
IRON	20.0	21.55	107.8
MAGNESIUM	20.0	20.06	100.3
MOLYBDENUM	1.0	1.05	105.0
NICKEL	0.4	0.41	102.5
POTASSIUM	200.0	211.50	105.8
SODIUM	200.0	211.60	105.8

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICB

File: JGK19A Nov 19, 2013 17:33

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.171	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SODIUM	3.900	U

SAMPLE: CCB

File: JGK19A Nov 19, 2013 17:49

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.481	B
NICKEL	0.020	U
POTASSIUM	8.200	U
SODIUM	4.131	J

SAMPLE: CCB

File: JGK19A Nov 19, 2013 18:29

Analyte	Result	C
ALUMINUM	2.055	J
CALCIUM	4.100	U
CHROMIUM	0.030	U
IRON	4.871	J
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SODIUM	3.900	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB

File: JGK19A Nov 19, 2013 19:09

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
IRON	4.700	U
MAGNESIUM	0.944	J
MOLYBDENUM	0.120	U
NICKEL	0.102	J
POTASSIUM	8.200	U
SODIUM	116.700	B

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICSA

File: JGK19A Nov 19, 2013 17:39

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	91030	91.0
CALCIUM	100000	91300	91.3
CHROMIUM	0	1	
IRON	100000	86610	86.6
MAGNESIUM	100000	89450	89.5
MOLYBDENUM	2000	1890	94.5
NICKEL	0	0	
POTASSIUM	100000	94280	94.3
SODIUM	100000	93790	93.8

SAMPLE: ICSAB

File: JGK19A Nov 19, 2013 17:43

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	91620	91.6
CALCIUM	100000	91610	91.6
CHROMIUM	20	20	100.0
IRON	100000	87060	87.1
MAGNESIUM	100000	90470	90.5
MOLYBDENUM	2000	1927	96.4
NICKEL	20	18	90.0
POTASSIUM	100000	94520	94.5
SODIUM	100000	94110	94.1

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK07HGS1

Matrix: SOIL **SDG Name:** SG8254

Method: CV **Prep Date:** 11/07/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK07HGS1	LCSOGK07HGS1	0.6	0.1	
PBSGK07HGS1	PBSGK07HGS1	0.6	0.1	
004/5-SS1057-0001	SG8254-002	0.68	0.1	A
004/5-SS1056-000.6	SG8254-003	0.68	0.1	B
004/5-SS1055-000.8	SG8254-004	0.77	0.1	A
004/5-SS1054-000.6	SG8254-005	0.65	0.1	A
004/5-SS1054-000.6D	SG8254-005D	0.62	0.1	A
004/5-SS1054-000.6S	SG8254-005S	0.63	0.1	A
004/5-SS1053-000.6	SG8254-006	0.63	0.1	A
004/5-SS1052-000.6	SG8254-007	0.7	0.1	A
004/5-SS1051-000.8	SG8254-008	0.64	0.1	B
004/5-SS1050-000.6	SG8254-009	0.77	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK07HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK07HGS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.005	J

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK07HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK07HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.81	97.6	80	120

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK08HGS1

Matrix: SOIL **SDG Name:** SG8254

Method: CV **Prep Date:** 11/08/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK08HGS1	LCSOGK08HGS1	0.6	0.1	
PBSGK08HGS1	PBSGK08HGS1	0.6	0.1	
004/5-SS1062-000.8	SG8254-010	0.8	0.1	A
004/5-SS-DUP04-1013	SG8254-011	0.63	0.1	A
004/5-SS1061-000.6	SG8254-012	0.72	0.1	A
004/5-SS1067-000.7	SG8254-013	0.69	0.1	A
004/5-SS1066-000.9	SG8254-014	0.66	0.1	A
004/5-SS1060-000.5	SG8254-015	0.68	0.1	A
004/5-SS1059-000.6	SG8254-016	0.82	0.1	A
004/5-SS1058-000.5	SG8254-017	0.64	0.1	A
004/5-SS1065-000.5	SG8254-018	0.65	0.1	A
004/5-SS1064-000.6	SG8254-019	0.63	0.1	A
004/5-SS1063-000.6	SG8254-020	0.74	0.1	A
004/5-SS1068-000.5	SG8254-021	0.69	0.1	A
003-SS1011-000.8	SG8254-022	0.77	0.1	A
004/5-SS-DUP05-1013	SG8254-023	0.64	0.1	A
003-SS1012-000.7	SG8254-024	0.64	0.1	A
003-SS1013-000.7	SG8254-025	0.64	0.1	A
003-SS1014-0001	SG8254-026	0.66	0.1	A
003-SS1015-000.8	SG8254-027	0.65	0.1	B
003-SS1016-000.9	SG8254-028	0.67	0.1	A
003-SS1016-000.9D	SG8254-028D	0.64	0.1	A
003-SS1016-000.9S	SG8254-028S	0.64	0.1	A
003-SS1017-000.8	SG8254-029	0.66	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK08HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK08HGS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.005	J

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK08HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK08HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	1.00	120.5	80	120

Katahdin Analytical Services A0000204

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK09HGW1

Matrix: WATER **SDG Name:** SG8254

Method: CV **Prep Date:** 11/09/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWGK09HGW1	LCSWGK09HGW1	0.025	0.025	
PBWGK09HGW1	PBWGK09HGW1	0.025	0.025	
TF2-SS-RB03-1013	SG8254-033	0.025	0.025	C

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGK09HGW1

Matrix: WATER **SDG Name:** SG8254

QC Batch ID: GK09HGW1

Concentration Units : ug/L

Analyte	RESULT	C
MERCURY	0.10	U

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGK09HGW1

Matrix: WATER **SDG Name:** SG8254

QC Batch ID: GK09HGW1

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	5.00	5.43	108.6	80	120

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK12HGS1

Matrix: SOIL **SDG Name:** SG8254

Method: CV **Prep Date:** 11/12/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LC2OGK12HGS1	LC2OGK12HGS1	0.6	0.1	
LCSOGK12HGS1	LCSOGK12HGS1	0.6	0.1	
PBSGK12HGS1	PBSGK12HGS1	0.6	0.1	
003-SS1018-000.8	SG8254-030	0.64	0.1	A
003-SS1019-000.5	SG8254-031	0.71	0.1	A
003-SS-DUP06-1013	SG8254-032	0.66	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK12HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK12HGS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.017	U

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LC2OGK12HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK12HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.88	106.0	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK12HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK12HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.79	95.2	80	120

7D

LABORATORY CONTROL SAMPLE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK12HGS1 **Lab Sample ID:** LCSOGK12HGS1

Concentration Units: mg/Kgdrywt

Analyte	Control Limit (%)	LCS Result	LCS Dup. Result	RPD(%)	Q
MERCURY	20.0	0.79	0.88	10.3	

FORM VIID - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: CETAC M6100 **File Name:** HGK08A

Date: 11/8/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	14:12	Hg
Standard #1 (0.2 p		1	14:14	Hg
Standard #2 (0.5 p		1	14:16	Hg
Standard #3 (1.0 p		1	14:18	Hg
Standard #4 (5.0 p		1	14:20	Hg
Standard #5 (10.0		1	14:23	Hg
ICV		1	14:25	HG
ICB		1	14:27	HG
PQL		1	14:29	HG
ZZZZZZ		1	14:33	
ZZZZZZ		1	14:35	
ZZZZZZ		1	14:37	
ZZZZZZ		1	14:39	
ZZZZZZ		1	14:42	
ZZZZZZ		1	14:44	
ZZZZZZ		1	14:46	
ZZZZZZ		1	14:48	
ZZZZZZ		1	14:50	
CCV		1	14:52	HG
CCB		1	14:54	HG
ZZZZZZ		1	14:56	
ZZZZZZ		1	14:58	
ZZZZZZ		1	15:01	
ZZZZZZ		1	15:03	
ZZZZZZ		1	15:05	
ZZZZZZ		1	15:07	
ZZZZZZ		1	15:09	
ZZZZZZ		5	15:11	
ZZZZZZ		1	15:13	
ZZZZZZ		1	15:16	
CCV		1	15:18	HG
CCB		1	15:20	HG
ZZZZZZ		1	15:22	
ZZZZZZ		1	15:24	
ZZZZZZ		1	15:26	
ZZZZZZ		1	15:28	
ZZZZZZ		1	15:30	
ZZZZZZ		1	15:33	
ZZZZZZ		1	15:35	
ZZZZZZ		1	15:37	
PBSGK07HGS1		1	15:39	HG
ZZZZZZ		1	15:41	
CCV		1	15:43	HG
CCB		1	15:45	HG
ZZZZZZ		1	15:48	
ZZZZZZ		1	15:50	
ZZZZZZ		1	15:52	
ZZZZZZ		1	15:54	
ZZZZZZ		1	15:57	
ZZZZZZ		1	15:59	

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: CETAC M6100 **File Name:** HGK08A

Date: 11/8/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	16:01	
ZZZZZZ		1	16:03	
ZZZZZZ		1	16:05	
ZZZZZZ		1	16:07	
CCV		1	16:09	HG
CCB		1	16:12	HG
ZZZZZZ		1	16:14	
SG8254-002	004/5-SS1057-0001	1	16:16	HG
SG8254-003	004/5-SS1056-000.6	1	16:18	HG
SG8254-004	004/5-SS1055-000.8	1	16:20	HG
SG8254-005	004/5-SS1054-000.6	1	16:22	HG
SG8254-005L	004/5-SS1054-000.6L	5	16:25	HG
SG8254-005A	004/5-SS1054-000.6A	1	16:27	HG
SG8254-005D	004/5-SS1054-000.6D	1	16:29	HG
SG8254-005S	004/5-SS1054-000.6S	1	16:31	HG
SG8254-006	004/5-SS1053-000.6	1	16:33	HG
CCV		1	16:35	HG
CCB		1	16:37	HG
SG8254-007	004/5-SS1052-000.6	1	16:40	HG
SG8254-008	004/5-SS1051-000.8	1	16:42	HG
SG8254-009	004/5-SS1050-000.6	1	16:44	HG
LCSOGK07HGS1		1	16:50	HG
LCSOGK08HGS1		1	17:26	HG
PBSGK08HGS1		1	17:28	HG
SG8254-010	004/5-SS1062-000.8	1	17:30	HG
SG8254-011	004/5-SS-DUP04-1013	1	17:33	HG
SG8254-012	004/5-SS1061-000.6	1	17:35	HG
SG8254-013	004/5-SS1067-000.7	1	17:37	HG
CCV		1	17:39	HG
CCB		1	17:41	HG
SG8254-014	004/5-SS1066-000.9	1	17:43	HG
SG8254-015	004/5-SS1060-000.5	1	17:46	HG
SG8254-016	004/5-SS1059-000.6	1	17:48	HG
SG8254-017	004/5-SS1058-000.5	1	17:50	HG
SG8254-018	004/5-SS1065-000.5	1	17:52	HG
SG8254-019	004/5-SS1064-000.6	1	17:54	HG
SG8254-020	004/5-SS1063-000.6	1	17:56	HG
SG8254-021	004/5-SS1068-000.5	1	17:58	HG
SG8254-022	003-SS1011-000.8	1	18:00	HG
SG8254-023	004/5-SS-DUP05-1013	1	18:02	HG
CCV		1	18:05	HG
CCB		1	18:07	HG
SG8254-024	003-SS1012-000.7	1	18:09	HG
SG8254-025	003-SS1013-000.7	1	18:11	HG
SG8254-026	003-SS1014-0001	1	18:13	HG
SG8254-027	003-SS1015-000.8	1	18:15	HG
SG8254-028	003-SS1016-000.9	1	18:17	HG
SG8254-028L	003-SS1016-000.9L	5	18:19	HG
SG8254-028A	003-SS1016-000.9A	1	18:22	HG
SG8254-028D	003-SS1016-000.9D	1	18:24	HG
SG8254-028S	003-SS1016-000.9S	1	18:26	HG

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: CETAC M6100 **File Name:** HGK08A

Date: 11/8/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
SG8254-029	003-SS1017-000.8	1	18:37	HG
CCV		1	18:39	HG
CCB		1	18:41	HG

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICV

File: HGK08A Nov 08, 2013 14:25

Analyte	True	Found	%R (1)
MERCURY	6.0	6.04	100.7

SAMPLE: CCV

File: HGK08A Nov 08, 2013 14:52

Analyte	True	Found	%R (1)
MERCURY	5.0	5.81	116.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: HGK08A Nov 08, 2013 15:18

Analyte	True	Found	%R (1)
MERCURY	5.0	4.97	99.4

SAMPLE: CCV

File: HGK08A Nov 08, 2013 15:43

Analyte	True	Found	%R (1)
MERCURY	5.0	5.00	100.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: HGK08A Nov 08, 2013 16:09

Analyte	True	Found	%R (1)
MERCURY	5.0	5.91	118.2

SAMPLE: CCV

File: HGK08A Nov 08, 2013 16:35

Analyte	True	Found	%R (1)
MERCURY	5.0	5.07	101.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: HGK08A Nov 08, 2013 17:39

Analyte	True	Found	%R (1)
MERCURY	5.0	5.94	118.8

SAMPLE: CCV

File: HGK08A Nov 08, 2013 18:05

Analyte	True	Found	%R (1)
MERCURY	5.0	5.33	106.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: HGK08A Nov 08, 2013 18:39

Analyte	True	Found	%R (1)
MERCURY	5.0	5.20	104.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: PQL

File: HGK08A Nov 08, 2013 14:29

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.16	80.0

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICB

File: HGK08A Nov 08, 2013 14:27

Analyte	Result	C
MERCURY	-0.071	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 14:54

Analyte	Result	C
MERCURY	-0.064	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 15:20

Analyte	Result	C
MERCURY	-0.044	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB

File: HGK08A Nov 08, 2013 15:45

Analyte	Result	C
MERCURY	-0.068	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 16:12

Analyte	Result	C
MERCURY	-0.045	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 16:37

Analyte	Result	C
MERCURY	-0.062	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB

File: HGK08A Nov 08, 2013 17:41

Analyte	Result	C
MERCURY	-0.046	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 18:07

Analyte	Result	C
MERCURY	-0.075	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 18:41

Analyte	Result	C
MERCURY	-0.061	U

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: CETAC M6100 **File Name:** HGK11A

Date: 11/11/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	15:27	Hg
Standard #1 (0.2 p		1	15:29	Hg
Standard #2 (0.5 p		1	15:31	Hg
Standard #3 (1.0 p		1	15:33	Hg
Standard #4 (5.0 p		1	15:35	Hg
Standard #5 (10.0		1	15:37	Hg
ICV		1	15:42	HG
ICB		1	15:44	HG
PQL		1	15:46	HG
LCSWGK09HGW1		1	15:48	HG
PBWGK09HGW1		1	15:50	HG
ZZZZZZ		1	15:52	
ZZZZZZ		1	15:54	
SG8254-033	TF2-SS-RB03-1013	1	15:56	HG
ZZZZZZ		1	15:59	
ZZZZZZ		5	16:01	
ZZZZZZ		1	16:03	
ZZZZZZ		1	16:05	
CCV		1	16:07	HG
CCB		1	16:09	HG

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICV

File: HGK11A Nov 11, 2013 15:42

Analyte	True	Found	%R (1)
MERCURY	6.0	5.75	95.8

SAMPLE: CCV

File: HGK11A Nov 11, 2013 16:07

Analyte	True	Found	%R (1)
MERCURY	5.0	4.51	90.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: PQL

File: HGK11A Nov 11, 2013 15:46

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.19	95.0

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICB

File: HGK11A Nov 11, 2013 15:44

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGK11A Nov 11, 2013 16:09

Analyte	Result	C
MERCURY	0.030	U

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: CETAC M6100 **File Name:** HGK13A

Date: 11/13/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	15:08	Hg
Standard #1 (0.2 p		1	15:11	Hg
Standard #2 (0.5 p		1	15:13	Hg
Standard #3 (1.0 p		1	15:15	Hg
Standard #3 (1.0 p		1	15:20	Hg
Standard #4 (5.0 p		1	15:23	Hg
Standard #5 (10.0		1	15:25	Hg
ICV		1	15:30	HG
ICB		1	15:32	HG
PQL		1	15:34	HG
LCSOGK12HGS1		1	15:36	HG
PBSGK12HGS1		1	15:39	HG
LC2OGK12HGS1		1	15:41	HG
SG8254-030	003-SS1018-000.8	1	15:43	HG
SG8254-031	003-SS1019-000.5	1	15:45	HG
SG8254-032	003-SS-DUP06-1013	1	15:47	HG
ZZZZZZ		1	15:49	
ZZZZZZ		1	15:51	
ZZZZZZ		1	15:53	
CCV		1	15:56	HG
CCB		1	15:58	HG

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICV

File: HGK13A Nov 13, 2013 15:30

Analyte	True	Found	%R (1)
MERCURY	6.0	6.06	101.0

SAMPLE: CCV

File: HGK13A Nov 13, 2013 15:56

Analyte	True	Found	%R (1)
MERCURY	5.0	5.50	110.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: PQL

File: HGK13A Nov 13, 2013 15:34

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.23	115.0

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICB

File: HGK13A Nov 13, 2013 15:32

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGK13A Nov 13, 2013 15:58

Analyte	Result	C
MERCURY	0.030	U

Tetra Tech INC **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 29, 2014**

FROM: **JOSEPH KALINYAK** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PCDD/PCDF**
NAVSTA NEWPORT, CTO WE30
SAMPLE DELIVERY GROUP (SDG) 320-4670-1

SAMPLES: 3 / Aqueous / PCDD/PCDF

TF2-003-SS-RB03-1013	TF2-SS-RB01-1013	TF2-SS-RB02-1013

63 / Soil / PCDD/PCDF

TF2-003-SS-DUP06-1013	TF2-003-SS1011-000.8	TF2-003-SS1012-000.7
TF2-003-SS1013-000.7	TF2-003-SS1014-0001	TF2-003-SS1015-000.8
TF2-003-SS1016-000.9	TF2-003-SS1017-000.8	TF2-003-SS1018-000.8
TF2-003-SS1019-000.5	TF2-004/5-SS-DUP01-1013	TF2-004/5-SS-DUP02-1013
TF2-004/5-SS-DUP03-1013	TF2-004/5-SS-DUP04-1013	TF2-004/5-SS-DUP05-1013
TF2-004/5-SS1020-0001	TF2-004/5-SS1021-000.7	TF2-004/5-SS1022-000.9
TF2-004/5-SS1023-000.8	TF2-004/5-SS1024-000.6	TF2-004/5-SS1025-000.8
TF2-004/5-SS1026-000.8	TF2-004/5-SS1027-0001	TF2-004/5-SS1028-000.8
TF2-004/5-SS1029-000.6	TF2-004/5-SS1030-000.6	TF2-004/5-SS1031-000.8
TF2-004/5-SS1032-000.9	TF2-004/5-SS1033-000.8	TF2-004/5-SS1034-000.6
TF2-004/5-SS1035-0001	TF2-004/5-SS1036-000.6	TF2-004/5-SS1037-000.7
TF2-004/5-SS1038-000.7	TF2-004/5-SS1039-000.9	TF2-004/5-SS1040-000.9
TF2-004/5-SS1041-000.7	TF2-004/5-SS1042-000.5	TF2-004/5-SS1044-000.5
TF2-004/5-SS1045-000.5	TF2-004/5-SS1046-000.5	TF2-004/5-SS1047-000.8
TF2-004/5-SS1048-000.8	TF2-004/5-SS1049-000.9	TF2-004/5-SS1050-000.6
TF2-004/5-SS1051-000.8	TF2-004/5-SS1052-000.6	TF2-004/5-SS1053-000.6
TF2-004/5-SS1054-000.6	TF2-004/5-SS1055-000.8	TF2-004/5-SS1056-000.6
TF2-004/5-SS1057-0001	TF2-004/5-SS1058-000.5	TF2-004/5-SS1059-000.6
TF2-004/5-SS1060.000.5	TF2-004/5-SS1061-000.6	TF2-004/5-SS1062-000.8
TF2-004/5-SS1063-000.6	TF2-004/5-SS1064-000.6	TF2-004/5-SS1065-000.5
TF2-004/5-SS1066-000.9	TF2-004/5-SS1067-000.7	TF2-004/5-SS1068-000.5

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG 320-4670-7 consisted of sixty-three (63) soil samples and three (3) aqueous rinse blank samples. All samples were analyzed for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDF), as indicated above. Six (6) field duplicate sample pair were included in this sample delivery group (SDG):

TF2-004/5-SS-DUP01-1013 / TF2-004/5-SS1020-0001
TF2-004/5-SS-DUP02-1013 / TF2-004/5-SS1035-0001
TF2-004/5-SS-DUP03-1013 / TF2-004/5-SS1041-000.7
TF2-004/5-SS-DUP04-1013 / TF2-004/5-SS1061-000.6
TF2-004/5-SS-DUP05-1013 / TF2-004/5-SS1065-000.5
TF2-003-SS-DUP06-1013 / TF2-003-SS1015-000.8

The samples were collected by Tetra Tech on October 18, 21, and 22, 2013 and analyzed by TestAmerica Laboratories Inc. All analyses were conducted in accordance with EPA SW-846 Method 8290A for PCDDs and PCDFs, analytical and reporting protocols.

The data contained in this SDG were fully validated Tier II with regard to the following parameters:

- Data completeness
- * Hold times
- * Mass Calibration
- HRGC/HRMS Tuning and System Performance
- Chromatographic Resolution /Window Defining Mixtures
- Initial and continuing calibration
- Method Blank results
- Blank Spike/Blank Spike Duplicate Results
- Matrix Spike/Matrix Spike Duplicate Results
- * Clean-up Standard Recoveries
- Internal Standard Recoveries
- Field Duplicate Precision
- * Estimated Detection Limits
- * Compound Quantitation
- * Compound Identification

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

HOLD TIME

Many of the sample extraction analyses were completed after the 45 day sample extraction to analysis hold time listed in the recommendations for the analytical method. However, no validation action was taken as PCDDs/PCSFs are considered very stable. Per the SW846 8290A method, "The holding times listed in this method are recommendations. PCDDs and PCDFs are very stable in a variety of matrices, and holding times under the conditions listed in this section may be as long as a year for certain matrices."

HRGC/HRMS INSTRUMENT TUNING AND SYSTEM PERFORMANCE

The laboratory narrative indicated a problem with an instrumentation auto end resolution check not being completed within 12 hours of the beginning of the initial resolution check due to an instrument malfunction. The instrumentation affected was rebooted and an end resolution check was performed with compliant results (without changing the instrument tune parameters). No validation action was taken for this issue.

CHROMATOGRAPHIC RESOLUTION /WINDOW DEFINING MIXTURES

The resolution check exceeded the 25% quality control limit for the 2,3,7,8-TCDD mixture for column DB-5 on instrument 3D5 on 12/18/13 @ 22:06.

Affected Samples: 10 samples

Actions: No validation action was necessary as the samples were analyzed at 10X dilutions for OCDD only.

The resolution check exceeded the 25% (25.6%) quality control limit for the 2,3,7,8-TCDF mixture for column DB-225 on instrument 11D-5 on 12/16/13 @ 23:17.

Affected Samples:

TF2-004/5-SS1020-0001	TF2-004/5-SS1021-000.7	TF2-004/5-SS1022-000.9
TF2-004/5-SS1026-000.8	TF2-004/5-SS1027-0001	TF2-004/5-SS-DUP01-1013
TF2-004/5-SS1030-000.6	TF2-004/5-SS1031-000.8	

Actions: The samples were analyzed for 2,3,7,8-TCDF only. The sample detected 2,3,7,8-TCDF results were qualified estimated, (J). The non-detected results were not qualified.

BLANKS

Method blank 320-28374 had detected results for OCDD and Total HpCDD affecting samples TF2-003-SS-RB03-1013, TF2-SS-RB01-1013, and TF2-SS-RB02-1013. No action was taken as rinse blanks are not qualified for method blank contamination.

The following compounds were detected in the method blanks at the maximum concentrations indicated below.

Compound	Maximum Conc. pg/g	Action Level pg/g
1,2,3,4,7,8-HxCDF [1]	0.147	0.735
1,2,3,4,6,7,8-HpCDF [1]	0.174	0.870
Total HxCDF [1]	0.147	0.735
Total HpCDF [1]	0.174	0.870
OCDD [2]	0.196	1.96
OCDF [2]	0.141	1.41
OCDD [3]	0.305	3.05
1,2,3,4,6,7,8-HpCDF [3]	0.113	0.565
Total HpCDF [3]	0.113	0.565
OCDD [4]	0.221	2.21
OCDF [4]	0.307	3.07
1,2,3,4,6,7,8-HpCDF [4]	0.375	1.875
Total HpCDD [4]	0.0606	0.3030
Total HpCDF [4]	0.375	1.875
OCDD [5]	0.63	6.3
OCDF [5]	0.527	5.27
1,2,3,4,6,7,8-HpCDD [5]	0.0775	0.3875
1,2,3,4,6,7,8-HpCDF [5]	0.381	1.905
1,2,3,4,7,8-HxCDF [5]	0.302	1.510
Total HpCDD [5]	0.225	1.125
Total HpCDF [5]	0.381	1.905
Total HxCDF [5]	0.302	1.510

[1] Method blank 320-28361 results affecting sample TF2-004/5-SS1025-000.8

[2] Method blank 320-28431 results affecting samples:

TF2-003-SS-DUP06-1013 (1X & 10X dil)	TF2-004/5-SS-DUP05-1013
TF2-003-SS1011-000.8 (1X & 10X dil)	TF2-003-SS1012-000.7
TF2-003-SS1013-000.7	TF2-003-SS1014-0001
TF2-003-SS1015-000.8 (1X & 10X dil)	TF2-003-SS1016-000.9 (1X & 10X dil)
TF2-003-SS1017-000.8	TF2-003-SS1018-000.8
TF2-003-SS1019-000.5	TF2-004/5-SS1058-000.5
TF2-004/5-SS1059-000.6 (1X & 10X dil)	TF2-004/5-SS1060.000.5 (1X & 10X dil)

TF2-004/5-SS1063-000.6	TF2-004/5-SS1064-000.6
TF2-004/5-SS1065-000.5	TF2-004/5-SS1068-000.5

(3) Method blank 320-28458 results affecting samples;

TF2-004/5-SS1028-000.8	TF2-004/5-SS1027-0001 (1X & 10X dil)
TF2-004/5-SS1040-000.9 (1X & 10X dil)	TF2-004/5-SS1039-000.9 (1X & 10X dil)
TF2-004/5-SS1038-000.7	TF2-004/5-SS1037-000.7
TF2-004/5-SS1036-000.6 (1X & 10X dil)	TF2-004/5-SS1035-0001
TF2-004/5-SS-DUP02-1013	TF2-004/5-SS1026-000.8
TF2-004/5-SS1024-000.6	TF2-004/5-SS1023-000.8
TF2-004/5-SS1022-000.9 (1X & 10X dil)	TF2-004/5-SS1021-000.7
TF2-004/5-SS1020-0001 (1X & 10X dil)	TF2-004/5-SS1032-000.9
TF2-004/5-SS1031-000.8	TF2-004/5-SS-DUP01-1013 (1X & 10X dil)
TF2-004/5-SS1030-000.6	TF2-004/5-SS1029-000.6 (1X & 10X dil)

(4) Method blank 320-28540 results affecting samples;

TF2-004/5-SS-DUP03-1013 (1X & 10X dil)	TF2-004/5-SS1033-000.8
TF2-004/5-SS1034-000.6	TF2-004/5-SS1041-000.7 (1X & 10X dil)
TF2-004/5-SS1042-000.5	TF2-004/5-SS1044-000.5
TF2-004/5-SS1045-000.5 (1X & 10X dil)	TF2-004/5-SS1046-000.5
TF2-004/5-SS1047-000.8 (1X & 10X dil)	TF2-004/5-SS1048-000.8
TF2-004/5-SS1049-000.9	TF2-004/5-SS1050-000.6
TF2-004/5-SS1051-000.8 (1X & 10X dil)	TF2-004/5-SS1052-000.6
TF2-004/5-SS1053-000.6 (1X & 10X dil)	TF2-004/5-SS1054-000.6
TF2-004/5-SS1055-000.8	TF2-004/5-SS1056-000.6
TF2-004/5-SS1057-0001 (1X & 10X dil)	TF2-004/5-SS1062-000.8 (1X & 10X dil)

(5) Method blank 320-28546 results affecting samples TF2-004/5-SS1061-000.6, TF2-004/5-SS-DUP04-1013, TF2-004/5-SS1067-000.7, and TF2-004/5-SS1066-000.9 (1X & 10X dil).

An action level of 10X for the maximum level for OCDD and OCDF, 5X for the other PCDD/PCDFs has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination for each individual sample. No sample analyte results were qualified for method blank contamination.

CALIBRATIONS

The continuing calibration verification (CCV) percent difference (%D) was greater than the 20% quality control limit for 1,2,3,4,7,8-HxCDD on 11/05/13 @ 17:32 on instrument 3D5.

Affected Sample:

TF2-004/5-SS1038-000.5	TF2-004/5-SS1037-000.7	TF2-004/5-SS1036-000.6
TF2-004/5-SS1035-0001	TF2-004/5-SS-DUP02-1013	TF2-004/5-SS1026-000.8
TF2-004/5-SS1024-000.6	TF2-004/5-SS1023-000.8	

Actions: The sample detected 1,2,3,4,7,8-HxCDD results were qualified estimated, (J).

LABORATORY CONTROL SPIKE (LCS) /LABORATORY CONTROL SPIKE DUPLICATE (LCSD)

The LCS percent recovery (%R) was greater than the quality control limit for 2,3,4,7,8-PeCDF for batch 320-28540.

Affected Samples:

TF2-004/5-SS-DUP03-1013	TF2-004/5-SS1033-000.8	TF2-004/5-SS1034-000.6
TF2-004/5-SS1041-000.7	TF2-004/5-SS1042-000.5	TF2-004/5-SS1044-000.5
TF2-004/5-SS1045-000.5	TF2-004/5-SS1046-000.5	TF2-004/5-SS1047-000.8
TF2-004/5-SS1048-000.8	TF2-004/5-SS1049-000.9	TF2-004/5-SS1050-000.6
TF2-004/5-SS1051-000.8	TF2-004/5-SS1052-000.6	TF2-004/5-SS1053-000.6
TF2-004/5-SS1054-000.6	TF2-004/5-SS1055-000.8	TF2-004/5-SS1056-000.6
TF2-004/5-SS1057-0001	TF2-004/5-SS1062-000.8	

Actions: The detected 2,3,4,7,8-PeCDF sample results were qualified estimated, (J). The non-detected 2,3,4,7,8-PeCDF result was not qualified.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

The spiked sample TF2-004/5-SS1054-000.6 had an MSD %R for 1,2,3,4,6,7,8-HpCDD greater than the quality control limit.

Affected Sample: TF2-004/5-SS1054-000.6

Actions: The detected 1,2,3,4,6,7,8-HpCDD result was qualified estimated, (J).

INTERNAL STANDARD RECOVERY

The internal standard recovery for 13C-2,3,7,8-TCDF in sample TF2-004/5-SS1067-000.7 was below the 40% lower quality control limit in the alternate column sample re-analysis for 2,3,7,8-TCDF.

Affected Sample: TF2-004/5-SS1067-000.7

Actions: The detected 2,3,7,8-TCDF result was qualified estimated, (J).

FIELD DUPLICATE PRECISION

The field duplicate sample result relative percent difference (RPD) was greater than the 50% quality control limit for the analyte Total TCDF for field duplicate samples TF2-004/5-SS-DUP01-1013 / TF2-004/5-SS1020-0001.

Affected Samples: TF2-004/5-SS-DUP01-1013 / TF2-004/5-SS1020-0001

Actions: The aforementioned sample detected Total TCDF results were qualified estimated, (J).

The field duplicate sample result RPDs were greater than the 50% quality control limit for the analytes OCDF and 1,2,3,4,6,7,8-HpCDF for field duplicate samples TF2-004/5-SS-DUP02-1013 / TF2-004/5-SS1035-0001.

Affected Samples: TF2-004/5-SS-DUP02-1013 / TF2-004/5-SS1035-0001

Actions: The aforementioned sample detected and non-detected OCDF and 1,2,3,4,6,7,8-HpCDF results were qualified estimated, (J).

COMPOUND QUANTIFICATION

Positive sample analyte results with ion ratios outside of the limits were reported as EMPC (estimated maximum possible concentration) results and were qualified estimated, (J).

ADDITIONAL COMMENTS

Positive sample analyte results below the reporting limit (RL) but above the estimated detection limit (EDL) were qualified estimated, (J).

Samples were analyzed both undiluted and at a 10X dilution for OCDD as listed below due to the undiluted OCDD analysis results exceeding the highest calibration standard. Only the 10X diluted OCDD results were reported for the samples.

Affected Samples:

TF2-003-SS-DUP06-1013	TF2-003-SS1011-000.8	TF2-003-SS1015-000.8
TF2-003-SS1016-000.9	TF2-004/5-SS-DUP01-1013	TF2-004/5-SS-DUP03-1013
TF2-004/5-SS1020-0001	TF2-004/5-SS1022-000.9	TF2-004/5-SS1027-0001
TF2-004/5-SS1029-000.6	TF2-004/5-SS1033-000.8	TF2-004/5-SS1036-000.6
TF2-004/5-SS1039-000.9	TF2-004/5-SS1040-000.9	TF2-004/5-SS1041-000.7
TF2-004/5-SS1045-000.5	TF2-004/5-SS1047-000.8	TF2-004/5-SS1048-000.8
TF2-004/5-SS1051-000.8	TF2-004/5-SS1049-000.9	TF2-004/5-SS1053-000.6
TF2-004/5-SS1057-0001	TF2-004/5-SS1059-000.6	TF2-004/5-SS1060.000.5
TF2-004/5-SS1062-000.8	TF2-004/5-SS1066-000.9	

The 2,3,7,8-TCDF result quantitation limits for samples TF2-003-SS1015-000.8, TF2-004/5-SS-DUP02-1013, TF2-004/5-SS1024-000.6, and TF2-004/5-SS1036-000.6 were raised due to a matrix interference per the laboratory narrative. The detected and non-detected 2,3,7,8-TCDF sample results were qualified estimated, (J) and (UJ), respectively.

During the initial review of the laboratory provided materials/CD it was determined that data was missing from the pdf. The laboratory was contacted and it was determined that a revised data package had been completed but not received by the data validation chemist. The laboratory made the edited data package available on their website and the validation was completed.

The OCDD result for sample TF2-003-SS1011-000.8 exceeded the Sample Analysis Plan (SAP) Project Screening Level (PSL) of 14,000 pg/g (ng/kg). The 1,2,3,4,6,7,8-HpCDD results for samples TF2-004/5-SS1047-000.8 and TF2-004/5-SS1053-000.6 exceeded the SAP PSL limit of 420 pg/g. The 1,2,3,6,7,8-HxCDD result for sample TF2-004/5-SS1047-000.8 exceeded the SAP PSL limit of 42 pg/g. The 1,2,3,7,8-PeCDD result for sample TF2-004/5-SS1047-000.8 exceeded the SAP PSL limit of 4.2 pg/g

Non-detected sample analyte results were reported at the EDL.

EXECUTIVE SUMMARY

Laboratory Performance: Detected results for 1,2,3,4,7,8-HxCDD were qualified for a CCV %D non-compliance. A sample 2,3,7,8-TCDF result was qualified for an internal standard recovery non-compliance. Sample 2,3,7,8-TCDF detected results were qualified for a resolution check non-compliance.

Other Factors Affecting Data Quality: Positive results reported below the RL but above the EDL were qualified as estimated, (J). Positive sample analyte results reported as EMPC (estimated maximum possible concentration) results were qualified estimated, (J). Sample 2,3,7,8-TCDF results were qualified for matrix interference. Field duplicate sample PCDD/PCDF results were qualified for field duplicate imprecision. SAP PSLs were exceeded as listed in the Additional Comments section of this document.

The data for these analyses were reviewed with reference to the EPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans (Sept. 2011), to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Guidance/Procedures Attachment 2-3b: Example Organic Data Review Worksheets (1/13) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
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Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Value Qualifier Key (Val Qual)

J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The result is an estimated non-detected quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U - Value is a non-detect as reported by the laboratory.

UR – Non-detected result is considered rejected, (UR), as a result of technical non-compliances.

DATA QUALIFICATION CODE (QUAL CODE)

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's r < 0.995
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution / PCDF Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient r < 0.995
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed

1-29-14
JAS

PROJ_NO: 03019	NSAMPLE	TF2-003-SS-RB03-1013			TF2-SS-RB01-1013			TF2-SS-RB02-1013		
SDG: 320-4670-1	LAB_ID	320-4670-66			320-4670-17			320-4670-34		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/18/2013			10/21/2013		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	PG/L			PG/L			PG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		0.83	J	PW	0.76	U		1.5	U	
1,2,3,4,6,7,8,9-OCDF		0.46	U		1.2	U		1.7	U	
1,2,3,4,6,7,8-HPCDD		0.38	U		0.71	U		0.96	U	
1,2,3,4,6,7,8-HPCDF		0.29	U		0.62	U		0.82	U	
1,2,3,4,7,8,9-HPCDF		0.35	U		0.74	U		0.97	U	
1,2,3,4,7,8-HXCDD		0.41	U		0.76	U		0.98	U	
1,2,3,4,7,8-HXCDF		0.21	U		0.49	U		0.5	U	
1,2,3,6,7,8-HXCDD		0.41	U		0.76	U		0.98	U	
1,2,3,6,7,8-HXCDF		0.2	U		0.47	U		0.47	U	
1,2,3,7,8,9-HXCDD		0.37	U		0.69	U		0.88	U	
1,2,3,7,8,9-HXCDF		0.23	U		0.52	U		0.53	U	
1,2,3,7,8-PECDD		0.7	U		1.3	U		1.8	U	
1,2,3,7,8-PECDF		0.83	U		1.5	U		1.8	U	
2,3,4,6,7,8-HXCDF		0.21	U		0.49	U		0.5	U	
2,3,4,7,8-PECDF		0.88	U		1.6	U		1.9	U	
2,3,7,8-TCDD		0.51	U		0.94	U		1.1	U	
2,3,7,8-TCDF		0.54	U		0.99	U		1.2	U	
TOTAL HPCDD		0.72	J	P	0.71	U		0.96	U	
TOTAL HPCDF		0.35	U		0.74	U		0.97	U	
TOTAL HXCDD		0.41	U		0.76	U		0.98	U	
TOTAL HXCDF		0.23	U		0.52	U		0.53	U	
TOTAL PECDD		0.7	U		1.3	U		1.8	U	
TOTAL PECDF		0.88	U		1.6	U		1.9	U	
TOTAL TCDD		0.51	U		0.94	U		1.1	U	
TOTAL TCDF		0.54	U		0.99	U		1.2	U	

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1011-000.8			TF2-003-SS1011-000.8DL			TF2-003-SS1012-000.7			TF2-003-SS1013-000.7		
SDG: 320-4670-1	LAB_ID	320-4670-56			320-4670-56			320-4670-57			320-4670-58		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	87.3			87.3			89.9			93.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD					18000			4000			3300		
1,2,3,4,6,7,8,9-OCDF		17						12			13		
1,2,3,4,6,7,8-HPCDD		130						81			67		
1,2,3,4,6,7,8-HPCDF		13						12			12		
1,2,3,4,7,8,9-HPCDF		0.37	J	P				0.74	J	P	0.74	J	P
1,2,3,4,7,8-HXCDD		0.97	J	PW				1.8	J	P	1.1	J	PW
1,2,3,4,7,8-HXCDF		1.3	J	P				3	J	P	2.6	J	P
1,2,3,6,7,8-HXCDD		2.5	J	P				4	J	P	3.9	J	P
1,2,3,6,7,8-HXCDF		1.3	J	P				1.3	J	PW	1.1	J	PW
1,2,3,7,8,9-HXCDD		5.6						4.4	J	P	4.2	J	P
1,2,3,7,8,9-HXCDF		0.1	U					0.085	U		0.094	U	
1,2,3,7,8-PECDD		0.72	J	P				1.4	J	P	1.1	J	P
1,2,3,7,8-PECDF		0.4	J	P				0.74	J	PW	1.2	J	P
2,3,4,6,7,8-HXCDF		0.96	J	P				1.1	J	P	1.4	J	P
2,3,4,7,8-PECDF		0.68	J	P				1.2	J	P	1.2	J	P
2,3,7,8-TCDD		0.23	J	PW				0.26	J	PW	0.22	J	PW
2,3,7,8-TCDF		0.76	J	P				1	J	P	1.4		
TOTAL HPCDD		240						160			130		
TOTAL HPCDF		25						22			25		
TOTAL HXCDD		31	J	W				42			37	J	W
TOTAL HXCDF		20	J	W				17	J	W	17	J	W
TOTAL PECDD		9	J	W				31	J	W	26	J	W
TOTAL PECDF		15						15	J	W	16	J	W
TOTAL TCDD		5.5	J	W				64	J	W	19	J	W
TOTAL TCDF		9.6	J	W				13			14		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1014-0001			TF2-003-SS1015-000.8			TF2-003-SS1016-000.9			TF2-003-SS1017-000.8		
SDG: 320-4670-1	LAB_ID	320-4670-59			320-4670-60			320-4670-61			320-4670-62		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.1			93.4			90.9			93.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		3300			5400			6900			3300		
1,2,3,4,6,7,8,9-OCDF		12			8.9	J	P	11			8	J	P
1,2,3,4,6,7,8-HPCDD		70			84			110			58		
1,2,3,4,6,7,8-HPCDF		12			7.4			7			5.9		
1,2,3,4,7,8,9-HPCDF		0.61	J	P	0.54	J	P	0.11	U		0.093	U	
1,2,3,4,7,8-HXCDD		1.9	J	P	1.1	J	PW	1.6	J	P	1.1	J	P
1,2,3,4,7,8-HXCDF		2.6	J	P	1.7	J	P	1.7	J	P	1.3	J	P
1,2,3,6,7,8-HXCDD		4.4	J	P	2.8	J	P	2.6	J	P	1.6	J	PW
1,2,3,6,7,8-HXCDF		1.2	J	PW	0.82	J	P	0.88	J	P	0.78	J	P
1,2,3,7,8,9-HXCDD		4.8	J	P	2.9	J	PW	3.5	J	P	2.1	J	PW
1,2,3,7,8,9-HXCDF		0.083	U		0.074	U		0.086	U		0.068	U	
1,2,3,7,8-PECDD		1.1	J	PW	0.73	J	P	0.67	J	P	0.11	U	
1,2,3,7,8-PECDF		0.83	J	P	0.9	J	P	0.67	J	P	0.38	J	PW
2,3,4,6,7,8-HXCDF		1.3	J	P	0.85	J	P	0.78	J	P	0.83	J	P
2,3,4,7,8-PECDF		1.1	J	P	0.85	J	P	0.8	J	P	0.6	J	P
2,3,7,8-TCDD		0.43	J	P	0.15	J	PW	0.23	J	PW	0.27	J	P
2,3,7,8-TCDF		1.3			1.5	UJ	Q	1.1			0.69	J	P
TOTAL HPCDD		150			190			260			120		
TOTAL HPCDF		23			15			14			12		
TOTAL HXCDD		45	J	W	31	J	W	33			20	J	W
TOTAL HXCDF		15	J	W	13	J	W	15			9.2	J	W
TOTAL PECDD		26	J	W	12	J	W	6.7	J	W	7.1	J	W
TOTAL PECDF		14	J	W	12	J	W	15	J	W	7.1	J	W
TOTAL TCDD		20	J	W	7.6	J	W	3.8	J	W	4.8	J	W
TOTAL TCDF		25	J	W	8.9	J	W	12	J	W	5.8	J	W

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1018-000.8			TF2-003-SS1018-000.8A			TF2-003-SS1019-000.5			TF2-003-SS-DUP06-1013		
SDG: 320-4670-1	LAB_ID	320-4670-63			320-4670-63			320-4670-64			320-4670-65		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	95.4			95.4			91.8			92.7		
	DUP_OF										TF2-003-SS1015-000.8		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		3300						3000			6100		
1,2,3,4,6,7,8,9-OCDF		4.5	J	P				15			11		
1,2,3,4,6,7,8-HPCDD		41						72			88		
1,2,3,4,6,7,8-HPCDF		3.6	J	P				16			9.1		
1,2,3,4,7,8,9-HPCDF		0.18	J	PW				0.79	J	P	0.6	J	P
1,2,3,4,7,8-HXCDD		0.91	J	P				2.4	J	P	1.4	J	P
1,2,3,4,7,8-HXCDF		1	J	P				6			2.3	J	P
1,2,3,6,7,8-HXCDD		1.4	J	P				5.7			3.1	J	P
1,2,3,6,7,8-HXCDF		0.68	J	P				2.4	J	P	1.2	J	P
1,2,3,7,8,9-HXCDD		1.6	J	P				5.4			3.1	J	P
1,2,3,7,8,9-HXCDF		0.047	U					0.098	U		0.089	U	
1,2,3,7,8-PECDD		0.4	J	PW				1.7	J	P	0.94	J	PW
1,2,3,7,8-PECDF		0.3	J	PW				1.4	J	PW	0.96	J	P
2,3,4,6,7,8-HXCDF		0.39	J	P				1.9	J	P	0.89	J	PW
2,3,4,7,8-PECDF		0.43	J	P				1.1	J	PW	0.96	J	P
2,3,7,8-TCDD		0.11	J	PW				0.4	J	PW	0.25	J	PW
2,3,7,8-TCDF					0.46	J	P	1.5			0.84	J	P
TOTAL HPCDD		88						140			200		
TOTAL HPCDF		6.8	J	W				29	J	W	18		
TOTAL HXCDD		18						85	J	W	33		
TOTAL HXCDF		5.2	J	W				23	J	W	16	J	W
TOTAL PECDD		7.5	J	W				45	J	W	15	J	W
TOTAL PECDF		4.5	J	PW				19	J	W	14	J	W
TOTAL TCDD		5.9	J	W				37	J	W	7.8	J	W
TOTAL TCDF		4.7	J	W				17	J	W	10	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1020-0001			TF2-004/5-SS1020-0001A			TF2-004/5-SS1021-000.7			TF2-004/5-SS1021-000.7A		
SDG: 320-4670-1	LAB_ID	320-4670-7			320-4670-7			320-4670-6			320-4670-6		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	97.3			97.3			96.0			96.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		6000						3000					
1,2,3,4,6,7,8,9-OCDF		4.9	J	P				79					
1,2,3,4,6,7,8-HPCDD		44						140					
1,2,3,4,6,7,8-HPCDF		3.6	J	P				47					
1,2,3,4,7,8,9-HPCDF		0.39	J	P				3.2	J	P			
1,2,3,4,7,8-HXCDD		0.62	J	P				3.2	J	P			
1,2,3,4,7,8-HXCDF		0.41	J	PW				3.6	J	P			
1,2,3,6,7,8-HXCDD		0.9	J	P				7.1					
1,2,3,6,7,8-HXCDF		0.81	J	P				3.7	J	P			
1,2,3,7,8,9-HXCDD		1.2	J	PW				6					
1,2,3,7,8,9-HXCDF		0.058	U					0.12	U				
1,2,3,7,8-PECDD		0.27	J	P				1.6	J	P			
1,2,3,7,8-PECDF		0.054	U					0.64	J	P			
2,3,4,6,7,8-HXCDF		0.44	J	P				3.5	J	P			
2,3,4,7,8-PECDF		0.14	J	P				1.1	J	P			
2,3,7,8-TCDD		0.12	J	PW				0.18	J	PW			
2,3,7,8-TCDF					0.19	J	PS				0.69	J	PS
TOTAL HPCDD		75						260					
TOTAL HPCDF		8.1						140					
TOTAL HXCDD		8.8	J	W				50	J	W			
TOTAL HXCDF		9.9	J	W				91	J	W			
TOTAL PECDD		2	J	PW				7.8	J	W			
TOTAL PECDF		4.8	J	PW				30	J	W			
TOTAL TCDD		1.3	J	W				1.1	J	W			
TOTAL TCDF		4.8	J	GW				6	J	W			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1022-000.9			TF2-004/5-SS1022-000.9A			TF2-004/5-SS1023-000.8			TF2-004/5-SS1024-000.6		
SDG: 320-4670-1	LAB_ID	320-4670-5			320-4670-5			320-4670-4			320-4670-3		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.7			93.7			94.8			94.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		6400						2200			4100		
1,2,3,4,6,7,8,9-OCDF		5.3	J	P				22			29		
1,2,3,4,6,7,8-HPCDD		46						65			120		
1,2,3,4,6,7,8-HPCDF		2.9	J	P				13			20		
1,2,3,4,7,8,9-HPCDF		0.059	U					1	J	P	1.5	J	P
1,2,3,4,7,8-HXCDD		0.51	J	P				1.2	J	CP	2.1	J	CPW
1,2,3,4,7,8-HXCDF		0.27	J	PW				2.2	J	P	2.8	J	P
1,2,3,6,7,8-HXCDD		0.98	J	P				2.8	J	P	5.1	J	P
1,2,3,6,7,8-HXCDF		0.52	J	P				1.6	J	P	3.1	J	P
1,2,3,7,8,9-HXCDD		1.2	J	P				2.5	J	P	5.2	J	P
1,2,3,7,8,9-HXCDF		0.059	U					0.072	U		0.11	U	
1,2,3,7,8-PECDD		0.058	U					0.65	J	P	1.1	J	PW
1,2,3,7,8-PECDF		0.052	U					0.55	J	PW	0.6	J	P
2,3,4,6,7,8-HXCDF		0.28	J	P				1.4	J	P	2.8	J	P
2,3,4,7,8-PECDF		0.054	U					0.93	J	P	1.4	J	P
2,3,7,8-TCDD		0.071	U					0.19	J	PW	0.22	J	PW
2,3,7,8-TCDF					0.071	U		1	J	W	1.2	UJ	Q
TOTAL HPCDD		81						130			230		
TOTAL HPCDF		6.7						33			50		
TOTAL HXCDD		8.2	J	W				22			44	J	W
TOTAL HXCDF		3.6	J	PW				30			55		
TOTAL PECDD		1.7	J	PW				3.9	J	PW	7	J	W
TOTAL PECDF		0.79	J	PW				13	J	W	160	J	W
TOTAL TCDD		0.71	J	PW				2.4	J	W	2.7	J	W
TOTAL TCDF		0.72	J	PW				7.9			11	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1025-000.8			TF2-004/5-SS1026-000.8			TF2-004/5-SS1026-000.8A			TF2-004/5-SS1027-0001		
SDG: 320-4670-1	LAB_ID	320-4670-1			320-4670-2			320-4670-2			320-4670-14		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	91.8			95.2			95.2			92.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		3400			1400						6100		
1,2,3,4,6,7,8,9-OCDF		34			12						4.5	J	P
1,2,3,4,6,7,8-HPCDD		99			40						39		
1,2,3,4,6,7,8-HPCDF		27			11						2.1	J	P
1,2,3,4,7,8,9-HPCDF		1.7	J	P	0.87	J	P				0.08	U	
1,2,3,4,7,8-HXCDD		2.2	J	P	0.84	J	CP				0.28	J	P
1,2,3,4,7,8-HXCDF		4.4	J	P	1.1	J	P				0.3	J	P
1,2,3,6,7,8-HXCDD		4.5	J	P	1.6	J	P				0.47	J	PW
1,2,3,6,7,8-HXCDF		2.8	J	P	1.7	J	P				0.92	J	P
1,2,3,7,8,9-HXCDD		4.3	J	P	1.5	J	PW				0.57	J	P
1,2,3,7,8,9-HXCDF		0.1	U		0.12	U					0.056	U	
1,2,3,7,8-PECDD		0.91	J	P	0.28	J	PW				0.095	U	
1,2,3,7,8-PECDF		0.81	J	PW	0.31	J	PW				0.049	U	
2,3,4,6,7,8-HXCDF		3.1	J	P	2.1	J	P				0.05	U	
2,3,4,7,8-PECDF		1.6	J	P	0.44	J	P				0.051	U	
2,3,7,8-TCDD		0.16	J	PW	0.076	U					0.041	U	
2,3,7,8-TCDF		1	J	PW				0.21	J	PS			
TOTAL HPCDD		190			78						66		
TOTAL HPCDF		60			26						4.6	J	P
TOTAL HXCDD		38	J	W	12	J	W				4.6	J	PW
TOTAL HXCDF		64	J	W	34						2.6	J	PW
TOTAL PECDD		7.9	J	W	1.3	J	PW				1.2	J	PW
TOTAL PECDF		30	J	W	15	J	W				0.38	J	PW
TOTAL TCDD		3.4	J	W	0.076	U					0.43	J	PW
TOTAL TCDF		12	J	W	3.1	J	W				0.64	J	PW

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1027-0001A			TF2-004/5-SS1028-000.8			TF2-004/5-SS1029-000.6			TF2-004/5-SS1030-000.6		
SDG: 320-4670-1	LAB_ID	320-4670-14			320-4670-13			320-4670-12			320-4670-11		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	92.7			91.8			95.4			94.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD					2200			6300			3100		
1,2,3,4,6,7,8,9-OCDF					49			49			15		
1,2,3,4,6,7,8-HPCDD					78			170			70		
1,2,3,4,6,7,8-HPCDF					26			30			9.1		
1,2,3,4,7,8,9-HPCDF					1.5	J	P	1.8	J	P	0.67	J	P
1,2,3,4,7,8-HXCDD					1.3	J	P	3.1	J	P	1.4	J	P
1,2,3,4,7,8-HXCDF					2.9	J	P	3.5	J	P	1.2	J	P
1,2,3,6,7,8-HXCDD					3.3	J	P	7.3			2.7	J	P
1,2,3,6,7,8-HXCDF					2.1	J	P	2.2	J	P	0.95	J	P
1,2,3,7,8,9-HXCDD					2.8	J	P	4.6	J	P	2.7	J	P
1,2,3,7,8,9-HXCDF					0.084	U		0.069	U		0.08	U	
1,2,3,7,8-PECDD					0.55	J	PW	1.3	J	P	0.48	J	PW
1,2,3,7,8-PECDF					0.58	J	P	1.1	J	PW	0.48	J	P
2,3,4,6,7,8-HXCDF					1.9	J	P	1.8	J	P	0.81	J	P
2,3,4,7,8-PECDF					0.6	J	P	1.5	J	P	0.43	J	P
2,3,7,8-TCDD					0.036	U		0.29	J	PW	0.16	J	PW
2,3,7,8-TCDF		0.051	U		0.54	J	P	1.7					
TOTAL HPCDD					140			290			150		
TOTAL HPCDF					66			74			22		
TOTAL HXCDD					23	J	W	50	J	W	23	J	W
TOTAL HXCDF					37			40	J	W	17		
TOTAL PECDD					4	J	PW	9.1	J	W	3.1	J	PW
TOTAL PECDF					12	J	W	22	J	W	6.6	J	W
TOTAL TCDD					0.94	J	PW	4	J	W	0.78	J	PW
TOTAL TCDF					5.6	J	W	14	J	W	3.4	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1030-000.6A			TF2-004/5-SS1031-000.8			TF2-004/5-SS1031-000.8A			TF2-004/5-SS1032-000.9		
SDG: 320-4670-1	LAB_ID	320-4670-11			320-4670-9			320-4670-9			320-4670-8		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	94.9			91.1			91.1			91.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD					3800						3900		
1,2,3,4,6,7,8,9-OCDF					15						18		
1,2,3,4,6,7,8-HPCDD					71						96		
1,2,3,4,6,7,8-HPCDF					9						14		
1,2,3,4,7,8,9-HPCDF					0.52	J	P				1.1	J	P
1,2,3,4,7,8-HXCDD					1.2	J	P				1.9	J	P
1,2,3,4,7,8-HXCDF					1.4	J	P				2.2	J	P
1,2,3,6,7,8-HXCDD					2.5	J	P				3.6	J	P
1,2,3,6,7,8-HXCDF					1.1	J	P				2.2	J	P
1,2,3,7,8,9-HXCDD					2.4	J	P				3.8	J	P
1,2,3,7,8,9-HXCDF					0.07	U					0.11	U	
1,2,3,7,8-PECDD					0.44	J	PW				0.71	J	P
1,2,3,7,8-PECDF					0.4	J	PW				0.86	J	P
2,3,4,6,7,8-HXCDF					0.67	J	P				1.7	J	P
2,3,4,7,8-PECDF					0.49	J	P				0.49	J	P
2,3,7,8-TCDD					0.14	J	PW				0.053	U	
2,3,7,8-TCDF		0.71	J	P				0.66	J	P	0.97	U	
TOTAL HPCDD					130						190		
TOTAL HPCDF					21						34		
TOTAL HXCDD					20	J	W				31	J	W
TOTAL HXCDF					14	J	W				36		
TOTAL PECDD					2.5	J	PW				4.5	J	PW
TOTAL PECDF					6.6	J	W				27	J	W
TOTAL TCDD					1.5	J	W				0.76	J	PW
TOTAL TCDF					4.2	J	W				3.2	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1033-000.8			TF2-004/5-SS1033-000.8A			TF2-004/5-SS1034-000.6			TF2-004/5-SS1035-0001		
SDG: 320-4670-1	LAB_ID	320-4670-24			320-4670-24			320-4670-23			320-4670-21		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	94.5			94.5			93.1			94.9		
	DUP_OF												

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD	4500						2400			4000		
1,2,3,4,6,7,8,9-OCDF	19						22			280	J	G
1,2,3,4,6,7,8-HPCDD	88						59			330		
1,2,3,4,6,7,8-HPCDF	9.3						17			110	J	G
1,2,3,4,7,8,9-HPCDF	0.16	U					1.3	J	P	5.7		
1,2,3,4,7,8-HXCDD	0.81	J	P				1.2	J	PW	4.5	J	CP
1,2,3,4,7,8-HXCDF	0.9	J	P				2.7	J	P	11		
1,2,3,6,7,8-HXCDD	2.3	J	P				2.7	J	P	14		
1,2,3,6,7,8-HXCDF	0.83	J	P				2.4	J	P	4.6	J	P
1,2,3,7,8,9-HXCDD	1.7	J	P				2.7	J	P	11		
1,2,3,7,8,9-HXCDF	0.095	U					0.12	U		0.13	U	
1,2,3,7,8-PECDD	0.23	J	P				0.56	J	P	2.1	J	P
1,2,3,7,8-PECDF	0.084	U					0.77	J	PW	1.1	J	PW
2,3,4,6,7,8-HXCDF	0.59	J	P				2.4	J	P	3.3	J	P
2,3,4,7,8-PECDF	0.17	J	EP				1.1	J	EP	2	J	P
2,3,7,8-TCDD	0.039	U					0.24	J	PW	0.41	J	P
2,3,7,8-TCDF				0.088	U		0.94	J	P	1.3		
TOTAL HPCDD	160						110			580		
TOTAL HPCDF	23						38			210		
TOTAL HXCDD	15	J	W				23	J	W	94		
TOTAL HXCDF	9.8	J	W				48	J	W	81		
TOTAL PECDD	1.8	J	PW				4.7	J	PW	13	J	W
TOTAL PECDF	2.2	J	PW				33	J	W	25	J	W
TOTAL TCDD	0.44	J	PW				2.2	J	W	4.4	J	W
TOTAL TCDF	2.2	J	W				12	J	W	12	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1036-000.6			TF2-004/5-SS1037-000.7			TF2-004/5-SS1038-000.7			TF2-004/5-SS1039-000.9		
SDG: 320-4670-1	LAB_ID	320-4670-20			320-4670-19			320-4670-18			320-4670-16		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	96.8			96.6			91.3			90.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		6800			3400			3500			5700		
1,2,3,4,6,7,8,9-OCDF		63			26			27			18		
1,2,3,4,6,7,8-HPCDD		270			57			100			81		
1,2,3,4,6,7,8-HPCDF		40			16			17			11		
1,2,3,4,7,8,9-HPCDF		2.1	J	P	1.5	J	P	0.89	J	P	0.1	U	
1,2,3,4,7,8-HXCDD		3.3	J	CP	0.97	J	CP	1.5	J	CP	1.4	J	P
1,2,3,4,7,8-HXCDF		3.5	J	P	3.9	J	P	2	J	P	1.7	J	P
1,2,3,6,7,8-HXCDD		12			2.1	J	P	4.2	J	P	2.9	J	PW
1,2,3,6,7,8-HXCDF		2.4	J	P	2.2	J	P	1.5	J	P	1.2	J	P
1,2,3,7,8,9-HXCDD		8.2			2.5	J	P	3.8	J	P	2.7	J	P
1,2,3,7,8,9-HXCDF		0.096	U		0.11	U		0.12	U		0.094	U	
1,2,3,7,8-PECDD		1.5	J	P	0.58	J	P	0.73	J	P	0.63	J	P
1,2,3,7,8-PECDF		0.97	J	PW	1	J	P	0.54	J	PW	0.59	J	P
2,3,4,6,7,8-HXCDF		2	J	P	0.66	J	PW	2.1	J	P	0.78	J	P
2,3,4,7,8-PECDF		1.4	J	P	1	J	P	0.73	J	P	0.68	J	P
2,3,7,8-TCDD		0.27	J	PW	0.13	J	PW	0.11	J	PW	0.3	U	
2,3,7,8-TCDF		1.4	J	Q	0.8	J	P	0.88	J	P	0.64	J	P
TOTAL HPCDD		460			110			190			150		
TOTAL HPCDF		100			28			41			24		
TOTAL HXCDD		67	J	W	18			29			24	J	W
TOTAL HXCDF		53	J	W	23	J	W	26	J	W	17		
TOTAL PECDD		10	J	W	4.3	J	PW	4.4	J	PW	5.2	J	PW
TOTAL PECDF		20	J	W	38	J	W	11	J	W	10	J	W
TOTAL TCDD		4.5	J	W	1.9	J	W	1.9	J	W	1.4		
TOTAL TCDF		14	J	W	7.4	J	W	5.7	J	W	6.3	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1040-000.9			TF2-004/5-SS1041-000.7			TF2-004/5-SS1041-000.7A			TF2-004/5-SS1042-000.5		
SDG: 320-4670-1	LAB_ID	320-4670-15			320-4670-32			320-4670-32			320-4670-31		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	89.1			94.5			94.5			93.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		6400			5600						3000		
1,2,3,4,6,7,8,9-OCDF		37			15						140		
1,2,3,4,6,7,8-HPCDD		140			46						170		
1,2,3,4,6,7,8-HPCDF		19			6.4						75		
1,2,3,4,7,8,9-HPCDF		1.2	J	P	0.098	U					2.9	J	PW
1,2,3,4,7,8-HXCDD		1.7	J	PW	0.43	J	PW				3.3	J	P
1,2,3,4,7,8-HXCDF		2.4	J	P	0.54	J	PW				5.4		
1,2,3,6,7,8-HXCDD		4.7	J	P	0.86	J	P				7.1		
1,2,3,6,7,8-HXCDF		1.8	J	P	0.74	J	P				3.7	J	P
1,2,3,7,8,9-HXCDD		4	J	P	0.76	J	PW				6.7		
1,2,3,7,8,9-HXCDF		0.099	U		0.089	U					0.13	U	
1,2,3,7,8-PECDD		0.86	J	P	0.14	J	PW				1.1	J	P
1,2,3,7,8-PECDF		0.91	J	P	0.067	JU					0.85	J	PW
2,3,4,6,7,8-HXCDF		1.6	J	P	0.2	J	PW				3	J	P
2,3,4,7,8-PECDF		0.74	J	P	0.18	J	EP				1.5	J	EP
2,3,7,8-TCDD		0.044	U		0.035	U					0.045	U	
2,3,7,8-TCDF		0.95	J	P				0.12	U		1.2		
TOTAL HPCDD		270			82						300		
TOTAL HPCDF		51			15						180	J	W
TOTAL HXCDD		32	J	W	6.2	J	W				52		
TOTAL HXCDF		34			5.3	J	W				63		
TOTAL PECDD		3.8	J	PW	1.9	J	PW				6.9	J	W
TOTAL PECDF		14	J	W	1.1	J	PW				20	J	W
TOTAL TCDD		0.77	J	PW	0.63	J	PW				2	J	W
TOTAL TCDF		5.5	J	W	1	J	W				11	J	W

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PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1044-000.5			TF2-004/5-SS1045-000.5			TF2-004/5-SS1046-000.5			TF2-004/5-SS1046-000.5A		
SDG: 320-4670-1	LAB_ID	320-4670-30			320-4670-29			320-4670-28			320-4670-28		
FRACTION: DIOX	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	95.0			95.2			96.7			96.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		3500			6400			3600					
1,2,3,4,6,7,8,9-OCDF		55			420			18					
1,2,3,4,6,7,8-HPCDD		140			360			100					
1,2,3,4,6,7,8-HPCDF		28			130			13					
1,2,3,4,7,8,9-HPCDF		1.1	J	PW	8.9			0.75	J	P			
1,2,3,4,7,8-HXCDD		2.4	J	P	5.2			2.6	J	P			
1,2,3,4,7,8-HXCDF		2.4	J	P	5.5			1.7	J	P			
1,2,3,6,7,8-HXCDD		6.3			17			5.6					
1,2,3,6,7,8-HXCDF		1.6	J	P	3.6	J	P	1.1	J	P			
1,2,3,7,8,9-HXCDD		4.8	J	P	11			5.2					
1,2,3,7,8,9-HXCDF		0.12	U		0.18	U		0.085	U				
1,2,3,7,8-PECDD		0.82	J	PW	1.3	J	P	1.1	J	P			
1,2,3,7,8-PECDF		0.64	J	P	1.2	J	P	0.25	U				
2,3,4,6,7,8-HXCDF		1.2	J	P	3.2	J	P	0.94	J	P			
2,3,4,7,8-PECDF		0.67	J	EP	1.5	J	EP	0.59	J	EP			
2,3,7,8-TCDD		0.15	J	PW	0.26	J	PW	0.037	U				
2,3,7,8-TCDF		0.64	J	P	1.2						0.48	J	P
TOTAL HPCDD		240			580			200					
TOTAL HPCDF		70	J	W	460			31					
TOTAL HXCDD		40			81	J	W	43	J	W			
TOTAL HXCDF		28			110	J	W	21	J	W			
TOTAL PECDD		4.4	J	PW	8.4	J	W	5.6	J	W			
TOTAL PECDF		10	J	W	20	J	W	8.3	J	W			
TOTAL TCDD		1.5	J	W	2.2	J	W	0.91	J	PW			
TOTAL TCDF		6	J	W	13	J	W	5.2	J	W			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1047-000.8	TF2-004/5-SS1048-000.8	TF2-004/5-SS1049-000.9	TF2-004/5-SS1049-000.9A
SDG: 320-4670-1	LAB_ID	320-4670-27	320-4670-26	320-4670-25	320-4670-25
FRACTION: DIOX	SAMP_DATE	10/21/2013	10/21/2013	10/21/2013	10/21/2013
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM
	UNITS	NG/KG	NG/KG	NG/KG	NG/KG
	PCT_SOLIDS	92.8	92.6	93.7	93.7
	DUP_OF				

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD	10000			5400						4400		
1,2,3,4,6,7,8,9-OCDF	110			36			38					
1,2,3,4,6,7,8-HPCDD	850			110			160					
1,2,3,4,6,7,8-HPCDF	99			22			24					
1,2,3,4,7,8,9-HPCDF	4.2	J	P	1.3	J	P	1.2	J	PW			
1,2,3,4,7,8-HXCDD	16			2.1	J	P	2.9	J	P			
1,2,3,4,7,8-HXCDF	7.5			3.3	J	P	2.6	J	P			
1,2,3,6,7,8-HXCDD	52			4.8	J	P	8.1					
1,2,3,6,7,8-HXCDF	6			2	J	P	1.6	J	PW			
1,2,3,7,8,9-HXCDD	34			4.1	J	P	5.8					
1,2,3,7,8,9-HXCDF	0.17	U		0.12	U		0.13	U				
1,2,3,7,8-PECDD	5.4			0.75	J	P	1	J	P			
1,2,3,7,8-PECDF	1.1	J	PW	0.87	J	P	0.1	U				
2,3,4,6,7,8-HXCDF	5.5			1.7	J	P	1.3	J	P			
2,3,4,7,8-PECDF	1.4	J	EP	1.3	J	EPW	0.76	J	EP			
2,3,7,8-TCDD	0.54	J	P	0.23	J	PW	0.13	U				
2,3,7,8-TCDF	1.2			1.8			0.66	J	P			
TOTAL HPCDD	1500			210			280					
TOTAL HPCDF	240			51			61	J	W			
TOTAL HXCDD	320	J	W	35			53					
TOTAL HXCDF	150	J	W	32			30	J	W			
TOTAL PECDD	36			7.7	J	W	5.1	J	PW			
TOTAL PECDF	34	J	W	22	J	W	10	J	W			
TOTAL TCDD	4.7	J	W	3.2	J	W	1.2					
TOTAL TCDF	11	J	W	15	J	W	7.9	J	W			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1050-000.6			TF2-004/5-SS1051-000.8			TF2-004/5-SS1051-000.8A			TF2-004/5-SS1052-000.6		
SDG: 320-4670-1	LAB_ID	320-4670-42			320-4670-41			320-4670-41			320-4670-40		
FRACTION: DIOX	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.4			96.7			96.7			92.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		2800			5700						4000		
1,2,3,4,6,7,8,9-OCDF		96			35						200		
1,2,3,4,6,7,8-HPCDD		62			67						270		
1,2,3,4,6,7,8-HPCDF		34			15						92		
1,2,3,4,7,8,9-HPCDF		1.6	J	P	0.73	J	P				4.6	J	P
1,2,3,4,7,8-HXCDD		1	J	PW	0.95	J	P				4.5	J	P
1,2,3,4,7,8-HXCDF		4.1	J	P	1.1	J	PW				4.9	J	P
1,2,3,6,7,8-HXCDD		2.3	J	P	2	J	P				12		
1,2,3,6,7,8-HXCDF		1.7	J	P	1.2	J	P				4.2	J	P
1,2,3,7,8,9-HXCDD		2.3	J	P	1.8	J	P				9.7		
1,2,3,7,8,9-HXCDF		0.093	U		0.087	U					0.15	U	
1,2,3,7,8-PECDD		0.5	J	P	0.41	J	P				1.8	J	P
1,2,3,7,8-PECDF		0.43	J	PW	0.3	J	PW				1.1	J	PW
2,3,4,6,7,8-HXCDF		0.75	J	PW	0.58	J	PW				4.1	J	P
2,3,4,7,8-PECDF		0.65	J	EP	0.35	J	EP				1.6	J	EP
2,3,7,8-TCDD		0.16	J	PW	0.035	U					0.14	J	PW
2,3,7,8-TCDF		0.43	J	P				0.33	J	PW	1.2		
TOTAL HPCDD		110			120						470		
TOTAL HPCDF		62			39						240		
TOTAL HXCDD		18	J	W	14						79		
TOTAL HXCDF		20	J	W	13	J	W				95		
TOTAL PECDD		3.4	J	PW	2.9	J	PW				10	J	W
TOTAL PECDF		8.8	J	W	3.4	J	PW				29	J	W
TOTAL TCDD		1.8	J	W	1.2	J	W				2.2	J	W
TOTAL TCDF		6.6	J	W	2.7	J	W				11	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1053-000.6			TF2-004/5-SS1054-000.6			TF2-004/5-SS1054-000.6A			TF2-004/5-SS1055-000.8		
SDG: 320-4670-1	LAB_ID	320-4670-39			320-4670-38			320-4670-38			320-4670-37		
FRACTION: DIOX	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.3			95.8			95.8			93.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		7000			3100						1900		
1,2,3,4,6,7,8,9-OCDF		250			53						22		
1,2,3,4,6,7,8-HPCDD		510			98	J	D				55		
1,2,3,4,6,7,8-HPCDF		120			26						13		
1,2,3,4,7,8,9-HPCDF		5.2			1.2	J	P				0.76	J	P
1,2,3,4,7,8-HXCDD		6.5	J	W	1.7	J	P				0.87	J	P
1,2,3,4,7,8-HXCDF		7.1			1.9	J	P				1.4	J	P
1,2,3,6,7,8-HXCDD		23			4.3	J	P				2.4	J	P
1,2,3,6,7,8-HXCDF		5.1	J	P	1.2	J	PW				0.84	J	P
1,2,3,7,8,9-HXCDD		14			3.2	J	P				1.7	J	P
1,2,3,7,8,9-HXCDF		0.14	U		0.12	U					0.12	U	
1,2,3,7,8-PECDD		2.7	J	P	0.58	J	P				0.31	J	P
1,2,3,7,8-PECDF		0.81	J	P	0.23	J	P				0.14	J	PW
2,3,4,6,7,8-HXCDF		4.4	J	P	0.78	J	PW				0.59	J	PW
2,3,4,7,8-PECDF		0.98	J	EP	0.36	J	EP				0.16	J	EPW
2,3,7,8-TCDD		0.63	J	P	0.094	J	PW				0.043	U	
2,3,7,8-TCDF		0.77	J	P				0.17	J	PW			
TOTAL HPCDD		860			170						93		
TOTAL HPCDF		330			67						31		
TOTAL HXCDD		130	J	W	27						15		
TOTAL HXCDF		120			24	J	W				13	J	W
TOTAL PECDD		12	J	W	3.2	J	PW				2.4	J	PW
TOTAL PECDF		24	J	W	5.8	J	W				6.5	J	W
TOTAL TCDD		2.7	J	W	0.92	J	PW				0.46	J	PW
TOTAL TCDF		9.4	J	W	1.7	J	W				2.4	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1055-000.8A			TF2-004/5-SS1056-000.6			TF2-004/5-SS1056-000.6A			TF2-004/5-SS1057-0001		
SDG: 320-4670-1	LAB_ID	320-4670-37			320-4670-36			320-4670-36			320-4670-35		
FRACTION: DIOX	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.6			95.9			95.9			95.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD					3700						6400		
1,2,3,4,6,7,8,9-OCDF					21						43		
1,2,3,4,6,7,8-HPCDD					130						420		
1,2,3,4,6,7,8-HPCDF					16						44		
1,2,3,4,7,8,9-HPCDF					0.73	J	P				1.6	J	P
1,2,3,4,7,8-HXCDD					3	J	P				7.2		
1,2,3,4,7,8-HXCDF					1.9	J	P				3.2	J	P
1,2,3,6,7,8-HXCDD					6.7						23		
1,2,3,6,7,8-HXCDF					1.7	J	P				2.8	J	P
1,2,3,7,8,9-HXCDD					6.4						14		
1,2,3,7,8,9-HXCDF					0.11	U					0.11	U	
1,2,3,7,8-PECDD					1.2	J	PW				2.5	J	P
1,2,3,7,8-PECDF					0.45	J	P				0.5	J	PW
2,3,4,6,7,8-HXCDF					0.98	J	P				2.2	J	P
2,3,4,7,8-PECDF					0.25	J	EP				1	J	EP
2,3,7,8-TCDD					0.31	J	P				0.19	J	PW
2,3,7,8-TCDF		0.18	J	P				0.19	J	PW	0.56	J	P
TOTAL HPCDD					250						730		
TOTAL HPCDF					37						110		
TOTAL HXCDD					49						140		
TOTAL HXCDF					23						77		
TOTAL PECDD					8.4	J	W				14	J	W
TOTAL PECDF					8	J	W				16	J	W
TOTAL TCDD					1.3	J	W				1.7	J	W
TOTAL TCDF					3.4	J	W				6.2	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1058-000.5			TF2-004/5-SS1058-000.5A			TF2-004/5-SS1059-000.6			TF2-004/5-SS1059-000.6A		
SDG: 320-4670-1	LAB_ID	320-4670-50			320-4670-50			320-4670-49			320-4670-49		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	95.0			95.0			96.8			96.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		1400						6400					
1,2,3,4,6,7,8,9-OCDF		42						20					
1,2,3,4,6,7,8-HPCDD		48						59					
1,2,3,4,6,7,8-HPCDF		14						6.9	J	W			
1,2,3,4,7,8,9-HPCDF		0.91	J	P				0.11	U				
1,2,3,4,7,8-HXCDD		0.64	J	PW				0.53	J	P			
1,2,3,4,7,8-HXCDF		1.5	J	P				0.51	J	PW			
1,2,3,6,7,8-HXCDD		1.6	J	P				1	J	P			
1,2,3,6,7,8-HXCDF		1	J	P				0.64	J	P			
1,2,3,7,8,9-HXCDD		1.5	J	P				1.1	J	P			
1,2,3,7,8,9-HXCDF		0.081	U					0.059	U				
1,2,3,7,8-PECDD		0.3	J	P				0.18	J	P			
1,2,3,7,8-PECDF		0.066	U					0.048	U				
2,3,4,6,7,8-HXCDF		0.94	J	P				0.41	J	P			
2,3,4,7,8-PECDF		0.34	J	PW				0.05	U				
2,3,7,8-TCDD		0.036	U					0.042	U				
2,3,7,8-TCDF					0.42	J	P				0.065	U	
TOTAL HPCDD		82						100					
TOTAL HPCDF		42						17	J	W			
TOTAL HXCDD		10	J	W				7.5	J	W			
TOTAL HXCDF		14						6.6	J	W			
TOTAL PECDD		1.5	J	PW				1.6	J	PW			
TOTAL PECDF		3.7	J	PW				1.4	J	PW			
TOTAL TCDD		0.48	J	PW				1.3					
TOTAL TCDF		2.8	J	W				1.2	J	W			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1060.000.5			TF2-004/5-SS1061-000.6			TF2-004/5-SS1061-000.6A			TF2-004/5-SS1062-000.8		
SDG: 320-4670-1	LAB_ID	320-4670-48			320-4670-44			320-4670-44			320-4670-43		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	95.6			99.3			99.3			93.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		5500			3400						4900		
1,2,3,4,6,7,8,9-OCDF		210			40						29		
1,2,3,4,6,7,8-HPCDD		300			110						120		
1,2,3,4,6,7,8-HPCDF		95			22						17		
1,2,3,4,7,8,9-HPCDF		4.9	J	P	1.4	J	P				1.2	J	P
1,2,3,4,7,8-HXCDD		4.9	J	P	2.3	J	P				2.2	J	P
1,2,3,4,7,8-HXCDF		8.1			1.9	J	P				2	J	P
1,2,3,6,7,8-HXCDD		13			5.7						5.7		
1,2,3,6,7,8-HXCDF		5.6			1.3	J	P				1.3	J	P
1,2,3,7,8,9-HXCDD		10			4.7	J	P				4.9	J	P
1,2,3,7,8,9-HXCDF		0.098	U		0.088	U					0.099	U	
1,2,3,7,8-PECDD		1.9	J	P	0.98	J	P				1.2	J	P
1,2,3,7,8-PECDF		2	J	P	0.3	J	P				0.58	J	P
2,3,4,6,7,8-HXCDF		5.7			1.2	J	P				1.1	J	P
2,3,4,7,8-PECDF		2.4	J	P	0.51	J	P				0.84	J	EP
2,3,7,8-TCDD		0.28	J	PW	0.056	U					0.17	J	PW
2,3,7,8-TCDF		2						0.43	J	P	0.76	J	P
TOTAL HPCDD		510			200						210		
TOTAL HPCDF		240			56						39		
TOTAL HXCDD		87			34	J	W				41	J	W
TOTAL HXCDF		120	J	W	28						24		
TOTAL PECDD		14	J	W	4.7	J	PW				6.9	J	W
TOTAL PECDF		45	J	W	9.5	J	W				13	J	W
TOTAL TCDD		5.1	J	W	1.3	J	W				2.2	J	W
TOTAL TCDF		23			5	J	W				8.5	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1063-000.6			TF2-004/5-SS1063-000.6A			TF2-004/5-SS1064-000.6			TF2-004/5-SS1064-000.6A		
SDG: 320-4670-1	LAB_ID	320-4670-53			320-4670-53			320-4670-52			320-4670-52		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	96.5			96.5			97.3			97.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		1700						1900					
1,2,3,4,6,7,8,9-OCDF		34						44					
1,2,3,4,6,7,8-HPCDD		50						87					
1,2,3,4,6,7,8-HPCDF		15						22					
1,2,3,4,7,8,9-HPCDF		1	J	P				1.3	J	P			
1,2,3,4,7,8-HXCDD		0.66	J	PW				1.2	J	P			
1,2,3,4,7,8-HXCDF		1.8	J	P				1.8	J	PW			
1,2,3,6,7,8-HXCDD		2	J	P				3.8	J	P			
1,2,3,6,7,8-HXCDF		1.4	J	P				1.3	J	PW			
1,2,3,7,8,9-HXCDD		1.7	J	P				2.6	J	P			
1,2,3,7,8,9-HXCDF		0.087	U					0.1	U				
1,2,3,7,8-PECDD		0.27	J	PW				0.59	J	P			
1,2,3,7,8-PECDF		0.4	J	PW				0.53	J	P			
2,3,4,6,7,8-HXCDF		1.1	J	P				2.3	J	P			
2,3,4,7,8-PECDF		0.48	J	P				0.64	J	P			
2,3,7,8-TCDD		0.05	U					0.16	J	PW			
2,3,7,8-TCDF					0.49	J	P				0.44	J	PW
TOTAL HPCDD		90						150					
TOTAL HPCDF		40						56					
TOTAL HXCDD		14	J	W				27	J	W			
TOTAL HXCDF		38	J	W				28	J	W			
TOTAL PECDD		2.8	J	PW				4.6	J	PW			
TOTAL PECDF		9.9	J	W				12	J	W			
TOTAL TCDD		0.76	J	PW				2.1	J	W			
TOTAL TCDF		4.6	J	W				5.8	J	W			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1065-000.5			TF2-004/5-SS1066-000.9			TF2-004/5-SS1067-000.7			TF2-004/5-SS1067-000.7A		
SDG: 320-4670-1	LAB_ID	320-4670-51			320-4670-47			320-4670-46			320-4670-46		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	96.6			97.8			88.5			88.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		3000			5800			3700					
1,2,3,4,6,7,8,9-OCDF		100			69			40					
1,2,3,4,6,7,8-HPCDD		170			150			130					
1,2,3,4,6,7,8-HPCDF		51			33			24					
1,2,3,4,7,8,9-HPCDF		2.9	J	P	1.8	J	P	1.4	J	P			
1,2,3,4,7,8-HXCDD		2.7	J	P	3.1	J	P	2.9	J	P			
1,2,3,4,7,8-HXCDF		4.1	J	P	2.4	J	P	2.1	J	P			
1,2,3,6,7,8-HXCDD		6.8			7.2			6.8					
1,2,3,6,7,8-HXCDF		3.1	J	P	1.8	J	P	2.1	J	P			
1,2,3,7,8,9-HXCDD		5.4			6.2			6.3					
1,2,3,7,8,9-HXCDF		0.099	U		0.088	U		0.13	U				
1,2,3,7,8-PECDD		1.1	J	P	1.4	J	P	1.3	J	P			
1,2,3,7,8-PECDF		0.94	J	P	0.35	J	PW	0.1	U				
2,3,4,6,7,8-HXCDF		3.3	J	P	1.5	J	P	1.9	J	P			
2,3,4,7,8-PECDF		1.4	J	P	0.64	J	P	0.56	J	P			
2,3,7,8-TCDD		0.18	J	PW	0.26	J	PW	0.14	U				
2,3,7,8-TCDF		1			0.51	J	P				0.71	J	PRW
TOTAL HPCDD		290			270			240					
TOTAL HPCDF		130			88			57					
TOTAL HXCDD		45			44			47					
TOTAL HXCDF		68	J	W	36			38					
TOTAL PECDD		7.4	J	W	5.5	J	W	7.4	J	W			
TOTAL PECDF		26	J	W	9.8	J	W	11	J	W			
TOTAL TCDD		1.8	J	W	1.1	J	W	0.82	J	PW			
TOTAL TCDF		11	J	W	4.8	J	W	4.3	J	W			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1068-000.5			TF2-004/5-SS1068-000.5A			TF2-004/5-SS-DUP01-1013			TF2-004/5-SS-DUP01-1013A		
SDG: 320-4670-1	LAB_ID	320-4670-54			320-4670-54			320-4670-10			320-4670-10		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/22/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	94.0			94.0			96.8			96.8		
	DUP_OF							TF2-004/5-SS1020-0001			TF2-004/5-SS1020-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		2400						6600					
1,2,3,4,6,7,8,9-OCDF		65						7.3	J	P			
1,2,3,4,6,7,8-HPCDD		160						49					
1,2,3,4,6,7,8-HPCDF		41						4.1	J	P			
1,2,3,4,7,8,9-HPCDF		1.7	J	P				0.31	J	P			
1,2,3,4,7,8-HXCDD		2.3	J	P				0.55	J	PW			
1,2,3,4,7,8-HXCDF		2.5	J	P				0.46	J	P			
1,2,3,6,7,8-HXCDD		7.2						1.2	J	P			
1,2,3,6,7,8-HXCDF		1.9	J	P				1.4	J	P			
1,2,3,7,8,9-HXCDD		5.2	J	P				1.4	J	P			
1,2,3,7,8,9-HXCDF		0.11	U					0.069	U				
1,2,3,7,8-PECDD		0.75	J	PW				0.24	J	PW			
1,2,3,7,8-PECDF		0.48	J	PW				0.072	U				
2,3,4,6,7,8-HXCDF		1.8	J	P				0.55	J	P			
2,3,4,7,8-PECDF		0.72	J	P				0.15	J	P			
2,3,7,8-TCDD		0.098	U					0.045	U				
2,3,7,8-TCDF					0.33	U					0.17	J	PS
TOTAL HPCDD		270						86					
TOTAL HPCDF		100						10					
TOTAL HXCDD		44						10	J	W			
TOTAL HXCDF		43						10	J	W			
TOTAL PECDD		6.1	J	W				1.8	J	PW			
TOTAL PECDF		14	J	W				4.2	J	PW			
TOTAL TCDD		2.3	J	W				0.58	J	PW			
TOTAL TCDF		5.9	J	W				1.3	J	GW			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS-DUP02-1013			TF2-004/5-SS-DUP03-1013			TF2-004/5-SS-DUP03-1013A			TF2-004/5-SS-DUP04-1013		
SDG: 320-4670-1	LAB_ID	320-4670-22			320-4670-33			320-4670-33			320-4670-45		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.8			94.9			94.9			95.6		
	DUP_OF	TF2-004/5-SS1035-0001			TF2-004/5-SS1041-000.7			TF2-004/5-SS1041-000.7			TF2-004/5-SS1061-000.6		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		3600			6000						3600		
1,2,3,4,6,7,8,9-OCDF		110	J	G	18						49		
1,2,3,4,6,7,8-HPCDD		330			63						120		
1,2,3,4,6,7,8-HPCDF		60	J	G	7.3						23		
1,2,3,4,7,8,9-HPCDF		3.3	J	P	0.15	U					1	J	P
1,2,3,4,7,8-HXCDD		4.5	J	CP	0.49	J	P				2.2	J	P
1,2,3,4,7,8-HXCDF		5.3	J	P	0.9	J	P				2.1	J	P
1,2,3,6,7,8-HXCDD		16			0.95	J	P				5.6		
1,2,3,6,7,8-HXCDF		3.3	J	P	0.76	J	PW				1.3	J	P
1,2,3,7,8,9-HXCDD		8.8			1.1	J	P				4.9	J	P
1,2,3,7,8,9-HXCDF		0.16	U		0.094	U					0.096	U	
1,2,3,7,8-PECDD		1.8	J	PW	0.11	J	PW				0.91	J	PW
1,2,3,7,8-PECDF		1	J	PW	0.073	U					0.34	J	P
2,3,4,6,7,8-HXCDF		2.5	J	PW	0.34	J	PW				1.2	J	P
2,3,4,7,8-PECDF		1.2	J	PW	0.076	U					0.51	J	PW
2,3,7,8-TCDD		0.3	J	PW	0.04	U					0.2	J	PW
2,3,7,8-TCDF		1.5	UJ	Q				0.15	J	P			
TOTAL HPCDD		590			120						220		
TOTAL HPCDF		150			18						62		
TOTAL HXCDD		96			7.7	J	W				36		
TOTAL HXCDF		69	J	W	6.8	J	W				30		
TOTAL PECDD		13	J	W	1.8	J	PW				4.8	J	PW
TOTAL PECDF		21	J	W	1.3	J	PW				9.2	J	W
TOTAL TCDD		4	J	W	0.59	J	P				1.2	J	W
TOTAL TCDF		11			1	J	W				4.1	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS-DUP04-1013A			TF2-004/5-SS-DUP05-1013		
SDG: 320-4670-1	LAB_ID	320-4670-45			320-4670-55		
FRACTION: DIOX	SAMP_DATE	10/21/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	NG/KG			NG/KG		
	PCT_SOLIDS	95.6			96.5		
	DUP_OF	TF2-004/5-SS1061-000.6			TF2-004/5-SS1065-000.5		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD					3100		
1,2,3,4,6,7,8,9-OCDF					89		
1,2,3,4,6,7,8-HPCDD					170		
1,2,3,4,6,7,8-HPCDF					46		
1,2,3,4,7,8,9-HPCDF					2.4	J	P
1,2,3,4,7,8-HXCDD					2.6	J	P
1,2,3,4,7,8-HXCDF					4	J	P
1,2,3,6,7,8-HXCDD					6.5		
1,2,3,6,7,8-HXCDF					3.1	J	P
1,2,3,7,8,9-HXCDD					5.9		
1,2,3,7,8,9-HXCDF					0.15	U	
1,2,3,7,8-PECDD					1.1	J	P
1,2,3,7,8-PECDF					0.87	J	P
2,3,4,6,7,8-HXCDF					3	J	P
2,3,4,7,8-PECDF					1.4	J	P
2,3,7,8-TCDD					0.056	U	
2,3,7,8-TCDF		0.42	J	PW	1.2		
TOTAL HPCDD					290		
TOTAL HPCDF					120	J	W
TOTAL HXCDD					47	J	W
TOTAL HXCDF					68		
TOTAL PECDD					8.3	J	W
TOTAL PECDF					29		
TOTAL TCDD					2.8	J	W
TOTAL TCDF					9.6	J	W

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS-RB03-1013 | Lab Sample ID: 320-4670-66

Matrix: Water | Lab File ID: 28OC13C4D5_013.d

Analysis Method: 8290 | Date Collected: 10/22/2013 12:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1020.4(mL) | Date Analyzed: 10/29/2013 05:30

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		9.8	0.51
51207-31-9	2,3,7,8-TCDF	ND		9.8	0.54
40321-76-4	1,2,3,7,8-PeCDD	ND		49	0.70
57117-41-6	1,2,3,7,8-PeCDF	ND		49	0.83
57117-31-4	2,3,4,7,8-PeCDF	ND		49	0.88
39227-28-6	1,2,3,4,7,8-HxCDD	ND		49	0.41
57653-85-7	1,2,3,6,7,8-HxCDD	ND		49	0.41
19408-74-3	1,2,3,7,8,9-HxCDD	ND		49	0.37
70648-26-9	1,2,3,4,7,8-HxCDF	ND		49	0.21
57117-44-9	1,2,3,6,7,8-HxCDF	ND		49	0.20
60851-34-5	2,3,4,6,7,8-HxCDF	ND		49	0.21
72918-21-9	1,2,3,7,8,9-HxCDF	ND		49	0.23
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		49	0.38
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		49	0.29
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		49	0.35
3268-87-9	OCDD	0.83	J q B	98	0.52
39001-02-0	OCDF	ND		98	0.46
41903-57-5	Total TCDD	ND		9.8	0.51
30402-14-3	Total TCDF	ND		9.8	0.54
36088-22-9	Total PeCDD	ND		49	0.70
30402-15-4	Total PeCDF	ND		49	0.88
34465-46-8	Total HxCDD	ND		49	0.41
55684-94-1	Total HxCDF	ND		49	0.23
37871-00-4	Total HpCDD	0.72	J B	49	0.38
38998-75-3	Total HpCDF	ND		49	0.35

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS-RB03-1013 | Lab Sample ID: 320-4670-66

Matrix: Water | Lab File ID: 28OC13C4D5_013.d

Analysis Method: 8290 | Date Collected: 10/22/2013 12:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1020.4(mL) | Date Analyzed: 10/29/2013 05:30

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	93		40-135
89059-46-1	13C-2,3,7,8-TCDF	93		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	93		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	85		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	102		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	95		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	94		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	99		40-135
114423-97-1	13C-OCDD	96		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-SS-RB01-1013 | Lab Sample ID: 320-4670-17

Matrix: Water | Lab File ID: 28OC13C4D5_011.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1007.7(mL) | Date Analyzed: 10/29/2013 04:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		9.9	0.94
51207-31-9	2,3,7,8-TCDF	ND		9.9	0.99
40321-76-4	1,2,3,7,8-PeCDD	ND		50	1.3
57117-41-6	1,2,3,7,8-PeCDF	ND		50	1.5
57117-31-4	2,3,4,7,8-PeCDF	ND		50	1.6
39227-28-6	1,2,3,4,7,8-HxCDD	ND		50	0.76
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.76
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.69
70648-26-9	1,2,3,4,7,8-HxCDF	ND		50	0.49
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	0.47
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.49
72918-21-9	1,2,3,7,8,9-HxCDF	ND		50	0.52
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		50	0.71
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		50	0.62
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.74
3268-87-9	OCDD	ND		99	0.76
39001-02-0	OCDF	ND		99	1.2
41903-57-5	Total TCDD	ND		9.9	0.94
30402-14-3	Total TCDF	ND		9.9	0.99
36088-22-9	Total PeCDD	ND		50	1.3
30402-15-4	Total PeCDF	ND		50	1.6
34465-46-8	Total HxCDD	ND		50	0.76
55684-94-1	Total HxCDF	ND		50	0.52
37871-00-4	Total HpCDD	ND		50	0.71
38998-75-3	Total HpCDF	ND		50	0.74

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-SS-RB01-1013 | Lab Sample ID: 320-4670-17

Matrix: Water | Lab File ID: 28OC13C4D5_011.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1007.7(mL) | Date Analyzed: 10/29/2013 04:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	91		40-135
89059-46-1	13C-2,3,7,8-TCDF	91		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	80		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	75		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	105		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	100		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	86		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	92		40-135
114423-97-1	13C-OCDD	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-SS-RB02-1013 | Lab Sample ID: 320-4670-34

Matrix: Water | Lab File ID: 28OC13C4D5_012.d

Analysis Method: 8290 | Date Collected: 10/21/2013 11:50

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1001.7(mL) | Date Analyzed: 10/29/2013 04:47

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	1.1
51207-31-9	2,3,7,8-TCDF	ND		10	1.2
40321-76-4	1,2,3,7,8-PeCDD	ND		50	1.8
57117-41-6	1,2,3,7,8-PeCDF	ND		50	1.8
57117-31-4	2,3,4,7,8-PeCDF	ND		50	1.9
39227-28-6	1,2,3,4,7,8-HxCDD	ND		50	0.98
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.98
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.88
70648-26-9	1,2,3,4,7,8-HxCDF	ND		50	0.50
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	0.47
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.50
72918-21-9	1,2,3,7,8,9-HxCDF	ND		50	0.53
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		50	0.96
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		50	0.82
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.97
3268-87-9	OCDD	ND		100	1.5
39001-02-0	OCDF	ND		100	1.7
41903-57-5	Total TCDD	ND		10	1.1
30402-14-3	Total TCDF	ND		10	1.2
36088-22-9	Total PeCDD	ND		50	1.8
30402-15-4	Total PeCDF	ND		50	1.9
34465-46-8	Total HxCDD	ND		50	0.98
55684-94-1	Total HxCDF	ND		50	0.53
37871-00-4	Total HpCDD	ND		50	0.96
38998-75-3	Total HpCDF	ND		50	0.97

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-SS-RB02-1013 | Lab Sample ID: 320-4670-34

Matrix: Water | Lab File ID: 28OC13C4D5_012.d

Analysis Method: 8290 | Date Collected: 10/21/2013 11:50

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1001.7(mL) | Date Analyzed: 10/29/2013 04:47

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	87		40-135
89059-46-1	13C-2,3,7,8-TCDF	89		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	75		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	71		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	100		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	100		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	81		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	89		40-135
114423-97-1	13C-OCDD	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS-DUP06-1013 Lab Sample ID: 320-4670-65

Matrix: Solid Lab File ID: 31OC13C3D5_78.d

Analysis Method: 8290 Date Collected: 10/22/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 15:44

Sample wt/vol: 10.22(g) Date Analyzed: 11/03/2013 03:40

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.25	J q	1.1	0.047
40321-76-4	1,2,3,7,8-PeCDD	0.94	J q	5.3	0.23
57117-41-6	1,2,3,7,8-PeCDF	0.96	J	5.3	0.075
57117-31-4	2,3,4,7,8-PeCDF	0.96	J	5.3	0.078
39227-28-6	1,2,3,4,7,8-HxCDD	1.4	J	5.3	0.079
57653-85-7	1,2,3,6,7,8-HxCDD	3.1	J	5.3	0.058
19408-74-3	1,2,3,7,8,9-HxCDD	3.1	J	5.3	0.056
70648-26-9	1,2,3,4,7,8-HxCDF	2.3	J	5.3	0.092
57117-44-9	1,2,3,6,7,8-HxCDF	1.2	J	5.3	0.070
60851-34-5	2,3,4,6,7,8-HxCDF	0.89	J q	5.3	0.079
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.089
35822-46-9	1,2,3,4,6,7,8-HpCDD	88		5.3	0.30
67562-39-4	1,2,3,4,6,7,8-HpCDF	9.1		5.3	0.095
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.60	J	5.3	0.11
3268-87-9	OCDD	4900	E B	11	0.94
39001-02-0	OCDF	11	B	11	0.061
41903-57-5	Total TCDD	7.8	q	1.1	0.047
30402-14-3	Total TCDF	10	q	1.1	0.045
36088-22-9	Total PeCDD	15	q	5.3	0.23
30402-15-4	Total PeCDF	14	q	5.3	0.077
34465-46-8	Total HxCDD	33		5.3	0.064
55684-94-1	Total HxCDF	16	q	5.3	0.083
37871-00-4	Total HpCDD	200		5.3	0.30
38998-75-3	Total HpCDF	18		5.3	0.10

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS-DUP06-1013 | Lab Sample ID: 320-4670-65

Matrix: Solid | Lab File ID: 31OC13C3D5_78.d

Analysis Method: 8290 | Date Collected: 10/22/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:44

Sample wt/vol: 10.22(g) | Date Analyzed: 11/03/2013 03:40

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		40-135
89059-46-1	13C-2,3,7,8-TCDF	74		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	70		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	75		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	78		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	83		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	63		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	74		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1011-000.8 | Lab Sample ID: 320-4670-56

Matrix: Solid | Lab File ID: 04NO13B3D5_7.d

Analysis Method: 8290 | Date Collected: 10/22/2013 09:40

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.35(g) | Date Analyzed: 11/05/2013 01:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 12.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.23	J q	1.1	0.066
40321-76-4	1,2,3,7,8-PeCDD	0.72	J	5.5	0.087
57117-41-6	1,2,3,7,8-PeCDF	0.40	J	5.5	0.099
57117-31-4	2,3,4,7,8-PeCDF	0.68	J	5.5	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	0.97	J q	5.5	0.15
57653-85-7	1,2,3,6,7,8-HxCDD	2.5	J	5.5	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	5.6		5.5	0.11
70648-26-9	1,2,3,4,7,8-HxCDF	1.3	J	5.5	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	1.3	J	5.5	0.078
60851-34-5	2,3,4,6,7,8-HxCDF	0.96	J	5.5	0.089
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.5	0.10
35822-46-9	1,2,3,4,6,7,8-HpCDD	130		5.5	0.51
67562-39-4	1,2,3,4,6,7,8-HpCDF	13		5.5	0.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.37	J	5.5	0.12
3268-87-9	OCDD	13000	E B	11	2.2
39001-02-0	OCDF	17	B	11	0.070
41903-57-5	Total TCDD	5.5	q	1.1	0.066
30402-14-3	Total TCDF	9.6	q	1.1	0.050
36088-22-9	Total PeCDD	9.0	q	5.5	0.087
30402-15-4	Total PeCDF	15		5.5	0.10
34465-46-8	Total HxCDD	31	q	5.5	0.12
55684-94-1	Total HxCDF	20	q	5.5	0.093
37871-00-4	Total HpCDD	240		5.5	0.51
38998-75-3	Total HpCDF	25		5.5	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1011-000.8 | Lab Sample ID: 320-4670-56

Matrix: Solid | Lab File ID: 04NO13B3D5_7.d

Analysis Method: 8290 | Date Collected: 10/22/2013 09:40

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.35(g) | Date Analyzed: 11/05/2013 01:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 12.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	66		40-135
89059-46-1	13C-2,3,7,8-TCDF	75		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	72		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	73		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	71		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	78		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	88		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1012-000.7 | Lab Sample ID: 320-4670-57

Matrix: Solid | Lab File ID: 04NO13B3D5_8.d

Analysis Method: 8290 | Date Collected: 10/22/2013 09:50

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.27(g) | Date Analyzed: 11/05/2013 02:27

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 10.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.26	J q	1.1	0.12
40321-76-4	1,2,3,7,8-PeCDD	1.4	J	5.4	0.092
57117-41-6	1,2,3,7,8-PeCDF	0.74	J q	5.4	0.083
57117-31-4	2,3,4,7,8-PeCDF	1.2	J	5.4	0.087
39227-28-6	1,2,3,4,7,8-HxCDD	1.8	J	5.4	0.16
57653-85-7	1,2,3,6,7,8-HxCDD	4.0	J	5.4	0.12
19408-74-3	1,2,3,7,8,9-HxCDD	4.4	J	5.4	0.12
70648-26-9	1,2,3,4,7,8-HxCDF	3.0	J	5.4	0.087
57117-44-9	1,2,3,6,7,8-HxCDF	1.3	J q	5.4	0.066
60851-34-5	2,3,4,6,7,8-HxCDF	1.1	J	5.4	0.075
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.085
35822-46-9	1,2,3,4,6,7,8-HpCDD	81		5.4	0.31
67562-39-4	1,2,3,4,6,7,8-HpCDF	12		5.4	0.11
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.74	J	5.4	0.13
3268-87-9	OCDD	4000	B	11	1.1
39001-02-0	OCDF	12	B	11	0.068
41903-57-5	Total TCDD	64	q	1.1	0.12
30402-14-3	Total TCDF	13		1.1	0.045
36088-22-9	Total PeCDD	31	q	5.4	0.092
30402-15-4	Total PeCDF	15	q	5.4	0.085
34465-46-8	Total HxCDD	42		5.4	0.13
55684-94-1	Total HxCDF	17	q	5.4	0.078
37871-00-4	Total HpCDD	160		5.4	0.31
38998-75-3	Total HpCDF	22		5.4	0.12

FORM I

DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1012-000.7 Lab Sample ID: 320-4670-57

Matrix: Solid Lab File ID: 04NO13B3D5_8.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:50

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.27(g) Date Analyzed: 11/05/2013 02:27

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	74		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	70		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	71		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	75		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	56		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	63		40-135
114423-97-1	13C-OCDD	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1013-000.7 Lab Sample ID: 320-4670-58

Matrix: Solid Lab File ID: 04NO13B3D5_9.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:55

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) Date Analyzed: 11/05/2013 03:08

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.22	J q	1.0	0.093
40321-76-4	1,2,3,7,8-PeCDD	1.1	J	5.1	0.098
57117-41-6	1,2,3,7,8-PeCDF	1.2	J	5.1	0.076
57117-31-4	2,3,4,7,8-PeCDF	1.2	J	5.1	0.079
39227-28-6	1,2,3,4,7,8-HxCDD	1.1	J q	5.1	0.15
57653-85-7	1,2,3,6,7,8-HxCDD	3.9	J	5.1	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	4.2	J	5.1	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	2.6	J	5.1	0.096
57117-44-9	1,2,3,6,7,8-HxCDF	1.1	J q	5.1	0.073
60851-34-5	2,3,4,6,7,8-HxCDF	1.4	J	5.1	0.083
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.094
35822-46-9	1,2,3,4,6,7,8-HpCDD	67		5.1	0.28
67562-39-4	1,2,3,4,6,7,8-HpCDF	12		5.1	0.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.74	J	5.1	0.12
3268-87-9	OCDD	3300	B	10	0.84
39001-02-0	OCDF	13	B	10	0.054
41903-57-5	Total TCDD	19	q	1.0	0.093
30402-14-3	Total TCDF	14		1.0	0.042
36088-22-9	Total PeCDD	26	q	5.1	0.098
30402-15-4	Total PeCDF	16	q	5.1	0.077
34465-46-8	Total HxCDD	37	q	5.1	0.12
55684-94-1	Total HxCDF	17	q	5.1	0.086
37871-00-4	Total HpCDD	130		5.1	0.28
38998-75-3	Total HpCDF	25		5.1	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1013-000.7 Lab Sample ID: 320-4670-58

Matrix: Solid Lab File ID: 04NO13B3D5_9.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:55

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) Date Analyzed: 11/05/2013 03:08

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		40-135
89059-46-1	13C-2,3,7,8-TCDF	81		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	76		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	80		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	75		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	83		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	65		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	74		40-135
114423-97-1	13C-OCDD	88		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1014-0001 | Lab Sample ID: 320-4670-59

Matrix: Solid | Lab File ID: 04NO13B3D5_10.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.15(g) | Date Analyzed: 11/05/2013 03:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.43	J	1.1	0.080
40321-76-4	1,2,3,7,8-PeCDD	1.1	J q	5.3	0.079
57117-41-6	1,2,3,7,8-PeCDF	0.83	J	5.3	0.070
57117-31-4	2,3,4,7,8-PeCDF	1.1	J	5.3	0.072
39227-28-6	1,2,3,4,7,8-HxCDD	1.9	J	5.3	0.15
57653-85-7	1,2,3,6,7,8-HxCDD	4.4	J	5.3	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	4.8	J	5.3	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	2.6	J	5.3	0.085
57117-44-9	1,2,3,6,7,8-HxCDF	1.2	J q	5.3	0.065
60851-34-5	2,3,4,6,7,8-HxCDF	1.3	J	5.3	0.074
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.083
35822-46-9	1,2,3,4,6,7,8-HpCDD	70		5.3	0.29
67562-39-4	1,2,3,4,6,7,8-HpCDF	12		5.3	0.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.61	J	5.3	0.12
3268-87-9	OCDD	3300	B	11	0.84
39001-02-0	OCDF	12	B	11	0.072
41903-57-5	Total TCDD	20	q	1.1	0.080
30402-14-3	Total TCDF	25	q	1.1	0.045
36088-22-9	Total PeCDD	26	q	5.3	0.079
30402-15-4	Total PeCDF	14	q	5.3	0.071
34465-46-8	Total HxCDD	45	q	5.3	0.12
55684-94-1	Total HxCDF	15	q	5.3	0.076
37871-00-4	Total HpCDD	150		5.3	0.29
38998-75-3	Total HpCDF	23		5.3	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1014-0001 | Lab Sample ID: 320-4670-59

Matrix: Solid | Lab File ID: 04NO13B3D5_10.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.15(g) | Date Analyzed: 11/05/2013 03:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		40-135
89059-46-1	13C-2,3,7,8-TCDF	73		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	70		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	71		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	76		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		40-135
114423-97-1	13C-OCDD	78		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1015-000.8 Lab Sample ID: 320-4670-60

Matrix: Solid Lab File ID: 04NO13B3D5_11.d

Analysis Method: 8290 Date Collected: 10/22/2013 10:15

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.03(g) Date Analyzed: 11/05/2013 04:32

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.15	J q	1.1	0.067
40321-76-4	1,2,3,7,8-PeCDD	0.73	J	5.3	0.082
57117-41-6	1,2,3,7,8-PeCDF	0.90	J	5.3	0.066
57117-31-4	2,3,4,7,8-PeCDF	0.85	J	5.3	0.068
39227-28-6	1,2,3,4,7,8-HxCDD	1.1	J q	5.3	0.13
57653-85-7	1,2,3,6,7,8-HxCDD	2.8	J	5.3	0.099
19408-74-3	1,2,3,7,8,9-HxCDD	2.9	J q	5.3	0.095
70648-26-9	1,2,3,4,7,8-HxCDF	1.7	J	5.3	0.076
57117-44-9	1,2,3,6,7,8-HxCDF	0.82	J	5.3	0.058
60851-34-5	2,3,4,6,7,8-HxCDF	0.85	J	5.3	0.066
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.074
35822-46-9	1,2,3,4,6,7,8-HpCDD	84		5.3	0.30
67562-39-4	1,2,3,4,6,7,8-HpCDF	7.4		5.3	0.089
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.54	J	5.3	0.10
3268-87-9	OCDD	4400	E B	11	0.98
39001-02-0	OCDF	8.9	J B	11	0.055
41903-57-5	Total TCDD	7.6	q	1.1	0.067
30402-14-3	Total TCDF	8.9	q	1.1	0.046
36088-22-9	Total PeCDD	12	q	5.3	0.082
30402-15-4	Total PeCDF	12	q	5.3	0.067
34465-46-8	Total HxCDD	31	q	5.3	0.11
55684-94-1	Total HxCDF	13	q	5.3	0.068
37871-00-4	Total HpCDD	190		5.3	0.30
38998-75-3	Total HpCDF	15		5.3	0.097

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1015-000.8 | Lab Sample ID: 320-4670-60

Matrix: Solid | Lab File ID: 04NO13B3D5_11.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.03(g) | Date Analyzed: 11/05/2013 04:32

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		40-135
89059-46-1	13C-2,3,7,8-TCDF	76		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	74		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	74		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	74		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	80		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	64		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	74		40-135
114423-97-1	13C-OCDD	86		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1016-000.9 | Lab Sample ID: 320-4670-61

Matrix: Solid | Lab File ID: 04NO13B3D5_12.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:25

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.28(g) | Date Analyzed: 11/05/2013 05:14

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.23	J q	1.1	0.074
40321-76-4	1,2,3,7,8-PeCDD	0.67	J	5.3	0.073
57117-41-6	1,2,3,7,8-PeCDF	0.67	J	5.3	0.085
57117-31-4	2,3,4,7,8-PeCDF	0.80	J	5.3	0.088
39227-28-6	1,2,3,4,7,8-HxCDD	1.6	J	5.3	0.17
57653-85-7	1,2,3,6,7,8-HxCDD	2.6	J	5.3	0.12
19408-74-3	1,2,3,7,8,9-HxCDD	3.5	J	5.3	0.12
70648-26-9	1,2,3,4,7,8-HxCDF	1.7	J	5.3	0.088
57117-44-9	1,2,3,6,7,8-HxCDF	0.88	J	5.3	0.067
60851-34-5	2,3,4,6,7,8-HxCDF	0.78	J	5.3	0.076
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.086
35822-46-9	1,2,3,4,6,7,8-HpCDD	110		5.3	0.42
67562-39-4	1,2,3,4,6,7,8-HpCDF	7.0		5.3	0.093
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.3	0.11
3268-87-9	OCDD	5500	E B	11	1.3
39001-02-0	OCDF	11	B	11	0.057
41903-57-5	Total TCDD	3.8	q	1.1	0.074
30402-14-3	Total TCDF	12	q	1.1	0.048
36088-22-9	Total PeCDD	6.7	q	5.3	0.073
30402-15-4	Total PeCDF	15	q	5.3	0.086
34465-46-8	Total HxCDD	33		5.3	0.14
55684-94-1	Total HxCDF	15		5.3	0.079
37871-00-4	Total HpCDD	260		5.3	0.42
38998-75-3	Total HpCDF	14		5.3	0.10

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1016-000.9 Lab Sample ID: 320-4670-61

Matrix: Solid Lab File ID: 04NO13B3D5_12.d

Analysis Method: 8290 Date Collected: 10/22/2013 10:25

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.28(g) Date Analyzed: 11/05/2013 05:14

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	73		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	70		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	72		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	74		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	59		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		40-135
114423-97-1	13C-OCDD	84		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1017-000.8 | Lab Sample ID: 320-4670-62

Matrix: Solid | Lab File ID: 04NO13B3D5_13.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.57(g) | Date Analyzed: 11/05/2013 05:55

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.27	J	1.0	0.071
40321-76-4	1,2,3,7,8-PeCDD	ND		5.1	0.11
57117-41-6	1,2,3,7,8-PeCDF	0.38	J q	5.1	0.063
57117-31-4	2,3,4,7,8-PeCDF	0.60	J	5.1	0.065
39227-28-6	1,2,3,4,7,8-HxCDD	1.1	J	5.1	0.17
57653-85-7	1,2,3,6,7,8-HxCDD	1.6	J q	5.1	0.13
19408-74-3	1,2,3,7,8,9-HxCDD	2.1	J q	5.1	0.12
70648-26-9	1,2,3,4,7,8-HxCDF	1.3	J	5.1	0.070
57117-44-9	1,2,3,6,7,8-HxCDF	0.78	J	5.1	0.053
60851-34-5	2,3,4,6,7,8-HxCDF	0.83	J	5.1	0.061
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.068
35822-46-9	1,2,3,4,6,7,8-HpCDD	58		5.1	0.29
67562-39-4	1,2,3,4,6,7,8-HpCDF	5.9		5.1	0.078
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.1	0.093
3268-87-9	OCDD	3300	B	10	0.80
39001-02-0	OCDF	8.0	J B	10	0.054
41903-57-5	Total TCDD	4.8	q	1.0	0.071
30402-14-3	Total TCDF	5.8	q	1.0	0.040
36088-22-9	Total PeCDD	7.1	q	5.1	0.11
30402-15-4	Total PeCDF	7.1	q	5.1	0.064
34465-46-8	Total HxCDD	20	q	5.1	0.14
55684-94-1	Total HxCDF	9.2	q	5.1	0.063
37871-00-4	Total HpCDD	120		5.1	0.29
38998-75-3	Total HpCDF	12		5.1	0.085

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1017-000.8 | Lab Sample ID: 320-4670-62

Matrix: Solid | Lab File ID: 04NO13B3D5_13.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.57(g) | Date Analyzed: 11/05/2013 05:55

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		40-135
89059-46-1	13C-2,3,7,8-TCDF	73		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	71		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	69		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	76		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	63		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	71		40-135
114423-97-1	13C-OCDD	83		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1018-000.8 | Lab Sample ID: 320-4670-63

Matrix: Solid | Lab File ID: 05NO13A3D5_13.d

Analysis Method: 8290 | Date Collected: 10/22/2013 11:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.15(g) | Date Analyzed: 11/06/2013 06:00

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.11	J q	1.0	0.038
51207-31-9	2,3,7,8-TCDF	0.90	J	1.0	0.024
40321-76-4	1,2,3,7,8-PeCDD	0.40	J q	5.2	0.067
57117-41-6	1,2,3,7,8-PeCDF	0.30	J q	5.2	0.042
57117-31-4	2,3,4,7,8-PeCDF	0.43	J	5.2	0.043
39227-28-6	1,2,3,4,7,8-HxCDD	0.91	J	5.2	0.057
57653-85-7	1,2,3,6,7,8-HxCDD	1.4	J	5.2	0.042
19408-74-3	1,2,3,7,8,9-HxCDD	1.6	J	5.2	0.040
70648-26-9	1,2,3,4,7,8-HxCDF	1.0	J	5.2	0.048
57117-44-9	1,2,3,6,7,8-HxCDF	0.68	J	5.2	0.037
60851-34-5	2,3,4,6,7,8-HxCDF	0.39	J	5.2	0.042
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.047
35822-46-9	1,2,3,4,6,7,8-HpCDD	41		5.2	0.13
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.6	J	5.2	0.042
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.18	J q	5.2	0.050
3268-87-9	OCDD	3300	B	10	0.51
39001-02-0	OCDF	4.5	J B	10	0.034
41903-57-5	Total TCDD	5.9	q	1.0	0.038
30402-14-3	Total TCDF	4.7	q	1.0	0.024
36088-22-9	Total PeCDD	7.5	q	5.2	0.067
30402-15-4	Total PeCDF	4.5	J q	5.2	0.043
34465-46-8	Total HxCDD	18		5.2	0.046
55684-94-1	Total HxCDF	5.2	q	5.2	0.043
37871-00-4	Total HpCDD	88		5.2	0.13
38998-75-3	Total HpCDF	6.8	q	5.2	0.046

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1018-000.8 | Lab Sample ID: 320-4670-63

Matrix: Solid | Lab File ID: 05NO13A3D5_13.d

Analysis Method: 8290 | Date Collected: 10/22/2013 11:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.15(g) | Date Analyzed: 11/06/2013 06:00

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	80		40-135
89059-46-1	13C-2,3,7,8-TCDF	88		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	88		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	88		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	80		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	103		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	95		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	102		40-135
114423-97-1	13C-OCDD	122		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1019-000.5 | Lab Sample ID: 320-4670-64

Matrix: Solid | Lab File ID: 310C13C3D5_75.d

Analysis Method: 8290 | Date Collected: 10/22/2013 11:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.38(g) | Date Analyzed: 11/03/2013 01:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.40	J q	1.0	0.072
40321-76-4	1,2,3,7,8-PeCDD	1.7	J	5.2	0.19
57117-41-6	1,2,3,7,8-PeCDF	1.4	J q	5.2	0.089
57117-31-4	2,3,4,7,8-PeCDF	1.1	J q	5.2	0.093
39227-28-6	1,2,3,4,7,8-HxCDD	2.4	J	5.2	0.078
57653-85-7	1,2,3,6,7,8-HxCDD	5.7		5.2	0.057
19408-74-3	1,2,3,7,8,9-HxCDD	5.4		5.2	0.055
70648-26-9	1,2,3,4,7,8-HxCDF	6.0		5.2	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	2.4	J	5.2	0.077
60851-34-5	2,3,4,6,7,8-HxCDF	1.9	J	5.2	0.087
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.098
35822-46-9	1,2,3,4,6,7,8-HpCDD	72		5.2	0.23
67562-39-4	1,2,3,4,6,7,8-HpCDF	16		5.2	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.79	J	5.2	0.15
3268-87-9	OCDD	3000	B	10	0.72
39001-02-0	OCDF	15	B	10	0.080
41903-57-5	Total TCDD	37	q	1.0	0.072
30402-14-3	Total TCDF	17	q	1.0	0.054
36088-22-9	Total PeCDD	45	q	5.2	0.19
30402-15-4	Total PeCDF	19	q	5.2	0.091
34465-46-8	Total HxCDD	85	I	5.2	0.063
55684-94-1	Total HxCDF	23	q	5.2	0.091
37871-00-4	Total HpCDD	140		5.2	0.23
38998-75-3	Total HpCDF	29	q	5.2	0.14

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1019-000.5 | Lab Sample ID: 320-4670-64

Matrix: Solid | Lab File ID: 310C13C3D5_75.d

Analysis Method: 8290 | Date Collected: 10/22/2013 11:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.38(g) | Date Analyzed: 11/03/2013 01:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	65		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	67		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	60		40-135
114423-97-1	13C-OCDD	65		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP01-1013 | Lab Sample ID: 320-4670-10

Matrix: Solid | Lab File ID: 05NO13A3D5_10.d

Analysis Method: 8290 | Date Collected: 10/18/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.15(g) | Date Analyzed: 11/06/2013 03:55

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.045
51207-31-9	2,3,7,8-TCDF	0.24	J	1.0	0.036
40321-76-4	1,2,3,7,8-PeCDD	0.24	J q	5.1	0.063
57117-41-6	1,2,3,7,8-PeCDF	ND		5.1	0.072
57117-31-4	2,3,4,7,8-PeCDF	0.15	J	5.1	0.075
39227-28-6	1,2,3,4,7,8-HxCDD	0.55	J q	5.1	0.063
57653-85-7	1,2,3,6,7,8-HxCDD	1.2	J	5.1	0.046
19408-74-3	1,2,3,7,8,9-HxCDD	1.4	J	5.1	0.044
70648-26-9	1,2,3,4,7,8-HxCDF	0.46	J	5.1	0.071
57117-44-9	1,2,3,6,7,8-HxCDF	1.4	J	5.1	0.054
60851-34-5	2,3,4,6,7,8-HxCDF	0.55	J	5.1	0.062
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.069
35822-46-9	1,2,3,4,6,7,8-HpCDD	49		5.1	0.25
67562-39-4	1,2,3,4,6,7,8-HpCDF	4.1	J B	5.1	0.061
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.31	J	5.1	0.072
3268-87-9	OCDD	5400	E B	10	0.79
39001-02-0	OCDF	7.3	J	10	0.044
41903-57-5	Total TCDD	0.58	J q	1.0	0.045
30402-14-3	Total TCDF	1.3	q	1.0	0.036
36088-22-9	Total PeCDD	1.8	J q	5.1	0.063
30402-15-4	Total PeCDF	4.2	J q	5.1	0.074
34465-46-8	Total HxCDD	10	q	5.1	0.051
55684-94-1	Total HxCDF	10	q	5.1	0.064
37871-00-4	Total HpCDD	86		5.1	0.25
38998-75-3	Total HpCDF	10	B	5.1	0.066

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP01-1013 | Lab Sample ID: 320-4670-10

Matrix: Solid | Lab File ID: 05NO13A3D5_10.d

Analysis Method: 8290 | Date Collected: 10/18/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.15(g) | Date Analyzed: 11/06/2013 03:55

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	68		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	70		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	68		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	76		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	89		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP02-1013 | Lab Sample ID: 320-4670-22

Matrix: Solid | Lab File ID: 04NO13B3D5_24.d

Analysis Method: 8290 | Date Collected: 10/18/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 9.90(g) | Date Analyzed: 11/05/2013 13:53

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.30	J q	1.1	0.066
40321-76-4	1,2,3,7,8-PeCDD	1.8	J q	5.4	0.16
57117-41-6	1,2,3,7,8-PeCDF	1.0	J q	5.4	0.12
57117-31-4	2,3,4,7,8-PeCDF	1.2	J q	5.4	0.12
39227-28-6	1,2,3,4,7,8-HxCDD	4.5	J	5.4	0.23
57653-85-7	1,2,3,6,7,8-HxCDD	16		5.4	0.17
19408-74-3	1,2,3,7,8,9-HxCDD	8.8		5.4	0.16
70648-26-9	1,2,3,4,7,8-HxCDF	5.3	J	5.4	0.16
57117-44-9	1,2,3,6,7,8-HxCDF	3.3	J	5.4	0.12
60851-34-5	2,3,4,6,7,8-HxCDF	2.5	J q	5.4	0.14
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.16
35822-46-9	1,2,3,4,6,7,8-HpCDD	330		5.4	0.60
67562-39-4	1,2,3,4,6,7,8-HpCDF	60	B	5.4	0.28
55673-89-7	1,2,3,4,7,8,9-HpCDF	3.3	J	5.4	0.34
3268-87-9	OCDD	3600	B	11	0.94
39001-02-0	OCDF	110		11	0.14
41903-57-5	Total TCDD	4.0	q	1.1	0.066
30402-14-3	Total TCDF	11		1.1	0.061
36088-22-9	Total PeCDD	13	q	5.4	0.16
30402-15-4	Total PeCDF	21	q	5.4	0.12
34465-46-8	Total HxCDD	96		5.4	0.19
55684-94-1	Total HxCDF	69	q	5.4	0.14
37871-00-4	Total HpCDD	590		5.4	0.60
38998-75-3	Total HpCDF	150	B	5.4	0.31

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP02-1013 | Lab Sample ID: 320-4670-22

Matrix: Solid | Lab File ID: 04NO13B3D5_24.d

Analysis Method: 8290 | Date Collected: 10/18/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 9.90(g) | Date Analyzed: 11/05/2013 13:53

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	66		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	68		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	76		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	72		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	68		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	79		40-135
114423-97-1	13C-OCDD	80		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP03-1013 Lab Sample ID: 320-4670-33

Matrix: Solid Lab File ID: 310C13C3D5_21.d

Analysis Method: 8290 Date Collected: 10/21/2013 00:00

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) Date Analyzed: 11/01/2013 11:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.040
51207-31-9	2,3,7,8-TCDF	0.27	J	1.0	0.037
40321-76-4	1,2,3,7,8-PeCDD	0.11	J q	5.2	0.082
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.073
57117-31-4	2,3,4,7,8-PeCDF	ND	*	5.2	0.076
39227-28-6	1,2,3,4,7,8-HxCDD	0.49	J	5.2	0.088
57653-85-7	1,2,3,6,7,8-HxCDD	0.95	J	5.2	0.064
19408-74-3	1,2,3,7,8,9-HxCDD	1.1	J	5.2	0.062
70648-26-9	1,2,3,4,7,8-HxCDF	0.90	J	5.2	0.096
57117-44-9	1,2,3,6,7,8-HxCDF	0.76	J q	5.2	0.074
60851-34-5	2,3,4,6,7,8-HxCDF	0.34	J q	5.2	0.084
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.094
35822-46-9	1,2,3,4,6,7,8-HpCDD	63		5.2	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	7.3	B	5.2	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.2	0.15
3268-87-9	OCDD	5000	E B	10	0.91
39001-02-0	OCDF	18	B	10	0.070
41903-57-5	Total TCDD	0.59	J	1.0	0.040
30402-14-3	Total TCDF	1.0	q	1.0	0.037
36088-22-9	Total PeCDD	1.8	J q	5.2	0.082
30402-15-4	Total PeCDF	1.3	J q	5.2	0.074
34465-46-8	Total HxCDD	7.7	q	5.2	0.071
55684-94-1	Total HxCDF	6.8	q	5.2	0.087
37871-00-4	Total HpCDD	120	B	5.2	0.21
38998-75-3	Total HpCDF	18	B	5.2	0.14

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP03-1013 | Lab Sample ID: 320-4670-33

Matrix: Solid | Lab File ID: 310C13C3D5_21.d

Analysis Method: 8290 | Date Collected: 10/21/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) | Date Analyzed: 11/01/2013 11:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	63		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	62		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	63		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	55		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	55		40-135
114423-97-1	13C-OCDD	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP04-1013 | Lab Sample ID: 320-4670-45

Matrix: Solid | Lab File ID: 310C13C3D5_40.d

Analysis Method: 8290 | Date Collected: 10/21/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.10(g) | Date Analyzed: 11/02/2013 01:17

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.20	J q	1.0	0.049
51207-31-9	2,3,7,8-TCDF	0.70	J q	1.0	0.044
40321-76-4	1,2,3,7,8-PeCDD	0.91	J q	5.2	0.083
57117-41-6	1,2,3,7,8-PeCDF	0.34	J	5.2	0.086
57117-31-4	2,3,4,7,8-PeCDF	0.51	J q	5.2	0.089
39227-28-6	1,2,3,4,7,8-HxCDD	2.2	J	5.2	0.069
57653-85-7	1,2,3,6,7,8-HxCDD	5.6		5.2	0.051
19408-74-3	1,2,3,7,8,9-HxCDD	4.9	J	5.2	0.049
70648-26-9	1,2,3,4,7,8-HxCDF	2.1	J B	5.2	0.099
57117-44-9	1,2,3,6,7,8-HxCDF	1.3	J	5.2	0.075
60851-34-5	2,3,4,6,7,8-HxCDF	1.2	J	5.2	0.085
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.096
35822-46-9	1,2,3,4,6,7,8-HpCDD	120	B	5.2	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	23	B	5.2	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.0	J	5.2	0.16
3268-87-9	OCDD	3600	B	10	0.79
39001-02-0	OCDF	49	B	10	0.083
41903-57-5	Total TCDD	1.2	q	1.0	0.049
30402-14-3	Total TCDF	4.1	q	1.0	0.044
36088-22-9	Total PeCDD	4.8	J q	5.2	0.083
30402-15-4	Total PeCDF	9.2	q	5.2	0.087
34465-46-8	Total HxCDD	36		5.2	0.056
55684-94-1	Total HxCDF	30	B	5.2	0.089
37871-00-4	Total HpCDD	220	B	5.2	0.20
38998-75-3	Total HpCDF	62	B	5.2	0.15

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP04-1013 | Lab Sample ID: 320-4670-45

Matrix: Solid | Lab File ID: 31OC13C3D5_40.d

Analysis Method: 8290 | Date Collected: 10/21/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.10(g) | Date Analyzed: 11/02/2013 01:17

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.4 | GPC Cleanup: (Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	68		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	69		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	76		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	66		40-135
114423-97-1	13C-OCDD	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP05-1013 | Lab Sample ID: 320-4670-55

Matrix: Solid | Lab File ID: 04NO13B3D5_6.d

Analysis Method: 8290 | Date Collected: 10/22/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.26(g) | Date Analyzed: 11/05/2013 01:03

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.056
40321-76-4	1,2,3,7,8-PeCDD	1.1	J	5.0	0.083
57117-41-6	1,2,3,7,8-PeCDF	0.87	J	5.0	0.10
57117-31-4	2,3,4,7,8-PeCDF	1.4	J	5.0	0.11
39227-28-6	1,2,3,4,7,8-HxCDD	2.6	J	5.0	0.15
57653-85-7	1,2,3,6,7,8-HxCDD	6.5		5.0	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	5.9		5.0	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	4.0	J	5.0	0.16
57117-44-9	1,2,3,6,7,8-HxCDF	3.1	J	5.0	0.12
60851-34-5	2,3,4,6,7,8-HxCDF	3.0	J	5.0	0.13
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.15
35822-46-9	1,2,3,4,6,7,8-HpCDD	170		5.0	0.42
67562-39-4	1,2,3,4,6,7,8-HpCDF	46		5.0	0.23
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.4	J	5.0	0.27
3268-87-9	OCDD	3100	B	10	0.88
39001-02-0	OCDF	89	B	10	0.10
41903-57-5	Total TCDD	2.8	q	1.0	0.056
30402-14-3	Total TCDF	9.6	q	1.0	0.054
36088-22-9	Total PeCDD	8.3	q	5.0	0.083
30402-15-4	Total PeCDF	29		5.0	0.11
34465-46-8	Total HxCDD	47	q	5.0	0.12
55684-94-1	Total HxCDF	68		5.0	0.14
37871-00-4	Total HpCDD	290		5.0	0.42
38998-75-3	Total HpCDF	120	q	5.0	0.25

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP05-1013 | Lab Sample ID: 320-4670-55

Matrix: Solid | Lab File ID: 04NO13B3D5_6.d

Analysis Method: 8290 | Date Collected: 10/22/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.26(g) | Date Analyzed: 11/05/2013 01:03

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	71		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	68		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	69		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	72		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	69		40-135
114423-97-1	13C-OCDD	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1020-0001 | Lab Sample ID: 320-4670-7

Matrix: Solid | Lab File ID: 05NO13A3D5_7.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:40

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.14(g) | Date Analyzed: 11/06/2013 01:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.12	J q	1.0	0.037
51207-31-9	2,3,7,8-TCDF	0.31	J	1.0	0.033
40321-76-4	1,2,3,7,8-PeCDD	0.27	J	5.1	0.054
57117-41-6	1,2,3,7,8-PeCDF	ND		5.1	0.054
57117-31-4	2,3,4,7,8-PeCDF	0.14	J	5.1	0.056
39227-28-6	1,2,3,4,7,8-HxCDD	0.62	J	5.1	0.049
57653-85-7	1,2,3,6,7,8-HxCDD	0.90	J	5.1	0.036
19408-74-3	1,2,3,7,8,9-HxCDD	1.2	J q	5.1	0.034
70648-26-9	1,2,3,4,7,8-HxCDF	0.41	J q	5.1	0.060
57117-44-9	1,2,3,6,7,8-HxCDF	0.81	J	5.1	0.046
60851-34-5	2,3,4,6,7,8-HxCDF	0.44	J	5.1	0.052
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.058
35822-46-9	1,2,3,4,6,7,8-HpCDD	44		5.1	0.19
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.6	J B	5.1	0.054
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.39	J	5.1	0.064
3268-87-9	OCDD	5000	E B	10	0.77
39001-02-0	OCDF	4.9	J	10	0.040
41903-57-5	Total TCDD	1.3	q	1.0	0.037
30402-14-3	Total TCDF	4.8	q	1.0	0.033
36088-22-9	Total PeCDD	2.0	J q	5.1	0.054
30402-15-4	Total PeCDF	4.8	J q	5.1	0.055
34465-46-8	Total HxCDD	8.8	q	5.1	0.040
55684-94-1	Total HxCDF	9.9	q	5.1	0.054
37871-00-4	Total HpCDD	75		5.1	0.19
38998-75-3	Total HpCDF	8.1	B	5.1	0.059

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1020-0001 | Lab Sample ID: 320-4670-7

Matrix: Solid | Lab File ID: 05NO13A3D5_7.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:40

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.14(g) | Date Analyzed: 11/06/2013 01:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	68		40-135
89059-46-1	13C-2,3,7,8-TCDF	75		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	76		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	76		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	71		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	82		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	80		40-135
114423-97-1	13C-OCDD	97		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1021-000.7 | Lab Sample ID: 320-4670-6

Matrix: Solid | Lab File ID: 05NO13A3D5_6.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:30

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) | Date Analyzed: 11/06/2013 01:08

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.18	J q	1.0	0.045
51207-31-9	2,3,7,8-TCDF	0.95	J	1.0	0.045
40321-76-4	1,2,3,7,8-PeCDD	1.6	J	5.1	0.067
57117-41-6	1,2,3,7,8-PeCDF	0.64	J	5.1	0.083
57117-31-4	2,3,4,7,8-PeCDF	1.1	J	5.1	0.086
39227-28-6	1,2,3,4,7,8-HxCDD	3.2	J	5.1	0.078
57653-85-7	1,2,3,6,7,8-HxCDD	7.1		5.1	0.057
19408-74-3	1,2,3,7,8,9-HxCDD	6.0		5.1	0.055
70648-26-9	1,2,3,4,7,8-HxCDF	3.6	J	5.1	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	3.7	J	5.1	0.096
60851-34-5	2,3,4,6,7,8-HxCDF	3.5	J	5.1	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	140		5.1	0.27
67562-39-4	1,2,3,4,6,7,8-HpCDF	47	B	5.1	0.18
55673-89-7	1,2,3,4,7,8,9-HpCDF	3.2	J	5.1	0.21
3268-87-9	OCDD	3000	B	10	0.60
39001-02-0	OCDF	79		10	0.078
41903-57-5	Total TCDD	1.1	q	1.0	0.045
30402-14-3	Total TCDF	6.0	q	1.0	0.045
36088-22-9	Total PeCDD	7.8	q	5.1	0.067
30402-15-4	Total PeCDF	30	q	5.1	0.084
34465-46-8	Total HxCDD	50	q	5.1	0.063
55684-94-1	Total HxCDF	91	q	5.1	0.11
37871-00-4	Total HpCDD	260		5.1	0.27
38998-75-3	Total HpCDF	140	B	5.1	0.19

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1021-000.7 Lab Sample ID: 320-4670-6

Matrix: Solid Lab File ID: 05NO13A3D5_6.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:30

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) Date Analyzed: 11/06/2013 01:08

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	68		40-135
89059-46-1	13C-2,3,7,8-TCDF	74		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	76		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	76		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	81		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	69		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	76		40-135
114423-97-1	13C-OCDD	91		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1022-000.9 Lab Sample ID: 320-4670-5

Matrix: Solid Lab File ID: 05NO13A3D5_5.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:18

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.00(g) Date Analyzed: 11/06/2013 00:27

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.071
51207-31-9	2,3,7,8-TCDF	0.12	J q	1.1	0.033
40321-76-4	1,2,3,7,8-PeCDD	ND		5.3	0.058
57117-41-6	1,2,3,7,8-PeCDF	ND		5.3	0.052
57117-31-4	2,3,4,7,8-PeCDF	ND		5.3	0.054
39227-28-6	1,2,3,4,7,8-HxCDD	0.51	J	5.3	0.050
57653-85-7	1,2,3,6,7,8-HxCDD	0.98	J	5.3	0.036
19408-74-3	1,2,3,7,8,9-HxCDD	1.2	J	5.3	0.035
70648-26-9	1,2,3,4,7,8-HxCDF	0.27	J q	5.3	0.060
57117-44-9	1,2,3,6,7,8-HxCDF	0.52	J	5.3	0.046
60851-34-5	2,3,4,6,7,8-HxCDF	0.28	J	5.3	0.052
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.059
35822-46-9	1,2,3,4,6,7,8-HpCDD	46		5.3	0.22
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.9	J B	5.3	0.050
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.3	0.059
3268-87-9	OCDD	5000	E B	11	0.75
39001-02-0	OCDF	5.3	J	11	0.043
41903-57-5	Total TCDD	0.71	J q	1.1	0.071
30402-14-3	Total TCDF	0.72	J q	1.1	0.033
36088-22-9	Total PeCDD	1.7	J q	5.3	0.058
30402-15-4	Total PeCDF	0.79	J q	5.3	0.053
34465-46-8	Total HxCDD	8.2	q	5.3	0.040
55684-94-1	Total HxCDF	3.6	J q	5.3	0.054
37871-00-4	Total HpCDD	81		5.3	0.22
38998-75-3	Total HpCDF	6.7	B	5.3	0.054

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1022-000.9 Lab Sample ID: 320-4670-5

Matrix: Solid Lab File ID: 05NO13A3D5_5.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:18

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.00(g) Date Analyzed: 11/06/2013 00:27

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	68		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	73		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	73		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	75		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	69		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	76		40-135
114423-97-1	13C-OCDD	91		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1023-000.8 | Lab Sample ID: 320-4670-4

Matrix: Solid | Lab File ID: 04NO13B3D5_27.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:10

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.12(g) | Date Analyzed: 11/05/2013 15:59

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.19	J q	1.0	0.035
40321-76-4	1,2,3,7,8-PeCDD	0.65	J	5.2	0.066
57117-41-6	1,2,3,7,8-PeCDF	0.55	J q	5.2	0.059
57117-31-4	2,3,4,7,8-PeCDF	0.93	J	5.2	0.062
39227-28-6	1,2,3,4,7,8-HxCDD	1.2	J	5.2	0.079
57653-85-7	1,2,3,6,7,8-HxCDD	2.8	J	5.2	0.058
19408-74-3	1,2,3,7,8,9-HxCDD	2.5	J	5.2	0.056
70648-26-9	1,2,3,4,7,8-HxCDF	2.2	J	5.2	0.074
57117-44-9	1,2,3,6,7,8-HxCDF	1.6	J	5.2	0.057
60851-34-5	2,3,4,6,7,8-HxCDF	1.4	J	5.2	0.064
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.072
35822-46-9	1,2,3,4,6,7,8-HpCDD	65		5.2	0.13
67562-39-4	1,2,3,4,6,7,8-HpCDF	13	B	5.2	0.082
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.0	J	5.2	0.097
3268-87-9	OCDD	2200	B	10	0.40
39001-02-0	OCDF	22		10	0.044
41903-57-5	Total TCDD	2.4	q	1.0	0.035
30402-14-3	Total TCDF	7.9		1.0	0.031
36088-22-9	Total PeCDD	3.9	J q	5.2	0.066
30402-15-4	Total PeCDF	13	q	5.2	0.060
34465-46-8	Total HxCDD	22		5.2	0.064
55684-94-1	Total HxCDF	30		5.2	0.067
37871-00-4	Total HpCDD	130		5.2	0.13
38998-75-3	Total HpCDF	33	B	5.2	0.089

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1023-000.8 | Lab Sample ID: 320-4670-4

Matrix: Solid | Lab File ID: 04NO13B3D5_27.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:10

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.12(g) | Date Analyzed: 11/05/2013 15:59

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	80		40-135
89059-46-1	13C-2,3,7,8-TCDF	90		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	91		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	91		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	84		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	97		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	77		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	90		40-135
114423-97-1	13C-OCDD	97		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1024-000.6 Lab Sample ID: 320-4670-3

Matrix: Solid Lab File ID: 04NO13B3D5_26.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:05

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 9.91(g) Date Analyzed: 11/05/2013 15:17

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.22	J q	1.1	0.055
40321-76-4	1,2,3,7,8-PeCDD	1.1	J q	5.3	0.083
57117-41-6	1,2,3,7,8-PeCDF	0.60	J	5.3	0.13
57117-31-4	2,3,4,7,8-PeCDF	1.4	J	5.3	0.13
39227-28-6	1,2,3,4,7,8-HxCDD	2.1	J q	5.3	0.12
57653-85-7	1,2,3,6,7,8-HxCDD	5.1	J	5.3	0.088
19408-74-3	1,2,3,7,8,9-HxCDD	5.2	J	5.3	0.085
70648-26-9	1,2,3,4,7,8-HxCDF	2.8	J	5.3	0.11
57117-44-9	1,2,3,6,7,8-HxCDF	3.1	J	5.3	0.086
60851-34-5	2,3,4,6,7,8-HxCDF	2.8	J	5.3	0.097
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.11
35822-46-9	1,2,3,4,6,7,8-HpCDD	120		5.3	0.24
67562-39-4	1,2,3,4,6,7,8-HpCDF	20	B	5.3	0.099
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.5	J	5.3	0.12
3268-87-9	OCDD	4100	B	11	0.80
39001-02-0	OCDF	29		11	0.056
41903-57-5	Total TCDD	2.7	q	1.1	0.055
30402-14-3	Total TCDF	11	q	1.1	0.068
36088-22-9	Total PeCDD	7.0	q	5.3	0.083
30402-15-4	Total PeCDF	160	q	5.3	0.13
34465-46-8	Total HxCDD	44	q	5.3	0.098
55684-94-1	Total HxCDF	55		5.3	0.10
37871-00-4	Total HpCDD	230		5.3	0.24
38998-75-3	Total HpCDF	50	B	5.3	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1024-000.6 | Lab Sample ID: 320-4670-3

Matrix: Solid | Lab File ID: 04NO13B3D5_26.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 9.91(g) | Date Analyzed: 11/05/2013 15:17

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	75		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	101		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	97		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	59		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	77		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	57		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1025-000.8 Lab Sample ID: 320-4670-1

Matrix: Solid Lab File ID: 05NO13A3D5_4.d

Analysis Method: 8290 Date Collected: 10/18/2013 10:45

Extract. Method: 8290 Date Extracted: 10/24/2013 18:17

Sample wt/vol: 10.30(g) Date Analyzed: 11/05/2013 23:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.16	J q	1.1	0.031
40321-76-4	1,2,3,7,8-PeCDD	0.91	J	5.3	0.058
57117-41-6	1,2,3,7,8-PeCDF	0.81	J q	5.3	0.066
57117-31-4	2,3,4,7,8-PeCDF	1.6	J	5.3	0.068
39227-28-6	1,2,3,4,7,8-HxCDD	2.2	J	5.3	0.053
57653-85-7	1,2,3,6,7,8-HxCDD	4.5	J	5.3	0.039
19408-74-3	1,2,3,7,8,9-HxCDD	4.3	J	5.3	0.037
70648-26-9	1,2,3,4,7,8-HxCDF	4.4	J B	5.3	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	2.8	J	5.3	0.079
60851-34-5	2,3,4,6,7,8-HxCDF	3.1	J	5.3	0.090
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.10
35822-46-9	1,2,3,4,6,7,8-HpCDD	99		5.3	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	27	B	5.3	0.11
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.7	J	5.3	0.14
3268-87-9	OCDD	3400		11	0.55
39001-02-0	OCDF	34		11	0.049
41903-57-5	Total TCDD	3.4	q	1.1	0.031
30402-14-3	Total TCDF	12	q	1.1	0.048
36088-22-9	Total PeCDD	7.9	q	5.3	0.058
30402-15-4	Total PeCDF	30	q	5.3	0.067
34465-46-8	Total HxCDD	38	q	5.3	0.043
55684-94-1	Total HxCDF	64	q B	5.3	0.094
37871-00-4	Total HpCDD	190		5.3	0.21
38998-75-3	Total HpCDF	60	B	5.3	0.12

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1025-000.8 | Lab Sample ID: 320-4670-1

Matrix: Solid | Lab File ID: 05NO13A3D5_4.d

Analysis Method: 8290 | Date Collected: 10/18/2013 10:45

Extract. Method: 8290 | Date Extracted: 10/24/2013 18:17

Sample wt/vol: 10.30(g) | Date Analyzed: 11/05/2013 23:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	76		40-135
89059-46-1	13C-2,3,7,8-TCDF	84		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	87		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	88		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	75		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	88		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	74		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	83		40-135
114423-97-1	13C-OCDD	98		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1026-000.8 | Lab Sample ID: 320-4670-2

Matrix: Solid | Lab File ID: 04NO13B3D5_25.d

Analysis Method: 8290 | Date Collected: 10/18/2013 10:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.36(g) | Date Analyzed: 11/05/2013 14:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.076
51207-31-9	2,3,7,8-TCDF	0.32	J	1.0	0.057
40321-76-4	1,2,3,7,8-PeCDD	0.28	J q	5.1	0.11
57117-41-6	1,2,3,7,8-PeCDF	0.31	J q	5.1	0.095
57117-31-4	2,3,4,7,8-PeCDF	0.44	J	5.1	0.098
39227-28-6	1,2,3,4,7,8-HxCDD	0.84	J	5.1	0.11
57653-85-7	1,2,3,6,7,8-HxCDD	1.6	J	5.1	0.079
19408-74-3	1,2,3,7,8,9-HxCDD	1.5	J q	5.1	0.076
70648-26-9	1,2,3,4,7,8-HxCDF	1.1	J	5.1	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	1.7	J	5.1	0.093
60851-34-5	2,3,4,6,7,8-HxCDF	2.1	J	5.1	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	40		5.1	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	11	B	5.1	0.12
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.87	J	5.1	0.14
3268-87-9	OCDD	1400	B	10	0.60
39001-02-0	OCDF	12		10	0.076
41903-57-5	Total TCDD	ND		1.0	0.076
30402-14-3	Total TCDF	3.1	q	1.0	0.057
36088-22-9	Total PeCDD	1.3	J q	5.1	0.11
30402-15-4	Total PeCDF	15	q	5.1	0.096
34465-46-8	Total HxCDD	12	q	5.1	0.088
55684-94-1	Total HxCDF	34		5.1	0.11
37871-00-4	Total HpCDD	78		5.1	0.21
38998-75-3	Total HpCDF	26	B	5.1	0.13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1026-000.8 | Lab Sample ID: 320-4670-2

Matrix: Solid | Lab File ID: 04NO13B3D5_25.d

Analysis Method: 8290 | Date Collected: 10/18/2013 10:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.36(g) | Date Analyzed: 11/05/2013 14:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	66		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	64		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	65		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	51		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	60		40-135
114423-97-1	13C-OCDD	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1027-0001 Lab Sample ID: 320-4670-14

Matrix: Solid Lab File ID: 310C13C3D5_80.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:45

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.34(g) Date Analyzed: 11/03/2013 05:03

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.041
51207-31-9	2,3,7,8-TCDF	0.094	J q	1.0	0.028
40321-76-4	1,2,3,7,8-PeCDD	ND		5.2	0.095
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.049
57117-31-4	2,3,4,7,8-PeCDF	ND		5.2	0.051
39227-28-6	1,2,3,4,7,8-HxCDD	0.28	J	5.2	0.048
57653-85-7	1,2,3,6,7,8-HxCDD	0.47	J q	5.2	0.035
19408-74-3	1,2,3,7,8,9-HxCDD	0.57	J	5.2	0.034
70648-26-9	1,2,3,4,7,8-HxCDF	0.30	J	5.2	0.057
57117-44-9	1,2,3,6,7,8-HxCDF	0.92	J	5.2	0.044
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.2	0.050
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.056
35822-46-9	1,2,3,4,6,7,8-HpCDD	39		5.2	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.1	J B	5.2	0.068
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.2	0.080
3268-87-9	OCDD	4800	E B	10	0.91
39001-02-0	OCDF	4.5	J	10	0.048
41903-57-5	Total TCDD	0.43	J q	1.0	0.041
30402-14-3	Total TCDF	0.64	J q	1.0	0.028
36088-22-9	Total PeCDD	1.2	J q	5.2	0.095
30402-15-4	Total PeCDF	0.38	J q	5.2	0.050
34465-46-8	Total HxCDD	4.6	J q	5.2	0.039
55684-94-1	Total HxCDF	2.6	J q	5.2	0.051
37871-00-4	Total HpCDD	66		5.2	0.20
38998-75-3	Total HpCDF	4.6	J B	5.2	0.074

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1027-0001 | Lab Sample ID: 320-4670-14

Matrix: Solid | Lab File ID: 31OC13C3D5_80.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:45

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.34(g) | Date Analyzed: 11/03/2013 05:03

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.3 | GPC Cleanup: (Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	87		40-135
89059-46-1	13C-2,3,7,8-TCDF	91		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	88		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	92		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	100		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	102		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	79		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	87		40-135
114423-97-1	13C-OCDD	100		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1028-000.8 Lab Sample ID: 320-4670-13

Matrix: Solid Lab File ID: 31OC13C3D5_79.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:35

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.63(g) Date Analyzed: 11/03/2013 04:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.036
40321-76-4	1,2,3,7,8-PeCDD	0.55	J q	5.1	0.081
57117-41-6	1,2,3,7,8-PeCDF	0.58	J	5.1	0.079
57117-31-4	2,3,4,7,8-PeCDF	0.60	J	5.1	0.082
39227-28-6	1,2,3,4,7,8-HxCDD	1.3	J	5.1	0.065
57653-85-7	1,2,3,6,7,8-HxCDD	3.3	J	5.1	0.048
19408-74-3	1,2,3,7,8,9-HxCDD	2.8	J	5.1	0.046
70648-26-9	1,2,3,4,7,8-HxCDF	2.9	J	5.1	0.086
57117-44-9	1,2,3,6,7,8-HxCDF	2.1	J	5.1	0.066
60851-34-5	2,3,4,6,7,8-HxCDF	1.9	J	5.1	0.075
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.084
35822-46-9	1,2,3,4,6,7,8-HpCDD	78		5.1	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	26	B	5.1	0.14
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.5	J	5.1	0.17
3268-87-9	OCDD	2200	B	10	0.62
39001-02-0	OCDF	49		10	0.081
41903-57-5	Total TCDD	0.94	J q	1.0	0.036
30402-14-3	Total TCDF	5.6	q	1.0	0.031
36088-22-9	Total PeCDD	4.0	J q	5.1	0.081
30402-15-4	Total PeCDF	12	q	5.1	0.081
34465-46-8	Total HxCDD	23	q	5.1	0.053
55684-94-1	Total HxCDF	37		5.1	0.078
37871-00-4	Total HpCDD	140		5.1	0.21
38998-75-3	Total HpCDF	66	B	5.1	0.15

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1028-000.8 | Lab Sample ID: 320-4670-13

Matrix: Solid | Lab File ID: 310C13C3D5_79.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:35

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.63(g) | Date Analyzed: 11/03/2013 04:22

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	87		40-135
89059-46-1	13C-2,3,7,8-TCDF	93		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	88		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	93		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	99		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	103		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	81		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	87		40-135
114423-97-1	13C-OCDD	94		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1029-000.6 | Lab Sample ID: 320-4670-12

Matrix: Solid | Lab File ID: 05NO13A3D5_12.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:30

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.37(g) | Date Analyzed: 11/06/2013 05:19

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.29	J q	1.0	0.034
40321-76-4	1,2,3,7,8-PeCDD	1.3	J	5.1	0.055
57117-41-6	1,2,3,7,8-PeCDF	1.1	J q	5.1	0.052
57117-31-4	2,3,4,7,8-PeCDF	1.5	J	5.1	0.054
39227-28-6	1,2,3,4,7,8-HxCDD	3.1	J	5.1	0.063
57653-85-7	1,2,3,6,7,8-HxCDD	7.3		5.1	0.046
19408-74-3	1,2,3,7,8,9-HxCDD	4.6	J	5.1	0.044
70648-26-9	1,2,3,4,7,8-HxCDF	3.5	J	5.1	0.071
57117-44-9	1,2,3,6,7,8-HxCDF	2.2	J	5.1	0.054
60851-34-5	2,3,4,6,7,8-HxCDF	1.8	J	5.1	0.062
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.069
35822-46-9	1,2,3,4,6,7,8-HpCDD	170		5.1	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	30	B	5.1	0.11
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.8	J	5.1	0.13
3268-87-9	OCDD	4600	E B	10	0.69
39001-02-0	OCDF	49		10	0.049
41903-57-5	Total TCDD	4.0	q	1.0	0.034
30402-14-3	Total TCDF	14	q	1.0	0.041
36088-22-9	Total PeCDD	9.1	q	5.1	0.055
30402-15-4	Total PeCDF	22	q	5.1	0.053
34465-46-8	Total HxCDD	50	q	5.1	0.051
55684-94-1	Total HxCDF	40	q	5.1	0.064
37871-00-4	Total HpCDD	290		5.1	0.21
38998-75-3	Total HpCDF	74	B	5.1	0.12

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1029-000.6 | Lab Sample ID: 320-4670-12

Matrix: Solid | Lab File ID: 05NO13A3D5_12.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:30

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.37(g) | Date Analyzed: 11/06/2013 05:19

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	84		40-135
89059-46-1	13C-2,3,7,8-TCDF	93		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	98		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	95		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	91		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	105		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	89		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	94		40-135
114423-97-1	13C-OCDD	118		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1030-000.6 Lab Sample ID: 320-4670-11

Matrix: Solid Lab File ID: 05NO13A3D5_11.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:20

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.04(g) Date Analyzed: 11/06/2013 04:37

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.16	J q	1.0	0.043
51207-31-9	2,3,7,8-TCDF	0.94	J q	1.0	0.039
40321-76-4	1,2,3,7,8-PeCDD	0.48	J q	5.2	0.068
57117-41-6	1,2,3,7,8-PeCDF	0.48	J	5.2	0.062
57117-31-4	2,3,4,7,8-PeCDF	0.43	J	5.2	0.065
39227-28-6	1,2,3,4,7,8-HxCDD	1.4	J	5.2	0.068
57653-85-7	1,2,3,6,7,8-HxCDD	2.7	J	5.2	0.050
19408-74-3	1,2,3,7,8,9-HxCDD	2.7	J	5.2	0.048
70648-26-9	1,2,3,4,7,8-HxCDF	1.2	J	5.2	0.082
57117-44-9	1,2,3,6,7,8-HxCDF	0.95	J	5.2	0.063
60851-34-5	2,3,4,6,7,8-HxCDF	0.81	J	5.2	0.071
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.080
35822-46-9	1,2,3,4,6,7,8-HpCDD	70		5.2	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	9.1	B	5.2	0.078
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.67	J	5.2	0.093
3268-87-9	OCDD	3100	B	10	0.54
39001-02-0	OCDF	15		10	0.059
41903-57-5	Total TCDD	0.78	J q	1.0	0.043
30402-14-3	Total TCDF	3.4	q	1.0	0.039
36088-22-9	Total PeCDD	3.1	J q	5.2	0.068
30402-15-4	Total PeCDF	6.6	q	5.2	0.064
34465-46-8	Total HxCDD	23	q	5.2	0.055
55684-94-1	Total HxCDF	17		5.2	0.074
37871-00-4	Total HpCDD	150		5.2	0.20
38998-75-3	Total HpCDF	22	B	5.2	0.086

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1030-000.6 | Lab Sample ID: 320-4670-11

Matrix: Solid | Lab File ID: 05NO13A3D5_11.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:20

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.04(g) | Date Analyzed: 11/06/2013 04:37

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	73		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	75		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	82		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	70		40-135
114423-97-1	13C-OCDD	87		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1031-000.8 | Lab Sample ID: 320-4670-9

Matrix: Solid | Lab File ID: 05NO13A3D5_9.d

Analysis Method: 8290 | Date Collected: 10/18/2013 12:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.27(g) | Date Analyzed: 11/06/2013 03:13

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.14	J q	1.1	0.047
51207-31-9	2,3,7,8-TCDF	0.91	J	1.1	0.042
40321-76-4	1,2,3,7,8-PeCDD	0.44	J q	5.3	0.081
57117-41-6	1,2,3,7,8-PeCDF	0.40	J q	5.3	0.067
57117-31-4	2,3,4,7,8-PeCDF	0.49	J	5.3	0.070
39227-28-6	1,2,3,4,7,8-HxCDD	1.2	J	5.3	0.061
57653-85-7	1,2,3,6,7,8-HxCDD	2.5	J	5.3	0.045
19408-74-3	1,2,3,7,8,9-HxCDD	2.4	J	5.3	0.043
70648-26-9	1,2,3,4,7,8-HxCDF	1.4	J	5.3	0.072
57117-44-9	1,2,3,6,7,8-HxCDF	1.1	J	5.3	0.055
60851-34-5	2,3,4,6,7,8-HxCDF	0.67	J	5.3	0.063
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.070
35822-46-9	1,2,3,4,6,7,8-HpCDD	71		5.3	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	9.0	B	5.3	0.074
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.52	J	5.3	0.088
3268-87-9	OCDD	3800	B	11	0.66
39001-02-0	OCDF	15		11	0.052
41903-57-5	Total TCDD	1.5	q	1.1	0.047
30402-14-3	Total TCDF	4.2	q	1.1	0.042
36088-22-9	Total PeCDD	2.5	J q	5.3	0.081
30402-15-4	Total PeCDF	6.6	q	5.3	0.069
34465-46-8	Total HxCDD	20	q	5.3	0.050
55684-94-1	Total HxCDF	14	q	5.3	0.065
37871-00-4	Total HpCDD	130		5.3	0.20
38998-75-3	Total HpCDF	21	B	5.3	0.081

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1031-000.8 | Lab Sample ID: 320-4670-9

Matrix: Solid | Lab File ID: 05NO13A3D5_9.d

Analysis Method: 8290 | Date Collected: 10/18/2013 12:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.27(g) | Date Analyzed: 11/06/2013 03:13

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	67		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	73		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	72		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	67		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	74		40-135
114423-97-1	13C-OCDD	84		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1032-000.9 Lab Sample ID: 320-4670-8

Matrix: Solid Lab File ID: 05NO13A3D5_8.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:55

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.29(g) Date Analyzed: 11/06/2013 02:32

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.053
40321-76-4	1,2,3,7,8-PeCDD	0.71	J	5.3	0.075
57117-41-6	1,2,3,7,8-PeCDF	0.86	J	5.3	0.091
57117-31-4	2,3,4,7,8-PeCDF	0.49	J	5.3	0.095
39227-28-6	1,2,3,4,7,8-HxCDD	1.9	J	5.3	0.072
57653-85-7	1,2,3,6,7,8-HxCDD	3.6	J	5.3	0.052
19408-74-3	1,2,3,7,8,9-HxCDD	3.8	J	5.3	0.050
70648-26-9	1,2,3,4,7,8-HxCDF	2.2	J	5.3	0.11
57117-44-9	1,2,3,6,7,8-HxCDF	2.2	J	5.3	0.085
60851-34-5	2,3,4,6,7,8-HxCDF	1.7	J	5.3	0.097
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.11
35822-46-9	1,2,3,4,6,7,8-HpCDD	96		5.3	0.24
67562-39-4	1,2,3,4,6,7,8-HpCDF	14	B	5.3	0.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.1	J	5.3	0.12
3268-87-9	OCDD	3900	B	11	0.66
39001-02-0	OCDF	18		11	0.055
41903-57-5	Total TCDD	0.76	J q	1.1	0.053
30402-14-3	Total TCDF	3.2	q	1.1	0.059
36088-22-9	Total PeCDD	4.5	J q	5.3	0.075
30402-15-4	Total PeCDF	27	q	5.3	0.093
34465-46-8	Total HxCDD	31	q	5.3	0.058
55684-94-1	Total HxCDF	36		5.3	0.10
37871-00-4	Total HpCDD	190		5.3	0.24
38998-75-3	Total HpCDF	34	B	5.3	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1032-000.9 | Lab Sample ID: 320-4670-8

Matrix: Solid | Lab File ID: 05NO13A3D5_8.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.29(g) | Date Analyzed: 11/06/2013 02:32

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	74		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	74		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	67		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	70		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	77		40-135
114423-97-1	13C-OCDD	91		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1033-000.8 Lab Sample ID: 320-4670-24

Matrix: Solid Lab File ID: 31OC13C3D5_8.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) Date Analyzed: 11/01/2013 02:16

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.039
51207-31-9	2,3,7,8-TCDF	0.32	J	1.0	0.039
40321-76-4	1,2,3,7,8-PeCDD	0.23	J	5.2	0.060
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.084
57117-31-4	2,3,4,7,8-PeCDF	0.17	J *	5.2	0.088
39227-28-6	1,2,3,4,7,8-HxCDD	0.81	J	5.2	0.065
57653-85-7	1,2,3,6,7,8-HxCDD	2.3	J	5.2	0.048
19408-74-3	1,2,3,7,8,9-HxCDD	1.7	J	5.2	0.046
70648-26-9	1,2,3,4,7,8-HxCDF	0.90	J	5.2	0.097
57117-44-9	1,2,3,6,7,8-HxCDF	0.83	J	5.2	0.074
60851-34-5	2,3,4,6,7,8-HxCDF	0.59	J	5.2	0.085
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.095
35822-46-9	1,2,3,4,6,7,8-HpCDD	88		5.2	0.26
67562-39-4	1,2,3,4,6,7,8-HpCDF	9.3	B	5.2	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.2	0.16
3268-87-9	OCDD	4300	E B	10	0.97
39001-02-0	OCDF	19	B	10	0.070
41903-57-5	Total TCDD	0.44	J q	1.0	0.039
30402-14-3	Total TCDF	2.2	q	1.0	0.039
36088-22-9	Total PeCDD	1.8	J q	5.2	0.060
30402-15-4	Total PeCDF	2.2	J q	5.2	0.086
34465-46-8	Total HxCDD	15	q	5.2	0.053
55684-94-1	Total HxCDF	9.8	q	5.2	0.088
37871-00-4	Total HpCDD	160	B	5.2	0.26
38998-75-3	Total HpCDF	23	B	5.2	0.15

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1033-000.8 | Lab Sample ID: 320-4670-24

Matrix: Solid | Lab File ID: 310C13C3D5_8.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:55

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) | Date Analyzed: 11/01/2013 02:16

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	64		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	62		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	59		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	61		40-135
114423-97-1	13C-OCDD	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1034-000.6 | Lab Sample ID: 320-4670-23

Matrix: Solid | Lab File ID: 31OC13C3D5_7.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:45

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) | Date Analyzed: 11/01/2013 01:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.24	J q	1.0	0.030
40321-76-4	1,2,3,7,8-PeCDD	0.56	J	5.1	0.054
57117-41-6	1,2,3,7,8-PeCDF	0.77	J q	5.1	0.088
57117-31-4	2,3,4,7,8-PeCDF	1.1	J *	5.1	0.092
39227-28-6	1,2,3,4,7,8-HxCDD	1.2	J q	5.1	0.065
57653-85-7	1,2,3,6,7,8-HxCDD	2.7	J	5.1	0.048
19408-74-3	1,2,3,7,8,9-HxCDD	2.7	J	5.1	0.046
70648-26-9	1,2,3,4,7,8-HxCDF	2.7	J	5.1	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	2.4	J	5.1	0.093
60851-34-5	2,3,4,6,7,8-HxCDF	2.4	J	5.1	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	59		5.1	0.18
67562-39-4	1,2,3,4,6,7,8-HpCDF	17	B	5.1	0.15
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.3	J	5.1	0.17
3268-87-9	OCDD	2400	B	10	0.72
39001-02-0	OCDF	22	B	10	0.074
41903-57-5	Total TCDD	2.2	q	1.0	0.030
30402-14-3	Total TCDF	12	q	1.0	0.044
36088-22-9	Total PeCDD	4.7	J q	5.1	0.054
30402-15-4	Total PeCDF	33	q	5.1	0.090
34465-46-8	Total HxCDD	23	q	5.1	0.053
55684-94-1	Total HxCDF	48	q	5.1	0.11
37871-00-4	Total HpCDD	110	B	5.1	0.18
38998-75-3	Total HpCDF	38	B	5.1	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1034-000.6 | Lab Sample ID: 320-4670-23

Matrix: Solid | Lab File ID: 31OC13C3D5_7.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:45

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) | Date Analyzed: 11/01/2013 01:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	69		40-135
89059-46-1	13C-2,3,7,8-TCDF	73		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	70		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	68		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	71		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	80		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	83		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1035-0001 | Lab Sample ID: 320-4670-21

Matrix: Solid | Lab File ID: 04NO13B3D5_23.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:35

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.33(g) | Date Analyzed: 11/05/2013 13:12

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.41	J	1.0	0.055
40321-76-4	1,2,3,7,8-PeCDD	2.1	J	5.1	0.13
57117-41-6	1,2,3,7,8-PeCDF	1.1	J q	5.1	0.10
57117-31-4	2,3,4,7,8-PeCDF	2.0	J	5.1	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	4.5	J	5.1	0.21
57653-85-7	1,2,3,6,7,8-HxCDD	14		5.1	0.15
19408-74-3	1,2,3,7,8,9-HxCDD	11		5.1	0.14
70648-26-9	1,2,3,4,7,8-HxCDF	11		5.1	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	4.6	J	5.1	0.10
60851-34-5	2,3,4,6,7,8-HxCDF	3.3	J	5.1	0.12
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.13
35822-46-9	1,2,3,4,6,7,8-HpCDD	330		5.1	0.47
67562-39-4	1,2,3,4,6,7,8-HpCDF	110	B	5.1	0.33
55673-89-7	1,2,3,4,7,8,9-HpCDF	5.7		5.1	0.39
3268-87-9	OCDD	4000	B	10	0.75
39001-02-0	OCDF	280		10	0.14
41903-57-5	Total TCDD	4.4	q	1.0	0.055
30402-14-3	Total TCDF	12	q	1.0	0.051
36088-22-9	Total PeCDD	13	q	5.1	0.13
30402-15-4	Total PeCDF	25	q	5.1	0.10
34465-46-8	Total HxCDD	94		5.1	0.17
55684-94-1	Total HxCDF	81		5.1	0.12
37871-00-4	Total HpCDD	580		5.1	0.47
38998-75-3	Total HpCDF	210	B	5.1	0.36

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1035-0001 | Lab Sample ID: 320-4670-21

Matrix: Solid | Lab File ID: 04NO13B3D5_23.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:35

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.33(g) | Date Analyzed: 11/05/2013 13:12

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	79		40-135
89059-46-1	13C-2,3,7,8-TCDF	90		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	87		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	86		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	86		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	92		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	76		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	87		40-135
114423-97-1	13C-OCDD	101		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1036-000.6 Lab Sample ID: 320-4670-20

Matrix: Solid Lab File ID: 04NO13B3D5_22.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:25

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.30(g) Date Analyzed: 11/05/2013 12:30

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.27	J q	1.0	0.048
40321-76-4	1,2,3,7,8-PeCDD	1.5	J	5.0	0.095
57117-41-6	1,2,3,7,8-PeCDF	0.97	J q	5.0	0.077
57117-31-4	2,3,4,7,8-PeCDF	1.4	J	5.0	0.080
39227-28-6	1,2,3,4,7,8-HxCDD	3.3	J	5.0	0.15
57653-85-7	1,2,3,6,7,8-HxCDD	12		5.0	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	8.2		5.0	0.11
70648-26-9	1,2,3,4,7,8-HxCDF	3.5	J	5.0	0.099
57117-44-9	1,2,3,6,7,8-HxCDF	2.4	J	5.0	0.075
60851-34-5	2,3,4,6,7,8-HxCDF	2.0	J	5.0	0.086
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.096
35822-46-9	1,2,3,4,6,7,8-HpCDD	270		5.0	0.41
67562-39-4	1,2,3,4,6,7,8-HpCDF	40	B	5.0	0.15
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.1	J	5.0	0.18
3268-87-9	OCDD	5400	E B	10	1.0
39001-02-0	OCDF	63		10	0.064
41903-57-5	Total TCDD	4.5	q	1.0	0.048
30402-14-3	Total TCDF	14	q	1.0	0.051
36088-22-9	Total PeCDD	10	q	5.0	0.095
30402-15-4	Total PeCDF	20	q	5.0	0.079
34465-46-8	Total HxCDD	67	q	5.0	0.13
55684-94-1	Total HxCDF	53	q	5.0	0.089
37871-00-4	Total HpCDD	460		5.0	0.41
38998-75-3	Total HpCDF	100	B	5.0	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1036-000.6 | Lab Sample ID: 320-4670-20

Matrix: Solid | Lab File ID: 04NO13B3D5_22.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:25

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.30(g) | Date Analyzed: 11/05/2013 12:30

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	80		40-135
89059-46-1	13C-2,3,7,8-TCDF	89		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	86		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	89		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	82		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	90		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	75		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	88		40-135
114423-97-1	13C-OCDD	100		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1037-000.7 | Lab Sample ID: 320-4670-19

Matrix: Solid | Lab File ID: 04NO13B3D5_21.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.02(g) | Date Analyzed: 11/05/2013 11:48

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.13	J q	1.0	0.054
40321-76-4	1,2,3,7,8-PeCDD	0.58	J	5.2	0.078
57117-41-6	1,2,3,7,8-PeCDF	1.0	J	5.2	0.071
57117-31-4	2,3,4,7,8-PeCDF	1.0	J	5.2	0.073
39227-28-6	1,2,3,4,7,8-HxCDD	0.97	J	5.2	0.094
57653-85-7	1,2,3,6,7,8-HxCDD	2.1	J	5.2	0.069
19408-74-3	1,2,3,7,8,9-HxCDD	2.5	J	5.2	0.066
70648-26-9	1,2,3,4,7,8-HxCDF	3.9	J	5.2	0.11
57117-44-9	1,2,3,6,7,8-HxCDF	2.2	J	5.2	0.083
60851-34-5	2,3,4,6,7,8-HxCDF	0.66	J q	5.2	0.094
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.11
35822-46-9	1,2,3,4,6,7,8-HpCDD	57		5.2	0.24
67562-39-4	1,2,3,4,6,7,8-HpCDF	16	B	5.2	0.088
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.5	J	5.2	0.10
3268-87-9	OCDD	3400	B	10	0.74
39001-02-0	OCDF	26		10	0.063
41903-57-5	Total TCDD	1.9	q	1.0	0.054
30402-14-3	Total TCDF	7.4	q	1.0	0.047
36088-22-9	Total PeCDD	4.3	J q	5.2	0.078
30402-15-4	Total PeCDF	38	q	5.2	0.072
34465-46-8	Total HxCDD	18		5.2	0.076
55684-94-1	Total HxCDF	23	q	5.2	0.098
37871-00-4	Total HpCDD	110		5.2	0.24
38998-75-3	Total HpCDF	28	B	5.2	0.096

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1037-000.7 Lab Sample ID: 320-4670-19

Matrix: Solid Lab File ID: 04NO13B3D5_21.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:15

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.02(g) Date Analyzed: 11/05/2013 11:48

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	71		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	74		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	77		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	62		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	80		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1038-000.7 Lab Sample ID: 320-4670-18

Matrix: Solid Lab File ID: 04NO13B3D5_20.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:10

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.18(g) Date Analyzed: 11/05/2013 11:07

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.11	J q	1.1	0.064
40321-76-4	1,2,3,7,8-PeCDD	0.73	J	5.4	0.12
57117-41-6	1,2,3,7,8-PeCDF	0.54	J q	5.4	0.082
57117-31-4	2,3,4,7,8-PeCDF	0.73	J	5.4	0.085
39227-28-6	1,2,3,4,7,8-HxCDD	1.5	J	5.4	0.14
57653-85-7	1,2,3,6,7,8-HxCDD	4.2	J	5.4	0.10
19408-74-3	1,2,3,7,8,9-HxCDD	3.8	J	5.4	0.097
70648-26-9	1,2,3,4,7,8-HxCDF	2.0	J	5.4	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	1.5	J	5.4	0.096
60851-34-5	2,3,4,6,7,8-HxCDF	2.1	J	5.4	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	100		5.4	0.36
67562-39-4	1,2,3,4,6,7,8-HpCDF	17	B	5.4	0.12
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.89	J	5.4	0.14
3268-87-9	OCDD	3500	B	11	0.82
39001-02-0	OCDF	27		11	0.076
41903-57-5	Total TCDD	1.9	q	1.1	0.064
30402-14-3	Total TCDF	5.7	q	1.1	0.057
36088-22-9	Total PeCDD	4.4	J q	5.4	0.12
30402-15-4	Total PeCDF	11	q	5.4	0.083
34465-46-8	Total HxCDD	29		5.4	0.11
55684-94-1	Total HxCDF	26	q	5.4	0.11
37871-00-4	Total HpCDD	190		5.4	0.36
38998-75-3	Total HpCDF	41	B	5.4	0.13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1038-000.7 | Lab Sample ID: 320-4670-18

Matrix: Solid | Lab File ID: 04NO13B3D5_20.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:10

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.18(g) | Date Analyzed: 11/05/2013 11:07

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	61		40-135
89059-46-1	13C-2,3,7,8-TCDF	69		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	69		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	70		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	56		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	66		40-135
114423-97-1	13C-OCDD	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1039-000.9 Lab Sample ID: 320-4670-16

Matrix: Solid Lab File ID: 310C13C3D5_84.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:00

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) Date Analyzed: 11/03/2013 07:50

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.30
40321-76-4	1,2,3,7,8-PeCDD	0.63	J	5.4	0.10
57117-41-6	1,2,3,7,8-PeCDF	0.59	J	5.4	0.072
57117-31-4	2,3,4,7,8-PeCDF	0.68	J	5.4	0.075
39227-28-6	1,2,3,4,7,8-HxCDD	1.4	J	5.4	0.075
57653-85-7	1,2,3,6,7,8-HxCDD	2.9	J q	5.4	0.055
19408-74-3	1,2,3,7,8,9-HxCDD	2.7	J	5.4	0.053
70648-26-9	1,2,3,4,7,8-HxCDF	1.7	J	5.4	0.097
57117-44-9	1,2,3,6,7,8-HxCDF	1.2	J	5.4	0.074
60851-34-5	2,3,4,6,7,8-HxCDF	0.78	J	5.4	0.084
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.094
35822-46-9	1,2,3,4,6,7,8-HpCDD	81		5.4	0.25
67562-39-4	1,2,3,4,6,7,8-HpCDF	11	B	5.4	0.088
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.4	0.10
3268-87-9	OCDD	4600	E B	11	0.86
39001-02-0	OCDF	18		11	0.068
41903-57-5	Total TCDD	1.4		1.1	0.30
30402-14-3	Total TCDF	6.3	q	1.1	0.046
36088-22-9	Total PeCDD	5.2	J q	5.4	0.10
30402-15-4	Total PeCDF	10	q	5.4	0.074
34465-46-8	Total HxCDD	24	q	5.4	0.061
55684-94-1	Total HxCDF	17		5.4	0.087
37871-00-4	Total HpCDD	150		5.4	0.25
38998-75-3	Total HpCDF	24	B	5.4	0.096

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1039-000.9 | Lab Sample ID: 320-4670-16

Matrix: Solid | Lab File ID: 31OC13C3D5_84.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) | Date Analyzed: 11/03/2013 07:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		40-135
89059-46-1	13C-2,3,7,8-TCDF	75		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	72		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	75		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	78		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	85		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	68		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	75		40-135
114423-97-1	13C-OCDD	83		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1040-000.9 Lab Sample ID: 320-4670-15

Matrix: Solid Lab File ID: 310C13C3D5_83.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:50

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.07(g) Date Analyzed: 11/03/2013 07:09

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.044
40321-76-4	1,2,3,7,8-PeCDD	0.86	J	5.6	0.11
57117-41-6	1,2,3,7,8-PeCDF	0.91	J	5.6	0.076
57117-31-4	2,3,4,7,8-PeCDF	0.74	J	5.6	0.079
39227-28-6	1,2,3,4,7,8-HxCDD	1.7	J q	5.6	0.088
57653-85-7	1,2,3,6,7,8-HxCDD	4.7	J	5.6	0.065
19408-74-3	1,2,3,7,8,9-HxCDD	4.0	J	5.6	0.062
70648-26-9	1,2,3,4,7,8-HxCDF	2.4	J	5.6	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	1.8	J	5.6	0.077
60851-34-5	2,3,4,6,7,8-HxCDF	1.6	J	5.6	0.088
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.6	0.099
35822-46-9	1,2,3,4,6,7,8-HpCDD	140		5.6	0.33
67562-39-4	1,2,3,4,6,7,8-HpCDF	19	B	5.6	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.2	J	5.6	0.16
3268-87-9	OCDD	5100	E B	11	1.0
39001-02-0	OCDF	37		11	0.074
41903-57-5	Total TCDD	0.77	J q	1.1	0.044
30402-14-3	Total TCDF	5.5	q	1.1	0.041
36088-22-9	Total PeCDD	3.8	J q	5.6	0.11
30402-15-4	Total PeCDF	14	q	5.6	0.077
34465-46-8	Total HxCDD	32	q	5.6	0.072
55684-94-1	Total HxCDF	34		5.6	0.091
37871-00-4	Total HpCDD	270		5.6	0.33
38998-75-3	Total HpCDF	51	B	5.6	0.15

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1040-000.9 | Lab Sample ID: 320-4670-15

Matrix: Solid | Lab File ID: 310C13C3D5_83.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:50

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.07(g) | Date Analyzed: 11/03/2013 07:09

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 10.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	82		40-135
89059-46-1	13C-2,3,7,8-TCDF	88		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	83		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	87		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	88		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	93		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	78		40-135
114423-97-1	13C-OCDD	88		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1041-000.7 | Lab Sample ID: 320-4670-32

Matrix: Solid | Lab File ID: 31OC13C3D5_20.d

Analysis Method: 8290 | Date Collected: 10/21/2013 10:35

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) | Date Analyzed: 11/01/2013 11:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.035
51207-31-9	2,3,7,8-TCDF	0.28	J	1.0	0.032
40321-76-4	1,2,3,7,8-PeCDD	0.14	J q	5.0	0.061
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.067
57117-31-4	2,3,4,7,8-PeCDF	0.18	J *	5.0	0.070
39227-28-6	1,2,3,4,7,8-HxCDD	0.43	J q	5.0	0.070
57653-85-7	1,2,3,6,7,8-HxCDD	0.86	J	5.0	0.051
19408-74-3	1,2,3,7,8,9-HxCDD	0.76	J q	5.0	0.049
70648-26-9	1,2,3,4,7,8-HxCDF	0.54	J q	5.0	0.091
57117-44-9	1,2,3,6,7,8-HxCDF	0.74	J	5.0	0.070
60851-34-5	2,3,4,6,7,8-HxCDF	0.20	J q	5.0	0.079
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.089
35822-46-9	1,2,3,4,6,7,8-HpCDD	46		5.0	0.18
67562-39-4	1,2,3,4,6,7,8-HpCDF	6.4	B	5.0	0.083
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.098
3268-87-9	OCDD	4100	E B	10	0.78
39001-02-0	OCDF	15	B	10	0.067
41903-57-5	Total TCDD	0.63	J q	1.0	0.035
30402-14-3	Total TCDF	1.0	q	1.0	0.032
36088-22-9	Total PeCDD	1.9	J q	5.0	0.061
30402-15-4	Total PeCDF	1.1	J q	5.0	0.068
34465-46-8	Total HxCDD	6.2	q	5.0	0.057
55684-94-1	Total HxCDF	5.3	q	5.0	0.082
37871-00-4	Total HpCDD	82	B	5.0	0.18
38998-75-3	Total HpCDF	15	B	5.0	0.091

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1041-000.7 | Lab Sample ID: 320-4670-32

Matrix: Solid | Lab File ID: 310C13C3D5_20.d

Analysis Method: 8290 | Date Collected: 10/21/2013 10:35

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) | Date Analyzed: 11/01/2013 11:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	67		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	61		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	66		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	63		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	76		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	59		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1042-000.5 Lab Sample ID: 320-4670-31

Matrix: Solid Lab File ID: 31OC13C3D5_19.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:20

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.13(g) Date Analyzed: 11/01/2013 10:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.045
40321-76-4	1,2,3,7,8-PeCDD	1.1	J	5.3	0.080
57117-41-6	1,2,3,7,8-PeCDF	0.85	J q	5.3	0.12
57117-31-4	2,3,4,7,8-PeCDF	1.5	J *	5.3	0.13
39227-28-6	1,2,3,4,7,8-HxCDD	3.3	J	5.3	0.11
57653-85-7	1,2,3,6,7,8-HxCDD	7.1		5.3	0.078
19408-74-3	1,2,3,7,8,9-HxCDD	6.7		5.3	0.075
70648-26-9	1,2,3,4,7,8-HxCDF	5.4		5.3	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	3.7	J	5.3	0.10
60851-34-5	2,3,4,6,7,8-HxCDF	3.0	J	5.3	0.12
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.13
35822-46-9	1,2,3,4,6,7,8-HpCDD	170		5.3	0.29
67562-39-4	1,2,3,4,6,7,8-HpCDF	75	B	5.3	0.28
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.9	J q	5.3	0.34
3268-87-9	OCDD	3000	B	11	0.61
39001-02-0	OCDF	140	B	11	0.11
41903-57-5	Total TCDD	2.0	q	1.1	0.045
30402-14-3	Total TCDF	11	q	1.1	0.064
36088-22-9	Total PeCDD	6.9	q	5.3	0.080
30402-15-4	Total PeCDF	20	q	5.3	0.12
34465-46-8	Total HxCDD	52		5.3	0.087
55684-94-1	Total HxCDF	63		5.3	0.12
37871-00-4	Total HpCDD	300	B	5.3	0.29
38998-75-3	Total HpCDF	180	B q	5.3	0.31

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1042-000.5 | Lab Sample ID: 320-4670-31

Matrix: Solid | Lab File ID: 310C13C3D5_19.d

Analysis Method: 8290 | Date Collected: 10/21/2013 10:20

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.13(g) | Date Analyzed: 11/01/2013 10:22

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	62		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	74		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	70		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	63		40-135
114423-97-1	13C-OCDD	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1044-000.5 Lab Sample ID: 320-4670-30

Matrix: Solid Lab File ID: 310C13C3D5_18.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:10

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) Date Analyzed: 11/01/2013 09:41

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.15	J q	1.0	0.042
40321-76-4	1,2,3,7,8-PeCDD	0.82	J q	5.2	0.094
57117-41-6	1,2,3,7,8-PeCDF	0.64	J	5.2	0.090
57117-31-4	2,3,4,7,8-PeCDF	0.67	J *	5.2	0.094
39227-28-6	1,2,3,4,7,8-HxCDD	2.4	J	5.2	0.14
57653-85-7	1,2,3,6,7,8-HxCDD	6.3		5.2	0.10
19408-74-3	1,2,3,7,8,9-HxCDD	4.8	J	5.2	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	2.4	J	5.2	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	1.6	J	5.2	0.094
60851-34-5	2,3,4,6,7,8-HxCDF	1.2	J	5.2	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	140		5.2	0.26
67562-39-4	1,2,3,4,6,7,8-HpCDF	28	B	5.2	0.17
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.1	J q	5.2	0.20
3268-87-9	OCDD	3500	B	10	0.74
39001-02-0	OCDF	55	B	10	0.085
41903-57-5	Total TCDD	1.5	q	1.0	0.042
30402-14-3	Total TCDF	6.0	q	1.0	0.040
36088-22-9	Total PeCDD	4.4	J q	5.2	0.094
30402-15-4	Total PeCDF	10	q	5.2	0.092
34465-46-8	Total HxCDD	40		5.2	0.12
55684-94-1	Total HxCDF	28		5.2	0.11
37871-00-4	Total HpCDD	240	B	5.2	0.26
38998-75-3	Total HpCDF	70	B q	5.2	0.18

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1044-000.5 Lab Sample ID: 320-4670-30

Matrix: Solid Lab File ID: 31OC13C3D5_18.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:10

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) Date Analyzed: 11/01/2013 09:41

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	71		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	69		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	62		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	72		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	64		40-135
114423-97-1	13C-OCDD	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1045-000.5 | Lab Sample ID: 320-4670-29

Matrix: Solid | Lab File ID: 31OC13C3D5_13.d

Analysis Method: 8290 | Date Collected: 10/21/2013 10:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.29(g) | Date Analyzed: 11/01/2013 05:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.26	J q	1.0	0.045
40321-76-4	1,2,3,7,8-PeCDD	1.3	J	5.1	0.084
57117-41-6	1,2,3,7,8-PeCDF	1.2	J	5.1	0.10
57117-31-4	2,3,4,7,8-PeCDF	1.5	J *	5.1	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	5.2		5.1	0.10
57653-85-7	1,2,3,6,7,8-HxCDD	17		5.1	0.075
19408-74-3	1,2,3,7,8,9-HxCDD	11		5.1	0.072
70648-26-9	1,2,3,4,7,8-HxCDF	5.5		5.1	0.18
57117-44-9	1,2,3,6,7,8-HxCDF	3.6	J	5.1	0.14
60851-34-5	2,3,4,6,7,8-HxCDF	3.2	J	5.1	0.16
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.18
35822-46-9	1,2,3,4,6,7,8-HpCDD	360		5.1	0.35
67562-39-4	1,2,3,4,6,7,8-HpCDF	130	B	5.1	0.43
55673-89-7	1,2,3,4,7,8,9-HpCDF	8.9		5.1	0.51
3268-87-9	OCDD	5300	E B	10	0.99
39001-02-0	OCDF	420	B	10	0.20
41903-57-5	Total TCDD	2.2	q	1.0	0.045
30402-14-3	Total TCDF	13	q	1.0	0.051
36088-22-9	Total PeCDD	8.4	q	5.1	0.084
30402-15-4	Total PeCDF	20	q	5.1	0.10
34465-46-8	Total HxCDD	81	q	5.1	0.083
55684-94-1	Total HxCDF	110	q	5.1	0.16
37871-00-4	Total HpCDD	580	B	5.1	0.35
38998-75-3	Total HpCDF	460	B	5.1	0.47

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1045-000.5 | Lab Sample ID: 320-4670-29

Matrix: Solid | Lab File ID: 310C13C3D5_13.d

Analysis Method: 8290 | Date Collected: 10/21/2013 10:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.29(g) | Date Analyzed: 11/01/2013 05:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	53		40-135
89059-46-1	13C-2,3,7,8-TCDF	54		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	56		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	51		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	55		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	57		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	57		40-135
114423-97-1	13C-OCDD	66		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1046-000.5 | Lab Sample ID: 320-4670-28

Matrix: Solid | Lab File ID: 31OC13C3D5_12.d

Analysis Method: 8290 | Date Collected: 10/21/2013 09:50

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.07(g) | Date Analyzed: 11/01/2013 05:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.037
51207-31-9	2,3,7,8-TCDF	0.80	J	1.0	0.038
40321-76-4	1,2,3,7,8-PeCDD	1.1	J	5.1	0.063
57117-41-6	1,2,3,7,8-PeCDF	ND		5.1	0.25
57117-31-4	2,3,4,7,8-PeCDF	0.59	J *	5.1	0.084
39227-28-6	1,2,3,4,7,8-HxCDD	2.6	J	5.1	0.062
57653-85-7	1,2,3,6,7,8-HxCDD	5.6		5.1	0.045
19408-74-3	1,2,3,7,8,9-HxCDD	5.2		5.1	0.044
70648-26-9	1,2,3,4,7,8-HxCDF	1.7	J	5.1	0.088
57117-44-9	1,2,3,6,7,8-HxCDF	1.1	J	5.1	0.067
60851-34-5	2,3,4,6,7,8-HxCDF	0.94	J	5.1	0.076
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.085
35822-46-9	1,2,3,4,6,7,8-HpCDD	100		5.1	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	13	B	5.1	0.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.75	J	5.1	0.12
3268-87-9	OCDD	3600	B	10	0.65
39001-02-0	OCDF	18	B	10	0.061
41903-57-5	Total TCDD	0.91	J q	1.0	0.037
30402-14-3	Total TCDF	5.2	q	1.0	0.038
36088-22-9	Total PeCDD	5.6	q	5.1	0.063
30402-15-4	Total PeCDF	8.3	q	5.1	0.17
34465-46-8	Total HxCDD	43	q	5.1	0.050
55684-94-1	Total HxCDF	21	q	5.1	0.079
37871-00-4	Total HpCDD	200	B	5.1	0.20
38998-75-3	Total HpCDF	31	B	5.1	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1046-000.5 | Lab Sample ID: 320-4670-28

Matrix: Solid | Lab File ID: 310C13C3D5_12.d

Analysis Method: 8290 | Date Collected: 10/21/2013 09:50

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.07(g) | Date Analyzed: 11/01/2013 05:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	72		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	76		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	64		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	78		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	94		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	76		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	75		40-135
114423-97-1	13C-OCDD	87		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1047-000.8 Lab Sample ID: 320-4670-27

Matrix: Solid Lab File ID: 310C13C3D5_11.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:40

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.25(g) Date Analyzed: 11/01/2013 04:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.54	J	1.1	0.046
40321-76-4	1,2,3,7,8-PeCDD	5.4		5.3	0.16
57117-41-6	1,2,3,7,8-PeCDF	1.1	J q	5.3	0.14
57117-31-4	2,3,4,7,8-PeCDF	1.4	J *	5.3	0.14
39227-28-6	1,2,3,4,7,8-HxCDD	16		5.3	0.15
57653-85-7	1,2,3,6,7,8-HxCDD	52		5.3	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	34		5.3	0.11
70648-26-9	1,2,3,4,7,8-HxCDF	7.5		5.3	0.18
57117-44-9	1,2,3,6,7,8-HxCDF	6.0		5.3	0.13
60851-34-5	2,3,4,6,7,8-HxCDF	5.5		5.3	0.15
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.17
35822-46-9	1,2,3,4,6,7,8-HpCDD	850		5.3	0.66
67562-39-4	1,2,3,4,6,7,8-HpCDF	99	B	5.3	0.27
55673-89-7	1,2,3,4,7,8,9-HpCDF	4.2	J	5.3	0.32
3268-87-9	OCDD	9100	E B	11	1.4
39001-02-0	OCDF	110	B	11	0.11
41903-57-5	Total TCDD	4.7	q	1.1	0.046
30402-14-3	Total TCDF	11	q	1.1	0.058
36088-22-9	Total PeCDD	36		5.3	0.16
30402-15-4	Total PeCDF	34	q	5.3	0.14
34465-46-8	Total HxCDD	320	q	5.3	0.12
55684-94-1	Total HxCDF	150	q	5.3	0.16
37871-00-4	Total HpCDD	1500	B	5.3	0.66
38998-75-3	Total HpCDF	240	B	5.3	0.29

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1047-000.8 | Lab Sample ID: 320-4670-27

Matrix: Solid | Lab File ID: 31OC13C3D5_11.d

Analysis Method: 8290 | Date Collected: 10/21/2013 09:40

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.25(g) | Date Analyzed: 11/01/2013 04:22

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	57		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	55		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	58		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	60		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	70		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	50		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	55		40-135
114423-97-1	13C-OCDD	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1048-000.8 | Lab Sample ID: 320-4670-26

Matrix: Solid | Lab File ID: 310C13C3D5_10.d

Analysis Method: 8290 | Date Collected: 10/21/2013 09:30

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) | Date Analyzed: 11/01/2013 03:40

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.23	J q	1.1	0.039
40321-76-4	1,2,3,7,8-PeCDD	0.75	J	5.4	0.091
57117-41-6	1,2,3,7,8-PeCDF	0.87	J	5.4	0.099
57117-31-4	2,3,4,7,8-PeCDF	1.3	J * q	5.4	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	2.1	J	5.4	0.073
57653-85-7	1,2,3,6,7,8-HxCDD	4.8	J	5.4	0.054
19408-74-3	1,2,3,7,8,9-HxCDD	4.1	J	5.4	0.052
70648-26-9	1,2,3,4,7,8-HxCDF	3.3	J	5.4	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	2.0	J	5.4	0.092
60851-34-5	2,3,4,6,7,8-HxCDF	1.7	J	5.4	0.10
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	110		5.4	0.23
67562-39-4	1,2,3,4,6,7,8-HpCDF	22	B	5.4	0.15
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.3	J	5.4	0.18
3268-87-9	OCDD	4900	E B	11	1.1
39001-02-0	OCDF	36	B	11	0.078
41903-57-5	Total TCDD	3.2	q	1.1	0.039
30402-14-3	Total TCDF	15	q	1.1	0.054
36088-22-9	Total PeCDD	7.7	q	5.4	0.091
30402-15-4	Total PeCDF	22	q	5.4	0.10
34465-46-8	Total HxCDD	35		5.4	0.060
55684-94-1	Total HxCDF	32		5.4	0.11
37871-00-4	Total HpCDD	210	B	5.4	0.23
38998-75-3	Total HpCDF	51	B	5.4	0.17

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1048-000.8 Lab Sample ID: 320-4670-26

Matrix: Solid Lab File ID: 310C13C3D5_10.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:30

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) Date Analyzed: 11/01/2013 03:40

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		40-135
89059-46-1	13C-2,3,7,8-TCDF	58		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	56		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	72		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	60		40-135
114423-97-1	13C-OCDD	66		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1049-000.9 | Lab Sample ID: 320-4670-25

Matrix: Solid | Lab File ID: 310C13C3D5_9.d

Analysis Method: 8290 | Date Collected: 10/21/2013 09:20

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.34(g) | Date Analyzed: 11/01/2013 02:58

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.13
40321-76-4	1,2,3,7,8-PeCDD	1.0	J	5.2	0.095
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.10
57117-31-4	2,3,4,7,8-PeCDF	0.76	J *	5.2	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	2.9	J	5.2	0.098
57653-85-7	1,2,3,6,7,8-HxCDD	8.1		5.2	0.072
19408-74-3	1,2,3,7,8,9-HxCDD	5.8		5.2	0.069
70648-26-9	1,2,3,4,7,8-HxCDF	2.6	J	5.2	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	1.6	J q	5.2	0.098
60851-34-5	2,3,4,6,7,8-HxCDF	1.3	J	5.2	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.13
35822-46-9	1,2,3,4,6,7,8-HpCDD	160		5.2	0.32
67562-39-4	1,2,3,4,6,7,8-HpCDF	24	B	5.2	0.18
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.2	J q	5.2	0.21
3268-87-9	OCDD	4500	E B	10	0.95
39001-02-0	OCDF	38	B	10	0.091
41903-57-5	Total TCDD	1.2		1.0	0.13
30402-14-3	Total TCDF	7.9	q	1.0	0.047
36088-22-9	Total PeCDD	5.1	J q	5.2	0.095
30402-15-4	Total PeCDF	10	q	5.2	0.10
34465-46-8	Total HxCDD	53		5.2	0.080
55684-94-1	Total HxCDF	30	q	5.2	0.12
37871-00-4	Total HpCDD	280	B	5.2	0.32
38998-75-3	Total HpCDF	61	B q	5.2	0.19

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1049-000.9 | Lab Sample ID: 320-4670-25

Matrix: Solid | Lab File ID: 310C13C3D5_9.d

Analysis Method: 8290 | Date Collected: 10/21/2013 09:20

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.34(g) | Date Analyzed: 11/01/2013 02:58

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	61		40-135
89059-46-1	13C-2,3,7,8-TCDF	57		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	64		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	63		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	63		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	81		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	62		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	61		40-135
114423-97-1	13C-OCDD	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1050-000.6 Lab Sample ID: 320-4670-42

Matrix: Solid Lab File ID: 310C13C3D5_37.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:40

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.14(g) Date Analyzed: 11/01/2013 23:12

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.16	J q	1.1	0.031
40321-76-4	1,2,3,7,8-PeCDD	0.50	J	5.3	0.059
57117-41-6	1,2,3,7,8-PeCDF	0.43	J q	5.3	0.057
57117-31-4	2,3,4,7,8-PeCDF	0.65	J *	5.3	0.059
39227-28-6	1,2,3,4,7,8-HxCDD	1.0	J q	5.3	0.055
57653-85-7	1,2,3,6,7,8-HxCDD	2.3	J	5.3	0.040
19408-74-3	1,2,3,7,8,9-HxCDD	2.3	J	5.3	0.038
70648-26-9	1,2,3,4,7,8-HxCDF	4.1	J	5.3	0.095
57117-44-9	1,2,3,6,7,8-HxCDF	1.7	J	5.3	0.072
60851-34-5	2,3,4,6,7,8-HxCDF	0.75	J q	5.3	0.082
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.093
35822-46-9	1,2,3,4,6,7,8-HpCDD	62		5.3	0.18
67562-39-4	1,2,3,4,6,7,8-HpCDF	34	B	5.3	0.17
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.6	J	5.3	0.20
3268-87-9	OCDD	2800	B	11	0.60
39001-02-0	OCDF	96	B	11	0.089
41903-57-5	Total TCDD	1.8	q	1.1	0.031
30402-14-3	Total TCDF	6.6	q	1.1	0.038
36088-22-9	Total PeCDD	3.4	J q	5.3	0.059
30402-15-4	Total PeCDF	8.8	q	5.3	0.058
34465-46-8	Total HxCDD	18	q	5.3	0.044
55684-94-1	Total HxCDF	20	q	5.3	0.086
37871-00-4	Total HpCDD	110	B	5.3	0.18
38998-75-3	Total HpCDF	62	B	5.3	0.18

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1050-000.6 | Lab Sample ID: 320-4670-42

Matrix: Solid | Lab File ID: 310C13C3D5_37.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:40

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.14(g) | Date Analyzed: 11/01/2013 23:12

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	74		40-135
89059-46-1	13C-2,3,7,8-TCDF	79		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	77		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	77		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	77		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	90		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	70		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	78		40-135
114423-97-1	13C-OCDD	85		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1051-000.8 | Lab Sample ID: 320-4670-41

Matrix: Solid | Lab File ID: 310C13C3D5_36.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:30

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.25(g) | Date Analyzed: 11/01/2013 22:30

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.035
51207-31-9	2,3,7,8-TCDF	0.62	J	1.0	0.034
40321-76-4	1,2,3,7,8-PeCDD	0.41	J	5.0	0.066
57117-41-6	1,2,3,7,8-PeCDF	0.30	J q	5.0	0.074
57117-31-4	2,3,4,7,8-PeCDF	0.35	J *	5.0	0.077
39227-28-6	1,2,3,4,7,8-HxCDD	0.95	J	5.0	0.056
57653-85-7	1,2,3,6,7,8-HxCDD	2.0	J	5.0	0.041
19408-74-3	1,2,3,7,8,9-HxCDD	1.8	J	5.0	0.040
70648-26-9	1,2,3,4,7,8-HxCDF	1.1	J q	5.0	0.089
57117-44-9	1,2,3,6,7,8-HxCDF	1.2	J	5.0	0.068
60851-34-5	2,3,4,6,7,8-HxCDF	0.58	J q	5.0	0.078
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.087
35822-46-9	1,2,3,4,6,7,8-HpCDD	67		5.0	0.22
67562-39-4	1,2,3,4,6,7,8-HpCDF	15	B	5.0	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.73	J	5.0	0.15
3268-87-9	OCDD	4500	E B	10	0.80
39001-02-0	OCDF	35	B	10	0.083
41903-57-5	Total TCDD	1.2	q	1.0	0.035
30402-14-3	Total TCDF	2.7	q	1.0	0.034
36088-22-9	Total PeCDD	2.9	J q	5.0	0.066
30402-15-4	Total PeCDF	3.4	J q	5.0	0.075
34465-46-8	Total HxCDD	14		5.0	0.046
55684-94-1	Total HxCDF	13	q	5.0	0.081
37871-00-4	Total HpCDD	120	B	5.0	0.22
38998-75-3	Total HpCDF	39	B	5.0	0.14

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1051-000.8 | Lab Sample ID: 320-4670-41

Matrix: Solid | Lab File ID: 310C13C3D5_36.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:30

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.25(g) | Date Analyzed: 11/01/2013 22:30

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	62		40-135
89059-46-1	13C-2,3,7,8-TCDF	65		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	64		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	65		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	65		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1052-000.6 | Lab Sample ID: 320-4670-40

Matrix: Solid | Lab File ID: 31OC13C3D5_35.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:25

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.46(g) | Date Analyzed: 11/01/2013 21:48

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.14	J q	1.0	0.056
40321-76-4	1,2,3,7,8-PeCDD	1.8	J	5.2	0.080
57117-41-6	1,2,3,7,8-PeCDF	1.1	J q	5.2	0.095
57117-31-4	2,3,4,7,8-PeCDF	1.6	J *	5.2	0.098
39227-28-6	1,2,3,4,7,8-HxCDD	4.5	J	5.2	0.097
57653-85-7	1,2,3,6,7,8-HxCDD	12		5.2	0.071
19408-74-3	1,2,3,7,8,9-HxCDD	9.7		5.2	0.068
70648-26-9	1,2,3,4,7,8-HxCDF	4.9	J	5.2	0.16
57117-44-9	1,2,3,6,7,8-HxCDF	4.2	J	5.2	0.12
60851-34-5	2,3,4,6,7,8-HxCDF	4.1	J	5.2	0.13
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.15
35822-46-9	1,2,3,4,6,7,8-HpCDD	270		5.2	0.37
67562-39-4	1,2,3,4,6,7,8-HpCDF	92	B	5.2	0.32
55673-89-7	1,2,3,4,7,8,9-HpCDF	4.6	J	5.2	0.38
3268-87-9	OCDD	4000	B	10	0.77
39001-02-0	OCDF	200	B	10	0.15
41903-57-5	Total TCDD	2.2	q	1.0	0.056
30402-14-3	Total TCDF	11	q	1.0	0.055
36088-22-9	Total PeCDD	10	q	5.2	0.080
30402-15-4	Total PeCDF	29	q	5.2	0.097
34465-46-8	Total HxCDD	79		5.2	0.079
55684-94-1	Total HxCDF	95		5.2	0.14
37871-00-4	Total HpCDD	470	B	5.2	0.37
38998-75-3	Total HpCDF	240	B	5.2	0.35

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1052-000.6 Lab Sample ID: 320-4670-40

Matrix: Solid Lab File ID: 310C13C3D5_35.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:25

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.46(g) Date Analyzed: 11/01/2013 21:48

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	60		40-135
89059-46-1	13C-2,3,7,8-TCDF	63		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	62		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	64		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	63		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	70		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	57		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1053-000.6 | Lab Sample ID: 320-4670-39

Matrix: Solid | Lab File ID: 31OC13C3D5_28.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:15

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.23(g) | Date Analyzed: 11/01/2013 16:37

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.63	J	1.0	0.040
40321-76-4	1,2,3,7,8-PeCDD	2.7	J	5.2	0.083
57117-41-6	1,2,3,7,8-PeCDF	0.81	J	5.2	0.12
57117-31-4	2,3,4,7,8-PeCDF	0.98	J *	5.2	0.12
39227-28-6	1,2,3,4,7,8-HxCDD	6.5	q	5.2	0.11
57653-85-7	1,2,3,6,7,8-HxCDD	23		5.2	0.078
19408-74-3	1,2,3,7,8,9-HxCDD	14		5.2	0.075
70648-26-9	1,2,3,4,7,8-HxCDF	7.1		5.2	0.14
57117-44-9	1,2,3,6,7,8-HxCDF	5.1	J	5.2	0.11
60851-34-5	2,3,4,6,7,8-HxCDF	4.4	J	5.2	0.13
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.14
35822-46-9	1,2,3,4,6,7,8-HpCDD	510		5.2	0.42
67562-39-4	1,2,3,4,6,7,8-HpCDF	120	B	5.2	0.37
55673-89-7	1,2,3,4,7,8,9-HpCDF	5.2		5.2	0.44
3268-87-9	OCDD	5300	E B	10	0.86
39001-02-0	OCDF	250	B	10	0.12
41903-57-5	Total TCDD	2.7	q	1.0	0.040
30402-14-3	Total TCDF	9.4	q	1.0	0.044
36088-22-9	Total PeCDD	12	q	5.2	0.083
30402-15-4	Total PeCDF	24	q	5.2	0.12
34465-46-8	Total HxCDD	130	q	5.2	0.087
55684-94-1	Total HxCDF	120		5.2	0.13
37871-00-4	Total HpCDD	860	B	5.2	0.42
38998-75-3	Total HpCDF	330	B	5.2	0.41

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1053-000.6 | Lab Sample ID: 320-4670-39

Matrix: Solid | Lab File ID: 31OC13C3D5_28.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:15

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.23(g) | Date Analyzed: 11/01/2013 16:37

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		40-135
89059-46-1	13C-2,3,7,8-TCDF	71		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	84		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	70		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	74		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	81		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	70		40-135
114423-97-1	13C-OCDD	81		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1054-000.6 Lab Sample ID: 320-4670-38

Matrix: Solid Lab File ID: 310C13C3D5_25.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:05

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.07(g) Date Analyzed: 11/01/2013 14:32

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.094	J q	1.0	0.037
51207-31-9	2,3,7,8-TCDF	0.43	J q	1.0	0.043
40321-76-4	1,2,3,7,8-PeCDD	0.58	J	5.2	0.074
57117-41-6	1,2,3,7,8-PeCDF	0.23	J	5.2	0.079
57117-31-4	2,3,4,7,8-PeCDF	0.36	J *	5.2	0.081
39227-28-6	1,2,3,4,7,8-HxCDD	1.7	J	5.2	0.090
57653-85-7	1,2,3,6,7,8-HxCDD	4.3	J	5.2	0.066
19408-74-3	1,2,3,7,8,9-HxCDD	3.2	J	5.2	0.063
70648-26-9	1,2,3,4,7,8-HxCDF	1.9	J	5.2	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	1.2	J q	5.2	0.097
60851-34-5	2,3,4,6,7,8-HxCDF	0.78	J q	5.2	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	98		5.2	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	26	B	5.2	0.15
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.2	J	5.2	0.17
3268-87-9	OCDD	3100	B	10	0.58
39001-02-0	OCDF	53	B	10	0.085
41903-57-5	Total TCDD	0.92	J q	1.0	0.037
30402-14-3	Total TCDF	1.7	q	1.0	0.043
36088-22-9	Total PeCDD	3.2	J q	5.2	0.074
30402-15-4	Total PeCDF	5.8	q	5.2	0.080
34465-46-8	Total HxCDD	27		5.2	0.073
55684-94-1	Total HxCDF	24	q	5.2	0.11
37871-00-4	Total HpCDD	170	B	5.2	0.21
38998-75-3	Total HpCDF	67	B	5.2	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1054-000.6 | Lab Sample ID: 320-4670-38

Matrix: Solid | Lab File ID: 310C13C3D5_25.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:05

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.07(g) | Date Analyzed: 11/01/2013 14:32

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		40-135
89059-46-1	13C-2,3,7,8-TCDF	65		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	66		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	62		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	68		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	81		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	63		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	82		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1055-000.8 | Lab Sample ID: 320-4670-37

Matrix: Solid | Lab File ID: 310C13C3D5_24.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.05(g) | Date Analyzed: 11/01/2013 13:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.043
51207-31-9	2,3,7,8-TCDF	0.36	J	1.1	0.048
40321-76-4	1,2,3,7,8-PeCDD	0.31	J	5.3	0.083
57117-41-6	1,2,3,7,8-PeCDF	0.14	J q	5.3	0.086
57117-31-4	2,3,4,7,8-PeCDF	0.16	J * q	5.3	0.089
39227-28-6	1,2,3,4,7,8-HxCDD	0.87	J	5.3	0.094
57653-85-7	1,2,3,6,7,8-HxCDD	2.4	J	5.3	0.069
19408-74-3	1,2,3,7,8,9-HxCDD	1.7	J	5.3	0.066
70648-26-9	1,2,3,4,7,8-HxCDF	1.4	J	5.3	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	0.84	J	5.3	0.090
60851-34-5	2,3,4,6,7,8-HxCDF	0.59	J q	5.3	0.10
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	55		5.3	0.16
67562-39-4	1,2,3,4,6,7,8-HpCDF	13	B	5.3	0.12
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.76	J	5.3	0.14
3268-87-9	OCDD	1900	B	11	0.51
39001-02-0	OCDF	22	B	11	0.088
41903-57-5	Total TCDD	0.46	J q	1.1	0.043
30402-14-3	Total TCDF	2.4	q	1.1	0.048
36088-22-9	Total PeCDD	2.4	J q	5.3	0.083
30402-15-4	Total PeCDF	6.5	q	5.3	0.087
34465-46-8	Total HxCDD	15		5.3	0.076
55684-94-1	Total HxCDF	13	q	5.3	0.11
37871-00-4	Total HpCDD	93	B	5.3	0.16
38998-75-3	Total HpCDF	31	B	5.3	0.13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1055-000.8 | Lab Sample ID: 320-4670-37

Matrix: Solid | Lab File ID: 310C13C3D5_24.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.05(g) | Date Analyzed: 11/01/2013 13:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	61		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	65		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	65		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	67		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	74		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		40-135
114423-97-1	13C-OCDD	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1056-000.6 Lab Sample ID: 320-4670-36

Matrix: Solid Lab File ID: 310C13C3D5_23.d

Analysis Method: 8290 Date Collected: 10/21/2013 13:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 9.99(g) Date Analyzed: 11/01/2013 13:09

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.31	J	1.0	0.033
51207-31-9	2,3,7,8-TCDF	0.50	J	1.0	0.036
40321-76-4	1,2,3,7,8-PeCDD	1.2	J q	5.2	0.11
57117-41-6	1,2,3,7,8-PeCDF	0.45	J	5.2	0.073
57117-31-4	2,3,4,7,8-PeCDF	0.25	J *	5.2	0.075
39227-28-6	1,2,3,4,7,8-HxCDD	3.0	J	5.2	0.14
57653-85-7	1,2,3,6,7,8-HxCDD	6.7		5.2	0.10
19408-74-3	1,2,3,7,8,9-HxCDD	6.4		5.2	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	1.9	J	5.2	0.11
57117-44-9	1,2,3,6,7,8-HxCDF	1.7	J	5.2	0.085
60851-34-5	2,3,4,6,7,8-HxCDF	0.98	J	5.2	0.097
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.11
35822-46-9	1,2,3,4,6,7,8-HpCDD	130		5.2	0.25
67562-39-4	1,2,3,4,6,7,8-HpCDF	16	B	5.2	0.12
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.73	J	5.2	0.14
3268-87-9	OCDD	3700	B	10	0.78
39001-02-0	OCDF	21	B	10	0.079
41903-57-5	Total TCDD	1.3	q	1.0	0.033
30402-14-3	Total TCDF	3.4	q	1.0	0.036
36088-22-9	Total PeCDD	8.4	q	5.2	0.11
30402-15-4	Total PeCDF	8.0	q	5.2	0.074
34465-46-8	Total HxCDD	49		5.2	0.12
55684-94-1	Total HxCDF	23		5.2	0.10
37871-00-4	Total HpCDD	250	B	5.2	0.25
38998-75-3	Total HpCDF	37	B	5.2	0.13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1056-000.6 Lab Sample ID: 320-4670-36

Matrix: Solid Lab File ID: 310C13C3D5_23.d

Analysis Method: 8290 Date Collected: 10/21/2013 13:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 9.99(g) Date Analyzed: 11/01/2013 13:09

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		40-135
89059-46-1	13C-2,3,7,8-TCDF	68		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	49		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	66		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	66		40-135
114423-97-1	13C-OCDD	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1057-0001 | Lab Sample ID: 320-4670-35

Matrix: Solid | Lab File ID: 310C13C3D5_22.d

Analysis Method: 8290 | Date Collected: 10/21/2013 13:45

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.37(g) | Date Analyzed: 11/01/2013 12:27

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.19	J q	1.0	0.037
40321-76-4	1,2,3,7,8-PeCDD	2.5	J	5.0	0.097
57117-41-6	1,2,3,7,8-PeCDF	0.50	J q	5.0	0.088
57117-31-4	2,3,4,7,8-PeCDF	1.0	J *	5.0	0.091
39227-28-6	1,2,3,4,7,8-HxCDD	7.2		5.0	0.18
57653-85-7	1,2,3,6,7,8-HxCDD	23		5.0	0.13
19408-74-3	1,2,3,7,8,9-HxCDD	14		5.0	0.13
70648-26-9	1,2,3,4,7,8-HxCDF	3.2	J	5.0	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	2.8	J	5.0	0.088
60851-34-5	2,3,4,6,7,8-HxCDF	2.2	J	5.0	0.10
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.11
35822-46-9	1,2,3,4,6,7,8-HpCDD	420		5.0	0.42
67562-39-4	1,2,3,4,6,7,8-HpCDF	44	B	5.0	0.17
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.6	J	5.0	0.20
3268-87-9	OCDD	5100	E B	10	0.83
39001-02-0	OCDF	43	B	10	0.072
41903-57-5	Total TCDD	1.7	q	1.0	0.037
30402-14-3	Total TCDF	6.2	q	1.0	0.039
36088-22-9	Total PeCDD	14	q	5.0	0.097
30402-15-4	Total PeCDF	16	q	5.0	0.089
34465-46-8	Total HxCDD	140		5.0	0.15
55684-94-1	Total HxCDF	77		5.0	0.10
37871-00-4	Total HpCDD	730	B	5.0	0.42
38998-75-3	Total HpCDF	110	B	5.0	0.18

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1057-0001 | Lab Sample ID: 320-4670-35

Matrix: Solid | Lab File ID: 31OC13C3D5_22.d

Analysis Method: 8290 | Date Collected: 10/21/2013 13:45

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.37(g) | Date Analyzed: 11/01/2013 12:27

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		40-135
89059-46-1	13C-2,3,7,8-TCDF	75		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	73		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	67		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	76		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	94		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	79		40-135
114423-97-1	13C-OCDD	88		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1058-000.5 | Lab Sample ID: 320-4670-50

Matrix: Solid | Lab File ID: 310C13C3D5_51.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:35

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.10(g) | Date Analyzed: 11/02/2013 09:15

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.036
51207-31-9	2,3,7,8-TCDF	0.65	J q	1.0	0.035
40321-76-4	1,2,3,7,8-PeCDD	0.30	J	5.2	0.059
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.066
57117-31-4	2,3,4,7,8-PeCDF	0.34	J q	5.2	0.069
39227-28-6	1,2,3,4,7,8-HxCDD	0.64	J q	5.2	0.068
57653-85-7	1,2,3,6,7,8-HxCDD	1.6	J	5.2	0.050
19408-74-3	1,2,3,7,8,9-HxCDD	1.5	J	5.2	0.048
70648-26-9	1,2,3,4,7,8-HxCDF	1.5	J	5.2	0.083
57117-44-9	1,2,3,6,7,8-HxCDF	1.0	J	5.2	0.063
60851-34-5	2,3,4,6,7,8-HxCDF	0.94	J	5.2	0.072
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.081
35822-46-9	1,2,3,4,6,7,8-HpCDD	48		5.2	0.16
67562-39-4	1,2,3,4,6,7,8-HpCDF	14		5.2	0.12
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.91	J	5.2	0.14
3268-87-9	OCDD	1400	B	10	0.47
39001-02-0	OCDF	42	B	10	0.088
41903-57-5	Total TCDD	0.48	J q	1.0	0.036
30402-14-3	Total TCDF	2.8	q	1.0	0.035
36088-22-9	Total PeCDD	1.5	J q	5.2	0.059
30402-15-4	Total PeCDF	3.7	J q	5.2	0.068
34465-46-8	Total HxCDD	10	q	5.2	0.055
55684-94-1	Total HxCDF	14		5.2	0.075
37871-00-4	Total HpCDD	82		5.2	0.16
38998-75-3	Total HpCDF	42		5.2	0.13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1058-000.5 | Lab Sample ID: 320-4670-50

Matrix: Solid | Lab File ID: 31OC13C3D5_51.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:35

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.10(g) | Date Analyzed: 11/02/2013 09:15

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	80		40-135
89059-46-1	13C-2,3,7,8-TCDF	84		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	84		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	86		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	87		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	91		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	79		40-135
114423-97-1	13C-OCDD	84		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1059-000.6 | Lab Sample ID: 320-4670-49

Matrix: Solid | Lab File ID: 31OC13C3D5_50.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:25

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) | Date Analyzed: 11/02/2013 08:33

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		0.99	0.042
51207-31-9	2,3,7,8-TCDF	0.22	J q	0.99	0.030
40321-76-4	1,2,3,7,8-PeCDD	0.18	J	4.9	0.049
57117-41-6	1,2,3,7,8-PeCDF	ND		4.9	0.048
57117-31-4	2,3,4,7,8-PeCDF	ND		4.9	0.050
39227-28-6	1,2,3,4,7,8-HxCDD	0.53	J	4.9	0.051
57653-85-7	1,2,3,6,7,8-HxCDD	1.0	J	4.9	0.038
19408-74-3	1,2,3,7,8,9-HxCDD	1.1	J	4.9	0.036
70648-26-9	1,2,3,4,7,8-HxCDF	0.51	J q	4.9	0.060
57117-44-9	1,2,3,6,7,8-HxCDF	0.64	J	4.9	0.046
60851-34-5	2,3,4,6,7,8-HxCDF	0.41	J	4.9	0.052
72918-21-9	1,2,3,7,8,9-HxCDF	ND		4.9	0.059
35822-46-9	1,2,3,4,6,7,8-HpCDD	59		4.9	0.16
67562-39-4	1,2,3,4,6,7,8-HpCDF	6.9	q	4.9	0.092
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		4.9	0.11
3268-87-9	OCDD	5500	E B	9.9	0.80
39001-02-0	OCDF	20	B	9.9	0.048
41903-57-5	Total TCDD	1.3		0.99	0.042
30402-14-3	Total TCDF	1.2	q	0.99	0.030
36088-22-9	Total PeCDD	1.6	J q	4.9	0.049
30402-15-4	Total PeCDF	1.4	J q	4.9	0.049
34465-46-8	Total HxCDD	7.5	q	4.9	0.042
55684-94-1	Total HxCDF	6.6	q	4.9	0.054
37871-00-4	Total HpCDD	100		4.9	0.16
38998-75-3	Total HpCDF	17	q	4.9	0.10

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1059-000.6 Lab Sample ID: 320-4670-49

Matrix: Solid Lab File ID: 310C13C3D5_50.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:25

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) Date Analyzed: 11/02/2013 08:33

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	87		40-135
89059-46-1	13C-2,3,7,8-TCDF	93		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	94		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	94		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	93		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	102		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	79		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	87		40-135
114423-97-1	13C-OCDD	98		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1060.000.5 Lab Sample ID: 320-4670-48

Matrix: Solid Lab File ID: 31OC13C3D5_49.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:15

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.06(g) Date Analyzed: 11/02/2013 07:52

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.28	J q	1.0	0.030
40321-76-4	1,2,3,7,8-PeCDD	1.9	J	5.2	0.068
57117-41-6	1,2,3,7,8-PeCDF	2.0	J	5.2	0.098
57117-31-4	2,3,4,7,8-PeCDF	2.4	J	5.2	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	4.9	J	5.2	0.14
57653-85-7	1,2,3,6,7,8-HxCDD	13		5.2	0.10
19408-74-3	1,2,3,7,8,9-HxCDD	10		5.2	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	8.1		5.2	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	5.6		5.2	0.077
60851-34-5	2,3,4,6,7,8-HxCDF	5.7		5.2	0.087
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.098
35822-46-9	1,2,3,4,6,7,8-HpCDD	300		5.2	0.30
67562-39-4	1,2,3,4,6,7,8-HpCDF	95		5.2	0.30
55673-89-7	1,2,3,4,7,8,9-HpCDF	4.9	J	5.2	0.35
3268-87-9	OCDD	4500	E B	10	0.72
39001-02-0	OCDF	210	B	10	0.096
41903-57-5	Total TCDD	5.1	q	1.0	0.030
30402-14-3	Total TCDF	23		1.0	0.043
36088-22-9	Total PeCDD	14	q	5.2	0.068
30402-15-4	Total PeCDF	45	q	5.2	0.10
34465-46-8	Total HxCDD	87		5.2	0.12
55684-94-1	Total HxCDF	120	q	5.2	0.091
37871-00-4	Total HpCDD	510		5.2	0.30
38998-75-3	Total HpCDF	240		5.2	0.32

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1060.000.5 | Lab Sample ID: 320-4670-48

Matrix: Solid | Lab File ID: 31OC13C3D5_49.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.06(g) | Date Analyzed: 11/02/2013 07:52

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	96		40-135
89059-46-1	13C-2,3,7,8-TCDF	103		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	100		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	104		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	103		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	115		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	90		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	100		40-135
114423-97-1	13C-OCDD	110		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1061-000.6 | Lab Sample ID: 320-4670-44

Matrix: Solid | Lab File ID: 31OC13C3D5_39.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:55

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.35(g) | Date Analyzed: 11/02/2013 00:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 0.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		0.97	0.056
51207-31-9	2,3,7,8-TCDF	0.89	J	0.97	0.047
40321-76-4	1,2,3,7,8-PeCDD	0.98	J	4.9	0.089
57117-41-6	1,2,3,7,8-PeCDF	0.30	J	4.9	0.085
57117-31-4	2,3,4,7,8-PeCDF	0.51	J	4.9	0.088
39227-28-6	1,2,3,4,7,8-HxCDD	2.3	J	4.9	0.070
57653-85-7	1,2,3,6,7,8-HxCDD	5.7		4.9	0.051
19408-74-3	1,2,3,7,8,9-HxCDD	4.7	J	4.9	0.049
70648-26-9	1,2,3,4,7,8-HxCDF	1.9	J B	4.9	0.090
57117-44-9	1,2,3,6,7,8-HxCDF	1.3	J	4.9	0.069
60851-34-5	2,3,4,6,7,8-HxCDF	1.2	J	4.9	0.078
72918-21-9	1,2,3,7,8,9-HxCDF	ND		4.9	0.088
35822-46-9	1,2,3,4,6,7,8-HpCDD	110	B	4.9	0.22
67562-39-4	1,2,3,4,6,7,8-HpCDF	22	B	4.9	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.4	J	4.9	0.15
3268-87-9	OCDD	3400	B	9.7	0.72
39001-02-0	OCDF	40	B	9.7	0.084
41903-57-5	Total TCDD	1.3	q	0.97	0.056
30402-14-3	Total TCDF	5.0	q	0.97	0.047
36088-22-9	Total PeCDD	4.7	J q	4.9	0.089
30402-15-4	Total PeCDF	9.5	q	4.9	0.086
34465-46-8	Total HxCDD	34	q	4.9	0.057
55684-94-1	Total HxCDF	28	B	4.9	0.081
37871-00-4	Total HpCDD	200	B	4.9	0.22
38998-75-3	Total HpCDF	56	B	4.9	0.14

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1061-000.6 | Lab Sample ID: 320-4670-44

Matrix: Solid | Lab File ID: 310C13C3D5_39.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:55

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.35(g) | Date Analyzed: 11/02/2013 00:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 0.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	60		40-135
89059-46-1	13C-2,3,7,8-TCDF	63		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	65		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	64		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	63		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	67		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1062-000.8 Lab Sample ID: 320-4670-43

Matrix: Solid Lab File ID: 310C13C3D5_38.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:50

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.35(g) Date Analyzed: 11/01/2013 23:54

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.17	J q	1.0	0.059
40321-76-4	1,2,3,7,8-PeCDD	1.2	J	5.2	0.092
57117-41-6	1,2,3,7,8-PeCDF	0.58	J	5.2	0.098
57117-31-4	2,3,4,7,8-PeCDF	0.84	J *	5.2	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	2.2	J	5.2	0.077
57653-85-7	1,2,3,6,7,8-HxCDD	5.7		5.2	0.056
19408-74-3	1,2,3,7,8,9-HxCDD	4.9	J	5.2	0.054
70648-26-9	1,2,3,4,7,8-HxCDF	2.0	J	5.2	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	1.3	J	5.2	0.077
60851-34-5	2,3,4,6,7,8-HxCDF	1.1	J	5.2	0.088
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.099
35822-46-9	1,2,3,4,6,7,8-HpCDD	120		5.2	0.29
67562-39-4	1,2,3,4,6,7,8-HpCDF	17	B	5.2	0.12
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.2	J	5.2	0.14
3268-87-9	OCDD	4200	E B	10	0.88
39001-02-0	OCDF	29	B	10	0.083
41903-57-5	Total TCDD	2.2	q	1.0	0.059
30402-14-3	Total TCDF	8.5	q	1.0	0.054
36088-22-9	Total PeCDD	6.9	q	5.2	0.092
30402-15-4	Total PeCDF	13	q	5.2	0.10
34465-46-8	Total HxCDD	41	q	5.2	0.063
55684-94-1	Total HxCDF	24		5.2	0.092
37871-00-4	Total HpCDD	210	B	5.2	0.29
38998-75-3	Total HpCDF	39	B	5.2	0.13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1062-000.8 | Lab Sample ID: 320-4670-43

Matrix: Solid | Lab File ID: 310C13C3D5_38.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:50

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.35(g) | Date Analyzed: 11/01/2013 23:54

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	67		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	68		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	67		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	74		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	59		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	64		40-135
114423-97-1	13C-OCDD	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1063-000.6 Lab Sample ID: 320-4670-53

Matrix: Solid Lab File ID: 31OC13C3D5_56.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:05

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.18(g) Date Analyzed: 11/02/2013 12:44

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.050
51207-31-9	2,3,7,8-TCDF	0.88	J	1.0	0.044
40321-76-4	1,2,3,7,8-PeCDD	0.27	J q	5.1	0.064
57117-41-6	1,2,3,7,8-PeCDF	0.40	J q	5.1	0.077
57117-31-4	2,3,4,7,8-PeCDF	0.48	J	5.1	0.080
39227-28-6	1,2,3,4,7,8-HxCDD	0.66	J q	5.1	0.091
57653-85-7	1,2,3,6,7,8-HxCDD	2.0	J	5.1	0.066
19408-74-3	1,2,3,7,8,9-HxCDD	1.7	J	5.1	0.064
70648-26-9	1,2,3,4,7,8-HxCDF	1.8	J	5.1	0.089
57117-44-9	1,2,3,6,7,8-HxCDF	1.4	J	5.1	0.068
60851-34-5	2,3,4,6,7,8-HxCDF	1.1	J	5.1	0.077
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.087
35822-46-9	1,2,3,4,6,7,8-HpCDD	50		5.1	0.17
67562-39-4	1,2,3,4,6,7,8-HpCDF	15		5.1	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.0	J	5.1	0.15
3268-87-9	OCDD	1700	B	10	0.52
39001-02-0	OCDF	34	B	10	0.074
41903-57-5	Total TCDD	0.76	J q	1.0	0.050
30402-14-3	Total TCDF	4.6	q	1.0	0.044
36088-22-9	Total PeCDD	2.8	J q	5.1	0.064
30402-15-4	Total PeCDF	9.9	q	5.1	0.079
34465-46-8	Total HxCDD	14	q	5.1	0.074
55684-94-1	Total HxCDF	38	I	5.1	0.080
37871-00-4	Total HpCDD	90		5.1	0.17
38998-75-3	Total HpCDF	40		5.1	0.14

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1063-000.6 | Lab Sample ID: 320-4670-53

Matrix: Solid | Lab File ID: 31OC13C3D5_56.d

Analysis Method: 8290 | Date Collected: 10/22/2013 09:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.18(g) | Date Analyzed: 11/02/2013 12:44

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	84		40-135
89059-46-1	13C-2,3,7,8-TCDF	90		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	87		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	91		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	94		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	96		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	74		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	83		40-135
114423-97-1	13C-OCDD	88		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1064-000.6 | Lab Sample ID: 320-4670-52

Matrix: Solid | Lab File ID: 310C13C3D5_53.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.12(g) | Date Analyzed: 11/02/2013 10:38

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.16	J q	1.0	0.042
51207-31-9	2,3,7,8-TCDF	0.99	J	1.0	0.042
40321-76-4	1,2,3,7,8-PeCDD	0.59	J	5.1	0.069
57117-41-6	1,2,3,7,8-PeCDF	0.53	J	5.1	0.076
57117-31-4	2,3,4,7,8-PeCDF	0.64	J	5.1	0.079
39227-28-6	1,2,3,4,7,8-HxCDD	1.2	J	5.1	0.10
57653-85-7	1,2,3,6,7,8-HxCDD	3.8	J	5.1	0.075
19408-74-3	1,2,3,7,8,9-HxCDD	2.6	J	5.1	0.072
70648-26-9	1,2,3,4,7,8-HxCDF	1.8	J q	5.1	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	1.3	J q	5.1	0.080
60851-34-5	2,3,4,6,7,8-HxCDF	2.3	J	5.1	0.091
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.10
35822-46-9	1,2,3,4,6,7,8-HpCDD	87		5.1	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	22		5.1	0.14
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.3	J	5.1	0.17
3268-87-9	OCDD	1900	B	10	0.55
39001-02-0	OCDF	44	B	10	0.092
41903-57-5	Total TCDD	2.1	q	1.0	0.042
30402-14-3	Total TCDF	5.8	q	1.0	0.042
36088-22-9	Total PeCDD	4.6	J q	5.1	0.069
30402-15-4	Total PeCDF	12	q	5.1	0.077
34465-46-8	Total HxCDD	27	q	5.1	0.083
55684-94-1	Total HxCDF	28	q	5.1	0.095
37871-00-4	Total HpCDD	150		5.1	0.21
38998-75-3	Total HpCDF	56		5.1	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1064-000.6 Lab Sample ID: 320-4670-52

Matrix: Solid Lab File ID: 31OC13C3D5_53.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:55

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.12(g) Date Analyzed: 11/02/2013 10:38

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 2.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		40-135
89059-46-1	13C-2,3,7,8-TCDF	76		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	76		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	76		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	77		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	82		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	65		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	70		40-135
114423-97-1	13C-OCDD	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1065-000.5 Lab Sample ID: 320-4670-51

Matrix: Solid Lab File ID: 31OC13C3D5_52.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:45

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.13(g) Date Analyzed: 11/02/2013 09:57

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.18	J q	1.0	0.037
40321-76-4	1,2,3,7,8-PeCDD	1.1	J	5.1	0.057
57117-41-6	1,2,3,7,8-PeCDF	0.94	J	5.1	0.074
57117-31-4	2,3,4,7,8-PeCDF	1.4	J	5.1	0.077
39227-28-6	1,2,3,4,7,8-HxCDD	2.7	J	5.1	0.12
57653-85-7	1,2,3,6,7,8-HxCDD	6.8		5.1	0.085
19408-74-3	1,2,3,7,8,9-HxCDD	5.4		5.1	0.082
70648-26-9	1,2,3,4,7,8-HxCDF	4.1	J	5.1	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	3.1	J	5.1	0.078
60851-34-5	2,3,4,6,7,8-HxCDF	3.3	J	5.1	0.088
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.099
35822-46-9	1,2,3,4,6,7,8-HpCDD	170		5.1	0.28
67562-39-4	1,2,3,4,6,7,8-HpCDF	51		5.1	0.22
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.9	J	5.1	0.25
3268-87-9	OCDD	3000	B	10	0.58
39001-02-0	OCDF	100	B	10	0.079
41903-57-5	Total TCDD	1.8	q	1.0	0.037
30402-14-3	Total TCDF	11	q	1.0	0.036
36088-22-9	Total PeCDD	7.4	q	5.1	0.057
30402-15-4	Total PeCDF	26	q	5.1	0.075
34465-46-8	Total HxCDD	45		5.1	0.095
55684-94-1	Total HxCDF	68	q	5.1	0.092
37871-00-4	Total HpCDD	290		5.1	0.28
38998-75-3	Total HpCDF	130		5.1	0.23

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1065-000.5 | Lab Sample ID: 320-4670-51

Matrix: Solid | Lab File ID: 310C13C3D5_52.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:45

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.13(g) | Date Analyzed: 11/02/2013 09:57

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	92		40-135
89059-46-1	13C-2,3,7,8-TCDF	97		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	95		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	98		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	97		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	105		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	83		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	89		40-135
114423-97-1	13C-OCDD	101		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1066-000.9 Lab Sample ID: 320-4670-47

Matrix: Solid Lab File ID: 31OC13C3D5_42.d

Analysis Method: 8290 Date Collected: 10/21/2013 15:15

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.31(g) Date Analyzed: 11/02/2013 02:41

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 2.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.26	J q	0.99	0.038
40321-76-4	1,2,3,7,8-PeCDD	1.4	J	5.0	0.057
57117-41-6	1,2,3,7,8-PeCDF	0.35	J q	5.0	0.060
57117-31-4	2,3,4,7,8-PeCDF	0.64	J	5.0	0.062
39227-28-6	1,2,3,4,7,8-HxCDD	3.1	J	5.0	0.051
57653-85-7	1,2,3,6,7,8-HxCDD	7.2		5.0	0.037
19408-74-3	1,2,3,7,8,9-HxCDD	6.2		5.0	0.036
70648-26-9	1,2,3,4,7,8-HxCDF	2.4	J B	5.0	0.090
57117-44-9	1,2,3,6,7,8-HxCDF	1.8	J	5.0	0.069
60851-34-5	2,3,4,6,7,8-HxCDF	1.5	J	5.0	0.078
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.088
35822-46-9	1,2,3,4,6,7,8-HpCDD	150	B	5.0	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	33	B	5.0	0.14
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.8	J	5.0	0.17
3268-87-9	OCDD	4400	E B	9.9	0.68
39001-02-0	OCDF	69	B	9.9	0.066
41903-57-5	Total TCDD	1.1	q	0.99	0.038
30402-14-3	Total TCDF	4.8	q	0.99	0.034
36088-22-9	Total PeCDD	5.5	q	5.0	0.057
30402-15-4	Total PeCDF	9.8	q	5.0	0.061
34465-46-8	Total HxCDD	44		5.0	0.041
55684-94-1	Total HxCDF	36	B	5.0	0.081
37871-00-4	Total HpCDD	270	B	5.0	0.20
38998-75-3	Total HpCDF	88	B	5.0	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1066-000.9 | Lab Sample ID: 320-4670-47

Matrix: Solid | Lab File ID: 310C13C3D5_42.d

Analysis Method: 8290 | Date Collected: 10/21/2013 15:15

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.31(g) | Date Analyzed: 11/02/2013 02:41

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 2.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	90		40-135
89059-46-1	13C-2,3,7,8-TCDF	95		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	97		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	98		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	95		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	100		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	82		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	87		40-135
114423-97-1	13C-OCDD	98		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1067-000.7 Lab Sample ID: 320-4670-46

Matrix: Solid Lab File ID: 31OC13C3D5_41.d

Analysis Method: 8290 Date Collected: 10/21/2013 15:05

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.07(g) Date Analyzed: 11/02/2013 01:59

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.14
51207-31-9	2,3,7,8-TCDF	0.71	J q	1.1	0.051
40321-76-4	1,2,3,7,8-PeCDD	1.3	J	5.6	0.095
57117-41-6	1,2,3,7,8-PeCDF	ND		5.6	0.10
57117-31-4	2,3,4,7,8-PeCDF	0.56	J	5.6	0.11
39227-28-6	1,2,3,4,7,8-HxCDD	2.9	J	5.6	0.083
57653-85-7	1,2,3,6,7,8-HxCDD	6.8		5.6	0.061
19408-74-3	1,2,3,7,8,9-HxCDD	6.3		5.6	0.059
70648-26-9	1,2,3,4,7,8-HxCDF	2.1	J B	5.6	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	2.1	J	5.6	0.099
60851-34-5	2,3,4,6,7,8-HxCDF	1.9	J	5.6	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.6	0.13
35822-46-9	1,2,3,4,6,7,8-HpCDD	130	B	5.6	0.28
67562-39-4	1,2,3,4,6,7,8-HpCDF	24	B	5.6	0.14
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.4	J	5.6	0.17
3268-87-9	OCDD	3700	B	11	0.85
39001-02-0	OCDF	40	B	11	0.097
41903-57-5	Total TCDD	0.82	J q	1.1	0.14
30402-14-3	Total TCDF	4.3	q	1.1	0.051
36088-22-9	Total PeCDD	7.4	q	5.6	0.095
30402-15-4	Total PeCDF	11	q	5.6	0.10
34465-46-8	Total HxCDD	47		5.6	0.068
55684-94-1	Total HxCDF	38	B	5.6	0.12
37871-00-4	Total HpCDD	240	B	5.6	0.28
38998-75-3	Total HpCDF	57	B	5.6	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1067-000.7 Lab Sample ID: 320-4670-46

Matrix: Solid Lab File ID: 310C13C3D5_41.d

Analysis Method: 8290 Date Collected: 10/21/2013 15:05

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.07(g) Date Analyzed: 11/02/2013 01:59

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	65		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	69		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	67		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	68		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	75		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	64		40-135
114423-97-1	13C-OCDD	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1068-000.5 | Lab Sample ID: 320-4670-54

Matrix: Solid | Lab File ID: 04NO13B3D5_5.d

Analysis Method: 8290 | Date Collected: 10/22/2013 09:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 9.98(g) | Date Analyzed: 11/05/2013 00:21

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.098
51207-31-9	2,3,7,8-TCDF	1.0	J q	1.1	0.047
40321-76-4	1,2,3,7,8-PeCDD	0.75	J q	5.3	0.077
57117-41-6	1,2,3,7,8-PeCDF	0.48	J q	5.3	0.095
57117-31-4	2,3,4,7,8-PeCDF	0.72	J	5.3	0.099
39227-28-6	1,2,3,4,7,8-HxCDD	2.3	J	5.3	0.16
57653-85-7	1,2,3,6,7,8-HxCDD	7.2		5.3	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	5.2	J	5.3	0.11
70648-26-9	1,2,3,4,7,8-HxCDF	2.5	J	5.3	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	1.9	J	5.3	0.088
60851-34-5	2,3,4,6,7,8-HxCDF	1.8	J	5.3	0.10
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.11
35822-46-9	1,2,3,4,6,7,8-HpCDD	160		5.3	0.49
67562-39-4	1,2,3,4,6,7,8-HpCDF	41		5.3	0.22
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.7	J	5.3	0.26
3268-87-9	OCDD	2400	B	11	0.67
39001-02-0	OCDF	65	B	11	0.12
41903-57-5	Total TCDD	2.3	q	1.1	0.098
30402-14-3	Total TCDF	5.9	q	1.1	0.047
36088-22-9	Total PeCDD	6.1	q	5.3	0.077
30402-15-4	Total PeCDF	14	q	5.3	0.097
34465-46-8	Total HxCDD	44		5.3	0.13
55684-94-1	Total HxCDF	43		5.3	0.10
37871-00-4	Total HpCDD	270		5.3	0.49
38998-75-3	Total HpCDF	100		5.3	0.24

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1068-000.5 | Lab Sample ID: 320-4670-54

Matrix: Solid | Lab File ID: 04NO13B3D5_5.d

Analysis Method: 8290 | Date Collected: 10/22/2013 09:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 9.98(g) | Date Analyzed: 11/05/2013 00:21

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	68		40-135
89059-46-1	13C-2,3,7,8-TCDF	78		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	75		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	75		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	72		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	75		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	62		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	70		40-135
114423-97-1	13C-OCDD	81		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS-DUP06-1013 Lab Sample ID: 320-4670-65 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_89.d

Analysis Method: 8290 Date Collected: 10/22/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 15:44

Sample wt/vol: 10.22(g) Date Analyzed: 12/19/2013 14:37

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6100*	*H B*	*110*	*10*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	52		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1011-000.8 RADL Lab Sample ID: 320-4670-56 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_86.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:40

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.35(g) Date Analyzed: 12/19/2013 12:31

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 12.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*18000*	*H B*	*110*	*14*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	65		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1015-000.8 RADL Lab Sample ID: 320-4670-60 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_87.d

Analysis Method: 8290 Date Collected: 10/22/2013 10:15

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.03(g) Date Analyzed: 12/19/2013 13:13

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5400*	*H B*	*110*	*9.4*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	58		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1016-000.9 RADL Lab Sample ID: 320-4670-61 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_88.d

Analysis Method: 8290 Date Collected: 10/22/2013 10:25

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.28(g) Date Analyzed: 12/19/2013 13:55

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6900*	*H B*	*110*	*11*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP01-1013 Lab Sample ID: 320-4670-10 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_46.d

Analysis Method: 8290 Date Collected: 10/18/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.15(g) Date Analyzed: 12/18/2013 07:22

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32174 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6600*	*H B*	*100*	*7.9*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP03-1013 | Lab Sample ID: 320-4670-33 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_74.d

Analysis Method: 8290 | Date Collected: 10/21/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) | Date Analyzed: 12/19/2013 03:40

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6000*	*H B*	*100*	*12*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	55		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1020-0001 | Lab Sample ID: 320-4670-7 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_45.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:40

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.14(g) | Date Analyzed: 12/18/2013 06:40

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32174 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6000*	*H B*	*100*	*7.0*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1022-000.9 Lab Sample ID: 320-4670-5 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_44.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:18

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.00(g) Date Analyzed: 12/18/2013 05:59

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32174 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6400*	*H B*	*110*	*8.3*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	74		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1027-0001 | Lab Sample ID: 320-4670-14 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_62.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:45

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.34(g) | Date Analyzed: 12/18/2013 18:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32193 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6100*	*H B*	*100*	*9.0*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1029-000.6 | Lab Sample ID: 320-4670-12 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_91.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:30

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.37(g) | Date Analyzed: 12/19/2013 16:00

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6300*	*H B*	*100*	*7.1*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1033-000.8 Lab Sample ID: 320-4670-24 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_68.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) Date Analyzed: 12/18/2013 23:29

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*4500*	*H B*	*100*	*12*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	62		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1036-000.6 Lab Sample ID: 320-4670-20 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_53.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:25

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.30(g) Date Analyzed: 12/18/2013 12:15

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32174 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6800*	*H B*	*100*	*7.6*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	80		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1039-000.9 | Lab Sample ID: 320-4670-16 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_52.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) | Date Analyzed: 12/18/2013 11:33

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32174 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5700*	*H B*	*110*	*10*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1040-000.9 Lab Sample ID: 320-4670-15 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_51.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:50

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.07(g) Date Analyzed: 12/18/2013 10:51

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32174 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6400*	*H B*	*110*	*9.0*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	75		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1041-000.7 Lab Sample ID: 320-4670-32 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_73.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:35

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) Date Analyzed: 12/19/2013 02:58

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5600*	*H B*	*100*	*9.8*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	52		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1045-000.5 | Lab Sample ID: 320-4670-29 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_72.d

Analysis Method: 8290 | Date Collected: 10/21/2013 10:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.29(g) | Date Analyzed: 12/19/2013 02:16

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6400*	*H B*	*100*	*10*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	46		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1047-000.8 Lab Sample ID: 320-4670-27 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_71.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:40

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.25(g) Date Analyzed: 12/19/2013 01:34

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*10000*	*H B*	*110*	*11*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	54		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1048-000.8 Lab Sample ID: 320-4670-26 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_70.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:30

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) Date Analyzed: 12/19/2013 00:52

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5400*	*H B*	*110*	*12*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	56		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1049-000.9 Lab Sample ID: 320-4670-25 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_69.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:20

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.34(g) Date Analyzed: 12/19/2013 00:11

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*4400*	*H B*	*100*	*12*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	64		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1051-000.8 | Lab Sample ID: 320-4670-41 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_77.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:30

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.25(g) | Date Analyzed: 12/19/2013 05:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5700*	*H B*	*100*	*8.5*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	62		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1053-000.6 | Lab Sample ID: 320-4670-39 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_76.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:15

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.23(g) | Date Analyzed: 12/19/2013 05:03

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*7000*	*H B*	*100*	*9.6*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	59		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1057-0001 Lab Sample ID: 320-4670-35 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_75.d

Analysis Method: 8290 Date Collected: 10/21/2013 13:45

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.37(g) Date Analyzed: 12/19/2013 04:21

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6400*	*H B*	*100*	*9.7*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1059-000.6 | Lab Sample ID: 320-4670-49 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_85.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:25

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) | Date Analyzed: 12/19/2013 11:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6400*	*H B*	*99*	*7.3*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	86		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1060.000.5 | Lab Sample ID: 320-4670-48 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_84.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.06(g) | Date Analyzed: 12/19/2013 11:08

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5500*	*H B*	*100*	*5.3*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	85		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1062-000.8 Lab Sample ID: 320-4670-43 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_82.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:50

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.35(g) Date Analyzed: 12/19/2013 09:33

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*4900*	*H B*	*100*	*10*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1066-000.9 Lab Sample ID: 320-4670-47 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_83.d

Analysis Method: 8290 Date Collected: 10/21/2013 15:15

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.31(g) Date Analyzed: 12/19/2013 10:14

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 2.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5800*	*H B*	*99*	*7.4*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS-DUP06-1013 RA Lab Sample ID: 320-4670-65 RA

Matrix: Solid Lab File ID: 08NO13B11D2_012.d

Analysis Method: 8290 Date Collected: 10/22/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 15:44

Sample wt/vol: 10.22(g) Date Analyzed: 11/09/2013 05:41

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.84	J	1.1	0.058

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1011-000.8 RA Lab Sample ID: 320-4670-56 RA

Matrix: Solid Lab File ID: 12NO1311D2_007.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:40

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.35(g) Date Analyzed: 11/13/2013 01:51

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 12.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.76	J	1.1	0.072

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	78		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1012-000.7 RA Lab Sample ID: 320-4670-57 RA

Matrix: Solid Lab File ID: 12NO1311D2_008.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:50

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.27(g) Date Analyzed: 11/13/2013 02:30

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.0	J	1.1	0.067

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1013-000.7 RA | Lab Sample ID: 320-4670-58 RA

Matrix: Solid | Lab File ID: 12NO1311D2_009.d

Analysis Method: 8290 | Date Collected: 10/22/2013 09:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) | Date Analyzed: 11/13/2013 03:09

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.4		1.0	0.064

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	84		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1014-0001 RA | Lab Sample ID: 320-4670-59 RA

Matrix: Solid | Lab File ID: 12NO1311D2_010.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.15(g) | Date Analyzed: 11/13/2013 03:48

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.3		1.1	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1015-000.8 RA Lab Sample ID: 320-4670-60 RA

Matrix: Solid Lab File ID: 18NO135D2_004.d

Analysis Method: 8290 Date Collected: 10/22/2013 10:15

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.03(g) Date Analyzed: 11/18/2013 18:35

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30113 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	G	1.5	1.5

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	63		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1016-000.9 RA | Lab Sample ID: 320-4670-61 RA

Matrix: Solid | Lab File ID: 12NO1311D2_012.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:25

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.28(g) | Date Analyzed: 11/13/2013 05:05

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.1		1.1	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	75		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1017-000.8 RA Lab Sample ID: 320-4670-62 RA

Matrix: Solid Lab File ID: 12NO1311D2_013.d

Analysis Method: 8290 Date Collected: 10/22/2013 10:55

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.57(g) Date Analyzed: 11/13/2013 05:44

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.69	J	1.0	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1018-000.8 RA Lab Sample ID: 320-4670-63 RA

Matrix: Solid Lab File ID: 18DE1311D2_012.d

Analysis Method: 8290 Date Collected: 10/22/2013 11:05

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.15(g) Date Analyzed: 12/19/2013 07:42

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.46*	*J H*	*1.0*	*0.059*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	91		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1019-000.5 RA | Lab Sample ID: 320-4670-64 RA

Matrix: Solid | Lab File ID: 08NO13B11D2_009.d

Analysis Method: 8290 | Date Collected: 10/22/2013 11:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.38(g) | Date Analyzed: 11/09/2013 03:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.5		1.0	0.064

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	64		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP01-1013 Lab Sample ID: 320-4670-10 RA

Matrix: Solid Lab File ID: 16DE13A11D2_010.d

Analysis Method: 8290 Date Collected: 10/18/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.15(g) Date Analyzed: 12/17/2013 03:54

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.17*	*J H*	*1.0*	*0.075*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP02-1013 Lab Sample ID: 320-4670-22 RA

Matrix: Solid Lab File ID: 18NO135D2_007.d

Analysis Method: 8290 Date Collected: 10/18/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 9.90(g) Date Analyzed: 11/18/2013 20:27

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30113 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	G	1.5	1.5

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP03-1013 Lab Sample ID: 320-4670-33 RA

Matrix: Solid Lab File ID: 17DE1311D2_007.d

Analysis Method: 8290 Date Collected: 10/21/2013 00:00

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) Date Analyzed: 12/18/2013 02:40

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.15*	*J H*	*1.0*	*0.073*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP04-1013 Lab Sample ID: 320-4670-45 RA

Matrix: Solid Lab File ID: 17DE1311D2_015.d

Analysis Method: 8290 Date Collected: 10/21/2013 00:00

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.10(g) Date Analyzed: 12/18/2013 07:51

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.42*	*J H q*	*1.0*	*0.064*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP05-1013 Lab Sample ID: 320-4670-55 RA

Matrix: Solid Lab File ID: 12NO1311D2_006.d

Analysis Method: 8290 Date Collected: 10/22/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.26(g) Date Analyzed: 11/13/2013 01:12

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.2		1.0	0.22

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1020-0001 RA Lab Sample ID: 320-4670-7 RA

Matrix: Solid Lab File ID: 16DE13A11D2_008.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:40

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.14(g) Date Analyzed: 12/17/2013 02:36

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 2.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.19*	*J H*	*1.0*	*0.067*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1021-000.7 RA Lab Sample ID: 320-4670-6 RA

Matrix: Solid Lab File ID: 16DE13A11D2_007.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:30

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) Date Analyzed: 12/17/2013 01:58

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.69*	*J H*	*1.0*	*0.11*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1022-000.9 RA Lab Sample ID: 320-4670-5 RA

Matrix: Solid Lab File ID: 16DE13A11D2_006.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:18

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.00(g) Date Analyzed: 12/17/2013 01:19

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*ND*	*H*	*1.1*	*0.071*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1023-000.8 RA Lab Sample ID: 320-4670-4 RA

Matrix: Solid Lab File ID: 18NO135D2_009.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:10

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.12(g) Date Analyzed: 11/18/2013 21:42

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30113 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.0	q	1.0	0.97

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	80		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1024-000.6 RA Lab Sample ID: 320-4670-3 RA

Matrix: Solid Lab File ID: 18NO135D2_008.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:05

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 9.91(g) Date Analyzed: 11/18/2013 21:04

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30113 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	G	1.2	1.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	60		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1025-000.8 RA Lab Sample ID: 320-4670-1 RA

Matrix: Solid Lab File ID: 19no13a5d2_005.d

Analysis Method: 8290 Date Collected: 10/18/2013 10:45

Extract. Method: 8290 Date Extracted: 10/24/2013 18:17

Sample wt/vol: 10.30(g) Date Analyzed: 11/19/2013 20:30

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30201 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.0	J q	1.1	0.73

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	80		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1026-000.8 RA | Lab Sample ID: 320-4670-2 RA

Matrix: Solid | Lab File ID: 16DE13A11D2_005.d

Analysis Method: 8290 | Date Collected: 10/18/2013 10:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.36(g) | Date Analyzed: 12/17/2013 00:40

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.21*	*J H*	*1.0*	*0.096*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1027-0001 RA Lab Sample ID: 320-4670-14 RA

Matrix: Solid Lab File ID: 16DE13A11D2_012.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:45

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.34(g) Date Analyzed: 12/17/2013 05:12

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*ND*	*H*	*1.0*	*0.051*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	100		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1028-000.8 RA | Lab Sample ID: 320-4670-13 RA

Matrix: Solid | Lab File ID: 08NO13B11D2_013.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:35

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.63(g) | Date Analyzed: 11/09/2013 06:20

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.54	J	1.0	0.052

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	91		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1029-000.6 RA Lab Sample ID: 320-4670-12 RA

Matrix: Solid Lab File ID: 19no13a5d2_007.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:30

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.37(g) Date Analyzed: 11/19/2013 21:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30201 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.7		1.0	0.64

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	91		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1029-000.6 Lab Sample ID: 320-4670-12 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_91.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:30

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.37(g) Date Analyzed: 12/19/2013 16:00

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6300*	*H B*	*100*	*7.1*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1030-000.6 RA Lab Sample ID: 320-4670-11 RA

Matrix: Solid Lab File ID: 16DE13A11D2_011.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:20

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.04(g) Date Analyzed: 12/17/2013 04:33

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.71*	*J H*	*1.0*	*0.070*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1031-000.8 RA Lab Sample ID: 320-4670-9 RA

Matrix: Solid Lab File ID: 16DE13A11D2_009.d

Analysis Method: 8290 Date Collected: 10/18/2013 12:05

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.27(g) Date Analyzed: 12/17/2013 03:15

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.66*	*J H*	*1.1*	*0.074*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1032-000.9 RA Lab Sample ID: 320-4670-8 RA

Matrix: Solid Lab File ID: 19no13a5d2_006.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:55

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.29(g) Date Analyzed: 11/19/2013 21:08

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30201 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.97

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1033-000.8 RA Lab Sample ID: 320-4670-24 RA

Matrix: Solid Lab File ID: 17DE1311D2_004.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) Date Analyzed: 12/18/2013 00:44

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*ND*	*H*	*1.0*	*0.088*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1034-000.6 RA | Lab Sample ID: 320-4670-23 RA

Matrix: Solid | Lab File ID: 07NO1311D2_005.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:45

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) | Date Analyzed: 11/07/2013 19:43

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.94	J	1.0	0.044

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	81		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1035-0001 RA Lab Sample ID: 320-4670-21 RA

Matrix: Solid Lab File ID: 18NO135D2_006.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:35

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.33(g) Date Analyzed: 11/18/2013 19:50

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.1 GPC Cleanup: (Y/N) N

Analysis Batch No.: 30113 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.3		1.0	0.78

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	81		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1036-000.6 RA Lab Sample ID: 320-4670-20 RA

Matrix: Solid Lab File ID: 18NO135D2_005.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:25

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.30(g) Date Analyzed: 11/18/2013 19:12

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30113 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.4	G	1.1	1.1

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	74		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1037-000.7 RA Lab Sample ID: 320-4670-19 RA

Matrix: Solid Lab File ID: 12NO1311D2_015.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:15

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.02(g) Date Analyzed: 11/13/2013 07:02

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.80	J	1.0	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	75		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1038-000.7 RA Lab Sample ID: 320-4670-18 RA

Matrix: Solid Lab File ID: 12NO1311D2_014.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:10

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.18(g) Date Analyzed: 11/13/2013 06:23

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.88	J	1.1	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1039-000.9 RA Lab Sample ID: 320-4670-16 RA

Matrix: Solid Lab File ID: 08NO13B11D2_015.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:00

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) Date Analyzed: 11/09/2013 07:38

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.64	J	1.1	0.062

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1040-000.9 RA Lab Sample ID: 320-4670-15 RA

Matrix: Solid Lab File ID: 08NO13B11D2_014.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:50

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.07(g) Date Analyzed: 11/09/2013 06:59

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.95	J	1.1	0.060

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	83		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1041-000.7 RA Lab Sample ID: 320-4670-32 RA

Matrix: Solid Lab File ID: 17DE1311D2_006.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:35

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) Date Analyzed: 12/18/2013 02:01

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*ND*	*H*	*1.0*	*0.12*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1042-000.5 RA Lab Sample ID: 320-4670-31 RA

Matrix: Solid Lab File ID: 07NO1311D2_011.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:20

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.13(g) Date Analyzed: 11/07/2013 23:36

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.2		1.1	0.057

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	67		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1044-000.5 RA Lab Sample ID: 320-4670-30 RA

Matrix: Solid Lab File ID: 07NO1311D2_010.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:10

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) Date Analyzed: 11/07/2013 22:57

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.64	J	1.0	0.052

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1045-000.5 RA Lab Sample ID: 320-4670-29 RA

Matrix: Solid Lab File ID: 07NO1311D2_009.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:00

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.29(g) Date Analyzed: 11/07/2013 22:18

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.2		1.0	0.057

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	62		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1046-000.5 RA Lab Sample ID: 320-4670-28 RA

Matrix: Solid Lab File ID: 17DE1311D2_005.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:50

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.07(g) Date Analyzed: 12/18/2013 01:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.48*	*J H*	*1.0*	*0.077*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	82		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1047-000.8 RA Lab Sample ID: 320-4670-27 RA

Matrix: Solid Lab File ID: 07NO1311D2_008.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:40

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.25(g) Date Analyzed: 11/07/2013 21:40

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.2		1.1	0.061

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1048-000.8 RA Lab Sample ID: 320-4670-26 RA

Matrix: Solid Lab File ID: 07NO1311D2_007.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:30

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) Date Analyzed: 11/07/2013 21:01

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.8		1.1	0.057

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1049-000.9 RA Lab Sample ID: 320-4670-25 RA

Matrix: Solid Lab File ID: 07NO1311D2_006.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:20

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.34(g) Date Analyzed: 11/07/2013 20:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.66	J	1.0	0.051

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1050-000.6 RA Lab Sample ID: 320-4670-42 RA

Matrix: Solid Lab File ID: 08NO13A11D2_013.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:40

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.14(g) Date Analyzed: 11/08/2013 18:27

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29533 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.43	J	1.1	0.091

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1051-000.8 RA | Lab Sample ID: 320-4670-41 RA

Matrix: Solid | Lab File ID: 17DE1311D2_013.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:30

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.25(g) | Date Analyzed: 12/18/2013 06:34

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.33*	*J H q*	*1.0*	*0.097*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1052-000.6 RA Lab Sample ID: 320-4670-40 RA

Matrix: Solid Lab File ID: 07NO1311D2_014.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:25

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.46(g) Date Analyzed: 11/08/2013 01:33

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.2		1.0	0.060

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	67		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1053-000.6 RA Lab Sample ID: 320-4670-39 RA

Matrix: Solid Lab File ID: 07NO1311D2_013.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:15

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.23(g) Date Analyzed: 11/08/2013 00:54

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.77	J	1.0	0.053

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1054-000.6 RA Lab Sample ID: 320-4670-38 RA

Matrix: Solid Lab File ID: 17DE1311D2_010.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:05

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.07(g) Date Analyzed: 12/18/2013 04:37

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.17*	*J H q*	*1.0*	*0.063*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1055-000.8 RA Lab Sample ID: 320-4670-37 RA

Matrix: Solid Lab File ID: 17DE1311D2_009.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:00

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.05(g) Date Analyzed: 12/18/2013 03:58

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.18*	*J H*	*1.1*	*0.076*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1056-000.6 RA Lab Sample ID: 320-4670-36 RA

Matrix: Solid Lab File ID: 17DE1311D2_008.d

Analysis Method: 8290 Date Collected: 10/21/2013 13:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 9.99(g) Date Analyzed: 12/18/2013 03:19

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.19*	*J H q*	*1.0*	*0.074*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	74		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1057-0001 RA Lab Sample ID: 320-4670-35 RA

Matrix: Solid Lab File ID: 07NO1311D2_012.d

Analysis Method: 8290 Date Collected: 10/21/2013 13:45

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.37(g) Date Analyzed: 11/08/2013 00:15

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.56	J	1.0	0.045

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1058-000.5 RA Lab Sample ID: 320-4670-50 RA

Matrix: Solid Lab File ID: 18DE1311D2_006.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:35

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.10(g) Date Analyzed: 12/19/2013 03:49

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.42*	*J H*	*1.0*	*0.079*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	87		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1059-000.6 RA Lab Sample ID: 320-4670-49 RA

Matrix: Solid Lab File ID: 18DE1311D2_005.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:25

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) Date Analyzed: 12/19/2013 03:10

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*ND*	*H*	*0.99*	*0.065*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	100		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1060.000.5 RA Lab Sample ID: 320-4670-48 RA

Matrix: Solid Lab File ID: 08NO13B11D2_004.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:15

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.06(g) Date Analyzed: 11/09/2013 00:30

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	2.0		1.0	0.067

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	108		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1061-000.6 RA Lab Sample ID: 320-4670-44 RA

Matrix: Solid Lab File ID: 17DE1311D2_014.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.35(g) Date Analyzed: 12/18/2013 07:12

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 0.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.43*	*J H*	*0.97*	*0.061*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1062-000.8 RA | Lab Sample ID: 320-4670-43 RA

Matrix: Solid | Lab File ID: 08NO13A11D2_014.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:50

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.35(g) | Date Analyzed: 11/08/2013 19:06

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.7 | GPC Cleanup: (Y/N) N

Analysis Batch No.: 29533 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.76	J	1.0	0.069

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	65		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1063-000.6 RA Lab Sample ID: 320-4670-53 RA

Matrix: Solid Lab File ID: 18DE1311D2_010.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:05

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.18(g) Date Analyzed: 12/19/2013 06:24

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.49*	*J H*	*1.0*	*0.069*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	95		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1064-000.6 RA Lab Sample ID: 320-4670-52 RA

Matrix: Solid Lab File ID: 18DE1311D2_007.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:55

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.12(g) Date Analyzed: 12/19/2013 04:28

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 2.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.44*	*J H q*	*1.0*	*0.080*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1065-000.5 RA Lab Sample ID: 320-4670-51 RA

Matrix: Solid Lab File ID: 08NO13B11D2_005.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:45

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.13(g) Date Analyzed: 11/09/2013 01:09

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.0		1.0	0.043

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	96		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1066-000.9 RA Lab Sample ID: 320-4670-47 RA

Matrix: Solid Lab File ID: 08NO13A11D2_015.d

Analysis Method: 8290 Date Collected: 10/21/2013 15:15

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.31(g) Date Analyzed: 11/08/2013 19:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 2.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29533 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.51	J	0.99	0.047

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	97		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1067-000.7 RA | Lab Sample ID: 320-4670-46 RA

Matrix: Solid | Lab File ID: 18DE1311D2_004.d

Analysis Method: 8290 | Date Collected: 10/21/2013 15:05

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.07(g) | Date Analyzed: 12/19/2013 02:31

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 11.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.82*	*J H q*	*1.1*	*0.29*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	32	*	40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1068-000.5 RA Lab Sample ID: 320-4670-54 RA

Matrix: Solid Lab File ID: 18DE1311D2_011.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:15

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 9.98(g) Date Analyzed: 12/19/2013 07:03

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*ND*	*H*	*1.1*	*0.33*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	74		40-135

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: 43019 SDG: 320-46701

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: Dioxins PCDD/PCDFs

Missing Information	Date Lab Contacted	Date Received
	See DV Report	

Validator: J Kalnyat Date: 1/22/14

EPA-NE - Data Validation
VOA/SV/Pest/PCB-I

Case: _____ SDG: _____

Sampler: _____ Company: _____ Contacted: Yes No See DV Report Date: _____

1. **PRESERVATION AND HOLDING TIMES** - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator:_____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator:_____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: _____ Date: 1/22/14

1/13

EPA NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

See DV Report

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: JK

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator:_____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator:_____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

See DV Report

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)
Comments:								

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator:_____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator:_____ Date: 1/24/14

1/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator:_____

Date: 1/22/14

1/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. Y N

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: JK

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methylphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria							
		Fluoranthene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150	Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery				% Recovery			
				Fluoranthene				Naphthalene	
				Pyrene				2-Methylnaphthalene	
				Benzo(a)anthracene				Acenaphthylene	
				Chrysene				Acenaphthene	
				Benzo(b)fluoranthene				Fluorene	
				Benzo(k)fluoranthene				Pentachlorophenol	
				Benzo(a)pyrene				Phenanthrene	
				Indeno(1,2,3-cd)pyrene				Anthracene	
				Dibenzo(a,h)anthracene					
				Benzo(g,h,i)perylene					

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1,2-Dichloroethane-d_4

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1.2-Dichloropropane –d_6 TDP= trans-1.3-Dichloropropene-d_4

TCA= 1.1.2.2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator:_____

Date: 1/22/14

Case:_____ SDG:_____

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

See DV Report

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

See DV Report

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria. See DV Report

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: _____ Date: _____

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria. See DV Report

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: JK

Date: 1/22/14

Case:_____ SDG:_____

See DV Report

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: _____

Date: 1/22/14

EPA NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: _____ Date: 1/22/14

Case:_____ SDG:_____

See DV Report

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: JK

Date: 1/22/14

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: _____

Date: 1/22/14

APPENDIX D

SUPPORT DOCUMENTATION

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Attn: TestAmerica Sacramento
Jill Kellman

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Dabra Seiken	(978) 474 8445	(978) 474-8499

Address	City	State	Zip Code
250 Andover St Suite 200	Wilmington	MA	01887

Purchase Order #	Proj. Name / No.	~~Katahdin~~ Quote #

Bill (if different than above) | Address

Sampler (Print / Sign) Kayleen Jalkut Kayleen Jalkut | Copies To: Peter Sevigard

LAB USE ONLY | WORK ORDER #:

KATAHDIN ~~PROJECT~~ NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

320-4670 Chain of Custody

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: TOTAL SOLIDS + DIOXIN - 8oz amb. glass jar (Filt. ☐Y ☒N)	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	TF2-004/5-SS1025-000.8	10/18/1045	SO	1	1									
	TF2-004/5-SS1026-000.8	10/18/1055	SO	1	1									
	TF2-004/5-SS1024-000.6	10/18/1105	SO	1	1									
	TF2-004/5-SS1023-000.8	10/18/1110	SO	1	1									
	TF2-004/5-SS1022-000.9	10/18/1118	SO	1	1									
	TF2-004/5-SS1021-000.7	10/18/1130	SO	1	1									
	TF2-004/5-SS1020-0001	10/18/1140	SO	1	1									
	TF2-004/5-SS1032-000.9	10/18/1155	SO	1	1									
	TF2-004/5-SS1031-000.8	10/18/1205	SO	1	1									
	TF2-004/5-SS-DUP01-1013	10/18/0000	SO	1	1									
	TF2-004/5-SS1030-000.6	10/18/1320	SO	1	1									
	TF2-004/5-SS1029-000.6	10/18/1330	SO	1	1									
	TF2-004/5-SS1028-000.8	10/18/1335	SO	1	1									
*	TF2-004/5-SS1027-0001	10/18/1345	SO	3	3									
	TF2-004/5-SS1040-000.9	10/18/1350	SO	1	1									
	TF2-004/5-SS1039-000.9	10/18/1400	SO	1	1									

KJ 10/23/13

COMMENTS * = Lab QC volume

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	~~Relinquished By: (Signature)~~	Date / Time	Received By: (Signature)
Kjalkut	10/23/13 1800	FedEx AB# 875937975510		10/23/13 1800	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	~~Relinquished By: (Signature)~~	Date / Time	Received By: (Signature)
		Kim Nelson	10/24/13	700	

0.9, 1, 2.7, 15°c

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Attn: TestAmerica Sacramento
Jill Kellman

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Dabra Seiken	(978) 474 8445	(978) 474-8499

Address	City	State	Zip Code
250 Andover St Suite 200	Wilmington	MA	01887

Purchase Order # | Proj. Name / No | ~~Katahdin~~ Quote #

Bill (if different than above) | Address

Sampler (Print / Sign) Kayleen Jaikut Kayleen Jaikut Peter Seiyard Peter Seiyard | Copies To:

LAB USE ONLY | WORK ORDER #

~~KATAHDIN PROJECT~~ NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	Filt. ☐Y ☒N DI/ZN - 1L amber	Filt. ☐Y ☒N TOTAL SOLIDS, DI/ZN - 8oz amber glass jar	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	TF2-SS-RB01-1013	10/18 / 1400	QC	2	2									
	TF2-SS004/5-SS1038-000.7	10/18 1410	SO	1	—	1								
	TF2-004/5-SS1037-000.7	10/18/ 1415	SO	1	—	1								
	TF2-004/5-SS1036-000.6	10/18/ 1425	SO	1	—	1								
	TF2-004/5-SS1035-0001	10/18 / 1435	SO	1	—	1								
	TF2-004/5-SS-DUP02-1013	10/18/ 0000	SO	1	—	1								
	TF2-004/5-SS1034-000.6	10/18/ 1445	SO	1	—	1								
	TF2-004/5-SS1033-000.8	10/18/ 1455	SO	1	—	1								
	TF2-004/5-SS1049-000.9	10/21/ 0920	SO	1	—	1								
	TF2-004/5-SS1048-000.8	10/21/0930	SO	1	—	1								
	TF2-004/5-SS1047-000.8	10/21 / 0940	SO	1	—	1								
	TF2-004/5-SS1046-000.5	10/21/ 0950	SO	1	—	1								
	TF2-004/5-SS1045-000.5	10/21/ 1000	SO	1	—	1								
	TF2-004/5-SS1044-000.5	10/21/ 1010	SO	1	—	1								
	TF2-004/5-SS1042-000.5	10/21/ 1020	SO	1	—	1								
	TF2-004/5-SS1041-000.7	10/21/ 1035	SO	1	—	1								

DJ 10/23/13

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	~~Relinquished By: (Signature)~~	Date / Time	Received By: (Signature)
K Jaikut	10/23/13 1800	FedEx AB# 879937975510	—— 10/23/13 1800		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	~~Relinquished By: (Signature)~~	Date / Time	Received By: (Signature)
		Lynn Nelson	10/24/13 0700		01/06/2014

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ORIGINAL

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Attn: TestAmerica Sacramento
Jill Kellman

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Dabra Seiken	(978) 474 8445	(978) 474-8499

Address	City	State	Zip Code
250 Andover St. Suite 200	Wilmington	MA	01887

Purchase Order # | Proj. Name / No. | ~~Katahdin Quote~~ #

Bill (if different than above) | Address

Sampler (Print / Sign) Kayleen Jalkut Kjalkut | Peter Seward | Copies To:

LAB USE ONLY | WORK ORDER #:

KATAHDIN ~~PROJECT~~ NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	Filt. ☐Y ☒N DIOXINS + TOTAL SOLIDS 8oz amber glass	Filt. ☐Y ☐N DIOXINS - 1L amber glass jars	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	TF2-004/5-SS-DUP07-1013	10/21/0000	SO	1	1	—								
	TF2-SS-RB02-1013	10/21/1150	QC	2	—	2								
	TF2-SS004/5-SS1057-0001	10/21/1345	SO	1	1	—								
	TF2-004/5-SS1056-000.6	10/21/1355	SO	1	1	—								
	TF2-004/5-SS1055-000.8	10/21/1400	SO	1	1	—								
*	TF2-004/5-SS1054-000.6	10/21/1405	SO	2	2	—								
	TF2-004/5-SS1053-000.6	10/21/1415	SO	1	1	—								
	TF2-004/5-SS1052-000.6	10/21/1425	SO	1	1	—								
	TF2-004/5-SS1051-000.8	10/21/1430	SO	1	1	—								
	TF2-004/5-SS1050-000.6	10/21/1440	SO	1	1	—								
	TF2-004/5-SS1062-000.8	10/21/1450	SO	1	1	—								
	TF2-004/5-SS1061-000.6	10/21/1455	SO	1	1	—								
	TF2-004/5-SS-DUP04-1013	10/21/0000	SO	1	1	—								
	TF2-004/5-SS1067-000.7	10/21/1505	SO	1	1	—								
	TF2-004/5-SS1066-000.9	10/21/1515	SO	1	1	—								
	TF2-004/5-SS1060-000.5	10/22/0815	SO	1	1	—								

COMMENTS * Lab QC volume

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	~~Relinquished By: (Signature)~~	Date / Time	Received By: (Signature)
Kjalkut	10/23/13 1800	FedEx AB# 8759 3797 5570	— 10/23/13 1800		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	~~Relinquished By: (Signature)~~	Date / Time	Received By: (Signature)
		Kmnelson	10/24/13 0700		

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01/06/2014
ORIGINAL

KAS-COC1

Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

TestAmerica Sacramento
Attn: Jill Kellman

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Dabra Seiken	(978) 474 8445	(978) 4748499

Address	City	State	Zip Code
250 Andover St. Suite 200	Wilmington	MA	01887

Purchase Order # | Proj. Name / No. | ~~Katahdin~~ Quote #

Bill (if different than above) | Address

Sampler (Print / Sign) Kayleen Jalkut Kayleen Jalkut Peter Sogard | Copies To:

LAB USE ONLY | WORK ORDER #:

KATAHDIN ~~PROJECT~~ NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	DIGNT TOTAL SOLIDS 8oz amber glass jar	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	TF2-004/5-SS1059-000.6	10/22/0825	SO	1	1										
	TF2-004/5-SS1058-000.5	10/22/0835	SO	1	1										
	TF2-004/5-SS1065-000.5	10/22/0845	SO	1	1										
*	TF2-004/5-SS1064-000.6	10/22/0855	SO	2	2										
	TF2-004/5-SS1063-000.6	10/22/0905	SO	1	1										
	TF2-004/5-SS1068-000.5	10/22/0915	SO	1	1										
	TF2-004/5-SS-DUP05-1013	10/22/0000	SO	1	1										
	TF2-003-SS1011-000.8	10/22/0940	SO	1	1										
	TF2-003-SS1012-000.7	10/22/0950	SO	1	1										
	TF2-003-SS1013-000.7	10/22/0955	SO	1	1										
	TF2-003-SS1014-0001	10/22/1005	SO	1	1										
	TF2-003-SS1015-000.8	10/22/1015	SO	1	1										
	TF2-003-SS1016-000.9	10/22/1025	SO	1	1										
	TF2-003-SS1017-000.8	10/22/1055	SO	1	1										
	TF2-003-SS1018-000.8	10/22/1105	SO	1	1										
**	TF2-003-SS1019-000.5	10/22/1115	SO	1	1										

10/23/13

COMMENTS * Lab QC volume ** No extra volume but please perform lab QC on this sample, if you can

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
K Jalkut	10/23/13 1800	FedEx AB #879937975570		10/23/13 1800	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature) Received By: Kim Nelan	Date / Time 10/24/3 0700	Received By: (Signature)

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

01/06/2014
ORIGINAL

KAS-COC1

Katahdin ANALYTICAL SERVICES

600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Test America Sacramento
Attn: Jill Kellman

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Dabra Seiken	(978) 474 8445	(978) 474 8499

Address	City	State	Zip Code
250 Andover St. Suite 200	Wilmington	MA	01887

Purchase Order # | Proj. Name / No. | ~~Katahdin Quote #~~

Bill (if different than above) | Address

Sampler (Print / Sign) Kayleen Jalkut Kayleen Jalkut | Peter Sevagal Peter Sev | Copies To:

LAB USE ONLY | WORK ORDER #: | KATAHDIN ~~PROJECT~~ NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ____ ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: Filt. ☐Y ☐N — DIOXIN + TOTAL SOLIDS 8oz amber glass jar	Filt. ☐Y ☐N — DIOXIN - 1L amber glass jar	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	TF2-003-SS-DUP06-1013	10/22/ 0000	SO	1	1	—								
	TF2-SS-RB03-1013	10/22/ 1200	QC	2	—	2								
	If ND 10/23/13	/												
		/												
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		/												

10/23/13 KJ

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	~~Relinquished By: (Signature)~~	Date / Time	Received By: (Signature)
K Jalkut	10/23/13 1800	FedEx AB#8759 37975570	——	10/23/13 1800	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
		Kim Nelson	10/24/13 0700		

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01/06/2014
ORIGINAL

KAS-COC1

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 320-4670-1

Login Number: 4670

List Source: TestAmerica Sacramento

List Number: 1

Creator: Nelson, Kym D

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

HOLDTIME

SDG 320-4670-1

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	PG/G	TF2-004/5-SS1059-000.6	320-4670-49	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1044-000.5	320-4670-30	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1045-000.5	320-4670-29	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1046-000.5	320-4670-28	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1047-000.8	320-4670-27	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1048-000.8	320-4670-26	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1049-000.9	320-4670-25	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1050-000.6	320-4670-42	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1051-000.8	320-4670-41	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1052-000.6	320-4670-40	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1053-000.6	320-4670-39	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1054-000.6	320-4670-38	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1055-000.8	320-4670-37	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1056-000.6	320-4670-36	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1042-000.5	320-4670-31	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	PG/G	TF2-003-SS1011-000.8	320-4670-56	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS-DUP05-101	320-4670-55	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS-DUP04-101	320-4670-45	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS-DUP03-101	320-4670-33	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS-DUP02-101	320-4670-22	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS-DUP01-101	320-4670-10	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1057-0001	320-4670-35	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1067-000.7	320-4670-46	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1058-000.5	320-4670-50	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1065-000.5	320-4670-51	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1063-000.6	320-4670-53	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1062-000.8	320-4670-43	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1061-000.6	320-4670-44	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1060.000.5	320-4670-48	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1064-000.6	320-4670-52	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1068-000.5	320-4670-54	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-003-SS1018-000.8	320-4670-63	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1024-000.6	320-4670-3	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	PG/G	TF2-004/5-SS1023-000.8	320-4670-4	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1022-000.9	320-4670-5	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1021-000.7	320-4670-6	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1020-0001	320-4670-7	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1025-000.8	320-4670-1	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-003-SS1019-000.5	320-4670-64	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-003-SS1016-000.9	320-4670-61	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-003-SS1017-000.8	320-4670-62	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-003-SS1015-000.8	320-4670-60	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-003-SS1013-000.7	320-4670-58	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-003-SS1012-000.7	320-4670-57	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1041-000.7	320-4670-32	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1066-000.9	320-4670-47	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-003-SS-DUP06-1013	320-4670-65	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1037-000.7	320-4670-19	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1040-000.9	320-4670-15	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1039-000.9	320-4670-16	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-003-SS1014-0001	320-4670-59	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	PG/G	TF2-004/5-SS1026-000.8	320-4670-2	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1038-000.7	320-4670-18	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1036-000.6	320-4670-20	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1035-0001	320-4670-21	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1034-000.6	320-4670-23	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1030-000.6	320-4670-11	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1032-000.9	320-4670-8	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1027-0001	320-4670-14	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1028-000.8	320-4670-13	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1029-000.6	320-4670-12	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1031-000.8	320-4670-9	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1033-000.8	320-4670-24	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/L	TF2-SS-RB02-1013	320-4670-34	NM	10/21/2013	12/23/2013	12/23/2013	63	0	63
	PG/L	TF2-SS-RB01-1013	320-4670-17	NM	10/18/2013	12/23/2013	12/23/2013	66	0	66
	PG/L	TF2-003-SS-RB03-1013	320-4670-66	NM	10/22/2013	12/23/2013	12/23/2013	62	0	62
DIOX	PG/G	TF2-004/5-SS1022-000.9	320-4670-5	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61
DIOX	PG/G	TF2-004/5-SS1020-0001	320-4670-7	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1027-0001	320-4670-14	NM	10/18/2013	10/25/2013	11/03/2013	7	9	16

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-003-SS-DUP06-1013	320-4670-65	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1021-000.7	320-4670-6	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1020-0001	320-4670-7	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1021-000.7	320-4670-6	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1022-000.9	320-4670-5	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1022-000.9	320-4670-5	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1020-0001	320-4670-7	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61
DIOX	PG/G	TF2-004/5-SS1023-000.8	320-4670-4	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1023-000.8	320-4670-4	NM	10/18/2013	10/25/2013	11/18/2013	7	24	31
DIOX	PG/G	TF2-004/5-SS1024-000.6	320-4670-3	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1024-000.6	320-4670-3	NM	10/18/2013	10/25/2013	11/18/2013	7	24	31
DIOX	PG/G	TF2-004/5-SS1025-000.8	320-4670-1	NM	10/18/2013	10/24/2013	11/05/2013	6	12	18
DIOX	PG/G	TF2-004/5-SS1025-000.8	320-4670-1	NM	10/18/2013	10/24/2013	11/19/2013	6	26	32
DIOX	PG/G	TF2-004/5-SS1026-000.8	320-4670-2	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-003-SS-DUP06-1013	320-4670-65	NM	10/22/2013	10/25/2013	11/09/2013	3	15	18
DIOX	PG/G	TF2-003-SS1012-000.7	320-4670-57	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-004/5-SS1027-0001	320-4670-14	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1026-000.8	320-4670-2	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-003-SS1015-000.8	320-4670-60	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1028-000.8	320-4670-13	NM	10/18/2013	10/25/2013	11/09/2013	7	15	22
DIOX	PG/G	TF2-003-SS1011-000.8	320-4670-56	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-003-SS1011-000.8	320-4670-56	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-003-SS1011-000.8	320-4670-56	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-003-SS1012-000.7	320-4670-57	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-003-SS1013-000.7	320-4670-58	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-003-SS1014-0001	320-4670-59	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-003-SS1014-0001	320-4670-59	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-003-SS1013-000.7	320-4670-58	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-003-SS1015-000.8	320-4670-60	NM	10/22/2013	10/25/2013	11/18/2013	3	24	27
DIOX	PG/G	TF2-003-SS-DUP06-1013	320-4670-65	NM	10/22/2013	10/25/2013	11/03/2013	3	9	12
DIOX	PG/G	TF2-003-SS1016-000.9	320-4670-61	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-003-SS1016-000.9	320-4670-61	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-003-SS1016-000.9	320-4670-61	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-003-SS1017-000.8	320-4670-62	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-003-SS1017-000.8	320-4670-62	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-003-SS1018-000.8	320-4670-63	NM	10/22/2013	10/25/2013	11/06/2013	3	12	15

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-003-SS1018-000.8	320-4670-63	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-003-SS1019-000.5	320-4670-64	NM	10/22/2013	10/25/2013	11/03/2013	3	9	12
DIOX	PG/G	TF2-003-SS1019-000.5	320-4670-64	NM	10/22/2013	10/25/2013	11/09/2013	3	15	18
DIOX	PG/G	TF2-003-SS1015-000.8	320-4670-60	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-004/5-SS1056-000.6	320-4670-36	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS1028-000.8	320-4670-13	NM	10/18/2013	10/25/2013	11/03/2013	7	9	16
DIOX	PG/G	TF2-004/5-SS1061-000.6	320-4670-44	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS1061-000.6	320-4670-44	NM	10/21/2013	10/28/2013	11/02/2013	7	5	12
DIOX	PG/G	TF2-004/5-SS1060.000.5	320-4670-48	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1060.000.5	320-4670-48	NM	10/22/2013	10/25/2013	11/09/2013	3	15	18
DIOX	PG/G	TF2-004/5-SS1060.000.5	320-4670-48	NM	10/22/2013	10/25/2013	11/02/2013	3	8	11
DIOX	PG/G	TF2-004/5-SS1059-000.6	320-4670-49	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1059-000.6	320-4670-49	NM	10/22/2013	10/25/2013	11/02/2013	3	8	11
DIOX	PG/G	TF2-004/5-SS1058-000.5	320-4670-50	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1058-000.5	320-4670-50	NM	10/22/2013	10/25/2013	11/02/2013	3	8	11
DIOX	PG/G	TF2-004/5-SS1057-0001	320-4670-35	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1062-000.8	320-4670-43	NM	10/21/2013	10/28/2013	11/08/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1057-0001	320-4670-35	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-004/5-SS1062-000.8	320-4670-43	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1056-000.6	320-4670-36	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1055-000.8	320-4670-37	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS1055-000.8	320-4670-37	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1054-000.6	320-4670-38	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS1054-000.6	320-4670-38	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1053-000.6	320-4670-39	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1053-000.6	320-4670-39	NM	10/21/2013	10/28/2013	11/08/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1053-000.6	320-4670-39	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1052-000.6	320-4670-40	NM	10/21/2013	10/28/2013	11/08/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1027-0001	320-4670-14	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61
DIOX	PG/G	TF2-004/5-SS1051-000.8	320-4670-41	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1057-0001	320-4670-35	NM	10/21/2013	10/28/2013	11/08/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1068-000.5	320-4670-54	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-004/5-SS-DUP05-101	320-4670-55	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-004/5-SS-DUP05-101	320-4670-55	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-004/5-SS-DUP04-101	320-4670-45	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS-DUP04-101	320-4670-45	NM	10/21/2013	10/28/2013	11/02/2013	7	5	12

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-004/5-SS-DUP03-101	320-4670-33	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS-DUP03-101	320-4670-33	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS-DUP03-101	320-4670-33	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS-DUP02-101	320-4670-22	NM	10/18/2013	10/25/2013	11/18/2013	7	24	31
DIOX	PG/G	TF2-004/5-SS-DUP02-101	320-4670-22	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS-DUP01-101	320-4670-10	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61
DIOX	PG/G	TF2-004/5-SS-DUP01-101	320-4670-10	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1062-000.8	320-4670-43	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1068-000.5	320-4670-54	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1051-000.8	320-4670-41	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS1067-000.7	320-4670-46	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1067-000.7	320-4670-46	NM	10/21/2013	10/28/2013	11/02/2013	7	5	12
DIOX	PG/G	TF2-004/5-SS1066-000.9	320-4670-47	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1066-000.9	320-4670-47	NM	10/21/2013	10/28/2013	11/08/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1066-000.9	320-4670-47	NM	10/21/2013	10/28/2013	11/02/2013	7	5	12
DIOX	PG/G	TF2-004/5-SS1065-000.5	320-4670-51	NM	10/22/2013	10/25/2013	11/09/2013	3	15	18
DIOX	PG/G	TF2-004/5-SS1065-000.5	320-4670-51	NM	10/22/2013	10/25/2013	11/02/2013	3	8	11
DIOX	PG/G	TF2-004/5-SS1064-000.6	320-4670-52	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-004/5-SS1064-000.6	320-4670-52	NM	10/22/2013	10/25/2013	11/02/2013	3	8	11
DIOX	PG/G	TF2-004/5-SS1063-000.6	320-4670-53	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1063-000.6	320-4670-53	NM	10/22/2013	10/25/2013	11/02/2013	3	8	11
DIOX	PG/G	TF2-004/5-SS-DUP01-101	320-4670-10	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1034-000.6	320-4670-23	NM	10/18/2013	10/28/2013	11/01/2013	10	4	14
DIOX	PG/G	TF2-004/5-SS1039-000.9	320-4670-16	NM	10/18/2013	10/25/2013	11/09/2013	7	15	22
DIOX	PG/G	TF2-004/5-SS1052-000.6	320-4670-40	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1038-000.7	320-4670-18	NM	10/18/2013	10/25/2013	11/13/2013	7	19	26
DIOX	PG/G	TF2-004/5-SS1038-000.7	320-4670-18	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1037-000.7	320-4670-19	NM	10/18/2013	10/25/2013	11/13/2013	7	19	26
DIOX	PG/G	TF2-004/5-SS1037-000.7	320-4670-19	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1036-000.6	320-4670-20	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61
DIOX	PG/G	TF2-004/5-SS1036-000.6	320-4670-20	NM	10/18/2013	10/25/2013	11/18/2013	7	24	31
DIOX	PG/G	TF2-004/5-SS1036-000.6	320-4670-20	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1035-0001	320-4670-21	NM	10/18/2013	10/25/2013	11/18/2013	7	24	31
DIOX	PG/G	TF2-004/5-SS1051-000.8	320-4670-41	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1034-000.6	320-4670-23	NM	10/18/2013	10/28/2013	11/07/2013	10	10	20
DIOX	PG/G	TF2-004/5-SS1039-000.9	320-4670-16	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-004/5-SS1033-000.8	320-4670-24	NM	10/18/2013	10/28/2013	12/18/2013	10	51	61
DIOX	PG/G	TF2-004/5-SS1033-000.8	320-4670-24	NM	10/18/2013	10/28/2013	11/01/2013	10	4	14
DIOX	PG/G	TF2-004/5-SS1032-000.9	320-4670-8	NM	10/18/2013	10/25/2013	11/19/2013	7	25	32
DIOX	PG/G	TF2-004/5-SS1032-000.9	320-4670-8	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1031-000.8	320-4670-9	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1031-000.8	320-4670-9	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1030-000.6	320-4670-11	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1030-000.6	320-4670-11	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1029-000.6	320-4670-12	NM	10/18/2013	10/25/2013	12/19/2013	7	55	62
DIOX	PG/G	TF2-004/5-SS1029-000.6	320-4670-12	NM	10/18/2013	10/25/2013	11/19/2013	7	25	32
DIOX	PG/G	TF2-004/5-SS1029-000.6	320-4670-12	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1035-0001	320-4670-21	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1046-000.5	320-4670-28	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS1050-000.6	320-4670-42	NM	10/21/2013	10/28/2013	11/08/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1050-000.6	320-4670-42	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1049-000.9	320-4670-25	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1049-000.9	320-4670-25	NM	10/21/2013	10/28/2013	11/07/2013	7	10	17
DIOX	PG/G	TF2-004/5-SS1049-000.9	320-4670-25	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-004/5-SS1048-000.8	320-4670-26	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1048-000.8	320-4670-26	NM	10/21/2013	10/28/2013	11/07/2013	7	10	17
DIOX	PG/G	TF2-004/5-SS1048-000.8	320-4670-26	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1047-000.8	320-4670-27	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1039-000.9	320-4670-16	NM	10/18/2013	10/25/2013	11/03/2013	7	9	16
DIOX	PG/G	TF2-004/5-SS1047-000.8	320-4670-27	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1040-000.9	320-4670-15	NM	10/18/2013	10/25/2013	11/03/2013	7	9	16
DIOX	PG/G	TF2-004/5-SS1042-000.5	320-4670-31	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1040-000.9	320-4670-15	NM	10/18/2013	10/25/2013	11/09/2013	7	15	22
DIOX	PG/G	TF2-004/5-SS1040-000.9	320-4670-15	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61
DIOX	PG/G	TF2-004/5-SS1041-000.7	320-4670-32	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1047-000.8	320-4670-27	NM	10/21/2013	10/28/2013	11/07/2013	7	10	17
DIOX	PG/G	TF2-004/5-SS1041-000.7	320-4670-32	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1046-000.5	320-4670-28	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1042-000.5	320-4670-31	NM	10/21/2013	10/28/2013	11/07/2013	7	10	17
DIOX	PG/G	TF2-004/5-SS1044-000.5	320-4670-30	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1044-000.5	320-4670-30	NM	10/21/2013	10/28/2013	11/07/2013	7	10	17
DIOX	PG/G	TF2-004/5-SS1045-000.5	320-4670-29	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-004/5-SS1045-000.5	320-4670-29	NM	10/21/2013	10/28/2013	11/07/2013	7	10	17
DIOX	PG/G	TF2-004/5-SS1045-000.5	320-4670-29	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1041-000.7	320-4670-32	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/L	TF2-SS-RB02-1013	320-4670-34	NM	10/21/2013	10/25/2013	10/29/2013	4	4	8
DIOX	PG/L	TF2-003-SS-RB03-1013	320-4670-66	NM	10/22/2013	10/25/2013	10/29/2013	3	4	7
DIOX	PG/L	TF2-SS-RB01-1013	320-4670-17	NM	10/18/2013	10/25/2013	10/29/2013	7	4	11

CASE NARRATIVE

Client: Tetra Tech, Inc.

Project: TF2, Portsmouth, CTO WE 30

Report Number: 320-4670-1

Revised - January 6, 2014
Report revised to include TEQ calculations and re-injections to meet QSM criteria.

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica West Sacramento attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

All parameters for which TestAmerica West Sacramento has certification were evaluated to the QSM specified reporting convention or to the client specified format if different from QSM. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Receipt
The samples were received on 10/24/2013 7:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.9° C, 1.0° C, 1.5° C and 2.7° C.

Dioxin - Method 8290
The laboratory control sample (LCS) for batch 28540 recovered outside control limits for 2,3,4,7,8-PeCDF. This analyte is high in the LCS but was ND or detected as an estimated "J" value below the reporting limit in the associated samples and within limits in the associated MS/MSD. Therefore, the data have been reported.

The ion abundance ratio for 2,3,7,8-TCDF is outside criteria for the following sample: TF2-004/5-SS1025-000.8 (320-4670-1). Quantitation is based on the theoretical ion abundance ratio; therefore, this analyte has been reported as an estimated maximum possible concentration (EMPC). The affected analyte has been flagged.

The ion abundance ratios are outside criteria for the following sample(s): (MB 320-28431/1-A), (MB 320-28540/1-A), (MB 320-28546/1-A), TF2-003-SS1019-000.5 (320-4670-64), TF2-003-SS-DUP06-1013 (320-4670-65), TF2-004/5-SS1027-0001 (320-4670-14), TF2-004/5-SS1028-000.8 (320-4670-13), TF2-004/5-SS1033-000.8 (320-4670-24), TF2-004/5-SS1034-000.6 (320-4670-23), TF2-004/5-SS1039-000.9 (320-4670-16), TF2-004/5-SS1040-000.9 (320-4670-15), TF2-004/5-SS1041-000.7 (320-4670-32), TF2-004/5-SS1042-000.5 (320-4670-31), TF2-004/5-SS1044-000.5 (320-4670-30), TF2-004/5-SS1045-000.5 (320-4670-29), TF2-004/5-SS1046-000.5 (320-4670-28), TF2-004/5-SS1047-000.8 (320-4670-27), TF2-004/5-SS1048-000.8 (320-4670-26), TF2-004/5-SS1049-000.9 (320-4670-25), TF2-004/5-SS1050-000.6 (320-4670-42), TF2-004/5-SS1051-000.8 (320-4670-41), TF2-004/5-SS1052-000.6 (320-4670-40), TF2-004/5-SS1053-000.6 (320-4670-39), TF2-004/5-SS1054-000.6 (320-4670-38), TF2-004/5-SS1055-000.8 (320-4670-37), TF2-004/5-SS1056-000.6 (320-4670-36), TF2-004/5-SS1057-0001

(320-4670-35), TF2-004/5-SS1058-000.5 (320-4670-50), TF2-004/5-SS1059-000.6 (320-4670-49), TF2-004/5-SS1060.000.5 (320-4670-48), TF2-004/5-SS1061-000.6 (320-4670-44), TF2-004/5-SS1062-000.8 (320-4670-43), TF2-004/5-SS1063-000.6 (320-4670-53), TF2-004/5-SS1064-000.6 (320-4670-52), TF2-004/5-SS1065-000.5 (320-4670-51), TF2-004/5-SS1066-000.9 (320-4670-47), TF2-004/5-SS1067-000.7 (320-4670-46), TF2-004/5-SS-DUP03-1013 (320-4670-33), TF2-004/5-SS-DUP04-1013 (320-4670-45), TF2-003-SS-RB03-1013 (320-4670-66) and (MB 320-28374/1-A.). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC). The affected analytes have been flagged.

The ion abundance ratios are outside criteria for the following samples: (MB 320-28458/1-A), TF2-003-SS1011-000.8 (320-4670-56), TF2-003-SS1012-000.7 (320-4670-57), TF2-003-SS1013-000.7 (320-4670-58), TF2-003-SS1014-0001 (320-4670-59), TF2-003-SS1015-000.8 (320-4670-60), TF2-003-SS1016-000.9 (320-4670-61), TF2-003-SS1017-000.8 (320-4670-62), TF2-004/5-SS1023-000.8 (320-4670-4), TF2-004/5-SS1024-000.6 (320-4670-3), TF2-004/5-SS1026-000.8 (320-4670-2), TF2-004/5-SS1035-0001 (320-4670-21), TF2-004/5-SS1036-000.6 (320-4670-20), TF2-004/5-SS1037-000.7 (320-4670-19), TF2-004/5-SS1038-000.7 (320-4670-18), TF2-004/5-SS1068-000.5 (320-4670-54), TF2-004/5-SS-DUP02-1013 (320-4670-22), TF2-004/5-SS-DUP05-1013 (320-4670-55). Quantitation is based on the theoretical ion abundance ratio. Therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC). The affected analytes have been flagged.

The ion abundance ratios are outside criteria for the following samples: TF2-003-SS1018-000.8 (320-4670-63), TF2-004/5-SS1020-0001 (320-4670-7), TF2-004/5-SS1021-000.7 (320-4670-6), TF2-004/5-SS1022-000.9 (320-4670-5), TF2-004/5-SS1025-000.8 (320-4670-1), TF2-004/5-SS1029-000.6 (320-4670-12), TF2-004/5-SS1030-000.6 (320-4670-11), TF2-004/5-SS1031-000.8 (320-4670-9), TF2-004/5-SS1032-000.9 (320-4670-8), TF2-004/5-SS-DUP01-1013 (320-4670-10). Quantitation is based on the theoretical ion abundance ratio. Therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC). The affected analytes have been flagged.

The concentration OCDD associated with the following samples exceeded the instrument calibration range: TF2-003-SS-DUP06-1013 (320-4670-65), TF2-004/5-SS1027-0001 (320-4670-14), TF2-004/5-SS1027-0001 (320-4670-14 MS), TF2-004/5-SS1027-0001 (320-4670-14 MSD), TF2-004/5-SS1033-000.8 (320-4670-24), TF2-004/5-SS1039-000.9 (320-4670-16), TF2-004/5-SS1040-000.9 (320-4670-15), TF2-004/5-SS1041-000.7 (320-4670-32), TF2-004/5-SS1045-000.5 (320-4670-29), TF2-004/5-SS1047-000.8 (320-4670-27), TF2-004/5-SS1048-000.8 (320-4670-26), TF2-004/5-SS1049-000.9 (320-4670-25), TF2-004/5-SS1051-000.8 (320-4670-41), TF2-004/5-SS1053-000.6 (320-4670-39), TF2-004/5-SS1057-0001 (320-4670-35), TF2-004/5-SS1059-000.6 (320-4670-49), TF2-004/5-SS1060.000.5 (320-4670-48), TF2-004/5-SS1062-000.8 (320-4670-43), TF2-004/5-SS1066-000.9 (320-4670-47), TF2-004/5-SS-DUP03-1013 (320-4670-33). These analytes have been qualified; however, the peak(s) did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range.

The concentration of one or more analytes associated with the following samples exceeded the instrument calibration range: TF2-004/5-SS1020-0001 (320-4670-7), TF2-004/5-SS1022-000.9 (320-4670-5), TF2-004/5-SS1029-000.6 (320-4670-12), TF2-004/5-SS-DUP01-1013 (320-4670-10), TF2-003-SS1011-000.8 (320-4670-56), TF2-003-SS1015-000.8 (320-4670-60), TF2-003-SS1016-000.9 (320-4670-61), TF2-004/5-SS1036-000.6 (320-4670-20). These analytes have been qualified; however, the peaks did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 28540 were outside control limits for 1,2,3,4,6,7,8-HpCDD. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Due to the high concentration of OCDD, the matrix spike / matrix spike duplicate (MS/MSD) for batch 28540, 28431 and 28458 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

The auto end resolution check was set up witihin 12 hours of the beginning resolutin check, however, the sios locked up and end rescheck could not be completed . The sios was rebooted the end resolution check was performed without changing the instrument tune parameters. This analysis was associated with the following samples:), TF2-004/5-SS1028-000.8 (320-4670-13), TF2-004/5-SS1040-000.9 (320-4670-15), TF2-004/5-SS1039-000.9 (320-4670-16), TF2-004/5-SS1060.000.5 (320-4670-48), TF2-004/5-SS1065-000.5 (320-4670-51), TF2-004/5-SS1064-000.6 (320-4670-52), TF2-003-SS1019-000.5 (320-4670-64), and TF2-003-SS-DUP06-1013 (320-4670-65).

The bracketing continuing calibration verification (CCV) associated with analytical batch 29348 has an analyte (1,2,3,4,7,8-HxCDD) with a percent difference value that is between the method criteria of 20% to 25% deviation from the initial calibration curve. Per method guidelines, an average relative response factor (RRF) is calculated from the bracketing CCV and is used to quantitate any positive results in the associated samples for the affected analytes.

Reanalysis of the following samples was performed outside of the analytical holding time : TF2-004/5-SS1036-000.6 (320-4670-20), TF2-004/5-SS1039-000.9 (320-4670-16), TF2-004/5-SS1040-000.9 (320-4670-15), TF2-004/5-SS1045-000.5 (320-4670-29), TF2-004/5-SS1047-000.8 (320-4670-27), TF2-004/5-SS1048-000.8 (320-4670-26), TF2-004/5-SS1049-000.9 (320-4670-25), TF2-004/5-SS1053-000.6 (320-4670-39), TF2-004/5-SS1057-0001 (320-4670-35), TF2-004/5-SS-DUP03-1013 (320-4670-33). TF2-004/5-SS1020-0001 (320-4670-7), TF2-004/5-SS1021-000.7 (320-4670-6), TF2-004/5-SS1022-000.9 (320-4670-5), TF2-004/5-SS1026-000.8 (320-4670-2), TF2-004/5-SS1027-0001 (320-4670-14), TF2-004/5-SS1027-0001 (320-4670-14 MS), TF2-004/5-SS1027-0001 (320-4670-14 MSD), TF2-004/5-SS1030-000.6 (320-4670-11), TF2-004/5-SS1031-000.8 (320-4670-9), TF2-004/5-SS-DUP01-1013 (320-4670-10), TF2-004/5-SS1033-000.8 (320-4670-24), TF2-004/5-SS1041-000.7 (320-4670-32), TF2-004/5-SS1046-000.5 (320-4670-28), TF2-004/5-SS1051-000.8 (320-4670-41), TF2-004/5-SS1054-000.6 (320-4670-38),

TF2-004/5-SS1054-000.6 (320-4670-38 MS), TF2-004/5-SS1054-000.6 (320-4670-38 MSD), TF2-004/5-SS1055-000.8 (320-4670-37), TF2-004/5-SS1056-000.6 (320-4670-36), TF2-004/5-SS1061-000.6 (320-4670-44), TF2-004/5-SS-DUP03-1013 (320-4670-33), TF2-004/5-SS1062-000.8 (320-4670-43), TF2-004/5-SS-DUP04-1013 (320-4670-45), TF2-003-SS1011-000.8 (320-4670-56), TF2-003-SS1015-000.8 (320-4670-60), TF2-003-SS1016-000.9 (320-4670-61), TF2-003-SS-DUP06-1013 (320-4670-65), TF2-004/5-SS1029-000.6 (320-4670-12), TF2-004/5-SS1059-000.6 (320-4670-49), TF2-004/5-SS1060.000.5 (320-4670-48), TF2-004/5-SS1066-000.9 (320-4670-47), TF2-003-SS1018-000.8 (320-4670-63), TF2-004/5-SS1058-000.5 (320-4670-50), TF2-004/5-SS1059-000.6 (320-4670-49), TF2-004/5-SS1063-000.6 (320-4670-53), TF2-004/5-SS1064-000.6 (320-4670-52), TF2-004/5-SS1064-000.6 (320-4670-52 MS), TF2-004/5-SS1064-000.6 (320-4670-52 MSD), TF2-004/5-SS1067-000.7 (320-4670-46), TF2-004/5-SS1068-000.5 (320-4670-54). Both the initial analysis and the re-analysis values have been reported.

The Isotope Dilution Analyte (IDA) recovery of 13C-2,3,7,8-TCDF associated with the following sample is below the method recommended limit: TF2-004/5-SS1067-000.7 (320-4670-46). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample. All detection limits are below the lower calibration.

The column performance standard mix (CPSM) associated with batch 32194 exceeded the 25% valley resolution requirement for 2,3,7,8-TCDD on the DB5 column analysis. The valley resolution was 26%. The associated samples were analyzed for OCDD only, therefore there is no impact on the data.

The following samples were diluted to bring the concentration of target analytes within the calibration range: TF2-004/5-SS1020-0001 (320-4670-7), TF2-004/5-SS1022-000.9 (320-4670-5), TF2-004/5-SS1027-0001 (320-4670-14 MS), TF2-004/5-SS1027-0001 (320-4670-14 MSD), TF2-004/5-SS1036-000.6 (320-4670-20), TF2-004/5-SS1039-000.9 (320-4670-16), TF2-004/5-SS1040-000.9 (320-4670-15), TF2-004/5-SS-DUP01-1013 (320-4670-10), TF2-003-SS1011-000.8 (320-4670-56), TF2-003-SS1015-000.8 (320-4670-60), TF2-003-SS1016-000.9 (320-4670-61), TF2-003-SS-DUP06-1013 (320-4670-65), TF2-004/5-SS1029-000.6 (320-4670-12), TF2-004/5-SS1059-000.6 (320-4670-49), TF2-004/5-SS1060.000.5 (320-4670-48), TF2-004/5-SS1062-000.8 (320-4670-43), TF2-004/5-SS1066-000.9 (320-4670-47). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

Dioxin Prep
No analytical or quality issues were noted.

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The isomer is qualified as positively identified, but at an estimated quantity because the quantitation is based on the theoretical ratio for these samples.
E	Result exceeded calibration range.
H	Sample was prepped or analyzed beyond the specified holding time
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
*	LCS or LCSD exceeds the control limits
F1	MS and/or MSD Recovery exceeds the control limits
*	Isotope Dilution analyte exceeds control limits
I	Ion Ratio outside of limits, value is EMPC.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method 8290

Dioxins and Furans (HRGC/HRMS) by Method 8290

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 5D2 Start Date: 08/13/2013 14:04

Analysis Batch Number: 22916 End Date: 08/13/2013 19:44

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-22916/1		08/13/2013 14:04	1	13AU13A5D2_001.d	DB-225 0.32(mm)
IC 320-22916/2		08/13/2013 14:41	1	13AU13A5D2_002.d	DB-225 0.32(mm)
IC 320-22916/3		08/13/2013 16:36	1	13AU13A5D2_005.d	DB-225 0.32(mm)
IC 320-22916/4		08/13/2013 17:14	1	13AU13A5D2_006.d	DB-225 0.32(mm)
IC 320-22916/5		08/13/2013 18:29	1	13AU13A5D2_008.d	DB-225 0.32(mm)
IC 320-22916/6		08/13/2013 19:07	1	13AU13A5D2_009.d	DB-225 0.32(mm)
ICV 320-22916/7		08/13/2013 19:44	1	13AU13A5D2_010.d	DB-225 0.32(mm)

CAL. 2,3,7,8-TCDF

8290

CAL. 2,3,7,8-TCDF
~~509~~
Istr. 502

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
13AU13A5D2	1	CPS 081313	DB225 CPSM HRDXNCP_00019				1.00000	
13AU13A5D2	2	IC 081313	CS-4 HRDXNL4_00011				1.00000	
13AU13A5D2	3		CS-3 HRDXNL3_00005		Expired		1.00000	
13AU13A5D2	4		CS-2 HRDXNL2_00006		Expired		1.00000	
13AU13A5D2	5	IC 081313A	CS-3 HRDXNL3_00007				1.00000	
13AU13A5D2	6	IC 081313B	CS-2 HRDXNL2_00008				1.00000	
13AU13A5D2	7	IC 081313C	CS-1 HRDXNL1_00012	NU	Sensitivity CK		1.00000	
13AU13A5D2	8	IC 081313D	CS-6 HRDXNL6_00006				1.00000	
13AU13A5D2	9	IC 081313E	CS-5 HRDXNL5_00012				1.00000	
13AU13A5D2	10	ICV 081313	2nd Source HRDXNIC_00013				1.00000	
13AU13A5D2	11	CPS 081313A	DB225 CPSM HRDXNCP_00019				1.00000	
13AU13A5D2	12						1.00000	
13AU13A5D2	13						1.00000	
13AU13A5D2	14						1.00000	
13AU13A5D2	15		MEG 08/13/13				1.00000	

log file checked
8-13-13 ALM

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 22916

SDG No.:

Instrument ID: 5D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2013 14:41 Calibration End Date: 08/13/2013 19:07 Calibration ID: 4077

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-22916/4	13AU13A5D2_006.d
Level 2	IC 320-22916/3	13AU13A5D2_005.d
Level 3	IC 320-22916/2	13AU13A5D2_002.d
Level 4	IC 320-22916/6	13AU13A5D2_009.d
Level 5	IC 320-22916/5	13AU13A5D2_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.6727	1.7106	1.5443	1.8729	1.9940	AveID		1.7589				10.0		20.0			
2,3,7,8-TCDF	0.9010	0.7874	0.7729	0.8940	0.9510	AveID		0.8613				9.0		20.0			
13C-2,3,7,8-TCDD	0.8044	0.9274	0.8309	0.9261	0.9074	Ave		0.8793				6.5		30.0			
13C-2,3,7,8-TCDF	2.0854	2.3174	2.0745	2.5749	2.5581	Ave		2.3221				10.0		30.0			
37Cl4-2,3,7,8-TCDD	1.2356	1.1101	1.1584	1.4896	1.5627	Ave		1.3113				15.0		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 22916

SDG No.:

Instrument ID: 5D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2013 14:41 Calibration End Date: 08/13/2013 19:07 Calibration ID: 4077

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-22916/4	13AU13A5D2_006.d
Level 2	IC 320-22916/3	13AU13A5D2_005.d
Level 3	IC 320-22916/2	13AU13A5D2_002.d
Level 4	IC 320-22916/6	13AU13A5D2_009.d
Level 5	IC 320-22916/5	13AU13A5D2_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	698850	3314280	14635876	42677175	253369560	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	987264	3650258	17612680	54233931	330065048	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCl	Ave	88149808	99838947	96257334	57423212	64508776	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCl	Ave	225283706	247567757	239201468	158385314	178823183	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	758264	2689506	15126230	41473615	248091330	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: ICV 320-22916/7 Calibration Date: 08/13/2013 19:44

Instrument ID: 5D2 Calib Start Date: 08/13/2013 14:41

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/13/2013 19:07

Lab File ID: 13AU13A5D2_010.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.759	1.897		10.8	10.0	7.9	30.0
2,3,7,8-TCDF	AveID	0.8613	0.9399		10.9	10.0	9.1	30.0
13C-2,3,7,8-TCDD	Ave	0.8793	0.8765		99.7	100	-0.3	
13C-2,3,7,8-TCDF	Ave	2.322	2.409		104	100	3.7	
37Cl4-2,3,7,8-TCDD	Ave	1.311	1.325		20.2	20.0	1.0	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-22916/1 Instrument ID (1): 5D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 08/13/2013 14:04

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.19	16

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\5D2\20130814-6548.b\13AU13A5D2_001.d
Injection Date: 13-Aug-2013 14:04:19 Limit Group: HR - 8290 - ICAL
Client ID: Instrument ID: 5D2
Lims Batch ID: 22916 Lims Sample ID: 1
Operator ID: Injection Vol: 2.0 ul
Column Type: Column Dia:

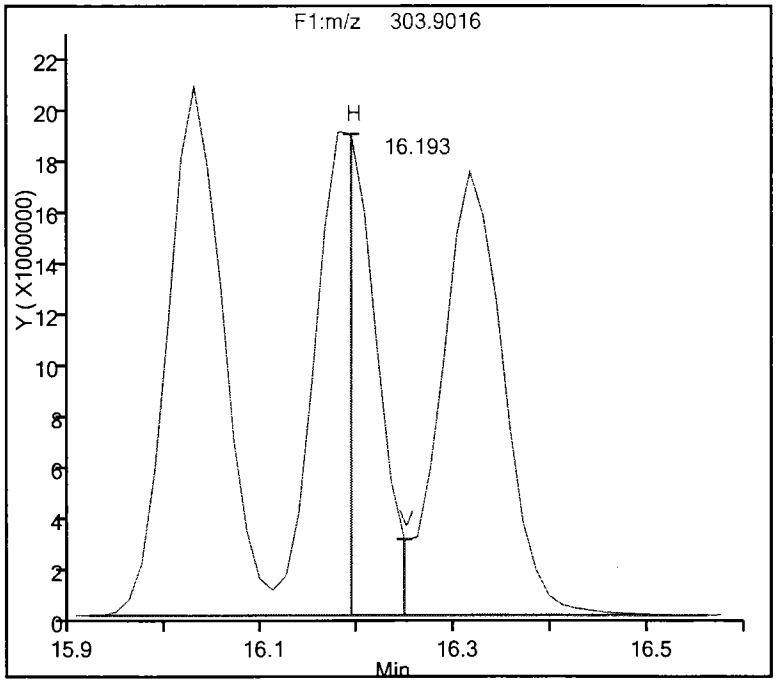
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2960386
H (Peak Height) = 18715020

%R = 16 <= 25
Passed



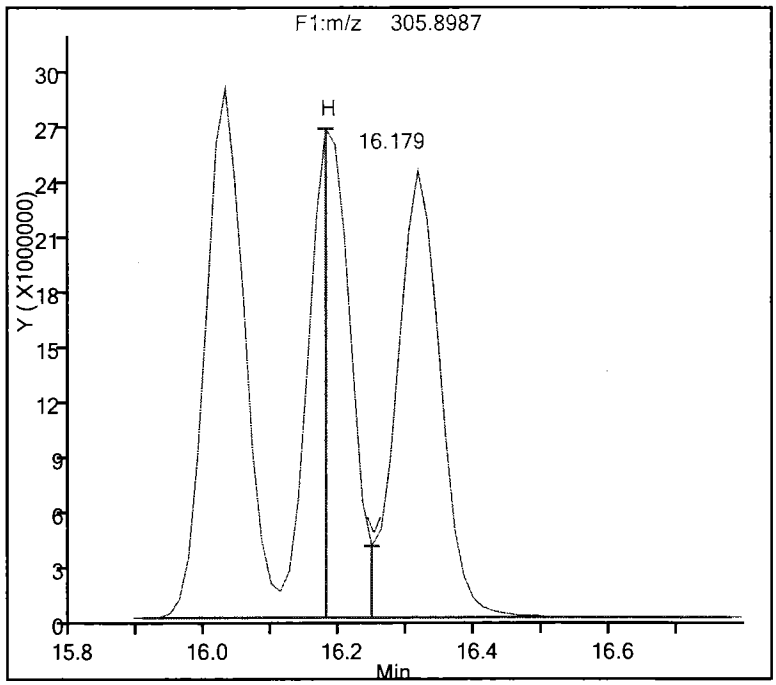
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3852978
H (Peak Height) = 26290420

%R = 15 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 5D2 Start Date: 11/18/2013 16:43

Analysis Batch Number: 30113 End Date: 11/19/2013 03:18

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-30113/1		11/18/2013 16:43	1	18NO135D2_001.d	DB-225 0.32(mm)
CCV 320-30113/2		11/18/2013 17:20	1	18NO135D2_002.d	DB-225 0.32(mm)
320-4670-60 RA	TF2-003-SS1015-000.8 RA	11/18/2013 18:35	1	18NO135D2_004.d	DB-225 0.32(mm)
320-4670-20 RA	TF2-004/5-SS1036-000.6 RA	11/18/2013 19:12	1	18NO135D2_005.d	DB-225 0.32(mm)
320-4670-21 RA	TF2-004/5-SS1035-0001 RA	11/18/2013 19:50	1	18NO135D2_006.d	DB-225 0.32(mm)
320-4670-22 RA	TF2-004/5-SS-DUP02-1013 RA	11/18/2013 20:27	1	18NO135D2_007.d	DB-225 0.32(mm)
320-4670-3 RA	TF2-004/5-SS1024-000.6 RA	11/18/2013 21:04	1	18NO135D2_008.d	DB-225 0.32(mm)
320-4670-4 RA	TF2-004/5-SS1023-000.8 RA	11/18/2013 21:42	1	18NO135D2_009.d	DB-225 0.32(mm)
ZZZZZ		11/18/2013 22:19	1		DB-225 0.32(mm)
ZZZZZ		11/18/2013 22:56	1		DB-225 0.32(mm)
ZZZZZ		11/18/2013 23:34	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 00:11	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 00:49	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 01:26	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 02:03	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 02:41	1		DB-225 0.32(mm)
CCV 320-30113/18		11/19/2013 03:18	1	18NO135D2_018.d	DB-225 0.32(mm)

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
18NO135D2	1	CPS 111813	DB225 CPSM HRDXNCP_00019				1.00000	
18NO135D2	2	CCV 111813	CS-4 HRDXNL4_00012				1.00000	
18NO135D2	3	RB 111813	Reagent Blank C-14				1.00000	
18NO135D2	4	320-28431	320-4670-A-60-A RI	20	8290/Solid	74	10.00000	g
18NO135D2	5	320-28458	320-4670-A-20-A	20	8290/Solid		10.00000	g
18NO135D2	6	320-28458	320-4670-A-21-A	20	8290/Solid		10.00000	g
18NO135D2	7	320-28458	320-4670-A-22-A	20	8290/Solid		10.00000	g
18NO135D2	8	320-28458	320-4670-A-3-A	20	8290/Solid		10.00000	g
18NO135D2	9	320-28458	320-4670-A-4-A	20	8290/Solid		10.00000	g
18NO135D2	10	320-29176	640-45478-B-19-B	20	8290/Solid	79	10.00000	g
18NO135D2	11	320-29176	640-45478-B-23-B	20	8290/Solid		10.00000	g
18NO135D2	12	320-29176	640-45478-B-24-B	20	8290/Solid		10.00000	g
18NO135D2	13	320-28640	320-4696-A-3-B	20	8290/Solid	76	10.00000	g
18NO135D2	14	320-28640	320-4696-A-4-B	20	8290/Solid		10.00000	g
18NO135D2	15	320-28640	320-4696-A-5-B	20	8290/Solid		10.00000	g
18NO135D2	16	320-29223	460-65815-F-6-A	20	8290/Solid	80	10.00000	g
18NO135D2	17	RB 111813A	Reagent Blank C-14				1.00000	
18NO135D2	18	CCV 111813A	CS-4 HRDXNL4_00012				1.00000	
18NO135D2	19						1.00000	
18NO135D2	20						1.00000	
18NO135D2	21						1.00000	
18NO135D2	22						1.00000	
18NO135D2	23		ALM 11-18-13				1.00000	
18NO135D2	24						1.00000	

logfile checked
11-19-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-30113/2 Calibration Date: 11/18/2013 17:20

Instrument ID: 5D2 Calib Start Date: 08/13/2013 14:41

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/13/2013 19:07

Lab File ID: 18NO135D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.759	2.012		11.4	10.0	14.4	20.0
2,3,7,8-TCDF	AveID	0.8613	0.7647		8.88	10.0	-11.2	20.0
13C-2,3,7,8-TCDD	Ave	0.8793	0.9286		106	100	5.6	30.0
13C-2,3,7,8-TCDF	Ave	2.322	2.191		94.3	100	-5.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.311	1.692		6.45	5.00	29.0	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-30113/18 Calibration Date: 11/19/2013 03:18

Instrument ID: 5D2 Calib Start Date: 08/13/2013 14:41

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/13/2013 19:07

Lab File ID: 18NO135D2_018.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.759	2.001		11.4	10.0	13.8	20.0
2,3,7,8-TCDF	AveID	0.8613	0.8195		9.52	10.0	-4.8	20.0
13C-2,3,7,8-TCDD	Ave	0.8793	0.9427		107	100	7.2	30.0
13C-2,3,7,8-TCDF	Ave	2.322	2.509		108	100	8.1	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.311	1.610		6.14	5.00	22.8	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-30113/1 Instrument ID (1): 5D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 11/18/2013 16:43

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	18.45	11

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\5D2\20131119-8727.b\18NO135D2_001.d
Injection Date: 18-Nov-2013 16:43:10 Instrument ID: 5D2
Lims ID: CPS Lab Sample ID: CPS 320-30113/1-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_5D2 Limit Group: HR - 8290 - ICAL

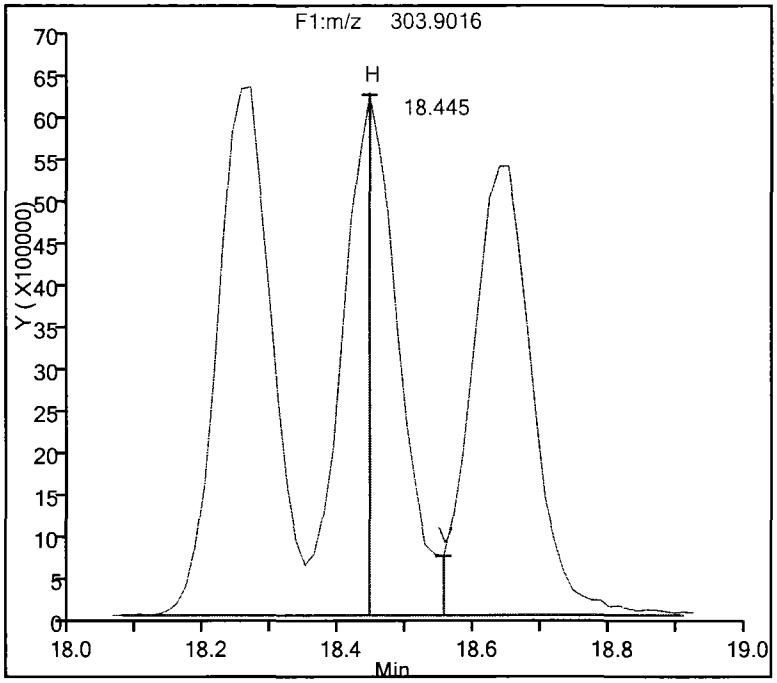
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 700461
H (Peak Height) = 6196759

%R = 11 <= 25
Passed



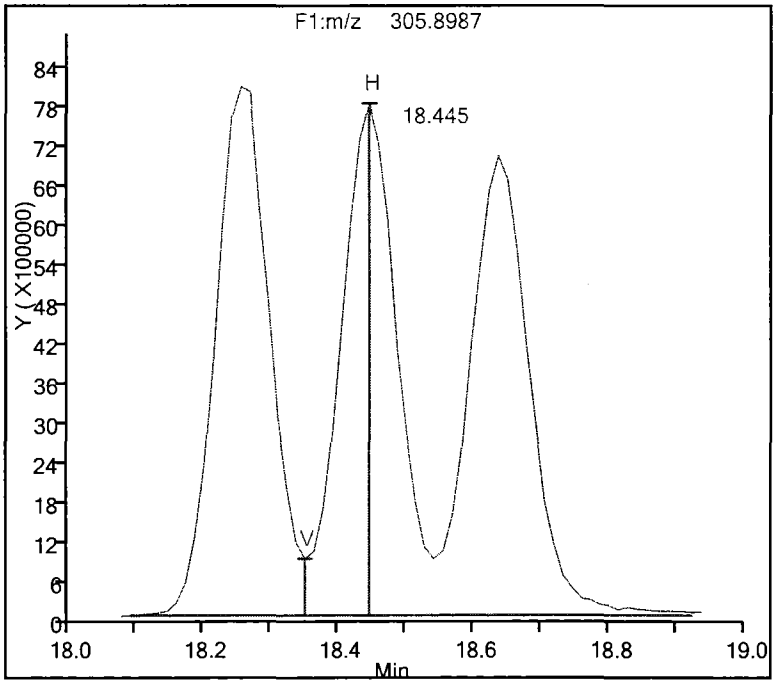
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 858838
H (Peak Height) = 7767766

%R = 11 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 5D2 Start Date: 11/19/2013 18:01

Analysis Batch Number: 30201 End Date: 11/20/2013 03:59

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-30201/1		11/19/2013 18:01	1	19no13a5d2_001.d	DB-225 0.32(mm)
CCV 320-30201/2		11/19/2013 18:38	1	19no13a5d2_002.d	DB-225 0.32(mm)
320-4670-1 RA	TF2-004/5-SS1025-000.8 RA	11/19/2013 20:30	1	19no13a5d2_005.d	DB-225 0.32(mm)
320-4670-8 RA	TF2-004/5-SS1032-000.9 RA	11/19/2013 21:08	1	19no13a5d2_006.d	DB-225 0.32(mm)
320-4670-12 RA	TF2-004/5-SS1029-000.6 RA	11/19/2013 21:45	1	19no13a5d2_007.d	DB-225 0.32(mm)
ZZZZZ		11/19/2013 22:23	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 23:00	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 23:37	1		DB-225 0.32(mm)
ZZZZZ		11/20/2013 00:15	1		DB-225 0.32(mm)
ZZZZZ		11/20/2013 00:52	1		DB-225 0.32(mm)
ZZZZZ		11/20/2013 01:30	1		DB-225 0.32(mm)
ZZZZZ		11/20/2013 02:07	1		DB-225 0.32(mm)
ZZZZZ		11/20/2013 02:44	1		DB-225 0.32(mm)
CCV 320-30201/17		11/20/2013 03:59	1	19no13a5d2_017.d	DB-225 0.32(mm)

8290

ata file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
19NO13A5D2	1	CPS 111913	DB225 CPSM HRDXNCP_00019				1.00000	
19NO13A5D2	2	CCV 111913	CS-4 HRDXNL4_00012				1.00000	
19NO13A5D2	3	RB 111913	Reagent Blank C-14				1.00000	
19NO13A5D2	4	320-27950	280-47992-B-24-A	20	1613B/Solid	71	10.00000	g
19NO13A5D2	5	320-28361	320-4670-A-1-B	20	8290/Solid	73	10.00000	g
19NO13A5D2	6	320-28458	320-4670-A-8-A	20	8290/Solid	74	10.00000	g
19NO13A5D2	7	320-28458	320-4670-A-12-A	20	8290/Solid		10.00000	g
19NO13A5D2	8	320-29772	640-45478-B-19-C	20	8290/Solid	84	10.00000	g
19NO13A5D2	9	320-29772	640-45478-B-23-C	20	8290/Solid		10.00000	g
19NO13A5D2	10	320-29772	640-45478-B-24-C	20	8290/Solid		10.00000	g
19NO13A5D2	11	320-29772	640-45478-B-28-C	20	8290/Solid		10.00000	g
19NO13A5D2	12	320-29772	640-45478-B-29-C	20	8290/Solid		10.00000	g
19NO13A5D2	13	320-29772	640-45478-B-60-C	20	8290/Solid		10.00000	g
19NO13A5D2	14	320-29772	640-45478-B-61-C	20	8290/Solid		10.00000	g
19NO13A5D2	15	320-29772	640-45478-B-18-C	20	8290/Solid		10.00000	g
19NO13A5D2	16	RB 111913A	Reagent Blank C-14				1.00000	
19NO13A5D2	17	CCV 111913A	CS-4 HRDXNL4_00012				1.00000	
19NO13A5D2	18						1.00000	
19NO13A5D2	19						1.00000	
19NO13A5D2	20						1.00000	
19NO13A5D2	21						1.00000	
19NO13A5D2	22						1.00000	
19NO13A5D2	23		AM 11-19-13				1.00000	
NO13A5D2	24						1.00000	

Logfile checked
11-20-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-30201/2 Calibration Date: 11/19/2013 18:38

Instrument ID: 5D2 Calib Start Date: 08/13/2013 14:41

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/13/2013 19:07

Lab File ID: 19no13a5d2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.759	1.963		11.2	10.0	11.6	20.0
2,3,7,8-TCDF	AveID	0.8613	0.7974		9.26	10.0	-7.4	20.0
13C-2,3,7,8-TCDD	Ave	0.8793	0.9511		108	100	8.2	30.0
13C-2,3,7,8-TCDF	Ave	2.322	2.651		114	100	14.2	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.311	1.646		6.28	5.00	25.6	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-30201/17 Calibration Date: 11/20/2013 03:59

Instrument ID: 5D2 Calib Start Date: 08/13/2013 14:41

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/13/2013 19:07

Lab File ID: 19no13a5d2_017.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.759	1.812		10.3	10.0	3.0	20.0
2,3,7,8-TCDF	AveID	0.8613	0.7801		9.06	10.0	-9.4	20.0
13C-2,3,7,8-TCDD	Ave	0.8793	0.9492		108	100	8.0	30.0
13C-2,3,7,8-TCDF	Ave	2.322	2.508		108	100	8.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.311	1.627		6.20	5.00	24.1	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-30201/1 Instrument ID (1): 5D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 11/19/2013 18:01

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.35	24

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\5D2\20131119-8757.b\19no13a5d2_001.d
Injection Date: 19-Nov-2013 18:01:29 Instrument ID: 5D2
Lims ID: CPS Lab Sample ID: CPS 320-30202/1-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_5D2 Limit Group: HR - 8290 - ICAL

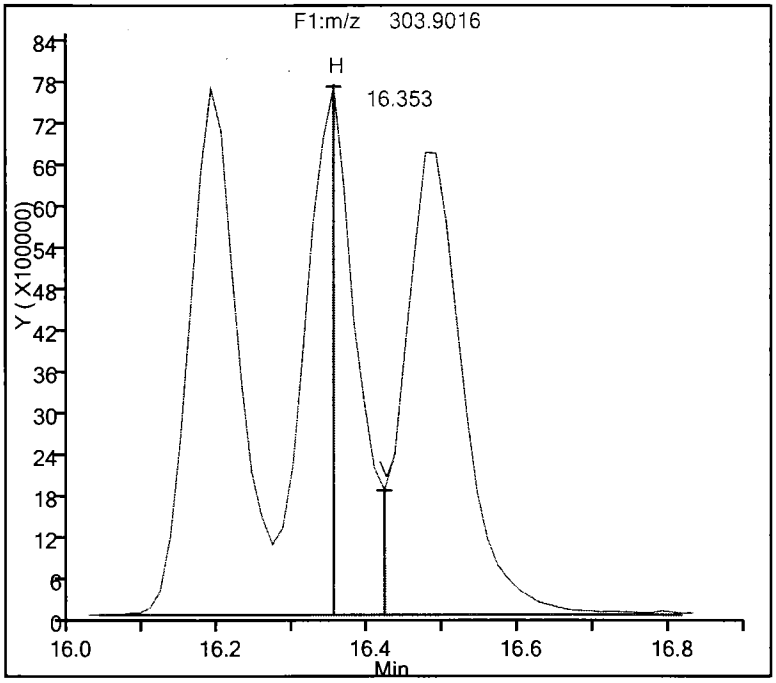
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1800437
H (Peak Height) = 7652684

%R = 24 <= 25
Passed



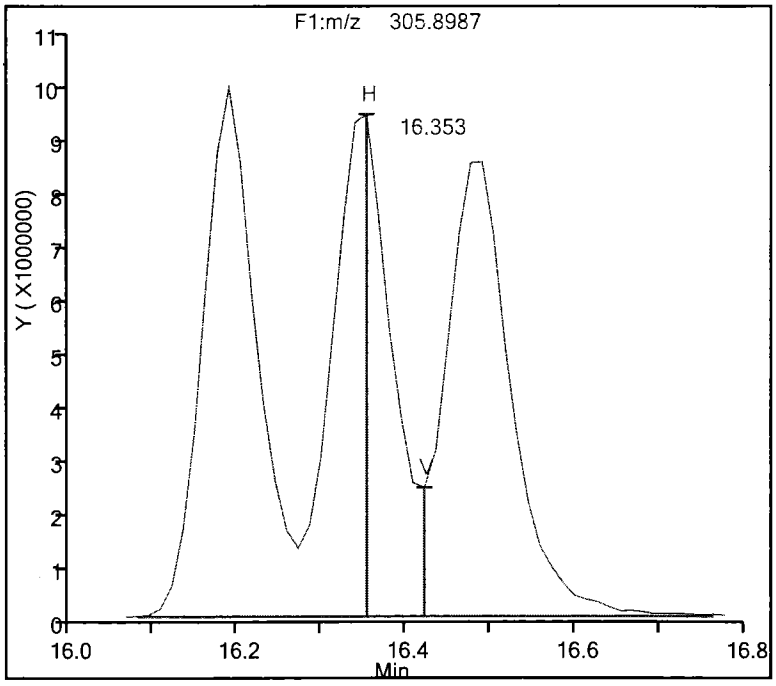
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2378227
H (Peak Height) = 9286062

%R = 26 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 08/27/2013 14:37

Analysis Batch Number: 24028 End Date: 08/27/2013 20:36

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-24028/1		08/27/2013 14:37	1	27AU13A11D2_001.d	DB-225 0.32(mm)
ZZZZZ		08/27/2013 15:17	1		DB-225 0.32(mm)
STD2 320-24028/3 IC		08/27/2013 15:57	1	27AU13A11D2_003.d	DB-225 0.32(mm)
STD3 320-24028/4 IC		08/27/2013 16:37	1	27AU13A11D2_004.d	DB-225 0.32(mm)
STD4 320-24028/5 IC		08/27/2013 17:17	1	27AU13A11D2_005.d	DB-225 0.32(mm)
STD5 320-24028/6 IC		08/27/2013 17:57	1	27AU13A11D2_006.d	DB-225 0.32(mm)
STD6 320-24028/7 IC		08/27/2013 18:37	1	27AU13A11D2_007.d	DB-225 0.32(mm)
ZZZZZ		08/27/2013 19:17	1		DB-225 0.32(mm)
ICV 320-24028/9		08/27/2013 19:56	1	27AU13A11D2_009.d	DB-225 0.32(mm)
CPS 320-24028/10		08/27/2013 20:36	1		DB-225 0.32(mm)

CAL 2,3,7,8 TCDF

8290

CAL

Data file	Smp	Work Order	Sample ID	Method/Matrix	Size	U
27AU13A11D2	1	CPS 082713	DB225 CPSM HRDXNCP_00019	2,3,7,8-TCDF	1.00000	
27AU13A11D2	2	RB 082713	Reagent Blank C-14		1.00000	
27AU13A11D2	3	IC 082713	CS-2 HRDXNL2_00008		1.00000	
27AU13A11D2	4	IC 082713A	CS-3 HRDXNL3_00007		1.00000	
27AU13A11D2	5	IC 082713B	CS-4 HRDXNL4_00011	INST. 405	1.00000	
27AU13A11D2	6	IC 082713C	CS-5 HRDXNL5_00012		1.00000	
27AU13A11D2	7	IC ~~031913E~~	CS-6 HRDXNL6_00006		1.00000	
27AU13A11D2	8	RB 082713A	Reagent Blank C-14		1.00000	
27AU13A11D2	9	ICV 082713	2nd Source HRDXNIC_00013		1.00000	
27AU13A11D2	10	CPS 082713A	DB225 CPSM HRDXN_00019		1.00000	
27AU13A11D2	11				1.00000	
27AU13A11D2	12		→ 082713E		1.00000	
27AU13A11D2	13		8/28/13 2:15		1.00000	
27AU13A11D2	14		SMA 08-27-13		1.00000	
27AU13A11D2	15				1.00000	
27AU13A11D2	16				1.00000	

logfile checked
8-27-13 ALM

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 24028

SDG No.:

Instrument ID: 11D5 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/27/2013 15:57 Calibration End Date: 08/27/2013 18:37 Calibration ID: 4236

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD2 320-24028/3	27AU13A11D2_003.d
Level 2	STD3 320-24028/4	27AU13A11D2_004.d
Level 3	STD4 320-24028/5	27AU13A11D2_005.d
Level 4	STD5 320-24028/6	27AU13A11D2_006.d
Level 5	STD6 320-24028/7	27AU13A11D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.3707	1.2441	1.1278	1.1243	1.1559	AveID		1.2046				8.7		20.0			
2,3,7,8-TCDF	1.1330	1.1274	1.0180	1.0167	1.0327	AveID		1.0655				5.6		20.0			
13C-2,3,7,8-TCDD	0.9756	0.9709	0.9771	0.9819	0.9960	Ave		0.9803				1.0		30.0			
13C-2,3,7,8-TCDF	1.4461	1.3722	1.3446	1.3982	1.3793	Ave		1.3881				2.7		30.0			
37Cl4-2,3,7,8-TCDD	1.4494	1.2702	1.3470	1.3530	1.3780	Ave		1.3595				4.7		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 24028

SDG No.:

Instrument ID: 11D5 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/27/2013 15:57 Calibration End Date: 08/27/2013 18:37 Calibration ID: 4236

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD2 320-24028/3	27AU13A11D2_003.d
Level 2	STD3 320-24028/4	27AU13A11D2_004.d
Level 3	STD4 320-24028/5	27AU13A11D2_005.d
Level 4	STD5 320-24028/6	27AU13A11D2_006.d
Level 5	STD6 320-24028/7	27AU13A11D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	378516	1389241	7369784	28582478	136678492	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	493585	1825042	9013600	36372605	167953482	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCI	Ave	61600490	57614409	65983869	64962288	59910082	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCI	Ave	90005250	79924664	89586654	90603039	82213219	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCI	Ave	513133	1696845	10260852	39970242	186697957	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-24028/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 08/27/2013 14:37

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.38	18

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\11D5\20130828-6877.b\27AU13A11D2_001.d		
Injection Date:	27-Aug-2013 14:37:43	Instrument ID:	11D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	24028 (1)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	DXN_DB225_11D2	Limit Group:	HR - 8290 - ICAL

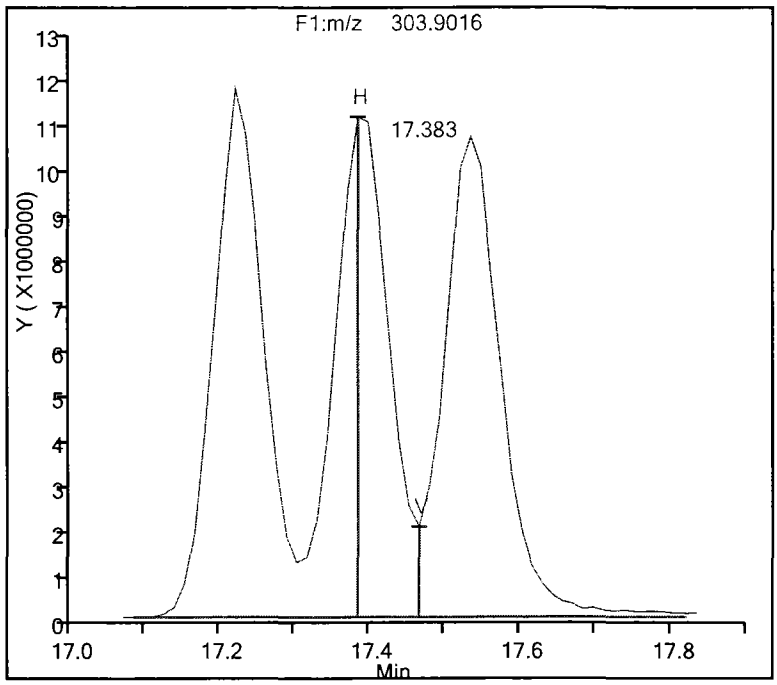
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2012755
H (Peak Height) = 11142892

%R = 18 <= 25
Passed



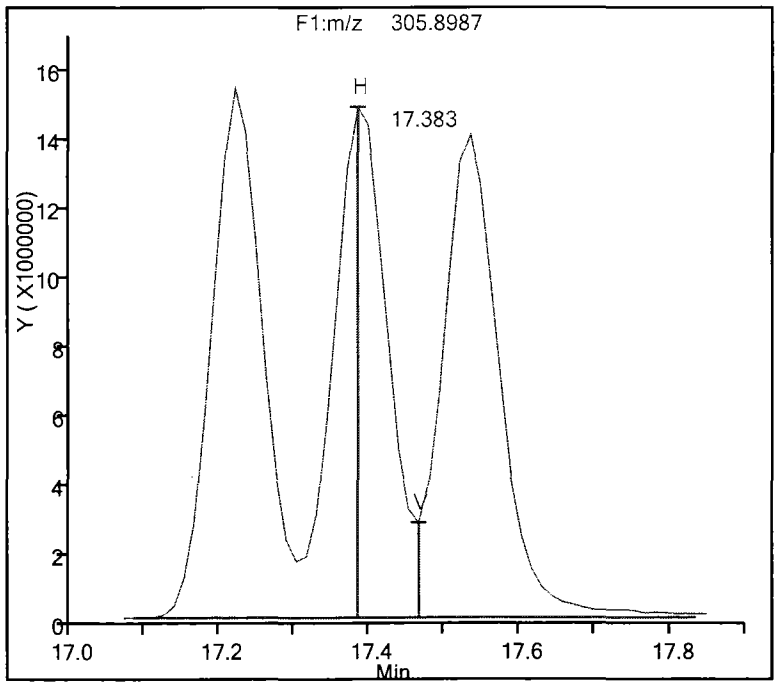
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2678604
H (Peak Height) = 14441132

%R = 19 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 11/07/2013 17:07

Analysis Batch Number: 29487 End Date: 11/08/2013 02:51

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-29487/1		11/07/2013 17:07	1	07NO1311D2_001.d	DB-225 0.32(mm)
CCV 320-29487/2		11/07/2013 17:45	1	07NO1311D2_002.d	DB-225 0.32(mm)
ZZZZZ		11/07/2013 19:04	1		DB-225 0.32(mm)
320-4670-23 RA	TF2-004/5-SS1034-000.6 RA	11/07/2013 19:43	1	07NO1311D2_005.d	DB-225 0.32(mm)
320-4670-25 RA	TF2-004/5-SS1049-000.9 RA	11/07/2013 20:22	1	07NO1311D2_006.d	DB-225 0.32(mm)
320-4670-26 RA	TF2-004/5-SS1048-000.8 RA	11/07/2013 21:01	1	07NO1311D2_007.d	DB-225 0.32(mm)
320-4670-27 RA	TF2-004/5-SS1047-000.8 RA	11/07/2013 21:40	1	07NO1311D2_008.d	DB-225 0.32(mm)
320-4670-29 RA	TF2-004/5-SS1045-000.5 RA	11/07/2013 22:18	1	07NO1311D2_009.d	DB-225 0.32(mm)
320-4670-30 RA	TF2-004/5-SS1044-000.5 RA	11/07/2013 22:57	1	07NO1311D2_010.d	DB-225 0.32(mm)
320-4670-31 RA	TF2-004/5-SS1042-000.5 RA	11/07/2013 23:36	1	07NO1311D2_011.d	DB-225 0.32(mm)
320-4670-35 RA	TF2-004/5-SS1057-0001 RA	11/08/2013 00:15	1	07NO1311D2_012.d	DB-225 0.32(mm)
320-4670-39 RA	TF2-004/5-SS1053-000.6 RA	11/08/2013 00:54	1	07NO1311D2_013.d	DB-225 0.32(mm)
320-4670-40 RA	TF2-004/5-SS1052-000.6 RA	11/08/2013 01:33	1	07NO1311D2_014.d	DB-225 0.32(mm)
ZZZZZ		11/08/2013 02:12	1		DB-225 0.32(mm)
CCV 320-29487/16		11/08/2013 02:51	1	07NO1311D2_016.d	DB-225 0.32(mm)

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
07NO1311D2	1	CPS 110713	DB225 CPSM HRDXNCP_00019				1.00000	
07NO1311D2	2	CCV 110713	CS-4 HRDXNL4_00012				1.00000	
07NO1311D2	3	RB 110713	Reagent Blank C-14				1.00000	
07NO1311D2	4	320-28374	490-38349-E-4-A	20	8290/Water	74	1.00000	L
07NO1311D2	5	320-28540	320-4670-A-23-A	20	8290/Solid	75	10.00000	g
07NO1311D2	6	320-28540	320-4670-A-25-A	20	8290/Solid		10.00000	g
07NO1311D2	7	320-28540	320-4670-A-26-A	20	8290/Solid		10.00000	g
07NO1311D2	8	320-28540	320-4670-A-27-A	20	8290/Solid		10.00000	g
07NO1311D2	9	320-28540	320-4670-A-29-A	20	8290/Solid		10.00000	g
07NO1311D2	10	320-28540	320-4670-A-30-A	20	8290/Solid		10.00000	g
07NO1311D2	11	320-28540	320-4670-A-31-A	20	8290/Solid		10.00000	g
07NO1311D2	12	320-28540	320-4670-A-35-A	20	8290/Solid		10.00000	g
07NO1311D2	13	320-28540	320-4670-A-39-A	20	8290/Solid		10.00000	g
07NO1311D2	14	320-28540	320-4670-A-40-A	20	8290/Solid		10.00000	g
07NO1311D2	15	RB 110713A	Reagent Blank C-14				1.00000	
07NO1311D2	16	CCV 110713A	CS-4 HRDXNL4_00012				1.00000	
07NO1311D2	17						1.00000	
07NO1311D2	18						1.00000	
07NO1311D2	19						1.00000	
07NO1311D2	20						1.00000	
07NO1311D2	21						1.00000	
07NO1311D2	22						1.00000	
07NO1311D2	23		SMA, ALM 11-07-13				1.00000	
07NO1311D2	24						1.00000	

logfile checked
11-08-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29487/2 Calibration Date: 11/07/2013 17:45

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 07NO1311D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.281		10.6	10.0	6.3	20.0
2,3,7,8-TCDF	AveID	1.066	1.040		9.76	10.0	-2.4	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9633		98.3	100	-1.7	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.605		116	100	15.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.371		5.04	5.00	0.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29487/16 Calibration Date: 11/08/2013 02:51

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 07NO1311D2_016.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.180		9.80	10.0	-2.0	20.0
2,3,7,8-TCDF	AveID	1.066	1.019		9.56	10.0	-4.4	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9644		98.4	100	-1.6	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.569		113	100	13.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.404		5.16	5.00	3.3	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29487/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 11/07/2013 17:07

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.33	25

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\11D5\20131108-8554.b\07NO1311D2_001.d		
Injection Date:	07-Nov-2013 17:07:05	Instrument ID:	11D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29487 (1)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	DXN_DB225_11D2	Limit Group:	HR - 8290 - ICAL

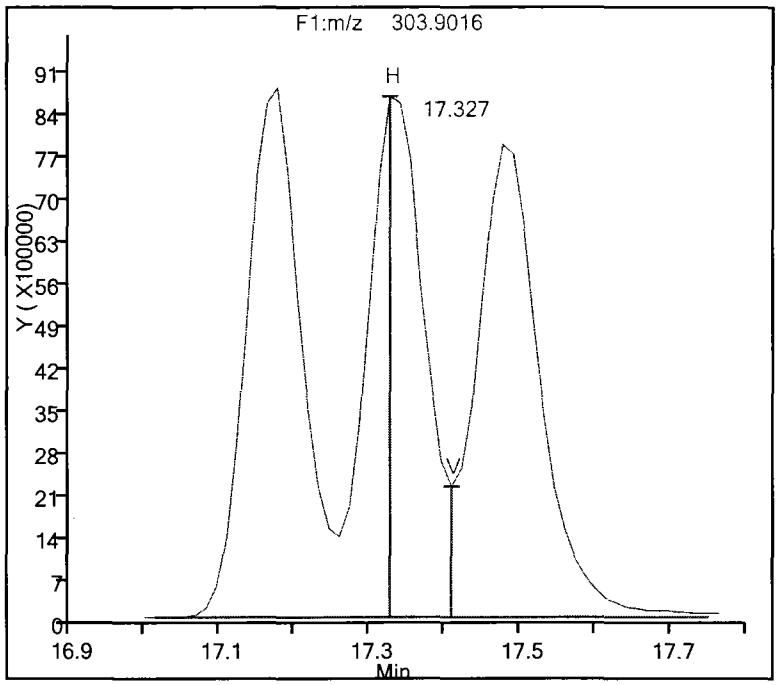
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2166649
H (Peak Height) = 8639702

%R = 25 <= 25
Passed



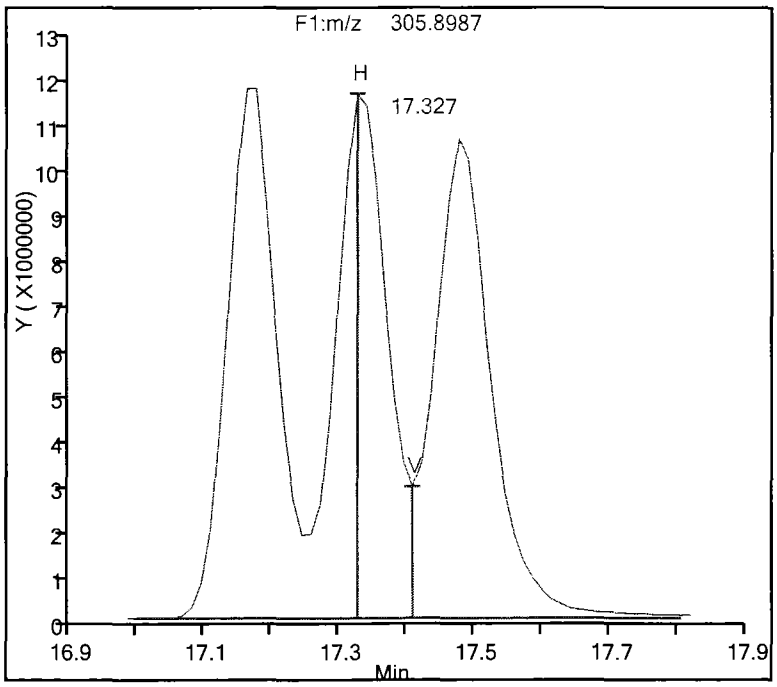
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2793701
H (Peak Height) = 11148806

%R = 25 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: T1D5 Start Date: 11/08/2013 10:36

Analysis Batch Number: 29533 End Date: 11/08/2013 21:02

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29533/1		11/08/2013 10:36	1	08NO13A11D2_001.d	DB-225 0.32(mm)
CPS 320-29533/3		11/08/2013 11:58	1	08NO13A11D2_003.d	DB-225 0.32(mm)
ZZZZZ		11/08/2013 15:51	1		DB-225 0.32(mm)
ZZZZZ		11/08/2013 16:30	1		DB-225 0.32(mm)
ZZZZZ		11/08/2013 17:09	1		DB-225 0.32(mm)
ZZZZZ		11/08/2013 17:48	1		DB-225 0.32(mm)
320-4670-42 RA	TF2-004/5-SS1050-000.6 RA	11/08/2013 18:27	1	08NO13A11D2_013.d	DB-225 0.32(mm)
320-4670-43 RA	TF2-004/5-SS1062-000.8 RA	11/08/2013 19:06	1	08NO13A11D2_014.d	DB-225 0.32(mm)
320-4670-47 RA	TF2-004/5-SS1066-000.9 RA	11/08/2013 19:45	1	08NO13A11D2_015.d	DB-225 0.32(mm)
ZZZZZ		11/08/2013 20:23	1		DB-225 0.32(mm)
CCV 320-29533/17		11/08/2013 21:02	1	08NO13A11D2_017.d	DB-225 0.32(mm)

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
08NO13A11D2	1	CCV 110813	CS-4 HRDXNL4_00012				1.00000	
08NO13A11D2	2	CPS 110813	DB225 CPSM HRDXNCP_00019				1.00000	
08NO13A11D2	3	CPS 110813A	DB225 CPSM HRDXNCP_00019				1.00000	
08NO13A11D2	4	RB 110713	Reagent Blank C-14				1.00000	
08NO13A11D2	5	320-28162	500-65240-E-2-A	20	8290A/Solid	E-35	1.00000	g
08NO13A11D2	6	280-28657	280-48399-C-2-A	20	1613B/Solid	76	10.00000	g
08NO13A11D2	7	280-28657	280-48399-C-18-A	20	1613B/Solid		10.00000	g
08NO13A11D2	8	320-28361	280-48190-B-30-A	20	1613B/Solid	73	10.00000	g
08NO13A11D2	9	320-28361	720-53263-B-1-A	20	8290/Solid	73	10.00000	g
08NO13A11D2	10	320-28361	720-53263-B-5-A	20	8290/Solid		10.00000	g
08NO13A11D2	11	320-28361	720-53161-C-1-A	20	8290/Solid		10.00000	g
08NO13A11D2	12	320-28361	720-53161-C-3-A	20	8290/Solid		10.00000	g
08NO13A11D2	13	320-28540	320-4670-A-42-A	20	8290/Solid	75	10.00000	g
08NO13A11D2	14	320-28540	320-4670-A-43-A	20	8290/Solid		10.00000	g
08NO13A11D2	15	320-28546	320-4670-A-47-A	20	8290/Solid		10.00000	g
08NO13A11D2	16	RB 110813A	Reagent Blank C-14				1.00000	
08NO13A11D2	17	CCV 110813A	CS-4 HRDXNL4_00012				1.00000	
08NO13A11D2	18						1.00000	
08NO13A11D2	19						1.00000	
08NO13A11D2	20						1.00000	
08NO13A11D2	21						1.00000	
08NO13A11D2	22		SMA 11-08-13				1.00000	
08NO13A11D2	23						1.00000	
08NO13A11D2	24						1.00000	
08NO13A11D2	25						1.00000	

logfile checked
11-08-13 ALM

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29533/1 Calibration Date: 11/08/2013 10:36

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 08NO13A11D2_001.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.131		9.39	10.0	-6.1	20.0
2,3,7,8-TCDF	AveID	1.066	0.9608		9.02	10.0	-9.8	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9252		94.4	100	-5.6	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.419		102	100	2.2	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.370		5.04	5.00	0.7	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29533/17 Calibration Date: 11/08/2013 21:02

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 08NO13A11D2_017.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.102		9.15	10.0	-8.5	20.0
2,3,7,8-TCDF	AveID	1.066	0.9596		9.01	10.0	-9.9	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9870		101	100	0.7	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.475		106	100	6.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.339		4.93	5.00	-1.5	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29533/3 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 11/08/2013 11:58

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.29	13

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\11D5\20131111-8569.b\08NO13A11D2_003.d
Injection Date: 08-Nov-2013 11:58:29 Instrument ID: 11D5
Lims ID: CPS Lab Sample ID: CPS 320-29535/3-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_11D2 Limit Group: HR - 8290 - ICAL

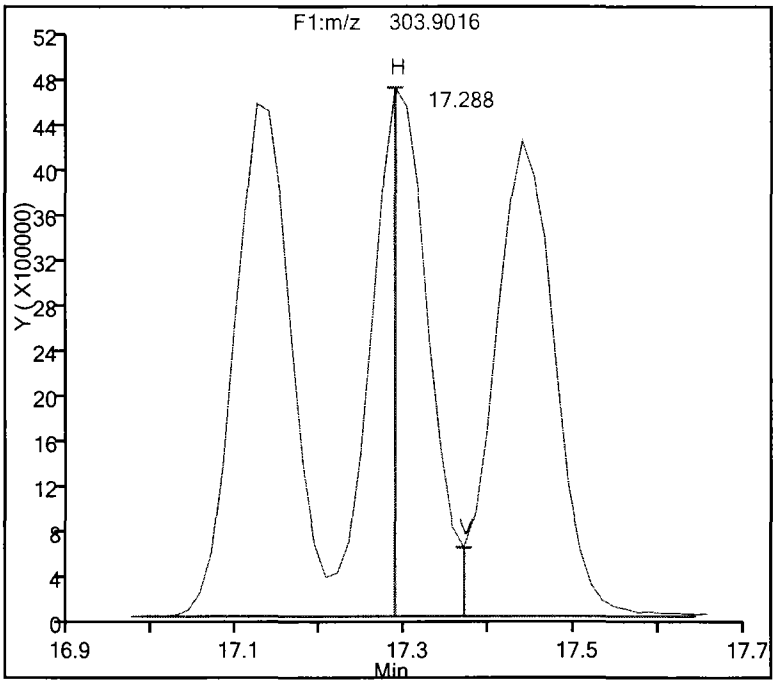
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 605778
H (Peak Height) = 4656705

%R = 13 <= 25
Passed



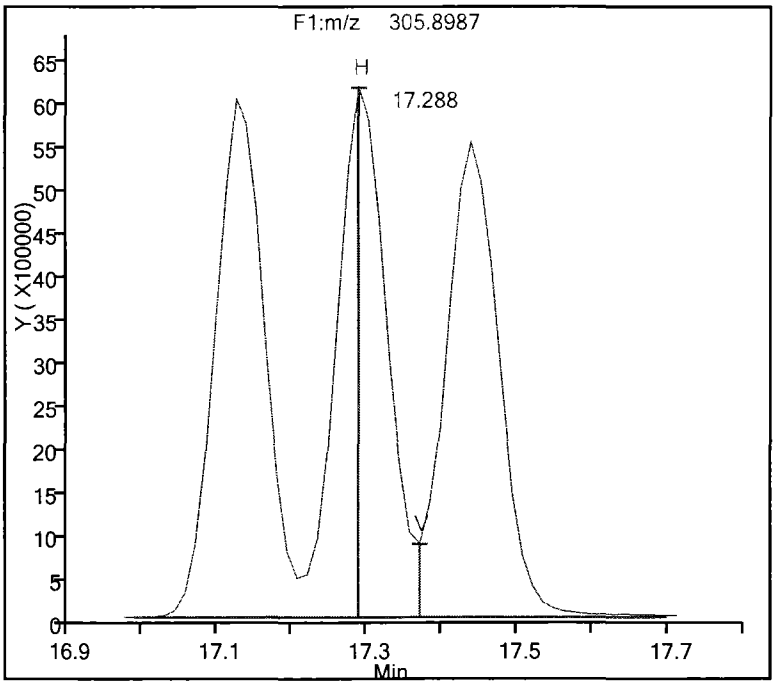
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 844020
H (Peak Height) = 6122992

%R = 14 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 11/08/2013 22:34

Analysis Batch Number: 29560 End Date: 11/09/2013 08:56

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-29560/1		11/08/2013 22:34	1	08NO13B11D2_001.d	DB-225 0.32(mm)
CCV 320-29560/2		11/08/2013 23:13	1	08NO13B11D2_002.d	DB-225 0.32(mm)
320-4670-48 RA	TF2-004/5-SS1060.000.5 RA	11/09/2013 00:30	1	08NO13B11D2_004.d	DB-225 0.32(mm)
320-4670-51 RA	TF2-004/5-SS1065-000.5 RA	11/09/2013 01:09	1	08NO13B11D2_005.d	DB-225 0.32(mm)
ZZZZZ		11/09/2013 01:48	1		DB-225 0.32(mm)
ZZZZZ		11/09/2013 02:27	1		DB-225 0.32(mm)
ZZZZZ		11/09/2013 03:06	1		DB-225 0.32(mm)
320-4670-64 RA	TF2-003-SS1019-000.5 RA	11/09/2013 03:45	1	08NO13B11D2_009.d	DB-225 0.32(mm)
320-4670-64 MS RA	TF2-003-SS1019-000.5 MS RA	11/09/2013 04:24	1	08NO13B11D2_010.d	DB-225 0.32(mm)
320-4670-64 MSD RA	TF2-003-SS1019-000.5 MSD RA	11/09/2013 05:03	1	08NO13B11D2_011.d	DB-225 0.32(mm)
320-4670-65 RA	TF2-003-SS-DUP06-1013 RA	11/09/2013 05:41	1	08NO13B11D2_012.d	DB-225 0.32(mm)
320-4670-13 RA	TF2-004/5-SS1028-000.8 RA	11/09/2013 06:20	1	08NO13B11D2_013.d	DB-225 0.32(mm)
320-4670-15 RA	TF2-004/5-SS1040-000.9 RA	11/09/2013 06:59	1	08NO13B11D2_014.d	DB-225 0.32(mm)
320-4670-16 RA	TF2-004/5-SS1039-000.9 RA	11/09/2013 07:38	1	08NO13B11D2_015.d	DB-225 0.32(mm)
ZZZZZ		11/09/2013 08:17	1		DB-225 0.32(mm)
CCV 320-29560/17		11/09/2013 08:56	1	08NO13B11D2_017.d	DB-225 0.32(mm)

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
08NO13B11D2	1	CPS 110813B	DB225 CPSM HRDXNCP_00019				1.00000	
08NO13B11D2	2	CCV 110813B	CS-4 HRDXNL4_00012				1.00000	
08NO13B11D2	3	RB 110813B	Reagent Blank C-14				1.00000	
08NO13B11D2	4	320-28431	320-4670-A-48-A	20	8290/Solid	74	10.00000	g
08NO13B11D2	5	320-28431	320-4670-A-51-A	20	8290/Solid		10.00000	g
08NO13B11D2	6	320-28431	320-4670-A-52-A	20	8290/Solid		10.00000	g
08NO13B11D2	7	320-28431	320-4670-A-52-B MS	20	8290/Solid		10.00000	g
08NO13B11D2	8	320-28431	320-4670-A-52-C MSD	20	8290/Solid		10.00000	g
08NO13B11D2	9	320-28431	320-4670-A-64-A	20	8290/Solid		10.00000	g
08NO13B11D2	10	320-28431	320-4670-A-64-B MS	20	8290/Solid		10.00000	g
08NO13B11D2	11	320-28431	320-4670-A-64-C MSD	20	8290/Solid		10.00000	g
08NO13B11D2	12	320-28431	320-4670-A-65-A	20	8290/Solid		10.00000	g
08NO13B11D2	13	320-28458	320-4670-A-13-A	20	8290/Solid		10.00000	g
08NO13B11D2	14	320-28458	320-4670-A-15-A	20	8290/Solid		10.00000	g
08NO13B11D2	15	320-28458	320-4670-A-16-A	20	8290/Solid		10.00000	g
08NO13B11D2	16	RB 110813B	Reagent Blank C-14				1.00000	
08NO13B11D2	17	CCV 110813B	CS-4 HRDXNL4_00012				1.00000	
08NO13B11D2	18						1.00000	
08NO13B11D2	19						1.00000	
08NO13B11D2	20						1.00000	
08NO13B11D2	21						1.00000	
08NO13B11D2	22						1.00000	
08NO13B11D2	23						1.00000	
08NO13B11D2	24						1.00000	
08NO13B11D2	25		ALM 11-08-13				1.00000	
08NO13B11D2	26						1.00000	

logfile checked
11-11-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29560/2 Calibration Date: 11/08/2013 23:13

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 08NO13B11D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.094		9.08	10.0	-9.2	20.0
2,3,7,8-TCDF	AveID	1.066	0.9915		9.30	10.0	-7.0	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	1.002		102	100	2.2	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.503		108	100	8.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.414		5.20	5.00	4.0	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29560/17 Calibration Date: 11/09/2013 08:56

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 08NO13B11D2_017.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.066		8.85	10.0	-11.5	20.0
2,3,7,8-TCDF	AveID	1.066	0.9216		8.65	10.0	-13.5	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9766		99.6	100	-0.4	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.412		102	100	1.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.411		5.19	5.00	3.8	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29560/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 11/08/2013 22:34

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.22	15

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\11D5\20131111-8575.b\08NO13B11D2_001.d
Injection Date: 08-Nov-2013 22:34:27 Instrument ID: 11D5
Lims ID: CPS Lab Sample ID: CPS 320-29560/1-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_11D2 Limit Group: HR - 8290 - ICAL

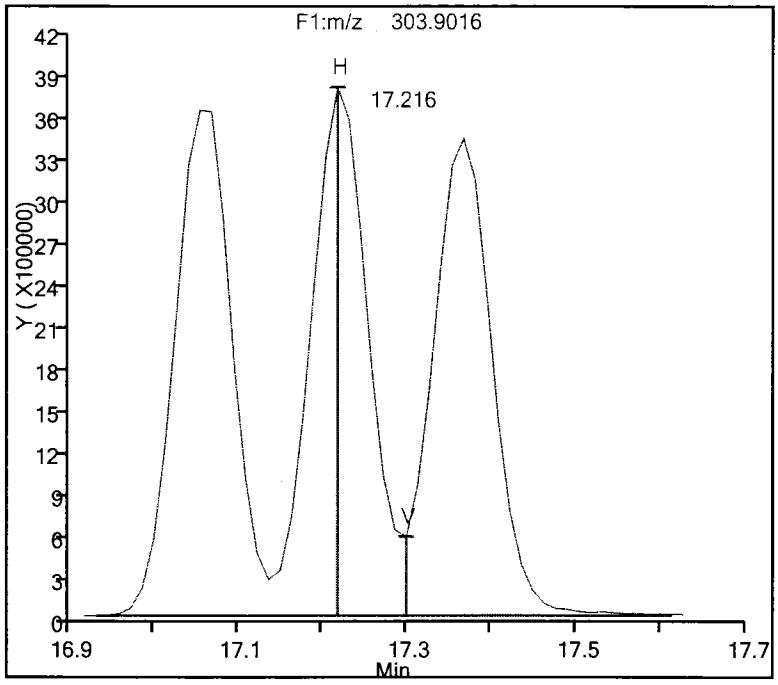
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 563627
H (Peak Height) = 3771051

%R = 15 <= 25
Passed



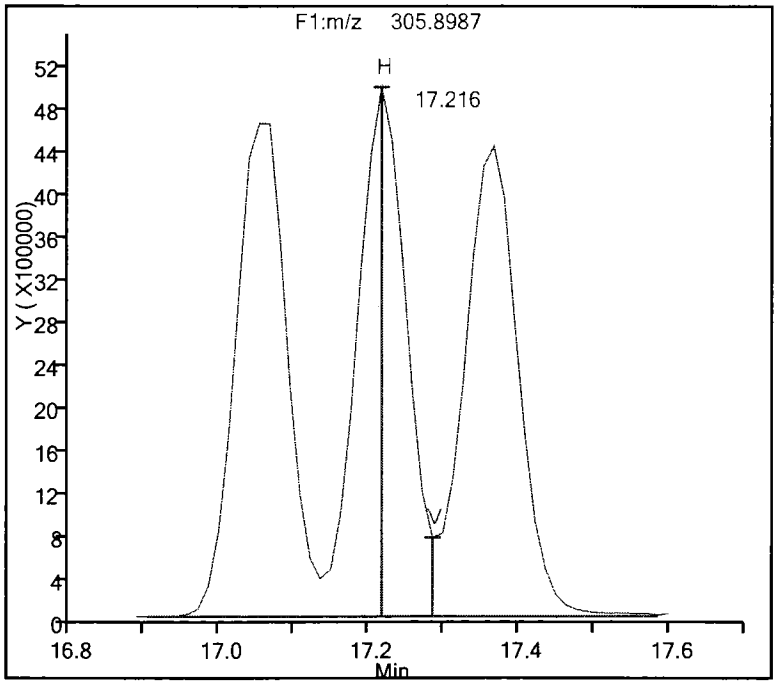
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 734095
H (Peak Height) = 4929679

%R = 15 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 11/12/2013 21:58

Analysis Batch Number: 29775 End Date: 11/13/2013 08:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-29775/1		11/12/2013 21:58	1	12NO1311D2_001.d	DB-225 0.32(mm)
CCV 320-29775/2		11/12/2013 22:36	1	12NO1311D2_002.d	DB-225 0.32(mm)
ZZZZZ		11/12/2013 23:15	1		DB-225 0.32(mm)
ZZZZZ		11/13/2013 00:33	1		DB-225 0.32(mm)
320-4670-55 RA	TF2-004/5-SS-DUP05-1013 RA	11/13/2013 01:12	1	12NO1311D2_006.d	DB-225 0.32(mm)
320-4670-56 RA	TF2-003-SS1011-000.8 RA	11/13/2013 01:51	1	12NO1311D2_007.d	DB-225 0.32(mm)
320-4670-57 RA	TF2-003-SS1012-000.7 RA	11/13/2013 02:30	1	12NO1311D2_008.d	DB-225 0.32(mm)
320-4670-58 RA	TF2-003-SS1013-000.7 RA	11/13/2013 03:09	1	12NO1311D2_009.d	DB-225 0.32(mm)
320-4670-59 RA	TF2-003-SS1014-0001 RA	11/13/2013 03:48	1	12NO1311D2_010.d	DB-225 0.32(mm)
ZZZZZ		11/13/2013 04:26	1		DB-225 0.32(mm)
320-4670-61 RA	TF2-003-SS1016-000.9 RA	11/13/2013 05:05	1	12NO1311D2_012.d	DB-225 0.32(mm)
320-4670-62 RA	TF2-003-SS1017-000.8 RA	11/13/2013 05:44	1	12NO1311D2_013.d	DB-225 0.32(mm)
320-4670-18 RA	TF2-004/5-SS1038-000.7 RA	11/13/2013 06:23	1	12NO1311D2_014.d	DB-225 0.32(mm)
320-4670-19 RA	TF2-004/5-SS1037-000.7 RA	11/13/2013 07:02	1	12NO1311D2_015.d	DB-225 0.32(mm)
ZZZZZ		11/13/2013 07:41	1		DB-225 0.32(mm)
CCV 320-29775/17		11/13/2013 08:20	1	12NO1311D2_017.d	DB-225 0.32(mm)

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
12NO1311D2	1	CPS 111213	DB225 CPSM HRDXNCP_00019				1.00000	
12NO1311D2	2	CCV 111213	CS-4 HRDXNL4_00012				1.00000	
12NO1311D2	3	RB 111213	Reagent Blank C-14				1.00000	
12NO1311D2	4	320-29176	280-48075-B-28-B	20	1613B/Solid	79	10.00000	g
12NO1311D2	5	320-28431	320-4670-A-54-A	20	8290/Solid	74	10.00000	g
12NO1311D2	6	320-28431	320-4670-A-55-A	20	8290/Solid		10.00000	g
12NO1311D2	7	320-28431	320-4670-A-56-A	20	8290/Solid		10.00000	g
12NO1311D2	8	320-28431	320-4670-A-57-A	20	8290/Solid		10.00000	g
12NO1311D2	9	320-28431	320-4670-A-58-A	20	8290/Solid		10.00000	g
12NO1311D2	10	320-28431	320-4670-A-59-A	20	8290/Solid		10.00000	g
12NO1311D2	11	320-28431	320-4670-A-60-A	20	8290/Solid		10.00000	g
12NO1311D2	12	320-28431	320-4670-A-61-A	20	8290/Solid		10.00000	g
12NO1311D2	13	320-28431	320-4670-A-62-A	20	8290/Solid		10.00000	g
12NO1311D2	14	320-28458	320-4670-A-18-A	20	8290/Solid	74	10.00000	g
12NO1311D2	15	320-28458	320-4670-A-19-A	20	8290/Solid		10.00000	g
12NO1311D2	16	RB 111213A	Reagent Blank C-14				1.00000	
12NO1311D2	17	CCV 111213A	CS-4 HRDXNL4_00012				1.00000	
12NO1311D2	18						1.00000	
12NO1311D2	19						1.00000	
12NO1311D2	20						1.00000	
12NO1311D2	21						1.00000	
12NO1311D2	22						1.00000	
12NO1311D2	23						1.00000	
12NO1311D2	24		ALM 11-12-13				1.00000	
12NO1311D2	25						1.00000	

logfile checked
11-13-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29775/2 Calibration Date: 11/12/2013 22:36

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 12NO1311D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.242		10.3	10.0	3.1	20.0
2,3,7,8-TCDF	AveID	1.066	1.132		10.6	10.0	6.3	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9547		97.4	100	-2.6	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.648		119	100	18.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.406		5.17	5.00	3.4	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29775/17 Calibration Date: 11/13/2013 08:20

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 12NO1311D2_017.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.225		10.2	10.0	1.7	20.0
2,3,7,8-TCDF	AveID	1.066	1.133		10.6	10.0	6.3	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9600		97.9	100	-2.1	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.622		117	100	16.8	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.370		5.04	5.00	0.7	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29775/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 11/12/2013 21:58

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.29	21

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\11D5\20131113-8644.b\12NO1311D2_001.d
Injection Date: 12-Nov-2013 21:58:05 Instrument ID: 11D5
Lims ID: CPS Lab Sample ID: CPS 320-29776/1-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_11D2 Limit Group: HR - 8290 - ICAL

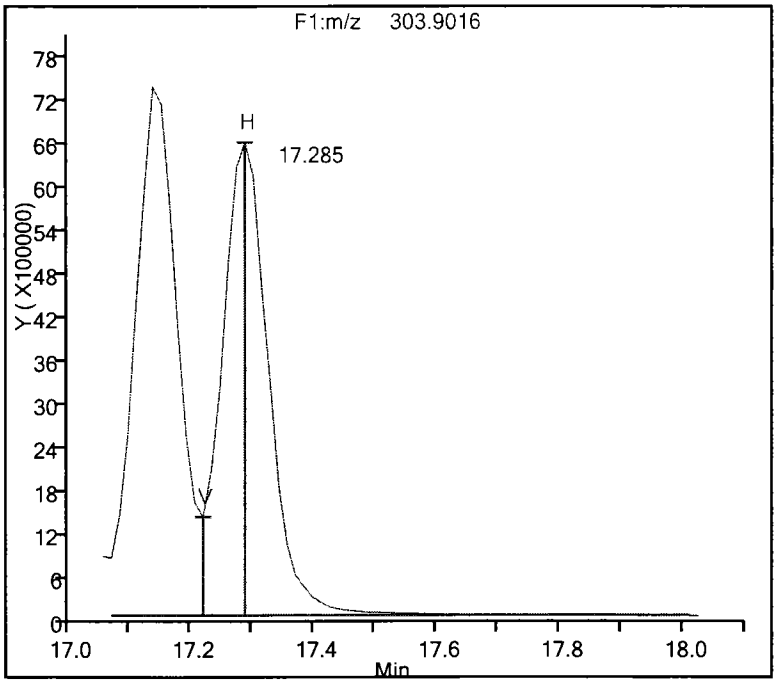
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1373599
H (Peak Height) = 6541215

%R = 21 <= 25
Passed



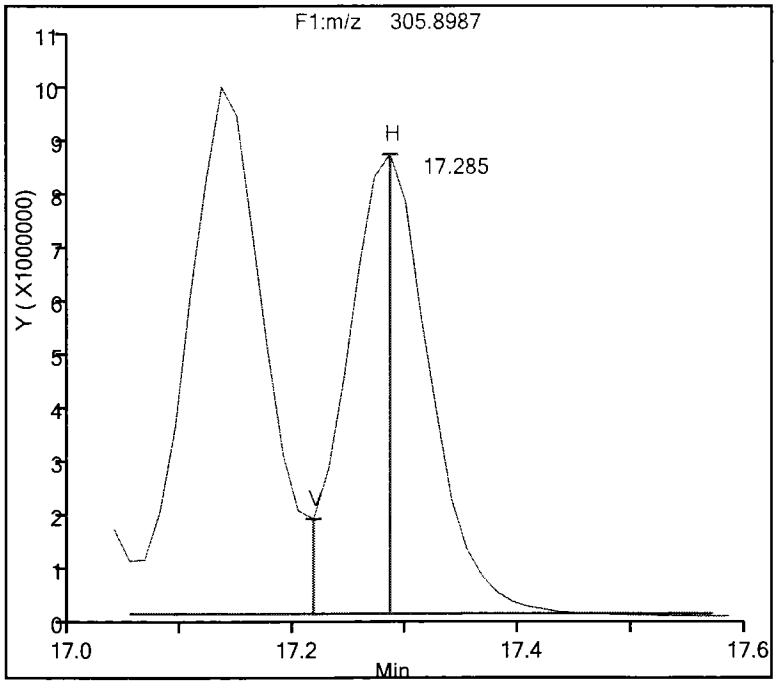
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1785379
H (Peak Height) = 8305699

%R = 21 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 12/16/2013 22:38

Analysis Batch Number: 32057 End Date: 12/17/2013 07:47

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-32057/2		12/16/2013 22:38	1	16DE13A11D2_002.d	DB-225 0.32(mm)
CPS 320-32057/3		12/16/2013 23:17	1	16DE13A11D2_003.d	DB-225 0.32(mm)
ZZZZZ		12/17/2013 00:01	1		DB-225 0.32(mm)
320-4670-2 RA	TF2-004/5-SS1026-000.8 RA	12/17/2013 00:40	1	16DE13A11D2_005.d	DB-225 0.32(mm)
320-4670-5 RA	TF2-004/5-SS1022-000.9 RA	12/17/2013 01:19	1	16DE13A11D2_006.d	DB-225 0.32(mm)
320-4670-6 RA	TF2-004/5-SS1021-000.7 RA	12/17/2013 01:58	1	16DE13A11D2_007.d	DB-225 0.32(mm)
320-4670-7 RA	TF2-004/5-SS1020-0001 RA	12/17/2013 02:36	1	16DE13A11D2_008.d	DB-225 0.32(mm)
320-4670-9 RA	TF2-004/5-SS1031-000.8 RA	12/17/2013 03:15	1	16DE13A11D2_009.d	DB-225 0.32(mm)
320-4670-10 RA	TF2-004/5-SS-DUP01-1013 RA	12/17/2013 03:54	1	16DE13A11D2_010.d	DB-225 0.32(mm)
320-4670-11 RA	TF2-004/5-SS1030-000.6 RA	12/17/2013 04:33	1	16DE13A11D2_011.d	DB-225 0.32(mm)
320-4670-14 RA	TF2-004/5-SS1027-0001 RA	12/17/2013 05:12	1	16DE13A11D2_012.d	DB-225 0.32(mm)
320-4670-14 MS RA	TF2-004/5-SS1027-0001 MS RA	12/17/2013 05:50	1	16DE13A11D2_013.d	DB-225 0.32(mm)
320-4670-14 MSD RA	TF2-004/5-SS1027-0001 MSD RA	12/17/2013 06:29	1	16DE13A11D2_014.d	DB-225 0.32(mm)
ZZZZZ		12/17/2013 07:08	1		DB-225 0.32(mm)
CCV 320-32057/16		12/17/2013 07:47	1	16DE13A11D2_016.d	DB-225 0.32(mm)

* Res check > 25%

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
16DE13A11D2	1	CPS 121613	DB225 CPSM HRDXNCP_00019				1.00000	
16DE13A11D2	2	CCV 121613	CS-4 HRDXNL4_00015				1.00000	
16DE13A11D2	3	CPS 121613A	DB225 CPSM HRDXNCP_00019				1.00000	
16DE13A11D2	4	RB 121613	Reagent Blank C-14				1.00000	
16DE13A11D2	5	320-28458	320-4670-A-2-A	20	8290/Solid	74	10.00000	g
16DE13A11D2	6	320-28458	320-4670-A-5-A	20	8290/Solid		10.00000	g
16DE13A11D2	7	320-28458	320-4670-A-6-A	20	8290/Solid		10.00000	g
16DE13A11D2	8	320-28458	320-4670-A-7-A	20	8290/Solid		10.00000	g
16DE13A11D2	9	320-28458	320-4670-A-9-A	20	8290/Solid		10.00000	g
16DE13A11D2	10	320-28458	320-4670-A-10-A	20	8290/Solid		10.00000	g
16DE13A11D2	11	320-28458	320-4670-A-11-A	20	8290/Solid		10.00000	g
16DE13A11D2	12	320-28458	320-4670-A-14-A	20	8290/Solid		10.00000	g
16DE13A11D2	13	320-28458	320-4670-A-14-B MS	20	8290/Solid		10.00000	g
16DE13A11D2	14	320-28458	320-4670-A-14-C MSD	20	8290/Solid		10.00000	g
16DE13A11D2	15	RB 121613A	Reagent Blank C-14				1.00000	
16DE13A11D2	16	CCV 121613A	CS-4 HRDXNL4_00015				1.00000	
16DE13A11D2	17						1.00000	
16DE13A11D2	18						1.00000	
16DE13A11D2	19						1.00000	
16DE13A11D2	20						1.00000	
16DE13A11D2	21						1.00000	
16DE13A11D2	22						1.00000	
16DE13A11D2	23		ALM 12-16-13				1.00000	
16DE13A11D2	24						1.00000	

Logfile checked
12-17-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32057/2 Calibration Date: 12/16/2013 22:38

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 16DE13A11D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.273		10.6	10.0	5.6	20.0
2,3,7,8-TCDF	AveID	1.066	1.136		10.7	10.0	6.6	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9734		99.3	100	-0.7	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.612		116	100	16.1	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.586		5.83	5.00	16.7	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32057/16 Calibration Date: 12/17/2013 07:47

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 16DE13A11D2_016.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.262		10.5	10.0	4.8	20.0
2,3,7,8-TCDF	AveID	1.066	1.075		10.1	10.0	0.9	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9851		100	100	0.5	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.666		120	100	20.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.601		5.89	5.00	17.8	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32057/3 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 12/16/2013 23:17

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.11	26

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\11D5\20131217-9285.b\16DE13A11D2_003.d
Injection Date: 16-Dec-2013 23:17:43 Instrument ID: 11D5
Lims ID: CPS Lab Sample ID: CPS 320-32057/3-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_11D2 Limit Group: HR - 8290 - ICAL

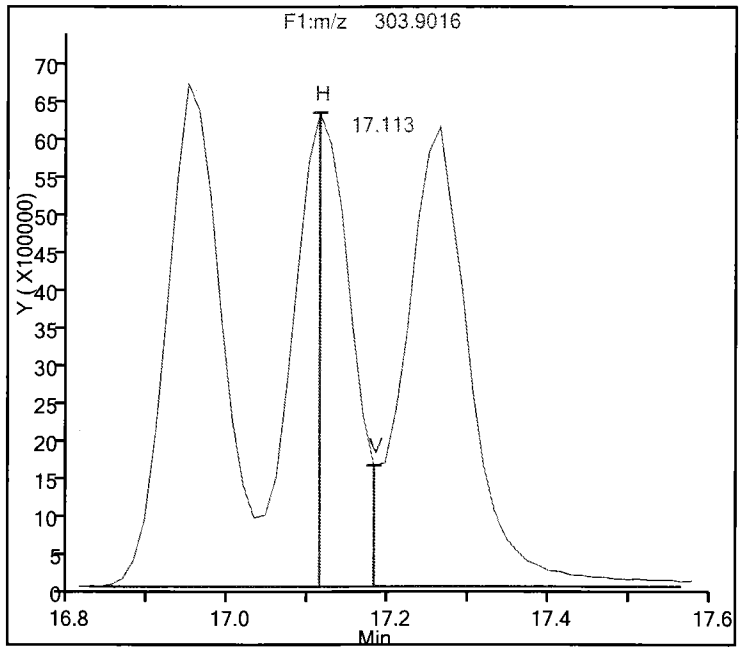
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1620348
H (Peak Height) = 6331772

%R = 26 <= 25
Passed



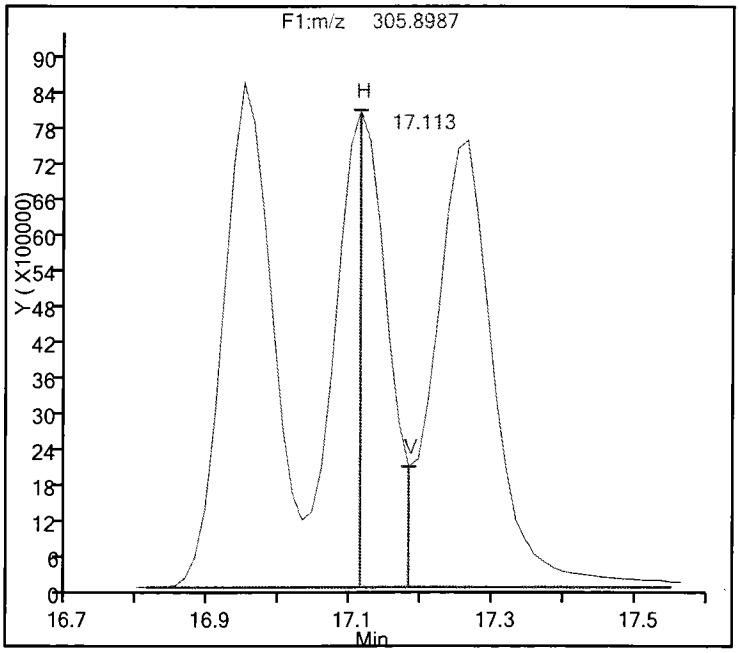
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2030452
H (Peak Height) = 8037748

%R = 25 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 12/17/2013 22:47

Analysis Batch Number: 32221 End Date: 12/18/2013 09:16

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32221/1		12/17/2013 22:47	1	17DE1311D2_001.d	DB-225 0.32(mm)
CCV 320-32221/2		12/17/2013 23:26	1	17DE1311D2_002.d	DB-225 0.32(mm)
ZZZZZ		12/18/2013 00:05	1		DB-225 0.32(mm)
320-4670-24 RA	TF2-004/5-SS1033-000.8 RA	12/18/2013 00:44	1	17DE1311D2_004.d	DB-225 0.32(mm)
320-4670-28 RA	TF2-004/5-SS1046-000.5 RA	12/18/2013 01:22	1	17DE1311D2_005.d	DB-225 0.32(mm)
320-4670-32 RA	TF2-004/5-SS1041-000.7 RA	12/18/2013 02:01	1	17DE1311D2_006.d	DB-225 0.32(mm)
320-4670-33 RA	TF2-004/5-SS-DUP03-1013 RA	12/18/2013 02:40	1	17DE1311D2_007.d	DB-225 0.32(mm)
320-4670-36 RA	TF2-004/5-SS1056-000.6 RA	12/18/2013 03:19	1	17DE1311D2_008.d	DB-225 0.32(mm)
320-4670-37 RA	TF2-004/5-SS1055-000.8 RA	12/18/2013 03:58	1	17DE1311D2_009.d	DB-225 0.32(mm)
320-4670-38 RA	TF2-004/5-SS1054-000.6 RA	12/18/2013 04:37	1	17DE1311D2_010.d	DB-225 0.32(mm)
320-4670-38 MS RA	TF2-004/5-SS1054-000.6 MS RA	12/18/2013 05:16	1	17DE1311D2_011.d	DB-225 0.32(mm)
320-4670-38 MSD RA	TF2-004/5-SS1054-000.6 MSD RA	12/18/2013 05:55	1	17DE1311D2_012.d	DB-225 0.32(mm)
320-4670-41 RA	TF2-004/5-SS1051-000.8 RA	12/18/2013 06:34	1	17DE1311D2_013.d	DB-225 0.32(mm)
320-4670-44 RA	TF2-004/5-SS1061-000.6 RA	12/18/2013 07:12	1	17DE1311D2_014.d	DB-225 0.32(mm)
320-4670-45 RA	TF2-004/5-SS-DUP04-1013 RA	12/18/2013 07:51	1	17DE1311D2_015.d	DB-225 0.32(mm)
ZZZZZ		12/18/2013 08:30	1		DB-225 0.32(mm)
CCV 320-32221/17		12/18/2013 09:16	1	17DE1311AD2_.d	DB-225 0.32(mm)

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
17DE1311D2	1	CPS 121713	DB225 CPSM HRDXNCP_00019				1.00000	
17DE1311D2	2	CCV 121713	CS-4 HRDXNL4_00015				1.00000	
17DE1311D2	3	RB 121713	Reagent Blank C-14				1.00000	
17DE1311D2	4	320-28540	320-4670-A-24-A	20	8290/Solid	75	10.00000	g
17DE1311D2	5	320-28540	320-4670-A-28-A	20	8290/Solid		10.00000	g
17DE1311D2	6	320-28540	320-4670-A-32-A	20	8290/Solid		10.00000	g
17DE1311D2	7	320-28540	320-4670-A-33-A	20	8290/Solid		10.00000	g
17DE1311D2	8	320-28540	320-4670-A-36-A	20	8290/Solid		10.00000	g
17DE1311D2	9	320-28540	320-4670-A-37-A	20	8290/Solid		10.00000	g
17DE1311D2	10	320-28540	320-4670-A-38-A	20	8290/Solid		10.00000	g
17DE1311D2	11	320-28540	320-4670-A-38-B MS	20	8290/Solid		10.00000	g
17DE1311D2	12	320-28540	320-4670-A-38-C MSD	20	8290/Solid		10.00000	g
17DE1311D2	13	320-28540	320-4670-A-41-A	20	8290/Solid		10.00000	g
17DE1311D2	14	320-28546	320-4670-A-44-A	20	8290/Solid	75	10.00000	g
17DE1311D2	15	320-28546	320-4670-A-45-A	20	8290/Solid		10.00000	g
17DE1311D2	16	RB 121713A	Reagent Blank C-14				1.00000	
17DE1311D2	17	CCV 121713A	CS-4 HRDXNL4_00015				1.00000	
17DE1311D2	18						1.00000	
17DE1311D2	19						1.00000	
17DE1311D2	20						1.00000	
17DE1311D2	21						1.00000	
17DE1311D2	22						1.00000	
17DE1311D2	23						1.00000	
17DE1311D2	24		ALM 12-17-13				1.00000	
17DE1311D2	25						1.00000	

logfile checked
12-18-13 ALM

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32221/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 12/17/2013 22:47

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.08	22

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\11D5\20131219-9335.b\17DE1311D2_001.d
Injection Date: 17-Dec-2013 22:47:28 Instrument ID: 11D5
Lims ID: CPS Lab Sample ID: CPS 320-32221/1-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_11D2 Limit Group: HR - 8290 - ICAL

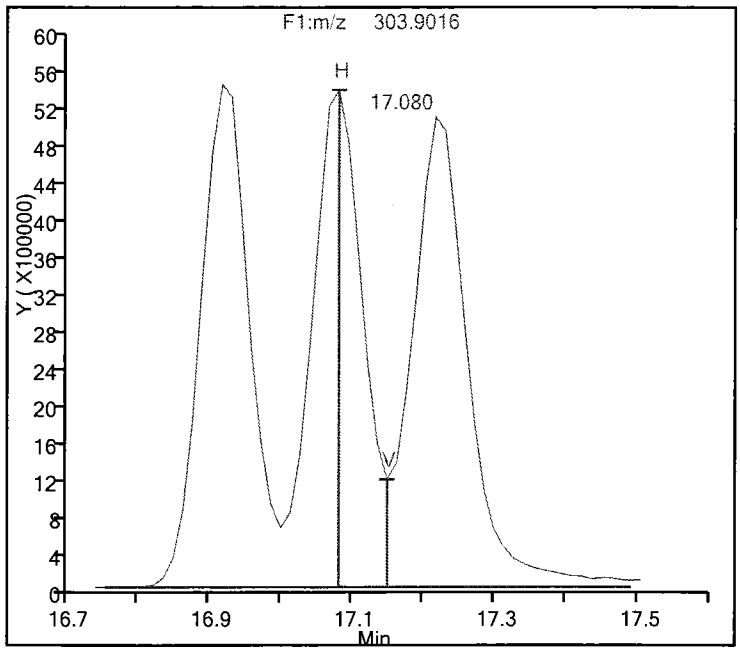
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1167398
H (Peak Height) = 5383206

%R = 22 <= 25
Passed



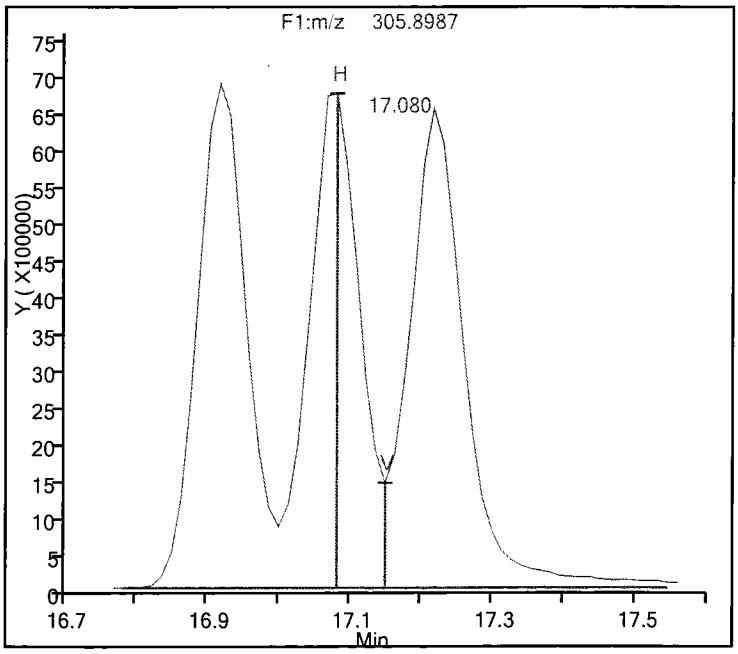
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1428748
H (Peak Height) = 6735628

%R = 21 <= 25
Passed



FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32221/2 Calibration Date: 12/17/2013 23:26

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 17DE1311D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.260		10.5	10.0	4.6	20.0
2,3,7,8-TCDF	AveID	1.066	1.142		10.7	10.0	7.2	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	1.002		102	100	2.2	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.716		124	100	23.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.657		6.10	5.00	21.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32221/17 Calibration Date: 12/18/2013 09:16

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 17DE1311AD2_.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.163		9.65	10.0	-3.5	20.0
2,3,7,8-TCDF	AveID	1.066	1.102		10.3	10.0	3.4	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9866		101	100	0.6	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.519		109	100	9.4	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.601		5.89	5.00	17.8	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 12/19/2013 00:35

Analysis Batch Number: 32234 End Date: 12/19/2013 09:00

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32234/1		12/19/2013 00:35	1	18DE1311D2_001.d	DB-225 0.32(mm)
CCV 320-32234/2		12/19/2013 01:14	1	18DE1311D2_002.d	DB-225 0.32(mm)
ZZZZZ		12/19/2013 01:52	1		DB-225 0.32(mm)
320-4670-46 RA	TF2-004/5-SS1067-000.7 RA	12/19/2013 02:31	1	18DE1311D2_004.d	DB-225 0.32(mm)
320-4670-49 RA	TF2-004/5-SS1059-000.6 RA	12/19/2013 03:10	1	18DE1311D2_005.d	DB-225 0.32(mm)
320-4670-50 RA	TF2-004/5-SS1058-000.5 RA	12/19/2013 03:49	1	18DE1311D2_006.d	DB-225 0.32(mm)
320-4670-52 RA	TF2-004/5-SS1064-000.6 RA	12/19/2013 04:28	1	18DE1311D2_007.d	DB-225 0.32(mm)
320-4670-52 MS RA	TF2-004/5-SS1064-000.6 MS RA	12/19/2013 05:07	1	18DE1311D2_008.d	DB-225 0.32(mm)
320-4670-52 MSD RA	TF2-004/5-SS1064-000.6 MSD RA	12/19/2013 05:45	1	18DE1311D2_009.d	DB-225 0.32(mm)
320-4670-53 RA	TF2-004/5-SS1063-000.6 RA	12/19/2013 06:24	1	18DE1311D2_010.d	DB-225 0.32(mm)
320-4670-54 RA	TF2-004/5-SS1068-000.5 RA	12/19/2013 07:03	1	18DE1311D2_011.d	DB-225 0.32(mm)
320-4670-63 RA	TF2-003-SS1018-000.8 RA	12/19/2013 07:42	1	18DE1311D2_012.d	DB-225 0.32(mm)
ZZZZZ		12/19/2013 08:21	1		DB-225 0.32(mm)
CCV 320-32234/14		12/19/2013 09:00	1	18DE1311D2_014.d	DB-225 0.32(mm)

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
18DE1311D2	1	CPS 121813	DB225 CPSM HRDXNCP_00019				1.00000	
18DE1311D2	2	CCV 121813	CS-4 HRDXNL4_00015				1.00000	
18DE1311D2	3	RB 121813	Reagent Blank C-14				1.00000	
18DE1311D2	4	320-28546	320-4670-A-46-A	20	8290/Solid	75	10.00000	g
18DE1311D2	5	320-28431	320-4670-A-49-A	20	8290/Solid	74	10.00000	g
18DE1311D2	6	320-28431	320-4670-A-50-A	20	8290/Solid		10.00000	g
18DE1311D2	7	320-28431	320-4670-A-52-A	20	8290/Solid		10.00000	g
18DE1311D2	8	320-28431	320-4670-A-52-B MS	20	8290/Solid		10.00000	g
18DE1311D2	9	320-28431	320-4670-A-52-C MSD	20	8290/Solid		10.00000	g
18DE1311D2	10	320-28431	320-4670-A-53-A	20	8290/Solid		10.00000	g
18DE1311D2	11	320-28431	320-4670-A-54-A	20	8290/Solid		10.00000	g
18DE1311D2	12	320-28431	320-4670-A-63-A	20	8290/Solid		10.00000	g
18DE1311D2	13	RB 121813A	Reagent Blank C-14				1.00000	
18DE1311D2	14	CCV 121813A	CS-4 HRDXNL4_00015				1.00000	
18DE1311D2	15						1.00000	
18DE1311D2	16						1.00000	
18DE1311D2	17						1.00000	
18DE1311D2	18						1.00000	
18DE1311D2	19						1.00000	
18DE1311D2	20						1.00000	
18DE1311D2	21		ALM 12-18-13				1.00000	
18DE1311D2	22						1.00000	

logfile Checked
12/19/13 JRB

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32234/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 12/19/2013 00:35

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.07	22

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\11D5\20131219-9340.b\18DE1311D2_001.d
Injection Date: 19-Dec-2013 00:35:13 Instrument ID: 11D5
Lims ID: CPS Lab Sample ID: CPS 320-32234/1-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_11D2 Limit Group: HR - 8290 - ICAL

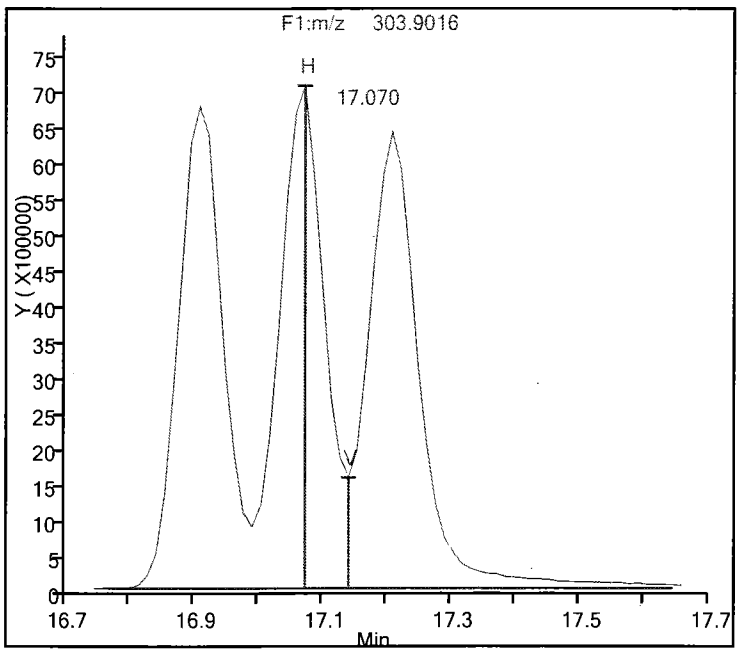
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1545396
H (Peak Height) = 7009460

%R = 22 <= 25
Passed



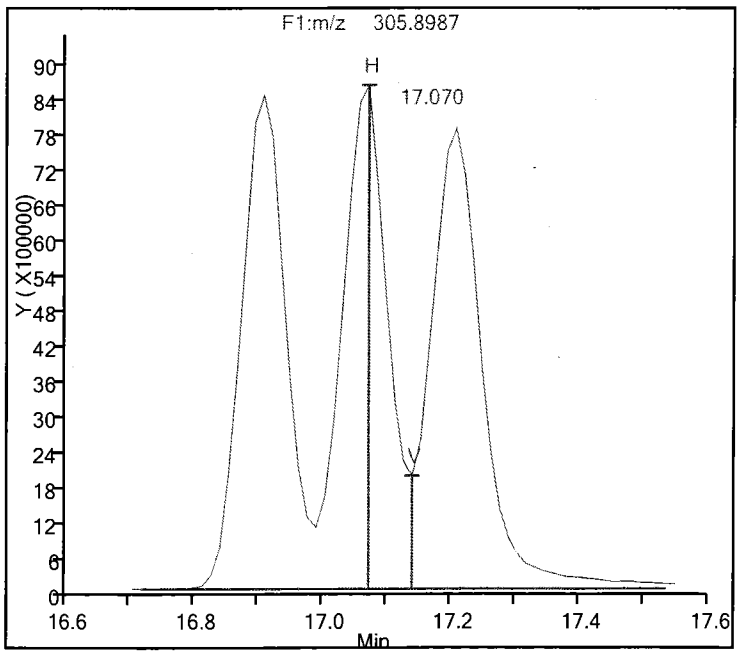
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1931732
H (Peak Height) = 8617940

%R = 22 <= 25
Passed



FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32234/2 Calibration Date: 12/19/2013 01:14

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 18DE1311D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.308		10.9	10.0	8.6	20.0
2,3,7,8-TCDF	AveID	1.066	1.096		10.3	10.0	2.8	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9380		95.7	100	-4.3	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.645		119	100	18.5	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.591		5.85	5.00	17.1	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32234/14 Calibration Date: 12/19/2013 09:00

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 18DE1311D2_014.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.251		10.4	10.0	3.9	20.0
2,3,7,8-TCDF	AveID	1.066	0.9340		8.77	10.0	-12.3	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9867		101	100	0.6	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.586		114	100	14.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.605		5.90	5.00	18.0	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 4D5 Start Date: 07/10/2013 17:23

Analysis Batch Number: 20434 End Date: 07/10/2013 23:51

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-20434/1		07/10/2013 17:23	1	10JL134D5_001.d	DB-5 0.32(mm)
IC 320-20434/3		07/10/2013 18:49	1	10JL134D5_003.d	DB-5 0.32(mm)
IC 320-20434/4		07/10/2013 19:32	1	10JL134D5_004.d	DB-5 0.32(mm)
IC 320-20434/5		07/10/2013 20:15	1	10JL134D5_005.d	DB-5 0.32(mm)
IC 320-20434/6		07/10/2013 20:58	1	10JL134D5_006.d	DB-5 0.32(mm)
IC 320-20434/7		07/10/2013 21:42	1	10JL134D5_007.d	DB-5 0.32(mm)
ZZZZZ		07/10/2013 22:25	1		DB-5 0.32(mm)
ICV 320-20434/9		07/10/2013 23:08	1	10JL134D5_009.d	DB-5 0.32(mm)
CPS 320-20434/10		07/10/2013 23:51	1		DB-5 0.32(mm)

CAL PCDD/PCDF

8290

PCDD/PCDF
CAL. INST 4D5

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
10JL134D5	1	CPS 071013	DB-5 CPSM HRDXNCP_00018				1.00000	
10JL134D5	2	IC 071013	CS-1 HRDXNL1_00012				1.00000	
10JL134D5	3	IC 071013A	CS-2 HRDXNL2_00008				1.00000	
10JL134D5	4	IC 071013B	CS-3 HRDXNL3_00007				1.00000	
10JL134D5	5	IC 071013C	CS-4 HRDXNL4_00011				1.00000	
10JL134D5	6	IC 071013D	CS-5 HRDXNL5_00012				1.00000	
10JL134D5	7	IC 071013E	CS-6 HRDXNL6_00006				1.00000	
10JL134D5	8	RB 071013	Reagent Blank C-14				1.00000	
10JL134D5	9	ICV 071013	2nd Source HRDXNIC_00013				1.00000	
10JL134D5	10	CPS 071013A	DB-5 CPSM HRDXNCP_00018				1.00000	
10JL134D5	11						1.00000	
10JL134D5	12						1.00000	
10JL134D5	13						1.00000	
10JL134D5	14						1.00000	
10JL134D5	15						1.00000	
10JL134D5	16						1.00000	
10JL134D5	17						1.00000	
10JL134D5	18						1.00000	
10JL134D5	19		ALM 07-10-13				1.00000	
10JL134D5	20						1.00000	

logfile checked
7-11-13
SMA

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 20434

SDG No.:

Instrument ID: 4D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/10/2013 18:49 Calibration End Date: 07/10/2013 21:42 Calibration ID: 3549

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-20434/3	10JL134D5_003.d
Level 2	IC 320-20434/4	10JL134D5_004.d
Level 3	IC 320-20434/5	10JL134D5_005.d
Level 4	IC 320-20434/6	10JL134D5_006.d
Level 5	IC 320-20434/7	10JL134D5_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.0552	1.0297	0.9249	0.9222	0.9434	AveID		0.9751				6.4		20.0			
2,3,7,8-TCDD	1.2455	1.2032	1.1420	1.1503	1.1756	AveID		1.1833				3.6		20.0			
1,2,3,7,8-PeCDF	1.2046	1.2534	1.1516	1.1718	1.1956	AveID		1.1954				3.2		20.0			
2,3,4,7,8-PeCDF	1.1698	1.1965	1.0832	1.0948	1.1172	AveID		1.1323				4.3		20.0			
1,2,3,7,8-PeCDD	1.1658	1.1580	1.0800	1.0949	1.1254	AveID		1.1248				3.4		20.0			
1,2,3,4,7,8-HxCDF	1.1031	1.1217	1.0263	1.0478	1.0420	AveID		1.0682				3.9		20.0			
1,2,3,6,7,8-HxCDF	1.1599	1.2323	1.0989	1.0768	1.0681	AveID		1.1272				6.1		20.0			
2,3,4,6,7,8-HxCDF	1.0903	1.1628	1.0298	1.0300	1.0324	AveID		1.0690				5.5		20.0			
1,2,3,4,7,8-HxCDD	1.1433	1.2423	1.2342	1.1477	1.1783	AveID		1.1892				3.9		20.0			
1,2,3,6,7,8-HxCDD	1.1477	1.2180	1.2639	1.1495	1.1508	AveID		1.1860				4.4		20.0			
1,2,3,7,8,9-HxCDD	1.3299	1.3727	1.3421	1.2659	1.2853	AveID		1.3192				3.3		20.0			
1,2,3,7,8,9-HxCDF	1.0286	1.1069	0.9622	0.9567	0.9866	AveID		1.0082				6.2		20.0			
1,2,3,4,6,7,8-HpCDF	1.5578	1.5991	1.4745	1.4798	1.5007	AveID		1.5224				3.6		20.0			
1,2,3,4,6,7,8-HpCDD	1.1163	1.1925	1.1190	1.1362	1.1542	AveID		1.1436				2.7		20.0			
1,2,3,4,7,8,9-HpCDF	1.2778	1.3520	1.2428	1.2284	1.3007	AveID		1.2803				3.8		20.0			
OCDD	1.2325	1.2814	1.1720	1.1930	1.1807	AveID		1.2119				3.7		20.0			
OCDF	1.4580	1.5039	1.4036	1.4267	1.4382	AveID		1.4461				2.6		20.0			
13C-2,3,7,8-TCDF	1.6223	1.5832	1.6098	1.6122	1.6275	Ave		1.6110				1.1		30.0			
13C-2,3,7,8-TCDD	0.9971	0.9852	1.0028	1.0070	1.0168	Ave		1.0017				1.2		30.0			
13C-1,2,3,7,8-PeCDF	1.2636	1.2535	1.2795	1.2589	1.2419	Ave		1.2595				1.1		30.0			
13C-1,2,3,7,8-PeCDD	0.7563	0.7834	0.7743	0.7638	0.7509	Ave		0.7657				1.7		30.0			
13C-1,2,3,4,7,8-HxCDF	1.2570	1.2451	1.3747	1.3491	1.3145	Ave		1.3081				4.3		30.0			
13C-1,2,3,6,7,8-HxCDD	0.8795	0.8839	0.8328	0.9005	0.8643	Ave		0.8722				2.9		30.0			
13C-1,2,3,4,6,7,8-HpCDF	0.8840	0.9176	0.9605	0.9121	0.8920	Ave		0.9132				3.3		30.0			
13C-1,2,3,4,6,7,8-HpCDD	0.7167	0.7565	0.7804	0.7293	0.7376	Ave		0.7441				3.3		30.0			
13C-OCDD	0.5996	0.6359	0.6591	0.5878	0.6418	Ave		0.6249				4.8		30.0			
37Cl4-2,3,7,8-TCDD	1.2664	1.1790	1.2072	1.2873	1.3112	Ave		1.2502				4.4		30.0			

Note: The ml coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 20434

SDG No.:

Instrument ID: 4D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/10/2013 18:49 Calibration End Date: 07/10/2013 21:42 Calibration ID: 3549

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-20434/3	10JL134D5_003.d
Level 2	IC 320-20434/4	10JL134D5_004.d
Level 3	IC 320-20434/5	10JL134D5_005.d
Level 4	IC 320-20434/6	10JL134D5_006.d
Level 5	IC 320-20434/7	10JL134D5_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	448612	1786296	7303095	35089428	136562862	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	311599	1286359	5666170	27574443	106585391	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	2589107	11927050	49438659	243558754	916355230	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	2583143	11399149	46875796	226794540	855003864	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	1539395	6963938	28201277	137731215	522939511	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	2076287	9278126	37449790	179813533	688283521	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	2166338	10030012	40164378	184515905	708503184	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	1967516	9325543	37623451	177368915	685720163	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1529151	7384467	27908750	133735227	521003390	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	1482153	7223267	28658941	135165140	514633642	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	1786816	8159790	30254709	147619431	570568088	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	1894347	9161943	35622988	165100121	659335528	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	1835099	9146026	35773798	161766956	636834418	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	1091301	5662971	22006572	99727789	406807355	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	1628232	7802764	30116813	134096328	552304908	2.50	10.0	50.0	200	1000
OCDD		AveID	1875746	9417476	36063662	156008884	673683716	5.00	20.0	100	400	2000
OCDF		AveID	2216292	10724991	42154009	184572023	808500731	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	81255203	88457942	78173463	96074983	73282546	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	49831406	55505173	48577223	60133827	45824847	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	87723605	96825261	86617937	105100073	77643074	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	53031213	61167652	53068777	64212642	47038255	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	46855988	51911947	45605648	52721291	41915948	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	54198004	60572168	46164561	59658027	45436276	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	29628323	34780835	29347576	33139639	26862521	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	39535905	47315424	40267945	43880020	35508307	100	100	100	100	100
13C-OCDD	13CHx(	Ave	60228891	72212318	60051436	63407919	56547204	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	357211	1481175	6618103	34643855	132529220	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-20434/1 Instrument ID (1): 4D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 07/10/2013 1[illegible]:23

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.53	17

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\4D5\20130711-5766.b\10JL134D5_001.d		
Injection Date:	10-Jul-2013 17:23:05	Limit Group:	HR - 8290 - ICAL
Client ID:		Instrument ID:	4D5
Lims Batch ID:	20434	Lims Sample ID:	1
Operator ID:		Injection Vol:	2.0 ul
Column Type:	DB-5	Column Dia:	0.32 mm

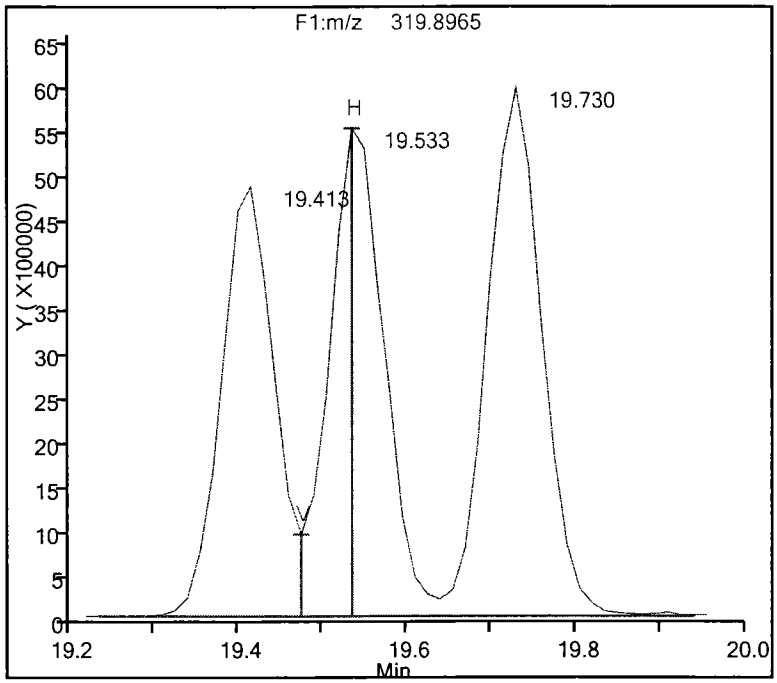
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 920198
H (Peak Height) = 5471622

%R = 17 <= 25
Passed



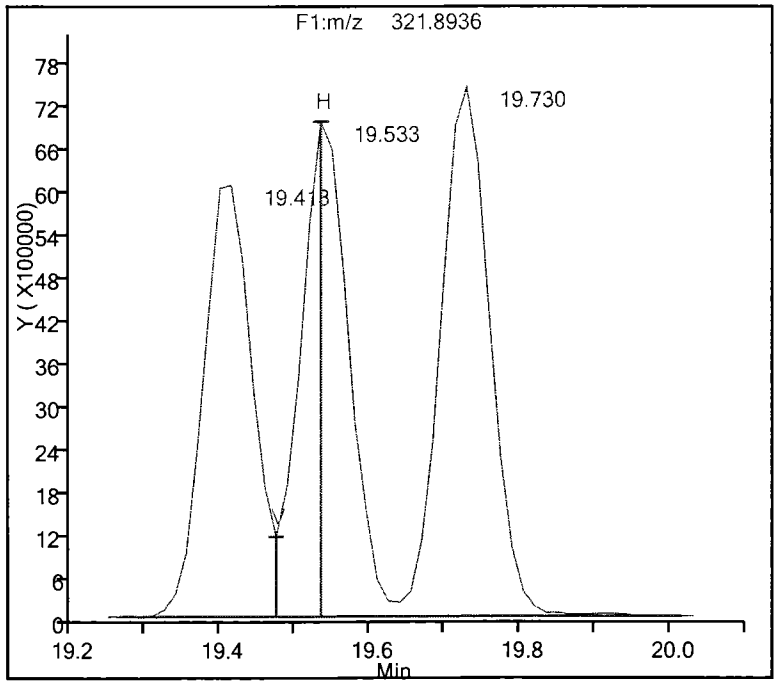
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1109682
H (Peak Height) = 6902450

%R = 16 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 4D5 Start Date: 10/28/2013 20:47

Analysis Batch Number: 28581 End Date: 10/29/2013 06:57

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-28581/1		10/28/2013 20:47	1	28OC13C4D5_001.d	DB-5 0.32(mm)
CCV 320-28581/2		10/28/2013 21:30	1	28OC13C4D5_002.d	DB-5 0.32(mm)
ZZZZZ		10/28/2013 22:19	1		DB-5 0.32(mm)
MB 320-28374/1-A		10/28/2013 23:02	1	28OC13C4D5_004.d	DB-5 0.32(mm)
LCS 320-28374/2-A		10/28/2013 23:45	1	28OC13C4D5_005.d	DB-5 0.32(mm)
ZZZZZ		10/29/2013 00:28	1		DB-5 0.32(mm)
ZZZZZ		10/29/2013 01:11	1		DB-5 0.32(mm)
ZZZZZ		10/29/2013 01:55	1		DB-5 0.32(mm)
ZZZZZ		10/29/2013 02:38	1		DB-5 0.32(mm)
ZZZZZ		10/29/2013 03:21	1		DB-5 0.32(mm)
320-4670-17	TF2-SS-RB01-1013	10/29/2013 04:04	1	28OC13C4D5_011.d	DB-5 0.32(mm)
320-4670-34	TF2-SS-RB02-1013	10/29/2013 04:47	1	28OC13C4D5_012.d	DB-5 0.32(mm)
320-4670-66	TF2-003-SS-RB03-1013	10/29/2013 05:30	1	28OC13C4D5_013.d	DB-5 0.32(mm)
CCV 320-28581/15		10/29/2013 06:57	1	28OC13C4D5_015.d	DB-5 0.32(mm)

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
28OC13C4D5	1	CPS 102813	DB-5 CPSM HRDXNCP_00018				1.00000	
28OC13C4D5	2	CCV 102813	CS-4 HRDXNL4_00012				1.00000	
28OC13C4D5	3	RB 102813	Reagent Blank C-14				1.00000	
28OC13C4D5	4	320-28374	MB 320-28374/1-A	20	8290/Water	74	1.00000	L
28OC13C4D5	5	320-28374	LCS 320-28374/2-A	20	8290/Water		1.00000	L
28OC13C4D5	6	320-28374	490-38349-E-1-A	20	8290/Water		1.00000	L
28OC13C4D5	7	320-28374	490-38349-E-2-A	20	8290/Water		1.00000	L
28OC13C4D5	8	320-28374	490-38349-E-3-A	20	8290/Water		1.00000	L
28OC13C4D5	9	320-28374	490-38349-E-4-A	20	8290/Water		1.00000	L
28OC13C4D5	10	320-28374	490-38349-E-5-A	20	8290/Water		1.00000	L
28OC13C4D5	11	320-28374	320-4670-A-17-A	20	8290/Water		1.00000	L
28OC13C4D5	12	320-28374	320-4670-A-34-A	20	8290/Water		1.00000	L
28OC13C4D5	13	320-28374	320-4670-A-66-A	20	8290/Water		1.00000	L
28OC13C4D5	14	RB 102813A	Reagent Blank C-14				1.00000	
28OC13C4D5	15	CCV 102813A	CS-4 HRDXNL4_00012				1.00000	
28OC13C4D5	16						1.00000	
28OC13C4D5	17						1.00000	
28OC13C4D5	18						1.00000	
28OC13C4D5	19						1.00000	
28OC13C4D5	20						1.00000	
28OC13C4D5	21		ALM 10-28-13				1.00000	
28OC13C4D5	22						1.00000	

logfile checked
10-29-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-28581/2 Calibration Date: 10/28/2013 21:30

Instrument ID: 4D5 Calib Start Date: 07/10/2013 18:49

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/10/2013 21:42

Lab File ID: 28OC13C4D5_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9751	1.132		11.6	10.0	16.1	20.0
2,3,7,8-TCDD	AveID	1.183	1.165		9.85	10.0	-1.5	20.0
1,2,3,7,8-PeCDF	AveID	1.195	1.258		52.6	50.0	5.3	20.0
2,3,4,7,8-PeCDF	AveID	1.132	1.180		52.1	50.0	4.2	20.0
1,2,3,7,8-PeCDD	AveID	1.125	1.042		46.3	50.0	-7.3	20.0
1,2,3,4,7,8-HxCDF	AveID	1.068	1.035		48.5	50.0	-3.1	20.0
1,2,3,6,7,8-HxCDF	AveID	1.127	1.232		54.6	50.0	9.3	20.0
2,3,4,6,7,8-HxCDF	AveID	1.069	1.122		52.5	50.0	5.0	20.0
1,2,3,4,7,8-HxCDD	AveID	1.189	0.9533		40.1	50.0	-19.8	20.0
1,2,3,6,7,8-HxCDD	AveID	1.186	1.120		47.2	50.0	-5.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.319	1.109		42.0	50.0	-15.9	20.0
1,2,3,7,8,9-HxCDF	AveID	1.008	0.8973		44.5	50.0	-11.0	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.522	1.517		49.8	50.0	-0.4	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.144	1.082		47.3	50.0	-5.4	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.280	1.255		49.0	50.0	-2.0	20.0
OCDD	AveID	1.212	1.187		98.0	100	-2.0	20.0
OCDF	AveID	1.446	1.419		98.2	100	-1.8	20.0
13C-2,3,7,8-TCDF	Ave	1.611	1.571		97.5	100	-2.5	30.0
13C-2,3,7,8-TCDD	Ave	1.002	0.9620		96.0	100	-4.0	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.259	1.064		84.5	100	-15.5	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7657	0.6620		86.5	100	-13.5	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.308	1.396		107	100	6.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.8722	1.019		117	100	16.9	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9132	0.9176		100	100	0.5	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7441	0.7021		94.4	100	-5.6	30.0
13C-OCDD	Ave	0.6249	0.5402		173	200	-13.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.250	1.104		4.41	5.00	-11.7	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-28581/15 Calibration Date: 10/29/2013 06:57

Instrument ID: 4D5 Calib Start Date: 07/10/2013 18:49

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/10/2013 21:42

Lab File ID: 28OC13C4D5_015.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9751	1.109		11.4	10.0	13.8	20.0
2,3,7,8-TCDD	AveID	1.183	1.144		9.67	10.0	-3.3	20.0
1,2,3,7,8-PeCDF	AveID	1.195	1.345		56.2	50.0	12.5	20.0
2,3,4,7,8-PeCDF	AveID	1.132	1.276		56.3	50.0	12.7	20.0
1,2,3,7,8-PeCDD	AveID	1.125	1.029		45.8	50.0	-8.5	20.0
1,2,3,4,7,8-HxCDF	AveID	1.068	1.072		50.2	50.0	0.3	20.0
1,2,3,6,7,8-HxCDF	AveID	1.127	1.260		55.9	50.0	11.8	20.0
2,3,4,6,7,8-HxCDF	AveID	1.069	1.109		51.9	50.0	3.8	20.0
1,2,3,4,7,8-HxCDD	AveID	1.189	1.021		42.9	50.0	-14.1	20.0
1,2,3,6,7,8-HxCDD	AveID	1.186	1.324		55.8	50.0	11.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.319	1.213		46.0	50.0	-8.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.008	0.9448		46.9	50.0	-6.3	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.522	1.534		50.4	50.0	0.7	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.144	1.092		47.7	50.0	-4.5	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.280	1.212		47.4	50.0	-5.3	20.0
OCDD	AveID	1.212	1.259		104	100	3.9	20.0
OCDF	AveID	1.446	1.532		106	100	5.9	20.0
13C-2,3,7,8-TCDF	Ave	1.611	1.650		102	100	2.4	30.0
13C-2,3,7,8-TCDD	Ave	1.002	0.998		99.6	100	-0.4	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.259	1.083		86.0	100	-14.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7657	0.7150		93.4	100	-6.6	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.308	1.539		118	100	17.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.8722	0.9868		113	100	13.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9132	1.002		110	100	9.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7441	0.7625		102	100	2.5	30.0
13C-OCDD	Ave	0.6249	0.6423		206	200	2.8	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.250	1.135		4.54	5.00	-9.2	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-28581/1 Instrument ID (1): 4D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/28/2013 20:47

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.61	18

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\4D5\20131028-8278.b\28OC13C4D5_001.d		
Injection Date:	28-Oct-2013 20:47:45	Instrument ID:	4D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	28581 (1)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	4D5_DIOXIN	Limit Group:	HR - 8290 - ICAL

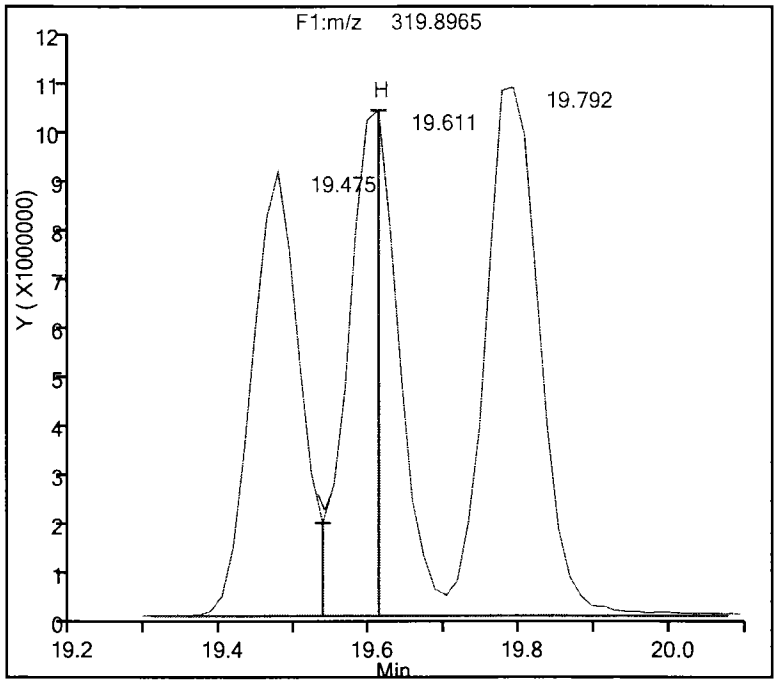
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1870192
H (Peak Height) = 10190704

%R = 18 <= 25
Passed



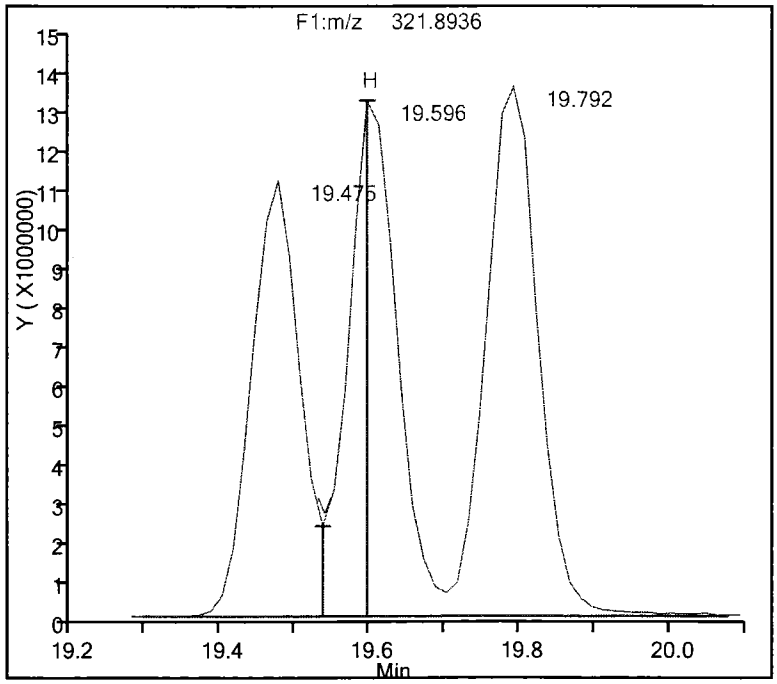
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2259516
H (Peak Height) = 12932668

%R = 17 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 4D5 Start Date: 10/31/2013 10:35

Analysis Batch Number: 28953 End Date: 10/31/2013 17:13

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-28953/1		10/31/2013 10:35	1	31OC13A4D5_001.d	DB-5 0.32(mm)
STD2 320-28953/3 IC		10/31/2013 12:02	1	31OC13A4D5_003.d	DB-5 0.32(mm)
STD3 320-28953/4 IC		10/31/2013 12:45	1	31OC13A4D5_004.d	DB-5 0.32(mm)
STD4 320-28953/5 IC		10/31/2013 13:29	1	31OC13A4D5_005.d	DB-5 0.32(mm)
STD5 320-28953/6 IC		10/31/2013 14:12	1	31OC13A4D5_006.d	DB-5 0.32(mm)
STD6 320-28953/7 IC		10/31/2013 14:55	1	31OC13A4D5_007.d	DB-5 0.32(mm)
ZZZZZ		10/31/2013 15:47	1		DB-5 0.32(mm)
ICV 320-28953/9		10/31/2013 16:30	1	31OC13A4D5_009.d	DB-5 0.32(mm)
CPS 320-28953/10		10/31/2013 17:13	1		DB-5 0.32(mm)

CAL PCDD/PCDF

8290

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 28953

SDG No.:

Instrument ID: 4D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/31/2013 12:02 Calibration End Date: 10/31/2013 14:55 Calibration ID: 4999

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD2 320-28953/3	31OC13A4D5_003.d
Level 2	STD3 320-28953/4	31OC13A4D5_004.d
Level 3	STD4 320-28953/5	31OC13A4D5_005.d
Level 4	STD5 320-28953/6	31OC13A4D5_006.d
Level 5	STD6 320-28953/7	31OC13A4D5_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9960	1.0576	1.0041	1.0040	1.0234	AveID		1.0170				2.4		20.0			
2,3,7,8-TCDD	1.2297	1.3423	1.2385	1.2214	1.2324	AveID		1.2529				4.0		20.0			
1,2,3,7,8-PeCDF	1.1824	1.2521	1.1475	1.1558	1.1638	AveID		1.1803				3.6		20.0			
2,3,4,7,8-PeCDF	1.1737	1.1913	1.1160	1.0923	1.1123	AveID		1.1371				3.8		20.0			
1,2,3,7,8-PeCDD	1.0919	1.1331	1.0664	1.0713	1.0985	AveID		1.0922				2.4		20.0			
1,2,3,4,7,8-HxCDF	1.1003	1.1810	1.0366	1.0441	1.0473	AveID		1.0819				5.6		20.0			
1,2,3,6,7,8-HxCDF	1.2415	1.3631	1.1519	1.1969	1.2720	AveID		1.2451				6.4		20.0			
2,3,4,6,7,8-HxCDF	1.1847	1.2464	1.0609	1.1030	1.1494	AveID		1.1489				6.3		20.0			
1,2,3,4,7,8-HxCDD	0.9726	1.1251	0.9568	0.8855	0.9703	AveID		0.9821				8.9		20.0			
1,2,3,6,7,8-HxCDD	1.2429	1.3191	1.2041	1.2151	1.0666	AveID		1.2096				7.6		20.0			
1,2,3,7,8,9-HxCDD	1.2118	1.3293	1.1744	1.1831	1.1571	AveID		1.2112				5.7		20.0			
1,2,3,7,8,9-HxCDF	1.0249	1.1211	0.9415	1.0269	1.0736	AveID		1.0376				6.4		20.0			
1,2,3,4,6,7,8-HpCDF	1.5207	1.5846	1.4807	1.4788	1.4756	AveID		1.5081				3.1		20.0			
1,2,3,4,6,7,8-HpCDD	1.0976	1.1438	1.0939	1.0998	1.0969	AveID		1.1064				1.9		20.0			
1,2,3,4,7,8,9-HpCDF	1.3462	1.3096	1.2422	1.2776	1.2820	AveID		1.2915				3.0		20.0			
OCDD	1.1932	1.2273	1.1284	1.1401	1.1327	AveID		1.1644				3.8		20.0			
OCDF	1.3955	1.4622	1.3679	1.4103	1.4093	AveID		1.4090				2.4		20.0			
13C-2,3,7,8-TCDF	1.8535	1.8126	1.8664	1.8626	1.8935	Ave		1.8577				1.6		30.0			
13C-2,3,7,8-TCDD	1.0229	1.0288	1.0275	1.0353	1.0736	Ave		1.0376				2.0		30.0			
13C-1,2,3,7,8-PeCDF	1.3716	1.3702	1.4027	1.4306	1.5026	Ave		1.4156				3.9		30.0			
13C-1,2,3,7,8-PeCDD	0.7800	0.7876	0.7796	0.8052	0.8457	Ave		0.7996				3.5		30.0			
13C-1,2,3,4,7,8-HxCDF	1.2876	1.2086	1.3123	1.2336	1.1723	Ave		1.2429				4.6		30.0			
13C-1,2,3,6,7,8-HxCDD	0.9078	0.8571	0.9056	0.8908	0.9094	Ave		0.8942				2.5		30.0			
13C-1,2,3,4,6,7,8-HpCDF	0.9326	0.9366	0.9330	0.9030	0.9028	Ave		0.9216				1.9		30.0			
13C-1,2,3,4,6,7,8-HpCDD	0.7367	0.7292	0.7267	0.7096	0.7218	Ave		0.7248				1.4		30.0			
13C-OCDD	0.6727	0.6596	0.6908	0.6947	0.7259	Ave		0.6887				3.7		30.0			
37Cl4-2,3,7,8-TCDD	1.3418	1.3327	1.3515	1.4107	1.4593	Ave		1.3792				3.9		30.0			

Note: The ml coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 28953

SDG No.:

Instrument ID: 4D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/31/2013 12:02 Calibration End Date: 10/31/2013 14:55 Calibration ID: 4999

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD2 320-28953/3	31OC13A4D5_003.d
Level 2	STD3 320-28953/4	31OC13A4D5_004.d
Level 3	STD4 320-28953/5	31OC13A4D5_005.d
Level 4	STD5 320-28953/6	31OC13A4D5_006.d
Level 5	STD6 320-28953/7	31OC13A4D5_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	589732	2773584	12168760	50853725	257928594	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	405862	2007103	8554130	35591824	179633198	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	3814376	16948005	74732455	318298374	1645022869	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	3670724	16174977	72757510	300627693	1568187771	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	1986266	8802164	38481899	165872261	869728989	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	2744960	12353170	54811327	221778982	1136257348	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	3133130	13754405	60769474	254498901	1391782147	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	3011817	12843404	55547956	234103963	1254474119	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1762505	8339764	35664076	138752700	836292932	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	2248119	10038643	45398459	192212650	929821659	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	2253418	10080024	43748478	186304495	1001246311	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	2556726	11419876	49572272	219395802	1175800642	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	2738926	11873204	52021237	216771092	1168277919	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	1478148	6808053	30385445	129362884	707307517	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	2244410	9815223	44134068	187422176	1014547762	2.50	10.0	50.0	200	1000
OCDD		AveID	2868203	12011969	55204570	240217717	1348528265	5.00	20.0	100	400	2000
OCDF		AveID	3206726	14086395	66165352	293832260	1653433658	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	124962550	130047039	127379730	130367142	129684220	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	68224941	73287314	68959848	72352712	72467026	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	130089386	138038954	134173930	141513168	144870454	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	72401409	77913426	72706189	77856611	79574823	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	63176688	64328455	66632634	67882022	68787324	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	75427606	78033864	78245266	82791877	90428906	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	42623684	46629023	43495232	45709902	49803164	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	55164837	59626002	55954105	58438554	65285902	100	100	100	100	100
13C-OCDD	13CHx(	Ave	92599793	98793959	98646086	106858085	121275786	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	501115	2130831	10199894	44074694	222562093	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-28953/1 Instrument ID (1): 4D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/31/2013 10:35

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.58	18

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\4D5\20131101-8391.b\31OC13A4D5_001.d		
Injection Date:	31-Oct-2013 10:35:56	Instrument ID:	4D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	28953 (1)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	4D5_DIOXIN	Limit Group:	HR - 8290 - ICAL

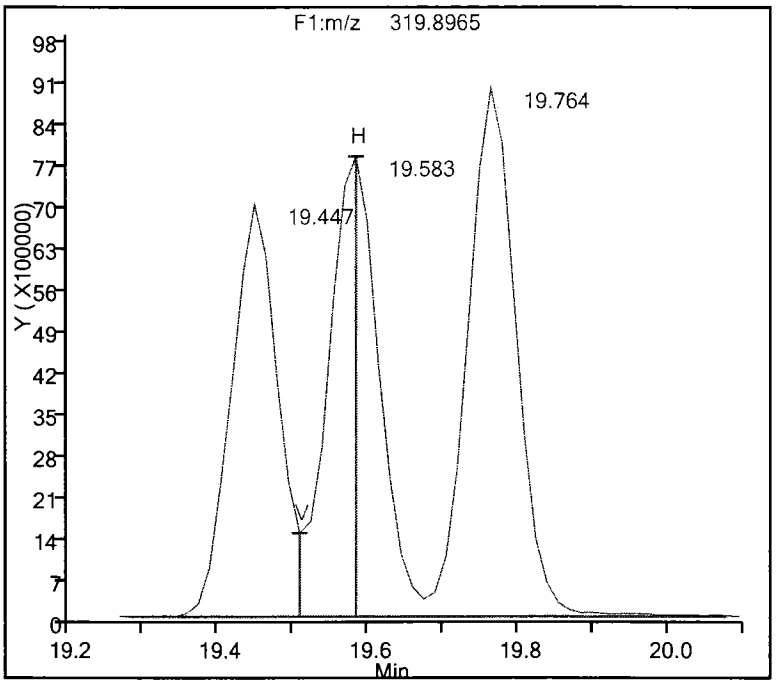
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1422579
H (Peak Height) = 7830259

%R = 18 <= 25
Passed



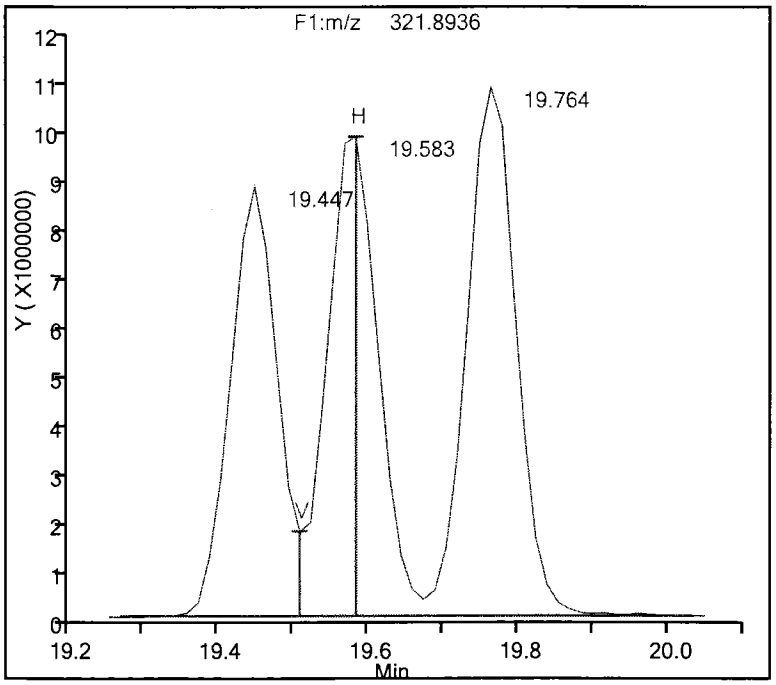
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1686252
H (Peak Height) = 9580780

%R = 18 <= 25
Passed



FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: ICV 320-28953/9 Calibration Date: 10/31/2013 16:30

Instrument ID: 4D5 Calib Start Date: 10/31/2013 12:02

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/31/2013 14:55

Lab File ID: 31OC13A4D5_009.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.017	1.065		10.5	10.0	4.7	30.0
2,3,7,8-TCDD	AveID	1.253	1.253		10.0	10.0	0.0	30.0
1,2,3,7,8-PeCDF	AveID	1.180	1.237		26.2	25.0	4.8	30.0
2,3,4,7,8-PeCDF	AveID	1.137	1.176		25.9	25.0	3.5	30.0
1,2,3,7,8-PeCDD	AveID	1.092	1.109		25.4	25.0	1.5	30.0
1,2,3,4,7,8-HxCDF	AveID	1.082	1.154		26.7	25.0	6.7	30.0
1,2,3,6,7,8-HxCDF	AveID	1.245	1.375		27.6	25.0	10.4	30.0
2,3,4,6,7,8-HxCDF	AveID	1.149	1.228		26.7	25.0	6.9	30.0
1,2,3,4,7,8-HxCDD	AveID	0.9821	0.9628		24.5	25.0	-2.0	30.0
1,2,3,6,7,8-HxCDD	AveID	1.210	1.131		23.4	25.0	-6.5	30.0
1,2,3,7,8,9-HxCDD	AveID	1.211	1.144		23.6	25.0	-5.6	30.0
1,2,3,7,8,9-HxCDF	AveID	1.038	1.108		26.7	25.0	6.8	30.0
1,2,3,4,6,7,8-HpCDF	AveID	1.508	1.632		27.1	25.0	8.2	30.0
1,2,3,4,6,7,8-HpCDD	AveID	1.106	1.168		26.4	25.0	5.6	30.0
1,2,3,4,7,8,9-HpCDF	AveID	1.292	1.354		26.2	25.0	4.8	30.0
OCDD	AveID	1.164	1.215		52.2	50.0	4.3	30.0
OCDF	AveID	1.409	1.451		51.5	50.0	3.0	30.0
13C-2,3,7,8-TCDF	Ave	1.858	1.872		101	100	0.7	
13C-2,3,7,8-TCDD	Ave	1.038	1.047		101	100	0.9	
13C-1,2,3,7,8-PeCDF	Ave	1.416	1.411		99.7	100	-0.3	
13C-1,2,3,7,8-PeCDD	Ave	0.7996	0.7903		98.8	100	-1.2	
13C-1,2,3,4,7,8-HxCDF	Ave	1.243	1.259		101	100	1.3	
13C-1,2,3,6,7,8-HxCDD	Ave	0.8942	1.006		113	100	12.5	
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9216	0.9380		102	100	1.8	
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7248	0.7381		102	100	1.8	
13C-OCDD	Ave	0.6887	0.6866		199	200	-0.3	
37Cl4-2,3,7,8-TCDD	Ave	1.379	1.367		19.8	20.0	-0.9	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 4D5 Start Date: 11/05/2013 17:40

Analysis Batch Number: 29245 End Date: 11/06/2013 03:07

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29245/2		11/05/2013 17:40	1	05NO134D5_002.d	DB-5 0.32(mm)
CPS 320-29245/3		11/05/2013 18:23	1	05NO134D5_003.d	DB-5 0.32(mm)
MB 320-28361/1-A		11/05/2013 19:13	1	05NO134D5_004.d	DB-5 0.32(mm)
LCS 320-28361/2-A		11/05/2013 19:56	1	05NO134D5_005.d	DB-5 0.32(mm)
ZZZZZ		11/05/2013 20:39	1		DB-5 0.32(mm)
ZZZZZ		11/05/2013 21:22	1		DB-5 0.32(mm)
ZZZZZ		11/05/2013 22:05	1		DB-5 0.32(mm)
ZZZZZ		11/05/2013 22:48	1		DB-5 0.32(mm)
ZZZZZ		11/05/2013 23:31	1		DB-5 0.32(mm)
ZZZZZ		11/06/2013 00:15	1		DB-5 0.32(mm)
ZZZZZ		11/06/2013 00:58	1		DB-5 0.32(mm)
ZZZZZ		11/06/2013 01:41	1		DB-5 0.32(mm)
ZZZZZ		11/06/2013 02:24	1		DB-5 0.32(mm)
CCV 320-29245/15		11/06/2013 03:07	1	05NO134D5_015.d	DB-5 0.32(mm)

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
05NO134D5	1	CPS 110513	DB-5 CPSM HRDXNCP_00018				1.00000	
05NO134D5	2	CCV 110513	CS-4 HRDXNL4_00012				1.00000	
05NO134D5	3	CPS 110513A	DB-5 CPSM HRDXNCP_00018				1.00000	
05NO134D5	4	320-28361	MB 320-28361/1-A	20	8290/Solid	73	10.00000	g
05NO134D5	5	320-28361	LCS 320-28361/2-A	20	8290/Solid		10.00000	g
05NO134D5	6	320-28361	720-53161-C-1-A	20	8290/Solid		10.00000	g
05NO134D5	7	320-28361	720-53161-C-2-A	20	8290/Solid		10.00000	g
05NO134D5	8	320-28361	720-53161-C-3-A	20	8290/Solid		10.00000	g
05NO134D5	9	320-28361	720-53161-C-4-A	20	8290/Solid		10.00000	g
05NO134D5	10	320-28361	720-53263-B-1-A	20	8290/Solid		10.00000	g
05NO134D5	11	320-28361	720-53263-B-3-A	20	8290/Solid		10.00000	g
05NO134D5	12	320-28361	720-53263-B-4-A	20	8290/Solid		10.00000	g
05NO134D5	13	320-28361	720-53263-B-5-A	20	8290/Solid		10.00000	g
05NO134D5	14	RB 110513	Reagent Blank C-14				1.00000	
05NO134D5	15	CCV 110513A	CS-4 HRDXNL4_00012				1.00000	
05NO134D5	16						1.00000	
05NO134D5	17						1.00000	
05NO134D5	18						1.00000	
05NO134D5	19						1.00000	
05NO134D5	20						1.00000	
05NO134D5	21		ALM 11-05-13				1.00000	
05NO134D5	22						1.00000	

logfile checked
11-06-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29245/2 Calibration Date: 11/05/2013 17:40

Instrument ID: 4D5 Calib Start Date: 10/31/2013 12:02

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/31/2013 14:55

Lab File ID: 05NO134D5_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.017	1.068		10.5	10.0	5.0	20.0
2,3,7,8-TCDD	AveID	1.253	1.190		9.50	10.0	-5.0	20.0
1,2,3,7,8-PeCDF	AveID	1.180	1.266		53.6	50.0	7.3	20.0
2,3,4,7,8-PeCDF	AveID	1.137	1.213		53.3	50.0	6.7	20.0
1,2,3,7,8-PeCDD	AveID	1.092	1.054		48.3	50.0	-3.5	20.0
1,2,3,4,7,8-HxCDF	AveID	1.082	1.098		50.8	50.0	1.5	20.0
1,2,3,6,7,8-HxCDF	AveID	1.245	1.324		53.2	50.0	6.3	20.0
2,3,4,6,7,8-HxCDF	AveID	1.149	1.197		52.1	50.0	4.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.9821	1.027		52.3	50.0	4.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.210	1.108		45.8	50.0	-8.4	20.0
1,2,3,7,8,9-HxCDD	AveID	1.211	1.181		48.8	50.0	-2.5	20.0
1,2,3,7,8,9-HxCDF	AveID	1.038	1.035		49.9	50.0	-0.2	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.508	1.589		52.7	50.0	5.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.106	1.105		49.9	50.0	-0.2	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.292	1.333		51.6	50.0	3.2	20.0
OCDD	AveID	1.164	1.211		104	100	4.0	20.0
OCDF	AveID	1.409	1.532		109	100	8.7	20.0
13C-2,3,7,8-TCDF	Ave	1.858	1.877		101	100	1.1	30.0
13C-2,3,7,8-TCDD	Ave	1.038	1.033		99.5	100	-0.5	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.416	1.314		92.8	100	-7.2	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7996	0.7757		97.0	100	-3.0	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.243	1.338		108	100	7.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.8942	0.9400		105	100	5.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9216	0.8794		95.4	100	-4.6	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7248	0.6795		93.8	100	-6.2	30.0
13C-OCDD	Ave	0.6887	0.6911		201	200	0.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.379	1.253		4.54	5.00	-9.2	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29245/15 Calibration Date: 11/06/2013 03:07

Instrument ID: 4D5 Calib Start Date: 10/31/2013 12:02

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/31/2013 14:55

Lab File ID: 05NO134D5_015.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.017	1.022		10.1	10.0	0.5	20.0
2,3,7,8-TCDD	AveID	1.253	1.206		9.63	10.0	-3.7	20.0
1,2,3,7,8-PeCDF	AveID	1.180	1.241		52.6	50.0	5.1	20.0
2,3,4,7,8-PeCDF	AveID	1.137	1.183		52.0	50.0	4.1	20.0
1,2,3,7,8-PeCDD	AveID	1.092	1.083		49.6	50.0	-0.8	20.0
1,2,3,4,7,8-HxCDF	AveID	1.082	1.160		53.6	50.0	7.2	20.0
1,2,3,6,7,8-HxCDF	AveID	1.245	1.303		52.3	50.0	4.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.149	1.199		52.2	50.0	4.4	20.0
1,2,3,4,7,8-HxCDD	AveID	0.9821	1.074		54.7	50.0	9.4	20.0
1,2,3,6,7,8-HxCDD	AveID	1.210	1.142		47.2	50.0	-5.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.211	1.241		51.3	50.0	2.5	20.0
1,2,3,7,8,9-HxCDF	AveID	1.038	1.079		52.0	50.0	3.9	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.508	1.584		52.5	50.0	5.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.106	1.114		50.4	50.0	0.7	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.292	1.317		51.0	50.0	2.0	20.0
OCDD	AveID	1.164	1.229		106	100	5.6	20.0
OCDF	AveID	1.409	1.570		111	100	11.4	20.0
13C-2,3,7,8-TCDF	Ave	1.858	1.892		102	100	1.8	30.0
13C-2,3,7,8-TCDD	Ave	1.038	1.040		100	100	0.2	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.416	1.358		96.0	100	-4.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7996	0.7818		97.8	100	-2.2	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.243	1.355		109	100	9.0	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.8942	0.9099		102	100	1.8	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9216	0.9110		98.9	100	-1.1	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7248	0.6983		96.3	100	-3.7	30.0
13C-OCDD	Ave	0.6887	0.6906		201	200	0.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.379	1.298		4.71	5.00	-5.9	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29245/3 Instrument ID (1): 4D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/05/2013 18:23

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.60	26

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\4D5\20131106-8476.b\05NO134D5_003.d		
Injection Date:	05-Nov-2013 18:23:44	Instrument ID:	4D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29245 (3)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	4D5_DIOXIN	Limit Group:	HR - 8290 - ICAL

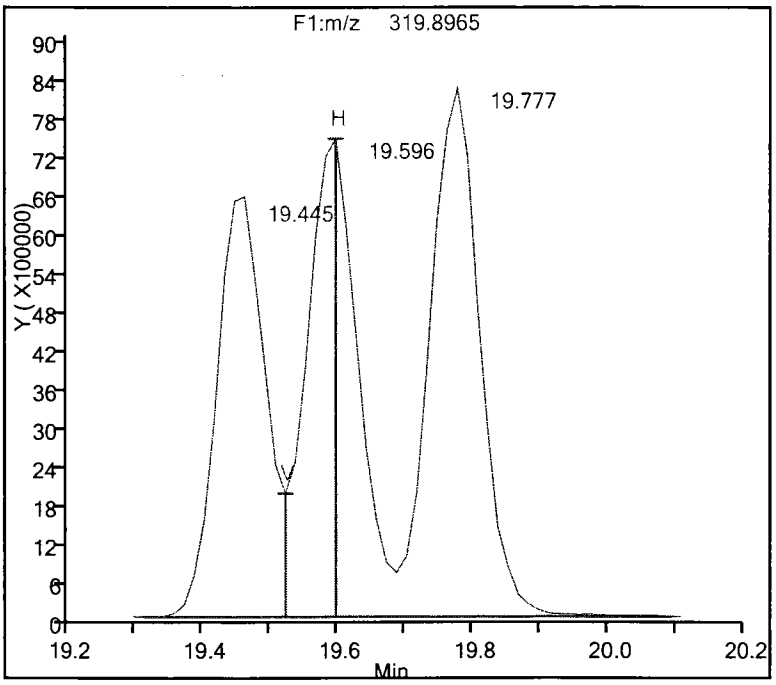
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1921219
H (Peak Height) = 7449795

%R = 26 <= 25
Passed



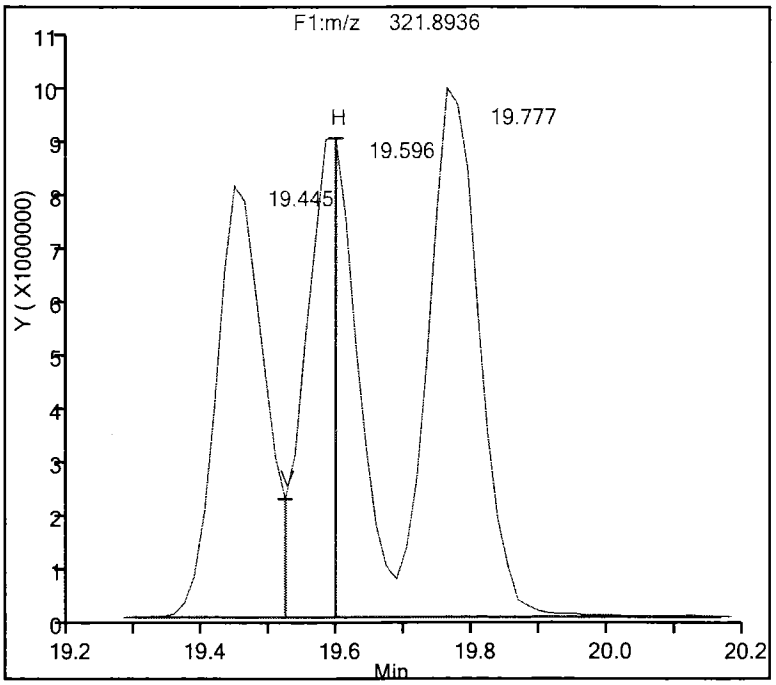
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2211644
H (Peak Height) = 8981308

%R = 25 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 07/31/2013 14:30

Analysis Batch Number: 21946 End Date: 07/31/2013 19:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-21946/1		07/31/2013 14:30	1	31JL13A3D5_1.d	DB-5 0.32(mm)
IC 320-21946/2		07/31/2013 15:11	1	31JL13A3D5_2.d	DB-5 0.32(mm)
IC 320-21946/3		07/31/2013 15:54	1	31JL13A3D5_3.d	DB-5 0.32(mm)
IC 320-21946/4		07/31/2013 16:35	1	31JL13A3D5_4.d	DB-5 0.32(mm)
IC 320-21946/5		07/31/2013 17:58	1	31JL13A3D5_6.d	DB-5 0.32(mm)
IC 320-21946/6		07/31/2013 18:40	1	31JL13A3D5_7.d	DB-5 0.32(mm)
ICV 320-21946/7		07/31/2013 19:31	1	31JL13A3D5_8.d	DB-5 0.32(mm)

CAL PCDD/PCDF

8290

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\JAN2013.PRO\SampleDB\31JL13A3D5.SPL
Last Modified: Thursday, August 01, 2013 08:45:14 Pacific Daylight Time
Printed: Thursday, August 01, 2013 11:01:18 Pacific Daylight Time

Page Position (1, 1)

CAL PCDD/PCDF INST. 3D5

	File Name	File Text	Sample ID	Bottle	Meth/Matrix	BOX #
1	31JL13A3D5_1	DB-5 CPSM HRDXNCP_00018	CPS 073113	Tray1:1	---	
2	31JL13A3D5_2	CS-4 HRDXNL4_00011	IC 073113	Tray1:6	---	
3	31JL13A3D5_3	CS-3 HRDXNL3_00007	IC 073113A	Tray1:5	---	
4	31JL13A3D5_4	CS-2 HRDXNL2_00008	IC 073113B	Tray1:4	---	
5	31JL13A3D5_5	CS-1 HRDXNL1_00012	IC 073113C	Tray1:3	---	
6	31JL13A3D5_6	CS-6 HRDXNL6_00006	IC 073113D	Tray1:8	---	
7	31JL13A3D5_7	CS-5 HRDXNL5_00012	IC 073113E	Tray1:7	---	
8	31JL13A3D5_8	2nd Source HRDXNIC_00013	ICV 073113	Tray1:9	---	
9	31JL13A3D5_9	DB-5 CPSM HRDXNCP_00018	CPS 073113A	Tray1:1	---	
10	31JL13A3D5_10	CS-4 HRDXNL4_00011	CCV 073113	Tray1:6	---	
11	31JL13A3D5_11	DB-5 CPSM HRDXNCP_00018	CPS 073113B	Tray1:1	---	
12	31JL13A3D5_12	MB 320-21850/1-A	320-21850	Tray1:10	1613B/8290/Solid	41
13	31JL13A3D5_13	580-39524-D-1-A	320-21850	Tray1:11	8290/Solid	---
14	31JL13A3D5_14	580-39524-D-2-A	320-21850	Tray1:12	8290/Solid	---
15	31JL13A3D5_15	580-39525-A-1-A	320-21850	Tray1:13	8290/Solid	---
16	31JL13A3D5_16	580-39525-A-2-A	320-21850	Tray1:14	8290/Solid	---
17	31JL13A3D5_17	580-39525-A-3-A	320-21850	Tray1:15	8290/Solid	---
18	31JL13A3D5_18	580-39525-A-4-A	320-21850	Tray1:16	8290/Solid	---
19	31JL13A3D5_19	580-39525-A-4-B MS	320-21850	Tray1:17	8290/Solid	---
20	31JL13A3D5_20	580-39525-A-4-C MSD	320-21850	Tray1:18	8290/Solid	---
21	31JL13A3D5_21	580-39525-A-5-A	320-21850	Tray1:19	8290/Solid	---
22	31JL13A3D5_22	LCS 320-21850/2-A	320-21850	Tray1:20	1613B/8290/Solid	---
23	31JL13A3D5_23	CS-4 HRDXNL4_00011	CCV 073113A	Tray1:6	---	

reviewed
by
MEL
8/1/13

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 21946

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/31/2013 15:11 Calibration End Date: 07/31/2013 18:40 Calibration ID: 3838

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-21946/4	31JL13A3D5_4.d
Level 2	IC 320-21946/3	31JL13A3D5_3.d
Level 3	IC 320-21946/2	31JL13A3D5_2.d
Level 4	IC 320-21946/6	31JL13A3D5_7.d
Level 5	IC 320-21946/5	31JL13A3D5_6.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.1261	1.1686	1.0671	1.0766	1.0945	AveID		1.1066				3.7		20.0			
2,3,7,8-TCDD	1.1921	1.1860	1.1116	1.1194	1.1358	AveID		1.1490				3.3		20.0			
1,2,3,7,8-PeCDF	1.1028	1.1650	1.0693	1.0867	1.0842	AveID		1.1016				3.4		20.0			
2,3,4,7,8-PeCDF	1.0792	1.1144	0.9984	1.0096	1.1059	AveID		1.0615				5.1		20.0			
1,2,3,7,8-PeCDD	1.0929	1.1641	1.0708	1.0515	1.0893	AveID		1.0937				3.9		20.0			
1,2,3,4,7,8-HxCDF	1.2719	1.3246	1.1973	1.1750	1.2282	AveID		1.2394				4.8		20.0			
1,2,3,6,7,8-HxCDF	1.6245	1.7573	1.6149	1.5709	1.5552	AveID		1.6246				4.9		20.0			
2,3,4,6,7,8-HxCDF	1.4400	1.5601	1.3636	1.3708	1.4116	AveID		1.4292				5.6		20.0			
1,2,3,4,7,8-HxCDD	0.8107	0.8294	0.7747	0.7957	0.7856	AveID		0.7992				2.7		20.0			
1,2,3,6,7,8-HxCDD	1.1545	1.1648	1.0529	1.0730	1.0129	AveID		1.0916				6.0		20.0			
1,2,3,7,8,9-HxCDD	1.2071	1.2825	1.0865	1.0988	1.0045	AveID		1.1359				9.6		20.0			
1,2,3,7,8,9-HxCDF	1.3440	1.4195	1.1680	1.1992	1.2262	AveID		1.2714				8.4		20.0			
1,2,3,4,6,7,8-HpCDF	1.4704	1.5122	1.4075	1.4127	1.4217	AveID		1.4449				3.1		20.0			
1,2,3,4,6,7,8-HpCDD	1.1154	1.2047	1.0938	1.0645	1.0977	AveID		1.1152				4.8		20.0			
1,2,3,4,7,8,9-HpCDF	1.2224	1.2300	1.2025	1.1822	1.2739	AveID		1.2222				2.8		20.0			
OCDD	1.1701	1.2840	1.1663	1.2319	1.2002	AveID		1.2105				4.0		20.0			
OCDF	1.5509	1.6849	1.6866	1.6793	1.6846	AveID		1.6572				3.6		20.0			
13C-2,3,7,8-TCDF	1.6097	1.6010	1.6044	1.6264	1.6484	Ave		1.6180				1.2		30.0			
13C-2,3,7,8-TCDD	1.0250	1.0445	1.0332	1.0381	1.0628	Ave		1.0407				1.4		30.0			
13C-1,2,3,7,8-PeCDF	1.1826	1.2713	1.2191	1.2682	1.2559	Ave		1.2394				3.1		30.0			
13C-1,2,3,7,8-PeCDD	0.7043	0.7778	0.7133	0.7827	0.8236	Ave		0.7604				6.6		30.0			
13C-1,2,3,4,7,8-HxCDF	0.9157	0.9173	1.0857	1.0367	1.0379	Ave		0.9986				7.8		30.0			
13C-1,2,3,6,7,8-HxCDD	0.8814	0.8930	0.9834	0.9420	0.9631	Ave		0.9326				4.7		30.0			
13C-1,2,3,4,6,7,8-HpCDF	0.7752	0.7904	0.8300	0.8143	0.8434	Ave		0.8107				3.5		30.0			
13C-1,2,3,4,6,7,8-HpCDD	0.6903	0.6973	0.7580	0.7531	0.7634	Ave		0.7324				4.8		30.0			
13C-OCDD	0.4578	0.4322	0.5014	0.5040	0.5440	Ave		0.4879				8.9		30.0			
37Cl4-2,3,7,8-TCDD	1.3374	1.3226	1.3591	1.3888	1.4535	Ave		1.3723				3.8		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 21946

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/31/2013 15:11 Calibration End Date: 07/31/2013 18:40 Calibration ID: 3838

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-21946/4	31JL13A3D5_4.d
Level 2	IC 320-21946/3	31JL13A3D5_3.d
Level 3	IC 320-21946/2	31JL13A3D5_2.d
Level 4	IC 320-21946/6	31JL13A3D5_7.d
Level 5	IC 320-21946/5	31JL13A3D5_6.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	1440257	6489135	25981035	114005041	497816942	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	900403	4080564	16455527	74602889	323025808	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	7280618	36236316	137723293	627478226	2590753960	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	7110028	34753041	128661815	583283118	2644204640	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	4243013	21931973	79393403	372456203	1704084093	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	5209389	25990176	100254986	439283130	2091702150	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	6656849	34445285	137358347	580379031	2555414186	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	5975002	30664312	113171336	509185931	2310910805	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	3154072	15849331	58576877	271302493	1230806551	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	4483863	22406758	80214624	366454673	1597420237	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	4595372	24063873	80782147	375523125	1585440891	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	5490200	27884924	97660010	452163460	2064496871	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	4638850	22881277	81782293	384906832	1776849147	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	3059183	15879175	59368914	267418588	1241538395	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	3700625	19181565	70537497	312052643	1612030361	2.50	10.0	50.0	200	1000
OCDD		AveID	3879440	20371421	76763269	387319608	1831133062	5.00	20.0	100	400	2000
OCDF		AveID	5230349	26521733	111056360	529356218	2483266720	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	272151028	294659911	256135928	280043877	236601352	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	155745100	173051694	146200705	158364880	133597955	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	264331676	310490212	257328667	288037517	238316887	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	158026373	190945889	152636611	178879147	153549965	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	101928071	121087703	104130205	116297108	104725381	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	154285923	189726412	150941152	170198245	156579083	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	72646744	94032036	71080814	79872654	77218434	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	112253168	139014529	108722598	127718195	115342924	100	100	100	100	100
13C-OCDD	13CHx(	Ave	131340787	156024320	126763511	151348772	147005354	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	1203521	5273412	23460388	102940878	448746786	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-21946/1 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 07/31/2013 14:30

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.63	22

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\3D5\20130731-6241.b\31JL13A3D5_1.d
Injection Date: 31-Jul-2013 14:30:03 Limit Group: HR - 8290 - ICAL
Client ID: Instrument ID: 3D5
Lims Batch ID: 21946 Lims Sample ID: 1
Operator ID: AM Injection Vol: 2.0 ul
Column Type: Column Dia:

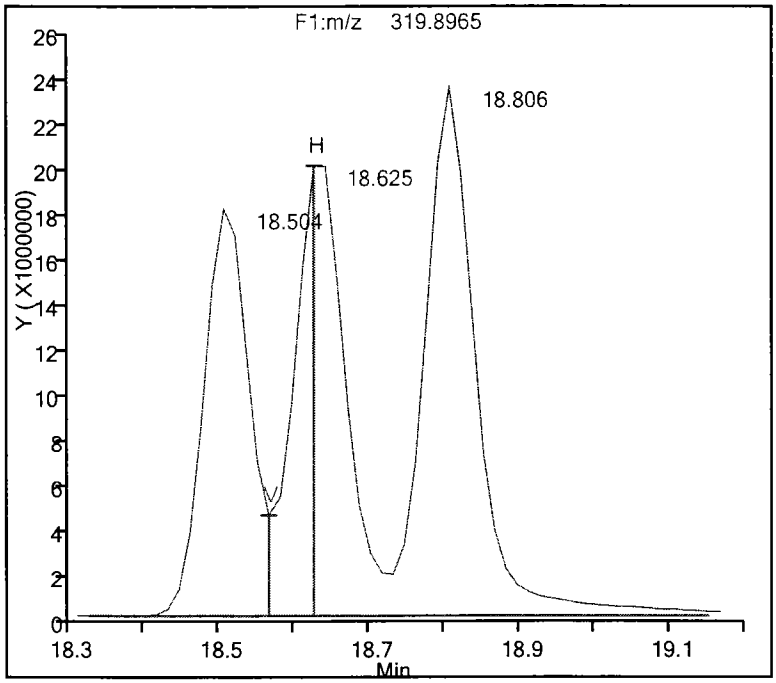
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 4376747
H (Peak Height) = 19507736

%R = 22 <= 25
Passed



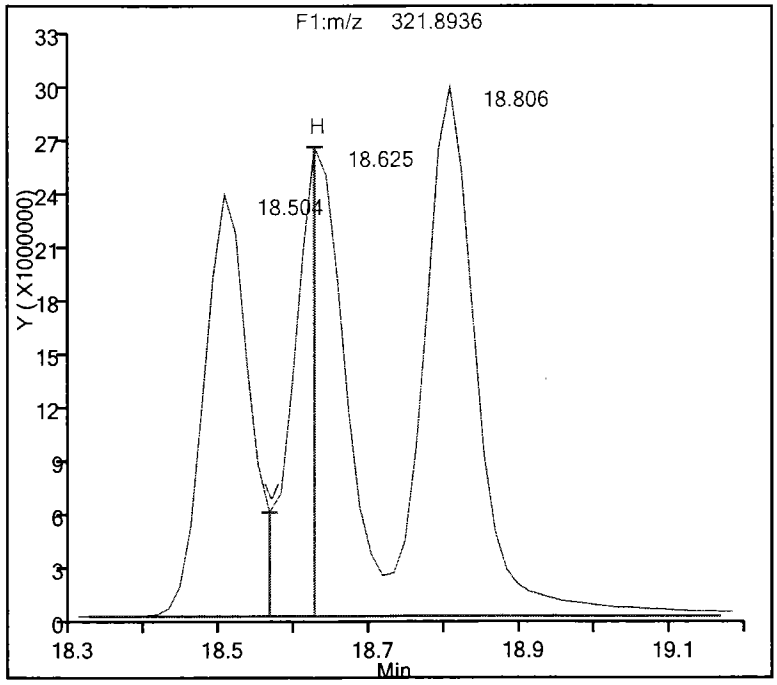
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 5781705
H (Peak Height) = 26163404

%R = 22 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 10/31/2013 22:06

Analysis Batch Number: 29121 End Date: 11/01/2013 07:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-29121/2		10/31/2013 22:06	1	31OC13C3D5_2.d	DB-5 0.32(mm)
CCV 320-29121/3		10/31/2013 22:48	1	31OC13C3D5_3.d	DB-5 0.32(mm)
ZZZZZ		10/31/2013 23:30	1		DB-5 0.32(mm)
MB 320-28540/1-A		11/01/2013 00:11	1	31OC13C3D5_5.d	DB-5 0.32(mm)
LCS 320-28540/2-A		11/01/2013 00:53	1	31OC13C3D5_6.d	DB-5 0.32(mm)
320-4670-23	TF2-004/5-SS1034-000.6	11/01/2013 01:35	1	31OC13C3D5_7.d	DB-5 0.32(mm)
320-4670-24	TF2-004/5-SS1033-000.8	11/01/2013 02:16	1	31OC13C3D5_8.d	DB-5 0.32(mm)
320-4670-25	TF2-004/5-SS1049-000.9	11/01/2013 02:58	1	31OC13C3D5_9.d	DB-5 0.32(mm)
320-4670-26	TF2-004/5-SS1048-000.8	11/01/2013 03:40	1	31OC13C3D5_10.d	DB-5 0.32(mm)
320-4670-27	TF2-004/5-SS1047-000.8	11/01/2013 04:22	1	31OC13C3D5_11.d	DB-5 0.32(mm)
320-4670-28	TF2-004/5-SS1046-000.5	11/01/2013 05:04	1	31OC13C3D5_12.d	DB-5 0.32(mm)
320-4670-29	TF2-004/5-SS1045-000.5	11/01/2013 05:45	1	31OC13C3D5_13.d	DB-5 0.32(mm)
CCV 320-29121/15		11/01/2013 07:19	1	31OC13C3D5_15.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29121/3 Calibration Date: 10/31/2013 22:48

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 31OC13C3D5_3.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.119		10.1	10.0	1.1	20.0
2,3,7,8-TCDD	AveID	1.149	1.173		10.2	10.0	2.1	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.190		54.0	50.0	8.0	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.141		53.7	50.0	7.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.032		47.2	50.0	-5.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.191		48.0	50.0	-3.9	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.521		46.8	50.0	-6.4	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.315		46.0	50.0	-8.0	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8723		54.6	50.0	9.1	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.169		53.6	50.0	7.1	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.173		51.6	50.0	3.2	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.182		46.5	50.0	-7.0	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.536		53.1	50.0	6.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.118		50.1	50.0	0.2	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.275		52.2	50.0	4.3	20.0
OCDD	AveID	1.211	1.189		98.2	100	-1.8	20.0
OCDF	AveID	1.657	1.509		91.0	100	-9.0	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.747		108	100	8.0	30.0
13C-2,3,7,8-TCDD	Ave	1.041	0.9880		94.9	100	-5.1	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.246		100	100	0.5	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.7933		104	100	4.3	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.229		123	100	23.0	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9639		103	100	3.4	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7834		96.6	100	-3.4	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6575		89.8	100	-10.2	30.0
13C-OCDD	Ave	0.4879	0.4526		186	200	-7.2	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.244		4.53	5.00	-9.4	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29121/15 Calibration Date: 11/01/2013 07:19

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 31OC13C3D5_15.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.117		10.1	10.0	1.0	20.0
2,3,7,8-TCDD	AveID	1.149	1.145		9.97	10.0	-0.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.200		54.5	50.0	8.9	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.120		52.7	50.0	5.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.025		46.9	50.0	-6.3	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.267		51.1	50.0	2.3	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.550		47.7	50.0	-4.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.341		46.9	50.0	-6.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8673		54.3	50.0	8.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.131		51.8	50.0	3.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.141		50.2	50.0	0.4	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.243		48.9	50.0	-2.2	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.532		53.0	50.0	6.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.106		49.6	50.0	-0.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.339		54.8	50.0	9.5	20.0
OCDD	AveID	1.211	1.154		95.4	100	-4.6	20.0
OCDF	AveID	1.657	1.469		88.6	100	-11.4	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.803		111	100	11.4	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.024		98.3	100	-1.7	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.462		118	100	17.9	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.9485		125	100	24.7	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.229		123	100	23.1	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9902		106	100	6.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8177		101	100	0.9	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.7262		99.2	100	-0.8	30.0
13C-OCDD	Ave	0.4879	0.5398		221	200	10.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.241		4.52	5.00	-9.5	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29121/2 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/31/2013 22:06

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.56	20

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131104-8438.b\31OC13C3D5_2.d		
Injection Date:	31-Oct-2013 22:06:04	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29121 (2)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

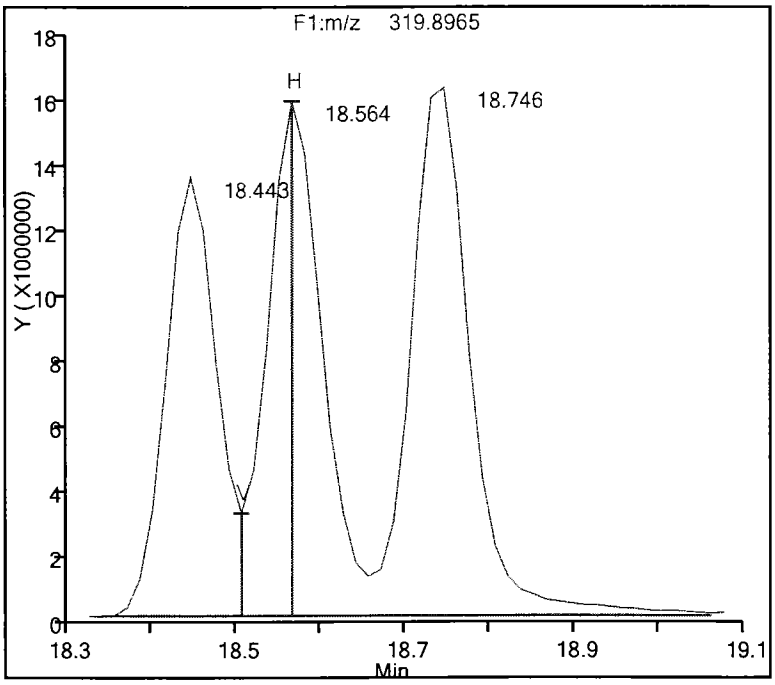
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3150899
H (Peak Height) = 15603895

%R = 20 <= 25
Passed



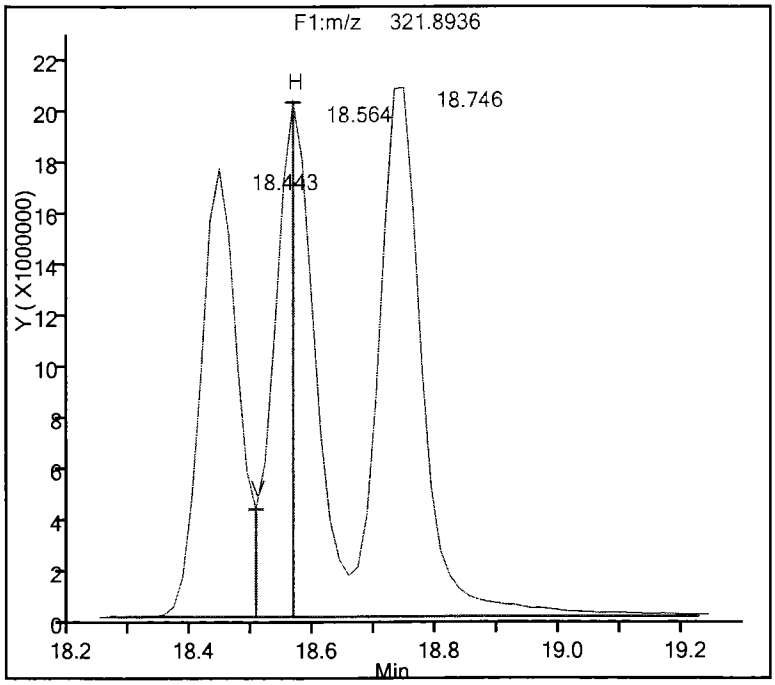
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 4091179
H (Peak Height) = 19583840

%R = 21 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/01/2013 07:19

Analysis Batch Number: 29135 End Date: 11/01/2013 18:11

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29135/15		11/01/2013 07:19	1	31OC13C3D5_15.d	DB-5 0.32(mm)
CPS 320-29135/16		11/01/2013 08:10	1	31OC13C3D5_16.d	DB-5 0.32(mm)
ZZZZZ		11/01/2013 08:51	1		DB-5 0.32(mm)
320-4670-30	TF2-004/5-SS1044-000.5	11/01/2013 09:41	1	31OC13C3D5_18.d	DB-5 0.32(mm)
320-4670-31	TF2-004/5-SS1042-000.5	11/01/2013 10:22	1	31OC13C3D5_19.d	DB-5 0.32(mm)
320-4670-32	TF2-004/5-SS1041-000.7	11/01/2013 11:04	1	31OC13C3D5_20.d	DB-5 0.32(mm)
320-4670-33	TF2-004/5-SS-DUP03-1013	11/01/2013 11:45	1	31OC13C3D5_21.d	DB-5 0.32(mm)
320-4670-35	TF2-004/5-SS1057-0001	11/01/2013 12:27	1	31OC13C3D5_22.d	DB-5 0.32(mm)
320-4670-36	TF2-004/5-SS1056-000.6	11/01/2013 13:09	1	31OC13C3D5_23.d	DB-5 0.32(mm)
320-4670-37	TF2-004/5-SS1055-000.8	11/01/2013 13:50	1	31OC13C3D5_24.d	DB-5 0.32(mm)
320-4670-38	TF2-004/5-SS1054-000.6	11/01/2013 14:32	1	31OC13C3D5_25.d	DB-5 0.32(mm)
320-4670-38 MS	TF2-004/5-SS1054-000.6 MS	11/01/2013 15:14	1	31OC13C3D5_26.d	DB-5 0.32(mm)
320-4670-38 MSD	TF2-004/5-SS1054-000.6 MSD	11/01/2013 15:56	1	31OC13C3D5_27.d	DB-5 0.32(mm)
320-4670-39	TF2-004/5-SS1053-000.6	11/01/2013 16:37	1	31OC13C3D5_28.d	DB-5 0.32(mm)
CCV 320-29135/30		11/01/2013 18:11	1	31OC13C3D5_30.d	DB-5 0.32(mm)

8290

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/01/2013 18:11

Analysis Batch Number: 29136 End Date: 11/02/2013 04:14

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29136/30		11/01/2013 18:11	1	31OC13C3D5_30.d	DB-5 0.32(mm)
CPS 320-29136/31		11/01/2013 19:02	1	31OC13C3D5_31.d	DB-5 0.32(mm)
ZZZZZ		11/01/2013 19:43	1		DB-5 0.32(mm)
MB 320-28546/1-A		11/01/2013 20:25	1	31OC13C3D5_33.d	DB-5 0.32(mm)
LCS 320-28546/2-A		11/01/2013 21:07	1	31OC13C3D5_34.d	DB-5 0.32(mm)
320-4670-40	TF2-004/5-SS1052-000.6	11/01/2013 21:48	1	31OC13C3D5_35.d	DB-5 0.32(mm)
320-4670-41	TF2-004/5-SS1051-000.8	11/01/2013 22:30	1	31OC13C3D5_36.d	DB-5 0.32(mm)
320-4670-42	TF2-004/5-SS1050-000.6	11/01/2013 23:12	1	31OC13C3D5_37.d	DB-5 0.32(mm)
320-4670-43	TF2-004/5-SS1062-000.8	11/01/2013 23:54	1	31OC13C3D5_38.d	DB-5 0.32(mm)
320-4670-44	TF2-004/5-SS1061-000.6	11/02/2013 00:35	1	31OC13C3D5_39.d	DB-5 0.32(mm)
320-4670-45	TF2-004/5-SS-DUP04-1013	11/02/2013 01:17	1	31OC13C3D5_40.d	DB-5 0.32(mm)
320-4670-46	TF2-004/5-SS1067-000.7	11/02/2013 01:59	1	31OC13C3D5_41.d	DB-5 0.32(mm)
320-4670-47	TF2-004/5-SS1066-000.9	11/02/2013 02:41	1	31OC13C3D5_42.d	DB-5 0.32(mm)
CCV 320-29136/44		11/02/2013 04:14	1	31OC13C3D5_44.d	DB-5 0.32(mm)

8290

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/02/2013 04:14

Analysis Batch Number: 29137 End Date: 11/02/2013 14:17

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29137/44		11/02/2013 04:14	1	31OC13C3D5_44.d	DB-5 0.32(mm)
CPS 320-29137/45		11/02/2013 05:05	1	31OC13C3D5_45.d	DB-5 0.32(mm)
ZZZZZ		11/02/2013 05:46	1		DB-5 0.32(mm)
MB 320-28431/1-A		11/02/2013 06:28	1	31OC13C3D5_47.d	DB-5 0.32(mm)
LCS 320-28431/2-A		11/02/2013 07:10	1	31OC13C3D5_48.d	DB-5 0.32(mm)
320-4670-48	TF2-004/5-SS1060.000.5	11/02/2013 07:52	1	31OC13C3D5_49.d	DB-5 0.32(mm)
320-4670-49	TF2-004/5-SS1059-000.6	11/02/2013 08:33	1	31OC13C3D5_50.d	DB-5 0.32(mm)
320-4670-50	TF2-004/5-SS1058-000.5	11/02/2013 09:15	1	31OC13C3D5_51.d	DB-5 0.32(mm)
320-4670-51	TF2-004/5-SS1065-000.5	11/02/2013 09:57	1	31OC13C3D5_52.d	DB-5 0.32(mm)
320-4670-52	TF2-004/5-SS1064-000.6	11/02/2013 10:38	1	31OC13C3D5_53.d	DB-5 0.32(mm)
320-4670-52 MS	TF2-004/5-SS1064-000.6 MS	11/02/2013 11:20	1	31OC13C3D5_54.d	DB-5 0.32(mm)
320-4670-52 MSD	TF2-004/5-SS1064-000.6 MSD	11/02/2013 12:02	1	31OC13C3D5_55.d	DB-5 0.32(mm)
320-4670-53	TF2-004/5-SS1063-000.6	11/02/2013 12:44	1	31OC13C3D5_56.d	DB-5 0.32(mm)
CCV 320-29137/59		11/02/2013 14:17	1	31OC13C3D5_58.d	DB-5 0.32(mm)

8290

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29135/15 Calibration Date: 11/01/2013 07:19

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 310C13C3D5_15.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.117		10.1	10.0	1.0	20.0
2,3,7,8-TCDD	AveID	1.149	1.145		9.97	10.0	-0.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.200		54.5	50.0	8.9	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.120		52.7	50.0	5.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.025		46.9	50.0	-6.3	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.267		51.1	50.0	2.3	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.550		47.7	50.0	-4.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.341		46.9	50.0	-6.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8673		54.3	50.0	8.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.131		51.8	50.0	3.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.141		50.2	50.0	0.4	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.243		48.9	50.0	-2.2	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.532		53.0	50.0	6.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.106		49.6	50.0	-0.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.339		54.8	50.0	9.5	20.0
OCDD	AveID	1.211	1.154		95.4	100	-4.6	20.0
OCDF	AveID	1.657	1.469		88.6	100	-11.4	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.803		111	100	11.4	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.024		98.3	100	-1.7	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.462		118	100	17.9	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.9485		125	100	24.7	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.229		123	100	23.1	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9902		106	100	6.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8177		101	100	0.9	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.7262		99.2	100	-0.8	30.0
13C-OCDD	Ave	0.4879	0.5398		221	200	10.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.241		4.52	5.00	-9.5	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29136/30 Calibration Date: 11/01/2013 18:11

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 31OC13C3D5_30.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.060		9.58	10.0	-4.2	20.0
2,3,7,8-TCDD	AveID	1.149	1.247		10.9	10.0	8.5	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.177		53.4	50.0	6.8	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.135		53.5	50.0	6.9	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.099		50.3	50.0	0.5	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.196		48.2	50.0	-3.5	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.485		45.7	50.0	-8.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.297		45.4	50.0	-9.3	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8392		52.5	50.0	5.0	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.141		52.3	50.0	4.5	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.117		49.2	50.0	-1.7	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.207		47.5	50.0	-5.1	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.499		51.9	50.0	3.7	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.187		53.2	50.0	6.4	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.292		52.9	50.0	5.7	20.0
OCDD	AveID	1.211	1.147		94.8	100	-5.2	20.0
OCDF	AveID	1.657	1.442		87.0	100	-13.0	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.765		109	100	9.1	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.055		101	100	1.4	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.339		108	100	8.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.7711		101	100	1.4	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.246		125	100	24.8	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.022		110	100	9.6	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8089		99.8	100	-0.2	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6827		93.2	100	-6.8	30.0
13C-OCDD	Ave	0.4879	0.4774		196	200	-2.2	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.347		4.91	5.00	-1.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29136/44 Calibration Date: 11/02/2013 04:14

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 31OC13C3D5_44.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.083		9.79	10.0	-2.1	20.0
2,3,7,8-TCDD	AveID	1.149	1.212		10.5	10.0	5.4	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.158		52.6	50.0	5.1	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.068		50.3	50.0	0.6	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.112		50.8	50.0	1.7	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.240		50.0	50.0	0.0	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.494		46.0	50.0	-8.1	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.345		47.1	50.0	-5.9	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.9057		56.7	50.0	13.3	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.142		52.3	50.0	4.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.137		50.0	50.0	0.0	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.255		49.3	50.0	-1.3	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.536		53.1	50.0	6.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.161		52.1	50.0	4.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.290		52.8	50.0	5.5	20.0
OCDD	AveID	1.211	1.148		94.9	100	-5.1	20.0
OCDF	AveID	1.657	1.461		88.2	100	-11.8	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.754		108	100	8.4	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.039		99.9	100	-0.1	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.343		108	100	8.3	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.7968		105	100	4.8	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.187		119	100	18.9	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9762		105	100	4.7	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7950		98.1	100	-1.9	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6962		95.1	100	-4.9	30.0
13C-OCDD	Ave	0.4879	0.5058		207	200	3.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.347		4.91	5.00	-1.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29137/59 | Calibration Date: 11/02/2013 14:17

Instrument ID: 3D5 | Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) | Calib End Date: 07/31/2013 18:40

Lab File ID: 31OC13C3D5_58.d | Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.084		9.80	10.0	-2.0	20.0
2,3,7,8-TCDD	AveID	1.149	1.210		10.5	10.0	5.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.165		52.9	50.0	5.7	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.101		51.9	50.0	3.7	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.125		51.4	50.0	2.8	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.185		47.8	50.0	-4.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.584		48.7	50.0	-2.5	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.356		47.4	50.0	-5.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8191		51.2	50.0	2.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.138		52.1	50.0	4.3	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.106		48.7	50.0	-2.6	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.225		48.2	50.0	-3.6	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.449		50.1	50.0	0.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.173		52.6	50.0	5.2	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.304		53.4	50.0	6.7	20.0
OCDD	AveID	1.211	1.141		94.2	100	-5.8	20.0
OCDF	AveID	1.657	1.478		89.2	100	-10.8	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.773		110	100	9.6	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.067		103	100	2.5	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.363		110	100	10.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.7833		103	100	3.0	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.205		121	100	20.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.036		111	100	11.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7797		96.2	100	-3.8	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6733		91.9	100	-8.1	30.0
13C-OCDD	Ave	0.4879	0.4667		191	200	-4.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.373		5.00	5.00	0.0	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29135/16 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/01/2013 08:10

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.56	24

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131104-8438.b\31OC13C3D5_16.d		
Injection Date:	01-Nov-2013 08:10:30	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29135 (16)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

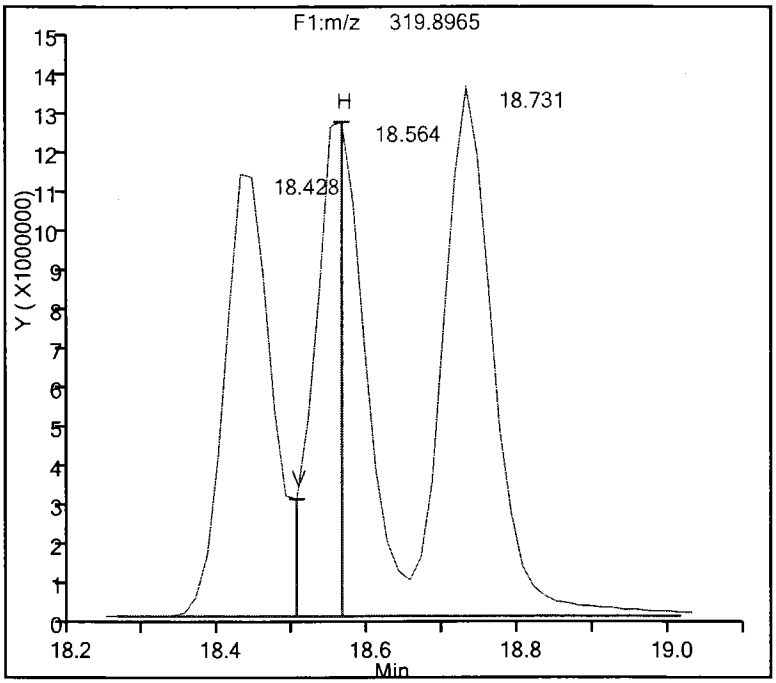
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2895892
H (Peak Height) = 12187094

%R = 24 <= 25
Passed



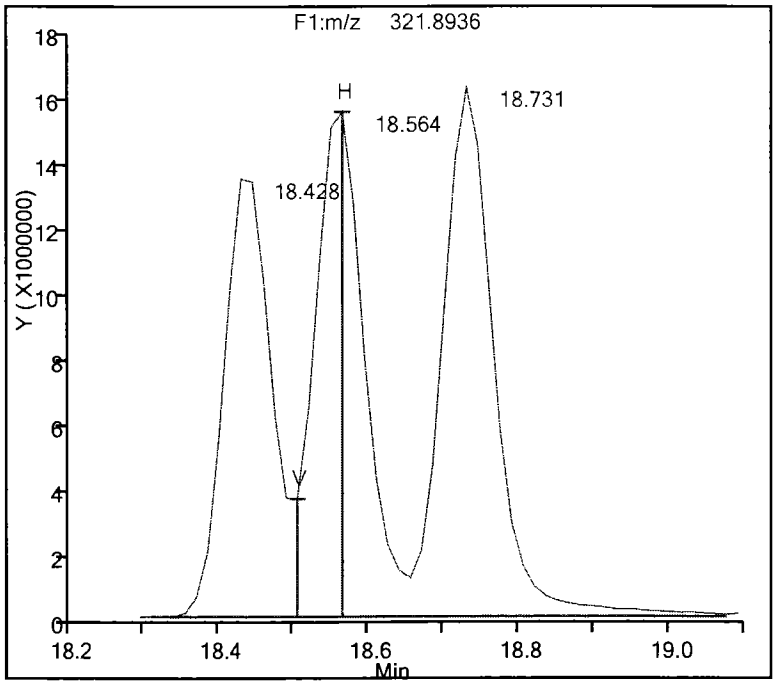
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3558612
H (Peak Height) = 15277100

%R = 23 <= 25
Passed



FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29136/31 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/01/2013 19:02

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.58	24

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131104-8438.b\31OC13C3D5_31.d		
Injection Date:	01-Nov-2013 19:02:27	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29136 (31)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

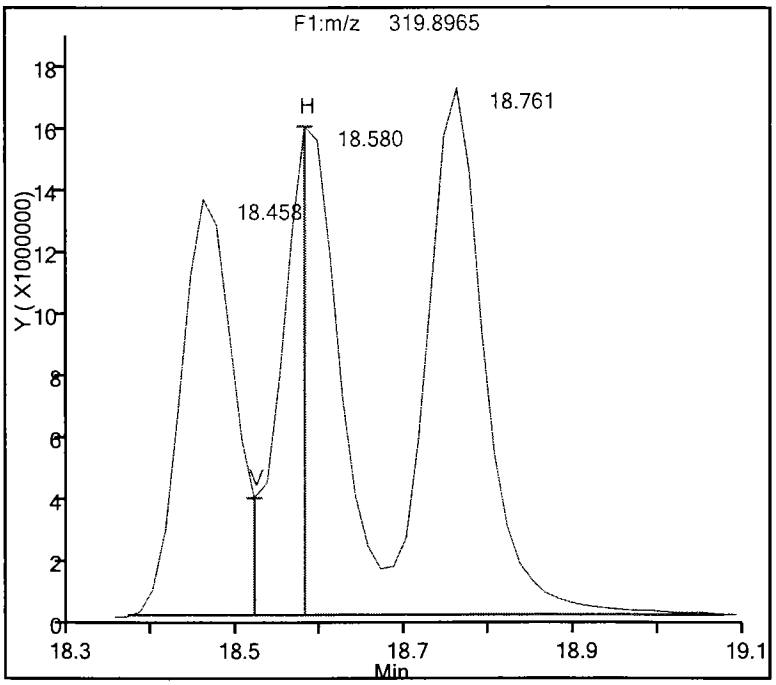
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3736257
H (Peak Height) = 15626203

%R = 24 <= 25
Passed



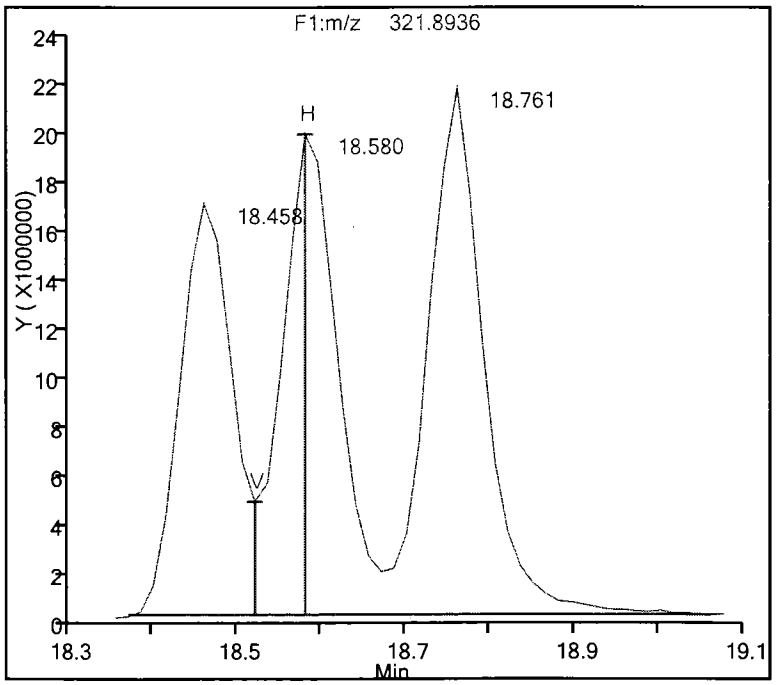
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 4615745
H (Peak Height) = 19633980

%R = 24 <= 25
Passed



FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29137/45 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/02/2013 05:05

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.58	21

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131104-8438.b\31OC13C3D5_45.d		
Injection Date:	02-Nov-2013 05:05:47	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29137 (45)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

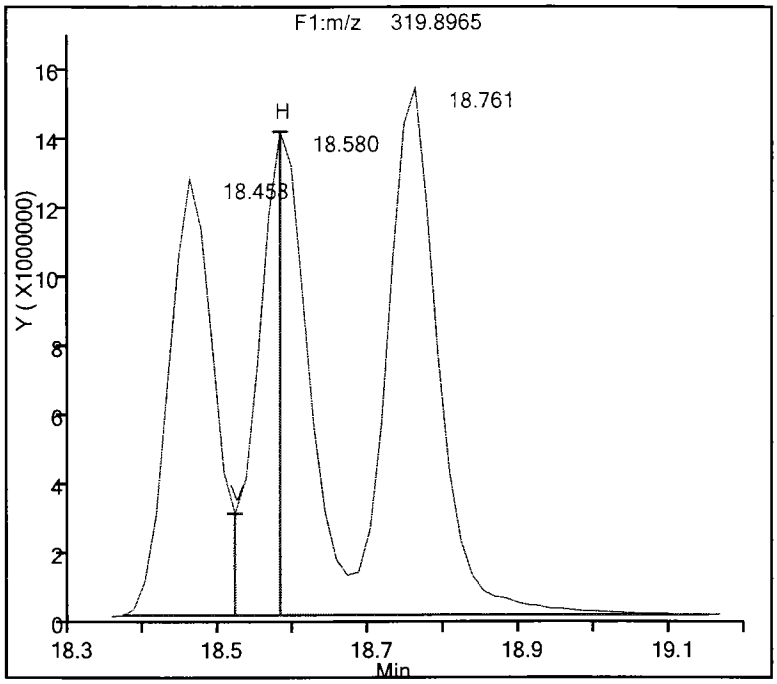
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2840651
H (Peak Height) = 13531113

%R = 21 <= 25
Passed



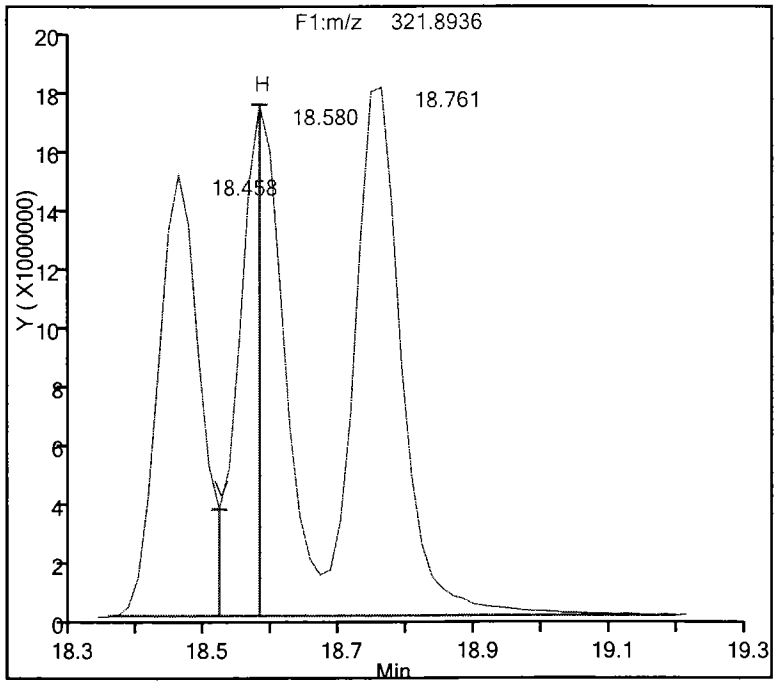
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3645381
H (Peak Height) = 17515964

%R = 21 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/03/2013 00:21

Analysis Batch Number: 29328 End Date: 11/03/2013 09:24

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29328/75		11/03/2013 00:21	1	31OC13C3D5_72.d	DB-5 0.32(mm)
CPS 320-29328/60		11/03/2013 01:12	1	31OC13C3D5_73.d	DB-5 0.32(mm)
320-4670-64	TF2-003-SS1019-000.5	11/03/2013 01:35	1	31OC13C3D5_75.d	DB-5 0.32(mm)
ZZZZZ		11/03/2013 01:53	1		DB-5 0.32(mm)
320-4670-64 MS	TF2-003-SS1019-000.5 MS	11/03/2013 02:16	1	31OC13C3D5_76.d	DB-5 0.32(mm)
320-4670-64 MSD	TF2-003-SS1019-000.5 MSD	11/03/2013 02:58	1	31OC13C3D5_77.d	DB-5 0.32(mm)
320-4670-65	TF2-003-SS-DUP06-1013	11/03/2013 03:40	1	31OC13C3D5_78.d	DB-5 0.32(mm)
320-4670-13	TF2-004/5-SS1028-000.8	11/03/2013 04:22	1	31OC13C3D5_79.d	DB-5 0.32(mm)
320-4670-14	TF2-004/5-SS1027-0001	11/03/2013 05:03	1	31OC13C3D5_80.d	DB-5 0.32(mm)
320-4670-14 MS	TF2-004/5-SS1027-0001 MS	11/03/2013 05:45	1	31OC13C3D5_81.d	DB-5 0.32(mm)
320-4670-14 MSD	TF2-004/5-SS1027-0001 MSD	11/03/2013 06:27	1	31OC13C3D5_82.d	DB-5 0.32(mm)
320-4670-15	TF2-004/5-SS1040-000.9	11/03/2013 07:09	1	31OC13C3D5_83.d	DB-5 0.32(mm)
320-4670-16	TF2-004/5-SS1039-000.9	11/03/2013 07:50	1	31OC13C3D5_84.d	DB-5 0.32(mm)
CCV 320-29328/73		11/03/2013 09:24	1	31OC13C3D5_86.d	DB-5 0.32(mm)

8290

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29328/75 Calibration Date: 11/03/2013 00:21

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 310C13C3D5_72.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.094		9.89	10.0	-1.1	20.0
2,3,7,8-TCDD	AveID	1.149	1.197		10.4	10.0	4.1	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.162		52.7	50.0	5.5	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.106		52.1	50.0	4.2	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.131		51.7	50.0	3.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.205		48.6	50.0	-2.8	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.591		49.0	50.0	-2.1	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.364		47.7	50.0	-4.5	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8955		56.0	50.0	12.1	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.125		51.5	50.0	3.0	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.143		50.3	50.0	0.6	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.262		49.6	50.0	-0.7	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.370		47.4	50.0	-5.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.189		53.3	50.0	6.6	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.297		53.0	50.0	6.1	20.0
OCDD	AveID	1.211	1.113		92.0	100	-8.0	20.0
OCDF	AveID	1.657	1.491		90.0	100	-10.0	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.754		108	100	8.4	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.047		101	100	0.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.339		108	100	8.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.7886		104	100	3.7	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.175		118	100	17.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9842		106	100	5.5	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7892		97.3	100	-2.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6752		92.2	100	-7.8	30.0
13C-OCDD	Ave	0.4879	0.4605		189	200	-5.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.329		4.84	5.00	-3.2	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29328/73 Calibration Date: 11/03/2013 09:24

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 310C13C3D5_86.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.047		9.47	10.0	-5.3	20.0
2,3,7,8-TCDD	AveID	1.149	1.183		10.3	10.0	3.0	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.158		52.5	50.0	5.1	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.104		52.0	50.0	4.0	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.151		52.6	50.0	5.2	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.226		49.5	50.0	-1.1	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.598		49.2	50.0	-1.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.367		47.8	50.0	-4.3	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8484		53.1	50.0	6.1	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.130		51.8	50.0	3.5	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.101		48.5	50.0	-3.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.261		49.6	50.0	-0.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.502		52.0	50.0	3.9	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.148		51.5	50.0	3.0	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.269		51.9	50.0	3.8	20.0
OCDD	AveID	1.211	1.120		92.5	100	-7.5	20.0
OCDF	AveID	1.657	1.493		90.1	100	-9.9	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.755		108	100	8.5	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.047		101	100	0.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.346		109	100	8.6	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.7750		102	100	1.9	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.181		118	100	18.3	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.011		108	100	8.4	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7797		96.2	100	-3.8	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6907		94.3	100	-5.7	30.0
13C-OCDD	Ave	0.4879	0.4738		194	200	-2.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.369		4.99	5.00	-0.3	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29328/60 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/03/2013 01:12

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.60	25

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131104-8438.b\31OC13C3D5_73.d		
Injection Date:	03-Nov-2013 01:12:15	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29328 (60)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

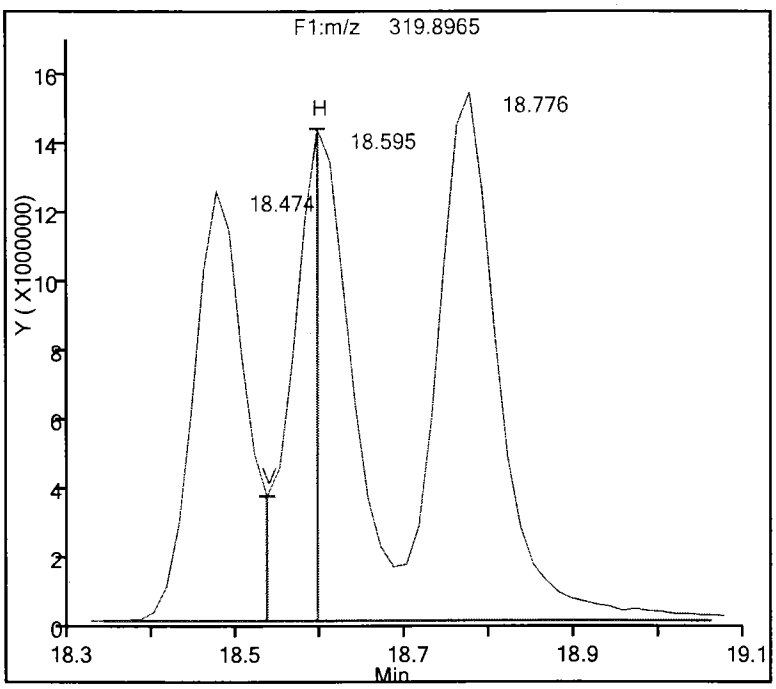
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3450157
H (Peak Height) = 13625425

%R = 25 <= 25
Passed



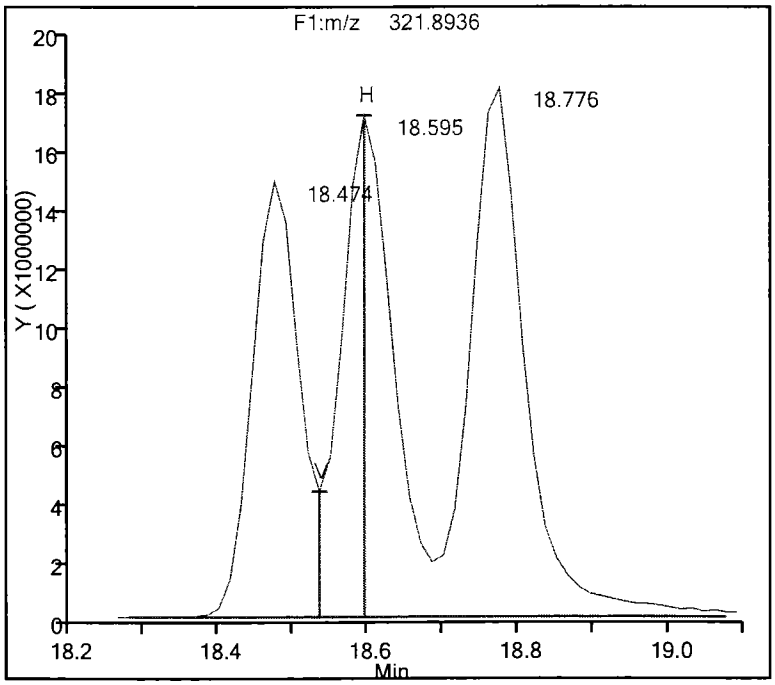
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 4162689
H (Peak Height) = 16647979

%R = 25 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/04/2013 22:15

Analysis Batch Number: 29347 End Date: 11/05/2013 07:29

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29347/2		11/04/2013 22:15	1	04NO13B3D5_2.d	DB-5 0.32(mm)
CPS 320-29347/3		11/04/2013 22:57	1	04NO13B3D5_3.d	DB-5 0.32(mm)
ZZZZZ		11/04/2013 23:39	1		DB-5 0.32(mm)
320-4670-54	TF2-004/5-SS1068-000.5	11/05/2013 00:21	1	04NO13B3D5_5.d	DB-5 0.32(mm)
320-4670-55	TF2-004/5-SS-DUP05-1013	11/05/2013 01:03	1	04NO13B3D5_6.d	DB-5 0.32(mm)
320-4670-56	TF2-003-SS1011-000.8	11/05/2013 01:45	1	04NO13B3D5_7.d	DB-5 0.32(mm)
320-4670-57	TF2-003-SS1012-000.7	11/05/2013 02:27	1	04NO13B3D5_8.d	DB-5 0.32(mm)
320-4670-58	TF2-003-SS1013-000.7	11/05/2013 03:08	1	04NO13B3D5_9.d	DB-5 0.32(mm)
320-4670-59	TF2-003-SS1014-0001	11/05/2013 03:50	1	04NO13B3D5_10.d	DB-5 0.32(mm)
320-4670-60	TF2-003-SS1015-000.8	11/05/2013 04:32	1	04NO13B3D5_11.d	DB-5 0.32(mm)
320-4670-61	TF2-003-SS1016-000.9	11/05/2013 05:14	1	04NO13B3D5_12.d	DB-5 0.32(mm)
320-4670-62	TF2-003-SS1017-000.8	11/05/2013 05:55	1	04NO13B3D5_13.d	DB-5 0.32(mm)
CCV 320-29347/15		11/05/2013 07:29	1	04NO13B3D5_15.d	DB-5 0.32(mm)

8290

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/05/2013 07:29

Analysis Batch Number: 29348 End Date: 11/05/2013 17:32

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29348/15		11/05/2013 07:29	1	04NO13B3D5_15.d	DB-5 0.32(mm)
CPS 320-29348/16		11/05/2013 08:20	1	04NO13B3D5_16.d	DB-5 0.32(mm)
ZZZZZ		11/05/2013 09:01	1		DB-5 0.32(mm)
MB 320-28458/1-A		11/05/2013 09:43	1	04NO13B3D5_18.d	DB-5 0.32(mm)
LCS 320-28458/2-A		11/05/2013 10:25	1	04NO13B3D5_19.d	DB-5 0.32(mm)
320-4670-18	TF2-004/5-SS1038-000.7	11/05/2013 11:07	1	04NO13B3D5_20.d	DB-5 0.32(mm)
320-4670-19	TF2-004/5-SS1037-000.7	11/05/2013 11:48	1	04NO13B3D5_21.d	DB-5 0.32(mm)
320-4670-20	TF2-004/5-SS1036-000.6	11/05/2013 12:30	1	04NO13B3D5_22.d	DB-5 0.32(mm)
320-4670-21	TF2-004/5-SS1035-0001	11/05/2013 13:12	1	04NO13B3D5_23.d	DB-5 0.32(mm)
320-4670-22	TF2-004/5-SS-DUP02-1013	11/05/2013 13:53	1	04NO13B3D5_24.d	DB-5 0.32(mm)
320-4670-2	TF2-004/5-SS1026-000.8	11/05/2013 14:35	1	04NO13B3D5_25.d	DB-5 0.32(mm)
320-4670-3	TF2-004/5-SS1024-000.6	11/05/2013 15:17	1	04NO13B3D5_26.d	DB-5 0.32(mm)
320-4670-4	TF2-004/5-SS1023-000.8	11/05/2013 15:59	1	04NO13B3D5_27.d	DB-5 0.32(mm)
CCV 320-29348/29		11/05/2013 17:32	1	04NO13B3D5_29.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29347/2 Calibration Date: 11/04/2013 22:15

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 04NO13B3D5_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.061		9.58	10.0	-4.2	20.0
2,3,7,8-TCDD	AveID	1.149	1.233		10.7	10.0	7.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.187		53.9	50.0	7.8	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.166		54.9	50.0	9.8	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.090		49.8	50.0	-0.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.199		48.4	50.0	-3.3	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.716		52.8	50.0	5.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.417		49.6	50.0	-0.8	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8169		51.1	50.0	2.2	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.124		51.5	50.0	3.0	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.160		51.1	50.0	2.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.265		49.8	50.0	-0.5	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.632		56.5	50.0	13.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.208		54.1	50.0	8.3	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.322		54.1	50.0	8.2	20.0
OCDD	AveID	1.211	1.160		95.8	100	-4.2	20.0
OCDF	AveID	1.657	1.465		88.4	100	-11.6	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.914		118	100	18.3	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.066		102	100	2.5	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.394		113	100	12.5	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8455		111	100	11.2	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.086		109	100	8.8	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.000		107	100	7.3	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7621		94.0	100	-6.0	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.5857		80.0	100	-20.0	30.0
13C-OCDD	Ave	0.4879	0.4643		190	200	-4.8	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.382		5.03	5.00	0.7	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29348/15 Calibration Date: 11/05/2013 07:29

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 04NO13B3D5_15.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.072		9.69	10.0	-3.1	20.0
2,3,7,8-TCDD	AveID	1.149	1.245		10.8	10.0	8.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.170		53.1	50.0	6.2	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.158		54.6	50.0	9.1	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.052		48.1	50.0	-3.8	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.187		47.9	50.0	-4.2	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.495		46.0	50.0	-8.0	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.300		45.5	50.0	-9.0	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8926		55.8	50.0	11.7	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.136		52.0	50.0	4.0	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.159		51.0	50.0	2.0	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.198		47.1	50.0	-5.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.461		50.6	50.0	1.1	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.210		54.2	50.0	8.5	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.296		53.0	50.0	6.0	20.0
OCDD	AveID	1.211	1.155		95.5	100	-4.5	20.0
OCDF	AveID	1.657	1.434		86.5	100	-13.5	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.832		113	100	13.2	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.011		97.2	100	-2.8	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.330		107	100	7.3	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8135		107	100	7.0	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.175		118	100	17.6	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9888		106	100	6.0	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8796		109	100	8.5	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6871		93.8	100	-6.2	30.0
13C-OCDD	Ave	0.4879	0.5526		227	200	13.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.319		4.81	5.00	-3.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29348/29 Calibration Date: 11/05/2013 17:32

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 04NO13B3D5_29.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.072		9.69	10.0	-3.1	20.0
2,3,7,8-TCDD	AveID	1.149	1.280		11.1	10.0	11.4	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.139		51.7	50.0	3.4	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.108		52.2	50.0	4.4	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.122		51.3	50.0	2.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.194		48.2	50.0	-3.7	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.426		43.9	50.0	-12.2	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.321		46.2	50.0	-7.6	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.9751		61.0	50.0	22.0*	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.140		52.2	50.0	4.4	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.200		52.8	50.0	5.6	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.239		48.7	50.0	-2.5	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.497		51.8	50.0	3.6	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.243		55.7	50.0	11.5	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.328		54.3	50.0	8.6	20.0
OCDD	AveID	1.211	1.133		93.6	100	-6.4	20.0
OCDF	AveID	1.657	1.386		83.6	100	-16.4	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.844		114	100	14.0	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.038		99.8	100	-0.2	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.442		116	100	16.3	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8430		111	100	10.9	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.146		115	100	14.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9407		101	100	0.9	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8778		108	100	8.3	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6881		94.0	100	-6.0	30.0
13C-OCDD	Ave	0.4879	0.5500		225	200	12.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.399		5.10	5.00	2.0	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29347/3 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/04/2013 22:57

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.44	24

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131106-8509.b\04NO13B3D5_3.d		
Injection Date:	04-Nov-2013 22:57:44	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29347 (3)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

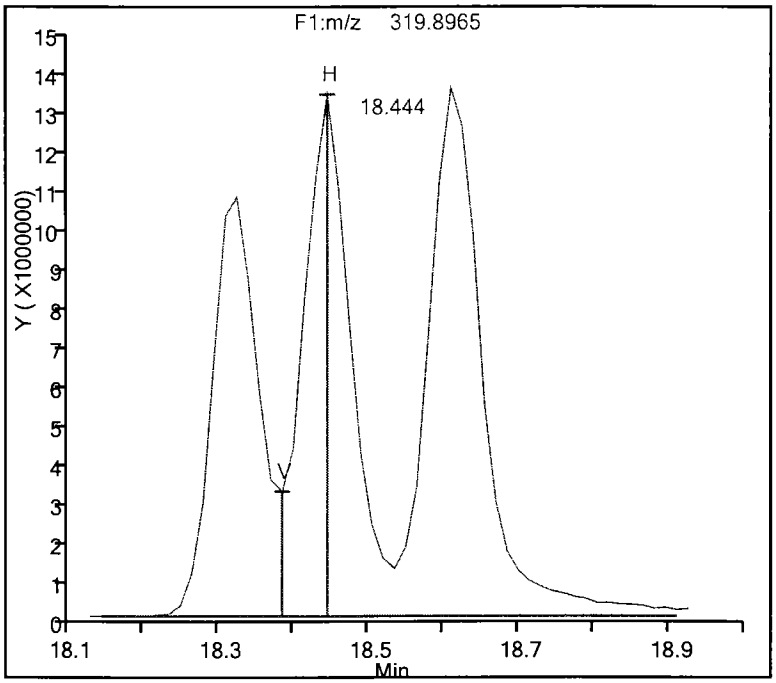
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3053425
H (Peak Height) = 12748165

%R = 24 <= 25
Passed



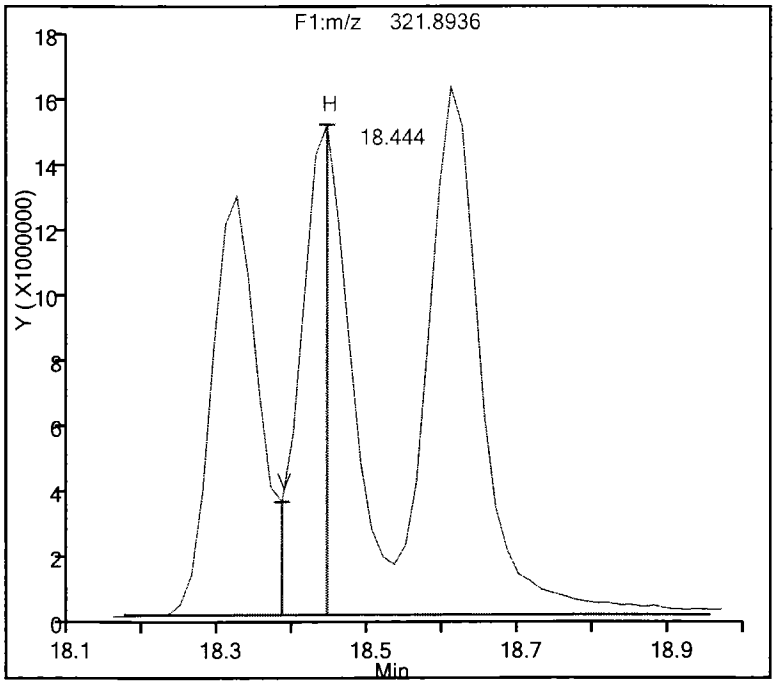
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3483986
H (Peak Height) = 15124972

%R = 23 <= 25
Passed



FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29348/16 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/05/2013 08:20

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.40	21

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131106-8509.b\04NO13B3D5_16.d		
Injection Date:	05-Nov-2013 08:20:41	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29348 (16)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

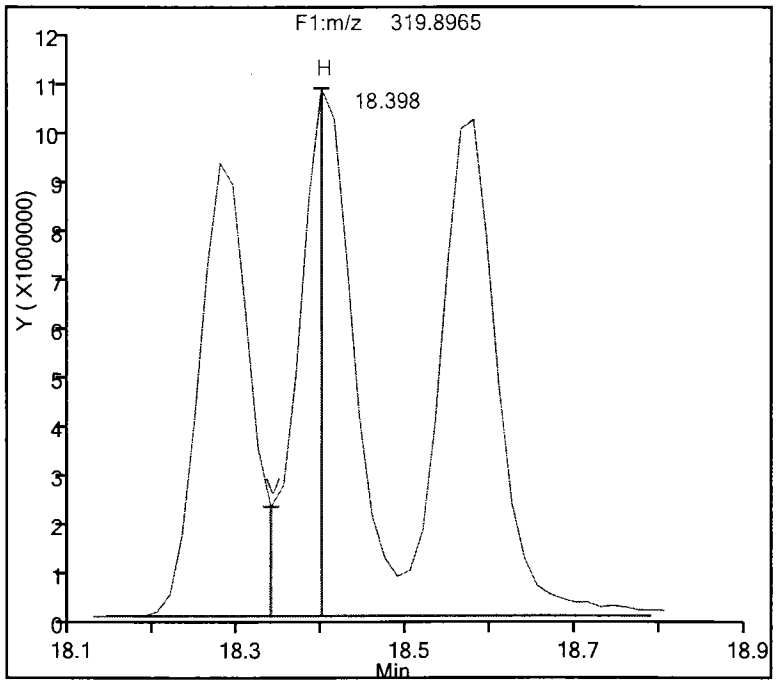
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2177779
H (Peak Height) = 10521531

%R = 21 <= 25
Passed



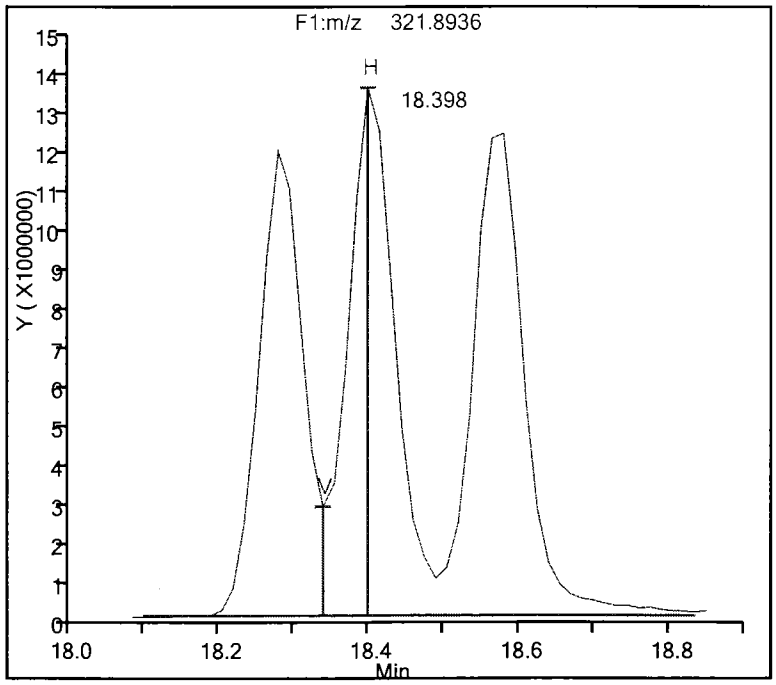
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2653148
H (Peak Height) = 12879928

%R = 21 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/05/2013 21:40

Analysis Batch Number: 29432 End Date: 11/06/2013 07:34

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29432/1	ok	11/05/2013 21:40	1	05NO13A3D5_1.d	DB-5 0.32(mm)
CPS 320-29432/2		11/05/2013 22:22	1	05NO13A3D5_2.d	DB-5 0.32(mm)
ZZZZZ		11/05/2013 23:03	1		DB-5 0.32(mm)
320-4670-1	TF2-004/5-SS1025-000.8	11/05/2013 23:45	1	05NO13A3D5_4.d	DB-5 0.32(mm)
320-4670-5	TF2-004/5-SS1022-000.9	11/06/2013 00:27	1	05NO13A3D5_5.d	DB-5 0.32(mm)
320-4670-6	TF2-004/5-SS1021-000.7	11/06/2013 01:08	1	05NO13A3D5_6.d	DB-5 0.32(mm)
320-4670-7	TF2-004/5-SS1020-0001	11/06/2013 01:50	1	05NO13A3D5_7.d	DB-5 0.32(mm)
320-4670-8	TF2-004/5-SS1032-000.9	11/06/2013 02:32	1	05NO13A3D5_8.d	DB-5 0.32(mm)
320-4670-9	TF2-004/5-SS1031-000.8	11/06/2013 03:13	1	05NO13A3D5_9.d	DB-5 0.32(mm)
320-4670-10	TF2-004/5-SS-DUP01-1013	11/06/2013 03:55	1	05NO13A3D5_10.d	DB-5 0.32(mm)
320-4670-11	TF2-004/5-SS1030-000.6	11/06/2013 04:37	1	05NO13A3D5_11.d	DB-5 0.32(mm)
320-4670-12	TF2-004/5-SS1029-000.6	11/06/2013 05:19	1	05NO13A3D5_12.d	DB-5 0.32(mm)
320-4670-63	TF2-003-SS1018-000.8	11/06/2013 06:00	1	05NO13A3D5_13.d	DB-5 0.32(mm)
CCV 320-29432/15		11/06/2013 07:34	1	05NO13A3D5_15.d	DB-5 0.32(mm)

8290

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29432/1 Calibration Date: 11/05/2013 21:40

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 05NO13A3D5_1.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.016		9.18	10.0	-8.2	20.0
2,3,7,8-TCDD	AveID	1.149	1.214		10.6	10.0	5.6	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.125		51.0	50.0	2.1	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.042		49.1	50.0	-1.8	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.120		51.2	50.0	2.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.182		47.7	50.0	-4.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.458		44.9	50.0	-10.3	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.277		44.7	50.0	-10.6	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8804		55.1	50.0	10.2	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.115		51.1	50.0	2.2	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.127		49.6	50.0	-0.8	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.155		45.4	50.0	-9.2	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.442		49.9	50.0	-0.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.199		53.7	50.0	7.5	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.253		51.3	50.0	2.5	20.0
OCDD	AveID	1.211	1.095		90.5	100	-9.5	20.0
OCDF	AveID	1.657	1.325		80.0	100	-20.0	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.771		109	100	9.5	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.041		100	100	0.0	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.381		111	100	11.4	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8028		106	100	5.6	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.152		115	100	15.4	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9708		104	100	4.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8638		107	100	6.6	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.7051		96.3	100	-3.7	30.0
13C-OCDD	Ave	0.4879	0.6040		248	200	23.8	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.417		5.16	5.00	3.2	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29432/15 Calibration Date: 11/06/2013 07:34

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 05NO13A3D5_15.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.052		9.51	10.0	-4.9	20.0
2,3,7,8-TCDD	AveID	1.149	1.283		11.2	10.0	11.7	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.151		52.3	50.0	4.5	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.142		53.8	50.0	7.6	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.076		49.2	50.0	-1.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.177		47.5	50.0	-5.0	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.374		42.3	50.0	-15.4	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.261		44.1	50.0	-11.8	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.9418		58.9	50.0	17.8	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.139		52.2	50.0	4.4	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.130		49.7	50.0	-0.5	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.186		46.6	50.0	-6.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.439		49.8	50.0	-0.4	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.180		52.9	50.0	5.8	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.275		52.2	50.0	4.3	20.0
OCDD	AveID	1.211	1.129		93.2	100	-6.8	20.0
OCDF	AveID	1.657	1.358		81.9	100	-18.1	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.777		110	100	9.8	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.017		97.7	100	-2.3	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.341		108	100	8.2	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8522		112	100	12.1	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.223		122	100	22.5	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9672		104	100	3.7	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.9243		114	100	14.0	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.7447		102	100	1.7	30.0
13C-OCDD	Ave	0.4879	0.6319		259	200	29.5	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.346		4.91	5.00	-1.9	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29432/2 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/05/2013 22:22

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.41	21

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131107-8535.b\05NO13A3D5_2.d		
Injection Date:	05-Nov-2013 22:22:15	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29432 (2)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

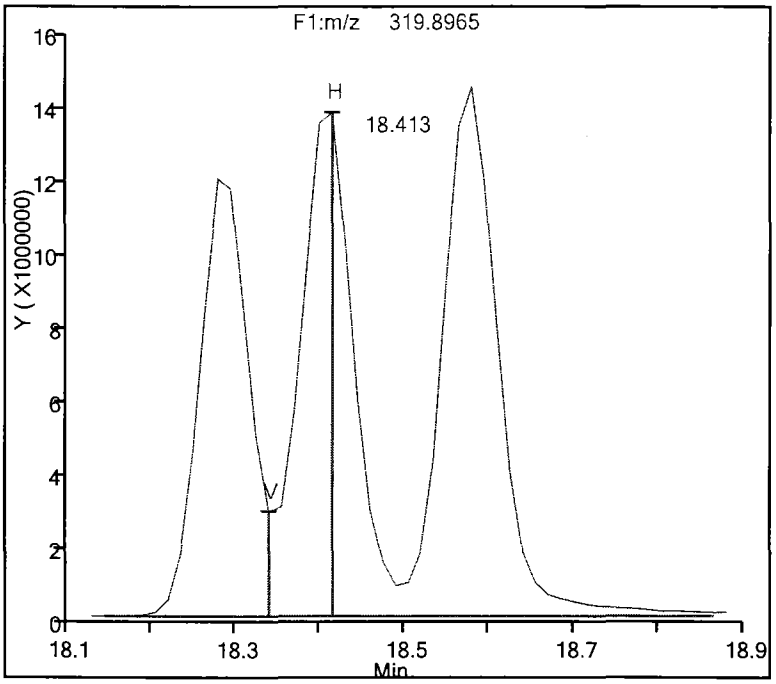
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2839927
H (Peak Height) = 13619729

%R = 21 <= 25
Passed



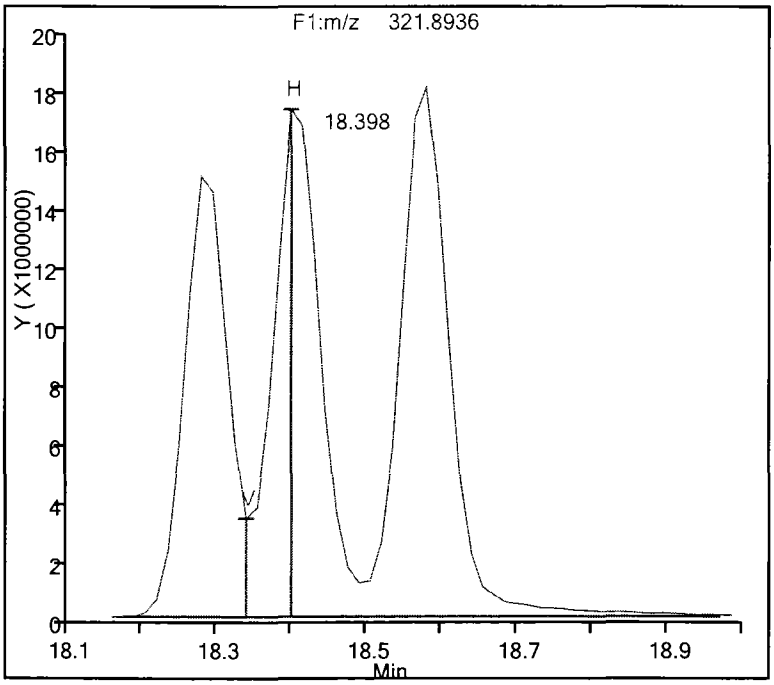
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3336485
H (Peak Height) = 17267372

%R = 19 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/18/2013 03:44

Analysis Batch Number: 32174 End Date: 12/18/2013 13:48

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-32174/13		12/18/2013 03:44	1	16DE13B3D5_41.d	DB-5 0.32(mm)
CPS 320-32174/14		12/18/2013 04:36	1	16DE13B3D5_42.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 05:17	1		DB-5 0.32(mm)
320-4670-5 RADL	TF2-004/5-SS1022-000.9 RADL	12/18/2013 05:59	10	16DE13B3D5_44.d	DB-5 0.32(mm)
320-4670-7 RADL	TF2-004/5-SS1020-0001 RADL	12/18/2013 06:40	10	16DE13B3D5_45.d	DB-5 0.32(mm)
320-4670-10 RADL	TF2-004/5-SS-DUP01-1013 RADL	12/18/2013 07:22	10	16DE13B3D5_46.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 08:04	10		DB-5 0.32(mm)
ZZZZZ		12/18/2013 08:46	10		DB-5 0.32(mm)
320-4670-14 MS RADL	TF2-004/5-SS1027-0001 MS RADL	12/18/2013 09:28	10	16DE13B3D5_49.d	DB-5 0.32(mm)
320-4670-14 MSD RADL	TF2-004/5-SS1027-0001 MSD RADL	12/18/2013 10:09	10	16DE13B3D5_50.d	DB-5 0.32(mm)
320-4670-15 RADL	TF2-004/5-SS1040-000.9 RADL	12/18/2013 10:51	10	16DE13B3D5_51.d	DB-5 0.32(mm)
320-4670-16 RADL	TF2-004/5-SS1039-000.9 RADL	12/18/2013 11:33	10	16DE13B3D5_52.d	DB-5 0.32(mm)
320-4670-20 RADL	TF2-004/5-SS1036-000.6 RADL	12/18/2013 12:15	10	16DE13B3D5_53.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 12:57	1		DB-5 0.32(mm)
CCV 320-32174/27		12/18/2013 13:48	1	16DE13B3D5_55.d	DB-5 0.32(mm)

8290

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32174/13 Calibration Date: 12/18/2013 03:44

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_41.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.014		9.17	10.0	-8.3	20.0
2,3,7,8-TCDD	AveID	1.149	1.175		10.2	10.0	2.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.138		51.6	50.0	3.3	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.098		51.7	50.0	3.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.109		50.7	50.0	1.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.107		44.7	50.0	-10.7	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.400		43.1	50.0	-13.8	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.250		43.7	50.0	-12.5	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8855		55.4	50.0	10.8	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.127		51.6	50.0	3.2	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.108		48.8	50.0	-2.4	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.140		44.8	50.0	-10.4	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.449		50.1	50.0	0.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.144		51.3	50.0	2.6	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.323		54.1	50.0	8.2	20.0
OCDD	AveID	1.211	1.263		104	100	4.4	20.0
OCDF	AveID	1.657	1.678		101	100	1.3	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.833		113	100	13.3	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.096		105	100	5.3	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.364		110	100	10.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8465		111	100	11.3	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.155		116	100	15.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.037		111	100	11.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.9053		112	100	11.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.7958		109	100	8.7	30.0
13C-OCDD	Ave	0.4879	0.5367		220	200	10.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.515		5.52	5.00	10.4	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32174/27 Calibration Date: 12/18/2013 13:48

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_55.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.002		9.05	10.0	-9.5	20.0
2,3,7,8-TCDD	AveID	1.149	1.271		11.1	10.0	10.6	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.126		51.1	50.0	2.2	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.109		52.2	50.0	4.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.072		49.0	50.0	-2.0	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.132		45.7	50.0	-8.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.539		47.4	50.0	-5.2	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.278		44.7	50.0	-10.6	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.7771		48.6	50.0	-2.8	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.143		52.4	50.0	4.7	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.100		48.4	50.0	-3.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.124		44.2	50.0	-11.6	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.492		51.6	50.0	3.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.143		51.2	50.0	2.5	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.268		51.9	50.0	3.7	20.0
OCDD	AveID	1.211	1.299		107	100	7.3	20.0
OCDF	AveID	1.657	1.767		107	100	6.6	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.821		113	100	12.6	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.055		101	100	1.3	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.328		107	100	7.1	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8385		110	100	10.3	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.093		109	100	9.4	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.073		115	100	15.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8317		103	100	2.6	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6832		93.3	100	-6.7	30.0
13C-OCDD	Ave	0.4879	0.4397		180	200	-9.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.560		5.68	5.00	13.7	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32174/14 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/18/2013 04:36

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.44	22

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\3D5\20131218-9321.b\16DE13B3D5_42.d
Injection Date: 18-Dec-2013 04:36:05 Instrument ID: 3D5
Lims ID: CPS Lab Sample ID: CPS 320-32174/14-A
Client ID:
Operator ID: SMA ALS Bottle#: 1 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 8290 - ICAL

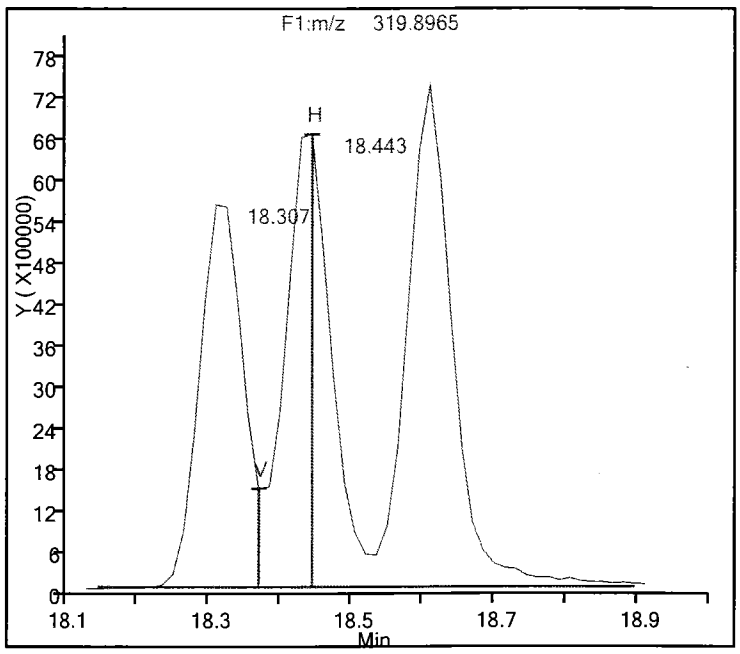
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1436902
H (Peak Height) = 6609211

%R = 22 <= 25
Passed



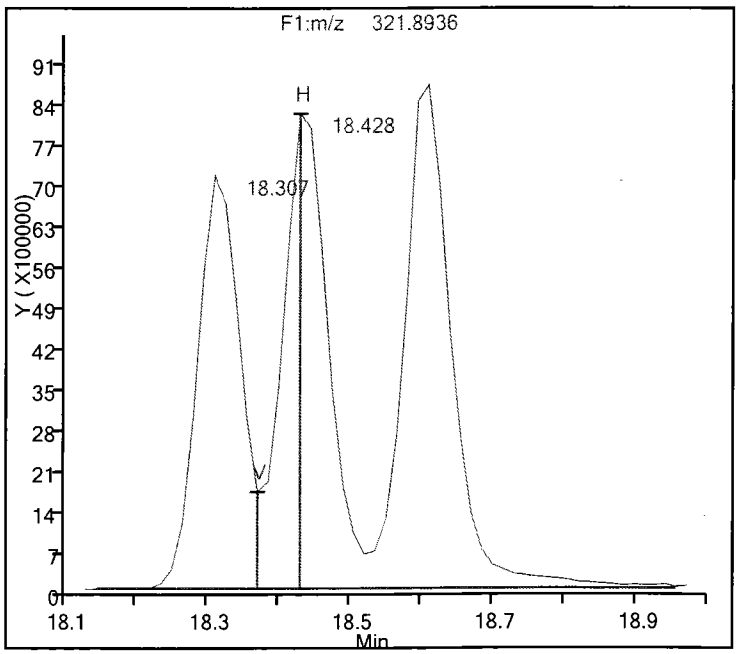
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1658604
H (Peak Height) = 8157702

%R = 20 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/18/2013 13:48

Analysis Batch Number: 32193 End Date: 12/18/2013 21:15

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-32193/1		12/18/2013 13:48	1	16DE13B3D5_55.d	DB-5 0.32(mm)
CPS 320-32193/2		12/18/2013 14:40	1	16DE13B3D5_56.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 15:21	1		DB-5 0.32(mm)
ZZZZZ		12/18/2013 16:02	10		DB-5 0.32(mm)
ZZZZZ		12/18/2013 16:44	10		DB-5 0.32(mm)
ZZZZZ		12/18/2013 17:26	10		DB-5 0.32(mm)
ZZZZZ		12/18/2013 18:08	10		DB-5 0.32(mm)
320-4670-14 RADL	TF2-004/5-SS1027-0001 RADL	12/18/2013 18:50	10	16DE13B3D5_62.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 19:32	10		DB-5 0.32(mm)
CCV 320-32193/11		12/18/2013 21:15	1	16DE13B3D5_65.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32193/1 Calibration Date: 12/18/2013 13:48

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_55.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.002		9.05	10.0	-9.5	20.0
2,3,7,8-TCDD	AveID	1.149	1.271		11.1	10.0	10.6	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.126		51.1	50.0	2.2	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.109		52.2	50.0	4.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.072		49.0	50.0	-2.0	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.132		45.7	50.0	-8.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.539		47.4	50.0	-5.2	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.278		44.7	50.0	-10.6	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.7771		48.6	50.0	-2.8	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.143		52.4	50.0	4.7	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.100		48.4	50.0	-3.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.124		44.2	50.0	-11.6	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.492		51.6	50.0	3.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.143		51.2	50.0	2.5	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.268		51.9	50.0	3.7	20.0
OCDD	AveID	1.211	1.299		107	100	7.3	20.0
OCDF	AveID	1.657	1.767		107	100	6.6	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.821		113	100	12.6	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.055		101	100	1.3	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.328		107	100	7.1	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8385		110	100	10.3	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.093		109	100	9.4	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.073		115	100	15.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8317		103	100	2.6	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6832		93.3	100	-6.7	30.0
13C-OCDD	Ave	0.4879	0.4397		180	200	-9.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.560		5.68	5.00	13.7	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32193/11 Calibration Date: 12/18/2013 21:15

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_65.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.010		9.13	10.0	-8.7	20.0
2,3,7,8-TCDD	AveID	1.149	1.181		10.3	10.0	2.8	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.126		51.1	50.0	2.2	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.120		52.8	50.0	5.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.102		50.4	50.0	0.7	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.122		45.3	50.0	-9.5	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.619		49.8	50.0	-0.3	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.327		46.4	50.0	-7.1	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.7203		45.1	50.0	-9.9	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.116		51.1	50.0	2.3	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.060		46.7	50.0	-6.7	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.168		45.9	50.0	-8.1	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.564		54.1	50.0	8.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.172		52.5	50.0	5.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.274		52.1	50.0	4.3	20.0
OCDD	AveID	1.211	1.280		106	100	5.8	20.0
OCDF	AveID	1.657	1.782		108	100	7.5	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.841		114	100	13.8	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.120		108	100	7.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.354		109	100	9.2	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8455		111	100	11.2	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.029		103	100	3.0	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.093		117	100	17.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7938		97.9	100	-2.1	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6656		82.5	100	-9.1	30.0
13C-OCDD	Ave	0.4879	0.4180		171	200	-14.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.659		6.04	5.00	20.9	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32193/2 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/18/2013 14:40

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.44	24

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\3D5\20131219-9327.b\16DE13B3D5_56.d
Injection Date: 18-Dec-2013 14:40:04 Instrument ID: 3D5
Lims ID: CPS Lab Sample ID: CPS 320-32194/2-A
Client ID:
Operator ID: SMA ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 8290 - ICAL

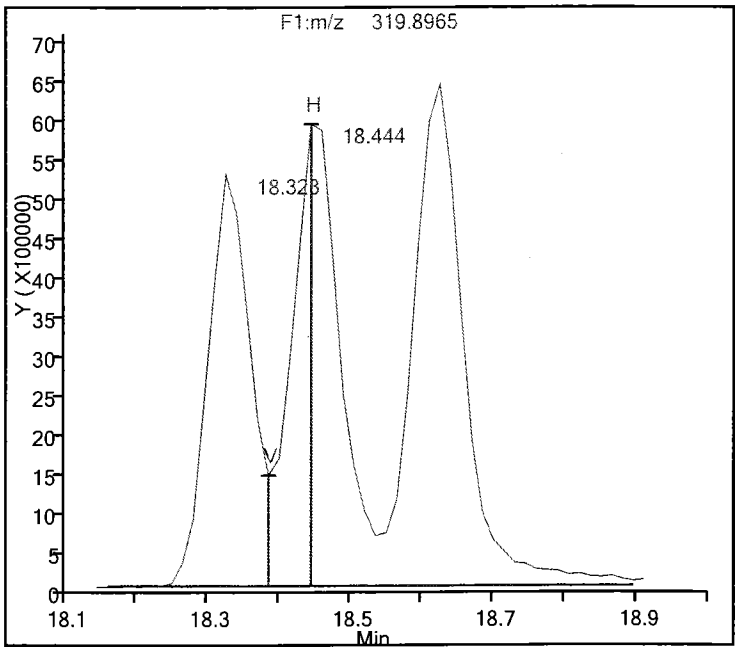
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1405298
H (Peak Height) = 5866099

%R = 24 <= 25
Passed



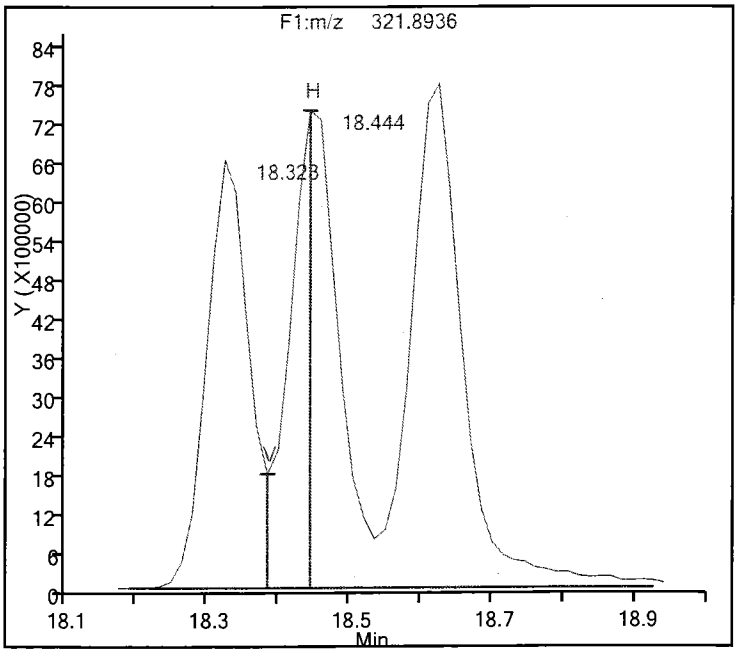
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1760261
H (Peak Height) = 7379581

%R = 24 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/18/2013 21:15

Analysis Batch ~~Number~~: 32194 End Date: 12/19/2013 07:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-32194/11		12/18/2013 21:15	1	16DE13B3D5_65.d	DB-5 0.32(mm)
CPS 320-32194/12		12/18/2013 22:06	1	16DE13B3D5_66.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 22:47	1		DB-5 0.32(mm)
320-4670-24 RADL	TF2-004/5-SS1033-000.8 RADL	12/18/2013 23:29	10	16DE13B3D5_68.d	DB-5 0.32(mm)
320-4670-25 RADL	TF2-004/5-SS1049-000.9 RADL	12/19/2013 00:11	10	16DE13B3D5_69.d	DB-5 0.32(mm)
320-4670-26 RADL	TF2-004/5-SS1048-000.8 RADL	12/19/2013 00:52	10	16DE13B3D5_70.d	DB-5 0.32(mm)
320-4670-27 RADL	TF2-004/5-SS1047-000.8 RADL	12/19/2013 01:34	10	16DE13B3D5_71.d	DB-5 0.32(mm)
320-4670-29 RADL	TF2-004/5-SS1045-000.5 RADL	12/19/2013 02:16	10	16DE13B3D5_72.d	DB-5 0.32(mm)
320-4670-32 RADL	TF2-004/5-SS1041-000.7 RADL	12/19/2013 02:58	10	16DE13B3D5_73.d	DB-5 0.32(mm)
320-4670-33 RADL	TF2-004/5-SS-DUP03-1013 RADL	12/19/2013 03:40	10	16DE13B3D5_74.d	DB-5 0.32(mm)
320-4670-35 RADL	TF2-004/5-SS1057-0001 RADL	12/19/2013 04:21	10	16DE13B3D5_75.d	DB-5 0.32(mm)
320-4670-39 RADL	TF2-004/5-SS1053-000.6 RADL	12/19/2013 05:03	10	16DE13B3D5_76.d	DB-5 0.32(mm)
320-4670-41 RADL	TF2-004/5-SS1051-000.8 RADL	12/19/2013 05:45	10	16DE13B3D5_77.d	DB-5 0.32(mm)
ZZZZZ		12/19/2013 06:27	1		DB-5 0.32(mm)
CCV 320-32194/25		12/19/2013 07:19	1	16DE13B3D5_79.d	DB-5 0.32(mm)

8290

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32194/11 Calibration Date: 12/18/2013 21:15

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_65.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.010		9.13	10.0	-8.7	20.0
2,3,7,8-TCDD	AveID	1.149	1.181		10.3	10.0	2.8	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.126		51.1	50.0	2.2	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.120		52.8	50.0	5.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.102		50.4	50.0	0.7	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.122		45.3	50.0	-9.5	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.619		49.8	50.0	-0.3	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.327		46.4	50.0	-7.1	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.7203		45.1	50.0	-9.9	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.116		51.1	50.0	2.3	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.060		46.7	50.0	-6.7	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.168		45.9	50.0	-8.1	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.564		54.1	50.0	8.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.172		52.5	50.0	5.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.274		52.1	50.0	4.3	20.0
OCDD	AveID	1.211	1.280		106	100	5.8	20.0
OCDF	AveID	1.657	1.782		108	100	7.5	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.841		114	100	13.8	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.120		108	100	7.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.354		109	100	9.2	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8455		111	100	11.2	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.029		103	100	3.0	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.093		117	100	17.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7938		97.9	100	-2.1	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6656		82.5	100	-9.1	30.0
13C-OCDD	Ave	0.4879	0.4180		171	200	-14.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.659		6.04	5.00	20.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32194/25 Calibration Date: 12/19/2013 07:19

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_79.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.013		9.16	10.0	-8.4	20.0
2,3,7,8-TCDD	AveID	1.149	1.171		10.2	10.0	1.9	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.139		51.7	50.0	3.4	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.106		52.1	50.0	4.2	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.079		49.3	50.0	-1.3	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.073		43.3	50.0	-13.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.542		47.5	50.0	-5.1	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.284		44.9	50.0	-10.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.7512		47.0	50.0	-6.0	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.123		51.5	50.0	2.9	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.086		47.8	50.0	-4.4	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.109		43.6	50.0	-12.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.529		52.9	50.0	5.8	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.217		54.5	50.0	9.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.230		50.3	50.0	0.7	20.0
OCDD	AveID	1.211	1.293		107	100	6.9	20.0
OCDF	AveID	1.657	1.749		106	100	5.5	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.854		115	100	14.6	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.090		105	100	4.8	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.356		109	100	9.4	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8605		113	100	13.2	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.082		108	100	8.4	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.087		117	100	16.5	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8403		104	100	3.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6703		91.5	100	-8.5	30.0
13C-OCDD	Ave	0.4879	0.4551		187	200	-6.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.575		5.74	5.00	14.8	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32194/12 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/18/2013 22:06

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.46	26

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\3D5\20131219-9327.b\16DE13B3D5_66.d
Injection Date: 18-Dec-2013 22:06:20 Instrument ID: 3D5
Lims ID: CPS Lab Sample ID: CPS 320-32194/12-A
Client ID:
Operator ID: SMA ALS Bottle#: 1 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 8290 - ICAL

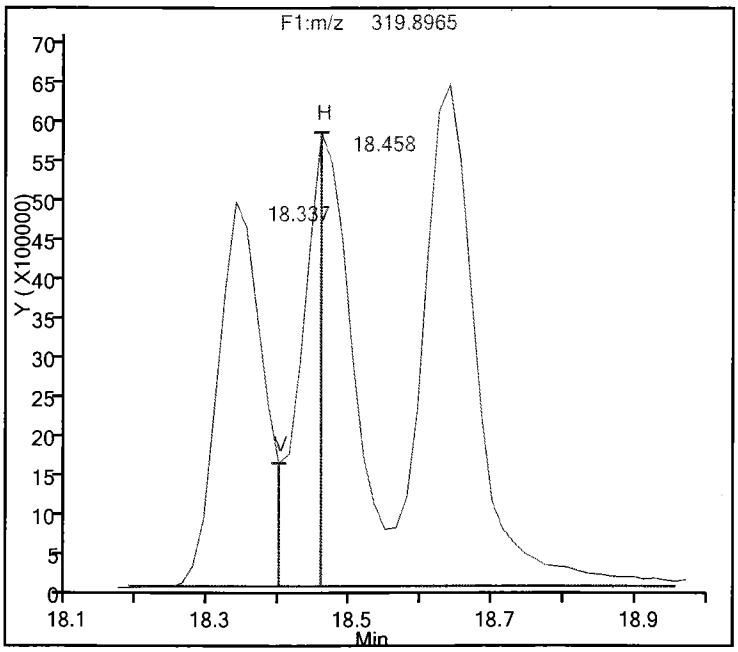
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1560288
H (Peak Height) = 5750588

%R = 27 <= 25
Failed



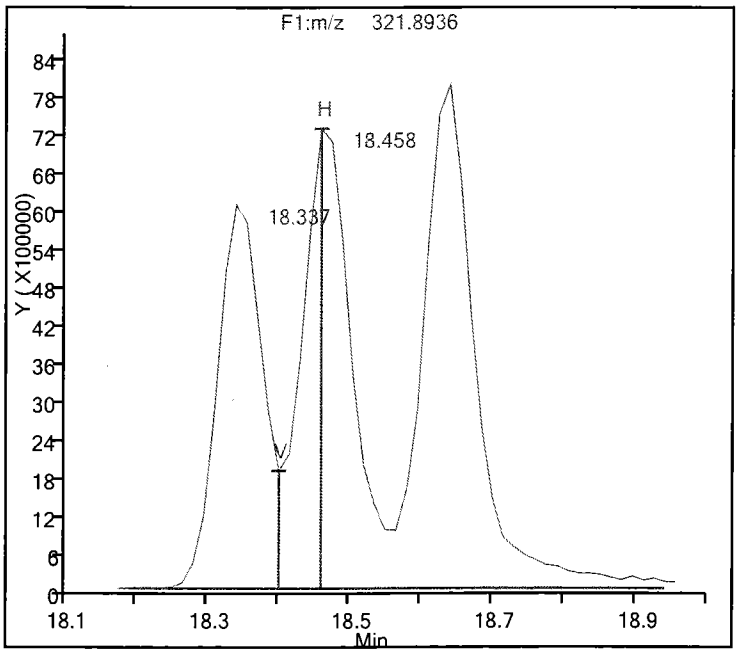
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1845789
H (Peak Height) = 7222210

%R = 26 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/19/2013 07:19

Analysis Batch Number: 32323 End Date: 12/19/2013 17:34

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-32323/1		12/19/2013 07:19	1	16DE13B3D5_79.d	DB-5 0.32(mm)
CPS 320-32323/2		12/19/2013 08:10	1	16DE13B3D5_80.d	DB-5 0.32(mm)
ZZZZZ		12/19/2013 08:51	1		DB-5 0.32(mm)
320-4670-43 RADL	TF2-004/5-SS1062-000.8 RADL	12/19/2013 09:33	10	16DE13B3D5_82.d	DB-5 0.32(mm)
320-4670-47 RADL	TF2-004/5-SS1066-000.9 RADL	12/19/2013 10:14	10	16DE13B3D5_83.d	DB-5 0.32(mm)
320-4670-48 RADL	TF2-004/5-SS1060.000.5 RADL	12/19/2013 11:08	10	16DE13B3D5_84.d	DB-5 0.32(mm)
320-4670-49 RADL	TF2-004/5-SS1059-000.6 RADL	12/19/2013 11:50	10	16DE13B3D5_85.d	DB-5 0.32(mm)
320-4670-56 RADL	TF2-003-SS1011-000.8 RADL	12/19/2013 12:31	10	16DE13B3D5_86.d	DB-5 0.32(mm)
320-4670-60 RADL	TF2-003-SS1015-000.8 RADL	12/19/2013 13:13	10	16DE13B3D5_87.d	DB-5 0.32(mm)
320-4670-61 RADL	TF2-003-SS1016-000.9 RADL	12/19/2013 13:55	10	16DE13B3D5_88.d	DB-5 0.32(mm)
320-4670-65 RADL	TF2-003-SS-DUP06-1013 RADL	12/19/2013 14:37	10	16DE13B3D5_89.d	DB-5 0.32(mm)
ZZZZZ		12/19/2013 15:19	10		DB-5 0.32(mm)
320-4670-12 RADL	TF2-004/5-SS1029-000.6 RADL	12/19/2013 16:00	10	16DE13B3D5_91.d	DB-5 0.32(mm)
ZZZZZ		12/19/2013 16:42	1		DB-5 0.32(mm)
CCV 320-32323/15		12/19/2013 17:34	1	16DE13B3D5_93.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32323/1 Calibration Date: 12/19/2013 07:19

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_79.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.013		9.16	10.0	-8.4	20.0
2,3,7,8-TCDD	AveID	1.149	1.145		9.97	10.0	-0.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.139		51.7	50.0	3.4	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.106		52.1	50.0	4.2	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.079		49.3	50.0	-1.3	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.073		43.3	50.0	-13.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.542		47.5	50.0	-5.1	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.284		44.9	50.0	-10.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.7512		47.0	50.0	-6.0	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.123		51.5	50.0	2.9	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.086		47.8	50.0	-4.4	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.109		43.6	50.0	-12.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.529		52.9	50.0	5.8	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.217		54.5	50.0	9.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.230		50.3	50.0	0.7	20.0
OCDD	AveID	1.211	1.293		107	100	6.9	20.0
OCDF	AveID	1.657	1.749		106	100	5.5	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.854		115	100	14.6	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.090		105	100	4.8	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.356		109	100	9.4	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8605		113	100	13.2	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.082		108	100	8.4	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.087		117	100	16.5	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8403		104	100	3.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6703		91.5	100	-8.5	30.0
13C-OCDD	Ave	0.4879	0.4551		187	200	-6.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.575		5.74	5.00	14.8	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32323/15 Calibration Date: 12/19/2013 17:34

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_93.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	0.9700		8.77	10.0	-12.3	20.0
2,3,7,8-TCDD	AveID	1.149	1.173		10.2	10.0	2.1	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.145		52.0	50.0	3.9	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.123		52.9	50.0	5.8	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.155		52.8	50.0	5.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.123		45.3	50.0	-9.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.608		49.5	50.0	-1.0	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.323		46.3	50.0	-7.4	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.6817		42.6	50.0	-14.7	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.122		51.4	50.0	2.8	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.056		46.5	50.0	-7.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.154		45.4	50.0	-9.3	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.416		49.0	50.0	-2.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.173		52.6	50.0	5.2	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.257		51.4	50.0	2.8	20.0
OCDD	AveID	1.211	1.237		102	100	2.2	20.0
OCDF	AveID	1.657	1.741		105	100	5.1	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.907		118	100	17.8	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.079		104	100	3.7	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.408		114	100	13.6	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8632		114	100	13.5	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.065		107	100	6.6	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.139		122	100	22.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8377		103	100	3.3	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6738		92.0	100	-8.0	30.0
13C-OCDD	Ave	0.4879	0.4550		187	200	-6.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.601		5.83	5.00	16.7	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32323/2 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/19/2013 08:10

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.47	24

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\3D5\20131220-9368.b\16DE13B3D5_80.d
Injection Date: 19-Dec-2013 08:10:19 Instrument ID: 3D5
Lims ID: CPS Lab Sample ID: CPS 320-32325/2-A
Client ID:
Operator ID: SMA ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 8290 - ICAL

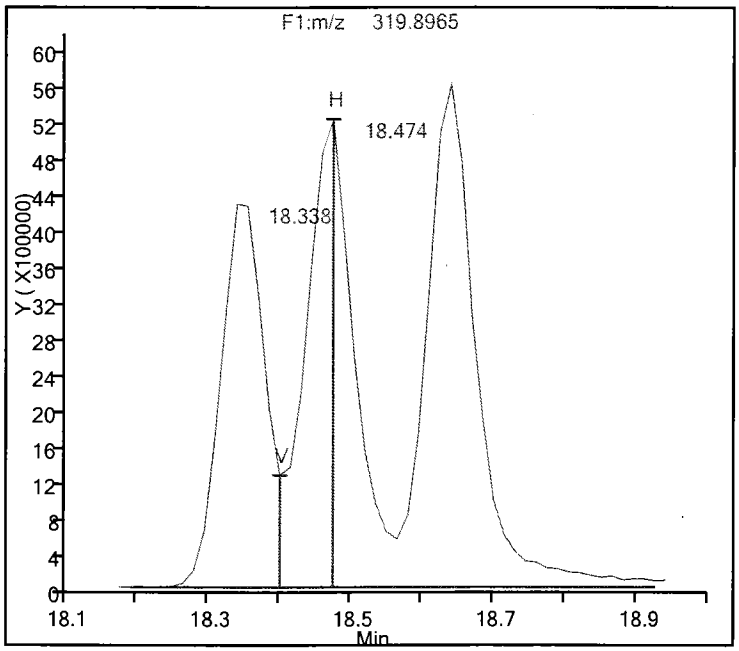
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1248248
H (Peak Height) = 5209267

%R = 24 <= 25
Passed



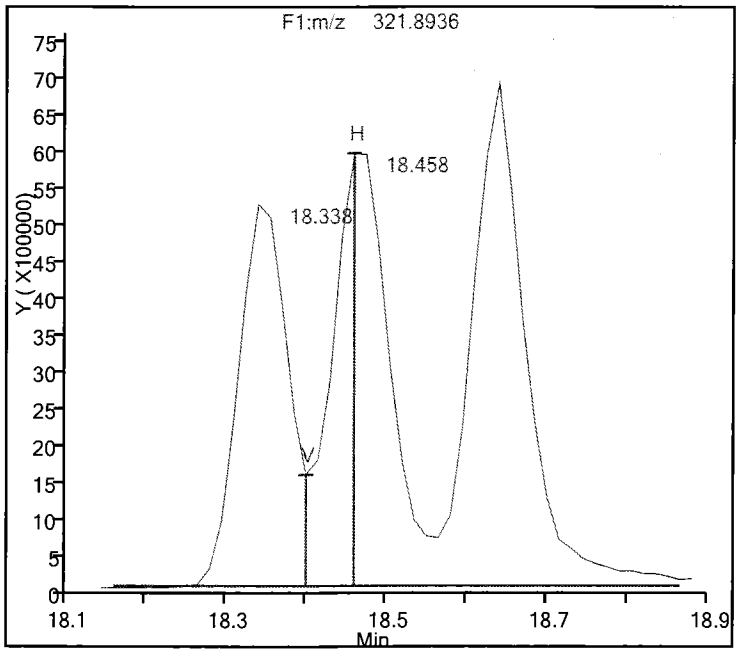
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1525079
H (Peak Height) = 5929357

%R = 26 <= 25
Passed



FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-004/5-SS1022-0 00.9 RADL	320-4670-5 RADL	74
TF2-004/5-SS1020-0 001 RADL	320-4670-7 RADL	73
TF2-004/5-SS-DUP01 -1013 RADL	320-4670-10 RADL	69
TF2-004/5-SS1029-0 00.6 RADL	320-4670-12 RADL	79
TF2-004/5-SS1027-0 001 RADL	320-4670-14 RADL	79
TF2-004/5-SS1040-0 00.9 RADL	320-4670-15 RADL	75
TF2-004/5-SS1039-0 00.9 RADL	320-4670-16 RADL	69
TF2-004/5-SS1036-0 00.6 RADL	320-4670-20 RADL	80
TF2-004/5-SS1033-0 00.8 RADL	320-4670-24 RADL	62
TF2-004/5-SS1049-0 00.9 RADL	320-4670-25 RADL	64
TF2-004/5-SS1048-0 00.8 RADL	320-4670-26 RADL	56
TF2-004/5-SS1047-0 00.8 RADL	320-4670-27 RADL	54
TF2-004/5-SS1045-0 00.5 RADL	320-4670-29 RADL	46
TF2-004/5-SS1041-0 00.7 RADL	320-4670-32 RADL	52
TF2-004/5-SS-DUP03 -1013 RADL	320-4670-33 RADL	55
TF2-004/5-SS1057-0 001 RADL	320-4670-35 RADL	61
TF2-004/5-SS1053-0 00.6 RADL	320-4670-39 RADL	59
TF2-004/5-SS1051-0 00.8 RADL	320-4670-41 RADL	62
TF2-004/5-SS1062-0 00.8 RADL	320-4670-43 RADL	61
TF2-004/5-SS1066-0 00.9 RADL	320-4670-47 RADL	79
TF2-004/5-SS1060.0 00.5 RADL	320-4670-48 RADL	85
TF2-004/5-SS1059-0 00.6 RADL	320-4670-49 RADL	86
TF2-003-SS1011-000 .8 RADL	320-4670-56 RADL	65
TF2-003-SS1015-000 .8 RADL	320-4670-60 RADL	58

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-003-SS1016-000 .9 RADL	320-4670-61 RADL	61
TF2-003-SS-DUP06-1 013 RADL	320-4670-65 RADL	52
TF2-004/5-SS1027-0 001 MS RADL	320-4670-14 MS RADL	62
TF2-004/5-SS1027-0 001 MSD RADL	320-4670-14 MSD RADL	60

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-225 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #
TF2-004/5-SS1025-0 00.8 RA	320-4670-1 RA	80
TF2-004/5-SS1026-0 00.8 RA	320-4670-2 RA	70
TF2-004/5-SS1024-0 00.6 RA	320-4670-3 RA	60
TF2-004/5-SS1023-0 00.8 RA	320-4670-4 RA	80
TF2-004/5-SS1022-0 00.9 RA	320-4670-5 RA	76
TF2-004/5-SS1021-0 00.7 RA	320-4670-6 RA	79
TF2-004/5-SS1020-0 001 RA	320-4670-7 RA	79
TF2-004/5-SS1032-0 00.9 RA	320-4670-8 RA	68
TF2-004/5-SS1031-0 00.8 RA	320-4670-9 RA	73
TF2-004/5-SS-DUP01 -1013 RA	320-4670-10 RA	72
TF2-004/5-SS1030-0 00.6 RA	320-4670-11 RA	76
TF2-004/5-SS1029-0 00.6 RA	320-4670-12 RA	91
TF2-004/5-SS1028-0 00.8 RA	320-4670-13 RA	91
TF2-004/5-SS1027-0 001 RA	320-4670-14 RA	100
TF2-004/5-SS1040-0 00.9 RA	320-4670-15 RA	83
TF2-004/5-SS1039-0 00.9 RA	320-4670-16 RA	72
TF2-004/5-SS1038-0 00.7 RA	320-4670-18 RA	72
TF2-004/5-SS1037-0 00.7 RA	320-4670-19 RA	75
TF2-004/5-SS1036-0 00.6 RA	320-4670-20 RA	74
TF2-004/5-SS1035-0 001 RA	320-4670-21 RA	81
TF2-004/5-SS-DUP02 -1013 RA	320-4670-22 RA	61
TF2-004/5-SS1034-0 00.6 RA	320-4670-23 RA	81
TF2-004/5-SS1033-0 00.8 RA	320-4670-24 RA	70
TF2-004/5-SS1049-0 00.9 RA	320-4670-25 RA	68

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-225 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF	#
TF2-004/5-SS1048-000.8 RA	320-4670-26 RA	69	
TF2-004/5-SS1047-000.8 RA	320-4670-27 RA	68	
TF2-004/5-SS1046-000.5 RA	320-4670-28 RA	82	
TF2-004/5-SS1045-000.5 RA	320-4670-29 RA	62	
TF2-004/5-SS1044-000.5 RA	320-4670-30 RA	69	
TF2-004/5-SS1042-000.5 RA	320-4670-31 RA	67	
TF2-004/5-SS1041-000.7 RA	320-4670-32 RA	73	
TF2-004/5-SS-DUP03-1013 RA	320-4670-33 RA	70	
TF2-004/5-SS1057-0001 RA	320-4670-35 RA	77	
TF2-004/5-SS1056-000.6 RA	320-4670-36 RA	74	
TF2-004/5-SS1055-000.8 RA	320-4670-37 RA	72	
TF2-004/5-SS1054-000.6 RA	320-4670-38 RA	71	
TF2-004/5-SS1053-000.6 RA	320-4670-39 RA	73	
TF2-004/5-SS1052-000.6 RA	320-4670-40 RA	67	
TF2-004/5-SS1051-000.8 RA	320-4670-41 RA	71	
TF2-004/5-SS1050-000.6 RA	320-4670-42 RA	76	
TF2-004/5-SS1062-000.8 RA	320-4670-43 RA	65	
TF2-004/5-SS1061-000.6 RA	320-4670-44 RA	68	
TF2-004/5-SS-DUP04-1013 RA	320-4670-45 RA	71	
TF2-004/5-SS1067-000.7 RA	320-4670-46 RA	32	*
TF2-004/5-SS1066-000.9 RA	320-4670-47 RA	97	
TF2-004/5-SS1060.000.5 RA	320-4670-48 RA	108	
TF2-004/5-SS1059-000.6 RA	320-4670-49 RA	100	
TF2-004/5-SS1058-000.5 RA	320-4670-50 RA	87	

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-225 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #
TF2-004/5-SS1065-0 00.5 RA	320-4670-51 RA	96
TF2-004/5-SS1064-0 00.6 RA	320-4670-52 RA	79
TF2-004/5-SS1063-0 00.6 RA	320-4670-53 RA	95
TF2-004/5-SS1068-0 00.5 RA	320-4670-54 RA	74
TF2-004/5-SS-DUP05 -1013 RA	320-4670-55 RA	76
TF2-003-SS1011-000 .8 RA	320-4670-56 RA	78
TF2-003-SS1012-000 .7 RA	320-4670-57 RA	79
TF2-003-SS1013-000 .7 RA	320-4670-58 RA	84
TF2-003-SS1014-000 1 RA	320-4670-59 RA	76
TF2-003-SS1015-000 .8 RA	320-4670-60 RA	63
TF2-003-SS1016-000 .9 RA	320-4670-61 RA	75
TF2-003-SS1017-000 .8 RA	320-4670-62 RA	77
TF2-003-SS1018-000 .8 RA	320-4670-63 RA	91
TF2-003-SS1019-000 .5 RA	320-4670-64 RA	64
TF2-003-SS-DUP06-1 013 RA	320-4670-65 RA	72
TF2-004/5-SS1027-0 001 MS RA	320-4670-14 MS RA	75
TF2-004/5-SS1054-0 00.6 MS RA	320-4670-38 MS RA	64
TF2-004/5-SS1064-0 00.6 MS RA	320-4670-52 MS RA	90
TF2-003-SS1019-000 .5 MS RA	320-4670-64 MS RA	64
TF2-004/5-SS1027-0 001 MSD RA	320-4670-14 MSD RA	72
TF2-004/5-SS1054-0 00.6 MSD RA	320-4670-38 MSD RA	77
TF2-004/5-SS1064-0 00.6 MSD RA	320-4670-52 MSD RA	97
TF2-003-SS1019-000 .5 MSD RA	320-4670-64 MSD RA	75

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-004/5-SS1025-0 00.8	320-4670-1	84	76	88	87	88	75	83	74
TF2-004/5-SS1026-0 00.8	320-4670-2	66	63	64	66	65	66	60	51
TF2-004/5-SS1024-0 00.6	320-4670-3	75	63	97	101	77	59	67	57
TF2-004/5-SS1023-0 00.8	320-4670-4	90	80	91	91	97	84	90	77
TF2-004/5-SS1022-0 00.9	320-4670-5	72	68	73	73	75	70	76	69
TF2-004/5-SS1021-0 00.7	320-4670-6	74	68	76	76	81	70	76	69
TF2-004/5-SS1020-0 001	320-4670-7	75	68	76	76	82	71	80	73
TF2-004/5-SS1032-0 00.9	320-4670-8	72	65	74	74	73	67	77	70
TF2-004/5-SS1031-0 00.8	320-4670-9	67	63	72	73	73	66	74	67
TF2-004/5-SS-DUP01 -1013	320-4670-10	68	63	68	70	76	64	72	66
TF2-004/5-SS1030-0 00.6	320-4670-11	72	67	75	73	82	70	70	66
TF2-004/5-SS1029-0 00.6	320-4670-12	93	84	95	98	105	91	94	89
TF2-004/5-SS1028-0 00.8	320-4670-13	93	87	93	88	103	99	87	81
TF2-004/5-SS1027-0 001	320-4670-14	91	87	92	88	102	100	87	79
TF2-004/5-SS1040-0 00.9	320-4670-15	88	82	87	83	93	88	78	73
TF2-004/5-SS1039-0 00.9	320-4670-16	75	71	75	72	85	78	75	68
TF2-004/5-SS1038-0 00.7	320-4670-18	69	61	70	69	71	64	66	56
TF2-004/5-SS1037-0 00.7	320-4670-19	72	65	74	71	77	69	72	62
TF2-004/5-SS1036-0 00.6	320-4670-20	89	80	89	86	90	82	88	75
TF2-004/5-SS1035-0 001	320-4670-21	90	79	86	87	92	86	87	76
TF2-004/5-SS-DUP02 -1013	320-4670-22	72	66	76	68	72	69	79	68
TF2-004/5-SS1034-0 00.6	320-4670-23	73	69	68	70	80	71	72	66
TF2-004/5-SS1033-0 00.8	320-4670-24	64	59	59	62	73	64	61	58
TF2-004/5-SS1049-0 00.9	320-4670-25	57	61	63	64	81	63	61	62

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-004/5-SS1048-000.8	320-4670-26	58	58	57	56	72	64	60	60
TF2-004/5-SS1047-000.8	320-4670-27	57	59	58	55	70	60	55	50
TF2-004/5-SS1046-000.5	320-4670-28	72	72	64	76	94	78	75	76
TF2-004/5-SS1045-000.5	320-4670-29	54	53	51	56	57	55	57	58
TF2-004/5-SS1044-000.5	320-4670-30	72	59	69	71	72	62	64	60
TF2-004/5-SS1042-000.5	320-4670-31	66	62	70	74	73	66	63	60
TF2-004/5-SS1041-000.7	320-4670-32	67	63	66	61	76	63	62	59
TF2-004/5-SS-DUP03-1013	320-4670-33	63	59	63	62	73	64	55	55
TF2-004/5-SS1057-0001	320-4670-35	75	70	67	73	94	76	79	73
TF2-004/5-SS1056-000.6	320-4670-36	68	64	66	49	73	66	66	60
TF2-004/5-SS1055-000.8	320-4670-37	66	61	65	65	74	67	68	66
TF2-004/5-SS1054-000.6	320-4670-38	65	64	62	66	81	68	67	63
TF2-004/5-SS1053-000.6	320-4670-39	71	67	70	84	81	74	70	66
TF2-004/5-SS1052-000.6	320-4670-40	63	60	64	62	70	63	62	57
TF2-004/5-SS1051-000.8	320-4670-41	65	62	65	64	71	65	62	58
TF2-004/5-SS1050-000.6	320-4670-42	79	74	77	77	90	77	78	70
TF2-004/5-SS1062-000.8	320-4670-43	66	63	68	67	74	67	64	59
TF2-004/5-SS1061-000.6	320-4670-44	63	60	64	65	71	63	62	58
TF2-004/5-SS-DUP04-1013	320-4670-45	66	63	69	68	76	70	66	61
TF2-004/5-SS1067-000.7	320-4670-46	65	63	67	69	75	68	64	61
TF2-004/5-SS1066-000.9	320-4670-47	95	90	98	97	100	95	87	82
TF2-004/5-SS1060.000.5	320-4670-48	103	96	104	100	115	103	100	90
TF2-004/5-SS1059-000.6	320-4670-49	93	87	94	94	102	93	87	79
TF2-004/5-SS1058-000.5	320-4670-50	84	80	86	84	91	87	79	73

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-004/5-SS1065-0 00.5	320-4670-51	97	92	98	95	105	97	89	83
TF2-004/5-SS1064-0 00.6	320-4670-52	76	71	76	76	82	77	70	65
TF2-004/5-SS1063-0 00.6	320-4670-53	90	84	91	87	96	94	83	74
TF2-004/5-SS1068-0 00.5	320-4670-54	78	68	75	75	75	72	70	62
TF2-004/5-SS-DUP05 -1013	320-4670-55	71	63	69	68	72	70	69	58
TF2-003-SS1011-000 .8	320-4670-56	75	66	73	72	78	71	72	61
TF2-003-SS1012-000 .7	320-4670-57	74	65	71	70	75	70	63	56
TF2-003-SS1013-000 .7	320-4670-58	81	71	80	76	83	75	74	65
TF2-003-SS1014-000 1	320-4670-59	73	64	71	70	76	66	68	60
TF2-003-SS1015-000 .8	320-4670-60	76	67	74	74	80	74	74	64
TF2-003-SS1016-000 .9	320-4670-61	73	65	72	70	74	69	68	59
TF2-003-SS1017-000 .8	320-4670-62	73	64	69	71	76	69	71	63
TF2-003-SS1018-000 .8	320-4670-63	88	80	88	88	103	80	102	95
TF2-003-SS1019-000 .5	320-4670-64	66	63	67	65	73	69	60	58
TF2-003-SS-DUP06-1 013	320-4670-65	74	71	75	70	83	78	67	63
	MB 320-28361/1-A	62	62	57	61	69	68	62	62
	MB 320-28431/1-A	72	68	73	72	79	72	67	67
	MB 320-28458/1-A	69	65	68	73	69	69	73	61
	MB 320-28540/1-A	61	59	58	58	70	62	50	55
	MB 320-28546/1-A	64	60	64	65	71	64	60	57
	LCS 320-28361/2-A	62	62	57	59	68	69	63	62
	LCS 320-28431/2-A	73	70	75	73	77	70	65	62
	LCS 320-28458/2-A	71	61	64	69	75	68	62	53
	LCS 320-28540/2-A	69	65	57	66	79	65	59	60
	LCS 320-28546/2-A	64	60	65	67	73	66	61	56
TF2-004/5-SS1027-0 001 MS	320-4670-14 MS	70	68	71	68	81	79	68	62

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-004/5-SS1054-0 00.6 MS	320-4670-38 MS	58	55	59	61	61	58	54	49
TF2-004/5-SS1064-0 00.6 MS	320-4670-52 MS	86	82	87	85	97	86	80	75
TF2-003-SS1019-000 .5 MS	320-4670-64 MS	65	62	65	63	73	68	61	56
TF2-004/5-SS1027-0 001 MSD	320-4670-14 MSD	67	65	67	65	71	72	63	58
TF2-004/5-SS1054-0 00.6 MSD	320-4670-38 MSD	73	67	74	72	78	73	72	63
TF2-004/5-SS1064-0 00.6 MSD	320-4670-52 MSD	97	89	100	97	111	103	92	83
TF2-003-SS1019-000 .5 MSD	320-4670-64 MSD	79	75	79	75	88	81	72	68

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-004/5-SS1025-0 00.8	320-4670-1	98
TF2-004/5-SS1026-0 00.8	320-4670-2	73
TF2-004/5-SS1024-0 00.6	320-4670-3	70
TF2-004/5-SS1023-0 00.8	320-4670-4	97
TF2-004/5-SS1022-0 00.9	320-4670-5	91
TF2-004/5-SS1021-0 00.7	320-4670-6	91
TF2-004/5-SS1020-0 001	320-4670-7	97
TF2-004/5-SS1032-0 00.9	320-4670-8	91
TF2-004/5-SS1031-0 00.8	320-4670-9	84
TF2-004/5-SS-DUP01 -1013	320-4670-10	89
TF2-004/5-SS1030-0 00.6	320-4670-11	87
TF2-004/5-SS1029-0 00.6	320-4670-12	118
TF2-004/5-SS1028-0 00.8	320-4670-13	94
TF2-004/5-SS1027-0 001	320-4670-14	100
TF2-004/5-SS1040-0 00.9	320-4670-15	88
TF2-004/5-SS1039-0 00.9	320-4670-16	83
TF2-004/5-SS1038-0 00.7	320-4670-18	76
TF2-004/5-SS1037-0 00.7	320-4670-19	80
TF2-004/5-SS1036-0 00.6	320-4670-20	100
TF2-004/5-SS1035-0 001	320-4670-21	101
TF2-004/5-SS-DUP02 -1013	320-4670-22	80
TF2-004/5-SS1034-0 00.6	320-4670-23	83
TF2-004/5-SS1033-0 00.8	320-4670-24	71
TF2-004/5-SS1049-0 00.9	320-4670-25	73

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-004/5-SS1048-0 00.8	320-4670-26	66
TF2-004/5-SS1047-0 00.8	320-4670-27	68
TF2-004/5-SS1046-0 00.5	320-4670-28	87
TF2-004/5-SS1045-0 00.5	320-4670-29	66
TF2-004/5-SS1044-0 00.5	320-4670-30	72
TF2-004/5-SS1042-0 00.5	320-4670-31	72
TF2-004/5-SS1041-0 00.7	320-4670-32	69
TF2-004/5-SS-DUP03 -1013	320-4670-33	68
TF2-004/5-SS1057-0 001	320-4670-35	88
TF2-004/5-SS1056-0 00.6	320-4670-36	69
TF2-004/5-SS1055-0 00.8	320-4670-37	71
TF2-004/5-SS1054-0 00.6	320-4670-38	82
TF2-004/5-SS1053-0 00.6	320-4670-39	81
TF2-004/5-SS1052-0 00.6	320-4670-40	68
TF2-004/5-SS1051-0 00.8	320-4670-41	71
TF2-004/5-SS1050-0 00.6	320-4670-42	85
TF2-004/5-SS1062-0 00.8	320-4670-43	70
TF2-004/5-SS1061-0 00.6	320-4670-44	67
TF2-004/5-SS-DUP04 -1013	320-4670-45	72
TF2-004/5-SS1067-0 00.7	320-4670-46	70
TF2-004/5-SS1066-0 00.9	320-4670-47	98
TF2-004/5-SS1060.0 00.5	320-4670-48	110
TF2-004/5-SS1059-0 00.6	320-4670-49	98
TF2-004/5-SS1058-0 00.5	320-4670-50	84

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-004/5-SS1065-000.5	320-4670-51	101
TF2-004/5-SS1064-000.6	320-4670-52	77
TF2-004/5-SS1063-000.6	320-4670-53	88
TF2-004/5-SS1068-000.5	320-4670-54	81
TF2-004/5-SS-DUP05-1013	320-4670-55	77
TF2-003-SS1011-000.8	320-4670-56	88
TF2-003-SS1012-000.7	320-4670-57	77
TF2-003-SS1013-000.7	320-4670-58	88
TF2-003-SS1014-0001	320-4670-59	78
TF2-003-SS1015-000.8	320-4670-60	86
TF2-003-SS1016-000.9	320-4670-61	84
TF2-003-SS1017-000.8	320-4670-62	83
TF2-003-SS1018-000.8	320-4670-63	122
TF2-003-SS1019-000.5	320-4670-64	65
TF2-003-SS-DUP06-1013	320-4670-65	74
	MB 320-28361/1-A	62
	MB 320-28431/1-A	72
	MB 320-28458/1-A	70
	MB 320-28540/1-A	59
	MB 320-28546/1-A	58
	LCS 320-28361/2-A	64
	LCS 320-28431/2-A	68
	LCS 320-28458/2-A	80
	LCS 320-28540/2-A	65
	LCS 320-28546/2-A	63
TF2-004/5-SS1027-0001 MS	320-4670-14 MS	77

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-004/5-SS1054-000.6 MS	320-4670-38 MS	59
TF2-004/5-SS1064-000.6 MS	320-4670-52 MS	89
TF2-003-SS1019-000.5 MS	320-4670-64 MS	63
TF2-004/5-SS1027-0001 MSD	320-4670-14 MSD	70
TF2-004/5-SS1054-000.6 MSD	320-4670-38 MSD	77
TF2-004/5-SS1064-000.6 MSD	320-4670-52 MSD	101
TF2-003-SS1019-000.5 MSD	320-4670-64 MSD	82

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-SS-RB01-1013	320-4670-17	91	91	75	80	100	105	92	86
TF2-SS-RB02-1013	320-4670-34	89	87	71	75	100	100	89	81
TF2-003-SS-RB03-1013	320-4670-66	93	93	85	93	95	102	99	94
	MB 320-28374/1-A	93	95	87	96	91	106	94	93
	LCS 320-28374/2-A	92	94	88	98	86	92	94	92

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-SS-RB01-1013	320-4670-17	77
TF2-SS-RB02-1013	320-4670-34	72
TF2-003-SS-RB03-1013	320-4670-66	96
	MB 320-28374/1-A	91
	LCS 320-28374/2-A	94

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 28OC13C4D5_004.d Lab Sample ID: MB 320-28374/1-A

Matrix: Water Date Extracted: 10/25/2013 08:29

Instrument ID: 4D5 Date Analyzed: 10/28/2013 23:02

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-28374/2-A	28OC13C4D5_005.d	10/28/2013 23:45
TF2-SS-RB01-1013	320-4670-17	28OC13C4D5_011.d	10/29/2013 04:04
TF2-SS-RB02-1013	320-4670-34	28OC13C4D5_012.d	10/29/2013 04:47
TF2-003-SS-RB03-1013	320-4670-66	28OC13C4D5_013.d	10/29/2013 05:30

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28374/1-A

Matrix: Water | Lab File ID: 28OC13C4D5_004.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1000.0(mL) | Date Analyzed: 10/28/2013 23:02

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.56
51207-31-9	2,3,7,8-TCDF	ND		10	0.63
40321-76-4	1,2,3,7,8-PeCDD	ND		50	0.82
57117-41-6	1,2,3,7,8-PeCDF	ND		50	0.94
57117-31-4	2,3,4,7,8-PeCDF	ND		50	0.99
39227-28-6	1,2,3,4,7,8-HxCDD	ND		50	0.37
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.37
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.33
70648-26-9	1,2,3,4,7,8-HxCDF	ND		50	0.27
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	0.26
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.27
72918-21-9	1,2,3,7,8,9-HxCDF	ND		50	0.29
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		50	0.49
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		50	0.25
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.30
3268-87-9	OCDD	1.30	J	100	0.39
39001-02-0	OCDF	ND		100	0.64
41903-57-5	Total TCDD	ND		10	0.56
30402-14-3	Total TCDF	ND		10	0.63
36088-22-9	Total PeCDD	ND		50	0.82
30402-15-4	Total PeCDF	ND		50	0.99
34465-46-8	Total HxCDD	ND		50	0.46
55684-94-1	Total HxCDF	ND		50	0.29
37871-00-4	Total HpCDD	0.698	J	50	0.49
38998-75-3	Total HpCDF	ND		50	0.30

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28374/1-A

Matrix: Water | Lab File ID: 28OC13C4D5_004.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1000.0(mL) | Date Analyzed: 10/28/2013 23:02

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	95		40-135
89059-46-1	13C-2,3,7,8-TCDF	93		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	96		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	87		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	106		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	91		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	93		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	94		40-135
114423-97-1	13C-OCDD	91		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: ~~Water~~ Level: Low Lab File ID: 28OC13C4D5_005.d

Lab ID: LCS 320-28374/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	211	105	72-144	
2,3,7,8-TCDF	200	252	126	73-150	
1,2,3,7,8-PeCDD	1000	961	96	79-125	
1,2,3,7,8-PeCDF	1000	1160	116	79-137	
2,3,4,7,8-PeCDF	1000	1160	116	76-137	
1,2,3,4,7,8-HxCDD	1000	954	95	65-144	
1,2,3,6,7,8-HxCDD	1000	1170	117	78-137	
1,2,3,7,8,9-HxCDD	1000	1070	107	74-142	
1,2,3,4,7,8-HxCDF	1000	1120	112	86-126	
1,2,3,6,7,8-HxCDF	1000	1260	126	79-137	
2,3,4,6,7,8-HxCDF	1000	1220	122	80-138	
1,2,3,7,8,9-HxCDF	1000	1130	113	72-145	
1,2,3,4,6,7,8-HpCDD	1000	1040	104	81-132	
1,2,3,4,6,7,8-HpCDF	1000	1090	109	81-135	
1,2,3,4,7,8,9-HpCDF	1000	1120	112	72-140	
OCDD	2000	2230	111	80-129	
OCDF	2000	2280	114	65-145	
13C-2,3,7,8-TCDD	2000	1880	94	40-135	
13C-2,3,7,8-TCDF	2000	1840	92	40-135	
13C-1,2,3,7,8-PeCDD	2000	1960	98	40-135	
13C-1,2,3,7,8-PeCDF	2000	1760	88	40-135	
13C-1,2,3,6,7,8-HxCDD	2000	1850	92	40-135	
13C-1,2,3,4,7,8-HxCDF	2000	1730	86	40-135	
13C-1,2,3,4,6,7,8-HpCDD	2000	1850	92	40-135	
13C-1,2,3,4,6,7,8-HpCDF	2000	1870	94	40-135	
13C-OCDD	4000	3770	94	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 05NO134D5_004.d Lab Sample ID: MB 320-28361/1-A

Matrix: Solid Date Extracted: 10/24/2013 18:17

Instrument ID: 4D5 Date Analyzed: 11/05/2013 19:13

Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-28361/2-A	05NO134D5_005.d	11/05/2013 19:56
TF2-004/5-SS1025-000.8	320-4670-1	05NO13A3D5_4.d	11/05/2013 23:45
TF2-004/5-SS1025-000.8 RA	320-4670-1 RA	19no13a5d2_005.d	11/19/2013 20:30

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28361/1-A

Matrix: Solid | Lab File ID: 05NO134D5_004.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/24/2013 18:17

Sample wt/vol: 10(g) | Date Analyzed: 11/05/2013 19:13

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29245 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.18
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.16
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.21
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.21
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.22
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.088
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.072
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.072
70648-26-9	1,2,3,4,7,8-HxCDF	0.147	J	5.0	0.047
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.040
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.044
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.049
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		5.0	0.070
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.174	J	5.0	0.060
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.070
3268-87-9	OCDD	ND		10	0.13
39001-02-0	OCDF	ND		10	0.13
41903-57-5	Total TCDD	ND		1.0	0.18
30402-14-3	Total TCDF	ND		1.0	0.16
36088-22-9	Total PeCDD	ND		5.0	0.21
30402-15-4	Total PeCDF	ND		5.0	0.22
34465-46-8	Total HxCDD	ND		5.0	0.088
55684-94-1	Total HxCDF	0.147	J	5.0	0.045
37871-00-4	Total HpCDD	ND		5.0	0.070
38998-75-3	Total HpCDF	0.174	J	5.0	0.065

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28361/1-A

Matrix: Solid | Lab File ID: 05NO134D5_004.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/24/2013 18:17

Sample wt/vol: 10(g) | Date Analyzed: 11/05/2013 19:13

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29245 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	62		40-135
89059-46-1	13C-2,3,7,8-TCDF	62		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	61		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	68		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	69		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	62		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	62		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 05NO134D5_005.d

Lab ID: LCS 320-28361/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	20.5	103	60-138	
2,3,7,8-TCDF	20.0	22.5	113	56-158	
1,2,3,7,8-PeCDD	100	108	108	70-122	
1,2,3,7,8-PeCDF	100	115	115	69-134	
2,3,4,7,8-PeCDF	100	115	115	70-131	
1,2,3,4,7,8-HxCDD	100	105	105	60-138	
1,2,3,6,7,8-HxCDD	100	102	102	68-136	
1,2,3,7,8,9-HxCDD	100	105	105	68-138	
1,2,3,4,7,8-HxCDF	100	115	115	74-128	
1,2,3,6,7,8-HxCDF	100	113	113	67-140	
2,3,4,6,7,8-HxCDF	100	116	116	71-137	
1,2,3,7,8,9-HxCDF	100	112	112	72-134	
1,2,3,4,6,7,8-HpCDD	100	110	110	71-128	
1,2,3,4,6,7,8-HpCDF	100	115	115	71-134	
1,2,3,4,7,8,9-HpCDF	100	109	109	68-129	
OCDD	200	228	114	70-128	
OCDF	200	239	119	63-141	
13C-2,3,7,8-TCDD	200	124	62	40-135	
13C-2,3,7,8-TCDF	200	124	62	40-135	
13C-1,2,3,7,8-PeCDD	200	119	59	40-135	
13C-1,2,3,7,8-PeCDF	200	114	57	40-135	
13C-1,2,3,6,7,8-HxCDD	200	138	69	40-135	
13C-1,2,3,4,7,8-HxCDF	200	136	68	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	123	62	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	126	63	40-135	
13C-OCDD	400	255	64	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_33.d Lab Sample ID: MB 320-28546/1-A

Matrix: Solid Date Extracted: 10/28/2013 12:47

Instrument ID: 3D5 Date Analyzed: 11/01/2013 20:25

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-28546/2-A	31OC13C3D5_34.d	11/01/2013 21:07
TF2-004/5-SS1061-000.6	320-4670-44	31OC13C3D5_39.d	11/02/2013 00:35
TF2-004/5-SS-DUP04-1013	320-4670-45	31OC13C3D5_40.d	11/02/2013 01:17
TF2-004/5-SS1067-000.7	320-4670-46	31OC13C3D5_41.d	11/02/2013 01:59
TF2-004/5-SS1066-000.9	320-4670-47	31OC13C3D5_42.d	11/02/2013 02:41
TF2-004/5-SS1066-000.9 RA	320-4670-47 RA	08NO13A11D2_015.d	11/08/2013 19:45
TF2-004/5-SS1061-000.6 RA	320-4670-44 RA	17DE1311D2_014.d	12/18/2013 07:12
TF2-004/5-SS-DUP04-1013 RA	320-4670-45 RA	17DE1311D2_015.d	12/18/2013 07:51
TF2-004/5-SS1067-000.7 RA	320-4670-46 RA	18DE1311D2_004.d	12/19/2013 02:31
TF2-004/5-SS1066-000.9 RADL	320-4670-47 RADL	16DE13B3D5_83.d	12/19/2013 10:14

2,3,7,8-TCDF

OCDD

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28546/1-A

Matrix: Solid | Lab File ID: 310C13C3D5_33.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10(g) | Date Analyzed: 11/01/2013 20:25

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.038
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.039
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.057
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.076
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.079
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.042
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.031
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.030
70648-26-9	1,2,3,4,7,8-HxCDF	0.302	J	5.0	0.084
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.064
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.073
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.082
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.0775	J	5.0	0.047
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.381	J	5.0	0.077
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.091
3268-87-9	OCDD	0.630	J	10	0.049
39001-02-0	OCDF	0.527	J	10	0.073
41903-57-5	Total TCDD	ND		1.0	0.038
30402-14-3	Total TCDF	ND		1.0	0.039
36088-22-9	Total PeCDD	ND		5.0	0.057
30402-15-4	Total PeCDF	ND		5.0	0.079
34465-46-8	Total HxCDD	ND		5.0	0.042
55684-94-1	Total HxCDF	0.302	J	5.0	0.075
37871-00-4	Total HpCDD	0.225	J	5.0	0.047
38998-75-3	Total HpCDF	0.381	J	5.0	0.084

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28546/1-A

Matrix: Solid | Lab File ID: 31OC13C3D5_33.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10(g) | Date Analyzed: 11/01/2013 20:25

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	60		40-135
89059-46-1	13C-2,3,7,8-TCDF	64		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	65		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	64		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	57		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	60		40-135
114423-97-1	13C-OCDD	58		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31OC13C3D5_34.d

Lab ID: LCS 320-28546/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	24.1	120	60-138	
2,3,7,8-TCDF	20.0	21.8	109	56-158	
1,2,3,7,8-PeCDD	100	114	114	70-122	
1,2,3,7,8-PeCDF	100	120	120	69-134	
2,3,4,7,8-PeCDF	100	122	122	70-131	
1,2,3,4,7,8-HxCDD	100	123	123	60-138	
1,2,3,6,7,8-HxCDD	100	118	118	68-136	
1,2,3,7,8,9-HxCDD	100	116	116	68-138	
1,2,3,4,7,8-HxCDF	100	117	117	74-128	
1,2,3,6,7,8-HxCDF	100	108	108	67-140	
2,3,4,6,7,8-HxCDF	100	109	109	71-137	
1,2,3,7,8,9-HxCDF	100	111	111	72-134	
1,2,3,4,6,7,8-HpCDD	100	118	118	71-128	
1,2,3,4,6,7,8-HpCDF	100	120	120	71-134	
1,2,3,4,7,8,9-HpCDF	100	122	122	68-129	
OCDD	200	214	107	70-128	
OCDF	200	203	101	63-141	
13C-2,3,7,8-TCDD	200	119	60	40-135	
13C-2,3,7,8-TCDF	200	129	64	40-135	
13C-1,2,3,7,8-PeCDD	200	133	67	40-135	
13C-1,2,3,7,8-PeCDF	200	129	65	40-135	
13C-1,2,3,6,7,8-HxCDD	200	131	66	40-135	
13C-1,2,3,4,7,8-HxCDF	200	146	73	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	113	56	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	122	61	40-135	
13C-OCDD	400	250	63	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_5.d Lab Sample ID: MB 320-28540/1-A

Matrix: Solid Date Extracted: 10/28/2013 12:22

Instrument ID: 3D5 Date Analyzed: 11/01/2013 00:11

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-28540/2-A	31OC13C3D5_6.d	11/01/2013 00:53
TF2-004/5-SS1034-000.6	320-4670-23	31OC13C3D5_7.d	11/01/2013 01:35
TF2-004/5-SS1033-000.8	320-4670-24	31OC13C3D5_8.d	11/01/2013 02:16
TF2-004/5-SS1049-000.9	320-4670-25	31OC13C3D5_9.d	11/01/2013 02:58
TF2-004/5-SS1048-000.8	320-4670-26	31OC13C3D5_10.d	11/01/2013 03:40
TF2-004/5-SS1047-000.8	320-4670-27	31OC13C3D5_11.d	11/01/2013 04:22
TF2-004/5-SS1046-000.5	320-4670-28	31OC13C3D5_12.d	11/01/2013 05:04
TF2-004/5-SS1045-000.5	320-4670-29	31OC13C3D5_13.d	11/01/2013 05:45
TF2-004/5-SS1044-000.5	320-4670-30	31OC13C3D5_18.d	11/01/2013 09:41
TF2-004/5-SS1042-000.5	320-4670-31	31OC13C3D5_19.d	11/01/2013 10:22
TF2-004/5-SS1041-000.7	320-4670-32	31OC13C3D5_20.d	11/01/2013 11:04
TF2-004/5-SS-DUP03-1013	320-4670-33	31OC13C3D5_21.d	11/01/2013 11:45
TF2-004/5-SS1057-0001	320-4670-35	31OC13C3D5_22.d	11/01/2013 12:27
TF2-004/5-SS1056-000.6	320-4670-36	31OC13C3D5_23.d	11/01/2013 13:09
TF2-004/5-SS1055-000.8	320-4670-37	31OC13C3D5_24.d	11/01/2013 13:50
TF2-004/5-SS1054-000.6	320-4670-38	31OC13C3D5_25.d	11/01/2013 14:32
TF2-004/5-SS1054-000.6 MS	320-4670-38 MS	31OC13C3D5_26.d	11/01/2013 15:14
TF2-004/5-SS1054-000.6 MSD	320-4670-38 MSD	31OC13C3D5_27.d	11/01/2013 15:56
TF2-004/5-SS1053-000.6	320-4670-39	31OC13C3D5_28.d	11/01/2013 16:37
TF2-004/5-SS1052-000.6	320-4670-40	31OC13C3D5_35.d	11/01/2013 21:48
TF2-004/5-SS1051-000.8	320-4670-41	31OC13C3D5_36.d	11/01/2013 22:30
TF2-004/5-SS1050-000.6	320-4670-42	31OC13C3D5_37.d	11/01/2013 23:12

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_5.d Lab Sample ID: MB 320-28540/1-A

Matrix: Solid Date Extracted: 10/28/2013 12:22

Instrument ID: 3D5 Date Analyzed: 11/01/2013 00:11

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-004/5-SS1062-000.8	320-4670-43	31OC13C3D5_38.d	11/01/2013 23:54
TF2-004/5-SS1034-000.6 RA	320-4670-23 RA	07NO1311D2_005.d	11/07/2013 19:43
TF2-004/5-SS1049-000.9 RA	320-4670-25 RA	07NO1311D2_006.d	11/07/2013 20:22
TF2-004/5-SS1048-000.8 RA	320-4670-26 RA	07NO1311D2_007.d	11/07/2013 21:01
TF2-004/5-SS1047-000.8 RA	320-4670-27 RA	07NO1311D2_008.d	11/07/2013 21:40
TF2-004/5-SS1045-000.5 RA	320-4670-29 RA	07NO1311D2_009.d	11/07/2013 22:18
TF2-004/5-SS1044-000.5 RA	320-4670-30 RA	07NO1311D2_010.d	11/07/2013 22:57
TF2-004/5-SS1042-000.5 RA	320-4670-31 RA	07NO1311D2_011.d	11/07/2013 23:36
TF2-004/5-SS1057-0001 RA	320-4670-35 RA	07NO1311D2_012.d	11/08/2013 00:15
TF2-004/5-SS1053-000.6 RA	320-4670-39 RA	07NO1311D2_013.d	11/08/2013 00:54
TF2-004/5-SS1052-000.6 RA	320-4670-40 RA	07NO1311D2_014.d	11/08/2013 01:33
TF2-004/5-SS1050-000.6 RA	320-4670-42 RA	08NO13A11D2_013.d	11/08/2013 18:27
TF2-004/5-SS1062-000.8 RA	320-4670-43 RA	08NO13A11D2_014.d	11/08/2013 19:06
TF2-004/5-SS1033-000.8 RA	320-4670-24 RA	17DE1311D2_004.d	12/18/2013 00:44
TF2-004/5-SS1046-000.5 RA	320-4670-28 RA	17DE1311D2_005.d	12/18/2013 01:22
TF2-004/5-SS1041-000.7 RA	320-4670-32 RA	17DE1311D2_006.d	12/18/2013 02:01
TF2-004/5-SS-DUP03-1013 RA	320-4670-33 RA	17DE1311D2_007.d	12/18/2013 02:40
TF2-004/5-SS1056-000.6 RA	320-4670-36 RA	17DE1311D2_008.d	12/18/2013 03:19
TF2-004/5-SS1055-000.8 RA	320-4670-37 RA	17DE1311D2_009.d	12/18/2013 03:58
TF2-004/5-SS1054-000.6 RA	320-4670-38 RA	17DE1311D2_010.d	12/18/2013 04:37
TF2-004/5-SS1054-000.6 MS RA	320-4670-38 MS RA	17DE1311D2_011.d	12/18/2013 05:16
TF2-004/5-SS1054-000.6 MSD RA	320-4670-38 MSD RA	17DE1311D2_012.d	12/18/2013 05:55

2,3,7,8-TCDF

FORM IV 8290

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_5.d Lab Sample ID: MB 320-28540/1-A

Matrix: Solid Date Extracted: 10/28/2013 12:22

Instrument ID: 3D5 Date Analyzed: 11/01/2013 00:11

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-004/5-SS1051-000.8 RA	320-4670-41 RA	17DE1311D2_013.d	12/18/2013 06:34
TF2-004/5-SS1033-000.8 RADL	320-4670-24 RADL	16DE13B3D5_68.d	12/18/2013 23:29
TF2-004/5-SS1049-000.9 RADL	320-4670-25 RADL	16DE13B3D5_69.d	12/19/2013 00:11
TF2-004/5-SS1048-000.8 RADL	320-4670-26 RADL	16DE13B3D5_70.d	12/19/2013 00:52
TF2-004/5-SS1047-000.8 RADL	320-4670-27 RADL	16DE13B3D5_71.d	12/19/2013 01:34
TF2-004/5-SS1045-000.5 RADL	320-4670-29 RADL	16DE13B3D5_72.d	12/19/2013 02:16
TF2-004/5-SS1041-000.7 RADL	320-4670-32 RADL	16DE13B3D5_73.d	12/19/2013 02:58
TF2-004/5-SS-DUP03-1013 RADL	320-4670-33 RADL	16DE13B3D5_74.d	12/19/2013 03:40
TF2-004/5-SS1057-0001 RADL	320-4670-35 RADL	16DE13B3D5_75.d	12/19/2013 04:21
TF2-004/5-SS1053-000.6 RADL	320-4670-39 RADL	16DE13B3D5_76.d	12/19/2013 05:03
TF2-004/5-SS1051-000.8 RADL	320-4670-41 RADL	16DE13B3D5_77.d	12/19/2013 05:45
TF2-004/5-SS1062-000.8 RADL	320-4670-43 RADL	16DE13B3D5_82.d	12/19/2013 09:33

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28540/1-A

Matrix: Solid | Lab File ID: 310C13C3D5_5.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10(g) | Date Analyzed: 11/01/2013 00:11

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.031
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.034
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.039
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.065
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.067
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.033
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.025
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.024
70648-26-9	1,2,3,4,7,8-HxCDF	ND		5.0	0.085
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.065
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.074
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.083
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		5.0	0.025
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.375	J	5.0	0.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.12
3268-87-9	OCDD	0.221	J	10	0.027
39001-02-0	OCDF	0.307	J	10	0.073
41903-57-5	Total TCDD	ND		1.0	0.031
30402-14-3	Total TCDF	ND		1.0	0.034
36088-22-9	Total PeCDD	ND		5.0	0.039
30402-15-4	Total PeCDF	ND		5.0	0.067
34465-46-8	Total HxCDD	ND		5.0	0.033
55684-94-1	Total HxCDF	ND		5.0	0.085
37871-00-4	Total HpCDD	0.0606	J	5.0	0.025
38998-75-3	Total HpCDF	0.375	J	5.0	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28540/1-A

Matrix: Solid | Lab File ID: 31OC13C3D5_5.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10(g) | Date Analyzed: 11/01/2013 00:11

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	61		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	58		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	58		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	62		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	70		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	55		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	50		40-135
114423-97-1	13C-OCDD	59		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 310C13C3D5_6.d

Lab ID: LCS 320-28540/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	23.2	116	60-138	
2,3,7,8-TCDF	20.0	22.6	113	56-158	
1,2,3,7,8-PeCDD	100	111	111	70-122	
1,2,3,7,8-PeCDF	100	122	122	69-134	
2,3,4,7,8-PeCDF	100	133	133	70-131	*
1,2,3,4,7,8-HxCDD	100	133	133	60-138	
1,2,3,6,7,8-HxCDD	100	119	119	68-136	
1,2,3,7,8,9-HxCDD	100	124	124	68-138	
1,2,3,4,7,8-HxCDF	100	113	113	74-128	
1,2,3,6,7,8-HxCDF	100	106	106	67-140	
2,3,4,6,7,8-HxCDF	100	108	108	71-137	
1,2,3,7,8,9-HxCDF	100	105	105	72-134	
1,2,3,4,6,7,8-HpCDD	100	114	114	71-128	
1,2,3,4,6,7,8-HpCDF	100	122	122	71-134	
1,2,3,4,7,8,9-HpCDF	100	127	127	68-129	
OCDD	200	224	112	70-128	
OCDF	200	206	103	63-141	
13C-2,3,7,8-TCDD	200	129	65	40-135	
13C-2,3,7,8-TCDF	200	138	69	40-135	
13C-1,2,3,7,8-PeCDD	200	133	66	40-135	
13C-1,2,3,7,8-PeCDF	200	114	57	40-135	
13C-1,2,3,6,7,8-HxCDD	200	131	65	40-135	
13C-1,2,3,4,7,8-HxCDF	200	158	79	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	120	60	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	117	59	40-135	
13C-OCDD	400	259	65	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_47.d Lab Sample ID: MB 320-28431/1-A

Matrix: Solid Date Extracted: 10/25/2013 15:42

Instrument ID: 3D5 Date Analyzed: 11/02/2013 06:28

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-28431/2-A	31OC13C3D5_48.d	11/02/2013 07:10
TF2-004/5-SS1060.000.5	320-4670-48	31OC13C3D5_49.d	11/02/2013 07:52
TF2-004/5-SS1059-000.6	320-4670-49	31OC13C3D5_50.d	11/02/2013 08:33
TF2-004/5-SS1058-000.5	320-4670-50	31OC13C3D5_51.d	11/02/2013 09:15
TF2-004/5-SS1065-000.5	320-4670-51	31OC13C3D5_52.d	11/02/2013 09:57
TF2-004/5-SS1064-000.6	320-4670-52	31OC13C3D5_53.d	11/02/2013 10:38
TF2-004/5-SS1064-000.6 MS	320-4670-52 MS	31OC13C3D5_54.d	11/02/2013 11:20
TF2-004/5-SS1064-000.6 MSD	320-4670-52 MSD	31OC13C3D5_55.d	11/02/2013 12:02
TF2-004/5-SS1063-000.6	320-4670-53	31OC13C3D5_56.d	11/02/2013 12:44
TF2-003-SS1019-000.5	320-4670-64	31OC13C3D5_75.d	11/03/2013 01:35
TF2-003-SS1019-000.5 MS	320-4670-64 MS	31OC13C3D5_76.d	11/03/2013 02:16
TF2-003-SS1019-000.5 MSD	320-4670-64 MSD	31OC13C3D5_77.d	11/03/2013 02:58
TF2-003-SS-DUP06-1013	320-4670-65	31OC13C3D5_78.d	11/03/2013 03:40
TF2-004/5-SS1068-000.5	320-4670-54	04NO13B3D5_5.d	11/05/2013 00:21
TF2-004/5-SS-DUP05-1013	320-4670-55	04NO13B3D5_6.d	11/05/2013 01:03
TF2-003-SS1011-000.8	320-4670-56	04NO13B3D5_7.d	11/05/2013 01:45
TF2-003-SS1012-000.7	320-4670-57	04NO13B3D5_8.d	11/05/2013 02:27
TF2-003-SS1013-000.7	320-4670-58	04NO13B3D5_9.d	11/05/2013 03:08
TF2-003-SS1014-0001	320-4670-59	04NO13B3D5_10.d	11/05/2013 03:50
TF2-003-SS1015-000.8	320-4670-60	04NO13B3D5_11.d	11/05/2013 04:32
TF2-003-SS1016-000.9	320-4670-61	04NO13B3D5_12.d	11/05/2013 05:14
TF2-003-SS1017-000.8	320-4670-62	04NO13B3D5_13.d	11/05/2013 05:55

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_47.d Lab Sample ID: MB 320-28431/1-A

Matrix: Solid Date Extracted: 10/25/2013 15:42

Instrument ID: 3D5 Date Analyzed: 11/02/2013 06:28

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-003-SS1018-000.8	320-4670-63	05NO13A3D5_13.d	11/06/2013 06:00
TF2-004/5-SS1060.000.5 RA	320-4670-48 RA	08NO13B11D2_004.d	11/09/2013 00:30
TF2-004/5-SS1065-000.5 RA	320-4670-51 RA	08NO13B11D2_005.d	11/09/2013 01:09
TF2-003-SS1019-000.5 RA	320-4670-64 RA	08NO13B11D2_009.d	11/09/2013 03:45
TF2-003-SS1019-000.5 MS RA	320-4670-64 MS RA	08NO13B11D2_010.d	11/09/2013 04:24
TF2-003-SS1019-000.5 MSD RA	320-4670-64 MSD RA	08NO13B11D2_011.d	11/09/2013 05:03
TF2-003-SS-DUP06-1013 RA	320-4670-65 RA	08NO13B11D2_012.d	11/09/2013 05:41
TF2-004/5-SS-DUP05-1013 RA	320-4670-55 RA	12NO1311D2_006.d	11/13/2013 01:12
TF2-003-SS1011-000.8 RA	320-4670-56 RA	12NO1311D2_007.d	11/13/2013 01:51
TF2-003-SS1012-000.7 RA	320-4670-57 RA	12NO1311D2_008.d	11/13/2013 02:30
TF2-003-SS1013-000.7 RA	320-4670-58 RA	12NO1311D2_009.d	11/13/2013 03:09
TF2-003-SS1014-0001 RA	320-4670-59 RA	12NO1311D2_010.d	11/13/2013 03:48
TF2-003-SS1016-000.9 RA	320-4670-61 RA	12NO1311D2_012.d	11/13/2013 05:05
TF2-003-SS1017-000.8 RA	320-4670-62 RA	12NO1311D2_013.d	11/13/2013 05:44
TF2-003-SS1015-000.8 RA	320-4670-60 RA	18NO135D2_004.d	11/18/2013 18:35
TF2-004/5-SS1059-000.6 RA	320-4670-49 RA	18DE1311D2_005.d	12/19/2013 03:10
TF2-004/5-SS1058-000.5 RA	320-4670-50 RA	18DE1311D2_006.d	12/19/2013 03:49
TF2-004/5-SS1064-000.6 RA	320-4670-52 RA	18DE1311D2_007.d	12/19/2013 04:28
TF2-004/5-SS1064-000.6 MS RA	320-4670-52 MS RA	18DE1311D2_008.d	12/19/2013 05:07
TF2-004/5-SS1064-000.6 MSD RA	320-4670-52 MSD RA	18DE1311D2_009.d	12/19/2013 05:45
TF2-004/5-SS1063-000.6 RA	320-4670-53 RA	18DE1311D2_010.d	12/19/2013 06:24
TF2-004/5-SS1068-000.5 RA	320-4670-54 RA	18DE1311D2_011.d	12/19/2013 07:03

2,3,7,8-TCDF

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_47.d Lab Sample ID: MB 320-28431/1-A

Matrix: Solid Date Extracted: 10/25/2013 15:42

Instrument ID: 3D5 Date Analyzed: 11/02/2013 06:28

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-003-SS1018-000.8 RA	320-4670-63 RA	18DE1311D2_012.d	12/19/2013 07:42
TF2-004/5-SS1060.000.5 RADL	320-4670-48 RADL	16DE13B3D5_84.d	12/19/2013 11:08
TF2-004/5-SS1059-000.6 RADL	320-4670-49 RADL	16DE13B3D5_85.d	12/19/2013 11:50
TF2-003-SS1011-000.8 RADL	320-4670-56 RADL	16DE13B3D5_86.d	12/19/2013 12:31
TF2-003-SS1015-000.8 RADL	320-4670-60 RADL	16DE13B3D5_87.d	12/19/2013 13:13
TF2-003-SS1016-000.9 RADL	320-4670-61 RADL	16DE13B3D5_88.d	12/19/2013 13:55
TF2-003-SS-DUP06-1013 RADL	320-4670-65 RADL	16DE13B3D5_89.d	12/19/2013 14:37

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28431/1-A

Matrix: Solid | Lab File ID: 31OC13C3D5_47.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10(g) | Date Analyzed: 11/02/2013 06:28

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.044
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.035
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.050
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.051
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.053
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.042
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.031
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.030
70648-26-9	1,2,3,4,7,8-HxCDF	ND		5.0	0.062
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.047
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.054
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.060
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		5.0	0.033
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		5.0	0.064
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.076
3268-87-9	OCDD	0.196	J	10	0.038
39001-02-0	OCDF	0.141	J	10	0.053
41903-57-5	Total TCDD	ND		1.0	0.044
30402-14-3	Total TCDF	ND		1.0	0.035
36088-22-9	Total PeCDD	ND		5.0	0.050
30402-15-4	Total PeCDF	ND		5.0	0.053
34465-46-8	Total HxCDD	ND		5.0	0.042
55684-94-1	Total HxCDF	ND		5.0	0.062
37871-00-4	Total HpCDD	ND		5.0	0.033
38998-75-3	Total HpCDF	ND		5.0	0.076

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28431/1-A

Matrix: Solid | Lab File ID: 310C13C3D5_47.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10(g) | Date Analyzed: 11/02/2013 06:28

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	68		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	72		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	73		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	72		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	79		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	67		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	72		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31OC13C3D5_48.d

Lab ID: LCS 320-28431/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	22.6	113	60-138	
2,3,7,8-TCDF	20.0	21.3	106	56-158	
1,2,3,7,8-PeCDD	100	111	111	70-122	
1,2,3,7,8-PeCDF	100	117	117	69-134	
2,3,4,7,8-PeCDF	100	112	112	70-131	
1,2,3,4,7,8-HxCDD	100	123	123	60-138	
1,2,3,6,7,8-HxCDD	100	114	114	68-136	
1,2,3,7,8,9-HxCDD	100	114	114	68-138	
1,2,3,4,7,8-HxCDF	100	113	113	74-128	
1,2,3,6,7,8-HxCDF	100	108	108	67-140	
2,3,4,6,7,8-HxCDF	100	108	108	71-137	
1,2,3,7,8,9-HxCDF	100	111	111	72-134	
1,2,3,4,6,7,8-HpCDD	100	112	112	71-128	
1,2,3,4,6,7,8-HpCDF	100	111	111	71-134	
1,2,3,4,7,8,9-HpCDF	100	115	115	68-129	
OCDD	200	205	102	70-128	
OCDF	200	190	95	63-141	
13C-2,3,7,8-TCDD	200	139	70	40-135	
13C-2,3,7,8-TCDF	200	146	73	40-135	
13C-1,2,3,7,8-PeCDD	200	146	73	40-135	
13C-1,2,3,7,8-PeCDF	200	149	75	40-135	
13C-1,2,3,6,7,8-HxCDD	200	140	70	40-135	
13C-1,2,3,4,7,8-HxCDF	200	154	77	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	123	62	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	130	65	40-135	
13C-OCDD	400	272	68	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 04NO13B3D5_18.d Lab Sample ID: MB 320-28458/1-A

Matrix: Solid Date Extracted: 10/25/2013 18:01

Instrument ID: 3D5 Date Analyzed: 11/05/2013 09:43

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-004/5-SS1028-000.8	320-4670-13	31OC13C3D5_79.d	11/03/2013 04:22
TF2-004/5-SS1027-0001	320-4670-14	31OC13C3D5_80.d	11/03/2013 05:03
TF2-004/5-SS1027-0001 MS	320-4670-14 MS	31OC13C3D5_81.d	11/03/2013 05:45
TF2-004/5-SS1027-0001 MSD	320-4670-14 MSD	31OC13C3D5_82.d	11/03/2013 06:27
TF2-004/5-SS1040-000.9	320-4670-15	31OC13C3D5_83.d	11/03/2013 07:09
TF2-004/5-SS1039-000.9	320-4670-16	31OC13C3D5_84.d	11/03/2013 07:50
	LCS 320-28458/2-A	04NO13B3D5_19.d	11/05/2013 10:25
TF2-004/5-SS1038-000.7	320-4670-18	04NO13B3D5_20.d	11/05/2013 11:07
TF2-004/5-SS1037-000.7	320-4670-19	04NO13B3D5_21.d	11/05/2013 11:48
TF2-004/5-SS1036-000.6	320-4670-20	04NO13B3D5_22.d	11/05/2013 12:30
TF2-004/5-SS1035-0001	320-4670-21	04NO13B3D5_23.d	11/05/2013 13:12
TF2-004/5-SS-DUP02-1013	320-4670-22	04NO13B3D5_24.d	11/05/2013 13:53
TF2-004/5-SS1026-000.8	320-4670-2	04NO13B3D5_25.d	11/05/2013 14:35
TF2-004/5-SS1024-000.6	320-4670-3	04NO13B3D5_26.d	11/05/2013 15:17
TF2-004/5-SS1023-000.8	320-4670-4	04NO13B3D5_27.d	11/05/2013 15:59
TF2-004/5-SS1022-000.9	320-4670-5	05NO13A3D5_5.d	11/06/2013 00:27
TF2-004/5-SS1021-000.7	320-4670-6	05NO13A3D5_6.d	11/06/2013 01:08
TF2-004/5-SS1020-0001	320-4670-7	05NO13A3D5_7.d	11/06/2013 01:50
TF2-004/5-SS1032-000.9	320-4670-8	05NO13A3D5_8.d	11/06/2013 02:32
TF2-004/5-SS1031-000.8	320-4670-9	05NO13A3D5_9.d	11/06/2013 03:13
TF2-004/5-SS-DUP01-1013	320-4670-10	05NO13A3D5_10.d	11/06/2013 03:55
TF2-004/5-SS1030-000.6	320-4670-11	05NO13A3D5_11.d	11/06/2013 04:37

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 04NO13B3D5_18.d Lab Sample ID: MB 320-28458/1-A

Matrix: Solid Date Extracted: 10/25/2013 18:01

Instrument ID: 3D5 Date Analyzed: 11/05/2013 09:43

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-004/5-SS1029-000.6	320-4670-12	05NO13A3D5_12.d	11/06/2013 05:19
TF2-004/5-SS1028-000.8 RA	320-4670-13 RA	08NO13B11D2_013.d	11/09/2013 06:20
TF2-004/5-SS1040-000.9 RA	320-4670-15 RA	08NO13B11D2_014.d	11/09/2013 06:59
TF2-004/5-SS1039-000.9 RA	320-4670-16 RA	08NO13B11D2_015.d	11/09/2013 07:38
TF2-004/5-SS1038-000.7 RA	320-4670-18 RA	12NO1311D2_014.d	11/13/2013 06:23
TF2-004/5-SS1037-000.7 RA	320-4670-19 RA	12NO1311D2_015.d	11/13/2013 07:02
TF2-004/5-SS1036-000.6 RA	320-4670-20 RA	18NO135D2_005.d	11/18/2013 19:12
TF2-004/5-SS1035-0001 RA	320-4670-21 RA	18NO135D2_006.d	11/18/2013 19:50
TF2-004/5-SS-DUP02-1013 RA	320-4670-22 RA	18NO135D2_007.d	11/18/2013 20:27
TF2-004/5-SS1024-000.6 RA	320-4670-3 RA	18NO135D2_008.d	11/18/2013 21:04
TF2-004/5-SS1023-000.8 RA	320-4670-4 RA	18NO135D2_009.d	11/18/2013 21:42
TF2-004/5-SS1032-000.9 RA	320-4670-8 RA	19no13a5d2_006.d	11/19/2013 21:08
TF2-004/5-SS1029-000.6 RA	320-4670-12 RA	19no13a5d2_007.d	11/19/2013 21:45
TF2-004/5-SS1026-000.8 RA	320-4670-2 RA	16DE13A11D2_005.d	12/17/2013 00:40
TF2-004/5-SS1022-000.9 RA	320-4670-5 RA	16DE13A11D2_006.d	12/17/2013 01:19
TF2-004/5-SS1021-000.7 RA	320-4670-6 RA	16DE13A11D2_007.d	12/17/2013 01:58
TF2-004/5-SS1020-0001 RA	320-4670-7 RA	16DE13A11D2_008.d	12/17/2013 02:36
TF2-004/5-SS1031-000.8 RA	320-4670-9 RA	16DE13A11D2_009.d	12/17/2013 03:15
TF2-004/5-SS-DUP01-1013 RA	320-4670-10 RA	16DE13A11D2_010.d	12/17/2013 03:54
TF2-004/5-SS1030-000.6 RA	320-4670-11 RA	16DE13A11D2_011.d	12/17/2013 04:33
TF2-004/5-SS1027-0001 RA	320-4670-14 RA	16DE13A11D2_012.d	12/17/2013 05:12
TF2-004/5-SS1027-0001 MS RA	320-4670-14 MS RA	16DE13A11D2_013.d	12/17/2013 05:50

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 04NO13B3D5_18.d Lab Sample ID: MB 320-28458/1-A

Matrix: Solid Date Extracted: 10/25/2013 18:01

Instrument ID: 3D5 Date Analyzed: 11/05/2013 09:43

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-004/5-SS1027-0001 MSD RA	320-4670-14 MSD RA	16DE13A11D2_014.d	12/17/2013 06:29
TF2-004/5-SS1022-000.9 RADL	320-4670-5 RADL	16DE13B3D5_44.d	12/18/2013 05:59
TF2-004/5-SS1020-0001 RADL	320-4670-7 RADL	16DE13B3D5_45.d	12/18/2013 06:40
TF2-004/5-SS-DUP01-1013 RADL	320-4670-10 RADL	16DE13B3D5_46.d	12/18/2013 07:22
TF2-004/5-SS1027-0001 MS RADL	320-4670-14 MS RADL	16DE13B3D5_49.d	12/18/2013 09:28
TF2-004/5-SS1027-0001 MSD RADL	320-4670-14 MSD RADL	16DE13B3D5_50.d	12/18/2013 10:09
TF2-004/5-SS1040-000.9 RADL	320-4670-15 RADL	16DE13B3D5_51.d	12/18/2013 10:51
TF2-004/5-SS1039-000.9 RADL	320-4670-16 RADL	16DE13B3D5_52.d	12/18/2013 11:33
TF2-004/5-SS1036-000.6 RADL	320-4670-20 RADL	16DE13B3D5_53.d	12/18/2013 12:15
TF2-004/5-SS1027-0001 RADL	320-4670-14 RADL	16DE13B3D5_62.d	12/18/2013 18:50
TF2-004/5-SS1029-000.6 RADL	320-4670-12 RADL	16DE13B3D5_91.d	12/19/2013 16:00

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-28458/1-A

Matrix: Solid Lab File ID: 04NO13B3D5_18.d

Analysis Method: 8290 Date Collected:

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10(g) Date Analyzed: 11/05/2013 09:43

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.042
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.035
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.046
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.054
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.056
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.048
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.035
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.034
70648-26-9	1,2,3,4,7,8-HxCDF	ND		5.0	0.068
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.052
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.059
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.066
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		5.0	0.041
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.113	J	5.0	0.060
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.071
3268-87-9	OCDD	0.305	J	10	0.051
39001-02-0	OCDF	ND		10	0.060
41903-57-5	Total TCDD	ND		1.0	0.042
30402-14-3	Total TCDF	ND		1.0	0.035
36088-22-9	Total PeCDD	ND		5.0	0.046
30402-15-4	Total PeCDF	ND		5.0	0.056
34465-46-8	Total HxCDD	ND		5.0	0.048
55684-94-1	Total HxCDF	ND		5.0	0.068
37871-00-4	Total HpCDD	ND		5.0	0.041
38998-75-3	Total HpCDF	0.113	J	5.0	0.066

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-28458/1-A

Matrix: Solid Lab File ID: 04NO13B3D5_18.d

Analysis Method: 8290 Date Collected:

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10(g) Date Analyzed: 11/05/2013 09:43

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	69		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	73		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	68		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	69		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	73		40-135
114423-97-1	13C-OCDD	70		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 04NO13B3D5_19.d

Lab ID: LCS 320-28458/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	24.0	120	60-138	
2,3,7,8-TCDF	20.0	20.8	104	56-158	
1,2,3,7,8-PeCDD	100	113	113	70-122	
1,2,3,7,8-PeCDF	100	116	116	69-134	
2,3,4,7,8-PeCDF	100	126	126	70-131	
1,2,3,4,7,8-HxCDD	100	108	108	60-138	
1,2,3,6,7,8-HxCDD	100	110	110	68-136	
1,2,3,7,8,9-HxCDD	100	110	110	68-138	
1,2,3,4,7,8-HxCDF	100	109	109	74-128	
1,2,3,6,7,8-HxCDF	100	103	103	67-140	
2,3,4,6,7,8-HxCDF	100	103	103	71-137	
1,2,3,7,8,9-HxCDF	100	101	101	72-134	
1,2,3,4,6,7,8-HpCDD	100	120	120	71-128	
1,2,3,4,6,7,8-HpCDF	100	111	111	71-134	
1,2,3,4,7,8,9-HpCDF	100	114	114	68-129	
OCDD	200	205	103	70-128	
OCDF	200	187	93	63-141	
13C-2,3,7,8-TCDD	200	122	61	40-135	
13C-2,3,7,8-TCDF	200	141	71	40-135	
13C-1,2,3,7,8-PeCDD	200	138	69	40-135	
13C-1,2,3,7,8-PeCDF	200	128	64	40-135	
13C-1,2,3,6,7,8-HxCDD	200	136	68	40-135	
13C-1,2,3,4,7,8-HxCDF	200	149	75	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	107	53	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	123	62	40-135	
13C-OCDD	400	321	80	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31OC13C3D5_81.d

Lab ID: 320-4670-14 MS Client ID: TF2-004/5-SS1027-0001 MS

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.9	ND	24.3	116	60-138	
2,3,7,8-TCDF	20.9	0.094 J	22.8	109	56-158	
1,2,3,7,8-PeCDD	104	ND	123	117	70-122	
1,2,3,7,8-PeCDF	104	ND	121	116	69-134	
2,3,4,7,8-PeCDF	104	ND	123	118	70-131	
1,2,3,4,7,8-HxCDD	104	0.28 J	117	112	60-138	
1,2,3,6,7,8-HxCDD	104	0.47 J	121	115	68-136	
1,2,3,7,8,9-HxCDD	104	0.57 J	114	109	68-138	
1,2,3,4,7,8-HxCDF	104	0.30 J	118	113	74-128	
1,2,3,6,7,8-HxCDF	104	0.92 J	122	116	67-140	
2,3,4,6,7,8-HxCDF	104	ND	116	111	71-137	
1,2,3,7,8,9-HxCDF	104	ND	117	112	72-134	
1,2,3,4,6,7,8-HpCDD	104	39	156	112	71-128	
1,2,3,4,6,7,8-HpCDF	104	2.1 J	117	110	71-134	
1,2,3,4,7,8,9-HpCDF	104	ND	118	113	68-129	
OCDD	209	4800	5080	141	70-128	E 4
OCDF	209	4.5 J	204	96	63-141	
13C-2,3,7,8-TCDD	209	180	141	68	40-135	
13C-2,3,7,8-TCDF	209	190	146	70	40-135	
13C-1,2,3,7,8-PeCDD	209	180	143	68	40-135	
13C-1,2,3,7,8-PeCDF	209	190	149	71	40-135	
13C-1,2,3,6,7,8-HxCDD	209	210	165	79	40-135	
13C-1,2,3,4,7,8-HxCDF	209	210	169	81	40-135	
13C-1,2,3,4,6,7,8-HpCDD	209	170	130	62	40-135	
13C-1,2,3,4,6,7,8-HpCDF	209	180	141	68	40-135	
13C-OCDD	417	420	322	77	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31OC13C3D5_82.d

Lab ID: 320-4670-14 MSD Client ID: TF2-004/5-SS1027-0001 MSD

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	20.8	23.5	113	3	20	60-138	
2,3,7,8-TCDF	20.8	22.5	108	1	20	56-158	
1,2,3,7,8-PeCDD	104	120	115	2	20	70-122	
1,2,3,7,8-PeCDF	104	122	118	1	20	69-134	
2,3,4,7,8-PeCDF	104	120	116	2	20	70-131	
1,2,3,4,7,8-HxCDD	104	112	107	5	20	60-138	
1,2,3,6,7,8-HxCDD	104	126	121	4	20	68-136	
1,2,3,7,8,9-HxCDD	104	113	109	1	20	68-138	
1,2,3,4,7,8-HxCDF	104	119	115	1	20	74-128	
1,2,3,6,7,8-HxCDF	104	123	118	1	20	67-140	
2,3,4,6,7,8-HxCDF	104	122	117	5	20	71-137	
1,2,3,7,8,9-HxCDF	104	120	116	3	20	72-134	
1,2,3,4,6,7,8-HpCDD	104	154	111	1	20	71-128	
1,2,3,4,6,7,8-HpCDF	104	117	111	0	20	71-134	
1,2,3,4,7,8,9-HpCDF	104	119	115	1	20	68-129	
OCDD	208	4630	-75	9	20	70-128	E 4
OCDF	208	214	101	5	20	63-141	
13C-2,3,7,8-TCDD	208	135	65			40-135	
13C-2,3,7,8-TCDF	208	140	67			40-135	
13C-1,2,3,7,8-PeCDD	208	134	65			40-135	
13C-1,2,3,7,8-PeCDF	208	140	67			40-135	
13C-1,2,3,6,7,8-HxCDD	208	149	72			40-135	
13C-1,2,3,4,7,8-HxCDF	208	148	71			40-135	
13C-1,2,3,4,6,7,8-HpCDD	208	120	58			40-135	
13C-1,2,3,4,6,7,8-HpCDF	208	131	63			40-135	
13C-OCDD	415	289	70			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 310C13C3D5_26.d

Lab ID: 320-4670-38 MS Client ID: TF2-004/5-SS1054-000.6 MS

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.8	0.094 J	24.8	119	60-138	
2,3,7,8-TCDF	20.8	0.43 J	23.0	109	56-158	
1,2,3,7,8-PeCDD	104	0.58 J	117	112	70-122	
1,2,3,7,8-PeCDF	104	0.23 J	123	118	69-134	
2,3,4,7,8-PeCDF	104	0.36 J	124	119	70-131	
1,2,3,4,7,8-HxCDD	104	1.7 J	139	132	60-138	
1,2,3,6,7,8-HxCDD	104	4.3 J	128	119	68-136	
1,2,3,7,8,9-HxCDD	104	3.2 J	124	116	68-138	
1,2,3,4,7,8-HxCDF	104	1.9 J	115	109	74-128	
1,2,3,6,7,8-HxCDF	104	1.2 J	108	102	67-140	
2,3,4,6,7,8-HxCDF	104	0.78 J	121	116	71-137	
1,2,3,7,8,9-HxCDF	104	ND	124	120	72-134	
1,2,3,4,6,7,8-HpCDD	104	98	218	115	71-128	
1,2,3,4,6,7,8-HpCDF	104	26	141	110	71-134	
1,2,3,4,7,8,9-HpCDF	104	1.2 J	126	120	68-129	
OCDD	208	3100	2890	-86	70-128	4
OCDF	208	53	254	97	63-141	
13C-2,3,7,8-TCDD	208	130	113	55	40-135	
13C-2,3,7,8-TCDF	208	140	121	58	40-135	
13C-1,2,3,7,8-PeCDD	208	140	127	61	40-135	
13C-1,2,3,7,8-PeCDF	208	130	122	59	40-135	
13C-1,2,3,6,7,8-HxCDD	208	140	120	58	40-135	
13C-1,2,3,4,7,8-HxCDF	208	170	127	61	40-135	
13C-1,2,3,4,6,7,8-HpCDD	208	130	101	49	40-135	
13C-1,2,3,4,6,7,8-HpCDF	208	140	113	54	40-135	
13C-OCDD	416	340	245	59	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 310C13C3D5_27.d

Lab ID: 320-4670-38 MSD Client ID: TF2-004/5-SS1054-000.6 MSD

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	19.7	23.9	121	4	20	60-138	
2,3,7,8-TCDF	19.7	21.9	109	5	20	56-158	
1,2,3,7,8-PeCDD	98.6	111	112	5	20	70-122	
1,2,3,7,8-PeCDF	98.6	120	121	3	20	69-134	
2,3,4,7,8-PeCDF	98.6	114	115	9	20	70-131	
1,2,3,4,7,8-HxCDD	98.6	124	124	11	20	60-138	
1,2,3,6,7,8-HxCDD	98.6	119	117	7	20	68-136	
1,2,3,7,8,9-HxCDD	98.6	116	114	6	20	68-138	
1,2,3,4,7,8-HxCDF	98.6	112	112	3	20	74-128	
1,2,3,6,7,8-HxCDF	98.6	101	101	6	20	67-140	
2,3,4,6,7,8-HxCDF	98.6	109	110	10	20	71-137	
1,2,3,7,8,9-HxCDF	98.6	113	115	10	20	72-134	
1,2,3,4,6,7,8-HpCDD	98.6	226	130	4	20	71-128	F
1,2,3,4,6,7,8-HpCDF	98.6	144	120	2	20	71-134	
1,2,3,4,7,8,9-HpCDF	98.6	115	115	9	20	68-129	
OCDD	197	3350	140	15	20	70-128	4
OCDF	197	248	99	3	20	63-141	
13C-2,3,7,8-TCDD	197	133	67			40-135	
13C-2,3,7,8-TCDF	197	145	73			40-135	
13C-1,2,3,7,8-PeCDD	197	141	72			40-135	
13C-1,2,3,7,8-PeCDF	197	147	74			40-135	
13C-1,2,3,6,7,8-HxCDD	197	144	73			40-135	
13C-1,2,3,4,7,8-HxCDF	197	154	78			40-135	
13C-1,2,3,4,6,7,8-HpCDD	197	125	63			40-135	
13C-1,2,3,4,6,7,8-HpCDF	197	141	72			40-135	
13C-OCDD	394	305	77			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31OC13C3D5_54.d

Lab ID: 320-4670-52 MS Client ID: TF2-004/5-SS1064-000.6 MS

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.3	0.16 J	23.6	115	60-138	
2,3,7,8-TCDF	20.3	0.99 J	22.9	108	56-158	
1,2,3,7,8-PeCDD	101	0.59 J	113	111	70-122	
1,2,3,7,8-PeCDF	101	0.53 J	122	120	69-134	
2,3,4,7,8-PeCDF	101	0.64 J	121	119	70-131	
1,2,3,4,7,8-HxCDD	101	1.2 J	124	121	60-138	
1,2,3,6,7,8-HxCDD	101	3.8 J	123	117	68-136	
1,2,3,7,8,9-HxCDD	101	2.6 J	119	115	68-138	
1,2,3,4,7,8-HxCDF	101	1.8 J	109	105	74-128	
1,2,3,6,7,8-HxCDF	101	1.3 J	106	103	67-140	
2,3,4,6,7,8-HxCDF	101	2.3 J	108	104	71-137	
1,2,3,7,8,9-HxCDF	101	ND	110	108	72-134	
1,2,3,4,6,7,8-HpCDD	101	87	217	128	71-128	
1,2,3,4,6,7,8-HpCDF	101	22	137	114	71-134	
1,2,3,4,7,8,9-HpCDF	101	1.3 J	120	117	68-129	
OCDD	203	1900	2310	226	70-128	4
OCDF	203	44	243	98	63-141	
13C-2,3,7,8-TCDD	203	140	166	82	40-135	
13C-2,3,7,8-TCDF	203	150	175	86	40-135	
13C-1,2,3,7,8-PeCDD	203	150	172	85	40-135	
13C-1,2,3,7,8-PeCDF	203	150	176	87	40-135	
13C-1,2,3,6,7,8-HxCDD	203	160	175	86	40-135	
13C-1,2,3,4,7,8-HxCDF	203	170	197	97	40-135	
13C-1,2,3,4,6,7,8-HpCDD	203	130	152	75	40-135	
13C-1,2,3,4,6,7,8-HpCDF	203	140	162	80	40-135	
13C-OCDD	406	310	363	89	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 310C13C3D5_55.d

Lab ID: 320-4670-52 MSD Client ID: TF2-004/5-SS1064-000.6 MSD

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	20.5	24.6	119	4	20	60-138	
2,3,7,8-TCDF	20.5	23.3	109	2	20	56-158	
1,2,3,7,8-PeCDD	102	116	113	2	20	70-122	
1,2,3,7,8-PeCDF	102	121	118	1	20	69-134	
2,3,4,7,8-PeCDF	102	120	117	1	20	70-131	
1,2,3,4,7,8-HxCDD	102	116	112	6	20	60-138	
1,2,3,6,7,8-HxCDD	102	122	115	1	20	68-136	
1,2,3,7,8,9-HxCDD	102	112	107	6	20	68-138	
1,2,3,4,7,8-HxCDF	102	113	109	4	20	74-128	
1,2,3,6,7,8-HxCDF	102	111	107	4	20	67-140	
2,3,4,6,7,8-HxCDF	102	109	105	2	20	71-137	
1,2,3,7,8,9-HxCDF	102	109	107	0	20	72-134	
1,2,3,4,6,7,8-HpCDD	102	216	126	0	20	71-128	
1,2,3,4,6,7,8-HpCDF	102	141	116	3	20	71-134	
1,2,3,4,7,8,9-HpCDF	102	119	115	1	20	68-129	
OCDD	205	2310	225	0	20	70-128	(4)
OCDF	205	240	96	1	20	63-141	
13C-2,3,7,8-TCDD	205	183	89			40-135	
13C-2,3,7,8-TCDF	205	199	97			40-135	
13C-1,2,3,7,8-PeCDD	205	199	97			40-135	
13C-1,2,3,7,8-PeCDF	205	204	100			40-135	
13C-1,2,3,6,7,8-HxCDD	205	211	103			40-135	
13C-1,2,3,4,7,8-HxCDF	205	227	111			40-135	
13C-1,2,3,4,6,7,8-HpCDD	205	171	83			40-135	
13C-1,2,3,4,6,7,8-HpCDF	205	188	92			40-135	
13C-OCDD	410	415	101			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31OC13C3D5_76.d

Lab ID: 320-4670-64 MS Client ID: TF2-003-SS1019-000.5 MS

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	21.6	0.40 J	26.2	120	60-138	
1,2,3,7,8-PeCDD	108	1.7 J	124	113	70-122	
1,2,3,7,8-PeCDF	108	1.4 J	126	116	69-134	
2,3,4,7,8-PeCDF	108	1.1 J	125	115	70-131	
1,2,3,4,7,8-HxCDD	108	2.4 J	126	115	60-138	
1,2,3,6,7,8-HxCDD	108	5.7	131	116	68-136	
1,2,3,7,8,9-HxCDD	108	5.4	124	110	68-138	
1,2,3,4,7,8-HxCDF	108	6.0	123	108	74-128	
1,2,3,6,7,8-HxCDF	108	2.4 J	116	105	67-140	
2,3,4,6,7,8-HxCDF	108	1.9 J	115	105	71-137	
1,2,3,7,8,9-HxCDF	108	ND	117	108	72-134	
1,2,3,4,6,7,8-HpCDD	108	72	201	120	71-128	
1,2,3,4,6,7,8-HpCDF	108	16	135	110	71-134	
1,2,3,4,7,8,9-HpCDF	108	0.79 J	121	112	68-129	
OCDD	216	3000	3160	93	70-128	4
OCDF	216	15	235	102	63-141	
13C-2,3,7,8-TCDD	216	130	133	62	40-135	
13C-2,3,7,8-TCDF	216	140	139	65	40-135	
13C-1,2,3,7,8-PeCDD	216	140	136	63	40-135	
13C-1,2,3,7,8-PeCDF	216	140	140	65	40-135	
13C-1,2,3,6,7,8-HxCDD	216	140	146	68	40-135	
13C-1,2,3,4,7,8-HxCDF	216	150	158	73	40-135	
13C-1,2,3,4,6,7,8-HpCDD	216	120	120	56	40-135	
13C-1,2,3,4,6,7,8-HpCDF	216	130	132	61	40-135	
13C-OCDD	432	270	272	63	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31OC13C3D5_77.d

Lab ID: 320-4670-64 MSD Client ID: TF2-003-SS1019-000.5 MSD

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	21.5	25.6	117	2	20	60-138	
1,2,3,7,8-PeCDD	107	125	115	1	20	70-122	
1,2,3,7,8-PeCDF	107	126	116	1	20	69-134	
2,3,4,7,8-PeCDF	107	127	117	1	20	70-131	
1,2,3,4,7,8-HxCDD	107	134	123	6	20	60-138	
1,2,3,6,7,8-HxCDD	107	128	113	3	20	68-136	
1,2,3,7,8,9-HxCDD	107	126	113	2	20	68-138	
1,2,3,4,7,8-HxCDF	107	125	111	2	20	74-128	
1,2,3,6,7,8-HxCDF	107	124	113	7	20	67-140	
2,3,4,6,7,8-HxCDF	107	118	108	3	20	71-137	
1,2,3,7,8,9-HxCDF	107	118	110	1	20	72-134	
1,2,3,4,6,7,8-HpCDD	107	188	109	7	20	71-128	
1,2,3,4,6,7,8-HpCDF	107	145	120	8	20	71-134	
1,2,3,4,7,8,9-HpCDF	107	129	120	6	20	68-129	
OCDD	215	2730	-109	15	20	70-128	4
OCDF	215	242	105	3	20	63-141	
13C-2,3,7,8-TCDD	215	162	75			40-135	
13C-2,3,7,8-TCDF	215	169	79			40-135	
13C-1,2,3,7,8-PeCDD	215	162	75			40-135	
13C-1,2,3,7,8-PeCDF	215	170	79			40-135	
13C-1,2,3,6,7,8-HxCDD	215	174	81			40-135	
13C-1,2,3,4,7,8-HxCDF	215	190	88			40-135	
13C-1,2,3,4,6,7,8-HpCDD	215	147	68			40-135	
13C-1,2,3,4,6,7,8-HpCDF	215	156	72			40-135	
13C-OCDD	430	351	82			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 08NO13B11D2_010.d

Lab ID: 320-4670-64 MS RA Client ID: TF2-003-SS1019-000.5 MS RA

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDF	21.6	1.5	23.1	100	56-158	
13C-2,3,7,8-TCDF	216	130	138	64	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 08NO13B11D2_011.d

Lab ID: 320-4670-64 MSD RA Client ID: TF2-003-SS1019-000.5 MSD RA

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDF	21.5	22.2	96	4	20	56-158	
13C-2,3,7,8-TCDF	215	161	75			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 16DE13A11D2_013.d

Lab ID: 320-4670-14 MS RA Client ID: TF2-004/5-SS1027-0001 MS RA

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDF	20.9	ND	23.9	114	56-158	H
13C-2,3,7,8-TCDF	209	210	156	75	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 16DE13A11D2_014.d

Lab ID: 320-4670-14 MSD RA Client ID: TF2-004/5-SS1027-0001 MSD RA

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDF	20.8	23.7	114	1	20	56-158	H
13C-2,3,7,8-TCDF	208	150	72			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 16DE13B3D5_49.d

Lab ID: 320-4670-14 MS RADL Client ID: TF2-004/5-SS1027-0001 MS RADL

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
OCDD	209	6100	6160	15	70-128	H 4
13C-OCDD	417	330	261	62	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 16DE13B3D5_50.d

Lab ID: 320-4670-14 MSD RADL Client ID: TF2-004/5-SS1027-0001 MSD RADL

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
OCDD	208	5410	-344	13	20	70-128	H 4
13C-OCDD	415	248	60			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 17DE1311D2_011.d

Lab ID: 320-4670-38 MS RA Client ID: TF2-004/5-SS1054-000.6 MS RA

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDF	20.8	0.17 J	23.5	112	56-158	H
13C-2,3,7,8-TCDF	208	150	132	64	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 17DE1311D2_012.d

Lab ID: 320-4670-38 MSD RA Client ID: TF2-004/5-SS1054-000.6 MSD RA

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDF	19.7	22.3	112	5	20	56-158	H
13C-2,3,7,8-TCDF	197	151	77			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 18DE1311D2_008.d

Lab ID: 320-4670-52 MS RA Client ID: TF2-004/5-SS1064-000.6 MS RA

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDF	20.3	0.44 J	21.3	103	56-158	H
13C-2,3,7,8-TCDF	203	160	182	90	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 18DE1311D2_009.d

Lab ID: 320-4670-52 MSD RA Client ID: TF2-004/5-SS1064-000.6 MSD RA

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDF	20.5	22.5	108	5	20	56-158	H
13C-2,3,7,8-TCDF	205	199	97			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	TF2-003-SS-DUP06-1013	UNITS	TF2-003-SS1015-000.8	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	6100	NG/KG	5400	12.17	700.00
DIOX	1,2,3,4,6,7,8,9-OCDF	11	NG/KG	8.9 J	21.11	2.10
DIOX	1,2,3,4,6,7,8-HPCDD	88	NG/KG	84	4.65	4.00
DIOX	1,2,3,4,6,7,8-HPCDF	9.1	NG/KG	7.4	20.61	1.70
DIOX	1,2,3,4,7,8,9-HPCDF	0.6 J	NG/KG	0.54 J	10.53	0.06
DIOX	1,2,3,4,7,8-HXCDD	1.4 J	NG/KG	1.1 J	24.00	0.30
DIOX	1,2,3,4,7,8-HXCDF	2.3 J	NG/KG	1.7 J	30.00	0.60
DIOX	1,2,3,6,7,8-HXCDD	3.1 J	NG/KG	2.8 J	10.17	0.30
DIOX	1,2,3,6,7,8-HXCDF	1.2 J	NG/KG	0.82 J	37.62	0.38
DIOX	1,2,3,7,8,9-HXCDD	3.1 J	NG/KG	2.9 J	6.67	0.20
DIOX	1,2,3,7,8-PECDD	0.94 J	NG/KG	0.73 J	25.15	0.21
DIOX	1,2,3,7,8-PECDF	0.96 J	NG/KG	0.9 J	6.45	0.06
DIOX	2,3,4,6,7,8-HXCDF	0.89 J	NG/KG	0.85 J	4.60	0.04
DIOX	2,3,4,7,8-PECDF	0.96 J	NG/KG	0.85 J	12.15	0.11
DIOX	2,3,7,8-TCDD	0.25 J	NG/KG	0.15 J	50.00	0.10
DIOX	2,3,7,8-TCDF	0.84 J /p	NG/KG	ND	200.00	0.84 N/A <2XR.L.
DIOX	TOTAL HPCDD	200	NG/KG	190	5.13	10.00
DIOX	TOTAL HPCDF	18	NG/KG	15	18.18	3.00
DIOX	TOTAL HXCDD	33	NG/KG	31 J	6.25	2.00
DIOX	TOTAL HXCDF	16 J	NG/KG	13 J	20.69	3.00
DIOX	TOTAL PECDD	15 J	NG/KG	12 J	22.22	3.00
DIOX	TOTAL PECDF	14 J	NG/KG	12 J	15.38	2.00
DIOX	TOTAL TCDD	7.8 J	NG/KG	7.6 J	2.60	0.20
DIOX	TOTAL TCDF	10 J	NG/KG	8.9 J	11.64	1.10

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	F2-004/5-SS-DUP01-1013	UNITS	F2-004/5-SS1020-0001	RPD	D
DIOX	2,3,7,8-TCDF	0.17 J	NG/KG	0.19 J	11.11	0.02

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	TF2-004/5-SS-DUP03-101	UNITS	TF2-004/5-SS1041-000.7	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	6000	NG/KG	5600	6.90	400.00
DIOX	1,2,3,4,6,7,8,9-OCDF	18	NG/KG	15	18.18	3.00
DIOX	1,2,3,4,6,7,8-HPCDD	63	NG/KG	46	31.19	17.00
DIOX	1,2,3,4,6,7,8-HPCDF	7.3	NG/KG	6.4	13.14	0.90
DIOX	1,2,3,4,7,8-HXCDD	0.49 J	NG/KG	0.43 J	13.04	0.06
DIOX	1,2,3,4,7,8-HXCDF	0.9 J	NG/KG	0.54 J	50.00	0.36
DIOX	1,2,3,6,7,8-HXCDD	0.95 J	NG/KG	0.86 J	9.94	0.09
DIOX	1,2,3,6,7,8-HXCDF	0.76 J	NG/KG	0.74 J	2.67	0.02
DIOX	1,2,3,7,8,9-HXCDD	1.1 J	NG/KG	0.76 J	36.56	0.34
DIOX	1,2,3,7,8-PECDD	0.11 J	NG/KG	0.14 J	24.00	0.03
DIOX	1,2,3,7,8-PECDF	ND	NG/KG	0.067 J /P	200.00	0.07 NA
DIOX	2,3,4,6,7,8-HXCDF	0.34 J /P	NG/KG	0.2 J /P	51.85	0.14 N/A
DIOX	2,3,4,7,8-PECDF	ND	NG/KG	0.18 J /P	200.00	0.18 N/A
DIOX	TOTAL HPCDD	120	NG/KG	82	37.62	38.00
DIOX	TOTAL HPCDF	18	NG/KG	15	18.18	3.00
DIOX	TOTAL HXCDD	7.7 J	NG/KG	6.2 J	21.58	1.50
DIOX	TOTAL HXCDF	6.8 J	NG/KG	5.3 J	24.79	1.50
DIOX	TOTAL PECDD	1.8 J	NG/KG	1.9 J	5.41	0.10
DIOX	TOTAL PECDF	1.3 J	NG/KG	1.1 J	16.67	0.20
DIOX	TOTAL TCDD	0.59 J	NG/KG	0.63 J	6.56	0.04
DIOX	TOTAL TCDF	1 J	NG/KG	1 J	0.00	0.00

< 2XR.L.

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	F2-004/5-SS-DUP03-1013	UNITS	F2-004/5-SS1041-000.7/	RPD	D
DIOX	2,3,7,8-TCDF	0.15 J /P	NG/KG	ND	200.00	0.15 N/A<2XR.L.

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	TF2-004/5-SS-DUP04-101	UNITS	TF2-004/5-SS1061-000.6	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	3600	NG/KG	3400	5.71	200.00
DIOX	1,2,3,4,6,7,8,9-OCDF	49	NG/KG	40	20.22	9.00
DIOX	1,2,3,4,6,7,8-HPCDD	120	NG/KG	110	8.70	10.00
DIOX	1,2,3,4,6,7,8-HPCDF	23	NG/KG	22	4.44	1.00
DIOX	1,2,3,4,7,8,9-HPCDF	1 J	NG/KG	1.4 J	33.33	0.40
DIOX	1,2,3,4,7,8-HXCDD	2.2 J	NG/KG	2.3 J	4.44	0.10
DIOX	1,2,3,4,7,8-HXCDF	2.1 J	NG/KG	1.9 J	10.00	0.20
DIOX	1,2,3,6,7,8-HXCDD	5.6	NG/KG	5.7	1.77	0.10
DIOX	1,2,3,6,7,8-HXCDF	1.3 J	NG/KG	1.3 J	0.00	0.00
DIOX	1,2,3,7,8,9-HXCDD	4.9 J	NG/KG	4.7 J	4.17	0.20
DIOX	1,2,3,7,8-PECDD	0.91 J	NG/KG	0.98 J	7.41	0.07
DIOX	1,2,3,7,8-PECDF	0.34 J	NG/KG	0.3 J	12.50	0.04
DIOX	2,3,4,6,7,8-HXCDF	1.2 J	NG/KG	1.2 J	0.00	0.00
DIOX	2,3,4,7,8-PECDF	0.51 J	NG/KG	0.51 J	0.00	0.00
DIOX	2,3,7,8-TCDD	0.2 J /P	NG/KG	ND	200.00	0.20 NA<2XR.L.
DIOX	TOTAL HPCDD	220	NG/KG	200	9.52	20.00
DIOX	TOTAL HPCDF	62	NG/KG	56	10.17	6.00
DIOX	TOTAL HXCDD	36	NG/KG	34 J	5.71	2.00
DIOX	TOTAL HXCDF	30	NG/KG	28	6.90	2.00
DIOX	TOTAL PECDD	4.8 J	NG/KG	4.7 J	2.11	0.10
DIOX	TOTAL PECDF	9.2 J	NG/KG	9.5 J	3.21	0.30
DIOX	TOTAL TCDD	1.2 J	NG/KG	1.3 J	8.00	0.10
DIOX	TOTAL TCDF	4.1 J	NG/KG	5 J	19.78	0.90

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	F2-004/5-SS-DUP04-1013	UNITS	F2-004/5-SS1061-000.6/	RPD	D
DIOX	2,3,7,8-TCDF	0.42 J	NG/KG	0.43 J	2.35	0.01

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	TF2-004/5-SS-DUP05-101	UNITS	TF2-004/5-SS1065-000.5	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	3100	NG/KG	3000	3.28	100.00
DIOX	1,2,3,4,6,7,8,9-OCDF	89	NG/KG	100	11.64	11.00
DIOX	1,2,3,4,6,7,8-HPCDD	170	NG/KG	170	0.00	0.00
DIOX	1,2,3,4,6,7,8-HPCDF	46	NG/KG	51	10.31	5.00
DIOX	1,2,3,4,7,8,9-HPCDF	2.4 J	NG/KG	2.9 J	18.87	0.50
DIOX	1,2,3,4,7,8-HXCDD	2.6 J	NG/KG	2.7 J	3.77	0.10
DIOX	1,2,3,4,7,8-HXCDF	4 J	NG/KG	4.1 J	2.47	0.10
DIOX	1,2,3,6,7,8-HXCDD	6.5	NG/KG	6.8	4.51	0.30
DIOX	1,2,3,6,7,8-HXCDF	3.1 J	NG/KG	3.1 J	0.00	0.00
DIOX	1,2,3,7,8,9-HXCDD	5.9	NG/KG	5.4	8.85	0.50
DIOX	1,2,3,7,8-PECDD	1.1 J	NG/KG	1.1 J	0.00	0.00
DIOX	1,2,3,7,8-PECDF	0.87 J	NG/KG	0.94 J	7.73	0.07
DIOX	2,3,4,6,7,8-HXCDF	3 J	NG/KG	3.3 J	9.52	0.30
DIOX	2,3,4,7,8-PECDF	1.4 J	NG/KG	1.4 J	0.00	0.00
DIOX	2,3,7,8-TCDD	ND	NG/KG	0.18 J *iP*	200.00	0.18 *NA<2XR.L.*
DIOX	2,3,7,8-TCDF	1.2	NG/KG	1	18.18	0.20
DIOX	TOTAL HPCDD	290	NG/KG	290	0.00	0.00
DIOX	TOTAL HPCDF	120 J	NG/KG	130	8.00	10.00
DIOX	TOTAL HXCDD	47 J	NG/KG	45	4.35	2.00
DIOX	TOTAL HXCDF	68	NG/KG	68 J	0.00	0.00
DIOX	TOTAL PECDD	8.3 J	NG/KG	7.4 J	11.46	0.90
DIOX	TOTAL PECDF	29	NG/KG	26 J	10.91	3.00
DIOX	TOTAL TCDD	2.8 J	NG/KG	1.8 J	43.48	1.00
DIOX	TOTAL TCDF	9.6 J	NG/KG	11 J	13.59	1.40

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	TF2-004/5-SS-DUP01-101	UNITS	TF2-004/5-SS1020-0001	RPD	D	
DIOX	1,2,3,4,6,7,8,9-OCDD	6600	NG/KG	6000	9.52	600.00	
DIOX	1,2,3,4,6,7,8,9-OCDF	7.3 J	NG/KG	4.9 J	39.34	2.40	
DIOX	1,2,3,4,6,7,8-HPCDD	49	NG/KG	44	10.75	5.00	
DIOX	1,2,3,4,6,7,8-HPCDF	4.1 J	NG/KG	3.6 J	12.99	0.50	
DIOX	1,2,3,4,7,8,9-HPCDF	0.31 J	NG/KG	0.39 J	22.86	0.08	
DIOX	1,2,3,4,7,8-HXCDD	0.55 J	NG/KG	0.62 J	11.97	0.07	
DIOX	1,2,3,4,7,8-HXCDF	0.46 J	NG/KG	0.41 J	11.49	0.05	
DIOX	1,2,3,6,7,8-HXCDD	1.2 J	NG/KG	0.9 J	28.57	0.30	
– DIOX –	1,2,3,6,7,8-HXCDF	1.4 J /P	NG/KG	0.81 J /P	53.39	0.59	N/A<2xR.L.
DIOX	1,2,3,7,8,9-HXCDD	1.4 J	NG/KG	1.2 J	15.38	0.20	
DIOX	1,2,3,7,8-PECDD	0.24 J	NG/KG	0.27 J	11.76	0.03	
DIOX	2,3,4,6,7,8-HXCDF	0.55 J	NG/KG	0.44 J	22.22	0.11	
DIOX	2,3,4,7,8-PECDF	0.15 J	NG/KG	0.14 J	6.90	0.01	
– DIOX –	2,3,7,8-TCDD	ND	NG/KG	0.12 J /P	200.00	0.12	N/A<2xR.L.
DIOX	TOTAL HPCDD	86	NG/KG	75	13.66	11.00	
DIOX	TOTAL HPCDF	10	NG/KG	8.1	20.99	1.90	
DIOX	TOTAL HXCDD	10 J	NG/KG	8.8 J	12.77	1.20	
DIOX	TOTAL HXCDF	10 J	NG/KG	9.9 J	1.01	0.10	
DIOX	TOTAL PECDD	1.8 J	NG/KG	2 J	10.53	0.20	
DIOX	TOTAL PECDF	4.2 J	NG/KG	4.8 J	13.33	0.60	
– DIOX –	TOTAL TCDD	0.58 J /P	NG/KG	1.3 J /W	76.60	0.72	N/A<2xR.L.
– DIOX –	TOTAL TCDF	1.3 J /W	NG/KG	4.8 J /W	114.75	3.50	

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	TF2-004/5-SS-DUP02-101	UNITS	TF2-004/5-SS1035-0001	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	3600	NG/KG	4000	10.53	400.00
DIOX	1,2,3,4,6,7,8,9-OCDF	110	NG/KG	280	87.18	170.00
DIOX	1,2,3,4,6,7,8-HPCDD	330	NG/KG	330	0.00	0.00
DIOX	1,2,3,4,6,7,8-HPCDF	60	NG/KG	110	58.82	50.00
DIOX	1,2,3,4,7,8,9-HPCDF	3.3 J /P	NG/KG	5.7	53.33	2.40 N/A 2XR.L.
DIOX	1,2,3,4,7,8-HXCDD	4.5 J	NG/KG	4.5 J	0.00	0.00
DIOX	1,2,3,4,7,8-HXCDF	5.3 J/P	NG/KG	11	69.94	5.70 N/A 2XR,L.
DIOX	1,2,3,6,7,8-HXCDD	16	NG/KG	14	13.33	2.00
DIOX	1,2,3,6,7,8-HXCDF	3.3 J	NG/KG	4.6 J	32.91	1.30
DIOX	1,2,3,7,8,9-HXCDD	8.8	NG/KG	11	22.22	2.20
DIOX	1,2,3,7,8-PECDD	1.8 J	NG/KG	2.1 J	15.38	0.30
DIOX	1,2,3,7,8-PECDF	1 J	NG/KG	1.1 J	9.52	0.10
DIOX	2,3,4,6,7,8-HXCDF	2.5 J	NG/KG	3.3 J	27.59	0.80
DIOX	2,3,4,7,8-PECDF	1.2 J	NG/KG	2 J	50.00	0.80
DIOX	2,3,7,8-TCDD	0.3 J	NG/KG	0.41 J	30.99	0.11
DIOX	2,3,7,8-TCDF	ND	NG/KG	1.3	200.00	1.30
DIOX	TOTAL HPCDD	590	NG/KG	580	1.71	10.00
DIOX	TOTAL HPCDF	150	NG/KG	210	33.33	60.00
DIOX	TOTAL HXCDD	96	NG/KG	94	2.11	2.00
DIOX	TOTAL HXCDF	69 J	NG/KG	81	16.00	12.00
DIOX	TOTAL PECDD	13 J	NG/KG	13 J	0.00	0.00
DIOX	TOTAL PECDF	21 J	NG/KG	25 J	17.39	4.00
DIOX	TOTAL TCDD	4 J	NG/KG	4.4 J	9.52	0.40
DIOX	TOTAL TCDF	11	NG/KG	12 J	8.70	1.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

PCDD/PCDF CALCULATION SOLIDS/SOILS/SEDIMENTS	SAMPLE TF2-004/5-SS1060.000.5		
TARGET ANALYTE	2,3,7,8-TCDF		
ANALYTE RESPONSE ION 1	2.17E+05		
ANALYTE RESPONSE ION 2	2.88E+05		
INTERNAL STD ION 1 RESPONSE	2.23E+07		
INTERNAL STD ION 2 RESPONSE	2.76E+07		
CONCENTRATION OF INTERNAL STANDARD (Conc.)	100	pg/ul	
Relative Response Factor Analyte (RRF)	1.066		
Weight of Initial sample grams (WT)	10.06	gm	
VOLUME OF FINAL EXTRACT (Vf)	20	uL	
DILUTION FACTOR (DF)	1		
% MOISTURE	4.4		
SOLIDS FRACTION	0.956		
Correction factor 1 (CF1)	1		
		0.9518	on column result

$$\frac{[(\text{analyte response ion1}+\text{analyte response ion2})/(\text{int. std. response ion1} + \text{int. std. response ion2})] * (Vf) * \text{Conc.} * DF}{RRF * WT * CF1 * \text{SOLIDS FRACTION}} = 1.9794 \text{ pg/g or ng/kg}$$

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name:	TestAmerica Sacramento	Job No.:	320-4670-1
SDG No.:			
Client Sample ID:	TF2-004/5-SS1060.000.5 RA	Lab Sample ID:	320-4670-48 RA
Matrix:	Solid	Lab File ID:	08NO13B11D2_004.d
Analysis Method:	8290	Date Collected:	10/22/2013 08:15
Extract. Method:	8290	Date Extracted:	10/25/2013 15:42
Sample wt/vol:	10.06(g)	Date Analyzed:	11/09/2013 00:30
Con. Extract Vol.:	20(uL)	Dilution Factor:	1
Injection Volume:	2(uL)	Level: (low/med)	Low
% Moisture:	4.4	GPC Cleanup:(Y/N)	N
Analysis Batch No.:	29560	Units:	pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	2.0		1.0	0.067

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	108		40-135

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\Sacchrom\ChromData\11D5\20131111-8575.b\08NO13B11D2_004.d
Lims ID: 320-4670-A-48-A Lab Sample ID: 320-4670-48
Client ID: TF2-004/5-SS1060.000.5
Sample Type: Client
Inject. Date: 09-Nov-2013 00:30:51 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28431
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D5

Method: \\Sacchrom\ChromData\11D5\20131111-8575.b\DXN_DB225_11D2.m
Limit Group: HR - 8290 - ICAL
Last Update: 15-Nov-2013 09:05:05 Calib Date: 27-Aug-2013 18:37:08
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\Sacchrom\ChromData\11D5\20130828-6877.b\27AU13A11D2_007.d

Column 1 : DB-225 (0.32 mm) Detector F1:HRSIR
Process Host: XAWRK011

First Level Reviewer: grandfieldv Date: 15-Nov-2013 09:06:00

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.972	33260490	0.81	1.4E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.207	49851509	0.81	1.3881	108.0	108.0	0.1850	0.1850	108	
2,3,7,8-TCDF	17.235	505815	0.75	1.0655	0.9522	0.9522	0.0321	0.0321		M
D 13C-2,3,7,8-TCDD	15.739	34128407	0.80	0.9803	104.7	104.7	0.1951	0.1951	105	
2,3,7,8-TCDD	15.739	85689	0.79	1.2046	0.2084	0.2084	0.0425	0.0425		

QC Flag Legend

Review Flags
M - Manually Integrated

TestAmerica Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\Sacchrom\ChromData\11D5\20131111-8575.b\08NO13B11D2_004.d
Lims ID: 320-4670-A-48-A Lab Sample ID: 320-4670-48
Client ID: TF2-004/5-SS1060.000.5
Sample Type: Client
Inject. Date: 09-Nov-2013 00:30:51 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28431
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D5

Method: \\Sacchrom\ChromData\11D5\20131111-8575.b\DXN_DB225_11D2.m
Limit Group: HR - 8290 - ICAL
Last Update: 15-Nov-2013 09:05:05 Calib Date: 27-Aug-2013 18:37:08
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\Sacchrom\ChromData\11D5\20130828-6877.b\27AU13A11D2_007.d

Column 1 : DB-225 (0.32 mm) Detector F1:HRSIR
Process Host: XAWRK011

First Level Reviewer: grandfieldv Date: 15-Nov-2013 09:06:00

Signal	RT (min.)	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD									
331.9368	15.972		14855041	3636720	3250	8125	1119.0		
333.9339	15.972		18405449	4195636	2743	6857	1529.6	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF									
315.9419	17.207	1.077	22252626	4489642	4286	10715	1047.5		
317.9389	17.207	1.077	27598883	5728050	3758	9395	1524.2	0.81(0.65-0.89)	
2,3,7,8-TCDF									M
303.9016	17.235	1.002	217418	45952	615	1537	74.7		M
305.8987	17.221	1.001	288397	64010	785	1962	81.5	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD									
331.9368	15.739	0.985	15198709	3850736	3250	8125	1184.8		
333.9339	15.739	0.985	18929698	4556084	2743	6857	1661.0	0.80(0.65-0.89)	
2,3,7,8-TCDD									
319.8965	15.739	1.000	37761	7276	703	1757	10.3		
321.8936	15.766	1.002	47928	11027	1020	2550	10.8	0.79(0.65-0.89)	

QC Flag Legend

Review Flags
M - Manually Integrated

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29560/2 Calibration Date: 11/08/2013 23:13

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 08NO13B11D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.094		9.08	10.0	-9.2	20.0
2,3,7,8-TCDF	AveID	1.066	0.9915		9.30	10.0	-7.0	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	1.002		102	100	2.2	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.503		108	100	8.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.414		5.20	5.00	4.0	

APPENDIX G

BACKGROUND SOIL COMPARISON STUDY

BACKGROUND COMPARISONS
TANK FARM 2
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

1. INTRODUCTION

The comparative statistical method was used to compare surface and subsurface soil data from Tank Farm 2 to the Newport Silt Loam background data. Newport Silt-Loam background data was used based upon historical soils maps. The comparative method utilizes several statistical techniques to compare site and background data.

The comparison of the site data with the background data involved a graphical evaluation and a hypothesis test comparing the central tendency (mean/median) concentrations and a hypothesis test comparing the right tails (largest values). The graphical evaluation consisted of visual inspection of boxplots, normal probability plots, and histograms. The graphical displays are presented at the end of this appendix. The statistical package R version 2.15.0 was used to conduct the statistical evaluations. The detection limit was used for non-detected concentrations for the graphical displays and for the statistical hypothesis tests.

2. STATISTICAL METHODLOGY

This section describes the graphical displays and hypothesis tests used to compare the site dataset to the background dataset.

2.1 Graphical Displays

Boxplots show the central tendency, degree of symmetry, range of variation, and potential outliers of a data set. The data set is shown as a rectangular box that represents the middle 50 percent of the data. The upper value of the box represents the 75th percentile and the lower value of the box represents the 25th percentile. The median is represented by the middle line in the box. Box plots for the same analyte were plotted on the same graph. The plots were visually inspected to see which data sets look similar and which ones differed. Particular attention was paid to see if the median from one data set fell within the 75th and 25th percentile range of the other data sets.

Probability plots are a useful first step for visually comparing two data sets in a single graph. If the site and background distributions were exactly identical, the plotted values would lie on a straight line through the origin. Deviations from this line show the differences between the two distributions. If the site and background distributions are similar the scattering of the two data sets will be mixed. If there is grouping of the two data sets then data sets are most likely different.

Histograms are a visual representation of the data collected into groups. The data range is divided into several bins or classes and the data are sorted into the bins. The x-axis displays the chemical concentration range for the bin and the y-axis shows the number of observations that fall within the bin. The histograms of the site and background datasets were plotted on top of each other to be able to compare the shapes of the two distributions, overall concentration ranges, and ranges of concentrations that have the most samples.

2.2 Hypothesis Tests

Two types of hypothesis tests were conducted one comparing the central tendency of the data sets and one comparing the right tails of the data sets. The Two Sample T-test, Wilcoxon Rank Sum test, Gehan test, and the Two Sample Proportion test were used to compare the central tendency of the site and background data sets. The Slippage Test and Quantile test were used to compare the right tails of the site and background datasets. All hypothesis tests were conducted using a five percent significance level meaning that if the p-value associated with the

hypothesis test is less than 0.05 there is statistically significant evidence that the null hypothesis (H_o or assumed hypothesis) is false. The p-value of a test can be thought of as the credibility of the null hypothesis; p-values greater than 0.05 indicate that the null hypothesis is credible whereas p-values less than 0.05 indicate otherwise.

The Two Sample T-Test tests for a difference between two populations means when it can be assumed that the data are approximately normally distributed or sample sizes are large enough (m and n at least 30) and the data are all detected. If the variances of the two data sets are not equal than the Two sample T Test with unequal variance was computed. The null and alternative hypotheses were:

H_o: Site Average ≥ Background Average + Background Standard Deviation
H_A: Site Average < Background Average + Background Standard Deviation

The Wilcoxon Rank-Sum (WRS) nonparametric test is used to test for a difference between median concentrations between two independent populations. The WRS test was used when the data were not normally distributed and there were less than three reporting limits if non-detected concentrations were present. The null and alternative hypotheses were:

H_o: Site Median ≥ Background Media + Background Standard Deviation
H_A: Site Median < Background Median + Background Standard Deviation

The Gehan nonparametric test is used to test for a difference between median concentrations between two independent populations. The Gehan test can be used when the background or site datasets contain multiple nondetects with different reporting limits. The Gehan test was used when the nondetects had more than three reporting limits. The null and alternative hypotheses are the same as the null and alternative hypothesis for the WRS test.

The Two Sample Proportion test was used to determine if the proportion of site samples in the top 25 percent of the combined site and background dataset is greater than the proportion of background samples. The proportion test was used when there were between 50 and 90 percent non-detects. The null and alternative hypotheses were:

H_o: Proportion Site ≥ Proportion Background
H_A: Proportion Site < Proportion Background

The Slippage Test and Quantile tests are used to test for a shift to the right in the extreme right-tail of the site versus the background concentrations. This is equivalent to asking if a set of the largest values of the site distribution are larger than the maximum value of the background distribution. If the slippage test found the extreme right tail of the site data to be larger than the background data it was concluded that the site concentrations are greater than background. The null and alternative hypothesis were:

H_o: Right Tail of Site Dataset ≤ Right Tail of the Background Dataset
H_A: Right Tail of the Site Dataset > Right Tail of the Background Dataset

3. RESULTS OF BACKGROUND COMPARISONS

This section summarizes the results of the visual comparison of the site and background data sets based on the graphical displays described in Section 2.1 and the results of the hypothesis tests described in Section 2.2. The samples used in the background data sets are presented in Table 1. The site data used in the entire site evaluation is presented in Table 2. Surface soil data from the site was also evaluated for three separate areas, AOC-001, combined AOCs 003, 004, and 005, and the Buoy Storage Area (BSA) as presented in Table 3.

The graphical displays are presented at the end of this appendix. The results of the statistical hypothesis tests and overall conclusion based on both the visual comparison and hypothesis tests and are presented in Tables 4 and 5 for surface soil and subsurface soil from the entire site, Table 6 for surface soil from AOC-001, Table 7 for surface soil from combined AOCs 003 and 004, and 005, and Table 8 for surface soil from the Buoy Storage Area.

Metals for which no background evaluation was conducted (because background concentrations were non-detect), were assumed to be at concentrations greater than background.

3.1 Surface Soil for the Entire Site

Metals concentrations in surface soil from Tank Farm 2 were compared to the Newport Silt Loam surface soil background concentrations. Background concentrations for antimony, silver, sodium, and thallium were non-detect. Therefore statistical comparison of site data to background data for antimony, silver, sodium, and thallium are not appropriate and were not conducted.

Based on the results of the visual comparison and hypothesis tests, surface soil concentrations of barium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, vanadium, and zinc are greater than background concentrations. Surface soil concentrations of aluminum, arsenic, beryllium, cadmium, mercury, potassium, and selenium are consistent with background concentrations. Although the statistical tests indicated barium was consistent with background, barium is considered greater than background based on the visual comparison. Barium has one detected concentration at TF2-004/5-SB1039 which is elevated above the rest of the data and may not represent background conditions.

3.2 Subsurface Soil for the Entire Site

Metals concentrations in subsurface soil from Tank Farm 2 were compared to the Newport Silt Loam subsurface soil background concentrations. Background concentrations for antimony, selenium, silver, and thallium were non-detect. Cadmium, mercury, and sodium concentrations were only detected in one or two background samples, which are not enough detected concentrations to perform statistical hypothesis tests on. Therefore statistical comparison of site data to background data for antimony, cadmium, mercury, selenium, silver, sodium, and thallium are not appropriate and were not conducted.

Based on the results of the visual comparison and hypothesis tests, subsurface soil concentrations of aluminum, arsenic, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, nickel, vanadium, and zinc are greater than background concentrations. Subsurface soil concentrations of barium, manganese, and potassium are consistent with background concentrations.

3.3 Surface Soil for AOC-001

Metals concentrations in surface soil from AOC-001 were compared to the Newport Silt Loam surface soil background concentrations. Background concentrations for antimony, silver, sodium, and thallium were non-detect. Therefore statistical comparison of site data to background data for antimony, silver, sodium, and thallium are not appropriate and were not conducted.

The overall conclusions from the statistical analysis for surface soil from AOC-001 are the same as determined for surface soil from the entire site, except for barium and lead. Based on the results of the visual comparison and hypothesis tests, surface soil concentrations of calcium, chromium, cobalt, copper, iron, magnesium, manganese, nickel, and zinc are greater than background concentrations. Surface soil concentrations of aluminum, arsenic, barium, beryllium, cadmium, lead, mercury, potassium, selenium, and vanadium are consistent with background concentrations.

3.4 Surface Soil for AOCs 003, 004, and 005

Metals concentrations in surface soil from AOCs 003, 004, and 005 were compared to the Newport Silt Loam surface soil background concentrations. Background concentrations for antimony, silver, sodium, and thallium were non-detect. Therefore statistical comparison of site data to background data for antimony, silver, sodium, and thallium are not appropriate and were not conducted.

The overall conclusions from the statistical analysis for surface soil from AOCs 003, 004, and 005 are the same as determined for surface soil from the entire site. Based on the results of the visual comparison and hypothesis tests, surface soil concentrations of barium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, vanadium, and zinc are greater than background concentrations. Surface soil concentrations of aluminum, arsenic, beryllium, cadmium, mercury, potassium, and selenium are consistent with background concentrations. Although the statistical tests indicated barium was consistent with background, barium is considered greater than background based on the visual comparison. Barium has one detected concentration at TF2-004/5-SB1039 which is elevated above the rest of the data and may not represent background conditions.

3.5 Surface Soil for the Buoy Storage Area

The lead concentrations in surface soil from the Buoy Storage Area were compared to the Newport Silt Loam surface soil background concentrations. Based on the results of the visual comparison and hypothesis tests, surface soil concentrations of lead are greater than background concentrations.

TABLE 1
BACKGROUND SAMPLE LIST
TANK FARM 2
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Surface Soil	Subsurface Soil
BWBK-SS-NE01-0001	BWBK-SB-NE01-0108
BWBK-SS-NE02-0001	BWBK-SB-NE02-0109
BWBK-SS-NE03-0001	BWBK-SB-NE03-0105
BWBK-SS-NE04-0001	BWBK-SB-NE04-0110
BWBK-SS-NE05-0001	BWBK-SB-NE05-0108-AVG
BWBK-SS-NE06-0001	BWBK-SB-NE06-0109
BWBK-SS-NE07-0001	BWBK-SB-NE07-0107
BWBK-SS-NE08-0001	BWBK-SB-NE08-0104
BWBK-SS-NE09-0001	BWBK-SB-NE09-0110-AVG
BWBK-SS-NE10-0001	BWBK-SB-NE10-0107
BWBK-SS-NE101-0001	BWBK-SB-NE101-0110
BWBK-SS-NE102-0001	BWBK-SB-NE102-0110
BWBK-SS-NE103-0001	BWBK-SB-NE103-0110-AVG
BWBK-SS-NE104-0001	BWBK-SB-NE104-0110
BWBK-SS-NE105-0001	BWBK-SB-NE105-0110
BWBK-SS-NE106-0001	BWBK-SB-NE106-0110
BWBK-SS-NE107-0001	BWBK-SB-NE107-0510
BWBK-SS-NE108-0001	BWBK-SB-NE108-0110
BWBK-SS-NE109-0001	BWBK-SB-NE109-0110
BWBK-SS-NE110-0001	BWBK-SB-NE110-0110-AVG
BKG-SS03-NEB-0016	
BKG-SS09-NEB-0018	

TABLE 2
TANK FARM 2 SAMPLE LIST
TANK FARM 2
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Surface Soil	
TF2-001-SS1000-0001	TF2-004/5-SS1057-0001
TF2-001-SS1001-0001	TF2-004/5-SS1058-000.5
TF2-001-SS1002-0001	TF2-004/5-SS1059-000.6
TF2-001-SS1003-0001-AVG	TF2-004/5-SS1060-000.5
TF2-001-SS1004-0001	TF2-004/5-SS1061-000.6-AVG
TF2-001-SS1005-0001	TF2-004/5-SS1062-000.8
TF2-001-SS1006-0001	TF2-004/5-SS1063-000.6
TF2-001-SS1007-0001	TF2-004/5-SS1064-000.6
TF2-001-SS1008-0001	TF2-004/5-SS1065-000.5-AVG
TF2-001-SS1009-0001	TF2-004/5-SS1066-000.9
TF2-001-SS1010-0001	TF2-004/5-SS1067-000.7
TF2-003-SS1011-000.8	TF2-004/5-SS1068-000.5
TF2-003-SS1012-000.7	TF2-BSA-SS1090-0001
TF2-003-SS1013-000.7	TF2-BSA-SS1091-0001
TF2-003-SS1014-0001	TF2-BSA-SS1092-0001
TF2-003-SS1015-000.8-AVG	TF2-BSA-SS1093-0001
TF2-003-SS1016-000.9	TF2-BSA-SS1094-0001
TF2-003-SS1017-000.8	TF2-BSA-SS1095-0001
TF2-003-SS1018-000.8	TF2-BSA-SS1096-0001-AVG
TF2-003-SS1019-000.5	TF2-BSA-SS1097-0001
TF2-004/5-SS1020-0001-AVG	
TF2-004/5-SS1021-000.7	
TF2-004/5-SS1022-000.9	
TF2-004/5-SS1023-000.8	
TF2-004/5-SS1024-000.6	
TF2-004/5-SS1025-000.8	
TF2-004/5-SS1026-000.8	
TF2-004/5-SS1027-0001	
TF2-004/5-SS1028-000.8	
TF2-004/5-SS1029-000.6	
TF2-004/5-SS1030-000.6	
TF2-004/5-SS1031-000.8	
TF2-004/5-SS1032-000.9	
TF2-004/5-SS1033-000.8	
TF2-004/5-SS1034-000.6	
TF2-004/5-SS1035-0001-AVG	
TF2-004/5-SS1036-000.6	
TF2-004/5-SS1037-000.7	
TF2-004/5-SS1038-000.7	
TF2-004/5-SS1039-000.9	
TF2-004/5-SS1040-000.9	
TF2-004/5-SS1041-000.7-AVG	
TF2-004/5-SS1042-000.5	
TF2-004/5-SS1043-0.10.5	
TF2-004/5-SS1044-000.5	
TF2-004/5-SS1045-000.5	
TF2-004/5-SS1046-000.5	
TF2-004/5-SS1047-000.8	
TF2-004/5-SS1048-000.8	
TF2-004/5-SS1049-000.9	
TF2-004/5-SS1050-000.6	
TF2-004/5-SS1051-000.8	
TF2-004/5-SS1052-000.6	
TF2-004/5-SS1053-000.6	
TF2-004/5-SS1054-000.6	
TF2-004/5-SS1055-000.8	
TF2-004/5-SS1056-000.6	

Subsurface Soil	
TF2-001-SB1000-0204	TF2-004/5-SB1066-0203
TF2-001-SB1000-0810	TF2-004/5-SB1068-0204-AVG
TF2-001-SB1001-0204	TF2-BSA-SB1091-0204
TF2-001-SB1001-0810	TF2-BSA-SB1092-0204
TF2-001-SB1002-0204	TF2-BSA-SB1093-0204
TF2-001-SB1002-0405	TF2-BSA-SB1094-0204
TF2-001-SB1003-0204	TF2-BSA-SB1095-0204
TF2-001-SB1004-0204-AVG	TF2-BSA-SB1096-0204
TF2-001-SB1005-0204-AVG	TF2-BSA-SB1097-0204
TF2-001-SB1006-0204	
TF2-001-SB1007-0204	
TF2-001-SB1008-0204	
TF2-001-SB1009-0204	
TF2-001-SB1009-0810	
TF2-001-SB1010-0204	
TF2-003-SB1011-0204-AVG	
TF2-003-SB1012-0204	
TF2-003-SB1012-0810	
TF2-003-SB1013-0204	
TF2-003-SB1013-0405	
TF2-003-SB1014-0204	
TF2-003-SB1014-0810	
TF2-003-SB1015-0204	
TF2-003-SB1015-0810	
TF2-003-SB1016-0204	
TF2-003-SB1016-0810	
TF2-003-SB1017-011.6	
TF2-003-SB1017-0204	
TF2-003-SB1017-0810	
TF2-003-SB1018-0204	
TF2-003-SB1019-0204	
TF2-003-SB1019-0810	
TF2-004/5-SB1021-0204-AVG	
TF2-004/5-SB1021-0608	
TF2-004/5-SB1025-2.604	
TF2-004/5-SB1026-022.7	
TF2-004/5-SB1031-0204	
TF2-004/5-SB1031-0810	
TF2-004/5-SB1032-0204	
TF2-004/5-SB1038-0204	
TF2-004/5-SB1038-0810	
TF2-004/5-SB1039-0406	
TF2-004/5-SB1040-0204	
TF2-004/5-SB1040-0810-AVG	
TF2-004/5-SB1041-022.5	
TF2-004/5-SB1047-0204	
TF2-004/5-SB1047-0608	
TF2-004/5-SB1048-0204	
TF2-004/5-SB1049-0204	
TF2-004/5-SB1049-0810	
TF2-004/5-SB1057-0304	
TF2-004/5-SB1057-0608-AVG	
TF2-004/5-SB1058-0204	
TF2-004/5-SB1064-0204	
TF2-004/5-SB1064-0406	
TF2-004/5-SB1065-0204	
TF2-004/5-SB1065-0608	

TABLE 3
TANK FARM 2 SAMPLE LIST FOR AOC-001, COMBINED AOCs 003, 004, AND 005, AND BUOY STORAGE AREA
TANK FARM 2
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

AOC-001 Surface Soil
TF2-001-SS1000-0001
TF2-001-SS1001-0001
TF2-001-SS1002-0001
TF2-001-SS1003-0001-AVG
TF2-001-SS1004-0001
TF2-001-SS1005-0001
TF2-001-SS1006-0001
TF2-001-SS1007-0001
TF2-001-SS1008-0001
TF2-001-SS1009-0001
TF2-001-SS1010-0001

Buoy Storage Area Surface Soil
TF2-BSA-SS1090-0001
TF2-BSA-SS1091-0001
TF2-BSA-SS1092-0001
TF2-BSA-SS1093-0001
TF2-BSA-SS1094-0001
TF2-BSA-SS1095-0001
TF2-BSA-SS1096-0001-AVG
TF2-BSA-SS1097-0001

AOC-003, 004, and 005 Surface Soil	
TF2-003-SS1011-000.8	TF2-004/5-SS1040-000.9
TF2-003-SS1012-000.7	TF2-004/5-SS1041-000.7-AVG
TF2-003-SS1013-000.7	TF2-004/5-SS1042-000.5
TF2-003-SS1014-0001	TF2-004/5-SS1043-0.10.5
TF2-003-SS1015-000.8-AVG	TF2-004/5-SS1044-000.5
TF2-003-SS1016-000.9	TF2-004/5-SS1045-000.5
TF2-003-SS1017-000.8	TF2-004/5-SS1046-000.5
TF2-003-SS1018-000.8	TF2-004/5-SS1047-000.8
TF2-003-SS1019-000.5	TF2-004/5-SS1048-000.8
TF2-004/5-SS1020-0001-AVG	TF2-004/5-SS1049-000.9
TF2-004/5-SS1021-000.7	TF2-004/5-SS1050-000.6
TF2-004/5-SS1022-000.9	TF2-004/5-SS1051-000.8
TF2-004/5-SS1023-000.8	TF2-004/5-SS1052-000.6
TF2-004/5-SS1024-000.6	TF2-004/5-SS1053-000.6
TF2-004/5-SS1025-000.8	TF2-004/5-SS1054-000.6
TF2-004/5-SS1026-000.8	TF2-004/5-SS1055-000.8
TF2-004/5-SS1027-0001	TF2-004/5-SS1056-000.6
TF2-004/5-SS1028-000.8	TF2-004/5-SS1057-0001
TF2-004/5-SS1029-000.6	TF2-004/5-SS1058-000.5
TF2-004/5-SS1030-000.6	TF2-004/5-SS1059-000.6
TF2-004/5-SS1031-000.8	TF2-004/5-SS1060-000.5
TF2-004/5-SS1032-000.9	TF2-004/5-SS1061-000.6-AVG
TF2-004/5-SS1033-000.8	TF2-004/5-SS1062-000.8
TF2-004/5-SS1034-000.6	TF2-004/5-SS1063-000.6
TF2-004/5-SS1035-0001-AVG	TF2-004/5-SS1064-000.6
TF2-004/5-SS1036-000.6	TF2-004/5-SS1065-000.5-AVG
TF2-004/5-SS1037-000.7	TF2-004/5-SS1066-000.9
TF2-004/5-SS1038-000.7	TF2-004/5-SS1067-000.7
TF2-004/5-SS1039-000.9	TF2-004/5-SS1068-000.5

TABLE 4
SURFACE SOIL STATISTICAL EVALUATIONS - ENTIRE SITE
TANK FARM 2
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Parameter	Site FOD	Background FOD	Site Maximum Detection (mg/kg)	Background Maximum Detection (mg/kg)	Site Distribution	Background Distribution	Central Tendency Hypothesis Test	Central Tendency Hypothesis Test p-value	Central Tendency Hypothesis Test Conclusion	Slippage Conclusion	Quantile Conclusion	Visual Comparison Conclusion	Overall Conclusion
ALUMINUM	69 / 69	22 / 22	18200	17900	Normal	Nonparametric	WRS	2.70E-05	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
ANTIMONY	68 / 69	0 / 22	6.6	--	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	NA	NA	NA	NA
ARSENIC	69 / 69	22 / 22	11.4	17.1	Normal	Nonparametric	WRS	1.16E-05	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
BARIUM	69 / 69	22 / 22	169	36.3	Nonparametric	Normal	WRS	1.25E-10	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Greater than Background	Site Greater than Background
BERYLLIUM	69 / 69	22 / 22	0.87	0.79	Nonparametric	Normal	WRS	2.08E-09	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
CADMIUM	69 / 69	6 / 22	0.29	0.53	Nonparametric	Nonparametric	Gehan	3.23E-02	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
CALCIUM	69 / 69	22 / 22	2630	559	Nonparametric	Normal	WRS	1.00E+00	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
CHROMIUM	69 / 69	22 / 22	44.5	17.1	Nonparametric	Nonparametric	WRS	9.58E-01	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
COBALT	69 / 69	22 / 22	16.6	7.4	Normal	Nonparametric	WRS	1.00E+00	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
COPPER	69 / 69	22 / 22	39.9	20.3	Nonparametric	Nonparametric	WRS	9.95E-01	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
IRON	69 / 69	22 / 22	36250	23000	Normal	Nonparametric	WRS	9.99E-01	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
LEAD	77 / 77	22 / 22	101	44	Nonparametric	Nonparametric	WRS	5.02E-01	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
MAGNESIUM	69 / 69	22 / 22	6180	2780	Normal	Normal	T-Test	1.00E+00	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
MANGANESE	69 / 69	22 / 22	658	290	Nonparametric	Normal	WRS	1.00E+00	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
MERCURY	52 / 69	22 / 22	0.17	0.24	Nonparametric	Nonparametric	Gehan	0.00E+00	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
NICKEL	69 / 69	22 / 22	53	16.5	Nonparametric	Nonparametric	WRS	1.00E+00	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
POTASSIUM	69 / 69	22 / 22	504	666	Nonparametric	Nonparametric	WRS	1.09E-06	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
SELENIUM	20 / 69	16 / 22	0.39	0.89	Nonparametric	Nonparametric	Proportion	8.95E-05	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
SILVER	69 / 69	0 / 22	0.56	--	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	NA	NA	NA	NA
SODIUM	23 / 69	0 / 22	60.9	--	Normal	Assumed Nonparametric	No Hypothesis Test	NA	NA	NA	NA	NA	NA
THALLIUM	56 / 69	0 / 22	0.1	--	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	NA	NA	NA	NA
VANADIUM	69 / 69	22 / 22	34.7	23.1	Nonparametric	Normal	WRS	0.5681	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
ZINC	69 / 69	22 / 22	99.1	67.4	Nonparametric	Nonparametric	WRS	0.9995	Site Greater than Background	Site Consistent with Background	Site Consistent with Background	Site Greater than Background	Site Greater than Background

FOD = Frequency of Detection

WRS = Wilcoxon Rank Sum

NA = Not applicable

Notes:

5 percent significance level was used for all hypothesis tests.

Antimony, silver, sodium, and thallium background concentrations are all non-detect. Therefore background comparisons were not appropriate.

TABLE 5
SUBSURFACE SOIL STATISTICAL EVALUATIONS - ENTIRE SITE
TANK FARM 2
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Parameter	Site FOD	Background FOD	Site Maximum Detection (mg/kg)	Background Maximum Detection (mg/kg)	Site Distribution	Background Distribution	Central Tendency Hypothesis Test	Central Tendency Hypothesis Test p-value	Central Tendency Hypothesis Test Conclusion	Slippage Conclusion	Quantile Conclusion	Visual Comparison Conclusion	Overall Conclusion
ALUMINUM	59 / 59	20 / 20	21000	12300	Nonparametric	Normal	WRS	1.00E+00	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
ANTIMONY	38 / 59	0 / 20	0.31	--	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	NA	NA	NA	NA
ARSENIC	59 / 59	20 / 20	14.3	5.8	Nonparametric	Nonparametric	WRS	1.00E+00	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
BARIUM	59 / 59	20 / 20	27.2	39.6	Normal	Nonparametric	WRS	2.19E-11	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
BERYLLIUM	59 / 59	20 / 20	1	0.51	Nonparametric	Normal	WRS	3.80E-05	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Greater than Background	Site Greater than Background
CADMIUM	59 / 59	2 / 20	0.28	0.075	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	NA	NA	NA	NA
CALCIUM	59 / 59	20 / 20	1660	792	Normal	Normal	T-Test	9.99E-01	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
CHROMIUM	59 / 59	20 / 20	28.8	14.9	Nonparametric	Normal	WRS	1.00E+00	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
COBALT	59 / 59	20 / 20	30.3	9.6	Nonparametric	Normal	WRS	9.99E-01	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
COPPER	59 / 59	20 / 20	63.9	16.5	Nonparametric	Normal	WRS	9.76E-01	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
IRON	59 / 59	20 / 20	45200	23700	Nonparametric	Normal	WRS	9.98E-01	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
LEAD	66 / 66	20 / 20	55.9	7.8	Nonparametric	Normal	WRS	1.00E+00	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
MAGNESIUM	59 / 59	20 / 20	7150	3890	Nonparametric	Normal	WRS	1.00E+00	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
MANGANESE	59 / 59	20 / 20	467	634	Normal	Nonparametric	WRS	5.02E-05	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
MERCURY	36 / 59	2 / 20	0.17	0.017	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	NA	NA	NA	NA
NICKEL	59 / 59	20 / 20	51.8	19	Nonparametric	Normal	WRS	9.98E-01	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
POTASSIUM	59 / 59	20 / 20	659.5	2040	Normal	Nonparametric	WRS	1.50E-11	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
SELENIUM	34 / 59	0 / 20	0.86	--	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	NA	NA	NA	NA
SILVER	54 / 59	0 / 20	0.06	--	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	NA	NA	NA	NA
SODIUM	25 / 59	1 / 20	84.4	54.9	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	NA	NA	NA	NA
THALLIUM	44 / 59	0 / 20	0.25	--	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	NA	NA	NA	NA
VANADIUM	59 / 59	20 / 20	29.2	18.5	Nonparametric	Normal	WRS	9.96E-01	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
ZINC	59 / 59	20 / 20	129	41.9	Nonparametric	Normal	WRS	1.00E+00	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background

FOD = Frequency of Detection
WRS = Wilcoxon Rank Sum
NA = Not applicable

Notes:

5 percent significance level was used for all hypothesis tests.

Antimony, selenium, silver, and thallium background concentrations are all non-detect. Therefore background comparisons were not appropriate.

Cadmium, mercury, and sodium background concentrations were only detected in one to two samples. Therefore background comparisons were not appropriate.

TABLE 6
SURFACE SOIL STATISTICAL EVALUATIONS FOR AOC-001
TANK FARM 2
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Parameter	Site FOD	Background FOD	Site Maximum Detection (mg/kg)	Background Maximum Detection (mg/kg)	Site Distribution	Background Distribution	Central Tendency Hypothesis Test	Central Tendency Hypothesis Test p-value	Central Tendency Hypothesis Test Conclusion	Slippage Conclusion	Quantile Conclusion	Visual Comparison Conclusion	Overall Conclusion
ALUMINUM	11 / 11	22 / 22	14600	17900	Normal	Nonparametric	WRS	0.02685	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
ANTIMONY	11 / 11	0 / 22	0.26	--	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	Site Greater than Background	Site Greater than Background	NA	Site Greater than Background
ARSENIC	11 / 11	22 / 22	7.7	17.1	Normal	Nonparametric	WRS	6.16E-05	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
BARIUM	11 / 11	22 / 22	22.8	36.3	Normal	Normal	T-Test	8.75E-10	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
BERYLLIUM	11 / 11	22 / 22	0.36	0.79	Normal	Normal	T-Test	1.37E-10	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
CADMIUM	11 / 11	6 / 22	0.14	0.53	Normal	Nonparametric	Gehan	0.031	Site Consistent with Background	Site Consistent with Background	Site Greater than Background	Site Consistent with Background	Site Consistent with Background
CALCIUM	11 / 11	22 / 22	2630	559	Nonparametric	Normal	WRS	1	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
CHROMIUM	11 / 11	22 / 22	17.65	17.1	Normal	Nonparametric	WRS	0.6559	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
COBALT	11 / 11	22 / 22	16.6	7.4	Normal	Nonparametric	WRS	1	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
COPPER	11 / 11	22 / 22	20.4	20.3	Normal	Nonparametric	WRS	0.8154	Site Greater than Background	Site Consistent with Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
IRON	11 / 11	22 / 22	27800	23000	Normal	Nonparametric	WRS	0.9987	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
LEAD	11 / 11	22 / 22	26.7	44	Nonparametric	Nonparametric	WRS	0.0001139	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
MAGNESIUM	11 / 11	22 / 22	4560	2780	Normal	Normal	T-Test	1	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
MANGANESE	11 / 11	22 / 22	459	290	Normal	Normal	T-Test	1	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
MERCURY	7 / 11	22 / 22	0.17	0.24	Normal	Nonparametric	Gehan	7.00E-04	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
NICKEL	11 / 11	22 / 22	28.4	16.5	Normal	Nonparametric	WRS	1	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background	Site Greater than Background
POTASSIUM	11 / 11	22 / 22	501	666	Normal	Nonparametric	WRS	0.01273	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
SELENIUM	4 / 11	16 / 22	0.31	0.89	Normal	Nonparametric	Gehan	2.00E-04	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
SILVER	11 / 11	0 / 22	0.56	--	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	Site Greater than Background	Site Greater than Background	NA	Site Greater than Background
SODIUM	10 / 11	0 / 22	60.9	--	Normal	Assumed Nonparametric	No Hypothesis Test	NA	NA	Site Greater than Background	Site Greater than Background	NA	Site Greater than Background
THALLIUM	11 / 11	0 / 22	0.08	--	Normal	Assumed Nonparametric	No Hypothesis Test	NA	NA	Site Greater than Background	Site Greater than Background	NA	Site Greater than Background
VANADIUM	11 / 11	22 / 22	20.9	23.1	Normal	Normal	T-Test	0.005868	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
ZINC	11 / 11	22 / 22	64.4	67.4	Normal	Nonparametric	WRS	0.9983	Site Greater than Background	Site Consistent with Background	Site Greater than Background	Site Greater than Background	Site Greater than Background

FOD = Frequency of Detection
WRS = Wilcoxon Rank Sum
NA = Not applicable

Notes:

5 percent significance level was used for all hypothesis tests.
Antimony, silver, sodium, and thallium background concentrations are all non-detect. Therefore background comparisons were not appropriate.

TABLE 7
SURFACE SOIL STATISTICAL EVALUATIONS FOR AOCs 3, 4, AND 5
TANK FARM 2
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Parameter	Site FOD	Background FOD	Site Maximum Detection (mg/kg)	Background Maximum Detection (mg/kg)	Site Distribution	Background Distribution	Central Tendency Hypothesis Test	Central Tendency Hypothesis Test p-value	Central Tendency Hypothesis Test Conclusion	Slippage Test Statistic	Slippage Conclusion	Quantile Test Statistic	Quantile Conclusion	Visual Comparison Conclusion	Overall Conclusion
ALUMINUM	58 / 58	22 / 22	18200	17900	Normal	Nonparametric	WRS	1.71E-05	Site Consistent with Background	1	Site Consistent with Background	6	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
ANTIMONY	57 / 58	0 / 22	6.6	--	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	57	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
ARSENIC	58 / 58	22 / 22	11.4	17.1	Normal	Nonparametric	WRS	6.37E-05	Site Consistent with Background	0	Site Consistent with Background	5	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
BARIUM	58 / 58	22 / 22	169	36.3	Nonparametric	Normal	WRS	7.21E-10	Site Consistent with Background	2	Site Consistent with Background	4	Site Consistent with Background	Site Greater than Background	Site Greater than Background
BERYLLIUM	58 / 58	22 / 22	0.87	0.79	Nonparametric	Normal	WRS	1.62E-08	Site Consistent with Background	3	Site Consistent with Background	4	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
CADMIUM	58 / 58	6 / 22	0.29	0.53	Nonparametric	Nonparametric	Gehan	0.0409	Site Consistent with Background	0	Site Consistent with Background	8	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
CALCIUM	58 / 58	22 / 22	1190	559	Normal	Normal	T-Test	1	Site Greater than Background	44	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
CHROMIUM	58 / 58	22 / 22	44.5	17.1	Nonparametric	Nonparametric	WRS	0.9711	Site Greater than Background	29	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
COBALT	58 / 58	22 / 22	16.4	7.4	Normal	Nonparametric	WRS	1	Site Greater than Background	52	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
COPPER	58 / 58	22 / 22	39.9	20.3	Nonparametric	Nonparametric	WRS	0.9967	Site Greater than Background	22	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
IRON	58 / 58	22 / 22	36250	23000	Normal	Nonparametric	WRS	0.9976	Site Greater than Background	32	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
LEAD	58 / 58	22 / 22	101	44	Nonparametric	Nonparametric	WRS	0.8606	Site Greater than Background	11	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
MAGNESIUM	58 / 58	22 / 22	6180	2780	Normal	Normal	T-Test	1	Site Greater than Background	44	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
MANGANESE	58 / 58	22 / 22	658	290	Nonparametric	Normal	WRS	0.9994	Site Greater than Background	19	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
MERCURY	45 / 58	22 / 22	0.14	0.24	Nonparametric	Nonparametric	Gehan	0	Site Consistent with Background	0	Site Consistent with Background	2	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
NICKEL	58 / 58	22 / 22	53	16.5	Nonparametric	Nonparametric	WRS	1	Site Greater than Background	43	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
POTASSIUM	58 / 58	22 / 22	504	666	Normal	Nonparametric	WRS	5.56E-07	Site Consistent with Background	0	Site Consistent with Background	8	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
SELENIUM	16 / 58	16 / 22	0.39	0.89	Normal	Nonparametric	Proportion	2.52E-03	Site Consistent with Background	0	Site Consistent with Background	4	Site Consistent with Background	Site Consistent with Background	Site Consistent with Background
SILVER	58 / 58	0 / 22	0.22	--	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	58	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
SODIUM	13 / 58	0 / 22	37.5	--	Normal	Assumed Nonparametric	No Hypothesis Test	NA	NA	13	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
THALLIUM	45 / 58	0 / 22	0.1	--	Nonparametric	Assumed Nonparametric	No Hypothesis Test	NA	NA	45	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
VANADIUM	58 / 58	22 / 22	34.7	23.1	Normal	Normal	T-Test	0.9044	Site Greater than Background	25	Site Greater than Background	10	Site Greater than Background	Site Greater than Background	Site Greater than Background
ZINC	58 / 58	22 / 22	99.1	67.4	Nonparametric	Nonparametric	WRS	0.9986	Site Greater than Background	4	Site Consistent with Background	9	Site Consistent with Background	Site Greater than Background	Site Greater than Background

FOD = Frequency of Detection
WRS = Wilcoxon Rank Sum
NA = Not applicable
Notes:
5 percent significance level was used for all hypothesis tests.
Antimony, silver, sodium, and thallium background concentrations are all non-detect. Therefore background comparisons were not appropriate.

TABLE 8
SURFACE SOIL STATISTICAL EVALUATIONS FOR BSA
TANK FARM 2
NAVSTA NEWPORT, NEWPORT, RHODE ISLAND

Parameter	Site FOD	Background FOD	Site Maximum Detection (mg/kg)	Background Maximum Detection (mg/kg)	Site Distribution	Background Distribution	Central Tendency Hypothesis Test	Central Tendency Hypothesis Test p-value	Central Tendency Hypothesis Test Conclusion	Slippage Conclusion	Quantile Conclusion	Visual Comparison Conclusion	Overall Conclusion
LEAD	8 / 8	22 / 22	73.8	44	Nonparametric	Nonparametric	WRS	0.4533	Site Greater than Background	Site Consistent with Background	Site Consistent with Background	Site Greater than Background	Site Greater than Background

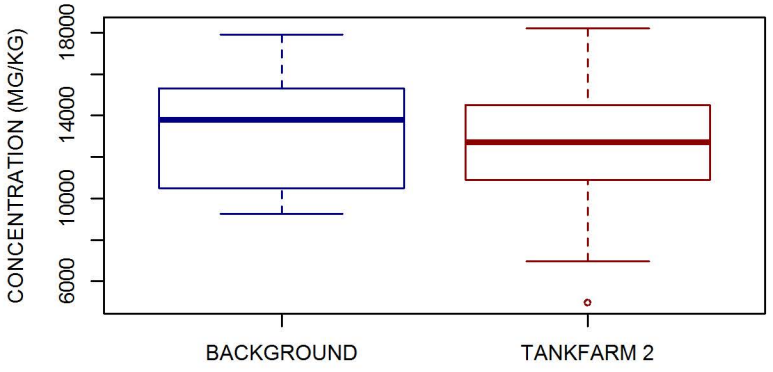
FOD = Frequency of Detection
WRS = Wilcoxon Rank Sum
NA = Not applicable
Notes:
5 percent significance level was used for all hypothesis tests.

GRAPHICAL DISPLAYS FOR

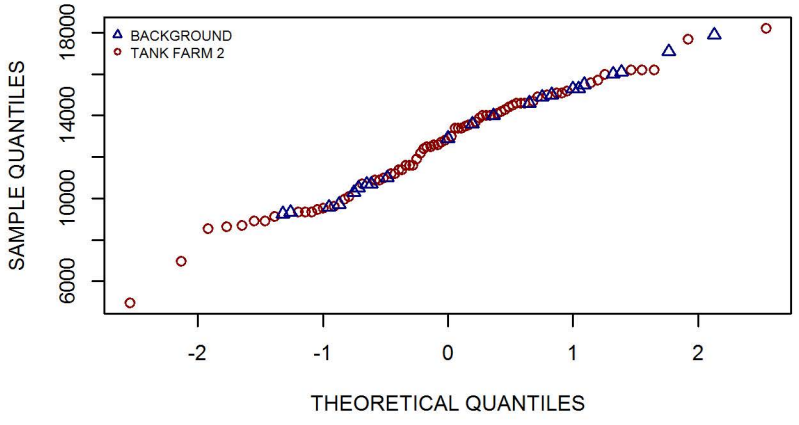
SURFACE SOIL FROM TANK FARM 2

ALUMINUM SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 1 OF 19

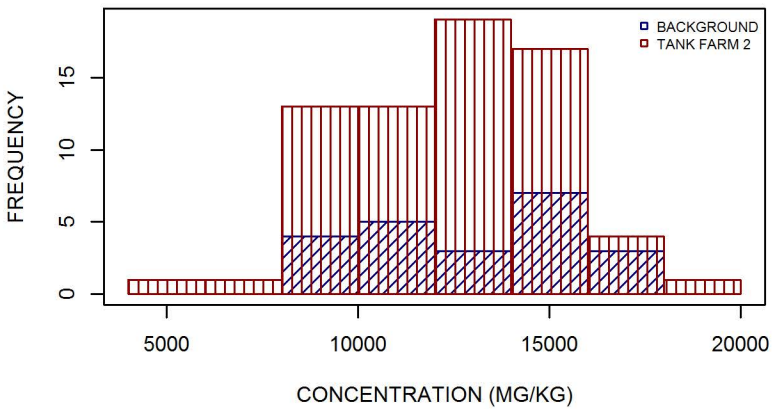
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	9300	5000
25TH PERCENTILE	11000	11000
MEDIAN	14000	13000
MEAN	13000	13000
75TH PERCENTILE	15000	14000
MAXIMUM	18000	18000

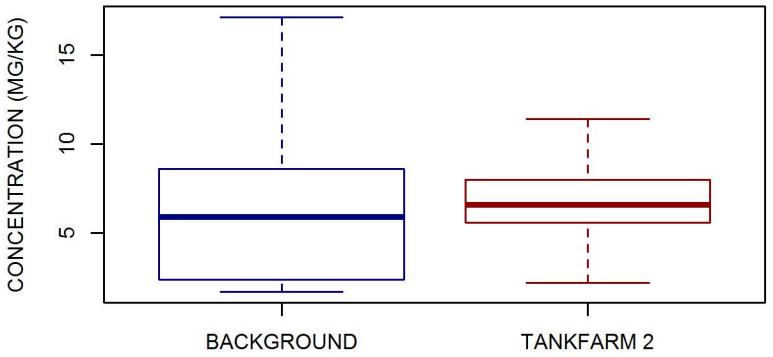
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

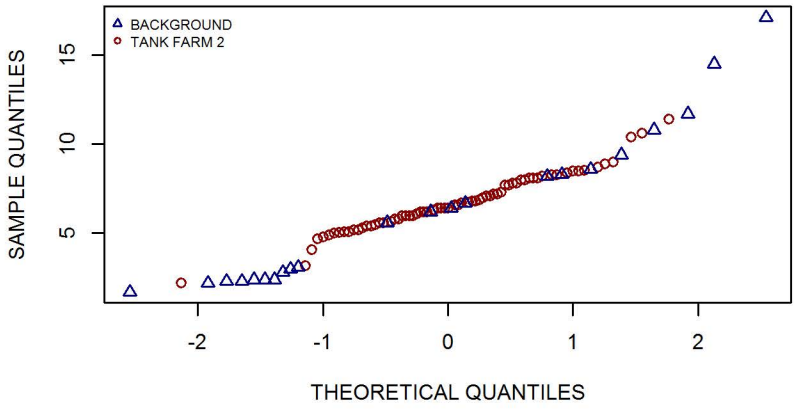
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

ARSENIC SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 2 OF 19

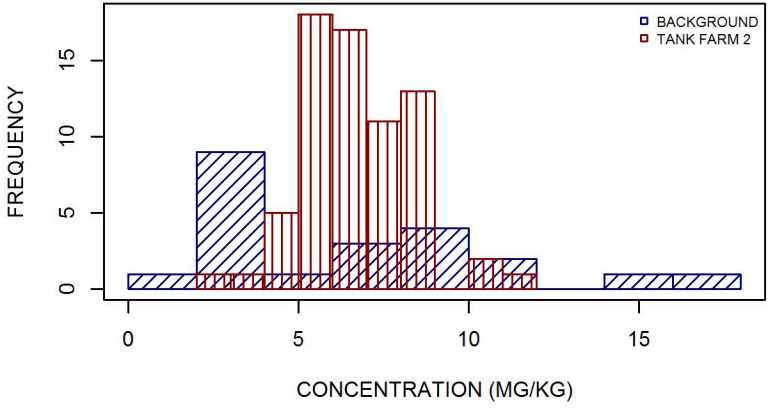
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



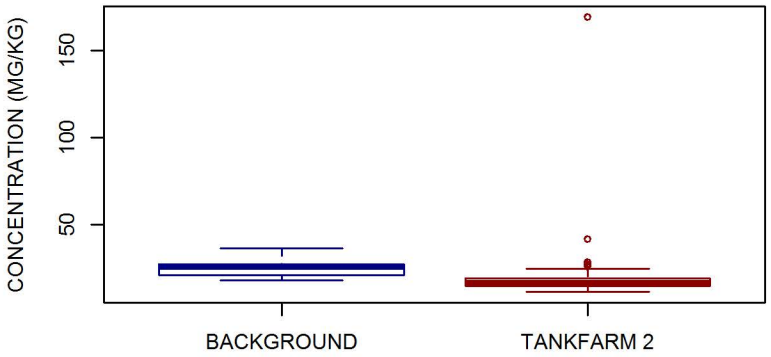
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	1.7	2.2
25TH PERCENTILE	2.4	5.6
MEDIAN	5.9	6.6
MEAN	6.3	6.7
75TH PERCENTILE	8.5	8
MAXIMUM	17	11

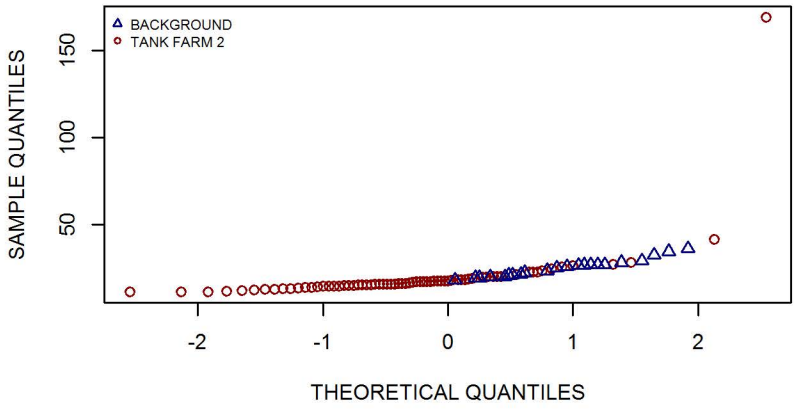
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

BARIUM SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 3 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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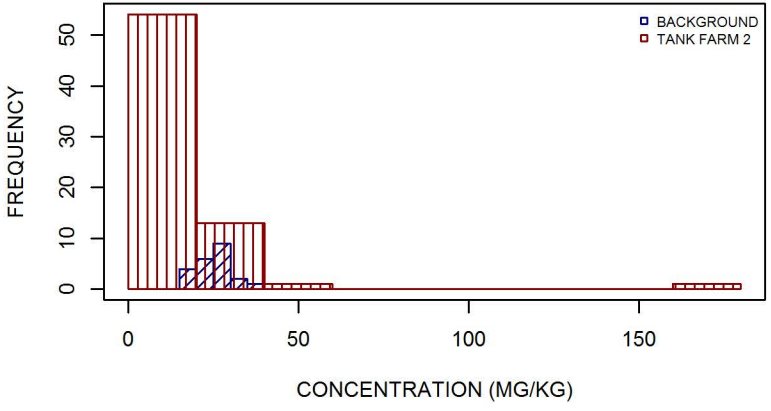


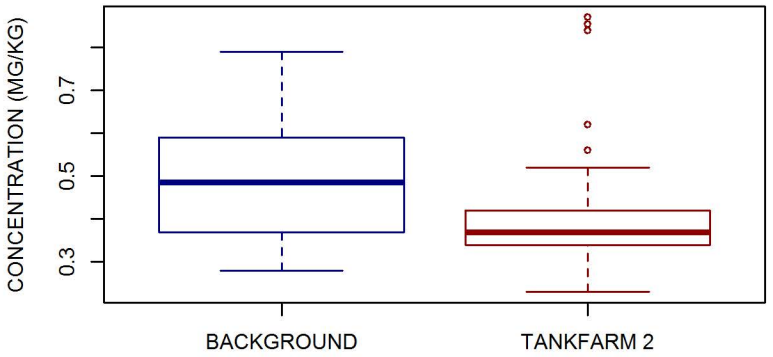
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	18	11
25TH PERCENTILE	21	15
MEDIAN	26	16
MEAN	25	20
75TH PERCENTILE	27	19
MAXIMUM	36	170

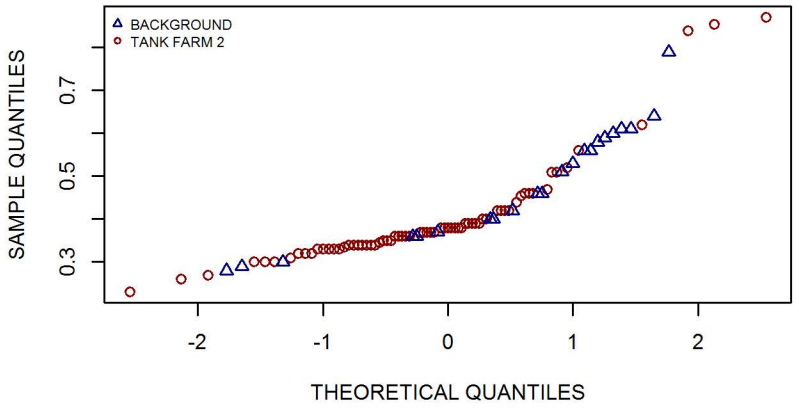
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

BERYLLIUM SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 4 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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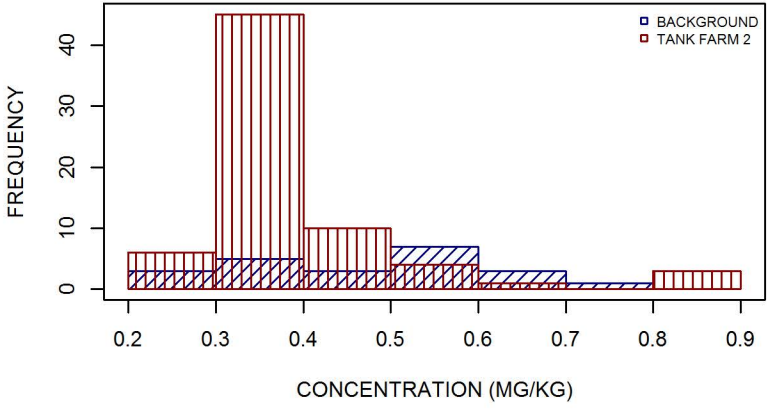


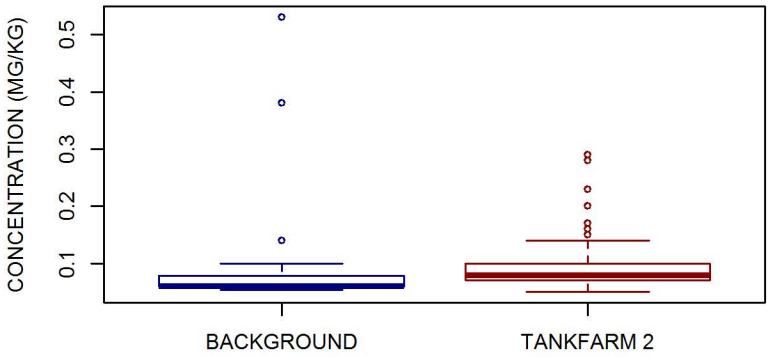
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	0.28	0.23
25TH PERCENTILE	0.38	0.34
MEDIAN	0.48	0.37
MEAN	0.49	0.4
75TH PERCENTILE	0.59	0.42
MAXIMUM	0.79	0.87

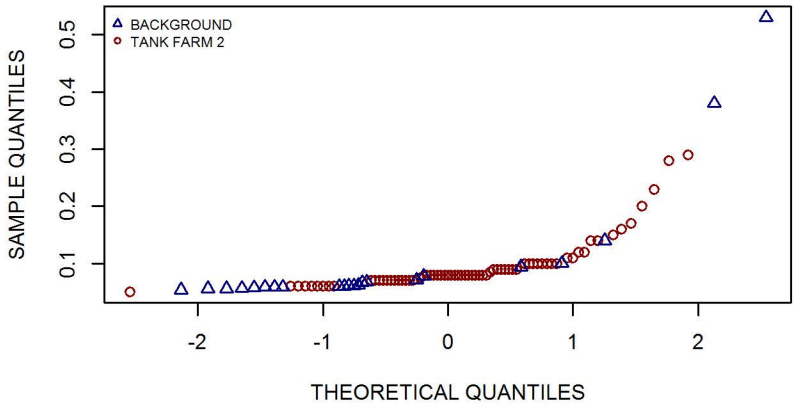
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

CADMIUM SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 5 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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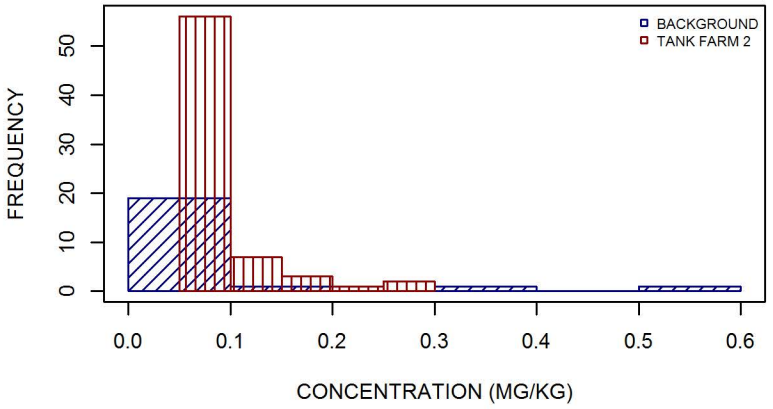


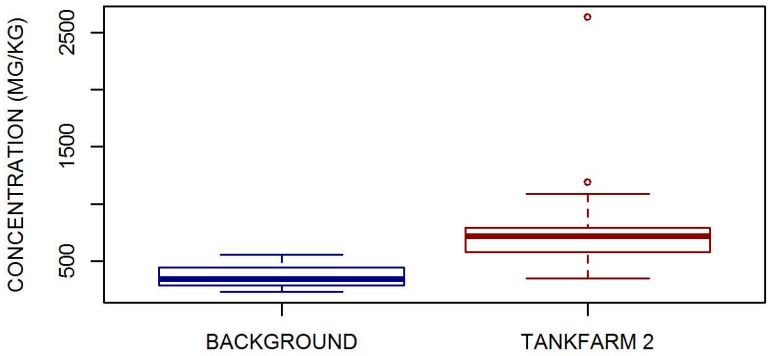
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	0.054	0.05
25TH PERCENTILE	0.059	0.07
MEDIAN	0.061	0.08
MEAN	0.1	0.096
75TH PERCENTILE	0.076	0.1
MAXIMUM	0.53	0.29

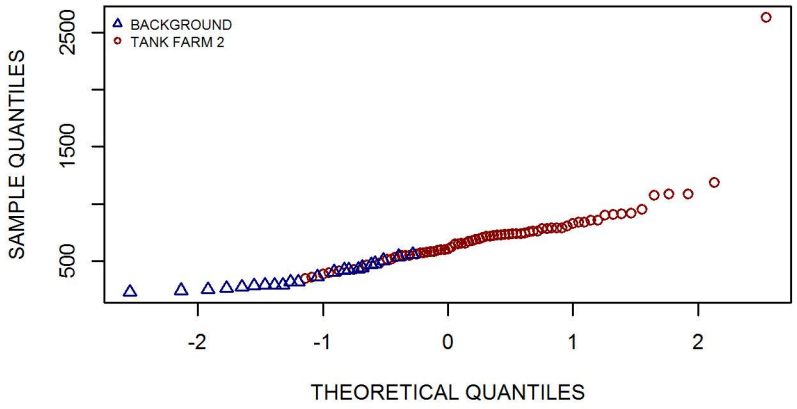
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

CALCIUM SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 6 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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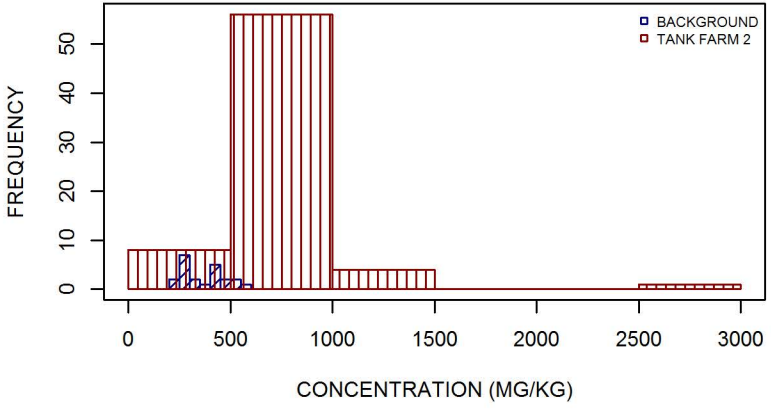


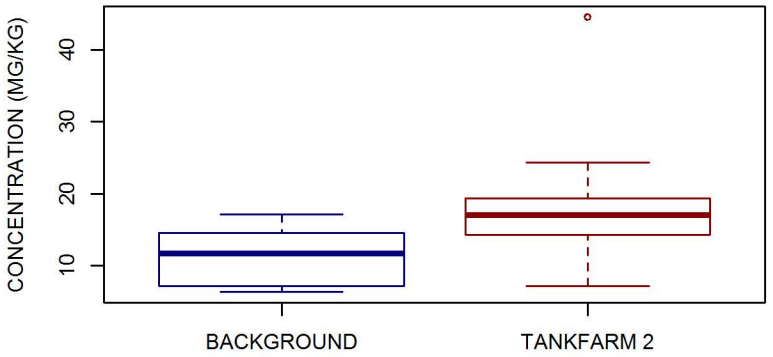
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	230	350
25TH PERCENTILE	290	580
MEDIAN	340	720
MEAN	370	730
75TH PERCENTILE	440	790
MAXIMUM	560	2600

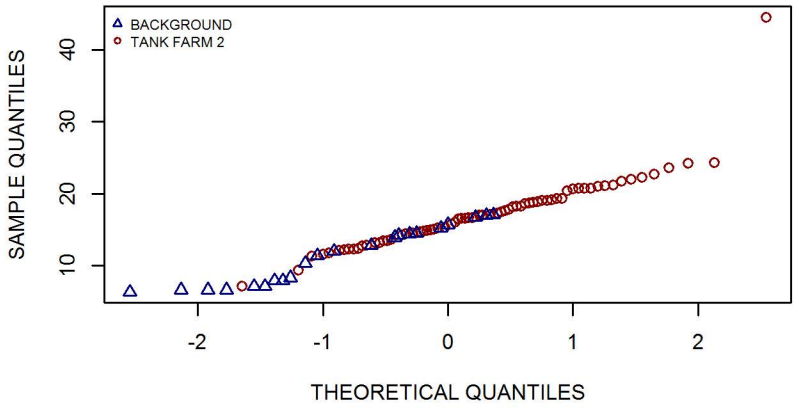
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

CHROMIUM SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 7 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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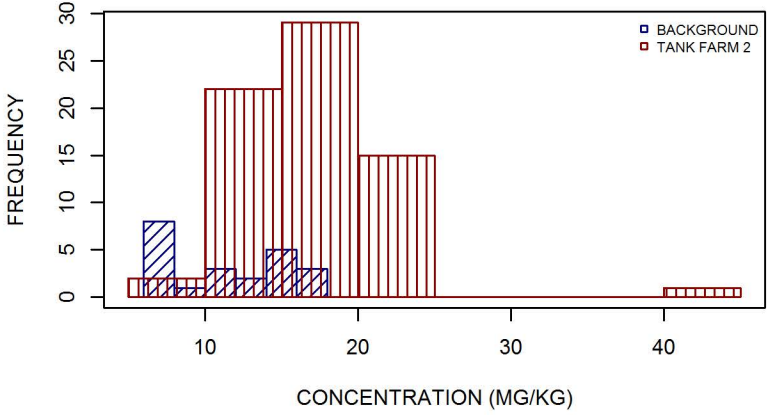


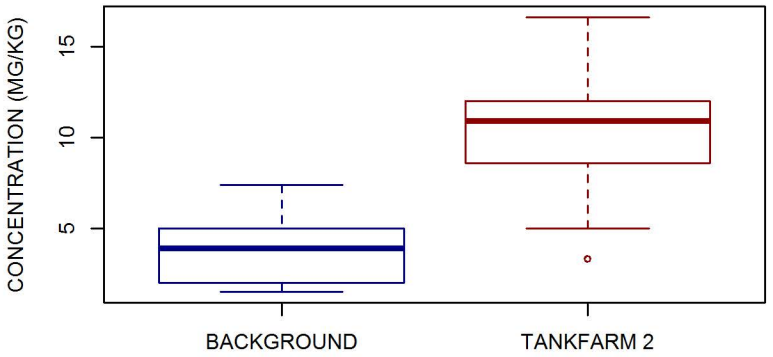
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	6.3	7.1
25TH PERCENTILE	7.3	14
MEDIAN	12	17
MEAN	11	17
75TH PERCENTILE	14	19
MAXIMUM	17	44

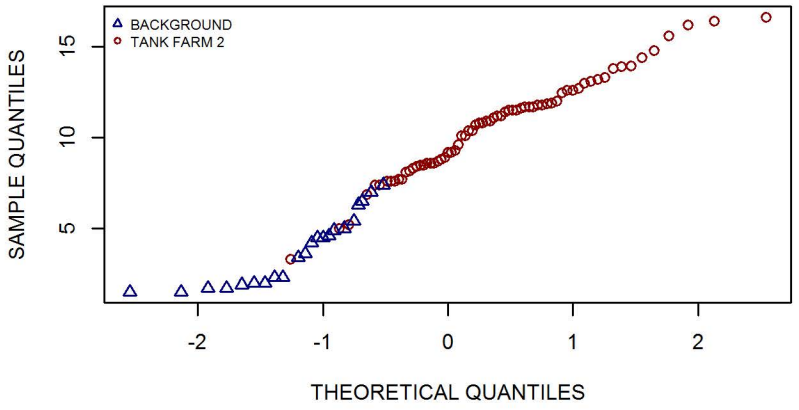
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

COBALT SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 8 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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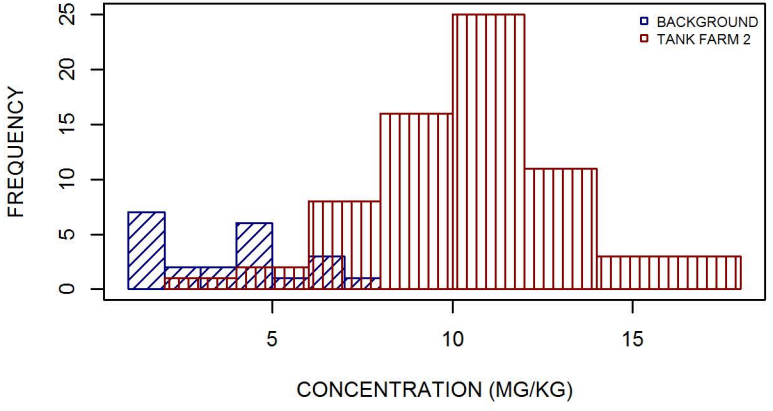


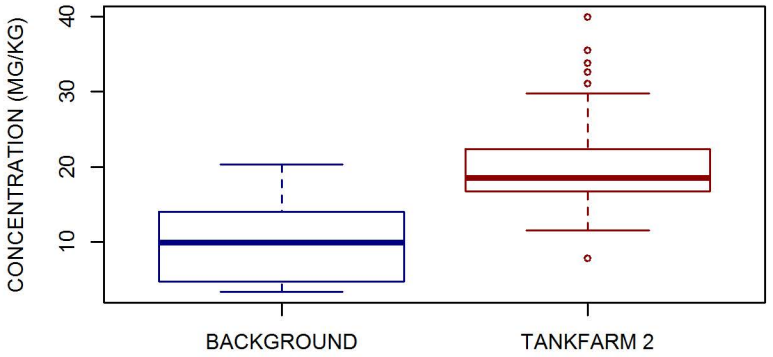
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	1.5	3.3
25TH PERCENTILE	2	8.6
MEDIAN	3.9	11
MEAN	3.8	11
75TH PERCENTILE	5	12
MAXIMUM	7.4	17

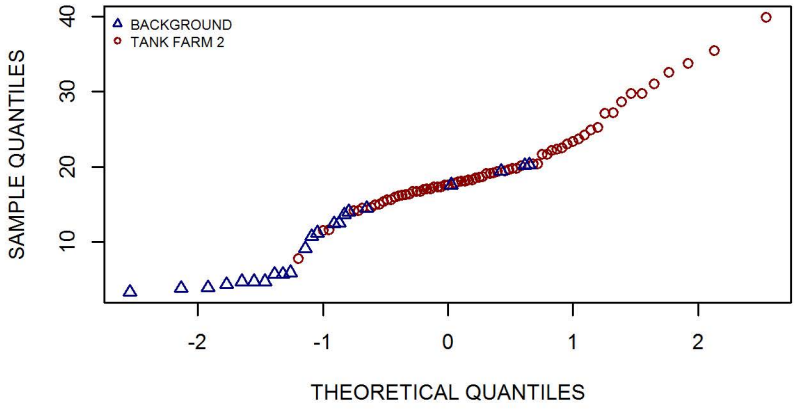
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

COPPER SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 9 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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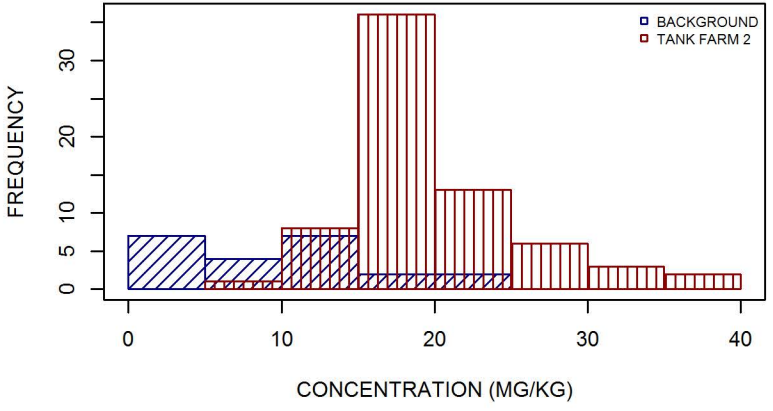


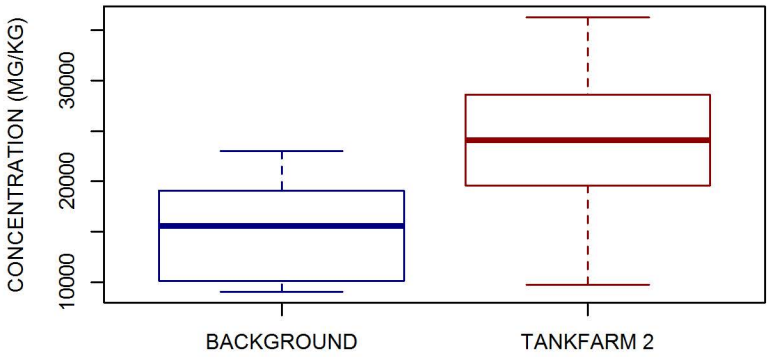
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	3.3	7.8
25TH PERCENTILE	4.7	17
MEDIAN	9.9	18
MEAN	10	20
75TH PERCENTILE	14	22
MAXIMUM	20	40

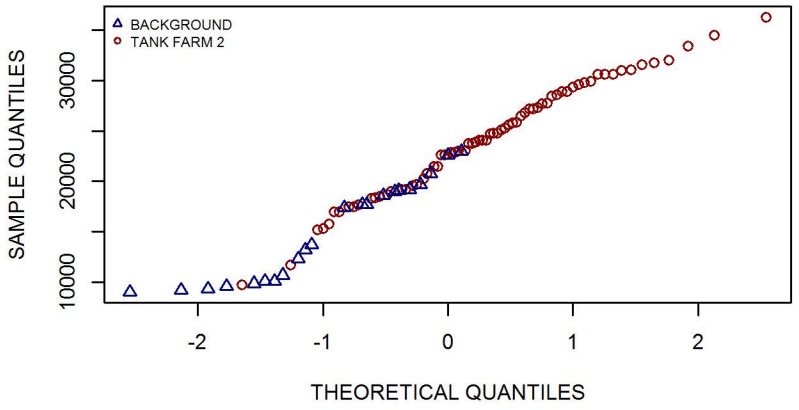
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

IRON SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 10 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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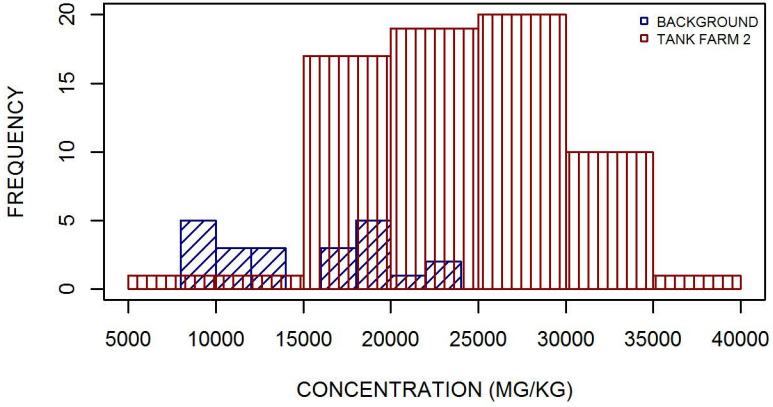


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	9000	9800
25TH PERCENTILE	10000	20000
MEDIAN	16000	24000
MEAN	15000	24000
75TH PERCENTILE	19000	29000
MAXIMUM	23000	36000

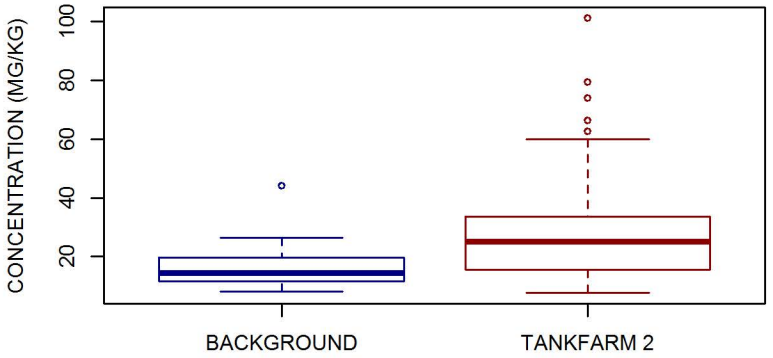
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

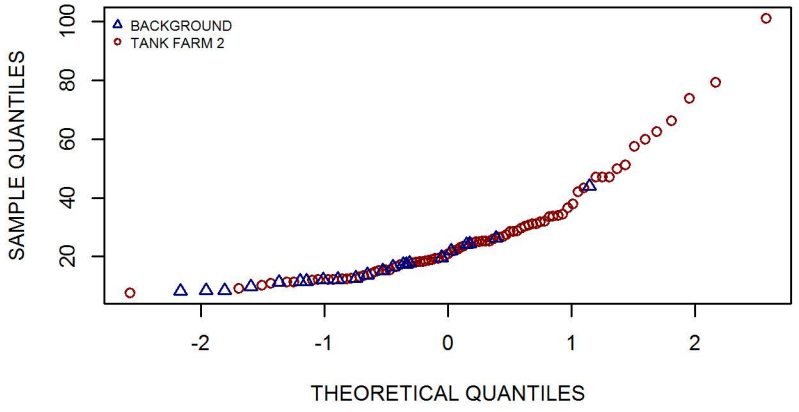
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

LEAD SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 11 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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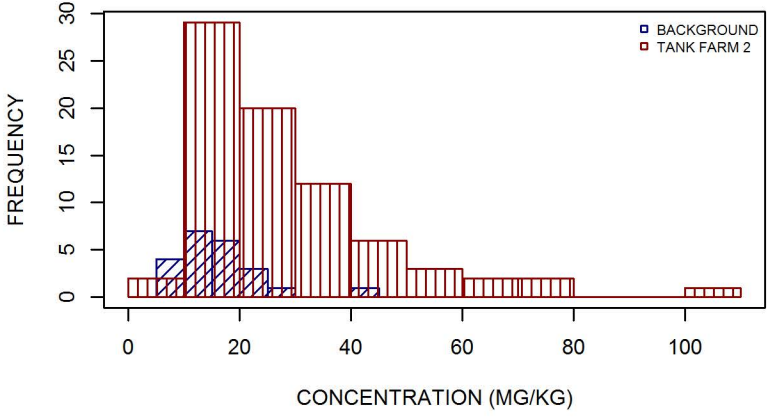


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	8.2	7.6
25TH PERCENTILE	12	16
MEDIAN	14	25
MEAN	17	28
75TH PERCENTILE	19	34
MAXIMUM	44	100

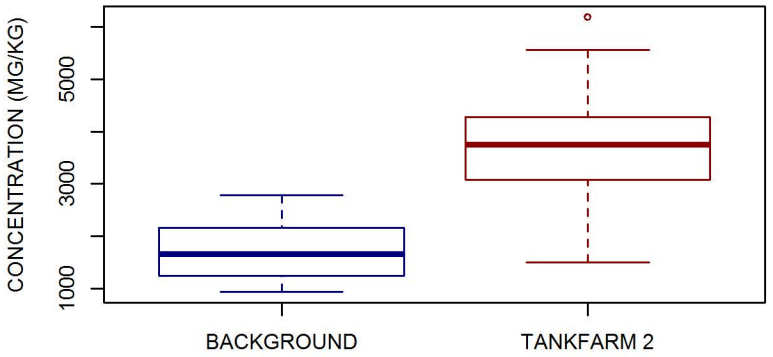
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

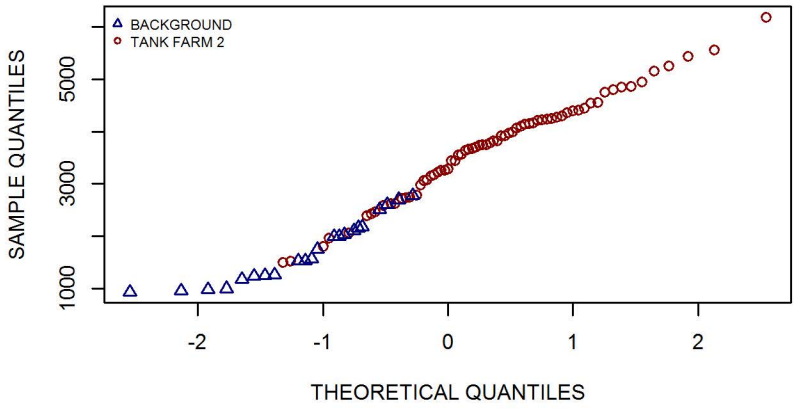
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

MAGNESIUM SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 12 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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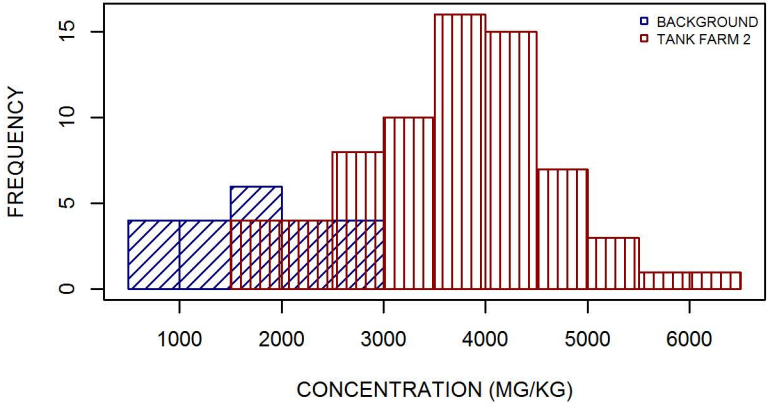


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	930	1500
25TH PERCENTILE	1200	3100
MEDIAN	1700	3800
MEAN	1700	3700
75TH PERCENTILE	2100	4300
MAXIMUM	2800	6200

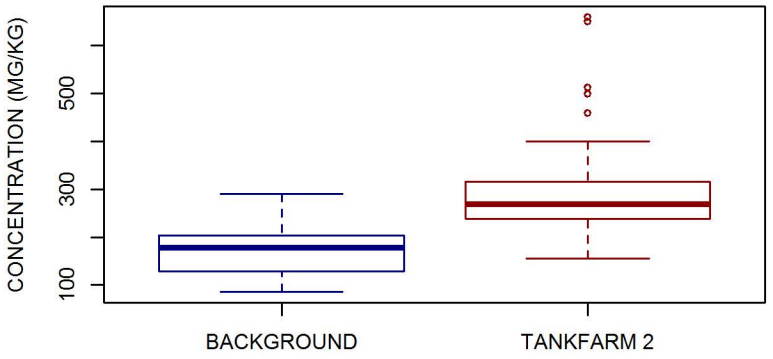
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

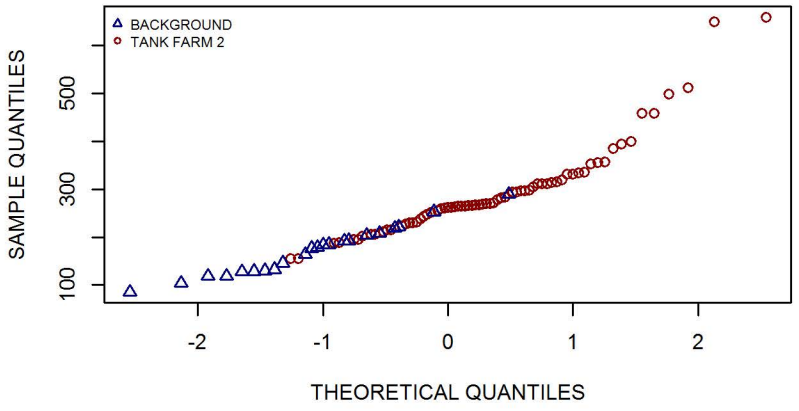
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

MANGANESE SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 13 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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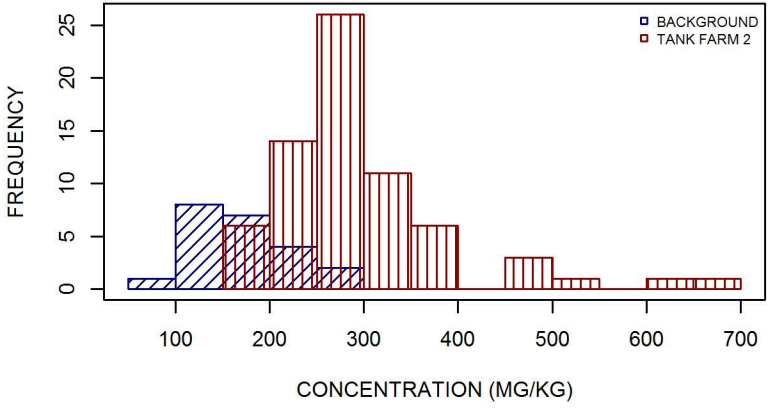


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	86	160
25TH PERCENTILE	130	240
MEDIAN	180	270
MEAN	170	290
75TH PERCENTILE	200	320
MAXIMUM	290	660

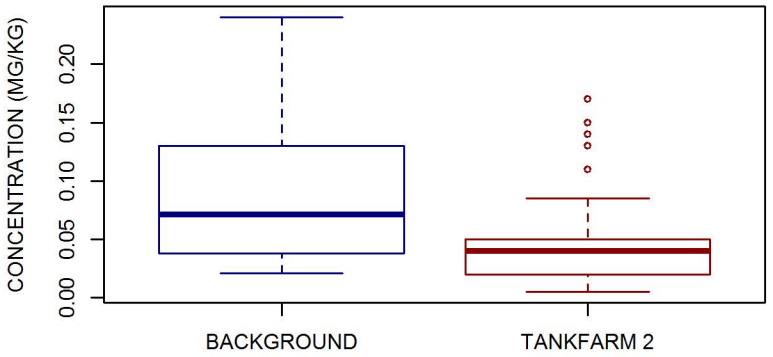
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

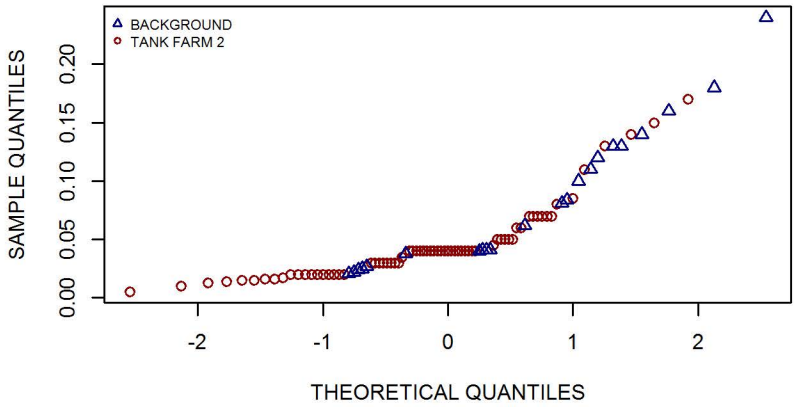
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

MERCURY SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 14 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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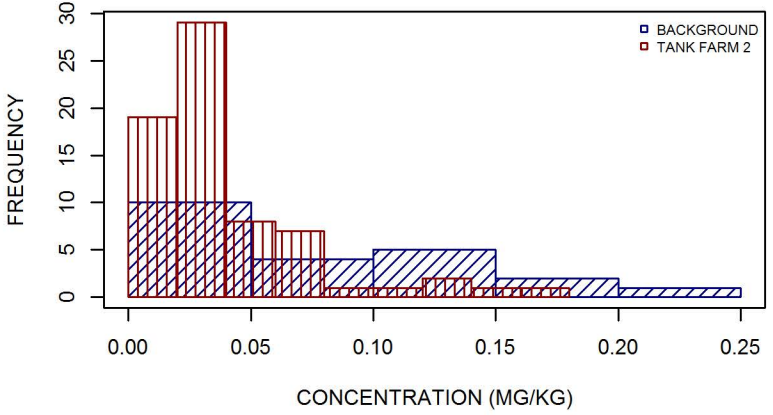


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	0.021	0.005
25TH PERCENTILE	0.038	0.02
MEDIAN	0.072	0.04
MEAN	0.084	0.045
75TH PERCENTILE	0.13	0.05
MAXIMUM	0.24	0.17

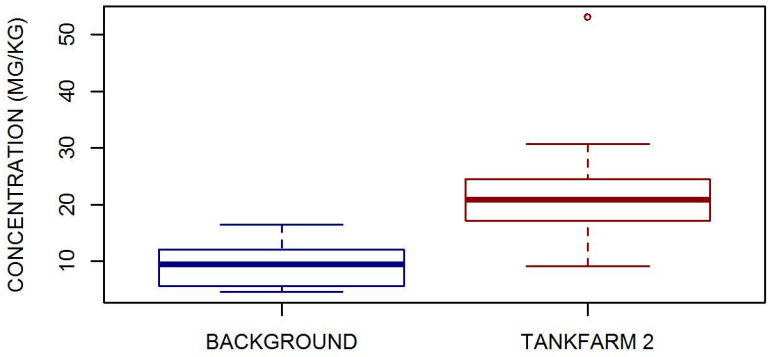
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

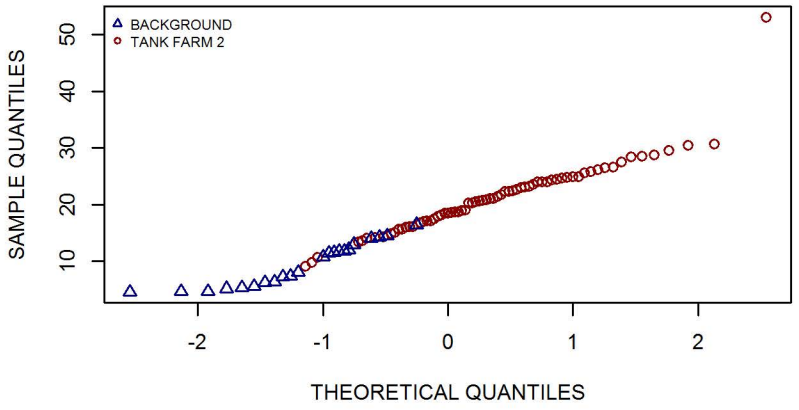
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

NICKEL SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 15 OF 19

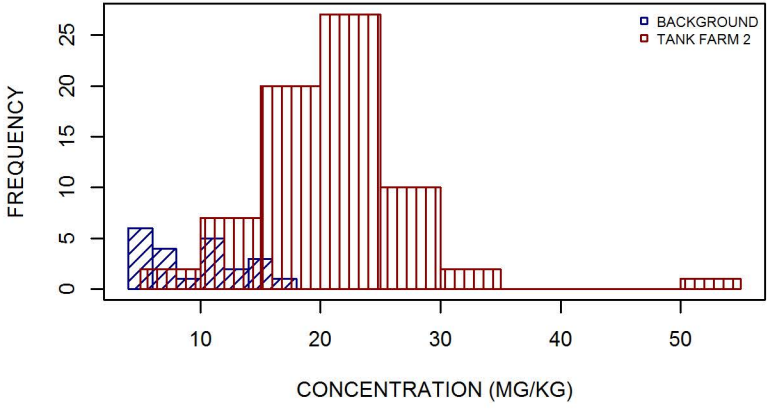
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



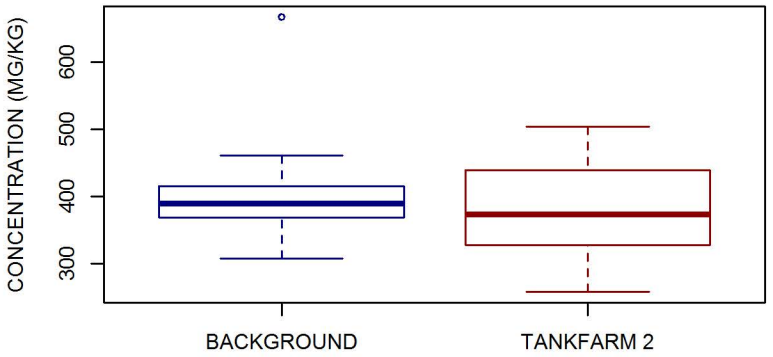
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	4.6	9.2
25TH PERCENTILE	5.8	17
MEDIAN	9.4	21
MEAN	9.4	21
75TH PERCENTILE	12	24
MAXIMUM	16	53

UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

POTASSIUM SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 16 OF 19

BOXPLOTS



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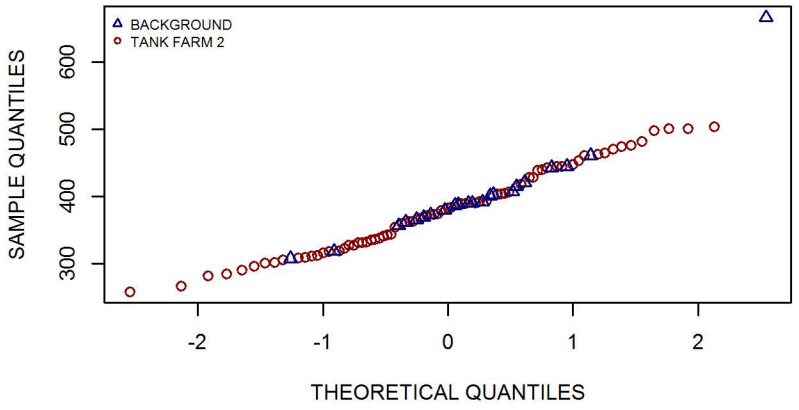

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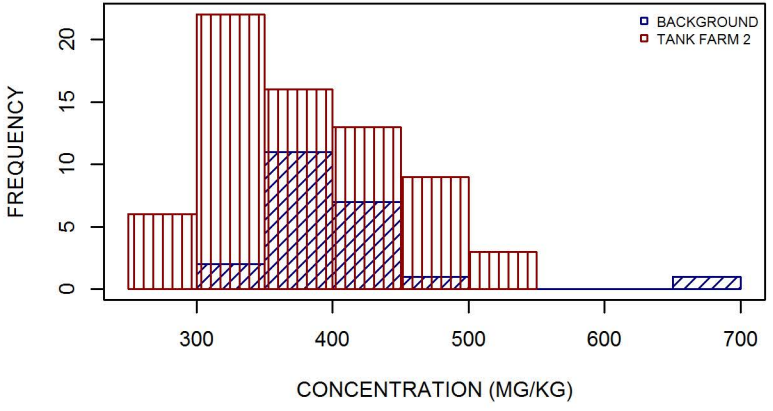


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	310	260
25TH PERCENTILE	370	330
MEDIAN	390	370
MEAN	400	380
75TH PERCENTILE	410	440
MAXIMUM	670	500

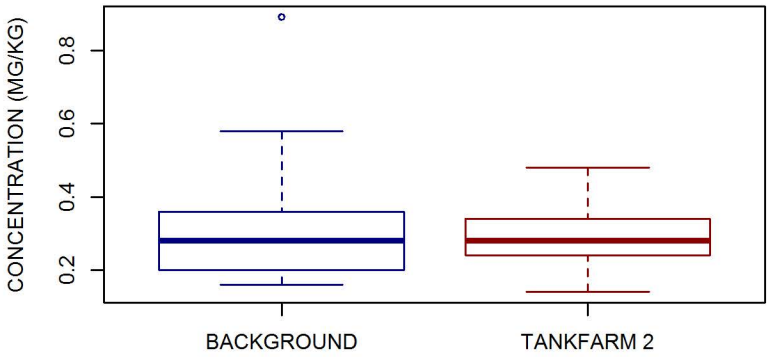
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

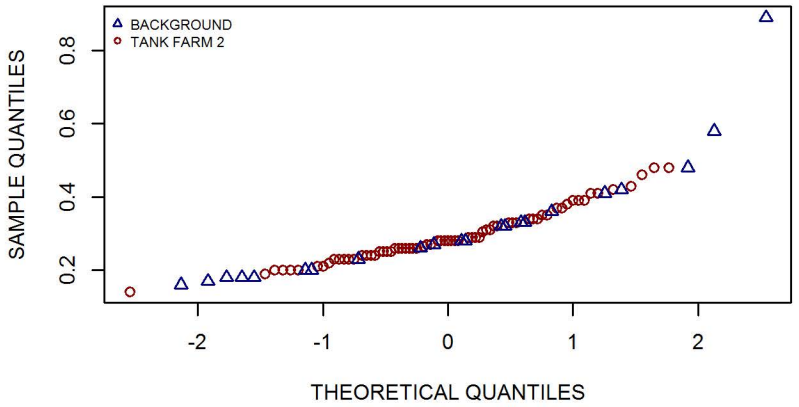
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

SELENIUM SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 17 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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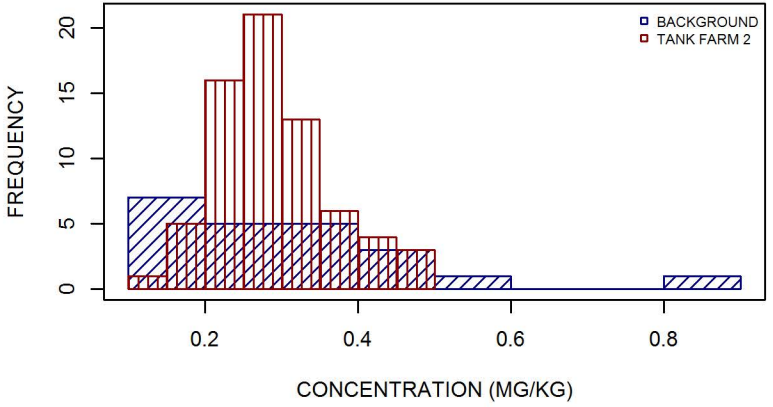


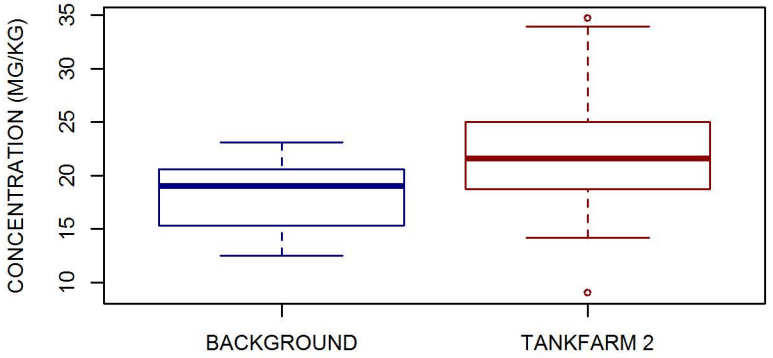
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	0.16	0.14
25TH PERCENTILE	0.2	0.24
MEDIAN	0.28	0.28
MEAN	0.32	0.29
75TH PERCENTILE	0.35	0.34
MAXIMUM	0.89	0.48

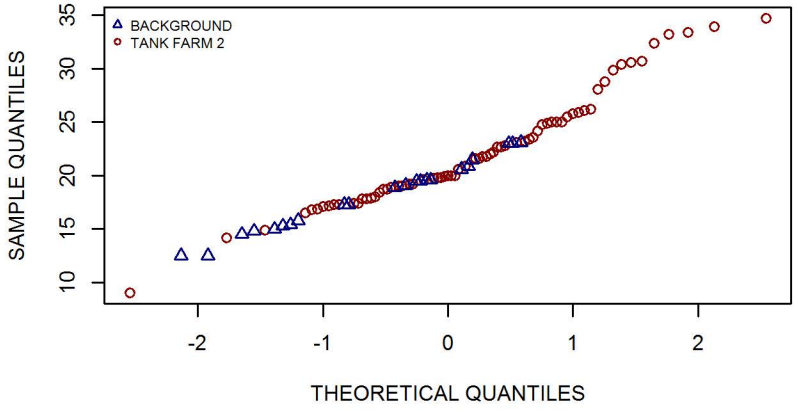
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

VANADIUM SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 18 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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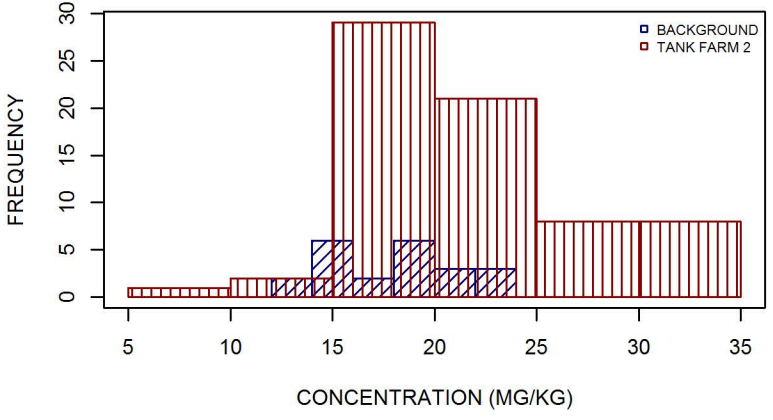


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	12	9
25TH PERCENTILE	15	19
MEDIAN	19	22
MEAN	18	22
75TH PERCENTILE	20	25
MAXIMUM	23	35

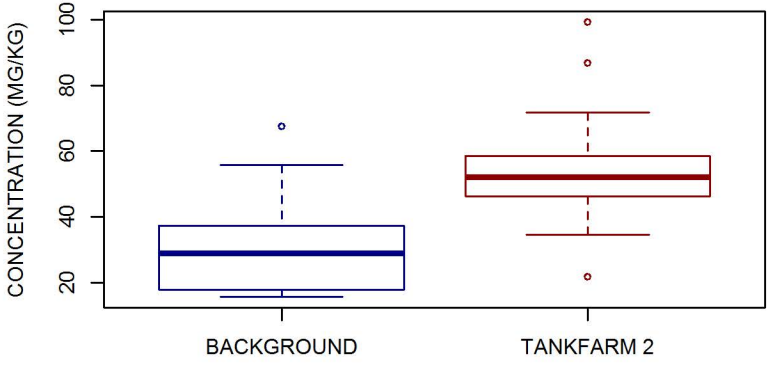
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

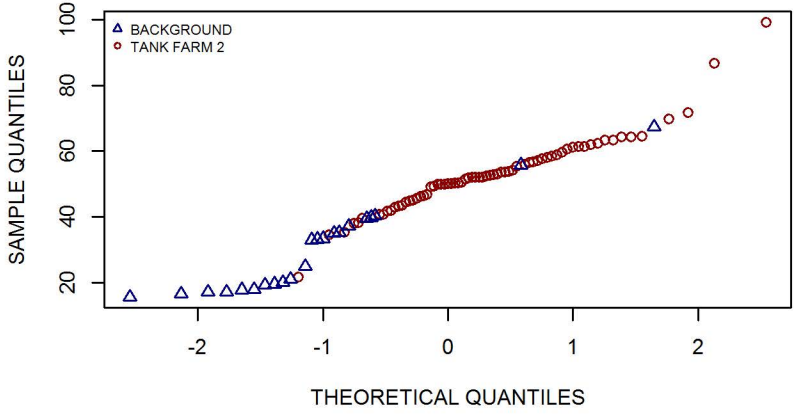
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

ZINC SURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 19 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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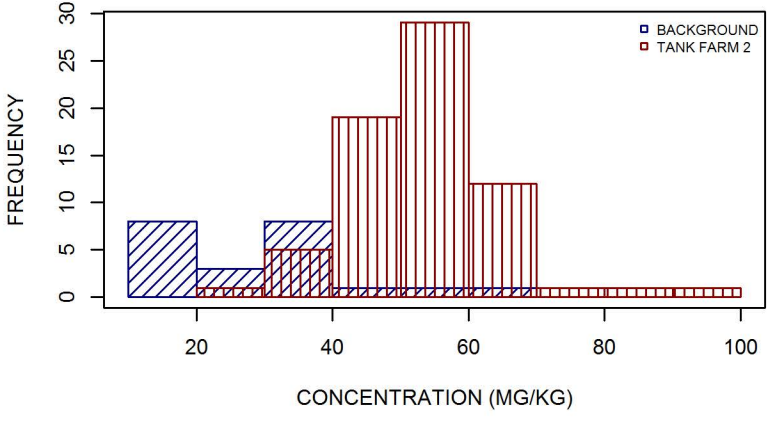


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	16	22
25TH PERCENTILE	18	46
MEDIAN	29	52
MEAN	30	53
75TH PERCENTILE	37	58
MAXIMUM	67	99

UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

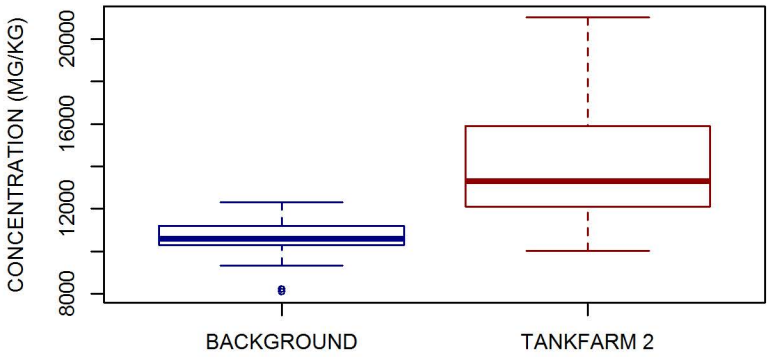
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

GRAPHICAL DISPLAYS FOR

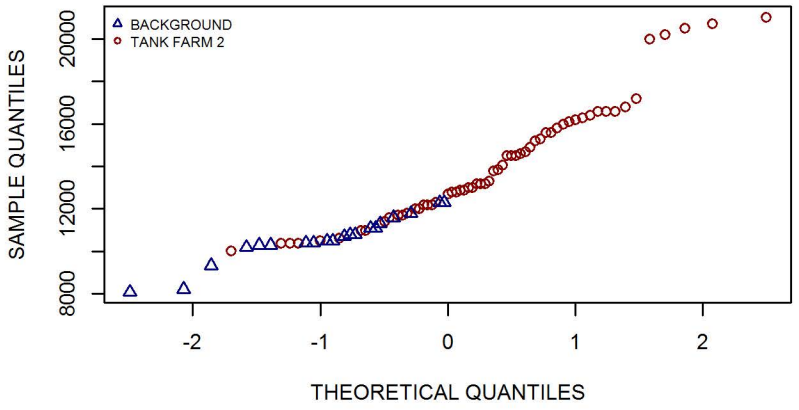
SUBSURFACE SOIL FROM TANK FARM 2

ALUMINUM SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 1 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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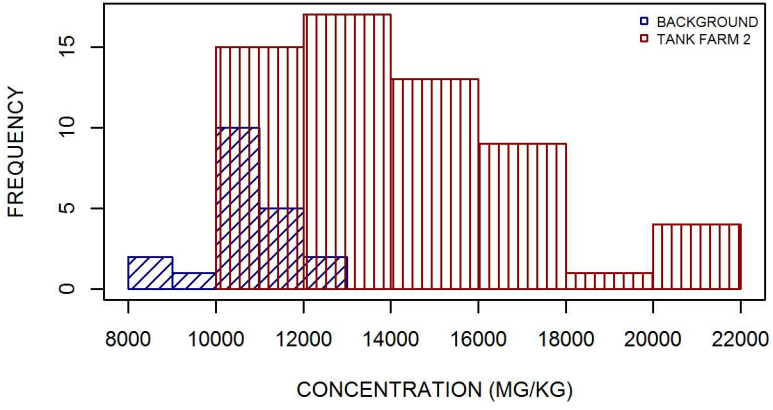


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	8100	10000
25TH PERCENTILE	10000	12000
MEDIAN	11000	13000
MEAN	11000	14000
75TH PERCENTILE	11000	16000
MAXIMUM	12000	21000

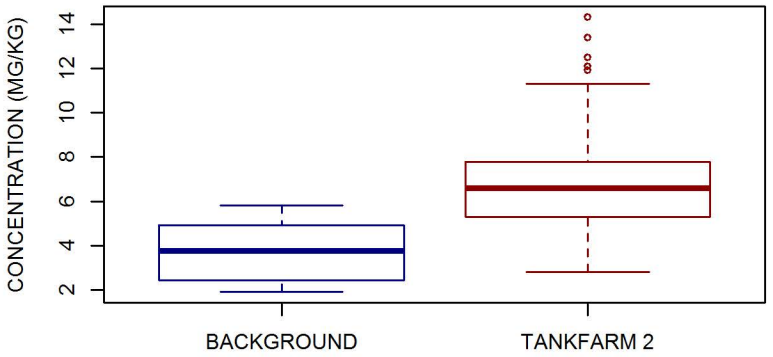
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

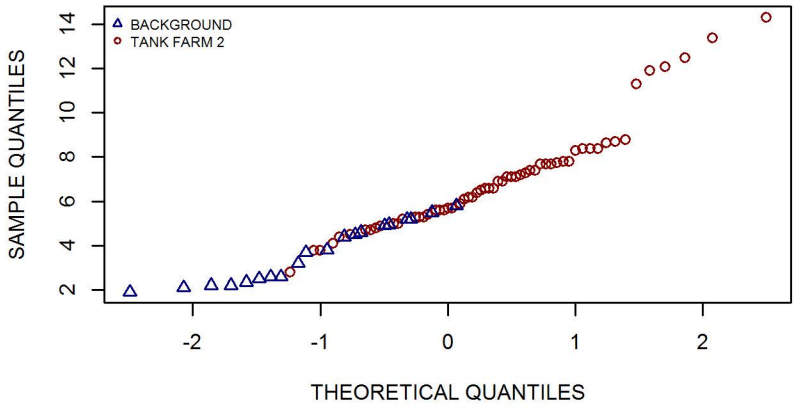
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

ARSENIC SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 2 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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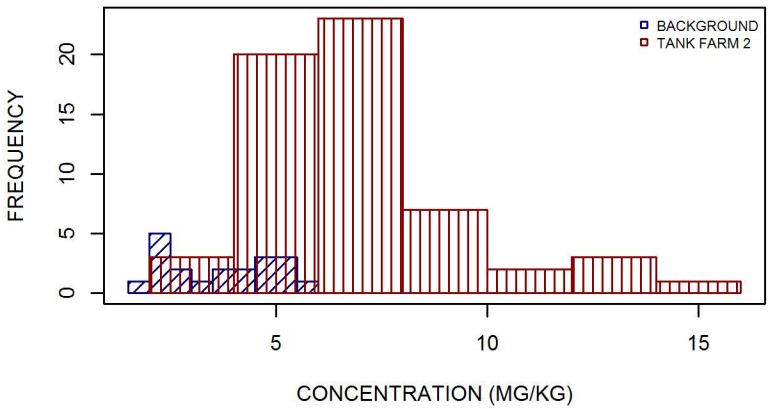


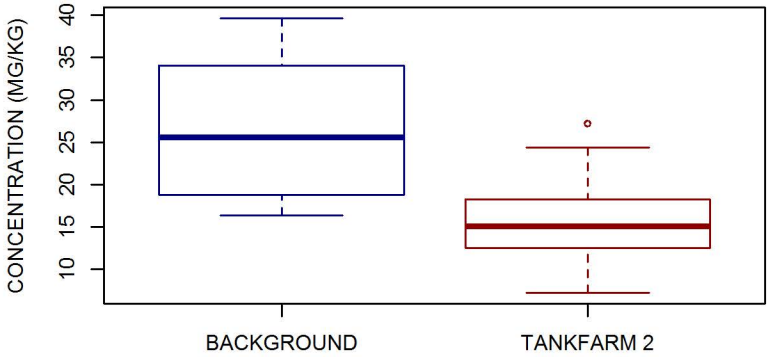
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	1.9	2.8
25TH PERCENTILE	2.5	5.3
MEDIAN	3.8	6.6
MEAN	3.7	7
75TH PERCENTILE	4.9	7.8
MAXIMUM	5.8	14

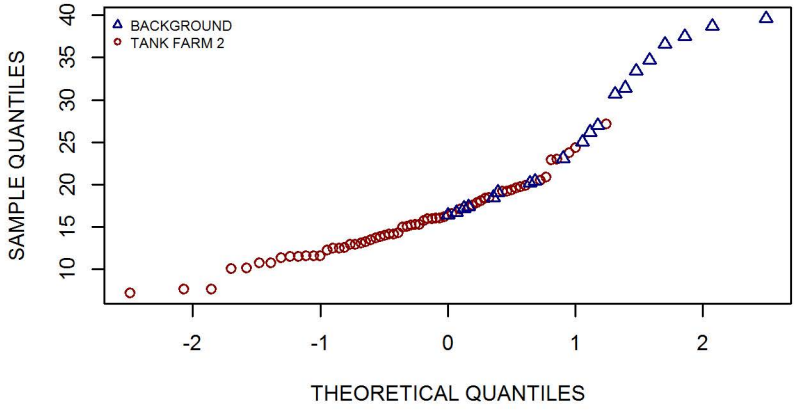
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

BARIUM SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 3 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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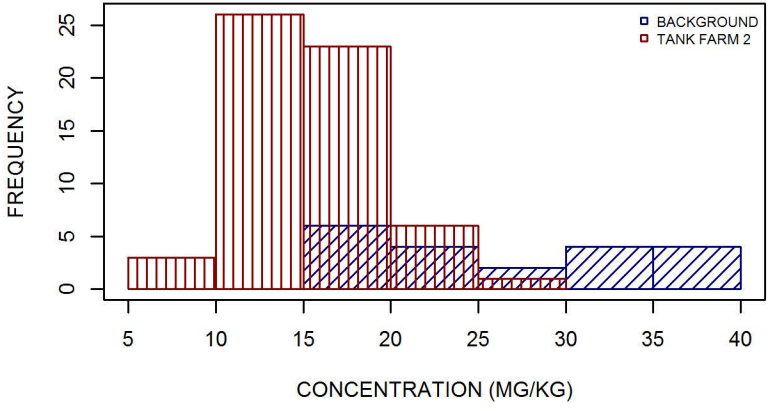


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	16	7.2
25TH PERCENTILE	19	12
MEDIAN	26	15
MEAN	26	15
75TH PERCENTILE	34	18
MAXIMUM	40	27

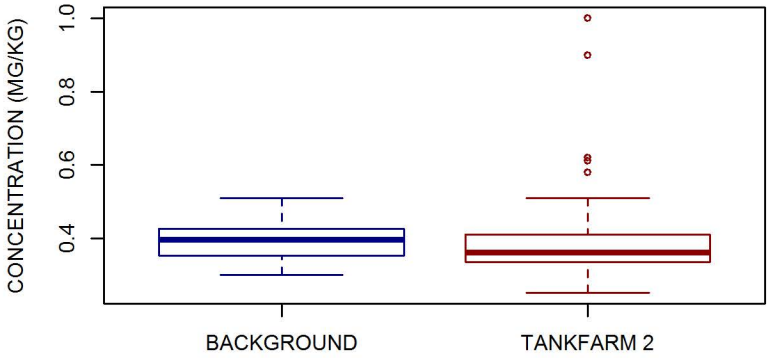
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

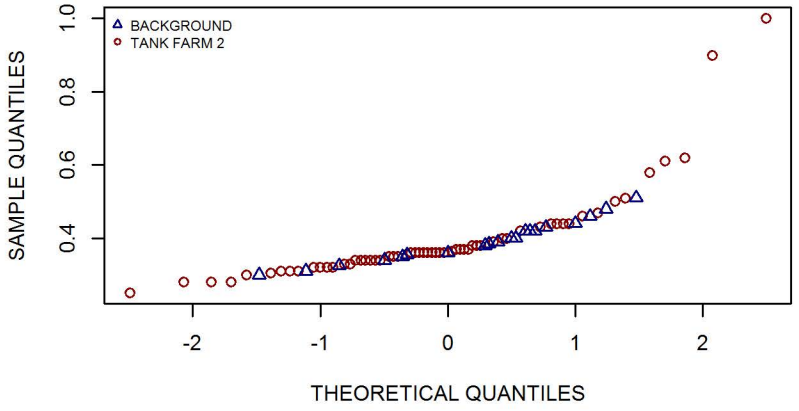
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

BERYLLIUM SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 4 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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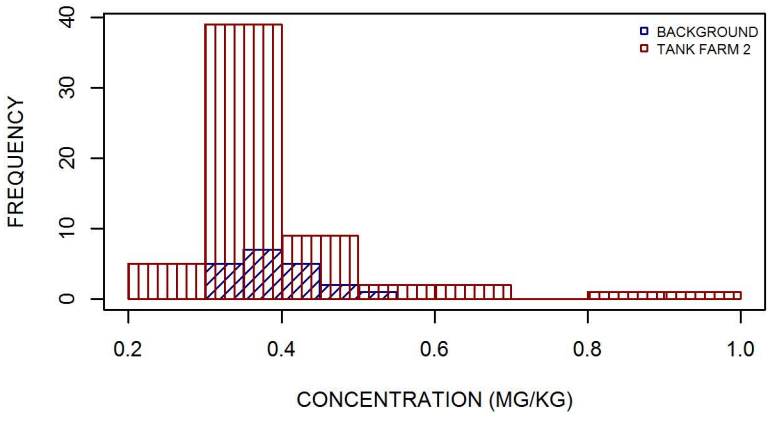


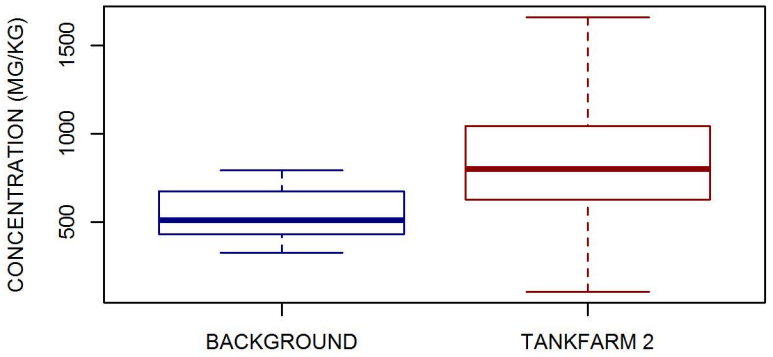
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	0.3	0.25
25TH PERCENTILE	0.35	0.34
MEDIAN	0.4	0.36
MEAN	0.39	0.4
75TH PERCENTILE	0.42	0.41
MAXIMUM	0.51	1

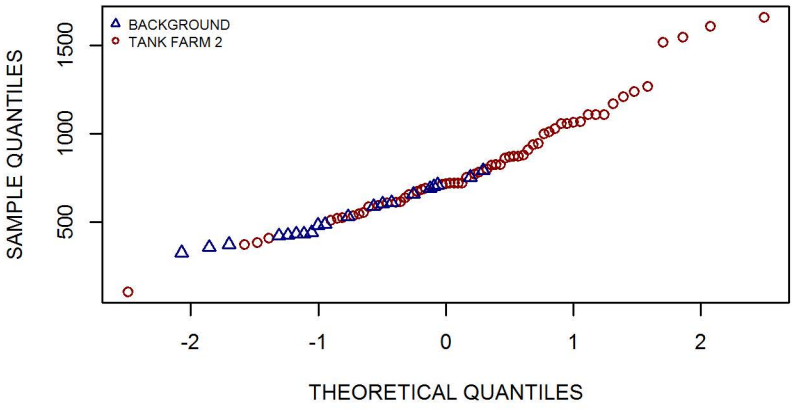
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

CALCIUM SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 5 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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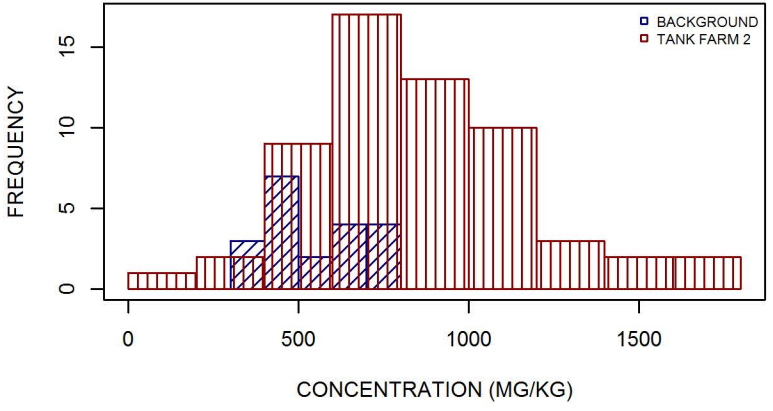


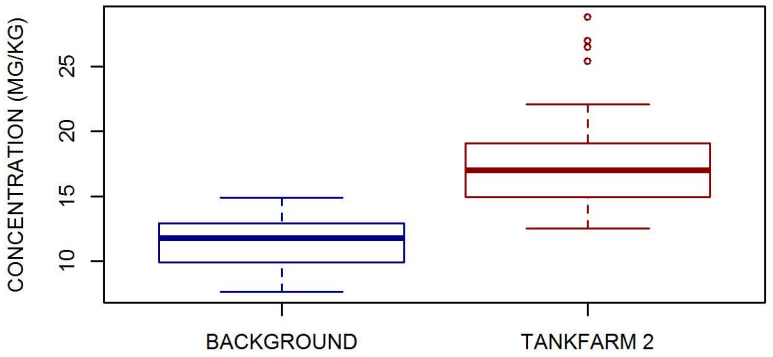
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	320	100
25TH PERCENTILE	430	630
MEDIAN	510	800
MEAN	540	840
75TH PERCENTILE	670	1000
MAXIMUM	790	1700

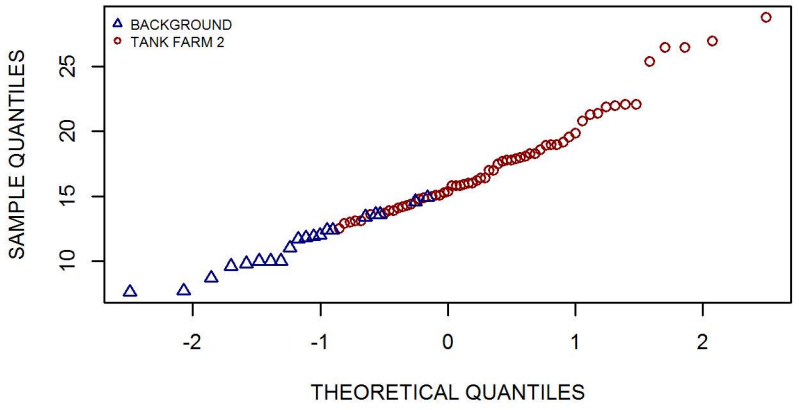
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

CHROMIUM SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 6 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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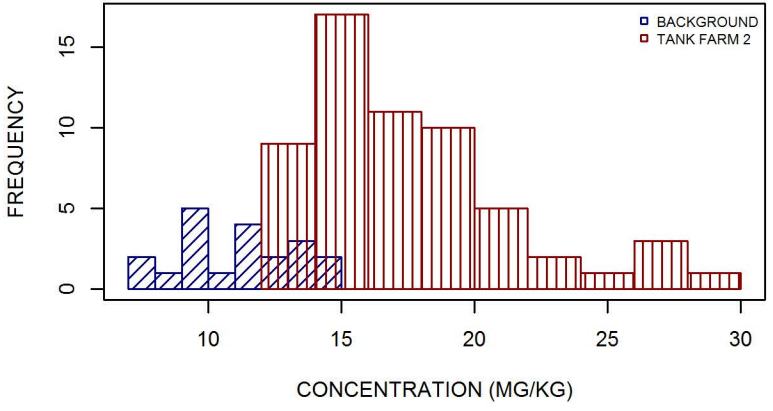


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	7.6	12
25TH PERCENTILE	10	15
MEDIAN	12	17
MEAN	11	18
75TH PERCENTILE	13	19
MAXIMUM	15	29

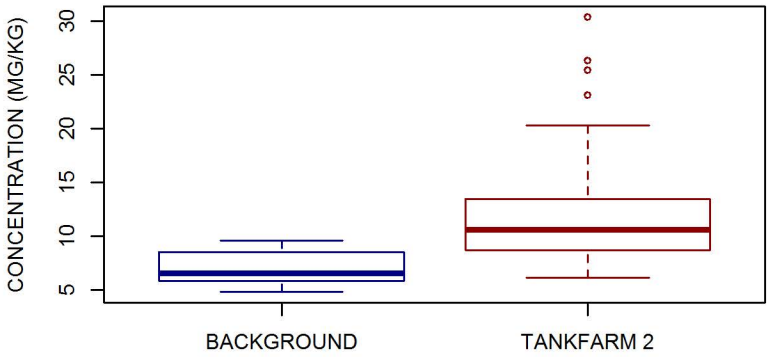
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

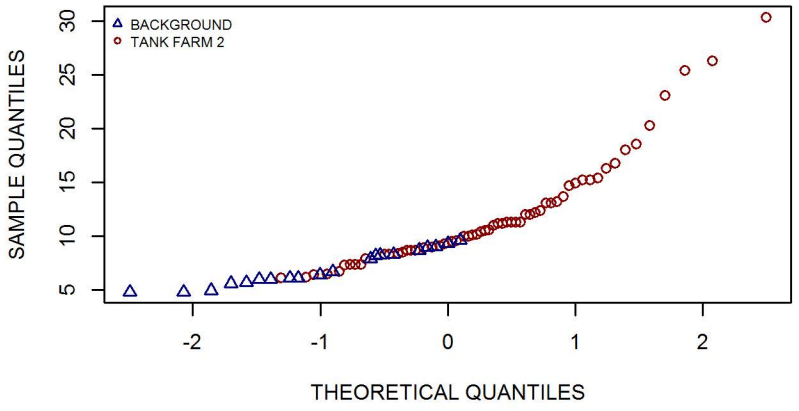
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

COBALT SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 7 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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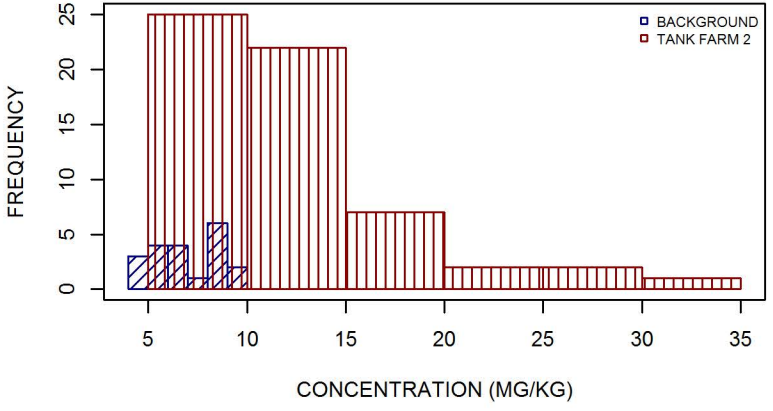


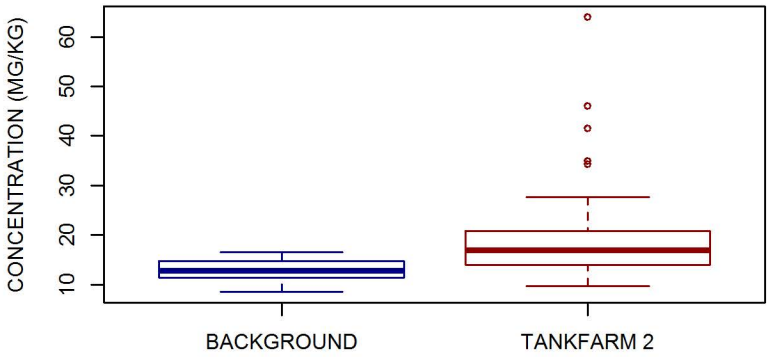
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	4.8	6.1
25TH PERCENTILE	5.9	8.7
MEDIAN	6.6	11
MEAN	7.1	12
75TH PERCENTILE	8.4	13
MAXIMUM	9.6	30

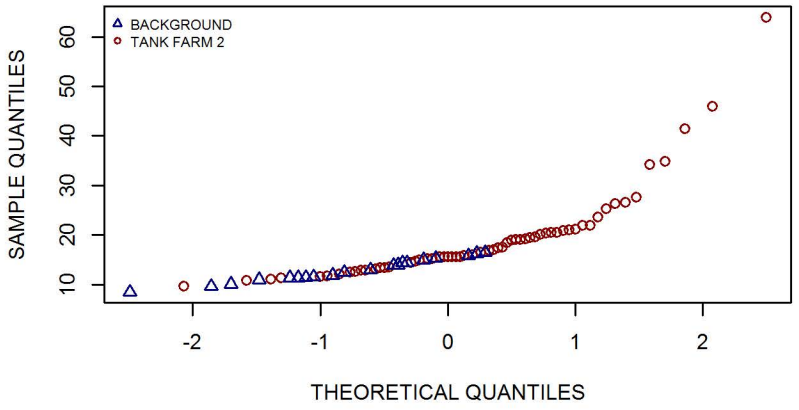
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

COPPER SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 8 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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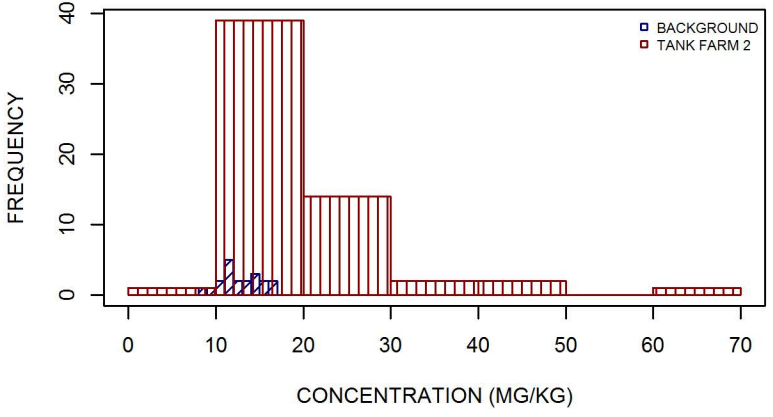


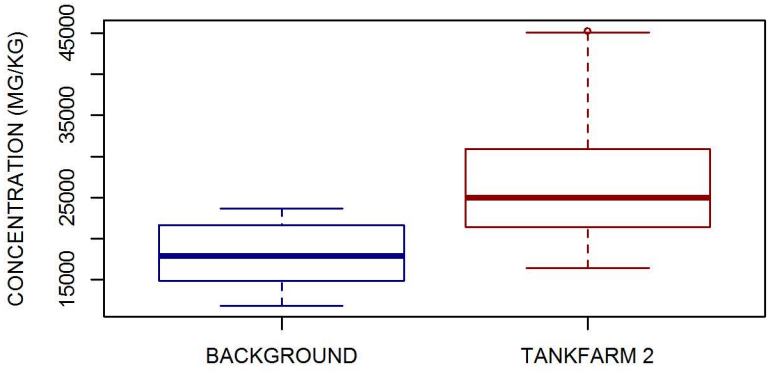
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	8.5	9.7
25TH PERCENTILE	11	14
MEDIAN	13	17
MEAN	13	19
75TH PERCENTILE	15	21
MAXIMUM	16	64

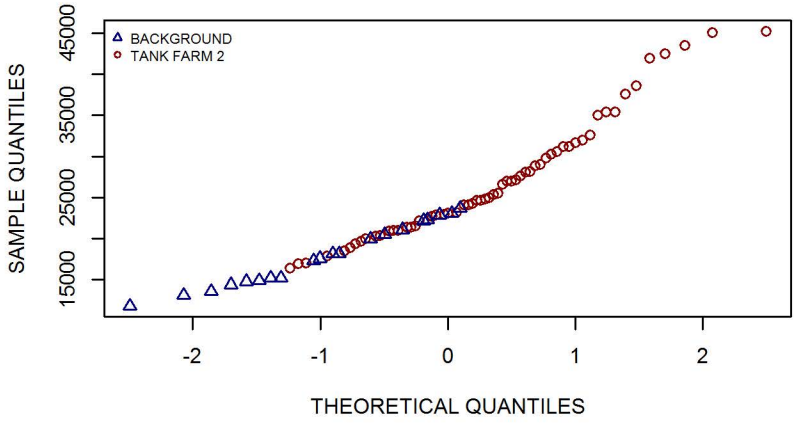
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

IRON SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 9 OF 16

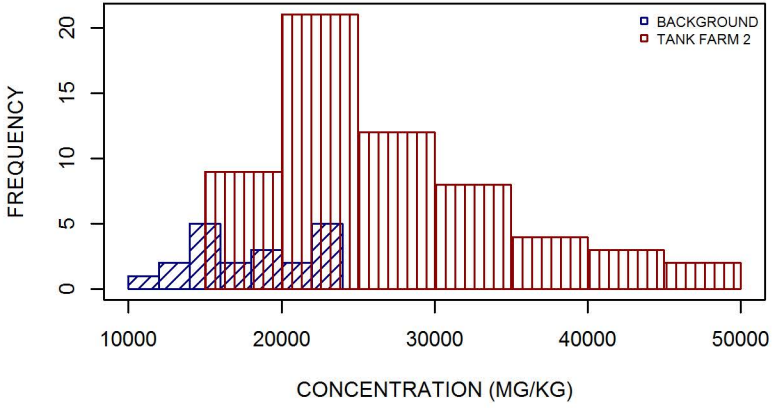
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	12000	16000
25TH PERCENTILE	15000	21000
MEDIAN	18000	25000
MEAN	18000	27000
75TH PERCENTILE	21000	31000
MAXIMUM	24000	45000

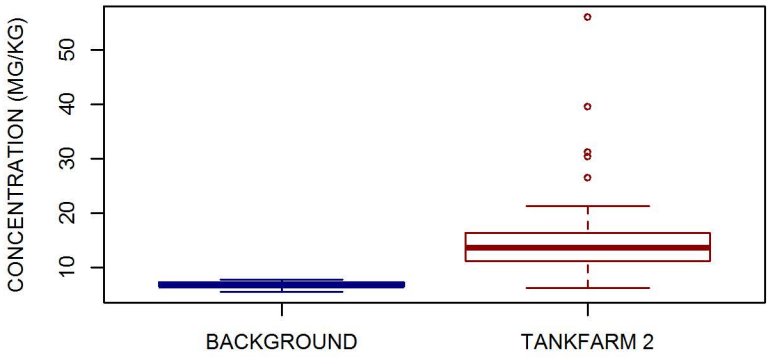
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

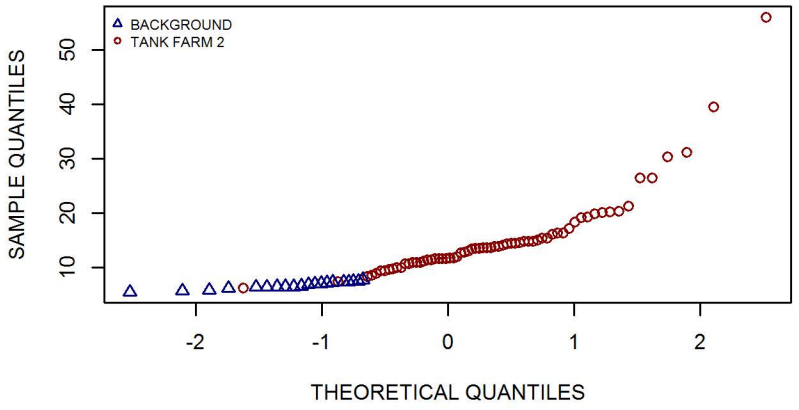
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

LEAD SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 10 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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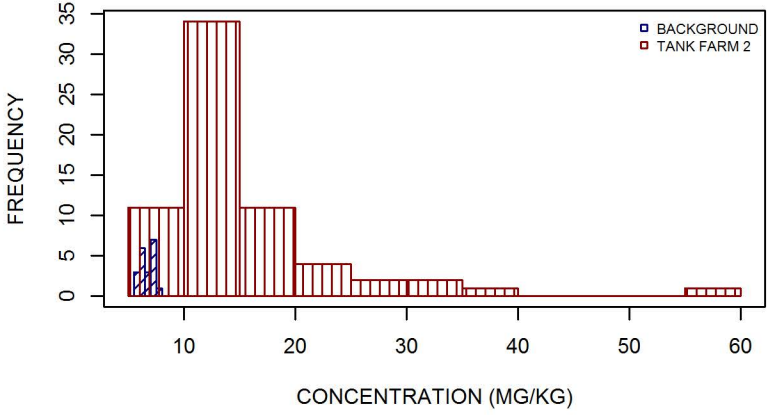


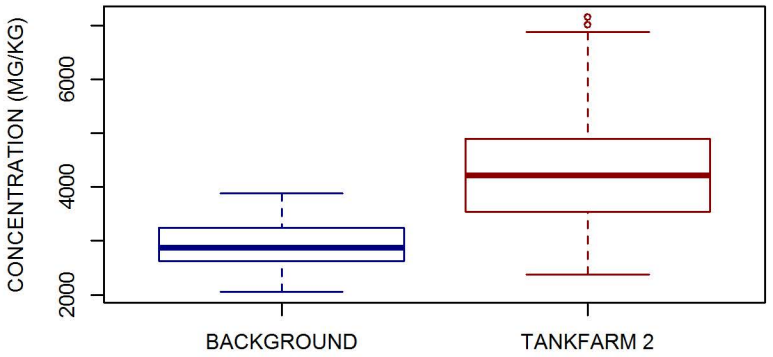
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	5.5	6.3
25TH PERCENTILE	6.4	11
MEDIAN	6.8	14
MEAN	6.8	15
75TH PERCENTILE	7.3	16
MAXIMUM	7.8	56

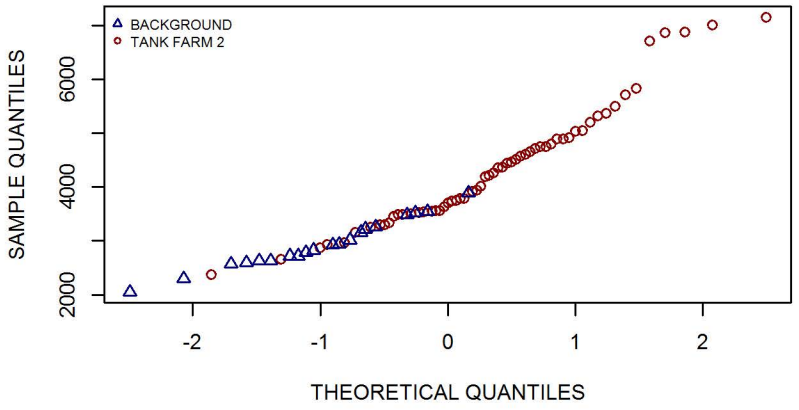
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

MAGNESIUM SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 11 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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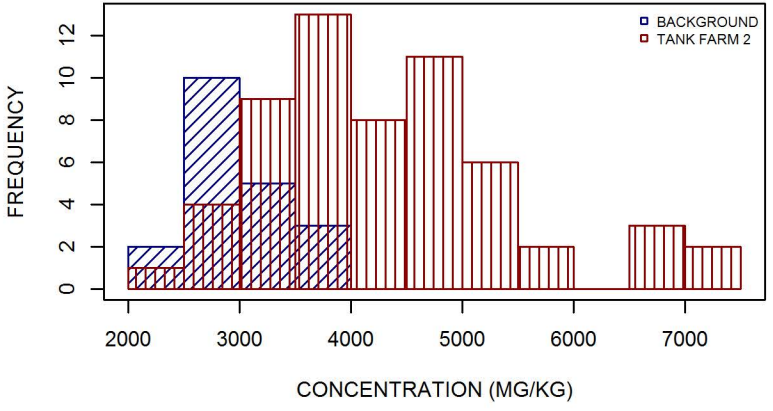


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	2000	2400
25TH PERCENTILE	2600	3500
MEDIAN	2900	4200
MEAN	2900	4300
75TH PERCENTILE	3200	4900
MAXIMUM	3900	7200

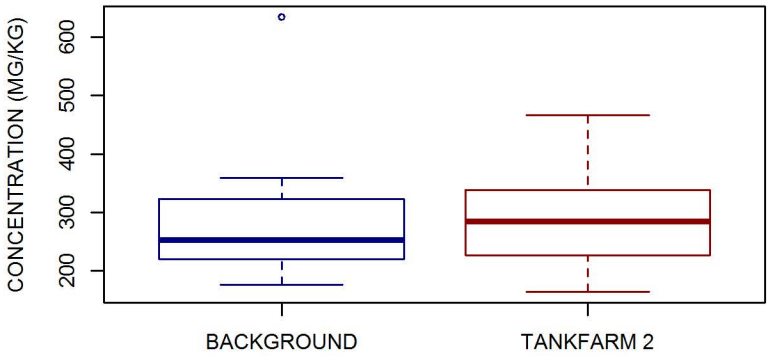
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

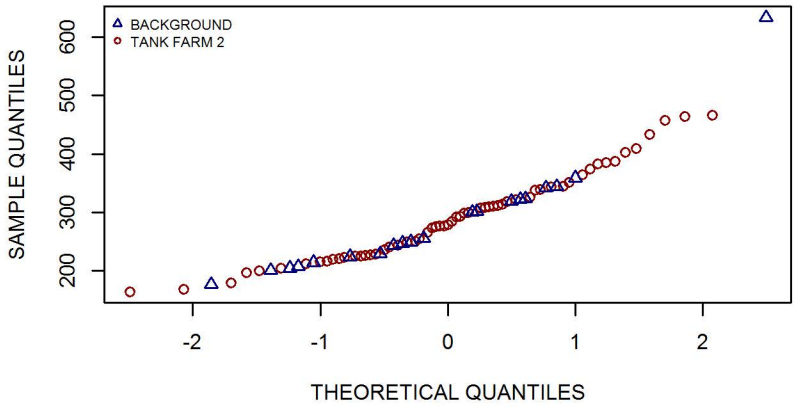
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

MANGANESE SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 12 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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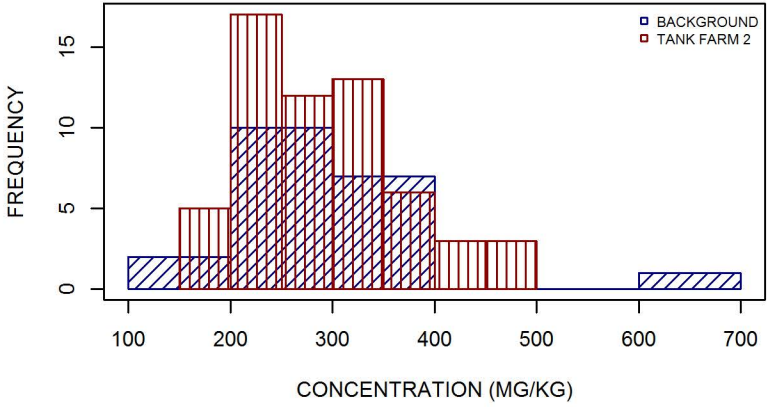


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	180	160
25TH PERCENTILE	220	230
MEDIAN	250	280
MEAN	280	290
75TH PERCENTILE	320	340
MAXIMUM	630	470

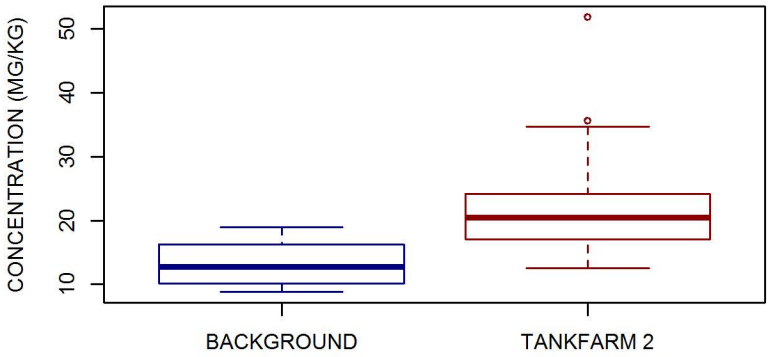
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

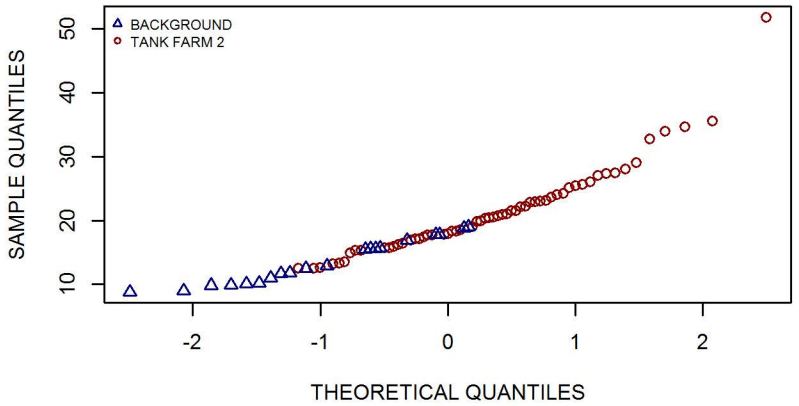
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

NICKEL SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 13 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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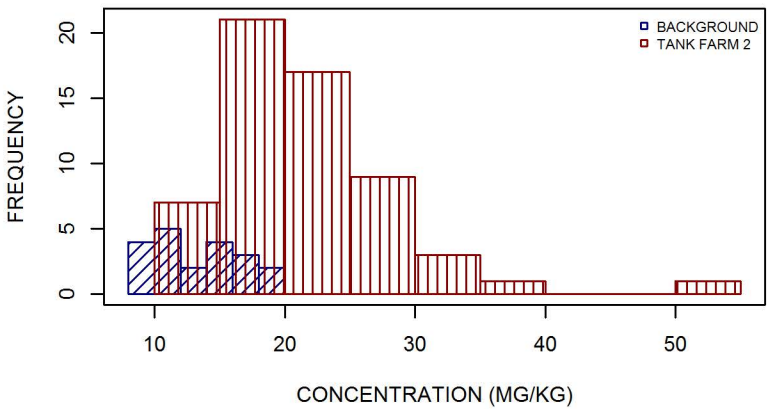


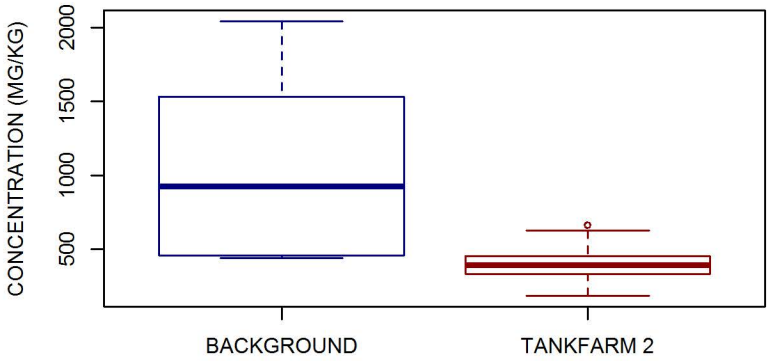
SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	8.8	12
25TH PERCENTILE	10	17
MEDIAN	13	20
MEAN	14	21
75TH PERCENTILE	16	24
MAXIMUM	19	52

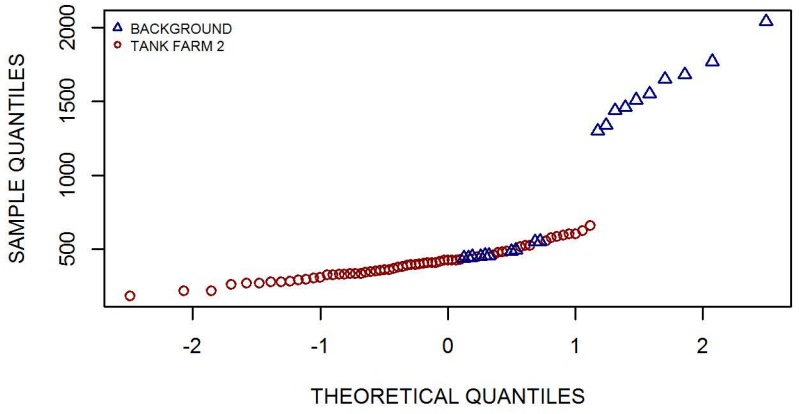
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

POTASSIUM SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 14 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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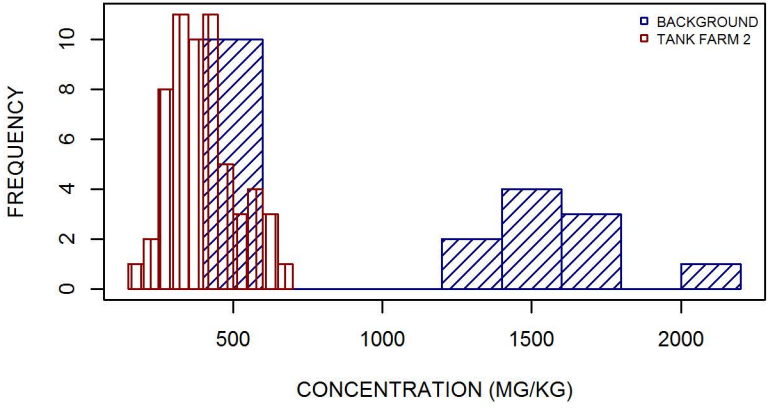


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	440	180
25TH PERCENTILE	460	330
MEDIAN	930	390
MEAN	1000	400
75TH PERCENTILE	1500	460
MAXIMUM	2000	660

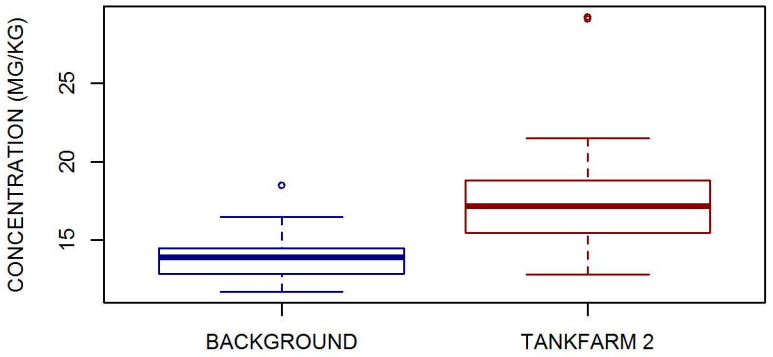
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

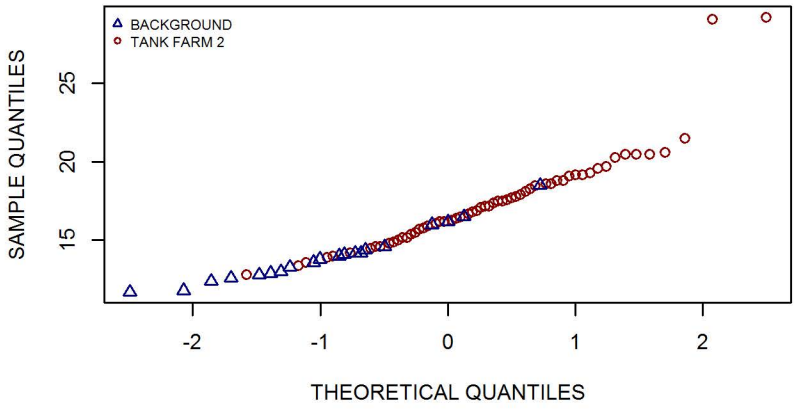
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

VANADIUM SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 15 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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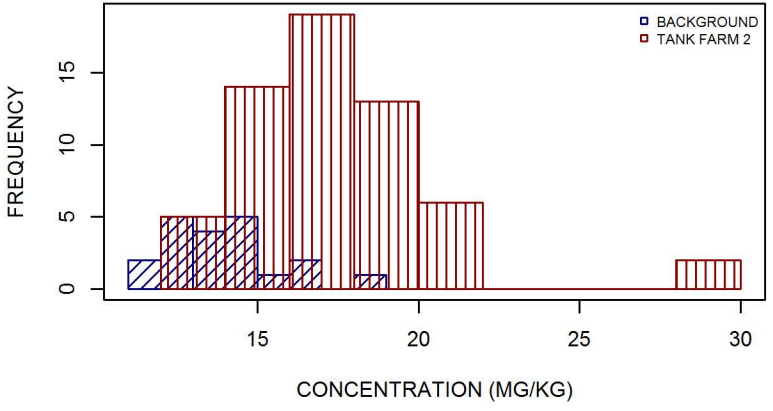


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	12	13
25TH PERCENTILE	13	15
MEDIAN	14	17
MEAN	14	17
75TH PERCENTILE	14	19
MAXIMUM	18	29

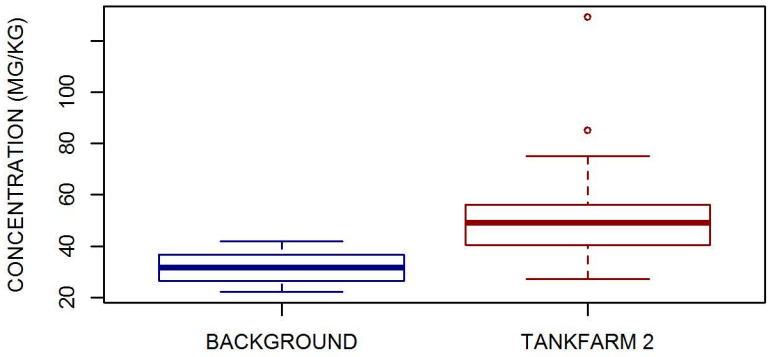
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

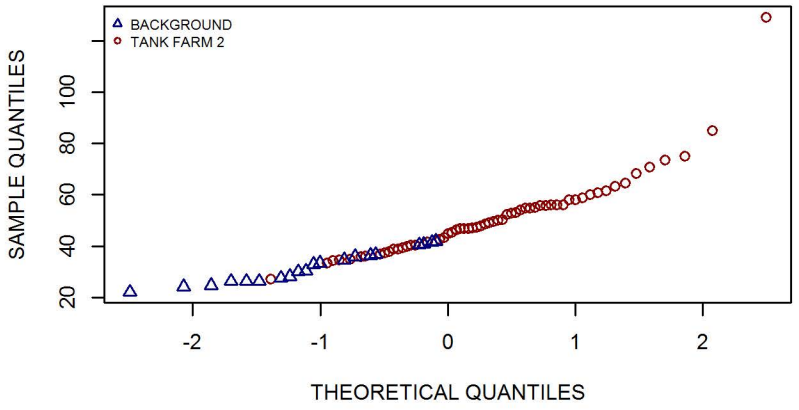
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

ZINC SUBSURFACE SOIL GRAPHICAL DISPLAYS
TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 16 OF 16

BOXPLOTS



NORMAL PROBABILITY PLOT



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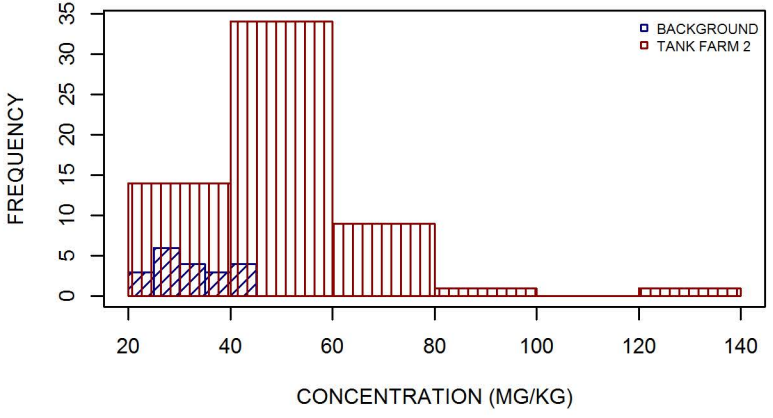


SUMMARY STATISTICS

	BACKGROUND	TANK FARM 2
MINIMUM	22	27
25TH PERCENTILE	26	40
MEDIAN	32	49
MEAN	32	51
75TH PERCENTILE	36	56
MAXIMUM	42	130

UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

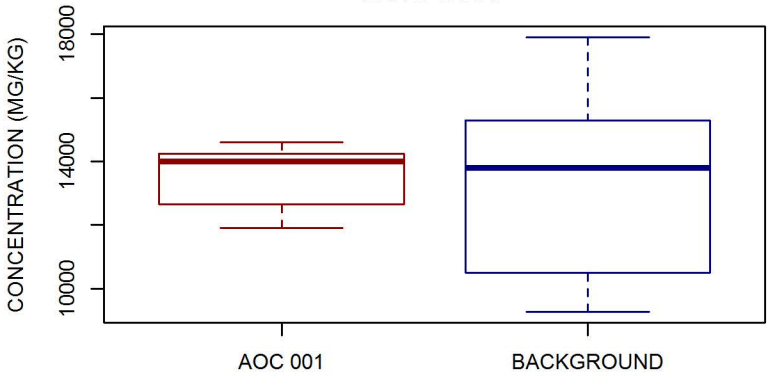
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

GRAPHICAL DISPLAYS FOR

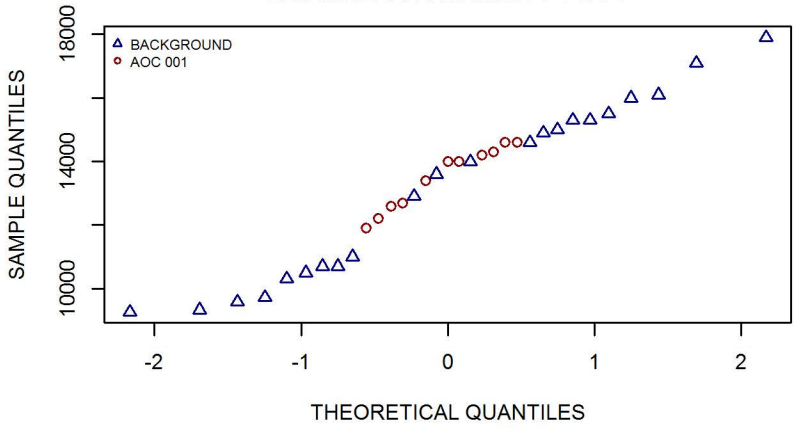
SURFACE SOIL FROM AOC-001 AT TANK FARM 2

ALUMINUM SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 1 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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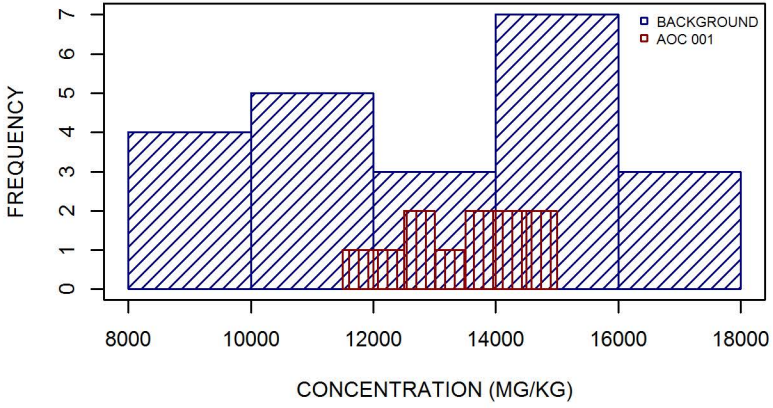


SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	9300	12000
25TH PERCENTILE	11000	13000
MEDIAN	14000	14000
MEAN	13000	14000
75TH PERCENTILE	15000	14000
MAXIMUM	18000	15000

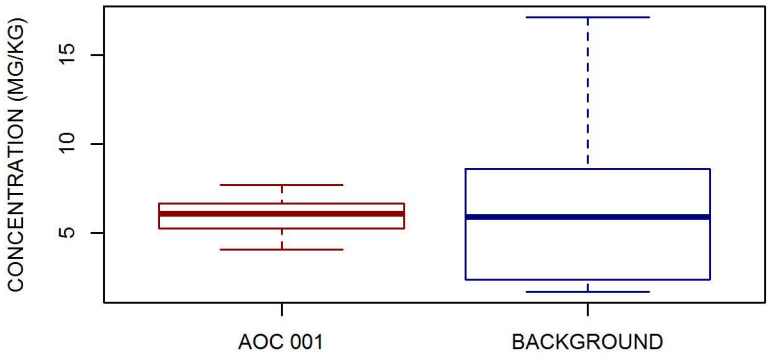
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

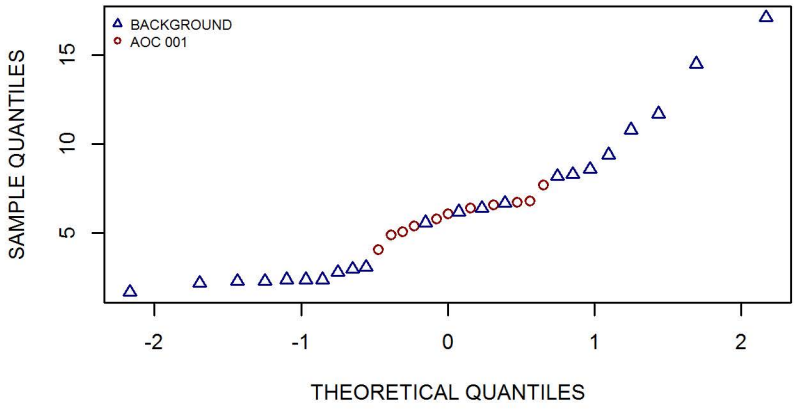
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

ARSENIC SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 2 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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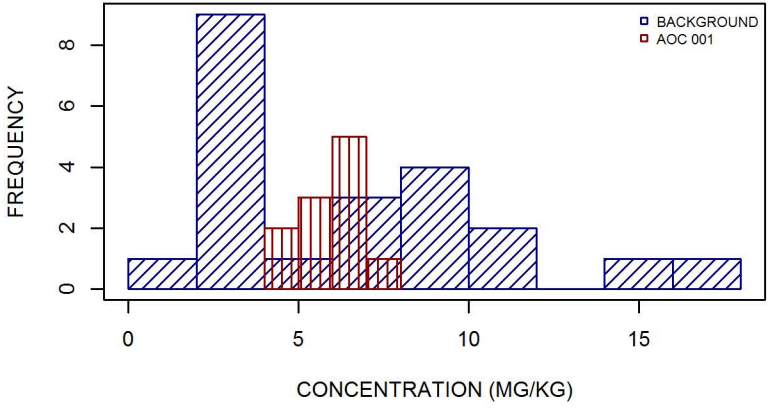


SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	1.7	4.1
25TH PERCENTILE	2.4	5.2
MEDIAN	5.9	6.1
MEAN	6.3	6
75TH PERCENTILE	8.5	6.7
MAXIMUM	17	7.7

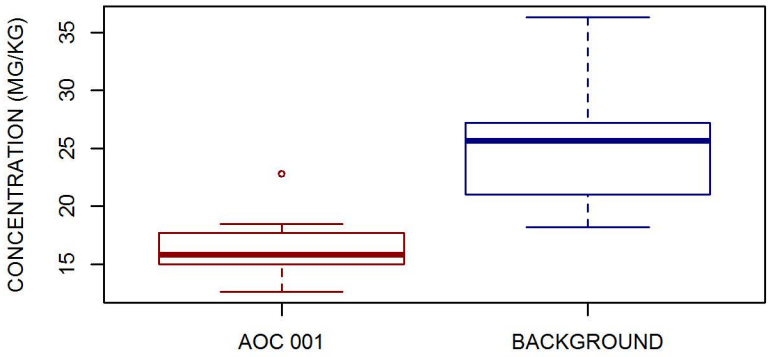
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

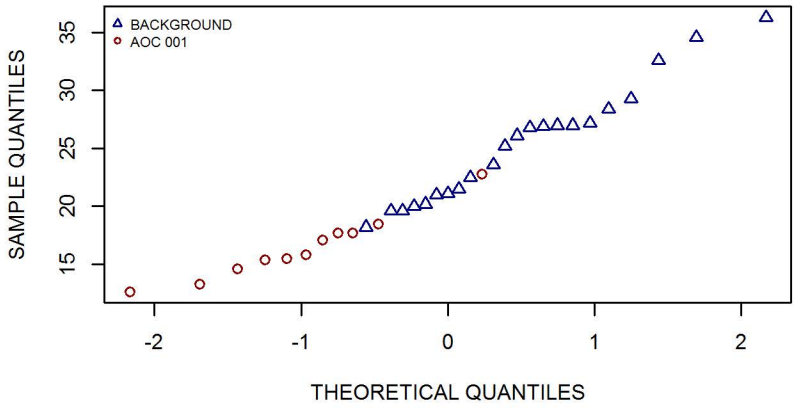
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

BARIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 3 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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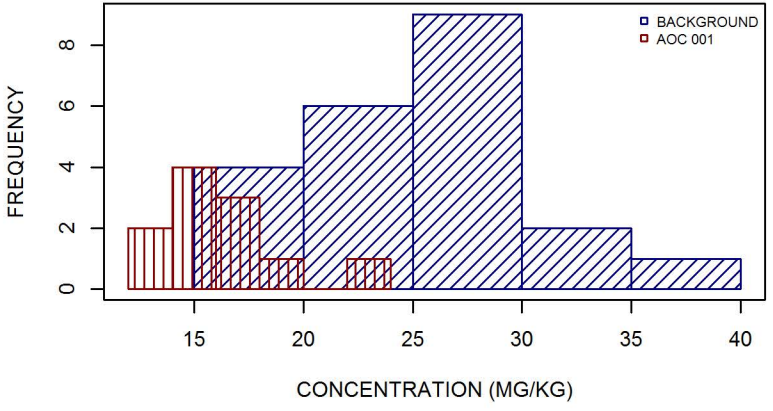


SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	18	13
25TH PERCENTILE	21	15
MEDIAN	26	16
MEAN	25	16
75TH PERCENTILE	27	18
MAXIMUM	36	23

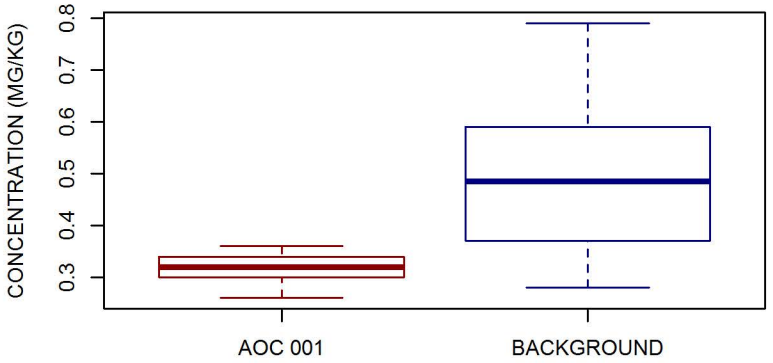
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

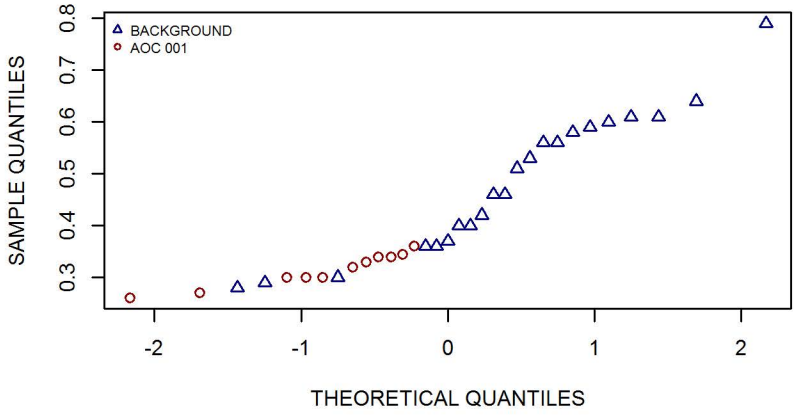
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

BERYLLIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 4 OF 19

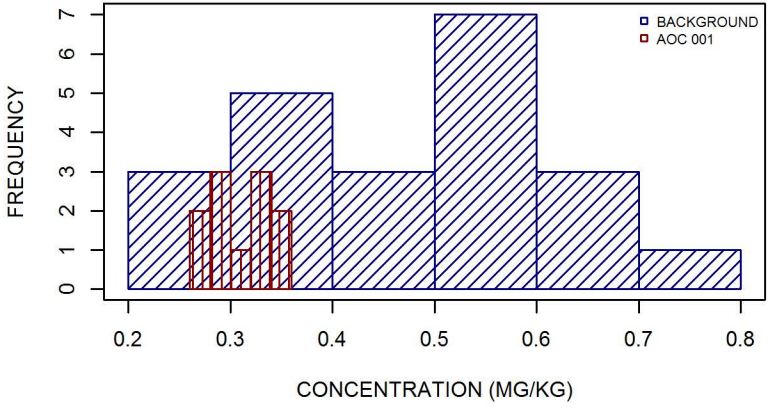
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



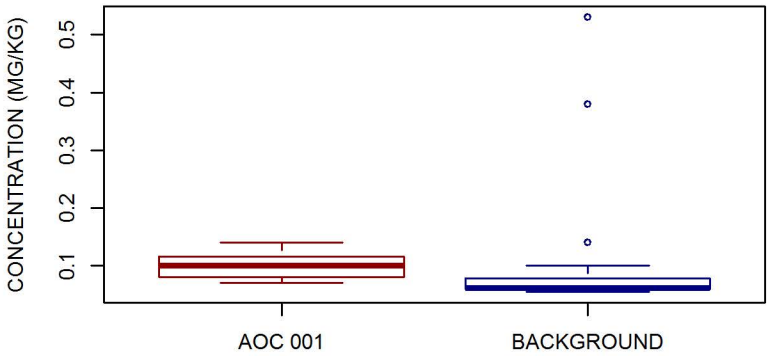
SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	0.28	0.26
25TH PERCENTILE	0.38	0.3
MEDIAN	0.48	0.32
MEAN	0.49	0.32
75TH PERCENTILE	0.59	0.34
MAXIMUM	0.79	0.36

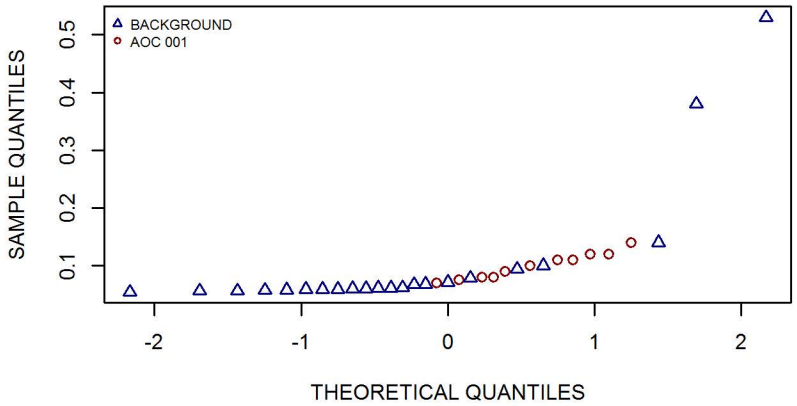
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

CADMIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 5 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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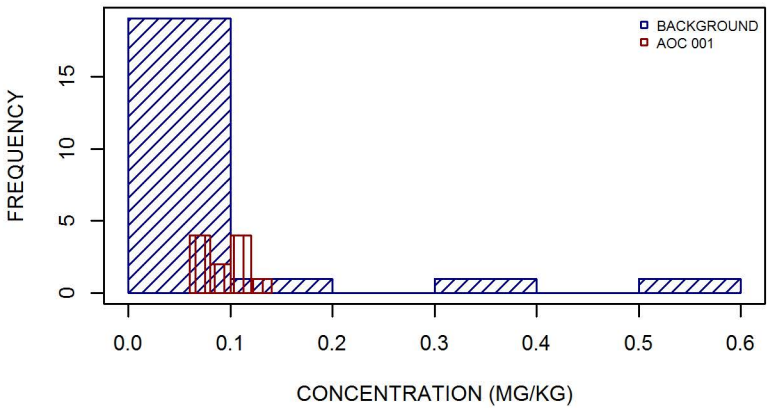


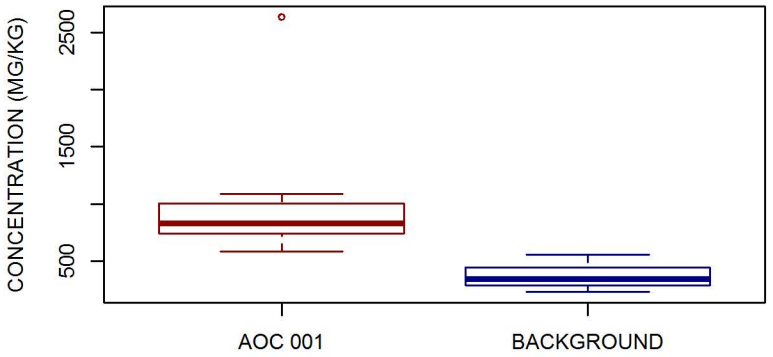
SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	0.054	0.07
25TH PERCENTILE	0.059	0.08
MEDIAN	0.061	0.1
MEAN	0.1	0.1
75TH PERCENTILE	0.076	0.12
MAXIMUM	0.53	0.14

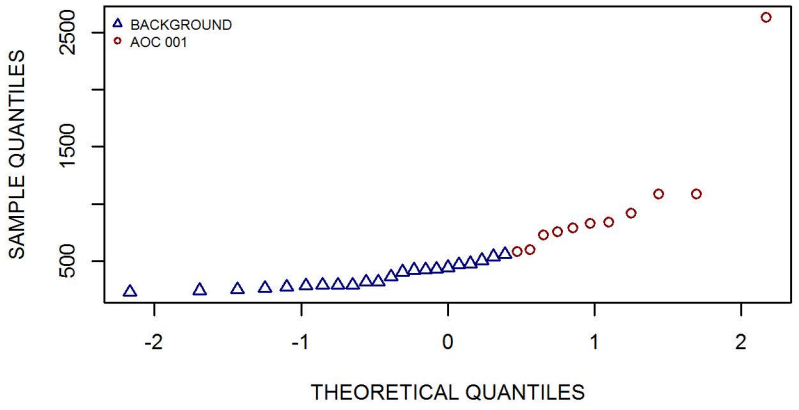
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

CALCIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 6 OF 19

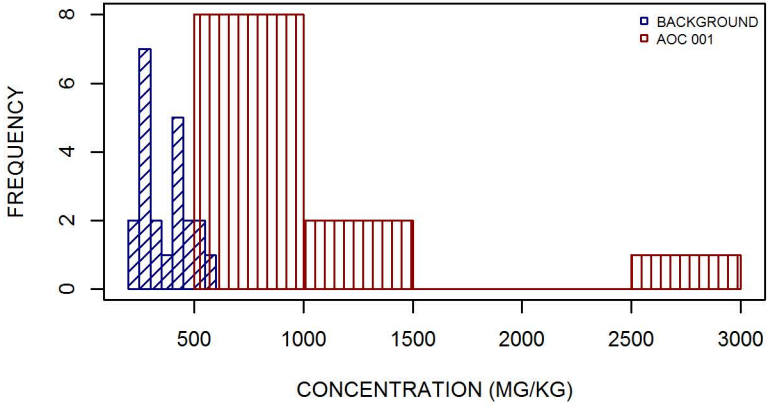
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	230	580
25TH PERCENTILE	290	740
MEDIAN	340	830
MEAN	370	990
75TH PERCENTILE	440	1000
MAXIMUM	560	2600

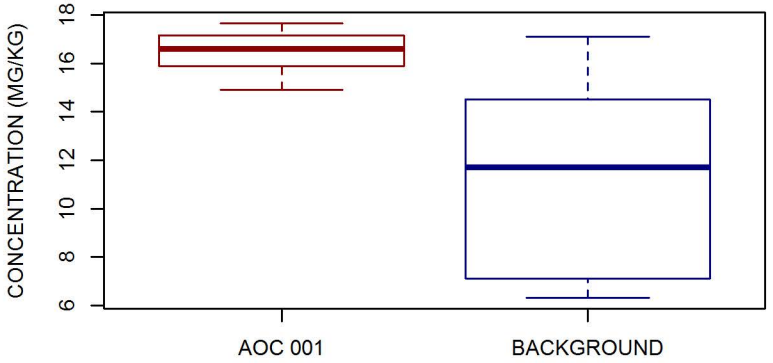
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

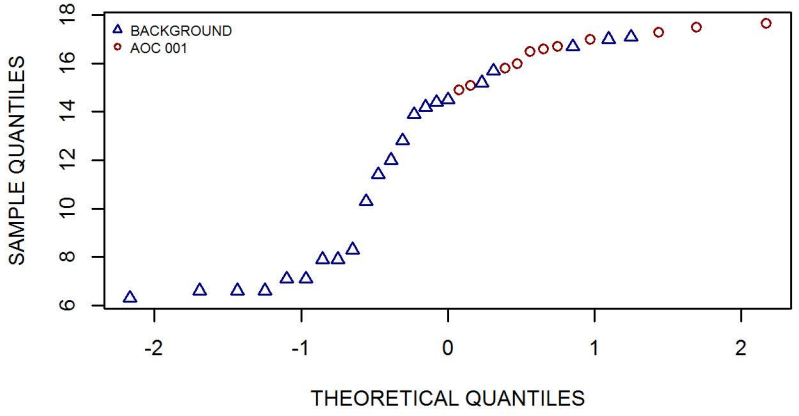
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

CHROMIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 7 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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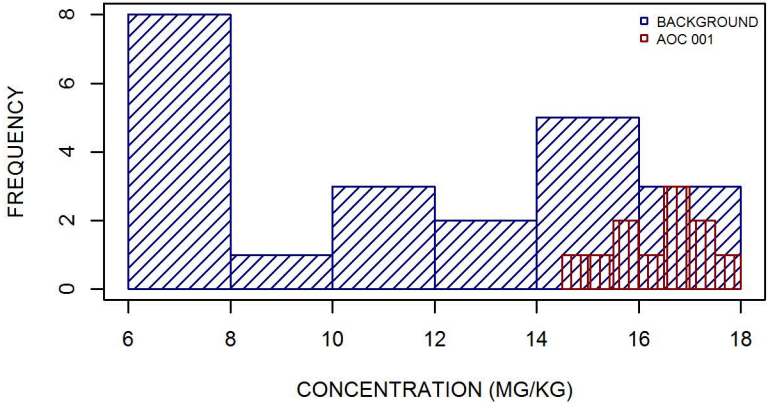


SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	6.3	15
25TH PERCENTILE	7.3	16
MEDIAN	12	17
MEAN	11	16
75TH PERCENTILE	14	17
MAXIMUM	17	18

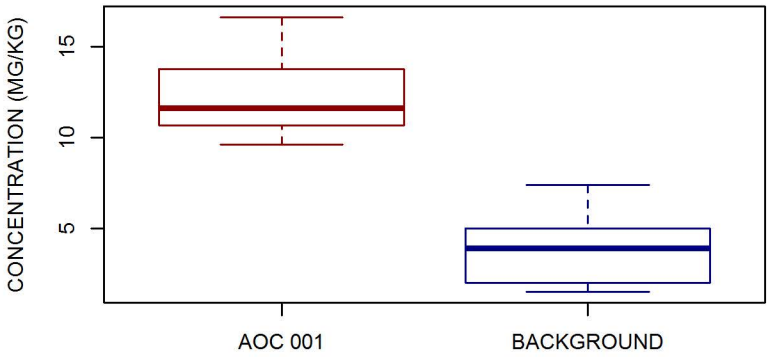
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

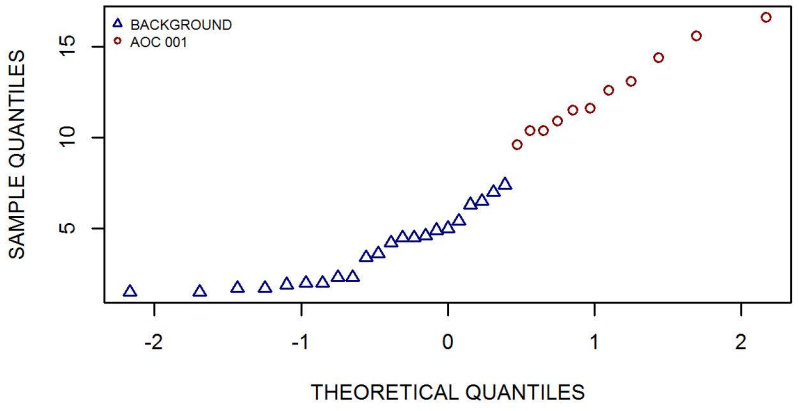
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

COBALT SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 8 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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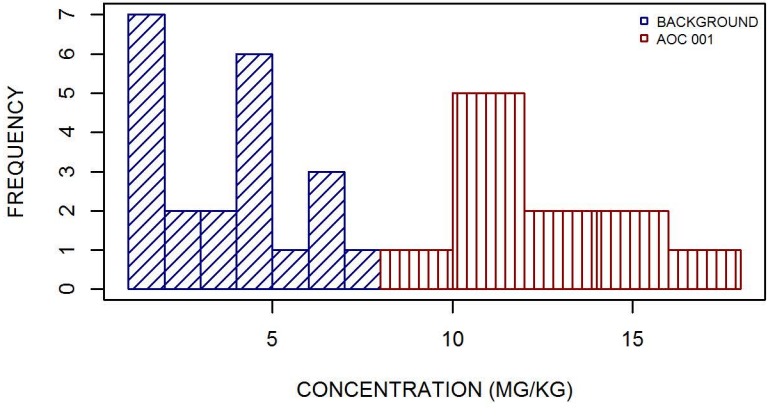


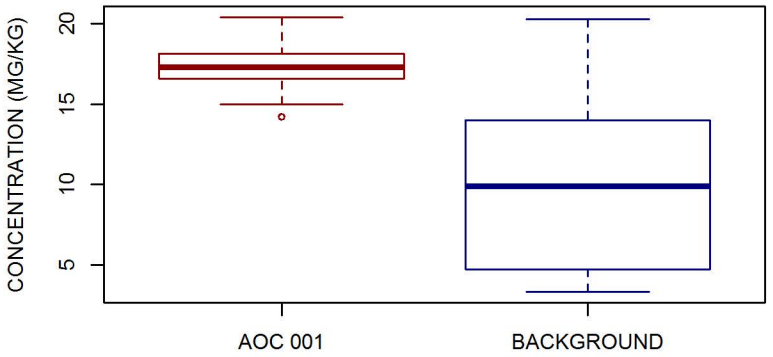
SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	1.5	9.6
25TH PERCENTILE	2	11
MEDIAN	3.9	12
MEAN	3.8	12
75TH PERCENTILE	5	14
MAXIMUM	7.4	17

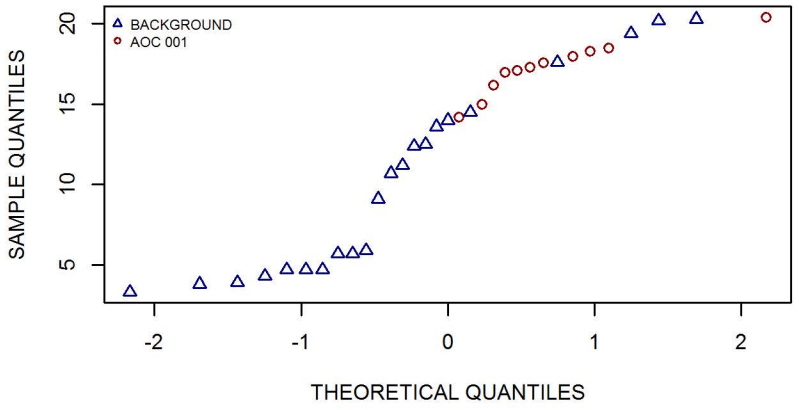
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

COPPER SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 9 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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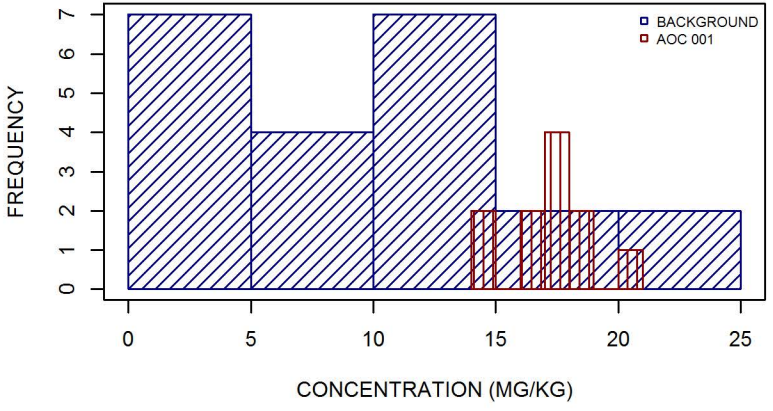


SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	3.3	14
25TH PERCENTILE	4.7	17
MEDIAN	9.9	17
MEAN	10	17
75TH PERCENTILE	14	18
MAXIMUM	20	20

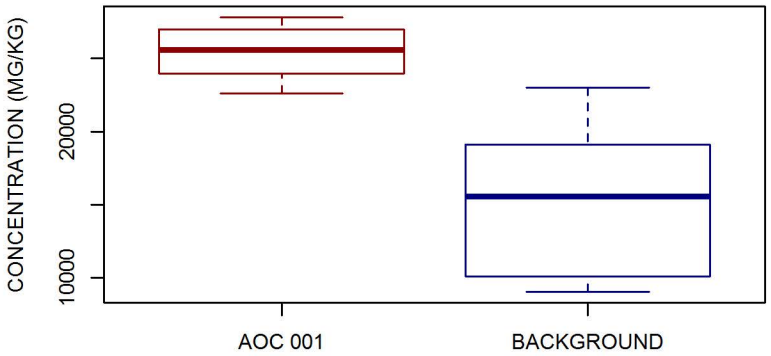
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

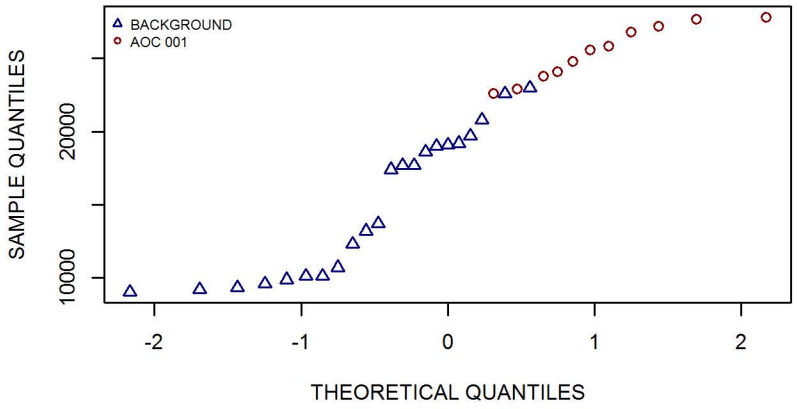
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

IRON SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 10 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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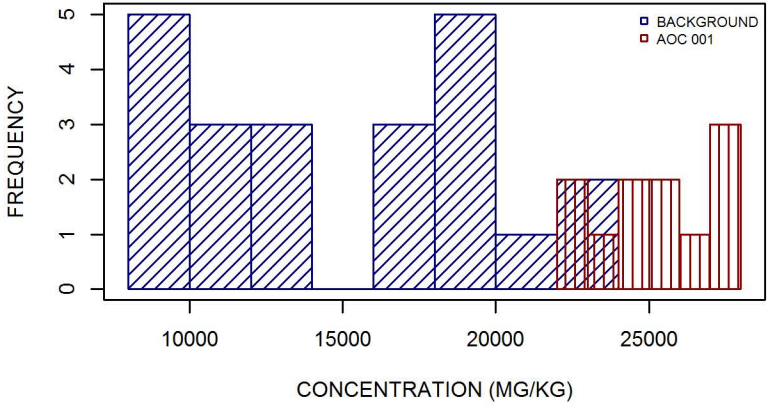


SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	9000	23000
25TH PERCENTILE	10000	24000
MEDIAN	16000	26000
MEAN	15000	25000
75TH PERCENTILE	19000	27000
MAXIMUM	23000	28000

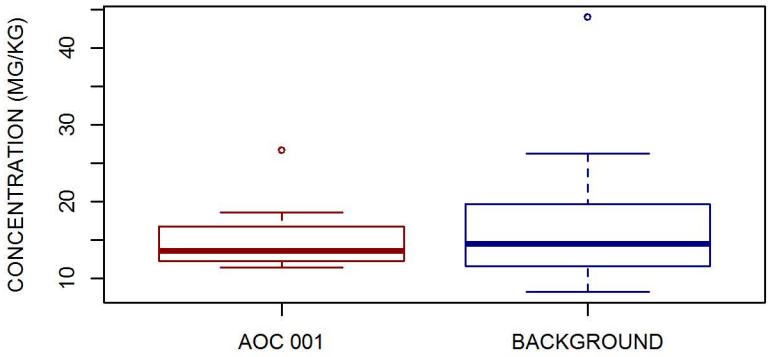
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

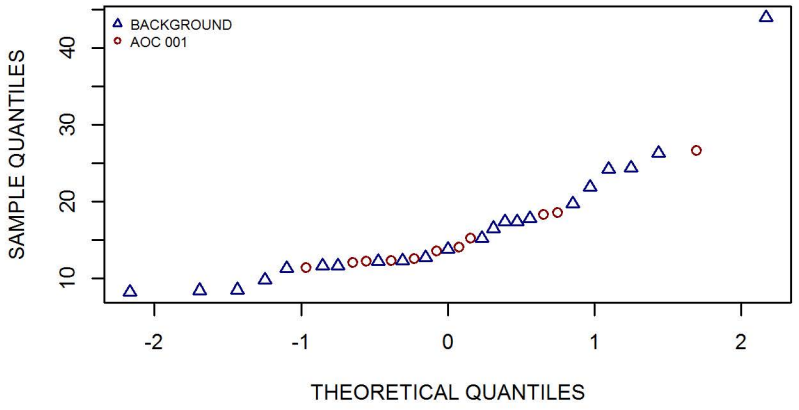
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

LEAD SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 11 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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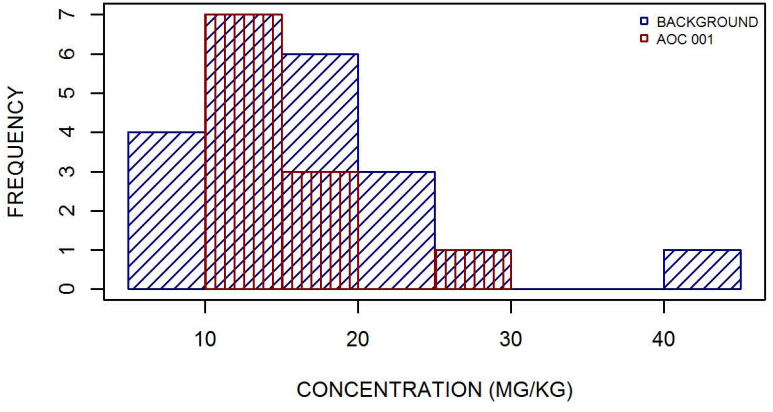


SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	8.2	11
25TH PERCENTILE	12	12
MEDIAN	14	14
MEAN	17	15
75TH PERCENTILE	19	17
MAXIMUM	44	27

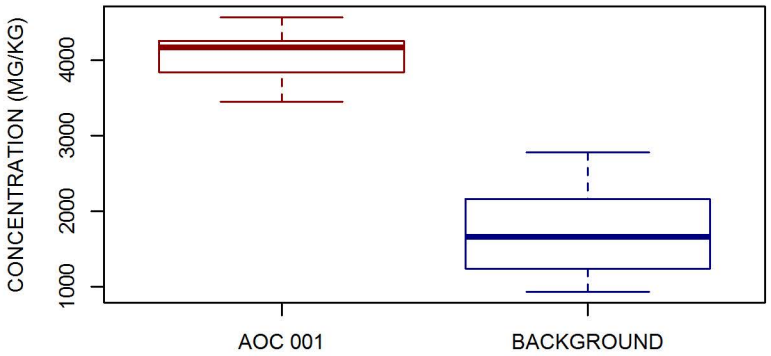
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

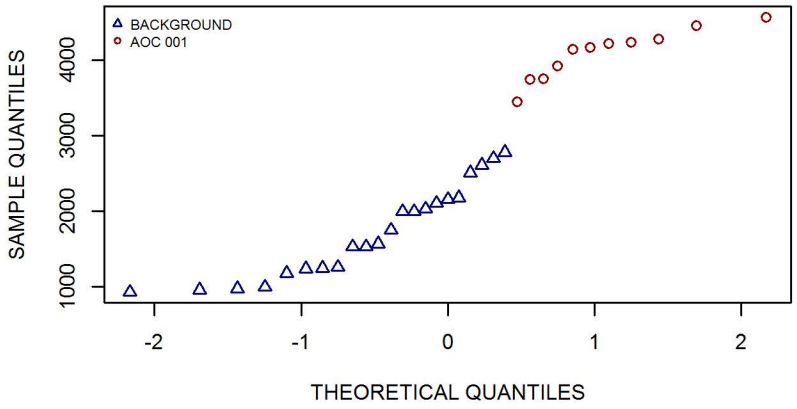
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

MAGNESIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 12 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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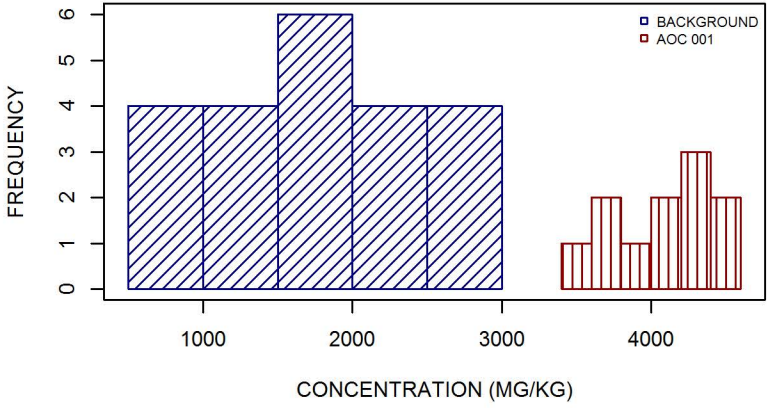


SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	930	3400
25TH PERCENTILE	1200	3800
MEDIAN	1700	4200
MEAN	1700	4100
75TH PERCENTILE	2100	4300
MAXIMUM	2800	4600

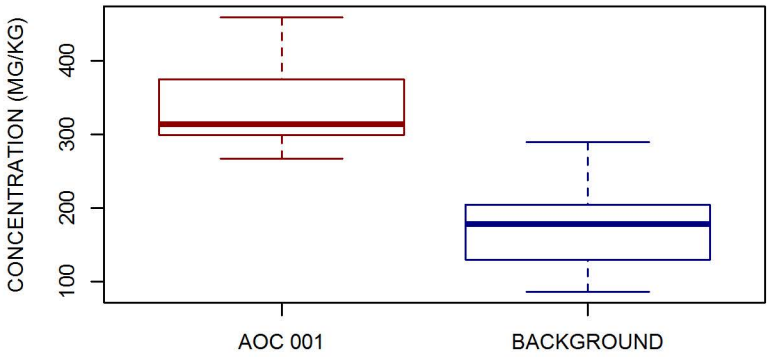
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

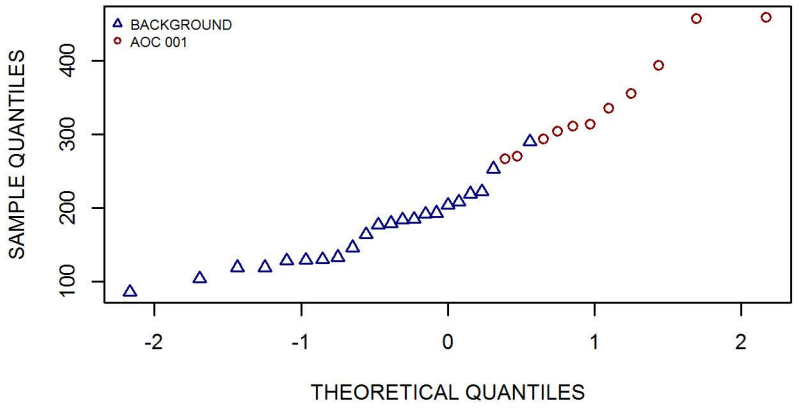
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

MANGANESE SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 13 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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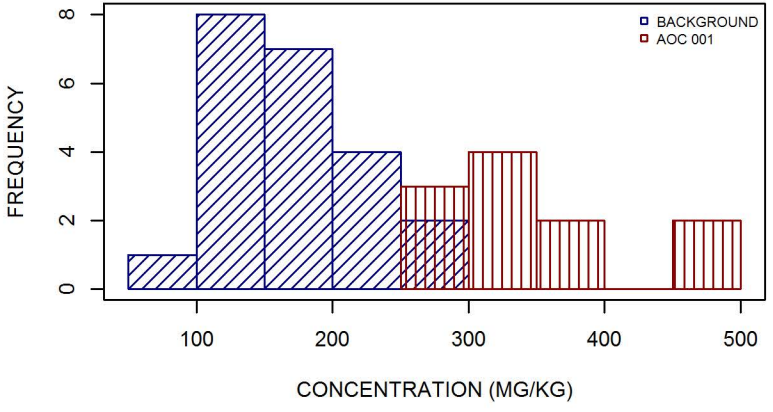


SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	86	270
25TH PERCENTILE	130	300
MEDIAN	180	310
MEAN	170	340
75TH PERCENTILE	200	380
MAXIMUM	290	460

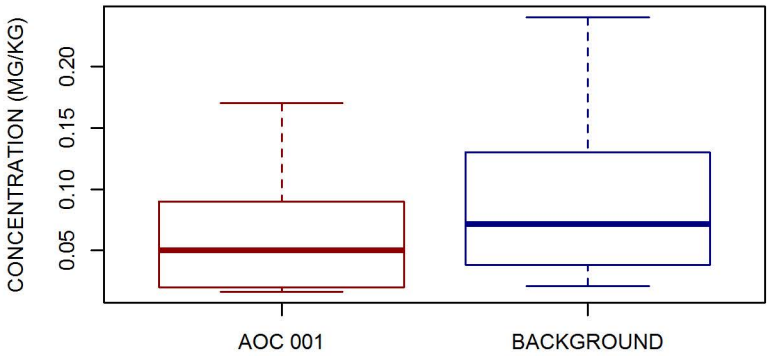
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

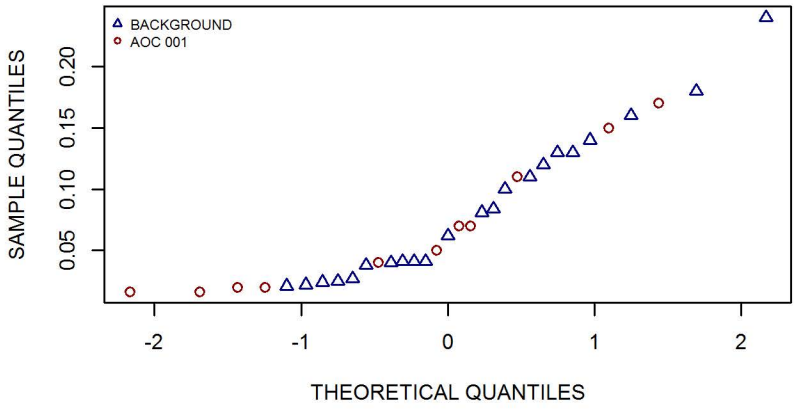
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

MERCURY SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 14 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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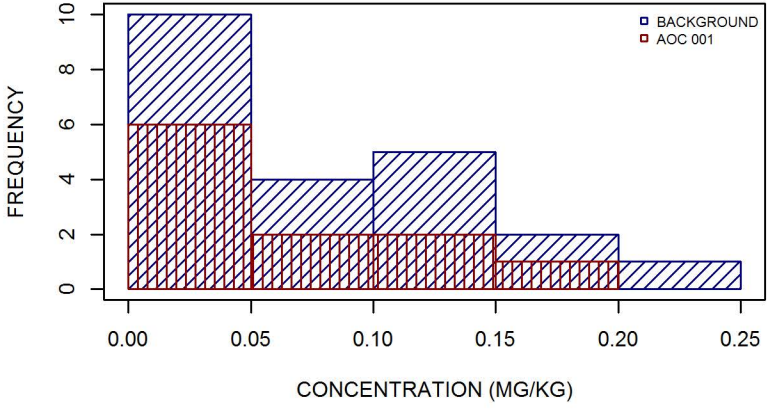


SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	0.021	0.016
25TH PERCENTILE	0.038	0.02
MEDIAN	0.072	0.05
MEAN	0.084	0.067
75TH PERCENTILE	0.13	0.09
MAXIMUM	0.24	0.17

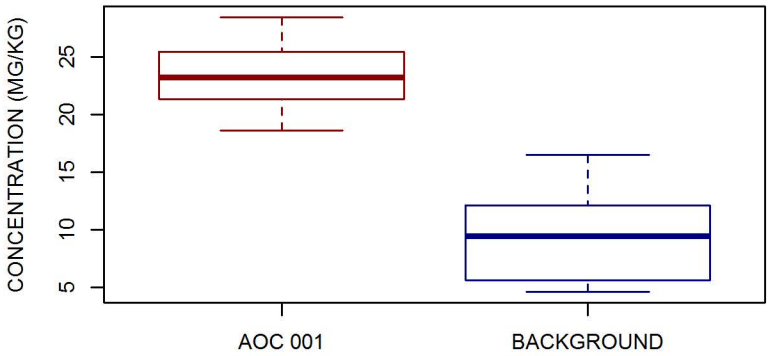
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

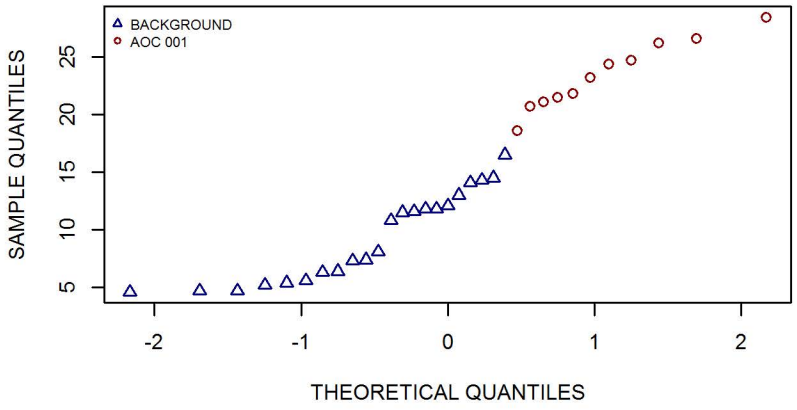
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

NICKEL SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 15 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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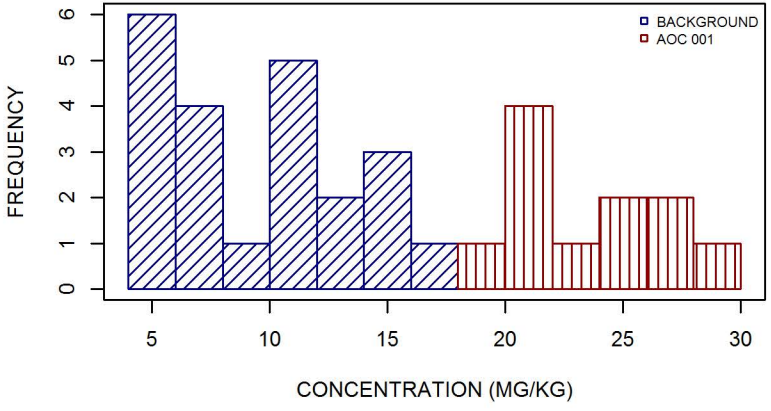


SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	4.6	19
25TH PERCENTILE	5.8	21
MEDIAN	9.4	23
MEAN	9.4	23
75TH PERCENTILE	12	25
MAXIMUM	16	28

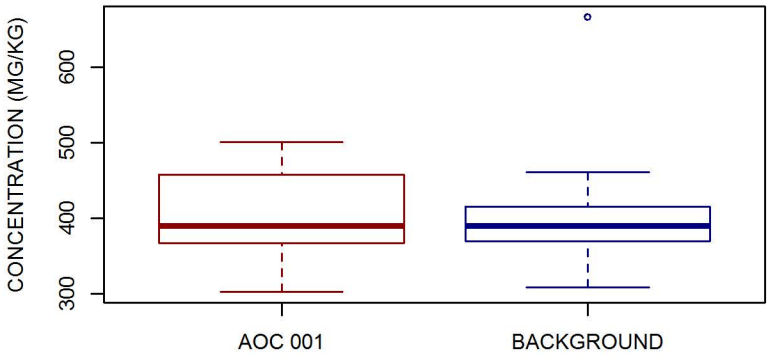
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

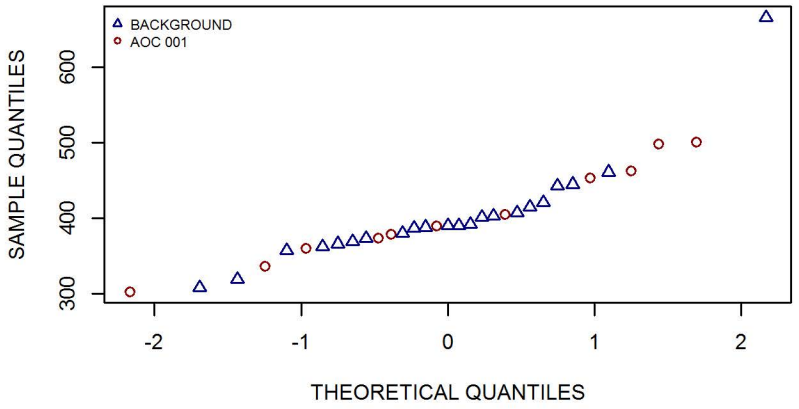
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

POTASSIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 16 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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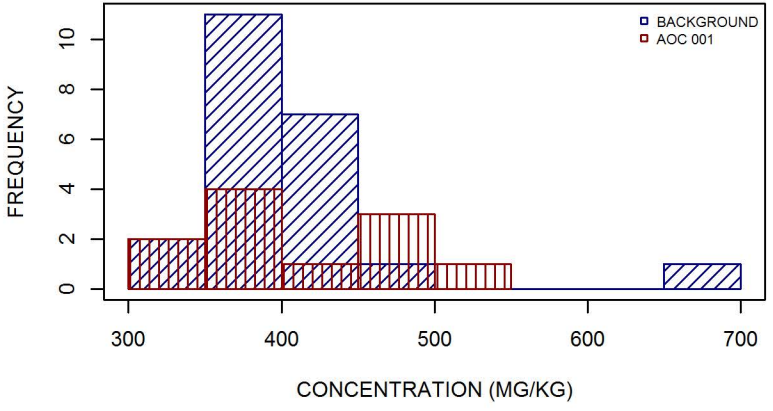


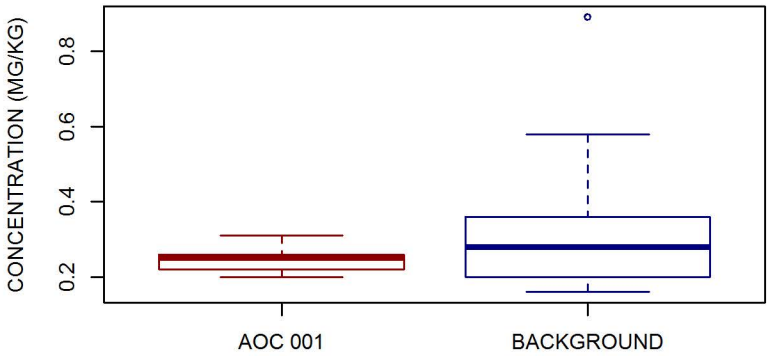
SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	310	300
25TH PERCENTILE	370	370
MEDIAN	390	390
MEAN	400	410
75TH PERCENTILE	410	460
MAXIMUM	670	500

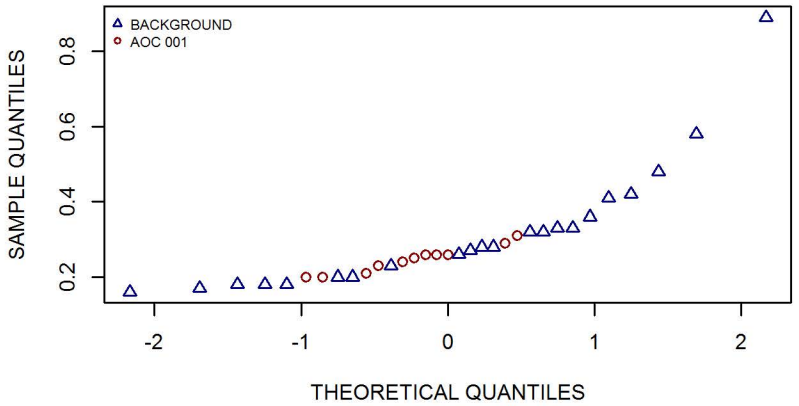
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

SELENIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 17 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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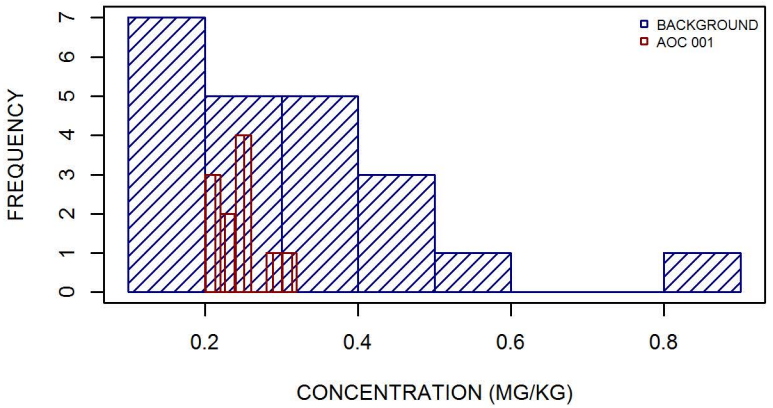


SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	0.16	0.2
25TH PERCENTILE	0.2	0.22
MEDIAN	0.28	0.25
MEAN	0.32	0.25
75TH PERCENTILE	0.35	0.26
MAXIMUM	0.89	0.31

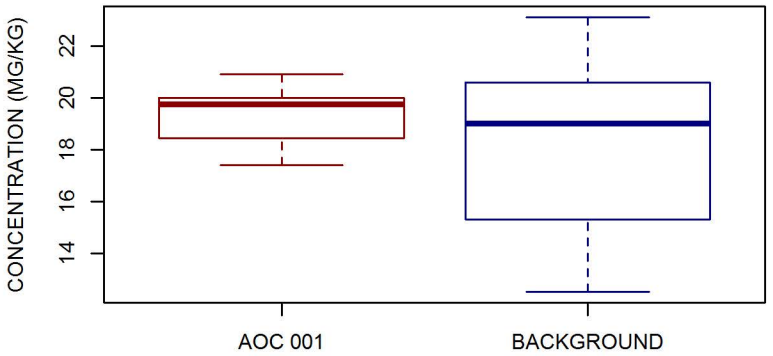
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

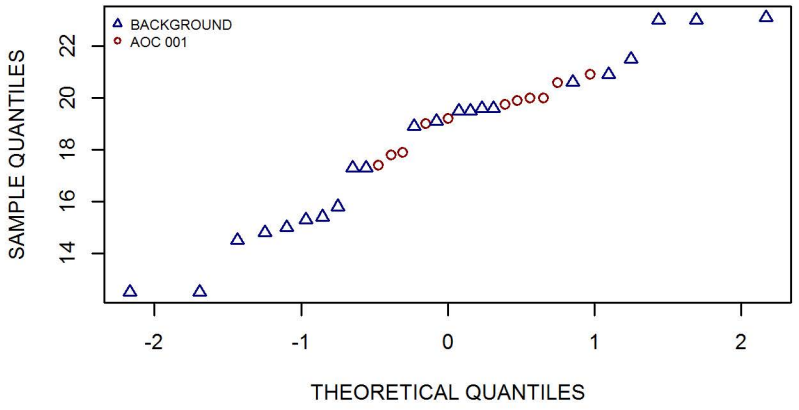
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

VANADIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 18 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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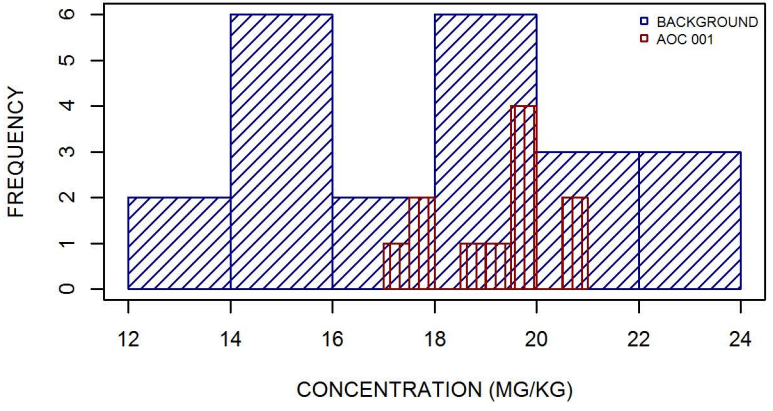


SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	12	17
25TH PERCENTILE	15	18
MEDIAN	19	20
MEAN	18	19
75TH PERCENTILE	20	20
MAXIMUM	23	21

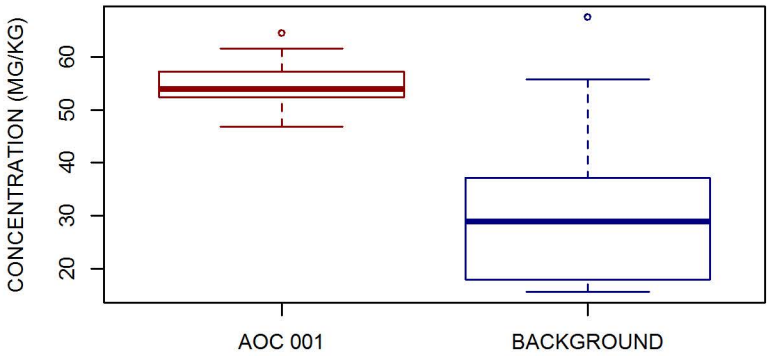
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

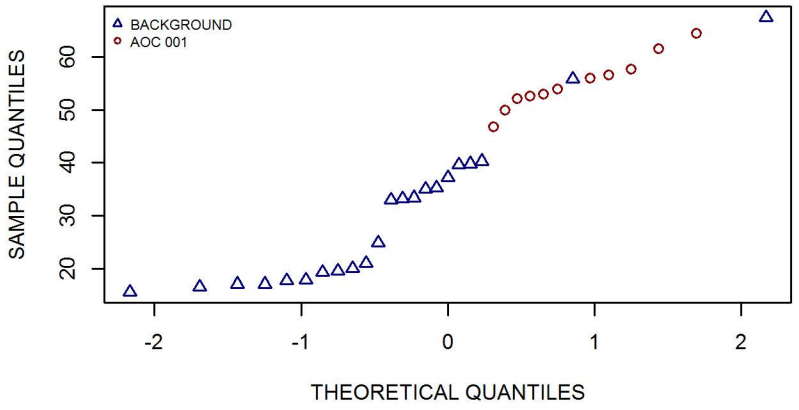
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

ZINC SURFACE SOIL GRAPHICAL DISPLAYS
AOC 001 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 19 OF 19

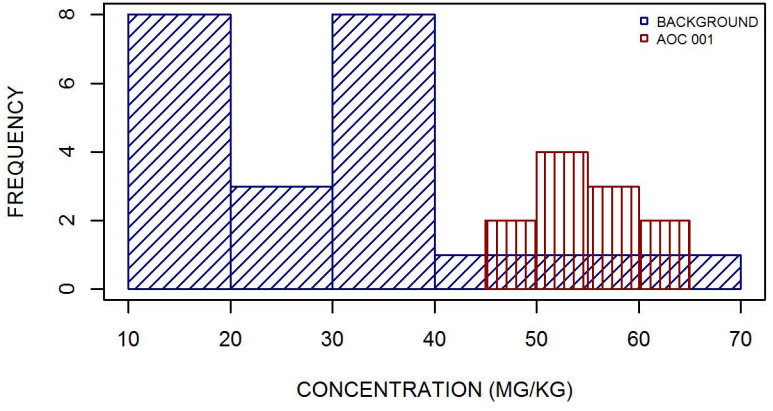
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



SUMMARY STATISTICS

	BACKGROUND	AOC 001
MINIMUM	16	47
25TH PERCENTILE	18	52
MEDIAN	29	54
MEAN	30	55
75TH PERCENTILE	37	57
MAXIMUM	67	64

UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

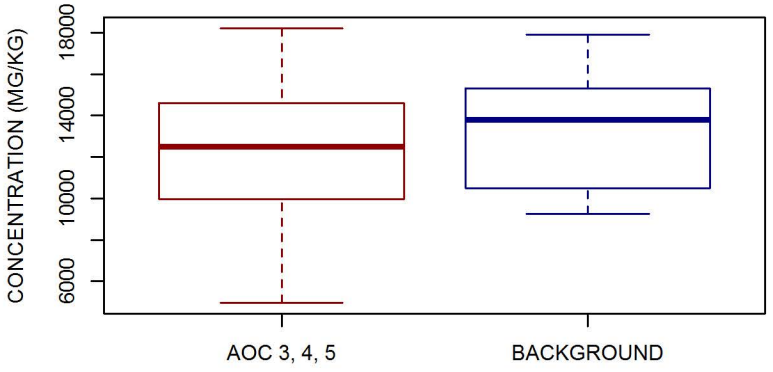
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

GRAPHICAL DISPLAYS FOR

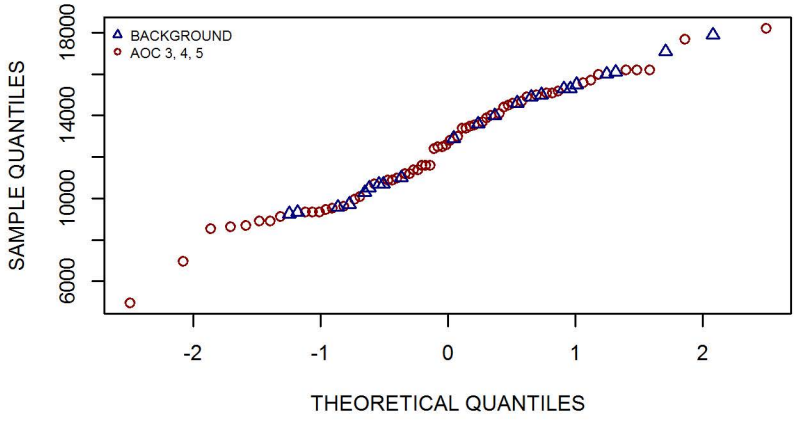
SURFACE SOIL FROM THE COMBINED AOCs 003, 004, AND 005 AT TANK FARM 2

ALUMINUM SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 1 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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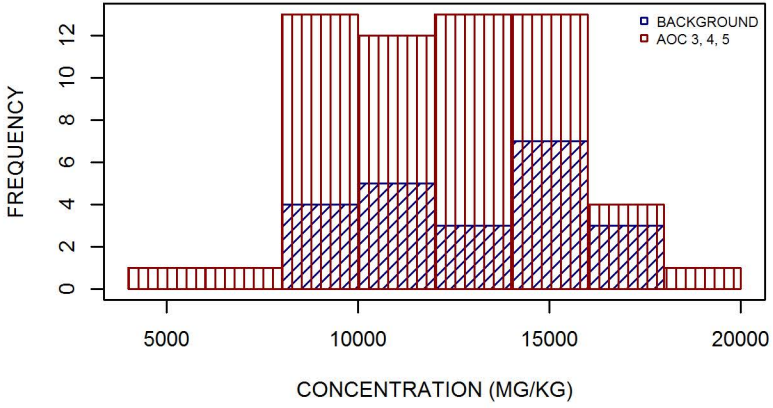


SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	9300	5000
25TH PERCENTILE	11000	10000
MEDIAN	14000	12000
MEAN	13000	12000
75TH PERCENTILE	15000	15000
MAXIMUM	18000	18000

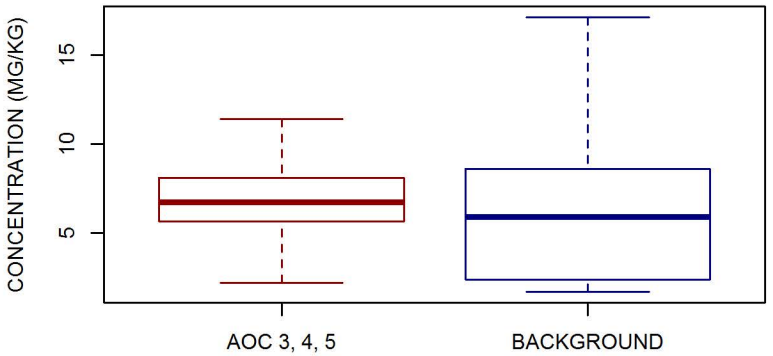
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

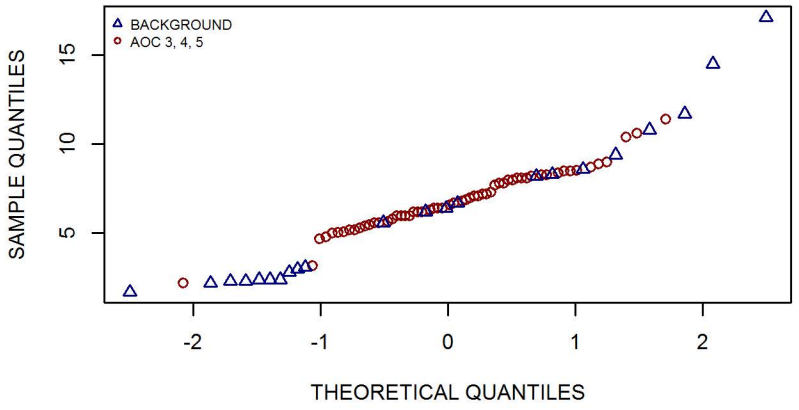
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

ARSENIC SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 2 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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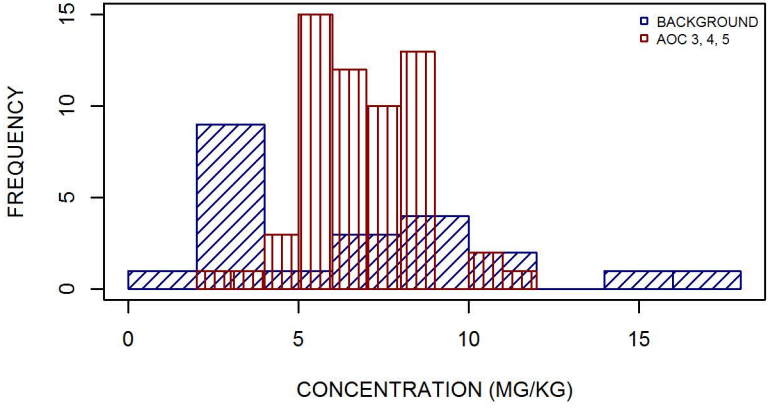


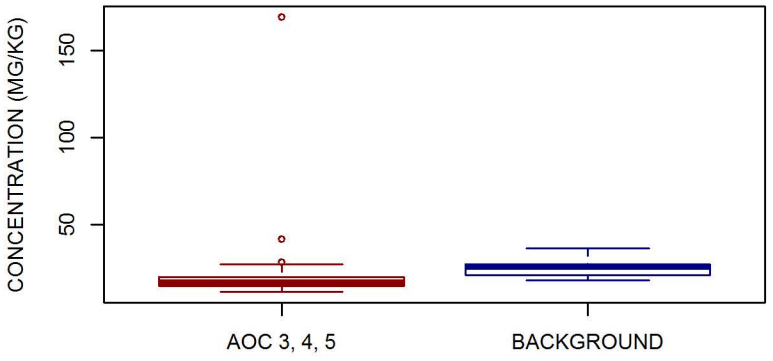
SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	1.7	2.2
25TH PERCENTILE	2.4	5.7
MEDIAN	5.9	6.8
MEAN	6.3	6.9
75TH PERCENTILE	8.5	8.1
MAXIMUM	17	11

UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

BARIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 3 OF 19

BOXPLOTS



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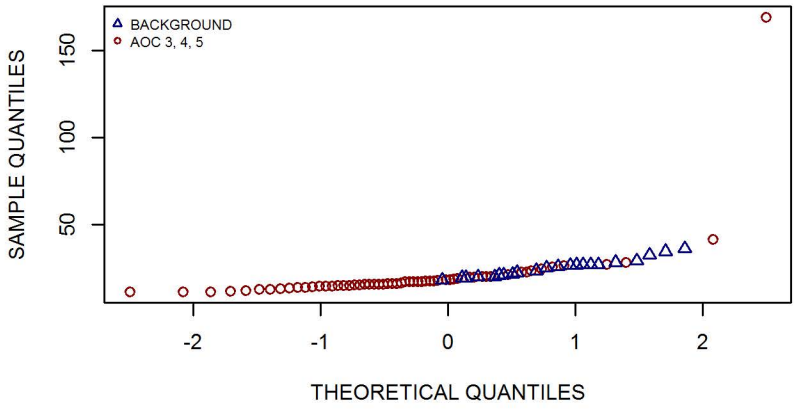

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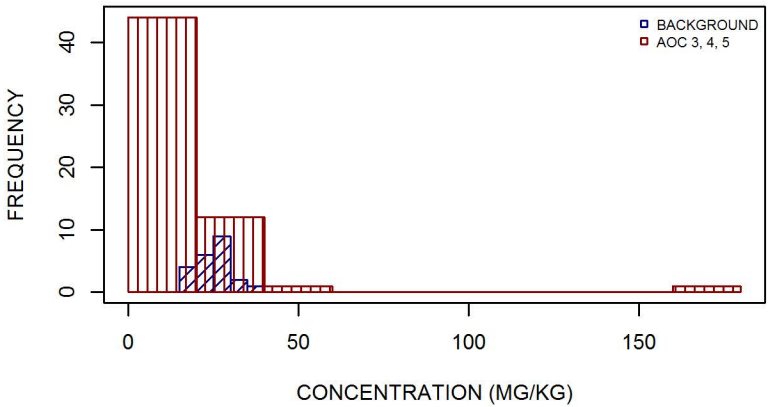


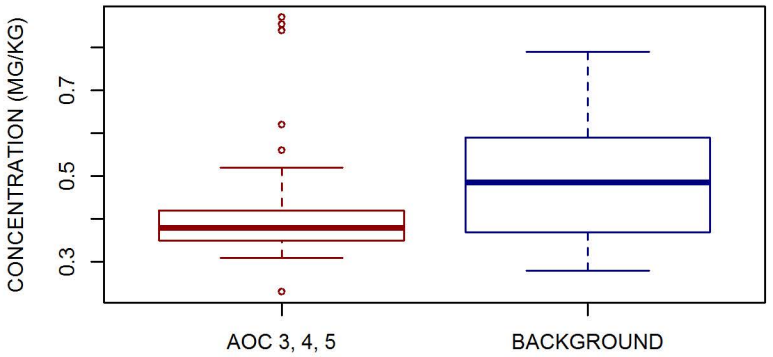
SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	18	11
25TH PERCENTILE	21	15
MEDIAN	26	17
MEAN	25	20
75TH PERCENTILE	27	20
MAXIMUM	36	170

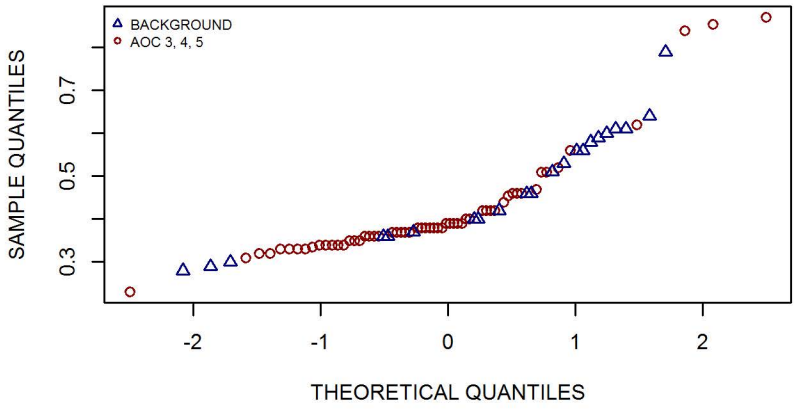
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

BERYLLIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 4 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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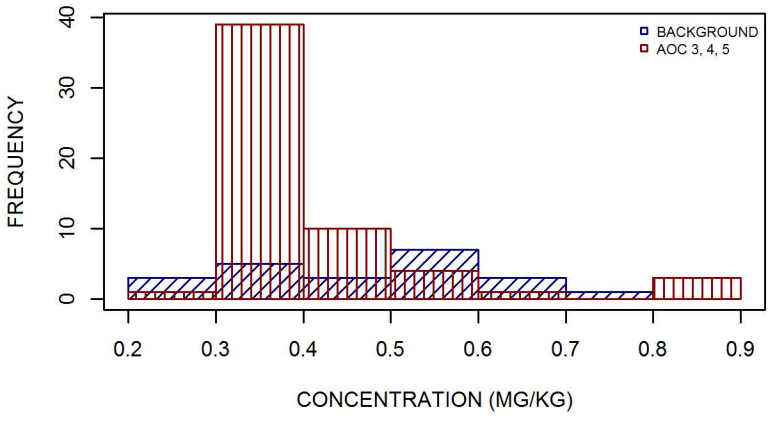


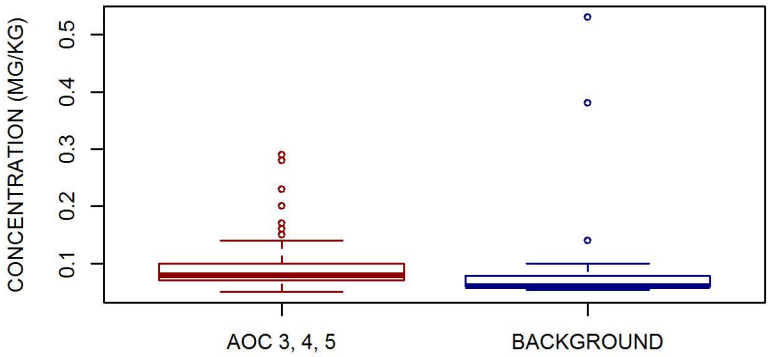
SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	0.28	0.23
25TH PERCENTILE	0.38	0.35
MEDIAN	0.48	0.38
MEAN	0.49	0.41
75TH PERCENTILE	0.59	0.42
MAXIMUM	0.79	0.87

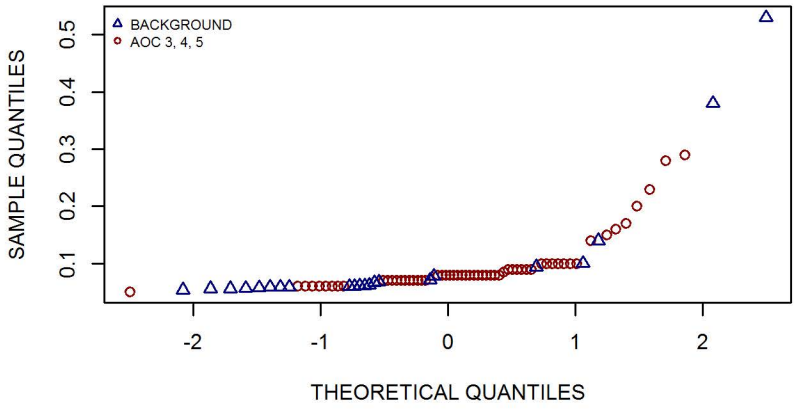
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

CADMIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 5 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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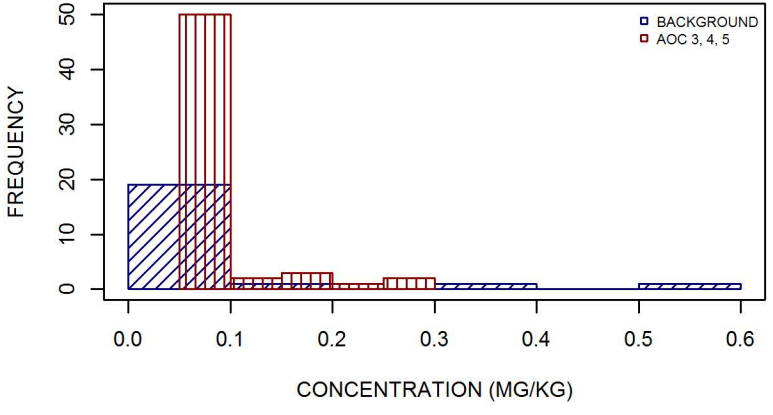


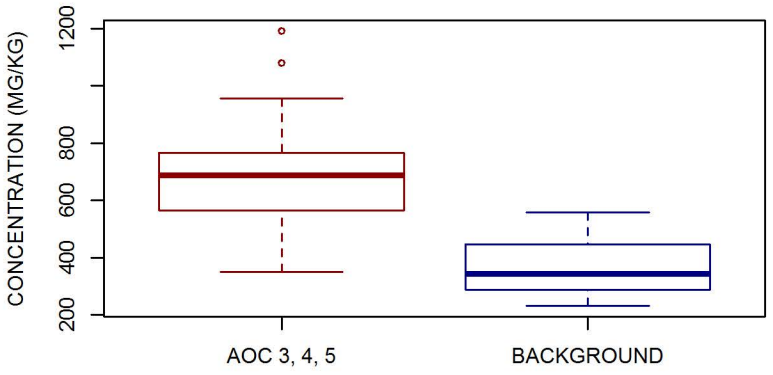
SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	0.054	0.05
25TH PERCENTILE	0.059	0.07
MEDIAN	0.061	0.08
MEAN	0.1	0.095
75TH PERCENTILE	0.076	0.098
MAXIMUM	0.53	0.29

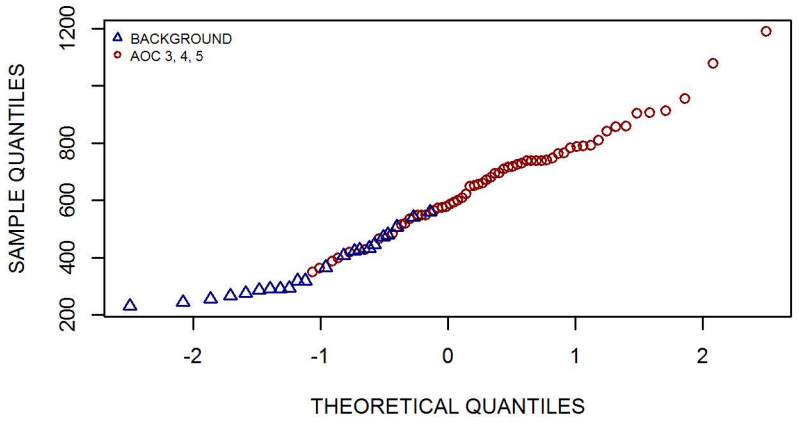
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

CALCIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 6 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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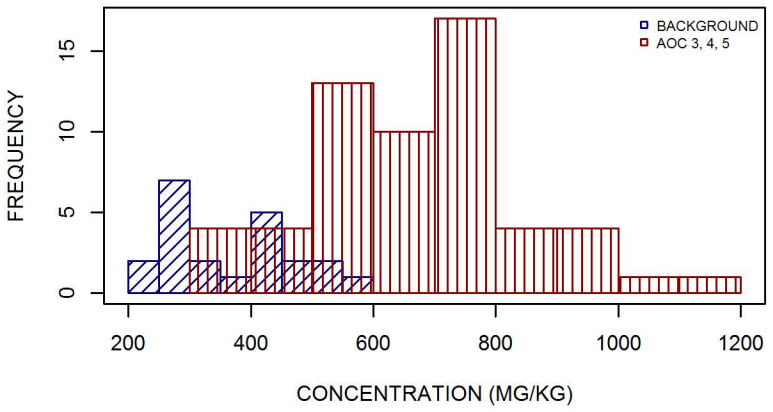


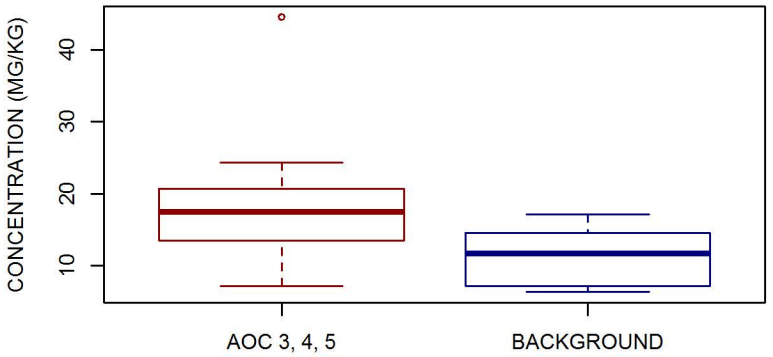
SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	230	350
25TH PERCENTILE	290	570
MEDIAN	340	690
MEAN	370	680
75TH PERCENTILE	440	770
MAXIMUM	560	1200

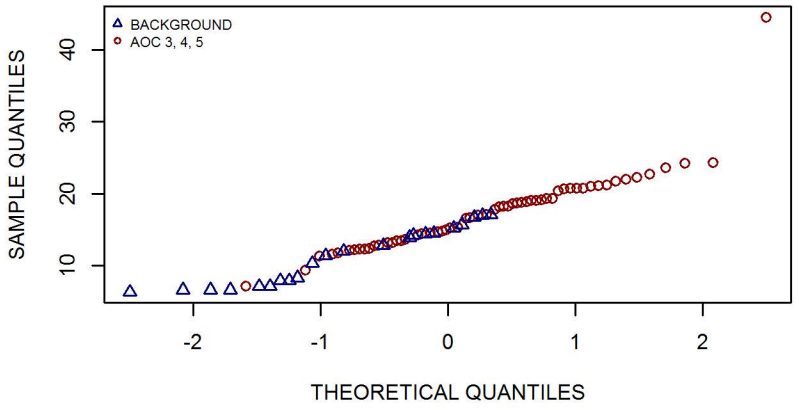
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

CHROMIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 7 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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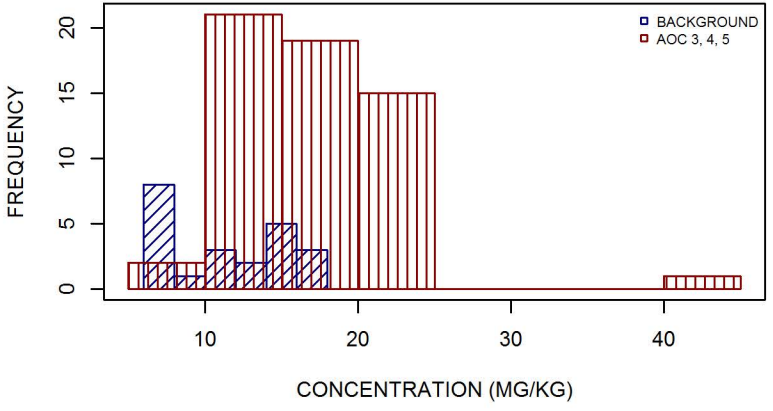


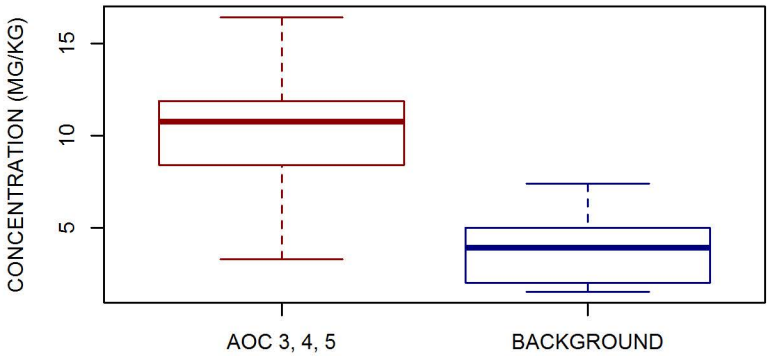
SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	6.3	7.1
25TH PERCENTILE	7.3	14
MEDIAN	12	17
MEAN	11	17
75TH PERCENTILE	14	21
MAXIMUM	17	44

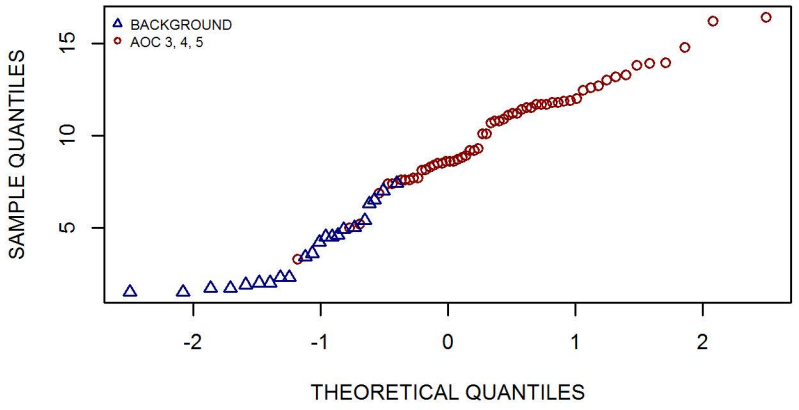
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

COBALT SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 8 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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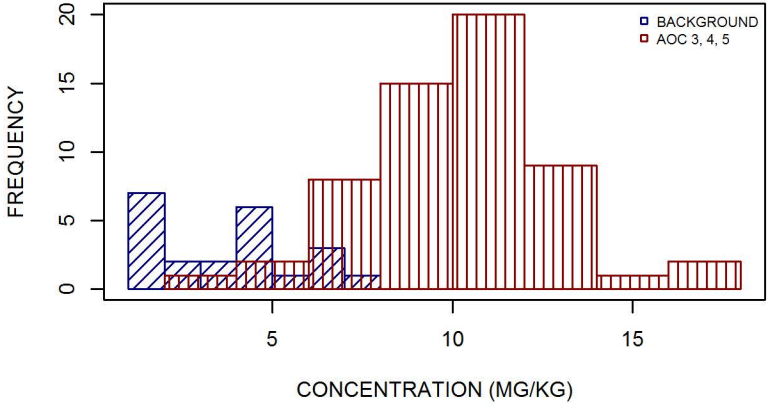


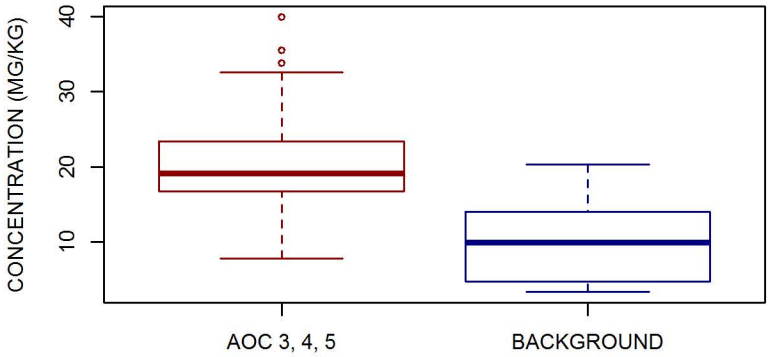
SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	1.5	3.3
25TH PERCENTILE	2	8.4
MEDIAN	3.9	11
MEAN	3.8	10
75TH PERCENTILE	5	12
MAXIMUM	7.4	16

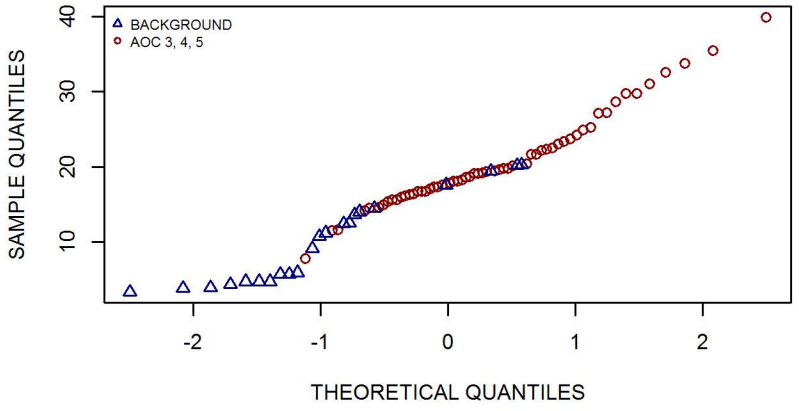
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

COPPER SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 9 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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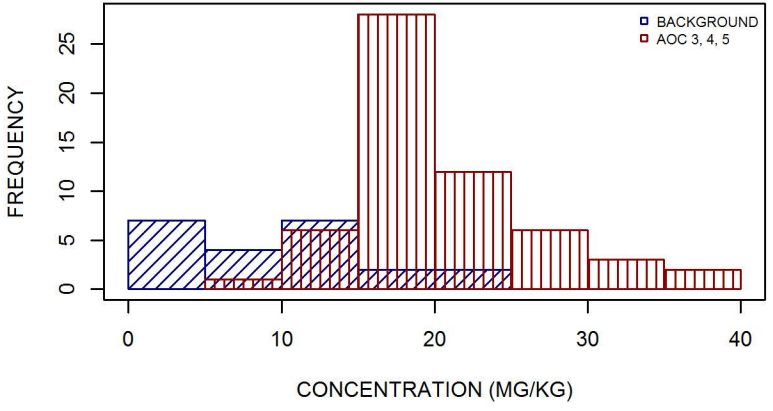


SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	3.3	7.8
25TH PERCENTILE	4.7	17
MEDIAN	9.9	19
MEAN	10	21
75TH PERCENTILE	14	23
MAXIMUM	20	40

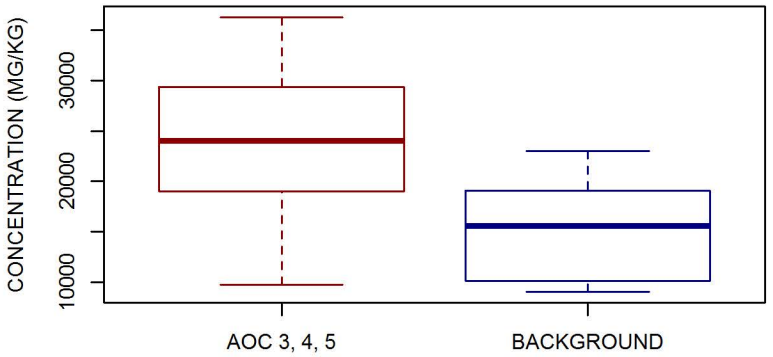
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

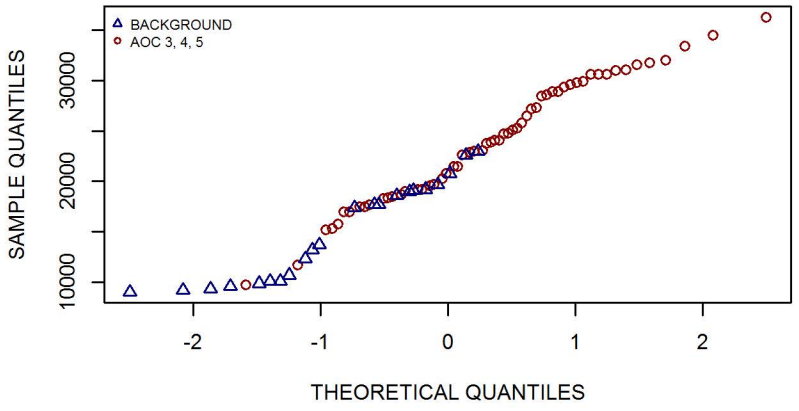
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

IRON SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 10 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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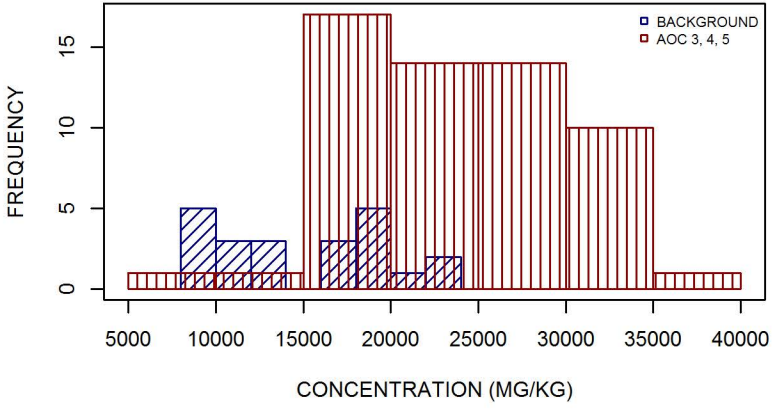


SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	9000	9800
25TH PERCENTILE	10000	19000
MEDIAN	16000	24000
MEAN	15000	24000
75TH PERCENTILE	19000	29000
MAXIMUM	23000	36000

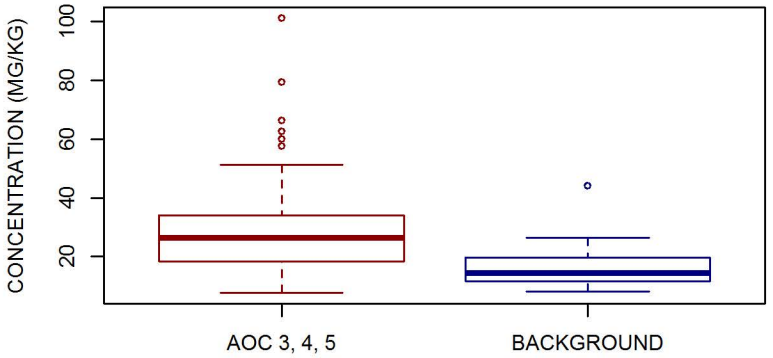
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

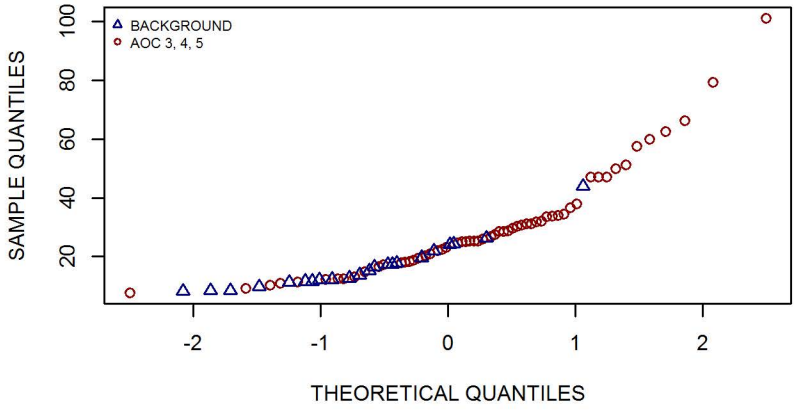
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

LEAD SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 11 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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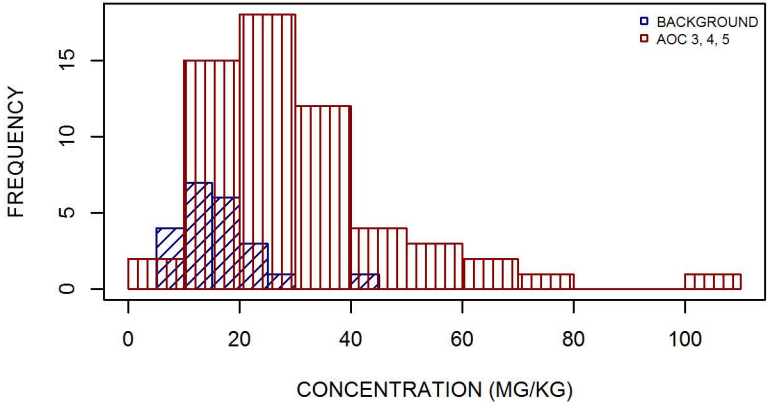


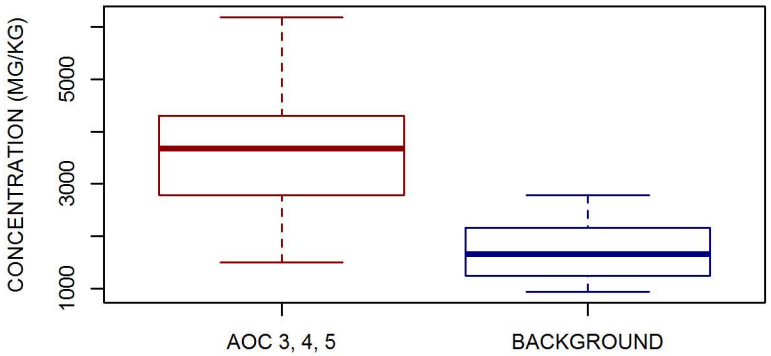
SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	8.2	7.6
25TH PERCENTILE	12	18
MEDIAN	14	26
MEAN	17	30
75TH PERCENTILE	19	34
MAXIMUM	44	100

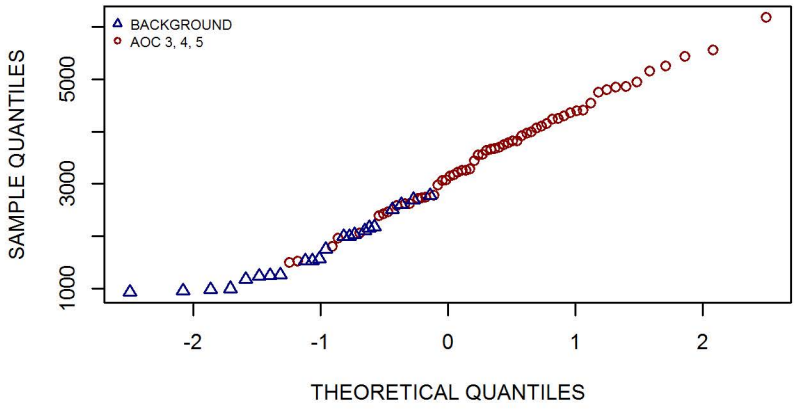
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

MAGNESIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 12 OF 19

BOXPLOTS



NORMAL PROBABILITY PLOT



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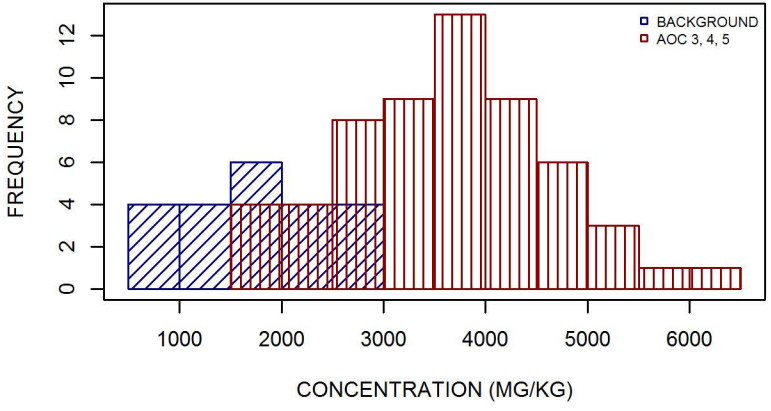


SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	930	1500
25TH PERCENTILE	1200	2800
MEDIAN	1700	3700
MEAN	1700	3600
75TH PERCENTILE	2100	4300
MAXIMUM	2800	6200

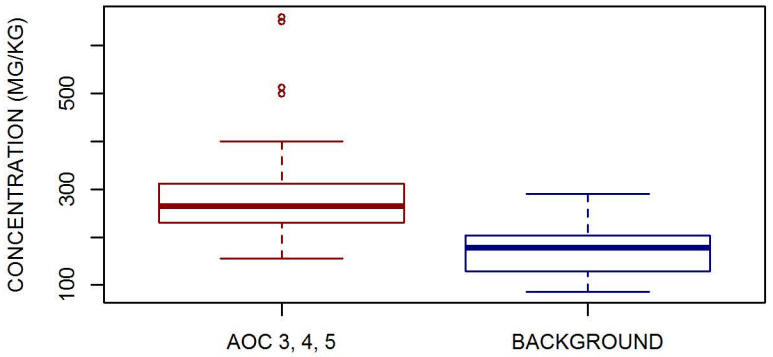
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

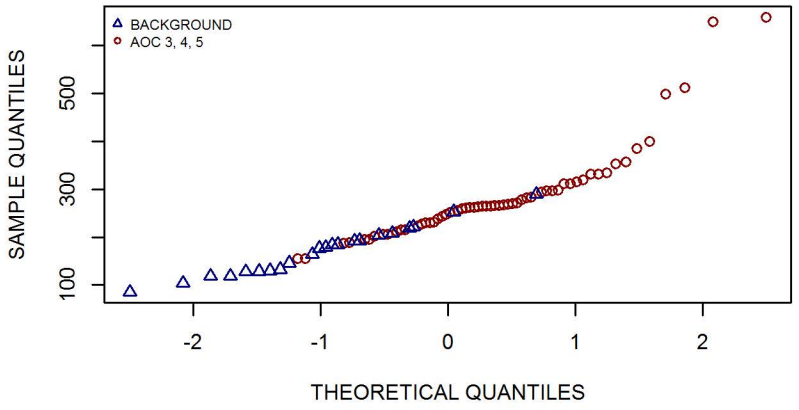
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

MANGANESE SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 13 OF 19

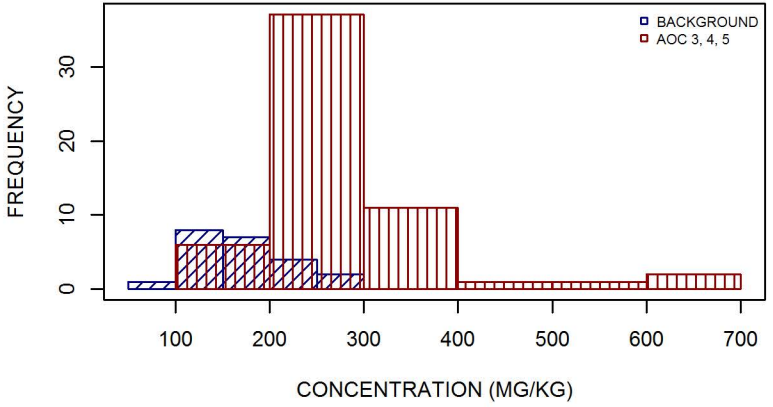
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	86	160
25TH PERCENTILE	130	230
MEDIAN	180	260
MEAN	170	280
75TH PERCENTILE	200	310
MAXIMUM	290	660

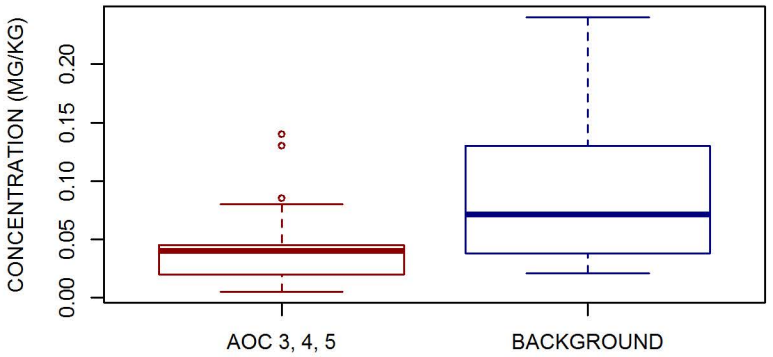
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

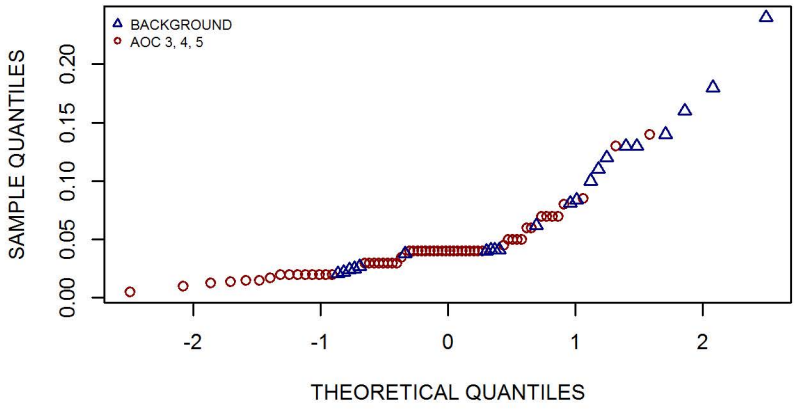
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

MERCURY SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 14 OF 19

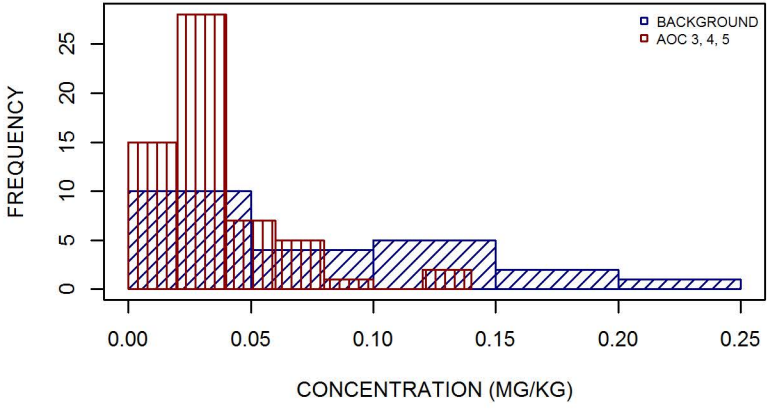
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	0.021	0.005
25TH PERCENTILE	0.038	0.022
MEDIAN	0.072	0.04
MEAN	0.084	0.041
75TH PERCENTILE	0.13	0.044
MAXIMUM	0.24	0.14

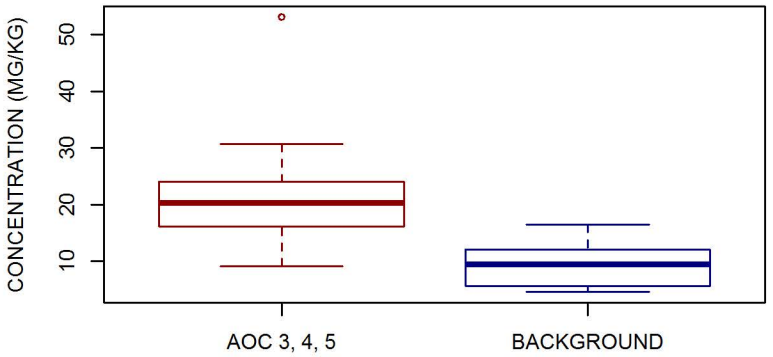
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

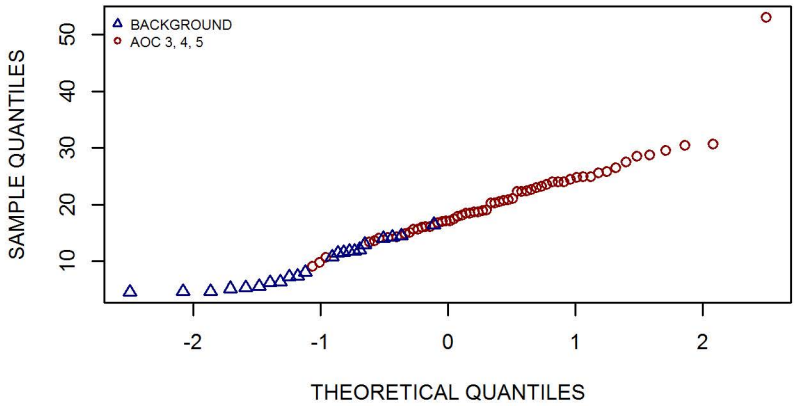
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

NICKEL SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 15 OF 19

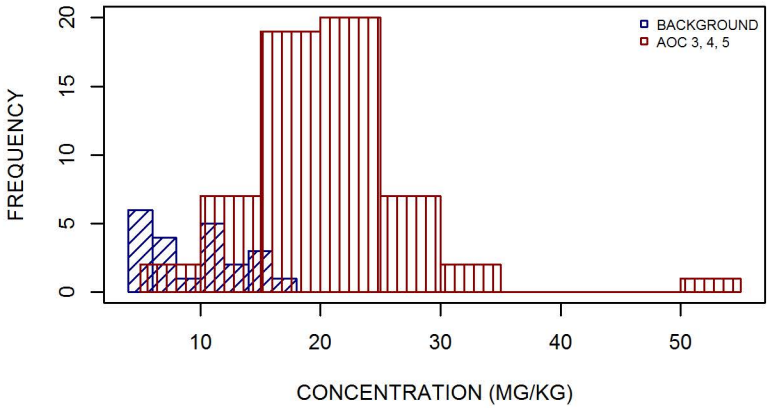
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



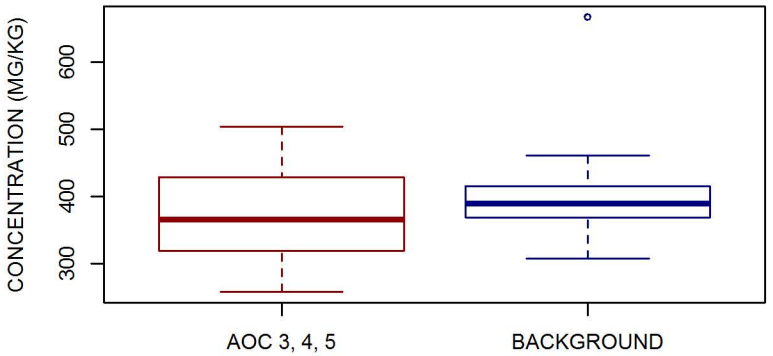
SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	4.6	9.2
25TH PERCENTILE	5.8	16
MEDIAN	9.4	20
MEAN	9.4	21
75TH PERCENTILE	12	24
MAXIMUM	16	53

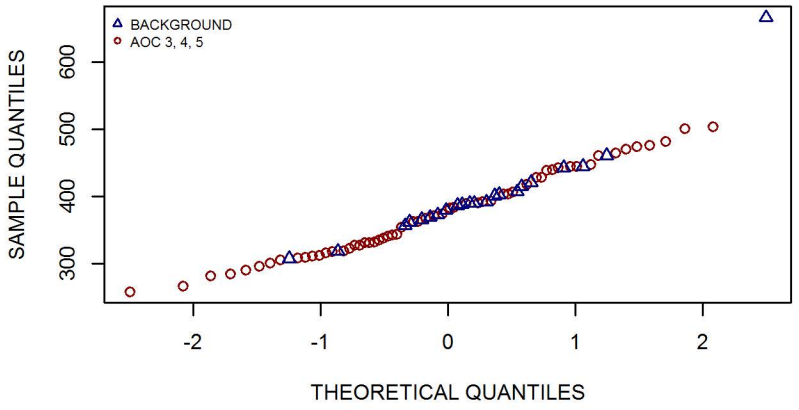
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

POTASSIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 16 OF 19

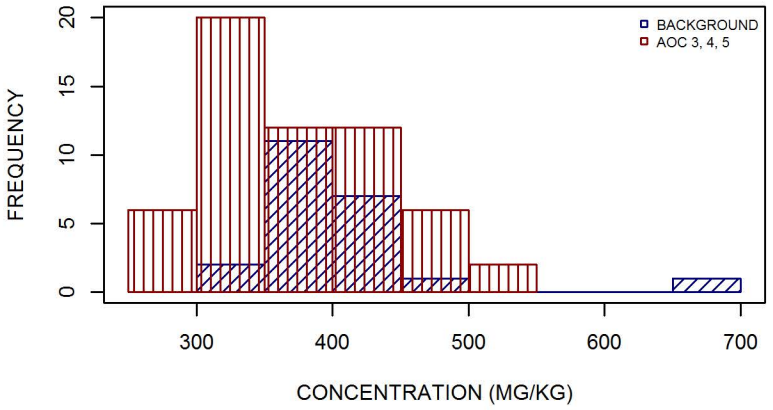
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



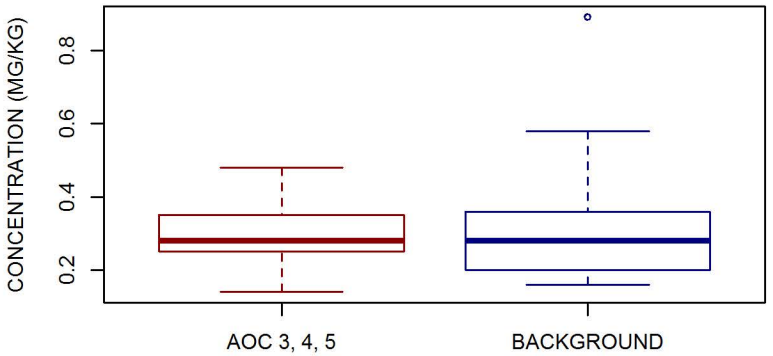
SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	310	260
25TH PERCENTILE	370	320
MEDIAN	390	370
MEAN	400	370
75TH PERCENTILE	410	430
MAXIMUM	670	500

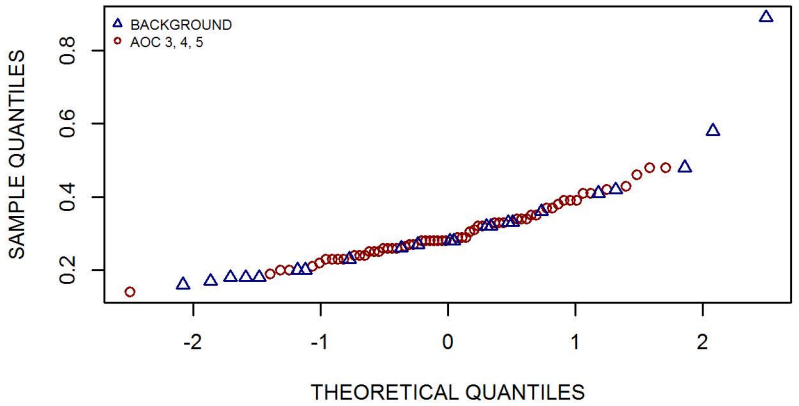
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

SELENIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 17 OF 19

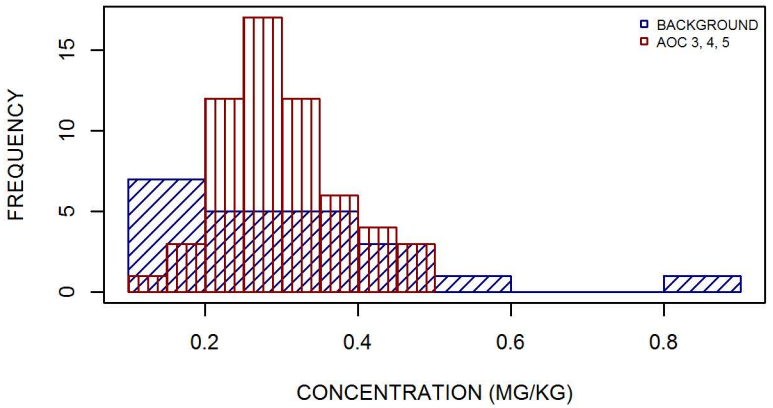
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



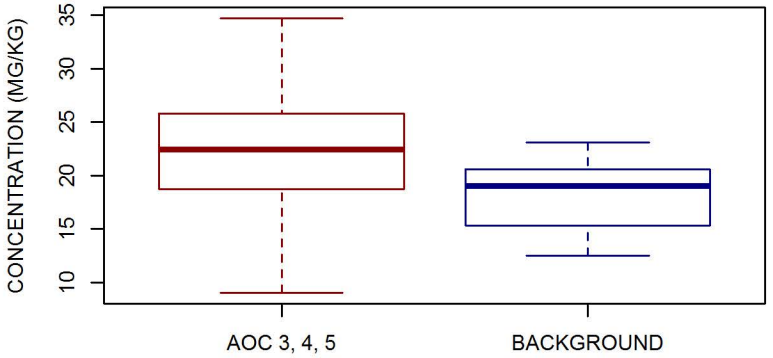
SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	0.16	0.14
25TH PERCENTILE	0.2	0.25
MEDIAN	0.28	0.28
MEAN	0.32	0.3
75TH PERCENTILE	0.35	0.35
MAXIMUM	0.89	0.48

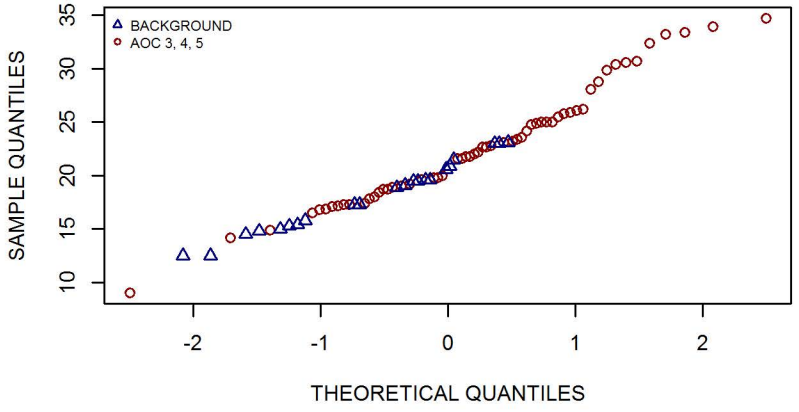
UNITS ARE MG/KG
DETECTION LIMIT USED FOR NON-DETECTS
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

VANADIUM SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 18 OF 19

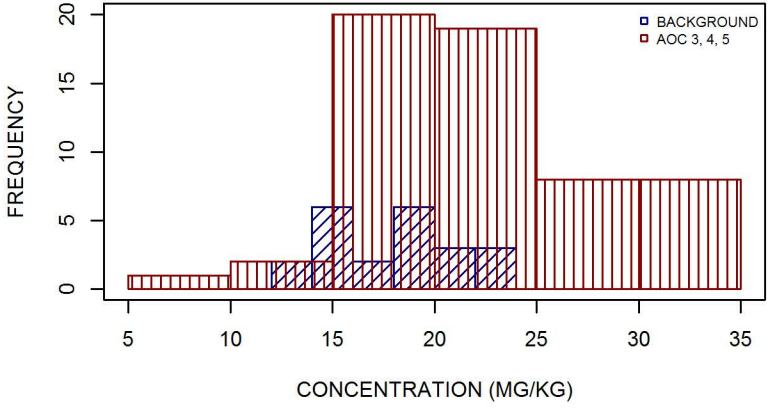
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	12	9
25TH PERCENTILE	15	19
MEDIAN	19	22
MEAN	18	23
75TH PERCENTILE	20	26
MAXIMUM	23	35

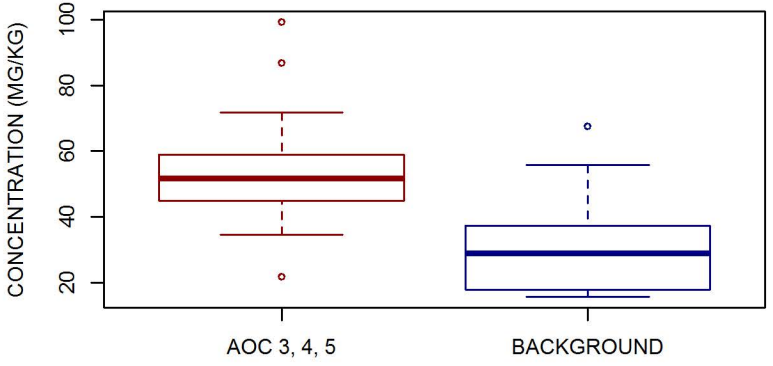
UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

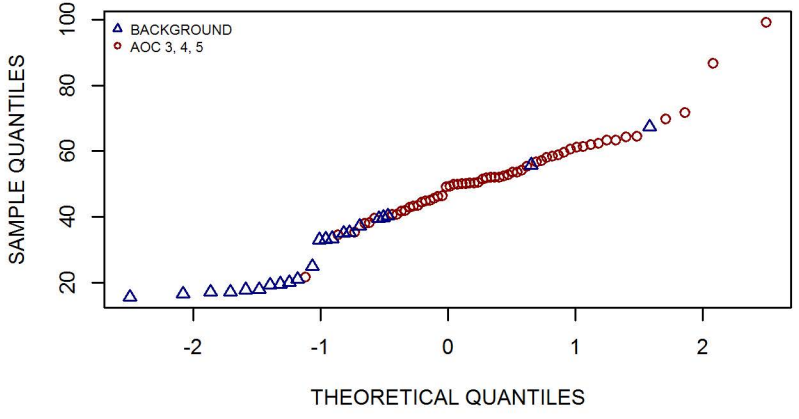
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

ZINC SURFACE SOIL GRAPHICAL DISPLAYS
AOCs 3, 4, AND 5 AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 19 OF 19

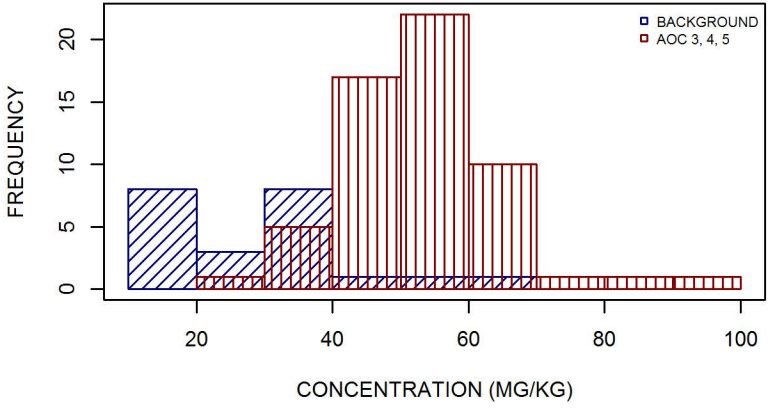
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



SUMMARY STATISTICS

	BACKGROUND	AOC 3, 4, 5
MINIMUM	16	22
25TH PERCENTILE	18	45
MEDIAN	29	52
MEAN	30	53
75TH PERCENTILE	37	59
MAXIMUM	67	99

UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

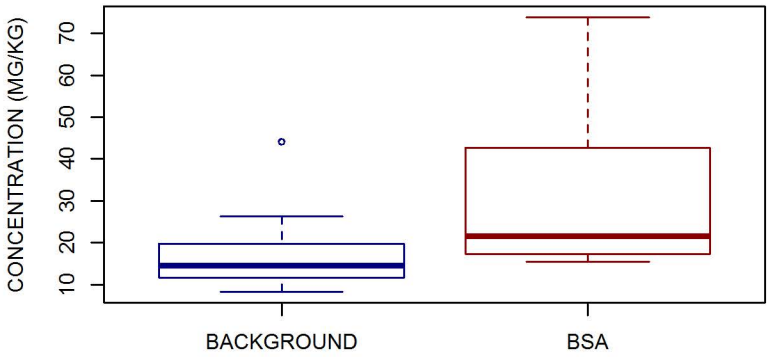
SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

GRAPHICAL DISPLAYS FOR

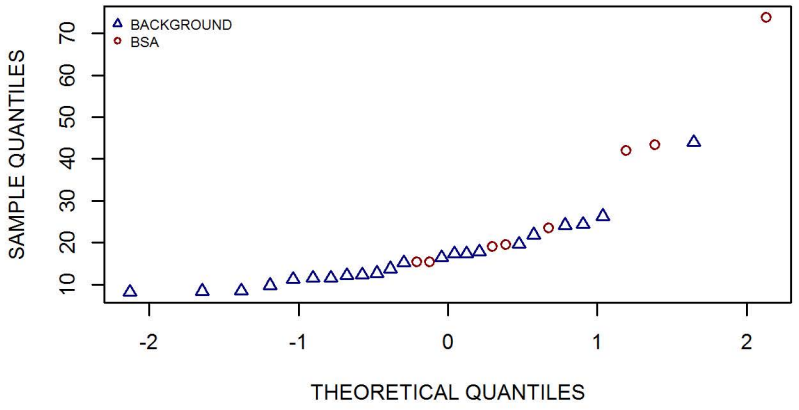
SURFACE SOIL FROM THE BUOY STORAGE AREA AT TANK FARM 2

LEAD SURFACE SOIL GRAPHICAL DISPLAYS
BUOY STORAGE AREA AT TANK FARM 2
NAVAL STATION NEWPORT, RHODE ISLAND
FIGURE 1 OF 1

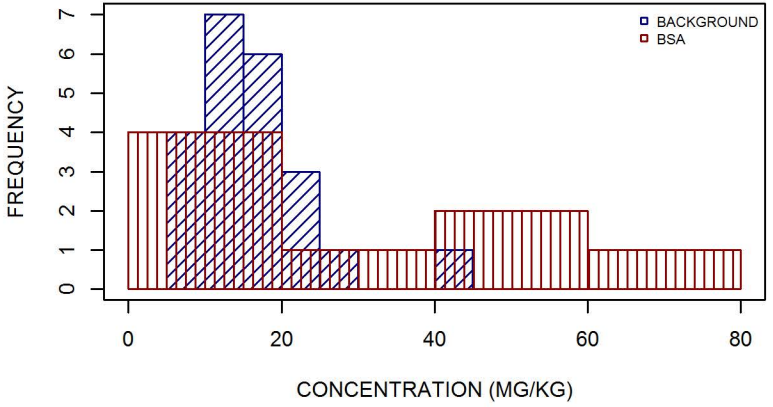
BOXPLOTS



NORMAL PROBABILITY PLOT



HISTOGRAMS



SUMMARY STATISTICS

	BACKGROUND	BSA
MINIMUM	8.2	16
25TH PERCENTILE	12	18
MEDIAN	14	22
MEAN	17	32
75TH PERCENTILE	19	42
MAXIMUM	44	74

UNITS ARE MG/KG

DETECTION LIMIT USED FOR NON-DETECTS

SUMMARY STATISTICS ROUNDED TO TWO SIGNIFICANT FIGURES

APPENDIX H

SUPPORTING INFORMATION FOR HUMAN HEALTH RISK ASSESSMENT

H-1 SAMPLES USED IN RISK ASSESSMENT

H-2 RAGS PART D TABLES

H-3 PROUCL OUTPUTS

H-4 SAMPLE CALCULATIONS

H-5 RAGS PART D TABLES FOR CHEMICALS PRESENT AT NATURALLY OCCURRING LEVELS

APPENDIX H.1

SAMPLES USED IN RISK ASSESSMENT

TABLE 1
SAMPLES USED IN THE HUMAN HEALTH RISK ASSESSMENT

SURFACE SOIL

TF2-001-SS1000-0001	TF2-003-SS1015-000.8-D	TF2-004/5-SS1031-000.8	TF2-004/5-SS1045-000.5	TF2-004/5-SS1061-000.6-D	TF2-B219-1
TF2-001-SS1001-0001	TF2-003-SS1016-000.9	TF2-004/5-SS1032-000.9	TF2-004/5-SS1046-000.5	TF2-004/5-SS1062-000.8	TF2-B219-2
TF2-001-SS1002-0001	TF2-003-SS1017-000.8	TF2-004/5-SS1033-000.8	TF2-004/5-SS1047-000.8	TF2-004/5-SS1063-000.6	TF2-B219-3
TF2-001-SS1003-0001	TF2-003-SS1018-000.8	TF2-004/5-SS1034-000.6	TF2-004/5-SS1048-000.8	TF2-004/5-SS1064-000.6	TF2-B219-4
TF2-001-SS1003-0001-D	TF2-003-SS1019-000.5	TF2-004/5-SS1035-0001	TF2-004/5-SS1049-000.9	TF2-004/5-SS1065-000.5	TF2-BSA-SS1090-0001
TF2-001-SS1004-0001	TF2-004/5-SS1020-0001	TF2-004/5-SS1035-0001-D	TF2-004/5-SS1050-000.6	TF2-004/5-SS1065-000.5-D	TF2-BSA-SS1091-0001
TF2-001-SS1005-0001	TF2-004/5-SS1020-0001-D	TF2-004/5-SS1036-000.6	TF2-004/5-SS1051-000.8	TF2-004/5-SS1066-000.9	TF2-BSA-SS1092-0001
TF2-001-SS1006-0001	TF2-004/5-SS1021-000.7	TF2-004/5-SS1037-000.7	TF2-004/5-SS1052-000.6	TF2-004/5-SS1067-000.7	TF2-BSA-SS1093-0001
TF2-001-SS1007-0001	TF2-004/5-SS1022-000.9	TF2-004/5-SS1038-000.7	TF2-004/5-SS1053-000.6	TF2-004/5-SS1068-000.5	TF2-BSA-SS1094-0001
TF2-001-SS1008-0001	TF2-004/5-SS1023-000.8	TF2-004/5-SS1039-000.9	TF2-004/5-SS1054-000.6	TF2-B219-SS1080-0001	TF2-BSA-SS1095-0001
TF2-001-SS1009-0001	TF2-004/5-SS1024-000.6	TF2-004/5-SS1040-000.9	TF2-004/5-SS1055-000.8	TF2-B219-SS1081-0001	TF2-BSA-SS1096-0001
TF2-001-SS1010-0001	TF2-004/5-SS1025-000.8	TF2-004/5-SS1041-000.7	TF2-004/5-SS1056-000.6	TF2-B219-SS1082-0001	TF2-BSA-SS1096-0001-D
TF2-003-SS1011-000.8	TF2-004/5-SS1026-000.8	TF2-004/5-SS1041-000.7-D	TF2-004/5-SS1057-0001	TF2-B219-SS1083-0001	TF2-BSA-SS1097-0001
TF2-003-SS1012-000.7	TF2-004/5-SS1027-0001	TF2-004/5-SS1042-000.5	TF2-004/5-SS1058-000.5	TF2-B219-SS1084-0001	
TF2-003-SS1013-000.7	TF2-004/5-SS1028-000.8	TF2-004/5-SB1043-0.10.5	TF2-004/5-SS1059-000.6	TF2-B219-SS1085-0001	
TF2-003-SS1014-0001	TF2-004/5-SS1029-000.6	TF2-004/5-SS1043-0.10.5	TF2-004/5-SS1060-000.5	TF2-B219-SS1086-0001	
TF2-003-SS1015-000.8	TF2-004/5-SS1030-000.6	TF2-004/5-SS1044-000.5	TF2-004/5-SS1061-000.6	TF2-B219-SS1087-0001	

SUBSURFACE SOIL

TF2-001-SB1000-0204	TF2-003-SB1011-0204	TF2-003-SB1019-0810	TF2-004/5-SB1047-0204	TF2-B219-SB1081-0204	TF2-BSA-SB1096-0204
TF2-001-SB1000-0810	TF2-003-SB1011-0204-D	TF2-004/5-SB1021-0204	TF2-004/5-SB1047-0608	TF2-B219-SB1082-0204-D	TF2-BSA-SB1097-0204
TF2-001-SB1001-0204	TF2-003-SB1012-0204	TF2-004/5-SB1021-0204-D	TF2-004/5-SB1048-0204	TF2-B219-SB1082-0204	
TF2-001-SB1001-0810	TF2-003-SB1012-0810	TF2-004/5-SB1021-0608	TF2-004/5-SB1049-0204	TF2-B219-SB1083-0204	
TF2-001-SB1002-0204	TF2-003-SB1013-0204	TF2-004/5-SB1025-2.604	TF2-004/5-SB1049-0810	TF2-B219-SB1084-0204	
TF2-001-SB1002-0405	TF2-003-SB1013-0405	TF2-004/5-SB1026-0204	TF2-004/5-SB1057-0304	TF2-B219-SB1085-0204	
TF2-001-SB1003-0204	TF2-003-SB1014-0204	TF2-004/5-SB1026-022.7	TF2-004/5-SB1057-0608	TF2-B219-SB1086-0204	
TF2-001-SB1004-0204	TF2-003-SB1014-0810	TF2-004/5-SB1031-0204	TF2-004/5-SB1057-0608-D	TF2-B219-SB1087-0204	
TF2-001-SB1004-0204-D	TF2-003-SB1015-0204	TF2-004/5-SB1031-0810	TF2-004/5-SB1058-0204	TF2-B219-SB1088-0204	
TF2-001-SB1005-0204	TF2-003-SB1015-0810	TF2-004/5-SB1032-0204	TF2-004/5-SB1064-0204	TF2-B219-SB1089-0204	
TF2-001-SB1005-0204-D	TF2-003-SB1016-0204	TF2-004/5-SB1036-0204	TF2-004/5-SB1064-0406	TF2-B219-SB1089-0204-D	
TF2-001-SB1006-0204	TF2-003-SB1016-0810	TF2-004/5-SB1038-0810	TF2-004/5-SB1065-0204	TF2-BSA-SB1091-0204	
TF2-001-SB1007-0204	TF2-003-SB1017-011.6	TF2-004/5-SB1039-0406	TF2-004/5-SB1065-0608	TF2-BSA-SS1091-0204	
TF2-001-SB1008-0204	TF2-003-SB1017-0204	TF2-004/5-SB1040-0204	TF2-004/5-SB1066-0203	TF2-BSA-SB1092-0204	
TF2-001-SB1009-0204	TF2-003-SB1017-0810	TF2-004/5-SB1040-0810	TF2-004/5-SB1068-0204	TF2-BSA-SB1093-0204	
TF2-001-SB1009-0810	TF2-003-SB1018-0204	TF2-004/5-SB1040-0810-D	TF2-004/5-SB1068-0204-D	TF2-BSA-SB1094-0204	
TF2-001-SB1010-0204	TF2-003-SB1019-0204	TF2-004/5-SB1041-022.5	TF2-B219-SB1080-0204	TF2-BSA-SB1095-0204	

APPENDIX H.2

RAGS PART D TABLES

RAGS Part D Table 1

Selection of Exposure Pathways

LIST OF TABLES
RAGS PART D TABLE 1
SELECTION OF EXPOSURE PATHWAYS

Table No.

1 Selection of Exposure Pathways

TABLE 1

SELECTION OF EXPOSURE PATHWAYS
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND
PAGE 1 OF 3

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Surface Soil	Surface Soil	Tank Farm 2	Trespassers	Adolescent	Ingestion Dermal	Quant Quant	Current trespassers may contact surface soil while at the site.
				Bow Hunters	Adult	Ingestion Dermal	Quant Quant	Bow hunters may contact surface soil while at the site.
		Air	Tank Farm 2	Trespassers	Adolescent	Inhalation	Quant	Current trespassers may be exposed to fugitive dust and volatile emissions from surface soil while at the site.
				Bow Hunters	Adult	Inhalation	Quant	Bow hunters may be exposed to fugitive dust and volatile emissions from surface soil while at the site.
	Subsurface Soil	Subsurface Soil	Tank Farm 2	Trespassers	Adolescent	Ingestion Dermal	None None	Current trespassers are not exposed to subsurface soil.
				Bow Hunters	Adult	Ingestion Dermal	None None	Current bow hunters are not exposed to subsurface soil.
		Air	Tank Farm 2	Trespassers	Adolescent	Inhalation	None	Current trespassers are not exposed to subsurface soil.
				Bow Hunters	Adult	Inhalation	None	Current bow hunters are not exposed to subsurface soil.
Future	Surface Soil	Surface Soil	Tank Farm 2	Construction Workers	Adult	Ingestion Dermal	Quant Quant	Construction workers may have contact with surface soil during excavation activities.
				Industrial Worker	Adult	Ingestion Dermal	Quant Quant	Industrial workers may contact surface soil during normal work activities.
				Trespassers	Adolescent	Ingestion Dermal	Quant Quant	Trespassers may contact surface soil while at the site.
				Recreational Users	Child	Ingestion Dermal	Quant Quant	Recreational users may contact surface soil while at the site.
					Adult	Ingestion Dermal	Quant Quant	
				Residents	Child	Ingestion Dermal	Quant Quant	Although a future residential scenario is considered unlikely at the site, this scenario is included to aid in future risk management decisions.
					Adult	Ingestion Dermal	Quant Quant	

TABLE 1

SELECTION OF EXPOSURE PATHWAYS
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND
PAGE 2 OF 3

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Surface Soil	Air	Tank Farm 2	Construction Workers	Adult	Inhalation	Quant	Construction workers may be exposed to fugitive dust and volatile emissions from surface soil during construction activities.
				Industrial Worker	Adult	Inhalation	Quant	Industrial workers may be exposed to fugitive dust and volatile emissions from surface soil during work activities.
				Trespassers	Adolescent	Inhalation	Quant	Trespassers may be exposed to fugitive dust and volatile emissions from surface soil while at the site.
				Recreational Users	Child	Inhalation	Quant	Recreational users may be exposed to fugitive dust and volatile emissions from surface soil while at the site.
					Adult	Inhalation	Quant	
				Residents	Child	Inhalation	Quant	Although a future residential scenario is considered unlikely at the site, this scenario is included to aid in future risk management decisions.
					Adult	Inhalation	Quant	
	Subsurface Soil	Subsurface Soil	Tank Farm 2	Construction Workers	Adult	Ingestion	Quant	Construction workers may have contact with subsurface soil during excavation activities.
						Dermal	Quant	
				Industrial Worker	Adult	Ingestion	Quant	Although exposures to subsurface soil by industrial workers are considered unlikely at the site, this scenario is included to aid in future risk management decisions.
						Dermal	Quant	
			Tank Farm 2	Trespassers	Adolescent	Ingestion	Quant	Although exposures to subsurface soil by trespassers are considered unlikely at the site, this scenario is included to aid in future risk management decisions.
						Dermal	Quant	
				Recreational Users	Child	Ingestion	Quant	Although exposures to subsurface soil by recreational users are considered unlikely at the site, this scenario is included to aid in future risk management decisions.
						Dermal	Quant	
					Adult	Ingestion	Quant	
						Dermal	Quant	
				Residents	Child	Ingestion	Quant	Although a future residential scenario is considered unlikely at the site, this scenario is included to aid in future risk management decisions.
						Dermal	Quant	
					Adult	Ingestion	Quant	
						Dermal	Quant	
		Air	Tank Farm 2	Construction Workers	Adult	Inhalation	Quant	Construction workers may be exposed to fugitive dust and volatile emissions from subsurface soil during construction activities.
				Industrial Worker	Adult	Inhalation	Quant	Although exposures to subsurface soil by industrial workers are considered unlikely at the site, this scenario is included to aid in future risk management decisions.
				Trespassers	Adolescent	Inhalation	Quant	Although exposures to subsurface soil by trespassers are considered unlikely at the site, this scenario is included to aid in future risk management decisions.
				Recreational Users	Child	Inhalation	Quant	Although exposures to subsurface soil by recreational users are considered unlikely at the site, this scenario is included to aid in future risk management decisions.
					Adult	Inhalation	Quant	

TABLE 1

SELECTION OF EXPOSURE PATHWAYS
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Subsurface Soil	Air	Tank Farm 2	Residents	Child	Inhalation	Quant	Although a future residential scenario is considered unlikely at the site, this scenario is included to aid in future risk management decisions.
					Adult	Inhalation	Quant	

Notes:
Quant - Quantitative.

RAGS Part D Table 2

Occurrence, Distribution and Selection Of Chemicals of Potential Concern

LIST OF TABLES
RAGS PART D TABLE 2
OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN

Table No.

2.1 Direct Contact with Surface Soil
2.2 Direct Contact with Subsurface Soil

TABLE 2.1
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SURFACE SOIL
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Above Background Concentration?[4]	Adjusted USEPA RSL Residential Soil[5]	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Tank Farm 2	**Polycyclic Aromatic Hydrocarbons**												
	91-57-6	2-Methylnaphthalene	2.2 J	72	ug/kg	TF2-004/5-SS1047-000.8	11/69	9.2 - 440	72	NA	23000 N	No	BSL
	83-32-9	Acenaphthene	1.6 J	1000	ug/kg	TF2-001-SS1005-0001	49/69	9.3 - 11	1000	NA	340000 N	No	BSL
	208-96-8	Acenaphthylene	1.3 J	26	ug/kg	TF2-001-SS1005-0001	34/69	9.3 - 12	26	NA	340000 N[7]	No	BSL
	120-12-7	Anthracene	1.4 J	2200	ug/kg	TF2-001-SS1005-0001	63/69	10 - 11	2200	NA	1700000 N	No	BSL
	56-55-3	**Benzo(a)anthracene**	2.9 J	4500	ug/kg	TF2-001-SS1005-0001	67/69	11 - 33	4500	NA	**150 C**	**Yes**	ASL
	50-32-8	**Benzo(a)pyrene**	4.2 J	3700	ug/kg	TF2-001-SS1005-0001	68/69	10 - 10	3700	NA	**15 C**	**Yes**	ASL
	205-99-2	**Benzo(b)fluoranthene**	5.2 J	5800	ug/kg	TF2-001-SS1005-0001	69/69	-	5800	NA	**150 C**	**Yes**	ASL
	191-24-2	Benzo(g,h,i)perylene	2.7 J	1800	ug/kg	TF2-001-SS1005-0001	67/69	10 - 11	1800	NA	170000 N[8]	No	BSL
	207-08-9	**Benzo(k)fluoranthene**	4.3 J	1700	ug/kg	TF2-001-SS1005-0001	67/69	10 - 11	1700	NA	**1500 C**	**Yes**	ASL
	218-01-9	Chrysene	4.4 J	4900	ug/kg	TF2-001-SS1005-0001	69/69	-	4900	NA	15000 C	No	BSL
	53-70-3	**Dibenzo(a,h)anthracene**	1.8 J	590 J	ug/kg	TF2-001-SS1005-0001	65/69	1.9 - 11	590	NA	**15 C**	**Yes**	ASL
	206-44-0	Fluoranthene	8.2 J	12000 J	ug/kg	TF2-001-SS1005-0001	69/69	-	12000	NA	230000 N	No	BSL
	86-73-7	Fluorene	3.5 J	1300	ug/kg	TF2-001-SS1005-0001	31/69	9.2 - 12	1300	NA	230000 N	No	BSL
	193-39-5	**Indeno(1,2,3-cd)pyrene**	2.4 J	2800 J	ug/kg	TF2-001-SS1005-0001	66/69	9.7 - 10	2800	NA	**150 C**	**Yes**	ASL
	91-20-3	Naphthalene	2.9 J	1800	ug/kg	TF2-001-SS1005-0001	15/69	9.2 - 12	1800	NA	3600 C	No	BSL
	85-01-8	Phenanthrene	3.1 J	11000	ug/kg	TF2-001-SS1005-0001	68/69	10 - 10	11000	NA	170000 N[8]	No	BSL
	129-00-0	Pyrene	6.5 J	11000 J	ug/kg	TF2-001-SS1005-0001	69/69	-	11000	NA	170000 N	No	BSL
	PCBs												
	11096-82-5	**Aroclor-1260**	24	18000	ug/kg	TF2-B219-1	12/12	-	18000	NA	**220 C**	**Yes**	ASL
	Dioxins/Furans												
	3268-87-9	**1,2,3,4,6,7,8,9-OCDD**	1400	18000	ng/kg	TF2-003-SS1011-000.8	69/69	-	18000	NA	**15000 C[10]**	**Yes**	ASL
	39001-02-0	1,2,3,4,6,7,8,9-OCDF	2 J	420	ng/kg	TF2-004/5-SS1045-000.5	69/69	-	420	NA	15000 C[9]	No	BSL
	35822-46-9	**1,2,3,4,6,7,8-HPCDD**	29	850	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	850	NA	**450 C[10]**	**Yes**	ASL
	67562-39-4	1,2,3,4,6,7,8-HPCDF	1.6 J	130	ng/kg	TF2-004/5-SS1045-000.5	67/69	0.92 - 1.6	130	NA	450 C[9]	No	BSL
	55673-89-7	1,2,3,4,7,8,9-HPCDF	0.14 J	8.9	ng/kg	TF2-004/5-SS1045-000.5	53/69	0.031 - 0.16	8.9	NA	450 C[9]	No	BSL
	39227-28-6	1,2,3,4,7,8-HXCDD	0.19 J	16	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	16	NA	45 C[9]	No	BSL
	70648-26-9	1,2,3,4,7,8-HXCDF	0.27 J	11	ng/kg	TF2-004/5-SS1035-0001	68/69	0.36 - 0.36	11	NA	45 C[9]	No	BSL
	57653-85-7	**1,2,3,6,7,8-HXCDD**	0.22 J	52	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	52	NA	**45 C[10]**	**Yes**	ASL
	57117-44-9	1,2,3,6,7,8-HXCDF	0.19 J	6	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	6	NA	45 C[9]	No	BSL
	19408-74-3	1,2,3,7,8,9-HXCDD	0.31 J	34	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	34	NA	45 C[9]	No	BSL
	72918-21-9	1,2,3,7,8,9-HXCDF	0.19 J	0.19 J	ng/kg	TF2-004/5-SB1043-0.10.5	1/69	0.026 - 0.18	0.19	NA	45 C[9]	No	BSL
	40321-76-4	**1,2,3,7,8-PECDD**	0.093 J	5.4	ng/kg	TF2-004/5-SS1047-000.8	60/69	0.047 - 0.11	5.4	NA	**4.5 C[10]**	**Yes**	ASL
	57117-41-6	1,2,3,7,8-PECDF	0.13 J	2 J	ng/kg	TF2-004/5-SS1060-000.5	55/69	0.04 - 0.25	2	NA	150 C[9]	No	BSL
	60851-34-5	2,3,4,6,7,8-HXCDF	0.096 J	5.7	ng/kg	TF2-004/5-SS1060-000.5	68/69	0.05 - 0.05	5.7	NA	45 C[9]	No	BSL
	57117-31-4	2,3,4,7,8-PECDF	0.12 J	2.4 J	ng/kg	TF2-004/5-SS1060-000.5	66/69	0.05 - 0.076	2.4	NA	15 C[9]	No	BSL
	1746-01-6	2,3,7,8-TCDD	0.094 J	0.63 J	ng/kg	TF2-004/5-SS1053-000.6	38/69	0.028 - 0.3	0.63	NA	4.5 C	No	BSL
	51207-31-9	2,3,7,8-TCDF	0.15 J	2	ng/kg	TF2-004/5-SS1060-000.5	53/69	0.051 - 1.5	2	NA	45 C[9]	No	BSL
	–	**2,3,7,8-TCDD Equivalents**	1.5	31.2	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	31.2	NA	**4.5 C**	**Yes**	ASL
	37871-00-4	Total HPCDD	51	1500	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	1500	NA	NA	No	NTX
	38998-75-3	Total HPCDF	1.6 J	460	ng/kg	TF2-004/5-SS1045-000.5	69/69	-	460	NA	NA	No	NTX

TABLE 2.1
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SURFACE SOIL
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Above Background Concentration?[4]	Adjusted USEPA RSL Residential Soil[5]	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Tank Farm 2	**Dioxins/Furans (continued)**												
	34465-46-8	Total HXCDD	3.2 J	320 J	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	320	NA	NA	No	NTX
	55684-94-1	Total HXCDF	2.3 J	150 J	ng/kg	TF2-004/5-SS1047-000.8	69/69	-	150	NA	NA	No	NTX
	36088-22-9	Total PECDD	0.6 J	45 J	ng/kg	TF2-003-SS1019-000.5	68/69	0.047 - 0.047	45	NA	NA	No	NTX
	30402-15-4	Total PECDF	0.36 J	160 J	ng/kg	TF2-004/5-SS1024-000.6	69/69	-	160	NA	NA	No	NTX
	41903-57-5	Total TCDD	0.35 J	64 J	ng/kg	TF2-003-SS1012-000.7	67/69	0.054 - 0.076	64	NA	NA	No	NTX
	55722-27-5	Total TCDF	0.64 J	25 J	ng/kg	TF2-003-SS1014-0001	69/69	-	25	NA	NA	No	NTX
	Metals												
	7429-90-5	Aluminum	4950	18200	mg/kg	TF2-004/5-SS1043-0.10.5	69/69	-	18200	No	7700 N	No	BKG
	7440-36-0	Antimony	0.05 J	6.6 J	mg/kg	TF2-004/5-SS1056-000.6	68/69	0.07 - 0.07	6.6	NA	3.1 N	Yes	ASL
	7440-38-2	Arsenic	2.2	11.4	mg/kg	TF2-004/5-SS1044-000.5	69/69	-	11.4	No	0.61 C	No	BKG
	7440-39-3	Barium	11.3 J	169 J	mg/kg	TF2-004/5-SS1039-000.9	69/69	-	169	Yes	1500 N	No	BSL
	7440-41-7	Beryllium	0.23	1.3 J	mg/kg	TF2-004/5-SS1065-000.5-D	69/69	-	1.3	No	16 N	No	BSL, BKG
	7440-43-9	Cadmium	0.05 J	0.29	mg/kg	TF2-003-SS1019-000.5	69/69	-	0.29	No	7 N	No	BSL, BKG
	7440-70-2	Calcium	307 J	2630	mg/kg	TF2-001-SS1005-0001	69/69	-	2630	Yes	NA	No	NUT
	7440-47-3	Chromium	7.1	44.5	mg/kg	TF2-003-SS1017-000.8	69/69	-	44.5	Yes	0.29 C[10]	Yes	ASL
	7440-48-4	Cobalt	3.3 J	16.6	mg/kg	TF2-001-SS1002-0001	69/69	-	16.6	Yes	2.3 N	Yes	ASL
	7440-50-8	Copper	7.8	39.9	mg/kg	TF2-004/5-SS1063-000.6	69/69	-	39.9	Yes	310 N	No	BSL
	7439-89-6	Iron	9760	37800	mg/kg	TF2-004/5-SS1035-0001	69/69	-	37800	Yes	5500 N	Yes	ASL
	7439-92-1	Lead	7.6	101 J	mg/kg	TF2-003-SS1016-000.9	77/77	-	101	Yes	400	No	BSL
	7439-95-4	Magnesium	1500 J	6180	mg/kg	TF2-004/5-SS1043-0.10.5	69/69	-	6180	Yes	NA	No	NUT
	7439-96-5	Manganese	155 J	658 J	mg/kg	TF2-003-SS1016-000.9	69/69	-	658	Yes	180 N	Yes	ASL
	7439-97-6	Mercury	0.005 J	0.21 J	mg/kg	TF2-001-SS1003-0001	52/69	0.01 - 0.02	0.21	No	2.3 N[11]	No	BSL, BKG
	7440-02-0	Nickel	9.2	53	mg/kg	TF2-004/5-SS1039-000.9	69/69	-	53	Yes	150 N	No	BSL
	7440-09-7	Potassium	258	504	mg/kg	TF2-004/5-SS1032-000.9	69/69	-	504	No	NA	No	NUT, BKG
	7782-49-2	Selenium	0.11 J	0.39 J	mg/kg	TF2-004/5-SS1054-000.6, TF2-004/5-SS1056-000.6	20/69	0.2 - 0.48	0.39	No	39 N	No	BSL, BKG
	7440-22-4	Silver	0.02 J	0.56	mg/kg	TF2-001-SS1006-0001	69/69	-	0.56	NA	39 N	No	BSL
	7440-23-5	Sodium	19.1 J	60.9 J	mg/kg	TF2-001-SS1002-0001	23/69	16.8 - 70.2	60.9	NA	NA	No	NUT
	7440-28-0	Thallium	0.03 J	0.1	mg/kg	TF2-003-SS1016-000.9	56/69	0.033 - 0.07	0.1	NA	0.078 N	Yes	ASL
	7440-62-2	Vanadium	9	35.2	mg/kg	TF2-004/5-SS1035-0001	69/69	-	35.2	Yes	39 N	No	BSL
	7440-66-6	Zinc	21.7	99.1 J	mg/kg	TF2-003-SS1016-000.9	69/69	-	99.1	Yes	2300 N	No	BSL

TABLE 2.1
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SURFACE SOIL
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Above Background Concentration?[4]	Adjusted USEPA RSL Residential Soil[5]	COPC Flag	Rationale for Contaminant Deletion or Selection[6]

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - To determine whether chemical concentrations were within background levels, a statistical analysis was conducted using the site and background datasets.
5 - USEPA Regional Screening Level, November 2013. Carcinogenic values represent an incremental cancer risk of 1E-06. The noncarcinogenic values are the RSL divided by 10 to correspond to a Target Hazard Quotient of 0.1.
6 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level and is statistically determined to be greater than site background.
7 - Value is for acenaphthene.
8 - Value is for pyrene.
9 - Value is derived by multiplying the criteria for 2,3,7,8-TCDD by World Health Organization Toxicity Equivalency Factor.
10 - Value is for hexavalent chromium.
11 - Value is for mercuric chloride (and other mercury salts).
Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Definitions:
C = Carcinogen
COPC = Chemical Of Potential Concern
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level and site background

For elimination as a COPC:
BKG = Less than Background Concentration
BSL = Below COPC Screening Level
NUT = Essential nutrient
NTX = No toxicity criteria

Associated Samples:

TF2-001-SS1000-0001	TF2-003-SS1015-000.8-D	TF2-004/5-SS1031-000.8	TF2-004/5-SS1045-000.5	TF2-004/5-SS1061-000.6-D	TF2-B219-1
TF2-001-SS1001-0001	TF2-003-SS1016-000.9	TF2-004/5-SS1032-000.9	TF2-004/5-SS1046-000.5	TF2-004/5-SS1062-000.8	TF2-B219-2
TF2-001-SS1002-0001	TF2-003-SS1017-000.8	TF2-004/5-SS1033-000.8	TF2-004/5-SS1047-000.8	TF2-004/5-SS1063-000.6	TF2-B219-3
TF2-001-SS1003-0001	TF2-003-SS1018-000.8	TF2-004/5-SS1034-000.6	TF2-004/5-SS1048-000.8	TF2-004/5-SS1064-000.6	TF2-B219-4
TF2-001-SS1003-0001-D	TF2-003-SS1019-000.5	TF2-004/5-SS1035-0001	TF2-004/5-SS1049-000.9	TF2-004/5-SS1065-000.5	TF2-BSA-SS1090-0001
TF2-001-SS1004-0001	TF2-004/5-SS1020-0001	TF2-004/5-SS1035-0001-D	TF2-004/5-SS1050-000.6	TF2-004/5-SS1065-000.5-D	TF2-BSA-SS1091-0001
TF2-001-SS1005-0001	TF2-004/5-SS1020-0001-D	TF2-004/5-SS1036-000.6	TF2-004/5-SS1051-000.8	TF2-004/5-SS1066-000.9	TF2-BSA-SS1092-0001
TF2-001-SS1006-0001	TF2-004/5-SS1021-000.7	TF2-004/5-SS1037-000.7	TF2-004/5-SS1052-000.6	TF2-004/5-SS1067-000.7	TF2-BSA-SS1093-0001
TF2-001-SS1007-0001	TF2-004/5-SS1022-000.9	TF2-004/5-SS1038-000.7	TF2-004/5-SS1053-000.6	TF2-004/5-SS1068-000.5	TF2-BSA-SS1094-0001
TF2-001-SS1008-0001	TF2-004/5-SS1023-000.8	TF2-004/5-SS1039-000.9	TF2-004/5-SS1054-000.6	TF2-B219-SS1080-0001	TF2-BSA-SS1095-0001
TF2-001-SS1009-0001	TF2-004/5-SS1024-000.6	TF2-004/5-SS1040-000.9	TF2-004/5-SS1055-000.8	TF2-B219-SS1081-0001	TF2-BSA-SS1096-0001
TF2-001-SS1010-0001	TF2-004/5-SS1025-000.8	TF2-004/5-SS1041-000.7	TF2-004/5-SS1056-000.6	TF2-B219-SS1082-0001	TF2-BSA-SS1096-0001-D
TF2-003-SS1011-000.8	TF2-004/5-SS1026-000.8	TF2-004/5-SS1041-000.7-D	TF2-004/5-SS1057-0001	TF2-B219-SS1083-0001	TF2-BSA-SS1097-0001
TF2-003-SS1012-000.7	TF2-004/5-SS1027-0001	TF2-004/5-SS1042-000.5	TF2-004/5-SS1058-000.5	TF2-B219-SS1084-0001	
TF2-003-SS1013-000.7	TF2-004/5-SS1028-000.8	TF2-004/5-SB1043-0.10.5	TF2-004/5-SS1059-000.6	TF2-B219-SS1085-0001	
TF2-003-SS1014-0001	TF2-004/5-SS1029-000.6	TF2-004/5-SS1043-0.10.5	TF2-004/5-SS1060-000.5	TF2-B219-SS1086-0001	
TF2-003-SS1015-000.8	TF2-004/5-SS1030-000.6	TF2-004/5-SS1044-000.5	TF2-004/5-SS1061-000.6	TF2-B219-SS1087-0001	

TABLE 2.2
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SUBSURFACE SOIL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Above Background Concentration?[4]	Adjusted USEPA RSL Residential Soil[5]	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Tank Farm 2	**Polycyclic Aromatic Hydrocarbons**												
	91-57-6	2-Methylnaphthalene	3.3 J	280 J	ug/kg	TF2-001-SB1005-0204-D	12/59	9.2 - 12	280	NA	23000 N	No	BSL
	83-32-9	Acenaphthene	1.8 J	890 J	ug/kg	TF2-001-SB1005-0204-D	21/59	1.6 - 12	890	NA	340000 N	No	BSL
	208-96-8	Acenaphthylene	1.8 J	88 J	ug/kg	TF2-001-SB1005-0204-D	15/59	9.2 - 12	88	NA	340000 N[7]	No	BSL
	120-12-7	Anthracene	1.7 J	1800 J	ug/kg	TF2-001-SB1005-0204-D	28/59	1.3 - 12	1800	NA	1700000 N	No	BSL
	56-55-3	Benzo(a)anthracene	2 J	4100 J	ug/kg	TF2-001-SB1005-0204-D	50/59	10 - 12	4100	NA	160 C	Yes	ASL
	50-32-8	Benzo(a)pyrene	3.5 J	3100 J	ug/kg	TF2-001-SB1005-0204-D	36/59	9.2 - 12	3100	NA	16 C	Yes	ASL
	205-99-2	Benzo(b)fluoranthene	3.1 J	4800 J	ug/kg	TF2-001-SB1005-0204-D	55/59	9.8 - 11	4800	NA	160 C	Yes	ASL
	191-24-2	Benzo(g,h,i)perylene	2.2 J	1500 J	ug/kg	TF2-001-SB1005-0204-D	34/59	2.2 - 12	1500	NA	170000 N[8]	No	ASL
	207-08-9	Benzo(k)fluoranthene	3.5 J	1500 J	ug/kg	TF2-001-SB1005-0204-D	30/59	3.1 - 12	1500	NA	1500 C	No	ASL
	218-01-9	Chrysene	1.9 J	3800 J	ug/kg	TF2-001-SB1005-0204-D	52/59	1.8 - 12	3800	NA	15000 C	No	ASL
	53-70-3	Dibenzo(a,h)anthracene	2.1 J	490 J	ug/kg	TF2-001-SB1005-0204-D	33/59	9.6 - 12	490	NA	16 C	Yes	ASL
	206-44-0	Fluoranthene	2.1 J	10000 J	ug/kg	TF2-001-SB1005-0204-D	42/59	9.6 - 12	10000	NA	230000 N	No	BSL
	86-73-7	Fluorene	4 J	1700 J	ug/kg	TF2-001-SB1005-0204-D	18/59	9.2 - 12	1700	NA	230000 N	No	BSL
	193-39-5	Indeno(1,2,3-cd)pyrene	2.1 J	2400 J	ug/kg	TF2-001-SB1005-0204-D	49/59	9.6 - 11	2400	NA	160 C	Yes	ASL
	91-20-3	Naphthalene	3.4 J	1200 J	ug/kg	TF2-001-SB1005-0204-D	11/59	9.2 - 12	1200	NA	3600 C	No	BSL
	85-01-8	Phenanthrene	2.2 J	11000 J	ug/kg	TF2-001-SB1005-0204-D	39/59	9.6 - 20	11000	NA	170000 N[8]	No	BSL
	129-00-0	Pyrene	3.2 J	10000 J	ug/kg	TF2-001-SB1005-0204-D	40/59	9.6 - 12	10000	NA	170000 N	No	BSL
	PCBs												
	11096-82-5	Aroclor-1260	25	110	ug/kg	TF2-B219-SB1081-0204	3/10	8.6 - 9.1	110	NA	220 C	No	BSL
	Dioxins/Furans												
	3268-87-9	1,2,3,4,6,7,8,9-OCDD	1300	14000	ng/kg	TF2-001-SB1007-0204	39/39	-	14000	NA	15000 C[9]	No	BSL
	39001-02-0	1,2,3,4,6,7,8,9-OCDF	1.3 J	21	ng/kg	TF2-004/5-SB1066-0203	13/39	0.32 - 7	21	NA	15000 C[9]	No	BSL
	35822-46-9	1,2,3,4,6,7,8-HPCDD	6	150	ng/kg	TF2-001-SB1007-0204	39/39	-	150	NA	450 C[9]	No	BSL
	67562-39-4	1,2,3,4,6,7,8-HPCDF	1.3 J	18	ng/kg	TF2-003-SB1017-011.6	13/39	0.19 - 1.3	18	NA	450 C[9]	No	BSL
	55673-89-7	1,2,3,4,7,8,9-HPCDF	0.075 J	0.97 J	ng/kg	TF2-003-SB1017-011.6	8/39	0.02 - 0.56	0.97	NA	450 C[9]	No	BSL
	39227-28-6	1,2,3,4,7,8-HXCDD	0.08 J	5 J	ng/kg	TF2-003-SB1017-011.6	31/39	0.026 - 0.33	5	NA	45 C[9]	No	BSL
	70648-26-9	1,2,3,4,7,8-HXCDF	0.23 J	3.8 J	ng/kg	TF2-003-SB1017-011.6, TF2-003-SB1019-0204	17/39	0.08 - 0.74	3.8	NA	45 C[9]	No	BSL
	57653-85-7	1,2,3,6,7,8-HXCDD	0.066 J	12	ng/kg	TF2-003-SB1017-011.6	30/39	0.022 - 0.23	12	NA	45 C[9]	No	BSL
	57117-44-9	1,2,3,6,7,8-HXCDF	0.1 J	3.3 J	ng/kg	TF2-003-SB1017-011.6	35/39	0.023 - 0.4	3.3	NA	45 C[9]	No	BSL
	19408-74-3	1,2,3,7,8,9-HXCDD	0.11 J	11	ng/kg	TF2-003-SB1017-011.6	35/39	0.045 - 0.24	11	NA	45 C[9]	No	BSL
	72918-21-9	1,2,3,7,8,9-HXCDF	0.049 J	0.3 J	ng/kg	TF2-003-SB1016-0204	9/39	0.014 - 0.12	0.3	NA	45 C[9]	No	BSL
	40321-76-4	1,2,3,7,8-PECDD	0.11 J	5.2 J	ng/kg	TF2-003-SB1017-011.6	12/39	0.034 - 0.24	5.2	NA	4.5 C[9]	Yes	ASL
	57117-41-6	1,2,3,7,8-PECDF	0.051 J	2.4 J	ng/kg	TF2-003-SB1017-011.6	18/39	0.02 - 0.16	2.4	NA	150 C[9]	No	BSL
	60851-34-5	2,3,4,6,7,8-HXCDF	0.067 J	2.6 J	ng/kg	TF2-003-SB1017-011.6	25/39	0.013 - 0.15	2.6	NA	45 C[9]	No	BSL
	57117-31-4	2,3,4,7,8-PECDF	0.062 J	3.3 J	ng/kg	TF2-003-SB1017-011.6	23/39	0.02 - 0.17	3.3	NA	15 C[9]	No	BSL
	1746-01-6	2,3,7,8-TCDD	0.037 J	0.47 J	ng/kg	TF2-003-SB1019-0204	2/39	0.017 - 0.16	0.47	NA	4.5 C	No	BSL
	51207-31-9	2,3,7,8-TCDF	0.23 J	2	ng/kg	TF2-003-SB1017-011.6	6/39	0.013 - 0.61	2	NA	45 C[9]	No	BSL
	–	2,3,7,8-TCDD Equivalents	0.55	11.7	ng/kg	TF2-003-SB1017-011.6	39/39	-	11.7	NA	4.5 C	Yes	ASL
	37871-00-4	Total HPCDD	10	270	ng/kg	TF2-001-SB1007-0204	39/39	-	270	NA	NA	No	NTX

TABLE 2.2
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SUBSURFACE SOIL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Above Background Concentration?[4]	Adjusted USEPA RSL Residential Soil[5]	COPC Flag	Rationale for Contaminant Deletion or Selection[6]
Tank Farm 2	**Dioxins/Furans (continued)**												
	38998-75-3	Total HPCDF	1.2 J	26	ng/kg	TF2-004/5-SB1066-0203	21/39	0.26 - 1.7	26	NA	NA	No	NTX
	34465-46-8	Total HXCDD	0.27 J	140	ng/kg	TF2-003-SB1017-011.6	39/39	-	140	NA	NA	No	NTX
	55684-94-1	Total HXCDF	0.48 J	29 J	ng/kg	TF2-003-SB1017-011.6	30/39	0.33 - 2.2	29	NA	NA	No	NTX
	36088-22-9	Total PECDD	0.043 J	180 J	ng/kg	TF2-003-SB1017-011.6	35/39	0.039 - 0.072	180	NA	NA	No	NTX
	30402-15-4	Total PECDF	0.1 J	25	ng/kg	TF2-003-SB1017-011.6	36/39	0.02 - 0.046	25	NA	NA	No	NTX
	41903-57-5	Total TCDD	0.09 J	160	ng/kg	TF2-003-SB1017-011.6	37/39	0.048 - 0.066	160	NA	NA	No	NTX
	55722-27-5	Total TCDF	0.11 J	37	ng/kg	TF2-003-SB1017-011.6	39/39	-	37	NA	NA	No	NTX
	Metals												
	7429-90-5	**Aluminum**	9450	21000	mg/kg	TF2-001-SB1008-0810	59/59	-	21000	Yes	**7700 N**	**Yes**	ASL
	7440-36-0	Antimony	0.03 J	0.31 J	mg/kg	TF2-003-SB1014-0204	38/59	0.03 - 0.12	0.31	NA	3.1 N	No	BSL
	7440-38-2	**Arsenic**	2.8	14.3	mg/kg	TF2-001-SB1008-0204	59/59	-	14.3	Yes	**0.61 C**	**Yes**	ASL
	7440-39-3	Barium	7.2	28	mg/kg	TF2-003-SB1011-0204-D	59/59	-	28	No	1500 N	No	BSL, BKG
	7440-41-7	Beryllium	0.25	1.3 J	mg/kg	TF2-004/5-SB1057-0608	59/59	-	1.3	Yes	16 N	No	BSL
	7440-43-9	Cadmium	0.04 J	0.28	mg/kg	TF2-001-SB1002-0405	59/59	-	0.28	NA	7 N	No	BSL
	7440-70-2	Calcium	101 J	1660	mg/kg	TF2-001-SB1008-0810	59/59	-	1660	Yes	NA	No	NUT
	7440-47-3	**Chromium**	11.7 J	28.8 J	mg/kg	TF2-004/5-SB1021-0608	59/59	-	28.8	Yes	**0.29 C[10]**	**Yes**	ASL
	7440-48-4	**Cobalt**	5.2	30.3	mg/kg	TF2-001-SB1000-0204	59/59	-	30.3	Yes	**2.3 N**	**Yes**	ASL
	7440-50-8	Copper	8.8	63.9 J	mg/kg	TF2-004/5-SB1021-0608	59/59	-	63.9	Yes	310 N	No	BSL
	7439-89-6	**Iron**	15200	45200	mg/kg	TF2-004/5-SB1021-0608	59/59	-	45200	Yes	**5500 N**	**Yes**	ASL
	7439-92-1	Lead	6.3	55.9 J	mg/kg	TF2-BSA-SB1097-0204	66/66	-	55.9	Yes	400	No	BSL
	7439-95-4	Magnesium	2380	7150	mg/kg	TF2-004/5-SB1058-0204	59/59	-	7150	Yes	NA	No	NUT
	7439-96-5	Manganese	163	467	mg/kg	TF2-004/5-SB1065-0608	59/59	-	467	No	**180 N**	No	BKG
	7439-97-6	Mercury	0.004 J	0.17	mg/kg	TF2-004/5-SB1032-0204	36/59	0.014 - 0.04	0.17	NA	2.3 N[11]	No	BSL
	7440-02-0	Nickel	11.4	51.8 J	mg/kg	TF2-004/5-SB1021-0608	59/59	-	51.8	Yes	150 N	No	BSL
	7440-09-7	Potassium	184	664	mg/kg	TF2-001-SB1005-0204-D	59/59	-	664	No	NA	No	NUT, BKG
	7782-49-2	Selenium	0.05 J	0.86	mg/kg	TF2-004/5-SB1057-0304	34/59	0.18 - 0.54	0.86	NA	39 N	No	BSL
	7440-22-4	Silver	0.01 J	0.06 J	mg/kg	TF2-001-SB1007-0204	54/59	0.024 - 0.034	0.06	NA	39 N	No	BSL
	7440-23-5	Sodium	19.2 J	84.4	mg/kg	TF2-003-SB1013-0405	25/59	28.3 - 51.7	84.4	NA	NA	No	NUT
	7440-28-0	**Thallium**	0.02 J	0.25	mg/kg	TF2-004/5-SB1057-0304	44/59	0.028 - 0.06	0.25	NA	**0.078 N**	**Yes**	ASL
	7440-62-2	Vanadium	12.8	29.2	mg/kg	TF2-001-SB1008-0810	59/59	-	29.2	Yes	39 N	No	BSL
	7440-66-6	Zinc	25.1	129 J	mg/kg	TF2-004/5-SB1021-0608	59/59	-	129	Yes	2300 N	No	BSL

TABLE 2.2
OCCURRENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN - DIRECT CONTACT WITH SUBSURFACE SOIL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil

Exposure Point	CAS Number	Chemical	Minimum Concentration[1]	Maximum Concentration[1]	Units	Sample of Maximum Concentration	Frequency of Detection	Range of Nondetects[2]	Concentration Used for Screening[3]	Above Background Concentration?[4]	Adjusted USEPA RSL Residential Soil[5]	COPC Flag	Rationale for Contaminant Deletion or Selection[6]

Footnotes:
1 - Sample and duplicate are considered as two separate samples when determining the minimum and maximum concentrations.
2 - Values presented are sample-specific quantitation limits.
3 - The maximum detected concentration is used for screening purposes.
4 - To determine whether chemical concentrations were within background levels, a statistical analysis was conducted using the site and background datasets.
5 - United States Environmental Protection Agency (USEPA) Regional Screening Level, November 2013. Carcinogenic values represent an incremental cancer risk of 1E-06. The noncarcinogenic values are the RSL divided by 10 to correspond to a Target Hazard Quotient of 0.1. Protection of groundwater values are risk-based SSLs.
6 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level and is statistically determined to be greater than site background.
7 - Value is for acenaphthene.
8 - Value is for pyrene.
9 - Value is derived by multiplying the criteria for 2,3,7,8-TCDD by World Health Organization Toxicity Equivalency Factor.
10 - Value is for hexavalent chromium.
11 - Value is for mercuric chloride (and other mercury salts).

Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

Definitions:
C = Carcinogen
COPC = Chemical Of Potential Concern
J = Estimated value
N = Noncarcinogen
NA = Not Applicable/Not Available

Rationale Codes:
For selection as a COPC:
ASL = Above Screening Level and site background

For elimination as a COPC:
BKG = Less than Background Concentration
BSL = Below COPC Screening Level
NUT = Essential nutrient
NTX = No toxicity criteria

Associated Samples:

TF2-001-SB1000-0204	TF2-003-SB1011-0204	TF2-003-SB1019-0810	TF2-004/5-SB1047-0204	TF2-B219-SB1081-0204	TF2-BSA-SB1096-0204
TF2-001-SB1000-0810	TF2-003-SB1011-0204-D	TF2-004/5-SB1021-0204	TF2-004/5-SB1047-0608	TF2-B219-SB1082-0204-D	TF2-BSA-SB1097-0204
TF2-001-SB1001-0204	TF2-003-SB1012-0204	TF2-004/5-SB1021-0204-D	TF2-004/5-SB1048-0204	TF2-B219-SB1082-0204	
TF2-001-SB1001-0810	TF2-003-SB1012-0810	TF2-004/5-SB1021-0608	TF2-004/5-SB1049-0204	TF2-B219-SB1083-0204	
TF2-001-SB1002-0204	TF2-003-SB1013-0204	TF2-004/5-SB1025-2.604	TF2-004/5-SB1049-0810	TF2-B219-SB1084-0204	
TF2-001-SB1002-0405	TF2-003-SB1013-0405	TF2-004/5-SB1026-0204	TF2-004/5-SB1057-0304	TF2-B219-SB1085-0204	
TF2-001-SB1003-0204	TF2-003-SB1014-0204	TF2-004/5-SB1026-022.7	TF2-004/5-SB1057-0608	TF2-B219-SB1086-0204	
TF2-001-SB1004-0204	TF2-003-SB1014-0810	TF2-004/5-SB1031-0204	TF2-004/5-SB1057-0608-D	TF2-B219-SB1087-0204	
TF2-001-SB1004-0204-D	TF2-003-SB1015-0204	TF2-004/5-SB1031-0810	TF2-004/5-SB1058-0204	TF2-B219-SB1088-0204	
TF2-001-SB1005-0204	TF2-003-SB1015-0810	TF2-004/5-SB1032-0204	TF2-004/5-SB1064-0204	TF2-B219-SB1089-0204	
TF2-001-SB1005-0204-D	TF2-003-SB1016-0204	TF2-004/5-SB1038-0204	TF2-004/5-SB1064-0406	TF2-B219-SB1089-0204-D	
TF2-001-SB1006-0204	TF2-003-SB1016-0810	TF2-004/5-SB1038-0810	TF2-004/5-SB1065-0204	TF2-BSA-SB1091-0204	
TF2-001-SB1007-0204	TF2-003-SB1017-011.6	TF2-004/5-SB1039-0406	TF2-004/5-SB1065-0608	TF2-BSA-SS1091-0204	
TF2-001-SB1008-0204	TF2-003-SB1017-0204	TF2-004/5-SB1040-0204	TF2-004/5-SB1066-0203	TF2-BSA-SB1092-0204	
TF2-001-SB1009-0204	TF2-003-SB1017-0810	TF2-004/5-SB1040-0810	TF2-004/5-SB1068-0204	TF2-BSA-SB1093-0204	
TF2-001-SB1009-0810	TF2-003-SB1018-0204	TF2-004/5-SB1040-0810-D	TF2-004/5-SB1068-0204-D	TF2-BSA-SB1094-0204	
TF2-001-SB1010-0204	TF2-003-SB1019-0204	TF2-004/5-SB1041-022.5	TF2-B219-SB1080-0204	TF2-BSA-SB1095-0204	

RAGS Part D Table 3

Medium-Specific Exposure Point Concentration Summary

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RAGS PART D TABLE 3
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

Table No.	Reasonable Maximum Exposures
3.1.RME	Surface Soil - Tank Farm 2
3.2.RME	All Soil - Tank Farm 2
3.3.RME	Surface Soil - AOC-001
3.4.RME	All Soil - AOC-001
3.5.RME	Surface Soil - Building 219
3.6.RME	All Soil - Building 219

TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Tank Farm 2	Benzo(a)anthracene	mg/kg	0.20	0.51 (L)	4.5	0.51	mg/kg	95% KM (Chebyshev) UCL	ProUCL 5.0.00
	Benzo(a)pyrene	mg/kg	0.16	0.41 (L)	3.7	0.41	mg/kg	95% KM (Chebyshev) UCL	ProUCL 5.0.00
	Benzo(b)fluoranthene	mg/kg	0.25	0.27 (L)	5.8	0.27	mg/kg	95% H-UCL	ProUCL 5.0.00
	Benzo(g,h,i)perylene	mg/kg	0.070	0.19 (L)	1.8	0.19	mg/kg	95% KM (Chebyshev) UCL	ProUCL 5.0.00
	Benzo(k)fluoranthene	mg/kg	0.081	0.20 (L)	1.7	0.20	mg/kg	95% KM (Chebyshev) UCL	ProUCL 5.0.00
	Chrysene	mg/kg	0.21	0.23 (L)	4.9	0.23	mg/kg	95% H-UCL	ProUCL 5.0.00
	Dibenzo(a,h)anthracene	mg/kg	0.030	0.070 (NP)	0.59	0.070	mg/kg	95% KM (Chebyshev) UCL	ProUCL 5.0.00
	Indeno(1,2,3-cd)pyrene	mg/kg	0.13	0.32 (L)	2.8	0.32	mg/kg	95% KM (Chebyshev) UCL	ProUCL 5.0.00
	Aroclor-1260	mg/kg	3.8	11 (G)	18	11	mg/kg	95% Adjusted Gamma UCL	ProUCL 5.0.00
	2,3,7,8-TCDD Equivalents	mg/kg	0.0000058	0.0000065 (L)	0.0000312	0.0000065	mg/kg	95% H-UCL	ProUCL 5.0.00
	Antimony	mg/kg	0.37	0.81 (NP)	6.6 J	0.81	mg/kg	95% KM (Chebyshev) UCL	ProUCL 5.0.00
	Chromium VI	mg/kg	17.2	18.2 (N)	44.5	18.2	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Cobalt	mg/kg	10.6	11.2 (N)	16.6	11.2	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Iron	mg/kg	24200	25300 (N)	37800	25300	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Manganese	mg/kg	294	314 (L)	658 J	314	mg/kg	95% Modified-t UCL	ProUCL 5.0.00
	Thallium	mg/kg	0.047	0.056 (NP)	0.1	0.056	mg/kg	95% KM (Chebyshev) UCL	ProUCL 5.0.00

G = Gamma
J = Estimated value
L = Lognormal
N = Normal
NP = Non-parametric

Exposure point concentrations for the RME scenarios are also the exposure point concentrations for the CTE scenarios.

TABLE 3.2.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: All Soil
Exposure Medium: All Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Tank Farm 2	Benzo(a)anthracene	mg/kg	0.18	0.48 (L)	4.5	0.48	mg/kg	97.5% KM (Chebyshev) UCL	ProUCL 5.0.00
	Benzo(a)pyrene	mg/kg	0.14	0.30 (L)	3.7	0.30	mg/kg	95% KM (Chebyshev) UCL	ProUCL 5.0.00
	Benzo(b)fluoranthene	mg/kg	0.22	0.58 (NP)	5.8	0.58	mg/kg	97.5% KM (Chebyshev) UCL	ProUCL 5.0.00
	Benzo(g,h,i)perylene	mg/kg	0.063	0.14 (L)	1.8	0.14	mg/kg	95% KM (Chebyshev) UCL	ProUCL 5.0.00
	Benzo(k)fluoranthene	mg/kg	0.071	0.15 (L)	1.7	0.15	mg/kg	95% KM (Chebyshev) UCL	ProUCL 5.0.00
	Chrysene	mg/kg	0.19	0.49 (L)	4.9	0.49	mg/kg	97.5% KM (Chebyshev) UCL	ProUCL 5.0.00
	Dibenzo(a,h)anthracene	mg/kg	0.027	0.052 (NP)	0.59 J	0.052	mg/kg	95% KM (Chebyshev) UCL	ProUCL 5.0.00
	Indeno(1,2,3-cd)pyrene	mg/kg	0.11	0.29 (L)	2.8 J	0.29	mg/kg	97.5% KM (Chebyshev) UCL	ProUCL 5.0.00
	Aroclor-1260	mg/kg	2.1	7.0 (G)	18	7.0	mg/kg	95% GROS Adjusted Gamma UCL	ProUCL 5.0.00
	2,3,7,8-TCDD Equivalents	mg/kg	0.0000046	0.0000052 (G)	0.0000312	0.0000052	mg/kg	95% Approximate Gamma UCL	ProUCL 5.0.00
	Aluminum	mg/kg	13300	13700 (N)	21000	13700	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Antimony	mg/kg	0.24	0.34 (NP)	6.6 J	0.34	mg/kg	95% KM (BCA) UCL	ProUCL 5.0.00
	Arsenic	mg/kg	6.8	7.1 (G)	14.3	7.1	mg/kg	95% Approximate Gamma UCL	ProUCL 5.0.00
	Chromium VI	mg/kg	17.4	18.1 (G)	44.5	18.1	mg/kg	95% Approximate Gamma UCL	ProUCL 5.0.00
	Cobalt	mg/kg	11.2	11.8 (L)	30.3	11.8	mg/kg	95% Modified-t UCL	ProUCL 5.0.00
	Iron	mg/kg	25500	26400 (N)	45200	26400	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Manganese	mg/kg	293	305 (G)	658 J	305	mg/kg	95% Approximate Gamma UCL	ProUCL 5.0.00
	Thallium	mg/kg	0.047	0.053 (NP)	0.25	0.053	mg/kg	95% KM (BCA) UCL	ProUCL 5.0.00

G = Gamma
J = Estimated value
L = Lognormal
NP = Non-parametric

Exposure point concentrations for the RME scenarios are also the exposure point concentrations for the CTE scenarios.

TABLE 3.3.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
AOC-001	Benzo(a)anthracene	mg/kg	0.54	4.6 (NP)	4.5	4.5	mg/kg	Maximum Concentration	Max < UCL
	Benzo(a)pyrene	mg/kg	0.43	3.8 (NP)	3.7	3.7	mg/kg	Maximum Concentration	Max < UCL
	Benzo(b)fluoranthene	mg/kg	0.69	5.9 (NP)	5.8	5.8	mg/kg	Maximum Concentration	Max < UCL
	Benzo(g,h,i)perylene	mg/kg	0.21	1.8 (NP)	1.8	1.8	mg/kg	Maximum Concentration	Max < UCL
	Benzo(k)fluoranthene	mg/kg	0.20	1.7 (NP)	1.7	1.7	mg/kg	Maximum Concentration	Max < UCL
	Chrysene	mg/kg	0.56	5.0 (NP)	4.9	4.9	mg/kg	Maximum Concentration	Max < UCL
	Dibenzo(a,h)anthracene	mg/kg	0.069	0.61 (NP)	0.59 J	0.59	mg/kg	Maximum Concentration	Max < UCL
	Indeno(1,2,3-cd)pyrene	mg/kg	0.33	2.9 (NP)	2.8 J	2.8	mg/kg	Maximum Concentration	Max < UCL
	Aroclor-1260	NA	NA	NA	NA	NA	NA	NA	NA
	2,3,7,8-TCDD Equivalents	mg/kg	0.0000024	0.0000027 (N)	0.0000032	0.0000027	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Antimony	mg/kg	0.13	0.17 (NP)	0.26 J	0.17	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Chromium VI	mg/kg	16.4	17.0 (N)	18	17.0	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Cobalt	mg/kg	12.4	13.7 (N)	16.6	13.7	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Iron	mg/kg	25,400	26,400 (N)	27,800	26,400	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Manganese	mg/kg	342	379 (N)	459	379	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Thallium	mg/kg	0.050	0.057 (N)	0.08 J	0.057	mg/kg	95% Student's-t UCL	ProUCL 5.0.00

J = Estimated value
N = Normal
NP = Non-parametric

Exposure point concentrations for the RME scenarios are also the exposure point concentrations for the CTE scenarios.

TABLE 3.4.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: All Soil
Exposure Medium: All Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
AOC-001	Benzo(a)anthracene	mg/kg	0.42	2.5 (NP)	4.5	2.5	mg/kg	99% KM (Chebyshev) UCL	ProUCL 5.0.00
	Benzo(a)pyrene	mg/kg	0.34	2.1 (NP)	3.7	2.1	mg/kg	99% KM (Chebyshev) UCL	ProUCL 5.0.00
	Benzo(b)fluoranthene	mg/kg	0.53	3.2 (NP)	5.8	3.2	mg/kg	99% KM (Chebyshev) UCL	ProUCL 5.0.00
	Benzo(g,h,i)perylene	mg/kg	0.17	1.0 (NP)	1.8	1.0	mg/kg	99% KM (Chebyshev) UCL	ProUCL 5.0.00
	Benzo(k)fluoranthene	mg/kg	0.160	0.95 (NP)	1.7	0.95	mg/kg	99% KM (Chebyshev) UCL	ProUCL 5.0.00
	Chrysene	mg/kg	0.42	2.6 (NP)	4.9	2.6	mg/kg	99% KM (Chebyshev) UCL	ProUCL 5.0.00
	Dibenzo(a,h)anthracene	mg/kg	0.053	0.32 (NP)	0.59 J	0.32	mg/kg	99% KM (Chebyshev) UCL	ProUCL 5.0.00
	Indeno(1,2,3-cd)pyrene	mg/kg	0.26	1.6 (NP)	2.8	1.6	mg/kg	99% KM (Chebyshev) UCL	ProUCL 5.0.00
	Aroclor-1260	NA	NA	NA	NA	NA	NA	NA	NA
	2,3,7,8-TCDD Equivalents	mg/kg	0.0000024	0.0000027 (G)	0.0000060	0.0000027	mg/kg	95% Adjusted Gamma UCL	ProUCL 5.0.00
	Aluminum	mg/kg	14,400	15,200 (N)	21,000	15,200	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Antimony	mg/kg	0.10	0.12 (G)	0.26 J	0.12	mg/kg	95% Adjusted Gamma KM-UCL	ProUCL 5.0.00
	Arsenic	mg/kg	7.5	8.4 (G)	14.3	8.4	mg/kg	95% Adjusted Gamma UCL	ProUCL 5.0.00
	Chromium VI	mg/kg	17.3	18.4 (G)	26.5	18.4	mg/kg	95% Adjusted Gamma UCL	ProUCL 5.0.00
	Cobalt	mg/kg	12.6	14.5 (N)	30.3	14.5	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Iron	mg/kg	25,800	28,000 (N)	45,100	28,000	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Manganese	mg/kg	308	339 (N)	459	339	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Thallium	mg/kg	0.059	0.067 (N)	0.12	0.067	mg/kg	95% Student's-t UCL	ProUCL 5.0.00

G = Gamma
J = Estimated value
NA = Not applicable
NP = Non-parametric

Exposure point concentrations for the RME scenarios are also the exposure point concentrations for the CTE scenarios.

TABLE 3.5.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
B219	Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA
	Aroclor-1260	mg/kg	3.8	11 (G)	18	11	mg/kg	95% Adjusted Gamma UCL	ProUCL 5.0.00
	2,3,7,8-TCDD Equivalents	NA	NA	NA	NA	NA	NA	NA	NA
	Antimony	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium VI	NA	NA	NA	NA	NA	NA	NA	NA
	Cobalt	NA	NA	NA	NA	NA	NA	NA	NA
	Iron	NA	NA	NA	NA	NA	NA	NA	NA
	Manganese	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	NA	NA	NA	NA	NA	NA	NA	NA

G = Gamma
NA = Not applicable

Exposure point concentrations for the RME scenarios are also the exposure point concentrations for the CTE scenarios.

TABLE 3.6.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: All Soil
Exposure Medium: All Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
B219	Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA
	Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA
	Chrysene	NA	NA	NA	NA	NA	NA	NA	NA
	Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA
	Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA
	Aroclor-1260	mg/kg	2.1	7.0 (G)	18	7.0	mg/kg	95% GROS Adjusted Gamma UCL	ProUCL 5.0.00
	2,3,7,8-TCDD Equivalents	NA	NA	NA	NA	NA	NA	NA	NA
	Aluminum	NA	NA	NA	NA	NA	NA	NA	NA
	Antimony	NA	NA	NA	NA	NA	NA	NA	NA
	Arsenic	NA	NA	NA	NA	NA	NA	NA	NA
	Chromium VI	NA	NA	NA	NA	NA	NA	NA	NA
	Cobalt	NA	NA	NA	NA	NA	NA	NA	NA
	Iron	NA	NA	NA	NA	NA	NA	NA	NA
	Manganese	NA	NA	NA	NA	NA	NA	NA	NA
	Thallium	NA	NA	NA	NA	NA	NA	NA	NA

G = Gamma
NA = Not applicable

Exposure point concentrations for the RME scenarios are also the exposure point concentrations for the CTE scenarios.

RAGS Part D Table 4

Values Used For Daily Intake Calculations

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VALUES USED FOR DAILY INTAKE CALCULATIONS

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4.2.RME Adolescent Trespassers Exposed to Air Emissions from Surface Soil/All Soil
4.3.RME Adult Bow Hunters Exposed to Surface Soil/All Soil
4.4.RME Adult Bow Hunters Exposed to Air Emissions from Surface Soil/All Soil
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4.17 Dermal Worksheet

TABLE 4.1.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - ADOLESCENT TRESPASSERS - SOILS

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Trespassers	Adolescent	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	USEPA, 1997	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	$\frac{Cs \times RBA \times IRS \times CF3 \times FI \times EF \times ED}{BW \times AT}$
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				FI	Fraction Ingested	1	unitless	--	
				EF	Exposure Frequency	48	days/year	(1)	
				ED	Exposure Duration	12	years	(2)	
				BW	Body Weight	50	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	4380	days	USEPA, 1989	
Dermal	Trespassers	Adolescent	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	4050	cm2	(3)	$\frac{CS \times CF3 \times SA \times SSAF \times DABS \times EV \times EF \times ED}{BW \times AT}$
				SSAF	Soil to Skin Adherence Factor	0.4	mg/cm2/event	USEPA, 2004	
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	48	days/year	(1)	
				ED	Exposure Duration	12	years	(2)	
				BW	Body Weight	50	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	4380	days	USEPA, 1989	

Notes:

For chemicals that act via the mutagenic mode of action the intake will be multiplied by the appropriate age-dependent adjustment factor in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

1 - Assumes 2 day a week for 24 weeks during late spring, summer, and early fall.

2 - Older child from age 7 to 18.

3 - Assumes 31 percent of the average total surface area of 1.31 m^2 for females and males, ages 7 through 17 years (USEPA, 1997).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

USEPA, 1997: Exposure Factors Handbook. EPA/600/8-95/002FA.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Cancer Ingestion Intake = 4.51E-06	Cancer Dermal Intake = 7.30E-07
Noncancer Ingestion Intake = 2.63E-07	Noncancer Dermal Intake = 4.26E-06

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.2.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - ADOLESCENT TRESPASSERS - SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Trespassers	Adolescent	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	4	hours/day	(1)	$\frac{CA \times ET \times EF \times ED}{AT \times 24\ hours/day}$
				EF	Exposure Frequency	48	days/year	(2)	
				ED	Exposure Duration	12	years	(3)	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	CA = (1/PEF + 1/VF) x Cs
				AT-N	Averaging Time (Non-Cancer)	4,380	days	USEPA, 1989	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA 2014	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2014	

Notes:

For chemicals that act via the mutagenic mode of action the intake will be multiplied by the appropriate age-dependent adjustment factor in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

1 - Professional judgment. Receptor is only at the site part of the day.

2 - Assumes 2 day a week for 24 weeks during late spring, summer, and early fall.

3 - Older child from age 7 to 18.

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 1997: Exposure Factors Handbook. USEPA/600/8-95/002FA.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b:Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Cancer Inhalation Intake = 3.76E-03 Noncancer Inhalation Intake = 2.19E-02

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from inhalation = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.3.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - BOW HUNTER - SOILS

DATA GAPS ASSESSMENT TANK FARM 3 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Bow Hunter	Adult	Tank Farm 3	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	USEPA, 2014	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	Cs x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	BW x AT
				FI	Fraction Ingested	1	unitless	(1)	
				EF	Exposure Frequency	20	days/year	(2)	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(3), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 16 - 26)	10	years	(3), USEPA, 2005, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	7,300	days	USEPA, 2014	
Dermal	Bow Hunter	Adult	Tank Farm 3	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002a	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	
				SA	Skin Surface Available for Contact	8,032	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.07	mg/cm2/event	USEPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	20	days/year	(2)	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(3), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 16 - 26)	10	years	(3), USEPA, 2005, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	7,300	days	USEPA, 2014	

Notes:

1 - The adult recreational user is assumed to be at the site only a portion of the day.

2 - Assume two days every other week during hunting season.

3 - Adults will be evaluated as one age group (7 - 26 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, adult recreational users will be evaluated as two age groups, 7 - 16 years and 16 - 26 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-89/060.

USEPA, 2002a:Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2002b: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Age 6 - 30) = 1.96E-08 Cancer Dermal Intake (Age 6 - 30) = 8.26E-08

Mutagenic Chemicals

Cancer Ingestion Intake (Age 6 - 16) = 8.78E-09 Cancer Dermal Intake (Age 6 - 16) = 4.13E-08

Cancer Ingestion Intake Age 16 - 26) = 8.78E-09 Cancer Dermal Intake (Age 16 - 26) = 4.13E-08

Noncarcinogenic Chemicals

Noncancer Ingestion Intake = 6.85E-08 Noncancer Dermal Intake = 2.89E-07

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.4.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - BOW HUNTER - SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 3 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Bow Hunter	Adult	Tank Farm 3	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	8	hours/day	(1)	$\frac{CA \times ET \times EF \times ED}{AT \times 24\ hours/day}$
				EF	Exposure Frequency	20	days/year	(2)	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(3), USEPA, 2005, 2014a	
				ED2	Exposure Duration (Age 16 - 26)	10	years	(3), USEPA, 2005, 2014a	CA = (1/PEF + 1/VF) x Cs
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014a	
				AT-N	Averaging Time (Non-Cancer)	7300	days	USEPA, 2014a	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA 2014b	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2014b	

Notes:

1 - The bow hunter is assumed to be hunting all day while at the site.

2 - Assume two days every other week during hunting season.

3 - Adults will be evaluated as one age group (7 - 26 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, adult recreational users will be evaluated as two age groups, 7 - 16 years and 16 - 26 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014a: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

USEPA, 2014b: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Non-Mutagenic Chemicals

Cancer Inhalation Intake (Age 6 - 30) = 5.22E-03

Noncarcinogenic Chemicals

Noncancer Inhalation Intake = 1.83E-02

Mutagenic Chemicals

Cancer Inhalation Intake (Age 6 - 16) = 2.61E-03

Cancer Inhalation Intake (Age 16 - 26) = 2.61E-03

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.5.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - CONSTRUCTION WORKERS- SOILS

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Construction Workers	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002a	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	330	mg/day	USEPA, 2002b	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	CS x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	0.000001	kg/mg	–	BW x AT
				FI	Fraction Ingested	1	unitless	USEPA, 2002b	
				EF	Exposure Frequency	130	days/year	(1)	
				ED	Exposure Duration	1	years	(1)	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 2014	
Dermal	Construction Workers	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002a	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	–	
				SA	Skin Surface Available for Contact	3470	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.3	mg/cm2/event	USEPA, 2002, 2004	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	130	days/year	(1)	
				ED	Exposure Duration	1	years	(1)	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 2014	

Notes:

1 - Professional judgment. Assumes a 26 week construction project.

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A.

USEPA, 2002a: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2002b: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Cancer Ingestion Intake = 2.10E-08 Cancer Dermal Intake = 6.62E-08

Noncancer Ingestion Intake = 1.47E-06 Noncancer Dermal Intake = 4.63E-06

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.6.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - CONSTRUCTION WORKERS - SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Construction Workers	Adult	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	8	hours/day	(1)	$\frac{CA \times ET \times EF \times ED}{AT \times 24\ hours/day}$
				EF	Exposure Frequency	130	days/year	(1)	
				ED	Exposure Duration	1	years	(1)	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 1989	CA = (1/PEF + 1/VF) x Cs
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	
				PEF	Particulate Emission Factor	1.40E+06	m3/kg	USEPA, 2002a	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	14.31	g/m2-s per kg/m3	USEPA, 2002a	

Notes:

1 - Professional judgment. Assumes a 26 week construction project.

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Cancer Inhalation Intake = 1.70E-03 Noncancer Inhalation Intake = 1.19E-01

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from inhalation = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.7.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - INDUSTRIAL WORKERS - SOIL

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Industrial Workers	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002a	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	USEPA, 2014	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	Cs x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	0.000001	kg/mg	–	BW x AT
				FI	Fraction Ingested	1	unitless	USEPA, 2014	
				EF	Exposure Frequency	250	days/year	USEPA, 2014	
				ED	Exposure Duration	25	years	USEPA, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	USEPA, 2014	
Dermal	Industrial Workers	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002a	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	–	
				SA	Skin Surface Available for Contact	3470	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.12	mg/cm2/event	USEPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	250	days/year	USEPA, 2002b	
				ED	Exposure Duration	25	years	USEPA, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	9125	days	USEPA, 2014	

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A.

USEPA, 2002a:Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2002b: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Cancer Ingestion Intake = 3.06E-07 Cancer Dermal Intake = 1.27E-06

Noncancer Ingestion Intake = 8.56E-07 Noncancer Dermal Intake = 3.57E-06

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.8.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - INDUSTRIAL WORKERS - SOIL TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Industrial Workers	Adult	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	8	hours/day	USEPA, 2014a	$\frac{CA \times ET \times EF \times ED}{AT \times 24\ hours/day}$
				EF	Exposure Frequency	250	days/year	USEPA, 2014a	
				ED	Exposure Duration	25	years	USEPA, 2002a	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014a	$CA = (1/PEF + 1/VF) \times Cs$
				AT-N	Averaging Time (Non-Cancer)	9125	days	USEPA, 2014a	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA, 2014b	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA, 2014b	

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b:Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014a: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

USEPA, 2014b: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Cancer Inhalation Intake = 8.15E-02 Noncancer Inhalation Intake = 2.28E-01

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from inhalation = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.9.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - CHILD RECREATIONAL USERS - SOILS

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Recreational User	Child	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	200	mg/day	USEPA, 2014	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	CS x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	0.000001	kg/mg	--	BW x AT
				FI	Fraction Ingested	0.5	unitless	(1)	
				EF	Exposure Frequency	48	days/year	(2)	
				ED1	Exposure Duration (Age 0 - 2)	2	years	(3), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 2 - 6)	4	years	(3), USEPA, 2005, 2014	
				BW	Body Weight	15	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	2190	days	USEPA, 2014	
Dermal	Recreational User	Child	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	2,690	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.2	mg/cm2/event	USEPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	48	days/year	(2)	
				ED1	Exposure Duration (Age 0 - 2)	2	years	(3), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 2 - 6)	4	years	(3), USEPA, 2005, 2014	
				BW	Body Weight	15	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	2190	days	USEPA, 2014	

Notes:

1 - The child recreational user is assumed to be at the site only a portion of the day.

2 - Assume two days a week for 24 weeks during late spring, summer, and early fall.

3 - Children will be evaluated as one age group (0 - 6 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, children recreational users will be evaluated as two age groups, 0 - 2 years and 2 - 6 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Age 0 - 6) = 7.51E-08 Cancer Dermal Intake (Age 0 - 6) = 4.04E-07

Mutagenic Chemicals

Cancer Ingestion Intake (Age 0 - 2) = 2.50E-08 Cancer Dermal Intake (Age 0 - 2) = 1.35E-07

Cancer Ingestion Intake (Age 2 - 6) = 5.01E-08 Cancer Dermal Intake (Age 2 - 6) = 2.70E-07

Noncarcinogenic Chemicals

Noncancer Ingestion Intake = 8.77E-07 Noncancer Dermal Intake = 4.72E-06

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.10.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - CHILD RECREATIONAL USERS - SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Recreational User	Child	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	4	hours/day	(1)	CA x ET x EF x ED
				EF	Exposure Frequency	48	days/year	(2)	AT x 24 hours/day
				ED1	Exposure Duration (Age 0 - 2)	2	years	(3), USEPA, 2005, 2014a	
				ED2	Exposure Duration (Age 2 - 6)	4	years	(3), USEPA, 2005, 2014a	CA = (1/PEF + 1/VF) x Cs
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014a	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 2014a	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA 2014b	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2014b	

Notes:

1 - The child recreational user is assumed to be at the site only a portion of the day.

2 - Assume two days a week for 24 weeks during late spring, summer, and early fall.

3 - Children will be evaluated as one age group (0 - 6 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, children recreational users will be evaluated as two age groups, 0 - 2 years and 2 - 6 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b:Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014a: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

USEPA, 2014b: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Non-Mutagenic Chemicals

Cancer Inhalation Intake (Age 0 - 6) = 1.88E-03 Noncancer Inhalation Intake = 2.19E-02

Mutagenic Chemicals

Cancer Inhalation Intake (Age 0 - 2) = 6.26E-04

Cancer Inhalation Intake (Age 2 - 6) = 1.25E-03

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from inhalation = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.11.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - ADULT RECREATIONAL USERS - SOILS

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Recreational User	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	USEPA, 2014	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	CS x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	BW x AT
				FI	Fraction Ingested	0.5	unitless	(1)	
				EF	Exposure Frequency	48	days/year	(2)	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(3), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 16 - 30)	10	years	(3), USEPA, 2005, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	7,300	days	USEPA, 2014	
Dermal	Recreational User	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	
				SA	Skin Surface Available for Contact	6,032	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.07	mg/cm2/event	USEPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	48	days/year	(2)	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(3), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 16 - 30)	10	years	(3), USEPA, 2005, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	7,300	days	USEPA, 2014	

Notes:

1 - The adult recreational user is assumed to be at the site only a portion of the day.

2 - Assume two days a week for 24 weeks during late spring, summer, and early fall.

3 - Adults will be evaluated as one age group (7 - 30 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, adult recreational users will be evaluated as two age groups, 7 - 16 years and 16 - 30 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Age 6 - 30) = 2.35E-08 Cancer Dermal Intake (Age 6 - 30) = 1.98E-07

Mutagenic Chemicals

Cancer Ingestion Intake (Age 6 - 16) = 1.17E-08 Cancer Dermal Intake (Age 6 - 16) = 9.92E-08

Cancer Ingestion Intake Age 16 - 30) = 1.17E-08 Cancer Dermal Intake (Age 16 - 30) = 9.92E-08

Noncarcinogenic Chemicals

Noncancer Ingestion Intake = 8.22E-08 Noncancer Dermal Intake = 6.94E-07

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.12.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - ADULT RECREATIONAL USERS - SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Recreational User	Adult	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	4	hours/day	(1)	CA x ET x EF x ED
				EF	Exposure Frequency	48	days/year	(2)	AT x 24 hours/day
				ED1	Exposure Duration (Age 6 - 16)	10	years	(3), USEPA, 2005, 2014a	
				ED2	Exposure Duration (Age 16 - 26)	10	years	(3), USEPA, 2005, 2014a	CA = (1/PEF + 1/VF) x Cs
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014a	
				AT-N	Averaging Time (Non-Cancer)	7300	days	USEPA, 2014a	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA 2014b	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2014b	

Notes:

1 - The adult recreational user is assumed to be at the site only a portion of the day.

2 - Assume two days a week for 24 weeks during late spring, summer, and early fall.

3 - Adults will be evaluated as one age group (7 - 26 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, adult recreational users will be evaluated as two age groups, 7 - 16 years and 16 - 26 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014a: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

USEPA, 2014b: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Non-Mutagenic Chemicals

Cancer Inhalation Intake (Age 6 - 30) = 6.26E-03

Noncarcinogenic Chemicals

Noncancer Inhalation Intake = 2.19E-02

Mutagenic Chemicals

Cancer Inhalation Intake (Age 6 - 16) = 3.13E-03

Cancer Inhalation Intake (Age 16 - 26) = 3.13E-03

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.13.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - CHILD RESIDENTS - SOILS

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Child	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	200	mg/day	USEPA, 2014	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	CS x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	1.0E-06	kg/mg	–	BW x AT
				FI	Fraction Ingested	1	unitless	–	
				EF	Exposure Frequency	350	days/year	USEPA, 2014	
				ED1	Exposure Duration (Age 0 - 2)	2	years	(1), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 2 - 6)	4	years	(1), USEPA, 2005, 2014	
				BW	Body Weight	15	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 2014	
Dermal	Resident	Child	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	1E-06	kg/mg	–	
				SA	Skin Surface Available for Contact	2,690	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherance Factor	0.2	mg/cm2/event	USEPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	350	days/year	USEPA, 2014	
				ED1	Exposure Duration (Age 0 - 2)	2	years	(1), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 2 - 6)	4	years	(1), USEPA, 2005, 2014	
				BW	Body Weight	15	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 2014	

Notes:

1 - Children will be evaluated as one age group (0 - 6 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential children will be evaluated as two age groups, 0 - 2 years and 2 - 6 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Age 0 - 6) = 1.10E-06 Cancer Dermal Intake (Age 0 - 6) = 2.95E-06

Mutagenic Chemicals

Cancer Ingestion Intake (Age 0 - 2) = 3.65E-07 Cancer Dermal Intake (Age 0 - 2) = 9.83E-07

Cancer Ingestion Intake (Age 2 - 6) = 7.31E-07 Cancer Dermal Intake (Age 2 - 6) = 1.97E-06

Noncarcinogenic Chemicals

Noncancer Ingestion Intake = 1.28E-05 Noncancer Dermal Intake = 3.44E-05

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.14.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - CHILD RESIDENTS SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Resident	Child	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	24	hours/day	USEPA, 2014a	CA x ET x EF x ED
				EF	Exposure Frequency	350	days/year	USEPA, 2014a	AT x 24 hours/day
				ED1	Exposure Duration (Age 0 - 2)	2	years	(1), USEPA, 2005, 2014a	
				ED2	Exposure Duration (Age 2 - 6)	4	years	(1), USEPA, 2005, 2014a	CA = (1/PEF + 1/VF) x Cs
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014a	
				AT-N	Averaging Time (Non-Cancer)	2190	days	USEPA, 2014a	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA 2014b	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2014b	

Notes:

1 - Children will be evaluated as one age group (0 - 6 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential children will be evaluated as two age groups, 0 - 2 years and 2 - 6 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014a: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

USEPA, 2014b: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Non-Mutagenic Chemicals

Cancer Inhalation Intake (Age 0 - 6) = 8.22E-02

Noncarcinogenic Chemicals

Noncancer Inhalation Intake = 1.92E+00

Mutagenic Chemicals

Cancer Inhalation Intake (Age 0 - 2) = 2.74E-02

Cancer Inhalation Intake (Age 2 - 6) = 5.48E-02

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from inhalation = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.15.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - ADULT RESIDENTS - SOILS

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	USEPA, 2014	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	CS x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	1.0E-06	kg/mg	–	BW x AT
				FI	Fraction Ingested	1	unitless	–	
				EF	Exposure Frequency	350	days/year	USEPA, 2014	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(1), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 16 - 26)	10	years	(1), USEPA, 2005, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	7,300	days	USEPA, 2014	
Dermal	Resident	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	1.0E-06	kg/mg	–	
				SA	Skin Surface Available for Contact	6,032	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherance Factor	0.07	mg/cm2/event	USEPA, 2014	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	350	days/year	USEPA, 2014	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(1), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 16 - 26)	10	years	(1), USEPA, 2005, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	7,300	days	USEPA, 2014	

Notes:

1 - Adults will be evaluated as one age group (7 – 26 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential adults will be evaluated as two age groups, 7 - 16 years and 16 – 26 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A.

USEPA, 2002a: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Age 6 – 30) = 3.42E-07 Cancer Dermal Intake (Age 6 - 30) = 1.45E-06

Mutagenic Chemicals

Cancer Ingestion Intake (Age 6 - 16) = 1.71E-07 Cancer Dermal Intake (Age 6 - 16) = 7.23E-07

Cancer Ingestion Intake (Age 16 - 26) = 1.71E-07 Cancer Dermal Intake (Age 16 - 26) = 7.23E-07

Noncarcinogenic Chemicals

Noncancer Ingestion Intake = 1.20E-06 Noncancer Dermal Intake = 5.06E-06

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.16.RME

VALUES USED FOR DAILY INTAKE CALCULATIONS

REASONABLE MAXIMUM EXPOSURE - ADULT RESIDENTS - SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Resident	Adult	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	24	hours/day	USEPA, 2014a	$\frac{CA \times ET \times EF \times ED}{AT \times 24\ hours/day}$
				EF	Exposure Frequency	350	days/year	USEPA, 2014a	
				ED1	Exposure Duration (Age 6 - 16)	10	years	(1), USEPA, 2005, 2014a	
				ED2	Exposure Duration (Age 16 - 26)	10	years	(1), USEPA, 2005, 2014a	CA = (1/PEF + 1/VF) x Cs
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	7300	days	USEPA, 1989	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA 2014b	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2014b	

Notes:

1 - Adults will be evaluated as one age group (7 - 30 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential adults will be evaluated as two age groups, 7 - 16 years and 16 - 30 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

USEPA, 2014a: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

USEPA, 2014b: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Non-Mutagenic Chemicals

Cancer Inhalation Intake (Age 6 - 30) = 2.74E-01

Noncarcinogenic Chemicals

Noncancer Inhalation Intake = 9.59E-01

Mutagenic Chemicals

Cancer Inhalation Intake (Age 6 - 16) = 1.37E-01

Cancer Inhalation Intake (Age 16 - 26) = 1.37E-01

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from Inhalation = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.1.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - ADOLESCENT TRESPASSERS - SOILS

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Trespassers	Adolescent	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	50	mg/day	USEPA, 1997	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	Cs x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	0.000001	kg/mg	–	BW x AT
				FI	Fraction Ingested	1	unitless	–	
				EF	Exposure Frequency	24	days/year	(1)	
				ED	Exposure Duration	6	years	(2)	
				BW	Body Weight	50	kg	USEPA, 1989	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2190	days	USEPA, 1989	
Dermal	Trespassers	Adolescent	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	–	
				SA	Skin Surface Available for Contact	4050	cm2	(3)	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.04	mg/cm2/event	USEPA, 2004	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	24	days/year	(1)	
				ED	Exposure Duration	6	years	(2)	
				BW	Body Weight	50	kg	USEPA, 1989	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2190	days	USEPA, 1989	

Notes:

1 - Assumes two days for 12 weeks.

2 - Assumes 50 percent of RME.

3 - Assumes 31 percent of the average total surface area of 1.31 m2 for females and males, ages 7 through 17 years (USEPA, 1997).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

USEPA, 1997: Exposure Factors Handbook. EPA/600/8-95/002FA.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Cancer Ingestion Intake = 5.64E-09 Cancer Dermal Intake = 1.83E-08

Noncancer Ingestion Intake = 6.58E-08 Noncancer Dermal Intake = 2.13E-07

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.2.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - ADOLESCENT TRESPASSERS - SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Trespassers	Adolescent	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	4	hours/day	(1)	$\frac{CA \times ET \times EF \times ED}{AT \times 24\ hours/day}$
				EF	Exposure Frequency	24	days/year	(2)	
				ED	Exposure Duration	6	years	(1)	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	CA = (1/PEF + 1/VF) x Cs
				AT-N	Averaging Time (Non-Cancer)	2,190	days	USEPA, 1989	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA 2014	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2014	

Notes:

1 - Assumes two days for 12 weeks.

2 - Assumes 50 percent of RME.

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Cancer Inhalation Intake = 9.39E-04 Noncancer Inhalation Intake = 1.10E-02

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from Inhalation = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.3.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - BOW HUNTER - SOILS

DATA GAPS ASSESSMENT TANK FARM 3 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Bow Hunter	Adult	Tank Farm 3	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	50	mg/day	USEPA, 1997	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	Cs x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	BW x AT
				FI	Fraction Ingested	1	unitless	(1)	
				EF	Exposure Frequency	10	days/year	(1)	
				ED1	Exposure Duration (Age 6 - 16)	2	years	(3), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 16 - 26)	5	years	(3), USEPA, 2005, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 2014	
Dermal	Bow Hunter	Adult	Tank Farm 3	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	
				SA	Skin Surface Available for Contact	8,032	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.01	mg/cm2/event	USEPA, 2004	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	10	days/year	(1)	
				ED1	Exposure Duration (Age 6 - 16)	2	years	(3), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 16 - 26)	5	years	(3), USEPA, 2005, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 2014	

Notes:

1 - The adult recreational user is assumed to be at the site only a portion of the day.

2 - Assume one day every other week during hunting season.

3 - Adults will be evaluated as one age group (7 - 26 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, adult recreational users will be evaluated as two age groups, 7 - 16 years and 16 - 26 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

USEPA, 1997: Exposure Factors Handbook. EPA/600/8-95/002FA.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake = 1.71E-08 Cancer Dermal Intake = 2.07E-08

Mutagenic Chemicals

Cancer Ingestion Intake (Age 6 - 16) = 4.89E-10 Cancer Dermal Intake (Age 6 - 16) = 5.90E-10

Cancer Ingestion Intake Age 16 - 26) = 1.22E-08 Cancer Dermal Intake (Age 16 - 26) = 1.48E-08

Noncarcinogenic Chemicals

Noncancer Ingestion Intake = 1.71E-08 Noncancer Dermal Intake = 2.07E-08

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.4.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - BOW HUNTER - SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 3 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Bow Hunter	Adult	Tank Farm 3	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	4	hours/day	(1)	$\frac{CA \times ET \times EF \times ED}{AT \times 24\ hours/day}$
				EF	Exposure Frequency	10	days/year	(2)	
				ED1	Exposure Duration (Age 6 - 16)	2	years	(3), USEPA, 2005, 2014a	
				ED2	Exposure Duration (Age 16 - 26)	5	years	(3), USEPA, 2005, 2014a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	CA = (1/PEF + 1/VF) x Cs
				AT-N	Averaging Time (Non-Cancer)	2555	days	USEPA, 2014	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA 2014b	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2014b	

Notes:

1 - The bow hunter is assumed to be hunting half a day while at the site.

2 - Assume one day every other week during hunting season.

3 - Adults will be evaluated as one age group (7 - 26 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, adult recreational users will be evaluated as two age groups, 7 - 16 years and 16 - 26 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Non-Mutagenic Chemicals

Cancer Inhalation Intake = 4.57E-04

Noncarcinogenic Chemicals

Noncancer Inhalation Intake = 4.57E-03

Mutagenic Chemicals

Cancer Inhalation Intake (Age 6 - 16) = 1.30E-04

Cancer Inhalation Intake (Age 16 - 26) = 3.26E-04

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from Ingestion = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.5.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - CONSTRUCTION WORKERS - SOILS

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Construction Workers	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002a	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	330	mg/day	USEPA, 2002b	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	CS x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	0.000001	kg/mg	–	BW x AT
				FI	Fraction Ingested	1	unitless	USEPA, 2002b	
				EF	Exposure Frequency	52	days/year	(1)	
				ED	Exposure Duration	1	years	(1)	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 2014	
Dermal	Construction Workers	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002a	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	–	
				SA	Skin Surface Available for Contact	3470	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.1	mg/cm2/event	USEPA, 2004	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	52	days/year	(1)	
				ED	Exposure Duration	1	years	(1)	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 2014	

Notes:

1 - Professional judgment. Assumes two days a week over a 26 week construction project.

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund, Vol 1: Human Health Evaluation Manual, Part A.

USEPA, 2002a: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2002b: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Cancer Ingestion Intake = 8.40E-09	Cancer Dermal Intake = 6.83E-09
Noncancer Ingestion Intake = 5.88E-07	Noncancer Dermal Intake = 6.18E-07

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.6.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - CONSTRUCTION WORKERS - SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Construction Workers	Adult	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	8	hours/day	(1)	$\frac{CA \times ET \times EF \times ED}{AT \times 24\ hours/day}$
				EF	Exposure Frequency	52	days/year	(1)	
				ED	Exposure Duration	1	years	(1)	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 1989	CA = (1/PEF + 1/VF) x Cs
				AT-N	Averaging Time (Non-Cancer)	365	days	USEPA, 1989	
				PEF	Particulate Emission Factor	1.40E+06	m3/kg	USEPA, 2002a	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	14.31	g/m2-s per kg/m3	USEPA, 2002a	

Notes:

1 - Professional judgment. For some factors, CTE is assumed to be 50 percent of RME.

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b:Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Cancer Inhalation Intake = 6.78E-04 Noncancer Inhalation Intake = 4.75E-02

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from inhalation = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.7.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - INDUSTRIAL WORKERS - SOIL

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Industrial Workers	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	50	mg/day	USEPA, 1993	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	Cs x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	0.000001	kg/mg	–	BW x AT
				FI	Fraction Ingested	1	unitless	USEPA, 1993	
				EF	Exposure Frequency	219	days/year	USEPA, 1993	
				ED	Exposure Duration	9	years	USEPA, 1993	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	3285	days	USEPA, 2014	
Dermal	Industrial Workers	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	–	
				SA	Skin Surface Available for Contact	3470	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.02	mg/cm2/event	USEPA, 2004	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	219	days/year	USEPA, 1993	
				ED	Exposure Duration	9	years	USEPA, 1993	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	3285	days	USEPA, 2014	

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A.

USEPA, 1993: Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Cancer Ingestion Intake = 4.82E-08 Cancer Dermal Intake = 6.69E-08

Noncancer Ingestion Intake = 3.75E-07 Noncancer Dermal Intake = 5.21E-07

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.8.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - INDUSTRIAL WORKERS - SOIL TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Industrial Workers	Adult	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	8	hours/day	USEPA, 2014a	$\frac{CA \times ET \times EF \times ED}{AT \times 24\ hours/day}$
				EF	Exposure Frequency	219	days/year	USEPA, 2002a	
				ED	Exposure Duration	9	years	USEPA, 1993	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014a	CA = (1/PEF + 1/VF) x Cs
				AT-N	Averaging Time (Non-Cancer)	3285	days	USEPA, 2014a	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA, 2014b	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA, 2014b	

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 1993: Superfund Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014a: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

USEPA, 2014b: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Cancer Inhalation Intake = 2.57E-02 Noncancer Inhalation Intake = 2.00E-01

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from Inhalation = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.8.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - CHILD RECREATIONAL USERS - SOILS

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Recreational User	Child	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	USEPA, 1997	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	CS x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	0.000001	kg/mg	--	BW x AT
				FI	Fraction Ingested	0.5	unitless	(1)	
				EF	Exposure Frequency	24	days/year	(2)	
				ED1	Exposure Duration (Age 0 - 2)	1	years	(3), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 2 - 6)	1	years	(3), USEPA, 2005, 2014	
				BW	Body Weight	15	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 2014	
Dermal	Recreational User	Child	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	0.000001	kg/mg	--	
				SA	Skin Surface Available for Contact	2,690	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.04	mg/cm2/event	USEPA, 2004	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	24	days/year	(2)	
				ED1	Exposure Duration (Age 0 - 2)	1	years	(3), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 2 - 6)	1	years	(3), USEPA, 2005, 2014	
				BW	Body Weight	15	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 2014	

Notes:

1 - The child recreational user is assumed to be at the site only a portion of the day.

2 - Assume two days a week for 24 weeks.

3 - Children will be evaluated as one age group (0 - 6 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, children recreational users will be evaluated as two age groups, 0 - 2 years and 2 - 6 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

USEPA, 1997: Exposure Factors Handbook. EPA/600/8-95/002FA.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake = 6.26E-09 Cancer Dermal Intake = 1.35E-08

Mutagenic Chemicals

Cancer Ingestion Intake (Age 0 - 2) = 3.13E-09 Cancer Dermal Intake (Age 0 - 2) = 6.74E-09

Cancer Ingestion Intake (Age 2 - 6) = 3.13E-09 Cancer Dermal Intake (Age 2 - 6) = 6.74E-09

Noncarcinogenic Chemicals

Noncancer Ingestion Intake = 2.19E-07 Noncancer Dermal Intake = 4.72E-07

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.10.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - CHILD RECREATIONAL USERS - SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Recreational User	Child	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	4	hours/day	(1)	CA x ET x EF x ED
				EF	Exposure Frequency	24	days/year	(2)	AT x 24 hours/day
				ED1	Exposure Duration (Age 0 - 2)	1	years	(3), USEPA, 2005, 2014a	
				ED2	Exposure Duration (Age 2 - 6)	1	years	(3), USEPA, 2005, 2014a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014a	CA = (1/PEF + 1/VF) x Cs
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 2014a	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA, 2014b	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA, 2014a	

Notes:

1 - Professional judgment, assume 50 percent of RME.

2 - Assume two days a week for 24 weeks.

3 - Children will be evaluated as one age group (0 - 6 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, children recreational users will be evaluated as two age groups, 0 - 2 years and 2 - 6 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014a: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

USEPA, 2014b: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Non-Mutagenic Chemicals

Cancer Inhalation Intake = 3.13E-04 Noncancer Inhalation Intake = 1.10E-02

Mutagenic Chemicals

Cancer Inhalation Intake (Age 0 - 2) = 1.57E-04

Cancer Inhalation Intake (Age 2 - 6) = 1.57E-04

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from inhalation = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.11.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - ADULT RECREATIONAL USERS - SOILS

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Recreational User	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	50	mg/day	USEPA, 1997	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	CS x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	BW x AT
				FI	Fraction Ingested	0.5	unitless	(1)	
				EF	Exposure Frequency	24	days/year	(1)	
				ED1	Exposure Duration (Age 6 - 16)	2	years	(3), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 16 - 30)	5	years	(3), USEPA, 2005, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 2014	
Dermal	Recreational User	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	
				SA	Skin Surface Available for Contact	6,032	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.01	mg/cm2/event	USEPA, 2004	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	24	days/year	(1)	
				ED1	Exposure Duration (Age 6 - 16)	2	years	(3), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 16 - 30)	5	years	(3), USEPA, 2005, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 2014	

Notes:

1 - The adult recreational user is assumed to be at the site only a portion of the day.

2 - Assume two days a week for 24 weeks.

3 - Adults will be evaluated as one age group (7 - 30 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, adult recreational users will be evaluated as two age groups, 7 - 16 years and 16 - 30 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

USEPA, 1997: Exposure Factors Handbook. EPA/600/8-95/002FA.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake = 2.05E-09 Cancer Dermal Intake = 4.96E-09

Mutagenic Chemicals

Cancer Ingestion Intake (Age 6 - 16) = 5.87E-10 Cancer Dermal Intake (Age 6 - 16) = 1.42E-09

Cancer Ingestion Intake Age 16 - 30) = 1.47E-09 Cancer Dermal Intake (Age 16 - 30) = 3.54E-09

Noncarcinogenic Chemicals

Noncancer Ingestion Intake = 2.05E-08 Noncancer Dermal Intake = 4.96E-08

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.12.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - ADULT RECREATIONAL USERS - SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Recreational User	Adult	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	4	hours/day	(1)	$\frac{CA \times ET \times EF \times ED}{AT \times 24\ hours/day}$
				EF	Exposure Frequency	24	days/year	(2)	
				ED1	Exposure Duration (Age 6 - 16)	2	years	(3), USEPA, 2005, 2014a	
				ED2	Exposure Duration (Age 16 - 26)	5	years	(3), USEPA, 2005, 2014a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 1989	CA = (1/PEF + 1/VF) x Cs
				AT-N	Averaging Time (Non-Cancer)	2555	days	USEPA, 1989	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA, 2014b	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2014b	

Notes:

1 - The adult recreational user is assumed to be at the site only a portion of the day.

2 - Assume two days a week for 24 weeks.

3 - Adults will be evaluated as one age group (7 - 26 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, adult recreational users will be evaluated as two age groups, 7 - 16 years and 16 - 26 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014a: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

USEPA, 2014b: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Non-Mutagenic Chemicals

Cancer Inhalation Intake = 1.10E-03

Noncarcinogenic Chemicals

Noncancer Inhalation Intake = 1.10E-02

Mutagenic Chemicals

Cancer Inhalation Intake (Age 6 - 16) = 3.13E-04

Cancer Inhalation Intake (Age 16 - 26) = 7.83E-04

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from inhalation = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.13.CTE
VALUES USED FOR DAILY INTAKE CALCULATIONS
CENTRAL TENDENCY EXPOSURES - CHILD RESIDENTS - SOILS
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Child	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	100	mg/day	USEPA, 1997	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	CS x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	BW x AT
				FI	Fraction Ingested	1	unitless	--	
				EF	Exposure Frequency	234	days/year	USEPA, 1993	
				ED1	Exposure Duration (Age 0 - 2)	1	years	(1), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 2 - 6)	1	years	(1), USEPA, 2005, 2014	
				BW	Body Weight	15	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 2014	
Dermal	Resident	Child	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	1E-06	kg/mg	--	
				SA	Skin Surface Available for Contact	2,690	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.04	mg/cm2/event	USEPA, 2004	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	234	days/year	USEPA, 1993	
				ED1	Exposure Duration (Age 0 - 2)	1	years	(1), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 2 - 6)	1	years	(1), USEPA, 2005, 2014	
				BW	Body Weight	15	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 2014	

Notes:

1 - Children will be evaluated as one age group (0 - 6 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential children will be evaluated as two age groups, 0 - 2 years and 2 - 6 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-89/060.

USEPA, 1993: Superfund Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure.

USEPA, 1997: Exposure Factors Handbook. EPA/600/8-95/002FA.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake = 1.22E-07 Cancer Dermal Intake = 1.31E-07

Mutagenic Chemicals

Cancer Ingestion Intake (Age 0 - 2) = 6.11E-08 Cancer Dermal Intake (Age 0 - 2) = 6.57E-08

Cancer Ingestion Intake (Age 2 - 6) = 6.11E-08 Cancer Dermal Intake (Age 2 - 6) = 6.57E-08

Noncarcinogenic Chemicals

Noncancer Ingestion Intake = 4.27E-06 Noncancer Dermal Intake = 4.60E-06

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.14.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - CHILD RESIDENTS - SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Resident	Child	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	24	hours/day	USEPA, 2014a	$\frac{CA \times ET \times EF \times ED}{AT \times 24 \text{ hours/day}}$
				EF	Exposure Frequency	234	days/year	USEPA, 1993	
				ED1	Exposure Duration (Age 0 - 2)	1	years	(1), USEPA, 2005, 2014a	
				ED2	Exposure Duration (Age 2 - 6)	1	years	(1), USEPA, 2005, 2014a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014a	CA = (1/PEF + 1/VF) x Cs
				AT-N	Averaging Time (Non-Cancer)	730	days	USEPA, 2014a	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA 2014b	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2014b	

Notes:

1 - Children will be evaluated as one age group (0 - 6 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential children will be evaluated as two age groups, 0 - 2 years and 2 - 6 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 1993: Superfund Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10, December.

USEPA, 2014a: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

USEPA, 2014b: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Non-Mutagenic Chemicals

Cancer Inhalation Intake = 1.83E-02

Noncarcinogenic Chemicals

Noncancer Inhalation Intake = 6.41E-01

Mutagenic Chemicals

Cancer Inhalation Intake (Age 0 - 2) = 9.16E-03

Cancer Inhalation Intake (Age 2 - 6) = 9.16E-03

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from inhalation = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.15.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - ADULT RESIDENTS - SOILS

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface Soil/Subsurface Soil
Exposure Medium: Surface/Subsurface Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Resident	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Intake (mg/kg/day) =
				IR-S	Ingestion Rate	50	mg/day	USEPA, 1993	
				RBA	Relative Bioavailability	Chemical Specific	unitless	USEPA, 1989	CS x RBA x IRS x CF3 x FI x EF x ED
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	BW x AT
				FI	Fraction Ingested	1	unitless	USEPA, 1993	
				EF	Exposure Frequency	234	days/year	USEPA, 1993	
				ED1	Exposure Duration (Age 6 - 16)	2	years	(1), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 16 - 26)	5	years	(1), USEPA, 2005, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 2014	
Dermal	Resident	Adult	Tank Farm 2	CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002	Dermally Absorbed Dose (mg/kg/day) =
				CF3	Conversion Factor 3	1.0E-06	kg/mg	--	
				SA	Skin Surface Available for Contact	6,032	cm2	USEPA, 2014	CS x CF3 x SA x SSAF x DABS x EV x EF x ED
				SSAF	Soil to Skin Adherence Factor	0.01	mg/cm2/event	USEPA, 2004	BW x AT
				DABS	Absorption Factor	Chemical Specific	unitless	USEPA, 2004	
				EV	Events Frequency	1	events/day	USEPA, 2004	
				EF	Exposure Frequency	234	days/year	USEPA, 1993	
				ED1	Exposure Duration (Age 6 - 16)	2	years	(1), USEPA, 2005, 2014	
				ED2	Exposure Duration (Age 16 - 26)	5	years	(1), USEPA, 2005, 2014	
				BW	Body Weight	80	kg	USEPA, 2014	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014	
				AT-N	Averaging Time (Non-Cancer)	2,555	days	USEPA, 2014	

Notes:

1 - Adults will be evaluated as one age group (7 - 30 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential adults will be evaluated as two age groups, 7 - 16 years and 16 - 30 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A.

USEPA, 1993: Superfund Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure.

USEPA, 2002: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

USEPA, 2014: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

Unit Intake Calculations

Incidental Ingestion Intake = (IR-S x CF3 x FI x EF x ED)/(BW x AT)

Dermal Intake = (CF3 x SA x SSAF x EF x ED)/(BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake = 4.01E-08 Cancer Dermal Intake = 4.83E-08

Mutagenic Chemicals

Cancer Ingestion Intake (Age 6 - 16) = 1.14E-08 Cancer Dermal Intake (Age 6 - 16) = 1.38E-08

Cancer Ingestion Intake (Age 16 - 26) = 2.86E-08 Cancer Dermal Intake (Age 16 - 26) = 3.45E-08

Noncarcinogenic Chemicals

Noncancer Ingestion Intake = 4.01E-07 Noncancer Dermal Intake = 4.83E-07

Cancer risk from ingestion = Soil concentration x Cancer Ingestion Intake x Oral Cancer Slope Factor

Cancer risk from dermal contact = Soil concentration x Cancer Dermal Intake x Absorption Factor x Dermal Cancer Slope Factor

Hazard Index from ingestion = Soil concentration x Noncancer Ingestion Intake / Oral Reference Dose

Hazard Index from dermal contact = Soil concentration x Noncancer Dermal Intake x Absorption Factor / Dermal Reference Dose

TABLE 4.16.CTE

VALUES USED FOR DAILY INTAKE CALCULATIONS

CENTRAL TENDENCY EXPOSURES - ADULT RESIDENTS - SOILS TO AIR

DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS, NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Medium: Surface/Subsurface Soil
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Resident	Adult	Tank Farm 2	CA	Chemical concentration in air	Calculated	mg/m3	USEPA, 2002a	Exposure Concentration (mg/m^3) =
				CS	Chemical concentration in soil	Max or 95% UCL	mg/kg	USEPA, 2002b	
				ET	Exposure Time	24	hours/day	USEPA, 1993	$\frac{CA \times ET \times EF \times ED}{AT \times 24\ hours/day}$
				EF	Exposure Frequency	234	days/year	USEPA, 1994	
				ED1	Exposure Duration (Age 6 - 16)	2	years	(1), USEPA, 2005, 2014a	
				ED2	Exposure Duration (Age 16 - 26)	5	years	(1), USEPA, 2005, 2014a	
				AT-C	Averaging Time (Cancer)	25,550	days	USEPA, 2014a	CA = (1/PEF + 1/VF) x Cs
				AT-N	Averaging Time (Non-Cancer)	2555	days	USEPA, 2014a	
				PEF	Particulate Emission Factor	1.10E+10	m3/kg	USEPA 2014b	
				VF	Volatilization Factor	Chemical-specific	m3/kg	USEPA, 2002a	
				Q/C	Inverse of mean concentration at center of source	73.95045	g/m2-s per kg/m3	USEPA 2014b	

Notes:

1 - Adults will be evaluated as one age group (7 - 30 years) for non-mutagenic chemicals. For chemicals that act via the mutagenic mode of action, residential adults will be evaluated as two age groups, 7 - 16 years and 16 - 30 years in accordance with USEPA's Supplemental Guidance of Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005).

Sources:

USEPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. USEPA/540/1-86/060.

USEPA, 1993: Superfund Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure.

USEPA, 2002a: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24.

USEPA, 2002b: Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10.

USEPA, 2014a: Human Health Evaluation Manual, Supplement Guidance, Update of Standard Default Exposure Factors. OSWER 9200.1-120.

USEPA, 2014b: Soil Screening Guidance calculation Internet site at http://rais.ornl.gov/epa/ssl1.shtml. Site-specific values for Hartford, Connecticut.

Unit Intake Calculations

Unit Exposure Concentration = (ET x EF x ED)/(AT x 24 hours/day)

Non-Mutagenic Chemicals

Cancer Inhalation Intake = 6.41E-02

Noncarcinogenic Chemicals

Noncancer Inhalation Intake = 6.41E-01

Mutagenic Chemicals

Cancer Inhalation Intake (Age 6 - 16) = 1.83E-02

Cancer Inhalation Intake (Age 16 - 26) = 4.58E-02

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Inhalation Cancer Slope Factor

Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Inhalation Reference Dose

TABLE 4.17

INTERMEDIATE VARIABLES FOR CALCULATING DA(EVENT)
DATA GAPS INVESTIGATION TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical of Potential Concern	Medium	Dermal Absorption Fraction (soil)	FA	Kp		T(event)		Tau		T*		B
			Value	Value	Units	Value	Units	Value	Units	Value	Units	Value
Semivolatile Organic Compounds												
Benzo(a)anthracene	Soil	0.13	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]
Benzo(a)pyrene	Soil	0.13	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]
Benzo(b)fluoranthene	Soil	0.13	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]
Benzo(k)fluoranthene	Soil	0.13	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]
Dibenzo(a,h)anthracene	Soil	0.13	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]
Indeno(1,2,3-cd)pyrene	Soil	0.13	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]
PCBs												
Aroclor-1260	Soil	0.14	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]
Dioxins/Furans												
2,3,7,8-TCDD Equivalents	Soil	0.03	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]	NA[1]
Inorganics												
Aluminum	Soil	0	1	1.0E-03	cm/hr	NA	NA	NA	NA	NA	NA	NA
Antimony	Soil	0	1	1.00E-03	cm/hr	NA	NA	NA	NA	NA	NA	NA
Arsenic	Soil	0.03	1	1.0E-03	cm/hr	NA	NA	NA	NA	NA	NA	NA
Chromium VI	Soil	0	1	2.0E-03	cm/hr	NA	NA	NA	NA	NA	NA	NA
Cobalt	Soil	0	1	4.0E-04	cm/hr	NA	NA	NA	NA	NA	NA	NA
Iron	Soil	0	1	1.0E-03	cm/hr	NA	NA	NA	NA	NA	NA	NA
Manganese	Soil	0	1	1.0E-03	cm/hr	NA	NA	NA	NA	NA	NA	NA
Thallium	Soil	0	1	1.00E-03	cm/hr	NA	NA	NA	NA	NA	NA	NA

Notes:
All values from USEPA's Risk Assessment Guidance for Superfund (RAGS) Volume 1: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final, July 2004.
1 - RAGS Part E recommends not attempting to quantify risk because contaminants are outside the effective predictive domain of the model.
FA = Fraction Absorbed Water
Kp = Dermal Permeability Coefficient of Compound in Water
T(event) = Event Duration
Tau = Lag Time
T* = Time to Reach Steady-State
B = Dimensionless Ratio of the Permeability Coefficient of a Compound Through the Stratum Corneum Relative to its Permeability Coefficient Across the Viable Epidermis
NA = Not applicable.

RAGS Part D Table 5

Non-Cancer Toxicity Data

LIST OF TABLES
RAGS PART D TABLE 5
NON-CANCER TOXICITY DATA

Table No.

5.1 Non-Cancer Toxicity Data - Oral/Dermal
5.2 Non-Cancer Toxicity Data - Inhalation

TABLE 5.1

NON-CANCER TOXICITY DATA – ORAL/DERMAL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal[1]	Absorbed RfD for Dermal[2]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD: Target Organ(s)	
		Value	Units		Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
PAHs										
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs										
Aroclor-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins/Furans										
2,3,7,8-TCDD Equivalents	Subchronic	2.0E-08	mg/kg/day	1	2.0E-08	mg/kg/day	Immune	30/1	ATSDR	12/1998
	Chronic	7.0E-10	mg/kg/day	1	7.0E-10	mg/kg/day	Reproductive	30/1	IRIS	4/11/2014
Metals										
Aluminum	Subchronic	1.0E+00	mg/kg/day	1	1.0E+00	mg/kg/day	Central Nervous System	30/1	ATSDR	9/2008
	Chronic	1.0E+00	mg/kg/day	1	1.0E+00	mg/kg/day	Central Nervous System	100	PPRTV	10/23/2006
Antimony	Subchronic	4.0E-04	mg/kg/day	0.15	6.0E-05	mg/kg/day	Blood	1000/1	PPRTV	7/29/2008
	Chronic	4.0E-04	mg/kg/day	0.15	6.0E-05	mg/kg/day	Blood	1000/1	IRIS	4/11/2014
Arsenic	Chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	Skin, Cardiovascular System	3/1	IRIS	4/11/2014
Chromium[3]	Subchronic	5.0E-03	mg/kg/day	0.025	1.3E-04	mg/kg/day	None Reported	100/3	HEAST	9/1997
	Chronic	3.0E-03	mg/kg/day	0.025	7.5E-05	mg/kg/day	None Reported	300/3	IRIS	4/11/2014
Cobalt	Subchronic	3.0E-03	mg/kg/day	1	3.0E-03	mg/kg/day	Thyroid	300/1	PPRTV	8/25/2008
	Chronic	3.0E-04	mg/kg/day	1	3.0E-04	mg/kg/day	Thyroid	3000/1	PPRTV	8/25/2008
Iron	Subchronic	7.0E-01	mg/kg/day	1	7.0E-01	mg/kg/day	Gastrointestinal System	1.5	PPRTV	9/11/2006
	Chronic	7.0E-01	mg/kg/day	1	7.0E-01	mg/kg/day	Gastrointestinal System	1.5	PPRTV	9/11/2006
Manganese[4]	Chronic	2.4E-02	mg/kg/day	0.04	9.6E-04	mg/kg/day	Central Nervous System	1	IRIS	4/11/2014
Thallium[5]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1 - U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.

2 - Adjusted dermal RfD = Oral RfD x Oral Absorption Efficiency for Dermal.

3 - Values are for hexavalent chromium.

4 - Adjusted IRIS value in accordance with IRIS.

5 - Toxicity criterion used to derive the is only suitable for screening and is not to be used for quantifying risks.

Definitions:

ATSDR = Agency for Toxic Substances and Disease Registry.

HEAST = Health Effects Assessment Summary Tables

IRIS = Integrated Risk Information System

NA = Not Available.

PPRTV = Provisional Peer Reviewed Toxicity Value.

TABLE 5.2

NON-CANCER TOXICITY DATA -- INHALATION
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Extrapolated RfD[1]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC: Target Organ(s)	
		Value	Units	Value	Units			Source(s)	Date(s) (MM/DD/YYYY)
PAHs									
Benzo(a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs									
Aroclor-1260	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins/Furans									
2,3,7,8-TCDD Equivalents	Chronic	4.0E-08	mg/m^3	1.1E-08	(mg/kg/day)	Reproductive	NA	Cal EPA	9/2009
Metals									
Aluminum	Chronic	5.0E-03	mg/m^3	1.4E-03	(mg/kg/day)	Central Nervous System	300/1	PPRTV	10/23/2006
Antimony	NA	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	Chronic	1.5E-05	mg/m^3	4.3E-06	(mg/kg/day)	Skin, Cardiovascular System	NA	Cal EPA	9/2009
Chromium[2]	Subchronic	3.0E-04	mg/m^3	8.6E-05	(mg/kg/day)	Respiratory	100/1	ATSDR	9/2012
	Chronic	1.0E-04	mg/m^3	2.9E-05	(mg/kg/day)	Respiratory	300/1	IRIS	4/11/2014
Cobalt	Subchronic	2.0E-05	mg/m^3	5.7E-06	(mg/kg/day)	Respiratory	100/1	PPRTV	8/25/2008
	Chronic	6.0E-06	mg/m^3	1.7E-06	(mg/kg/day)	Respiratory	300/1	PPRTV	8/25/2008
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	Chronic	5.0E-05	mg/m^3	1.4E-05	(mg/kg/day)	Central Nervous System	1000/1	IRIS	4/11/2014
Thallium	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1 - Extrapolated RfD = RfC *$20m^3$/day / 70 kg.

2 - Values are for hexavalent chromium.

Definitions:

ATSDR = Agency for Toxic Substances and Disease Registry

Cal EPA = California Environmental Protection Agency, Technical Support Document for Describing Available Cancer Slope Factors, September 2009.

IRIS = Integrated Risk Information System.

NA = Not Applicable.

PPRTV = Provisional Peer Reviewed Toxicity Value.

RAGS Part D Table 6

Cancer Toxicity Data

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CANCER TOXICITY DATA

Table No.

6.1 Cancer Toxicity Data - Oral/Dermal
6.2 Cancer Toxicity Data - Inhalation

TABLE 6.1

CANCER TOXICITY DATA – ORAL/DERMAL
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal[1]	Absorbed Cancer Slope Factor for Dermal[2]		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
PAHs								
Benzo(a)anthracene[3]	7.3E-01	$(mg/kg/day)^{-1}$	1	7.3E-01	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(1)	7/1993
Benzo(a)pyrene[3]	7.3E+00	$(mg/kg/day)^{-1}$	1	7.3E+00	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	IRIS	4/11/2014
Benzo(b)fluoranthene[3]	7.3E-01	$(mg/kg/day)^{-1}$	1	7.3E-01	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(1)	7/1993
Benzo(k)fluoranthene[3]	7.3E-02	$(mg/kg/day)^{-1}$	1	7.3E-02	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(1)	7/1993
Dibenzo(a,h)anthracene[3]	7.3E+00	$(mg/kg/day)^{-1}$	1	7.3E+00	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(1)	7/1993
Indeno(1,2,3-cd)pyrene[3]	7.3E-01	$(mg/kg/day)^{-1}$	1	7.3E-01	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(1)	7/1993
PCBs								
Aroclor-1260	2.0E+00	$(mg/kg/day)^{-1}$	1	2.0E+00	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(2)	9/1996
Dioxins/Furans								
2,3,7,8-TCDD Equivalents	1.3E+05	$(mg/kg/day)^{-1}$	1	1.3E+05	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Metals								
Aluminum	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA	NA
Arsenic	1.5E+00	$(mg/kg/day)^{-1}$	1	1.5E+00	$(mg/kg/day)^{-1}$	A / Known human carcinogen	IRIS	4/11/2014
Chromium[3,4]	5.0E-01	$(mg/kg/day)^{-1}$	0.025	2.0E+01	$(mg/kg/day)^{-1}$	D (Not classifiable as to human carcinogenicity)	NJDEP	4/8/2009
Cobalt	NA	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	NA	D (Not classifiable as to human carcinogenicity)	IRIS	4/11/2014
Thallium	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

1 - USEPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim. EPA/540/R/99/005.

2 - Adjusted cancer slope factor for dermal = Oral cancer slope factor / Oral absorption efficiency for dermal.

3 - Carcinogenic PAHs and hexavalent chromium are considered to act via the mutagenic mode of action. These chemicals are evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

4 - Values are for hexavalent chromium.

Cal EPA = California Environmental Protection Agency, Technical Support Document for Describing Available Cancer Slope Factors, September 2009.

IRIS = Integrated Risk Information System.

NA = Not Available.

NJDEP = New Jersey Department of Environmental Protection.

USEPA(1) = USEPA Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons, July 1993, EPA/600/R-93/089.

USEPA(2) = USEPA, PCBs: Cancer Dose-Response Assessment and Applications to Environmental Mixtures, September 1996, EPA/600/P-96/001F.

TABLE 6.2

CANCER TOXICITY DATA -- INHALATION
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND
PAGE 1 OF 2

Chemical of Potential Concern	Unit Risk		Inhalation Cancer Slope Factor[1]		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units	Value	Units		Source(s)	Date(s) (MM/DD/YYYY)
PAHs							
Benzo(a)anthracene[2]	1.1E-04	$(ug/m^3)^{-1}$	3.9E-01	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Benzo(a)pyrene[2]	1.1E-03	$(ug/m^3)^{-1}$	3.9E+00	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Benzo(b)fluoranthene[2]	1.1E-04	$(ug/m^3)^{-1}$	3.9E-01	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Benzo(k)fluoranthene[2]	1.1E-04	$(ug/m^3)^{-1}$	3.9E-01	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Dibenzo(a,h)anthracene[2]	1.2E-03	$(ug/m^3)^{-1}$	4.2E+00	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Indeno(1,2,3-cd)pyrene[2]	1.1E-04	$(ug/m^3)^{-1}$	3.9E-01	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
PCBs							
Aroclor-1260	5.7E-04	$(ug/m3)^{-1}$	2.0E+00	$(mg/kg/day)^{-1}$	B2 / Probable human carcinogen	USEPA(1)	9/1996
Dioxins/Furans							
2,3,7,8-TCDD Equivalents	3.8E+01	$(ug/m3)^{-1}$	1.3E+05	$(mg/kg/day)^{-1}$	NA	Cal EPA	9/2009
Metals							
Aluminum	NA	NA	NA	NA	NA	NA	NA
Antimony	NA	NA	NA	NA	NA	NA	NA
Arsenic	4.3E-03	$(ug/m^3)^{-1}$	1.5E+01	$(mg/kg/day)^{-1}$	A / Known human carcinogen	IRIS	4/11/2014
Chromium[2,3]	8.4E-02	$(ug/m^3)^{-1}$	2.9E+02	$(mg/kg/day)^{-1}$	A / Known human carcinogen	IRIS	4/11/2014
Cobalt	9.0E-03	$(ug/m^3)^{-1}$	3.2E+01	$(mg/kg/day)^{-1}$	NA	PPRTV	8/25/2008
Iron	NA	NA	NA	NA	NA	NA	NA
Manganese	NA	NA	NA	NA	D / Not classifiable as to human carcinogenicity	IRIS	4/11/2014
Thallium	NA	NA	NA	NA	NA	NA	NA

Notes:

1 - Inhalation CSF = Unit Risk * 70 kg / $20m^3$/day.

2 - Carcinogenic PAHs and hexavalent chromium are considered to act via the mutagenic mode of action. These chemicals are evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

3 - Values are for hexavalent chromium.

TABLE 6.2

CANCER TOXICITY DATA -- INHALATION
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Definitions:

Cal EPA = California Environmental Protection Agency, Technical Support Document for Describing Available Cancer Slope Factors, September 2009.

HEAST = Health Effects Assessment Summary Tables.

IRIS = Integrated Risk Information System.

NA = Not Available.

PPRTV = Provisional Peer Reviewed Toxicity Value.

USEPA(1) = USEPA, PCBs: Cancer Dose-Response Assessment and Applications to Environmental Mixtures, September 1996, EPA/600/P-96/001F.

RAGS Part D Table 7

Calculation of Cancer Risks and Non-Cancer Hazards

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CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

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	REASONABLE MAXIMUM EXPOSURES
7.1.RME	Adolescent Trespassers
7.2.RME	Adult Bow Hunters
7.3.RME	Construction Workers
7.4.RME	Industrial Workers
7.5.RME	Child Recreational Users
7.6.RME	Adult Recreational Users
7.7.RME	Child Residents
7.8.RME	Adult Residents
	CENTRAL TENDENCY EXPOSURES
7.1.CTE	Adolescent Trespassers
7.2.CTE	Adult Bow Hunters
7.3.CTE	Construction Workers
7.4.CTE	Industrial Workers
7.5.CTE	Child Recreational Users
7.6.CTE	Adult Recreational Users
7.7.CTE	Child Residents
7.8.CTE	Adult Residents

Tank Farm 2 (Entire Site)

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	6.9E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	5.0E-08	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	5.5E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	4.0E-07	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	3.7E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.7E-08	7.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	2.7E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	2.0E-09	5.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	9.5E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	6.9E-08	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	4.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.2E-08	8.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	5.0E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	9.9E-07	2.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	2.9E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	3.9E-08	1.7E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.002
				Antimony	0.81	mg/kg	3.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.1E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0005
				Chromium VI	18.2	mg/kg	2.6E-06	(mg/kg/day)	6.0E-01	(mg/kg/day)$^{-1}$	1.2E-06	4.6E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Cobalt	11.2	mg/kg	5.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.9E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.010
				Iron	25300	mg/kg	1.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.7E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.010
				Manganese	314	mg/kg	1.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	8.3E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.003
				Thallium	0.056	mg/kg	2.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.6E-06					0.03
			Dermal	Benzo(a)anthracene	0.51	mg/kg	1.5E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.1E-07	2.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	1.2E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	8.5E-07	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	7.7E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	5.6E-08	1.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	5.7E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	4.2E-09	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	2.0E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.5E-07	3.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	9.1E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	6.7E-08	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	1.1E-06	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.2E-06	5.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	1.4E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.9E-08	8.3E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.001
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								3.5E-06					0.001
		Exposure Point Total									6.3E-06					0.03
	Exposure Medium Total										6.3E-06					0.03
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	5.2E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.7E-14	1.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	4.2E-13	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	4.6E-13	8.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	2.8E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.0E-14	5.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	2.0E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.3E-14	4.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	7.2E-14	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	8.6E-14	1.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	3.3E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.6E-14	6.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	3.8E-12	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	2.1E-12	2.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	2.2E-18	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	8.4E-14	1.3E-17	(mg/m^3)	4.0E-08	(mg/m^3)	3.2E-10
				Antimony	7.4E-11	mg/m^3	2.8E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	1.9E-11	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.6E-09	3.6E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.6E-7
				Cobalt	1.0E-09	mg/m^3	3.8E-12	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	3.4E-11	2.2E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000004
				Iron	2.3E-06	mg/m^3	8.6E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.0E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	1.1E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.3E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00001
				Thallium	5.1E-12	mg/m^3	1.9E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.1E-13	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.6E-09					0.00002
		Exposure Point Total									1.6E-09					0.00002
	Exposure Medium Total										1.6E-09					0.00002
Medium Total											6.3E-06					0.03

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	6.6E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.7E-08	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	4.1E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.0E-07	7.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	7.8E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	5.7E-08	1.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	2.0E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.5E-09	3.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	7.0E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	5.1E-08	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	3.9E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.9E-08	7.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	3.2E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	6.3E-07	1.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	2.3E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	3.0E-08	1.4E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.002
				Aluminum	13700	mg/kg	6.2E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.6E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.004
				Antimony	0.34	mg/kg	1.5E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	8.9E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0002
				Arsenic	7.1	mg/kg	1.9E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.9E-07	1.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Chromium VI	18.1	mg/kg	2.4E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	1.2E-06	4.6E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Cobalt	11.8	mg/kg	5.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Iron	26400	mg/kg	1.2E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.9E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.010
				Manganese	305	mg/kg	1.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	8.0E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.003
				Thallium	0.053	mg/kg	2.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.7E-06					0.03
			Dermal	Benzo(a)anthracene	0.48	mg/kg	1.4E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.0E-07	2.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	8.5E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	6.2E-07	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	1.7E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.2E-07	3.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	4.3E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	3.1E-09	8.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	1.5E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.1E-07	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	8.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	6.0E-08	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	7.2E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.4E-06	4.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	1.1E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.5E-08	6.6E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0009
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.6E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.3E-07	9.1E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.7E-06					0.004
		Exposure Point Total									5.4E-06					0.04
	Exposure Medium Total										5.4E-06					0.04

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	4.9E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.4E-14	9.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	3.1E-13	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	3.4E-13	6.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.9E-11	mg/m^3	5.9E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	6.5E-14	1.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	1.5E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.7E-14	3.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	5.3E-14	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	6.4E-14	1.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	3.0E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.3E-14	5.8E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	2.4E-12	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	1.4E-12	1.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	1.8E-18	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	6.7E-14	1.0E-17	(mg/m^3)	4.0E-08	(mg/m^3)	2.6E-10
				Aluminum	1.2E-06	mg/m^3	4.7E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.7E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000005
				Antimony	3.1E-11	mg/m^3	1.2E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	2.4E-12	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	1.0E-11	1.4E-11	(mg/m^3)	1.5E-05	(mg/m^3)	9.4E-7
				Chromium VI	1.6E-09	mg/m^3	1.9E-11	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.6E-09	3.8E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.6E-7
				Cobalt	1.1E-09	mg/m^3	4.0E-12	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	3.6E-11	2.4E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000004
				Iron	2.4E-06	mg/m^3	9.0E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.3E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	1.0E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.1E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00001
				Thallium	4.8E-12	mg/m^3	1.8E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.1E-13	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.6E-09					0.00002
		Exposure Point Total									1.6E-09					0.00002
	Exposure Medium Total										1.6E-09					0.00002
Medium Total											5.4E-06					0.04

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	2.0E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.5E-08	3.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	1.6E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.2E-07	2.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	1.1E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	7.7E-09	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	7.8E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	5.7E-10	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	2.7E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.0E-08	4.8E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	1.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	9.1E-09	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	2.2E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	4.3E-07	7.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	1.3E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.7E-08	4.5E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0006
				Antimony	0.81	mg/kg	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	5.5E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0001
				Chromium VI	18.2	mg/kg	7.1E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	3.6E-07	1.2E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				Cobalt	11.2	mg/kg	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	7.7E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Iron	25300	mg/kg	5.0E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.7E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.002
				Manganese	314	mg/kg	6.1E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.2E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0009
				Thallium	0.056	mg/kg	1.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.8E-09	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								9.7E-07					0.007
			Dermal	Benzo(a)anthracene	0.51	mg/kg	1.1E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	8.0E-09	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	8.8E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	6.4E-08	1.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	5.8E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.2E-09	1.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	4.3E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	3.1E-10	7.5E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	1.5E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.1E-08	2.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	6.9E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	5.0E-09	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	1.3E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.5E-07	4.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	1.6E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.1E-09	5.6E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00008
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								3.6E-07					0.00008
		Exposure Point Total									1.3E-06					0.007
	Exposure Medium Total										1.3E-06					0.007
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	4.8E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.3E-14	8.5E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	3.9E-13	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	4.3E-13	6.8E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	2.6E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.9E-14	4.5E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	1.9E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.1E-14	3.3E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	6.6E-14	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	8.0E-14	1.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	3.0E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.3E-14	5.3E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	5.2E-12	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	3.0E-12	1.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	3.1E-18	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	1.2E-13	1.1E-17	(mg/m^3)	4.0E-08	(mg/m^3)	2.7E-10
				Antimony	7.4E-11	mg/m^3	3.8E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.3E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	1.7E-11	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.5E-09	3.0E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.0E-7
				Cobalt	1.0E-09	mg/m^3	5.3E-12	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	4.8E-11	1.9E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000003
				Iron	2.3E-06	mg/m^3	1.2E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	4.2E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	1.5E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.2E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00001
				Thallium	5.1E-12	mg/m^3	2.7E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	9.3E-14	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.5E-09					0.00001
		Exposure Point Total									1.5E-09					0.00001
	Exposure Medium Total										1.5E-09					0.00001
Medium Total											1.3E-06					0.007

TABLE 7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	1.9E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.4E-08	3.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	1.2E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	8.6E-08	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	2.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.7E-08	4.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	5.9E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	4.3E-10	1.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	2.0E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.5E-08	3.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	1.1E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	8.3E-09	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	1.4E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.7E-07	4.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	1.0E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.3E-08	3.6E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0005
				Aluminum	13700	mg/kg	2.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	9.4E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0009
				Antimony	0.34	mg/kg	6.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.3E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00006
				Arsenic	7.1	mg/kg	8.3E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.3E-07	2.9E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0010
				Chromium VI	18.1	mg/kg	7.1E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	3.5E-07	1.2E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				Cobalt	11.8	mg/kg	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	8.1E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Iron	26400	mg/kg	5.2E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.8E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Manganese	305	mg/kg	6.0E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.1E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0009
				Thallium	0.053	mg/kg	1.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								9.1E-07					0.009
			Dermal	Benzo(a)anthracene	0.48	mg/kg	1.0E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	7.5E-09	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	6.4E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	4.7E-08	1.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	1.2E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	9.1E-09	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	3.2E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	2.4E-10	5.8E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	1.1E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	8.2E-09	2.0E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	6.2E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.5E-09	1.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	8.1E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.6E-07	2.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	1.3E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.7E-09	4.5E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00008
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.8E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.6E-08	6.2E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.7E-07					0.0003
		Exposure Point Total									1.2E-06					0.009
	Exposure Medium Total										1.2E-06					0.009

TABLE 7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	4.6E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.0E-14	8.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	2.8E-13	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	3.1E-13	5.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-11	mg/m^3	5.5E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	6.1E-14	9.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	1.4E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.6E-14	2.5E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	4.9E-14	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	5.9E-14	8.6E-14	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	2.8E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.0E-14	4.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	3.3E-12	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	1.9E-12	1.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	2.5E-18	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	9.4E-14	8.6E-16	(mg/m^3)	4.0E-08	(mg/m^3)	2.2E-10
				Aluminum	1.2E-06	mg/m^3	6.5E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.3E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000005
				Antimony	3.1E-11	mg/m^3	1.6E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	3.4E-12	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	1.4E-11	1.2E-11	(mg/m^3)	1.5E-05	(mg/m^3)	7.9E-7
				Chromium VI	1.6E-09	mg/m^3	1.7E-11	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.4E-09	3.0E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.0E-7
				Cobalt	1.1E-09	mg/m^3	5.6E-12	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	5.0E-11	2.0E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000003
				Iron	2.4E-06	mg/m^3	1.3E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	4.4E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	1.4E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.1E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00001
				Thallium	4.8E-12	mg/m^3	2.5E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	8.6E-14	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.5E-09					0.00002
		Exposure Point Total									1.5E-09					0.00002
	Exposure Medium Total										1.5E-09					0.00002
Medium Total											1.2E-06					0.009

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	1.1E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	7.8E-09	7.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	8.6E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	6.3E-08	6.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	5.7E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.1E-09	4.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	4.2E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	3.1E-10	2.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	1.5E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.1E-08	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	6.7E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.9E-09	4.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	2.3E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	4.6E-07	1.6E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	1.4E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.8E-08	9.5E-12	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.0005
				Antimony	0.81	mg/kg	1.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.2E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.003
				Chromium VI	18.2	mg/kg	3.8E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	1.9E-07	2.7E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.005
				Cobalt	11.2	mg/kg	2.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.6E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Iron	25300	mg/kg	5.3E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.7E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.05
				Manganese	314	mg/kg	6.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.6E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.02
				Thallium	0.056	mg/kg	1.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	8.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								7.6E-07					0.09
			Dermal	Benzo(a)anthracene	0.51	mg/kg	4.4E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.2E-09	3.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	3.5E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.6E-08	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	2.3E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.7E-09	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	1.7E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.3E-10	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	6.0E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	4.4E-09	4.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	2.8E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.0E-09	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	1.0E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.0E-07	7.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	1.3E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.7E-09	9.0E-13	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.00005
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-03	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.4E-07					0.00006
		Exposure Point Total									1.0E-06					0.09
	Exposure Medium Total										1.0E-06					0.09
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	3.6E-07	mg/m^3	6.2E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	6.8E-11	4.3E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.9E-07	mg/m^3	5.0E-10	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	5.5E-10	3.5E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	1.9E-07	mg/m^3	3.3E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.6E-11	2.3E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-07	mg/m^3	2.4E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.7E-11	1.7E-08	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.0E-08	mg/m^3	8.6E-11	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	1.0E-10	6.9E-09	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.3E-07	mg/m^3	3.9E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	4.3E-11	2.7E-08	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	7.9E-06	mg/m^3	1.3E-08	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	7.5E-09	9.3E-07	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.6E-12	mg/m^3	7.9E-15	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	3.0E-10	5.5E-13	(mg/m^3)	4.0E-08	(mg/m^3)	0.00001
				Antimony	5.8E-07	mg/m^3	9.8E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.9E-08	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.3E-05	mg/m^3	2.2E-08	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.9E-06	1.6E-06	(mg/m^3)	3.0E-04	(mg/m^3)	0.005
				Cobalt	8.0E-06	mg/m^3	1.4E-08	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	1.2E-07	9.5E-07	(mg/m^3)	2.0E-05	(mg/m^3)	0.05
				Iron	1.8E-02	mg/m^3	3.1E-05	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.1E-03	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.2E-04	mg/m^3	3.8E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.7E-05	(mg/m^3)	5.0E-05	(mg/m^3)	0.5
				Thallium	4.0E-08	mg/m^3	6.8E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	4.7E-09	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								2.0E-06					0.6
		Exposure Point Total									2.0E-06					0.6
	Exposure Medium Total										2.0E-06					0.6
Medium Total											3.0E-06					0.7

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	1.0E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	7.4E-09	7.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	6.3E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.6E-08	4.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	1.2E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	8.9E-09	8.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	3.1E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.3E-10	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	1.1E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	8.0E-09	7.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	6.1E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.4E-09	4.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	1.5E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.9E-07	1.0E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	1.1E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.4E-08	7.6E-12	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.0004
				Aluminum	13700	mg/kg	2.9E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	2.0E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.02
				Antimony	0.34	mg/kg	7.1E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	5.0E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.001
				Arsenic	7.1	mg/kg	8.9E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.3E-07	6.3E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Chromium VI	18.1	mg/kg	3.8E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	1.9E-07	2.7E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.005
				Cobalt	11.8	mg/kg	2.5E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	1.7E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.006
				Iron	26400	mg/kg	5.5E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	3.9E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.06
				Manganese	305	mg/kg	6.4E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	4.5E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.02
				Thallium	0.053	mg/kg	1.1E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	7.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								7.1E-07					0.1
			Dermal	Benzo(a)anthracene	0.48	mg/kg	4.1E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.0E-09	2.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	2.6E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.9E-08	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	5.0E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.6E-09	3.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	1.3E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	9.4E-11	9.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	4.5E-10	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.3E-09	3.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	2.5E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.8E-09	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	6.5E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.3E-07	4.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	1.0E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.3E-09	7.2E-13	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.00004
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.4E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.1E-08	9.9E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-03	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.8E-07					0.003
		Exposure Point Total									8.9E-07					0.1
	Exposure Medium Total										8.9E-07					0.1

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	3.4E-07	mg/m^3	5.8E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	6.4E-11	4.1E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.1E-07	mg/m^3	3.6E-10	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	4.0E-10	2.5E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	4.1E-07	mg/m^3	7.0E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	7.7E-11	4.9E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.1E-07	mg/m^3	1.8E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.0E-11	1.3E-08	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	3.7E-08	mg/m^3	6.3E-11	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	7.6E-11	4.4E-09	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.1E-07	mg/m^3	3.5E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.9E-11	2.5E-08	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	5.0E-06	mg/m^3	8.5E-09	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	4.8E-09	5.9E-07	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	3.7E-12	mg/m^3	6.3E-15	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	2.4E-10	4.4E-13	(mg/m^3)	4.0E-08	(mg/m^3)	0.00001
				Aluminum	9.8E-03	mg/m^3	1.7E-05	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.2E-03	(mg/m^3)	5.0E-03	(mg/m^3)	0.2
				Antimony	2.4E-07	mg/m^3	4.1E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.9E-08	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	5.1E-06	mg/m^3	8.8E-09	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	3.7E-08	6.0E-07	(mg/m^3)	1.5E-05	(mg/m^3)	0.04
				Chromium VI	1.3E-05	mg/m^3	2.2E-08	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.8E-06	1.5E-06	(mg/m^3)	3.0E-04	(mg/m^3)	0.005
				Cobalt	8.4E-06	mg/m^3	1.4E-08	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	1.3E-07	1.0E-06	(mg/m^3)	2.0E-05	(mg/m^3)	0.05
				Iron	1.9E-02	mg/m^3	3.2E-05	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.2E-03	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.2E-04	mg/m^3	3.7E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.6E-05	(mg/m^3)	5.0E-05	(mg/m^3)	0.5
				Thallium	3.8E-08	mg/m^3	6.4E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	4.5E-09	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								2.0E-06					0.8
		Exposure Point Total									2.0E-06					0.8
	Exposure Medium Total										2.0E-06					0.8
Medium Total											2.9E-06					1.0

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	1.6E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.1E-07	4.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	1.3E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	8.2E-07	3.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	8.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	6.0E-08	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	6.1E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	4.5E-09	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	2.1E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.5E-07	6.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	9.8E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	7.1E-08	2.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	3.4E-06	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	6.7E-06	9.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	2.0E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.6E-07	5.6E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.008
				Antimony	0.81	mg/kg	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.9E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.002
				Chromium VI	18.2	mg/kg	5.6E-06	(mg/kg/day)	6.0E-01	(mg/kg/day)$^{-1}$	2.8E-06	1.6E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Cobalt	11.2	mg/kg	3.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	9.6E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.03
				Iron	25300	mg/kg	7.7E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.2E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.03
				Manganese	314	mg/kg	9.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.7E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.01
				Thallium	0.056	mg/kg	1.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.1E-05					0.09
			Dermal	Benzo(a)anthracene	0.51	mg/kg	8.4E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	6.2E-08	2.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	6.8E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	5.0E-07	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	4.5E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.3E-08	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	3.3E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	2.4E-09	9.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	1.2E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	8.5E-08	3.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	5.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.9E-08	1.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	2.0E-06	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	3.9E-06	5.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	2.5E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	3.2E-08	7.0E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0010
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								4.7E-06					0.0010
		Exposure Point Total									1.6E-05					0.09
	Exposure Medium Total										1.6E-05					0.09
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	3.8E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	4.2E-13	1.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	3.0E-12	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	3.3E-12	8.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	2.0E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.2E-13	5.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	1.5E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.6E-13	4.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	5.2E-13	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	6.2E-13	1.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	2.4E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.6E-13	6.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	8.2E-11	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	4.7E-11	2.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	4.8E-17	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	1.8E-12	1.3E-16	(mg/m^3)	4.0E-08	(mg/m^3)	3.4E-9
				Antimony	7.4E-11	mg/m^3	6.0E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	1.3E-10	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.1E-08	3.8E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000004
				Cobalt	1.0E-09	mg/m^3	8.3E-11	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	7.5E-10	2.3E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00004
				Iron	2.3E-06	mg/m^3	1.9E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.3E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	2.3E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.5E-09	(mg/m^3)	5.0E-05	(mg/m^3)	0.0001
				Thallium	5.1E-12	mg/m^3	4.2E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.2E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.2E-08					0.0002
		Exposure Point Total									1.2E-08					0.0002
	Exposure Medium Total										1.2E-08					0.0002
Medium Total											1.6E-05					0.09

TABLE 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	1.6E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.1E-07	4.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	9.2E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	6.7E-07	2.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	1.8E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.3E-07	5.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	4.6E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	3.3E-09	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	1.6E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.2E-07	4.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	8.9E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	6.5E-08	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	2.1E-06	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	4.3E-06	6.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	1.6E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.1E-07	4.5E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.006
				Aluminum	13700	mg/kg	4.2E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.2E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.01
				Antimony	0.34	mg/kg	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.9E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0007
				Arsenic	7.1	mg/kg	1.3E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.0E-06	3.6E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Chromium VI	18.1	mg/kg	5.5E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	2.8E-06	1.5E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Cobalt	11.8	mg/kg	3.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.0E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.03
				Iron	26400	mg/kg	8.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.3E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.03
				Manganese	305	mg/kg	9.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.6E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.01
				Thallium	0.053	mg/kg	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.0E-05					0.1
			Dermal	Benzo(a)anthracene	0.48	mg/kg	7.9E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	5.8E-08	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	5.0E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.6E-07	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	9.6E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	7.0E-08	2.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	2.5E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.8E-09	7.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	8.6E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	6.3E-08	2.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	4.8E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.5E-08	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	1.2E-06	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.5E-06	3.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	2.0E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.6E-08	5.6E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0008
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	2.7E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.1E-07	7.6E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								3.5E-06					0.003
		Exposure Point Total									1.4E-05					0.1
	Exposure Medium Total										1.4E-05					0.1

TABLE 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	3.6E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.9E-13	1.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	2.2E-12	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	2.4E-12	6.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-11	mg/m^3	4.3E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	4.7E-13	1.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	1.1E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.2E-13	3.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	3.9E-13	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	4.6E-13	1.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	2.1E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.4E-13	6.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	5.2E-11	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	3.0E-11	1.5E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	3.9E-17	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	1.5E-12	1.1E-16	(mg/m^3)	4.0E-08	(mg/m^3)	2.7E-9
				Aluminum	1.2E-06	mg/m^3	1.0E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.8E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.00006
				Antimony	3.1E-11	mg/m^3	2.5E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	7.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	5.3E-11	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	2.3E-10	1.5E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.000010
				Chromium VI	1.6E-09	mg/m^3	1.3E-10	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.1E-08	3.8E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000004
				Cobalt	1.1E-09	mg/m^3	8.7E-11	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	7.9E-10	2.4E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00004
				Iron	2.4E-06	mg/m^3	2.0E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.5E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	2.3E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.3E-09	(mg/m^3)	5.0E-05	(mg/m^3)	0.0001
				Thallium	4.8E-12	mg/m^3	3.9E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.1E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.2E-08					0.0002
		Exposure Point Total									1.2E-08					0.0002
	Exposure Medium Total										1.2E-08					0.0002
Medium Total											1.4E-05					0.1

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	2.0E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.5E-07	4.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	1.6E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.2E-06	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	1.1E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	7.9E-08	2.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	8.0E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	5.9E-09	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	2.8E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.0E-07	6.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	1.3E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	9.4E-08	2.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	8.3E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.7E-06	9.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	4.9E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	6.3E-08	6.7E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.008
				Antimony	0.81	mg/kg	6.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	7.1E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.002
				Chromium VI	18.2	mg/kg	7.3E-06	(mg/kg/day)	6.0E-01	(mg/kg/day)$^{-1}$	3.6E-06	1.6E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Cobalt	11.2	mg/kg	8.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	9.6E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.03
				Iron	25300	mg/kg	1.9E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.2E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.03
				Manganese	314	mg/kg	2.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.8E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.01
				Thallium	0.056	mg/kg	4.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								7.1E-06					0.09
			Dermal	Benzo(a)anthracene	0.51	mg/kg	1.4E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.0E-07	3.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	1.1E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	8.4E-07	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	7.6E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	5.5E-08	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	5.6E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	4.1E-09	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	2.0E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.4E-07	4.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	9.0E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	6.5E-08	2.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	6.2E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.2E-06	7.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	7.9E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.0E-08	9.2E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.001
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.5E-06					0.001
		Exposure Point Total									9.6E-06					0.09
	Exposure Medium Total										9.6E-06					0.09
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	4.6E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.1E-14	1.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	3.7E-13	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	4.1E-13	8.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	2.5E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.7E-14	5.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	1.8E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.0E-14	4.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	6.4E-14	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	7.7E-14	1.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	2.9E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.2E-14	6.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	1.9E-12	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	1.1E-12	2.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	1.1E-18	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	4.2E-14	1.3E-17	(mg/m^3)	4.0E-08	(mg/m^3)	3.2E-10
				Antimony	7.4E-11	mg/m^3	1.4E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	1.7E-11	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.4E-09	3.6E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.6E-7
				Cobalt	1.0E-09	mg/m^3	1.9E-12	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	1.7E-11	2.2E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000004
				Iron	2.3E-06	mg/m^3	4.3E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.0E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	5.4E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.3E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00001
				Thallium	5.1E-12	mg/m^3	9.6E-15	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.1E-13	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.4E-09					0.00002
		Exposure Point Total									1.4E-09					0.00002
	Exposure Medium Total										1.4E-09					0.00002
Medium Total											9.6E-06					0.09

TABLE 7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	1.9E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.4E-07	4.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	1.2E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	8.8E-07	2.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	2.3E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.7E-07	5.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	6.0E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	4.4E-09	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	2.1E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.5E-07	4.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	1.2E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	8.5E-08	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	5.3E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.1E-06	6.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	3.9E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	5.1E-08	4.6E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.007
				Aluminum	13700	mg/kg	1.0E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.2E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.01
				Antimony	0.34	mg/kg	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.0E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0007
				Arsenic	7.1	mg/kg	3.2E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.8E-07	3.7E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Chromium VI	18.1	mg/kg	7.3E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	3.6E-06	1.6E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Cobalt	11.8	mg/kg	8.9E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.0E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.03
				Iron	26400	mg/kg	2.0E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.3E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.03
				Manganese	305	mg/kg	2.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.7E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.01
				Thallium	0.053	mg/kg	4.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								6.6E-06					0.1
			Dermal	Benzo(a)anthracene	0.48	mg/kg	1.3E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	9.8E-08	2.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	8.4E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	6.1E-07	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	1.6E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.2E-07	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	4.2E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	3.1E-09	9.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	1.5E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.1E-07	3.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	8.1E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	5.9E-08	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	4.0E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	7.9E-07	4.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	6.3E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	8.2E-09	7.4E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.001
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	8.6E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.3E-07	1.0E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.9E-06					0.004
		Exposure Point Total									8.6E-06					0.1
	Exposure Medium Total										8.6E-06					0.1

TABLE 7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	4.4E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	4.8E-14	9.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	2.7E-13	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	3.0E-13	6.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-11	mg/m^3	5.3E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.8E-14	1.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	1.4E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.5E-14	3.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	4.7E-14	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	5.7E-14	1.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	2.6E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.9E-14	5.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	1.2E-12	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	6.8E-13	1.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	8.9E-19	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	3.4E-14	1.0E-17	(mg/m^3)	4.0E-08	(mg/m^3)	2.6E-10
				Aluminum	1.2E-06	mg/m^3	2.3E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.7E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000005
				Antimony	3.1E-11	mg/m^3	5.8E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	1.2E-12	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	5.2E-12	1.4E-11	(mg/m^3)	1.5E-05	(mg/m^3)	9.4E-7
				Chromium VI	1.6E-09	mg/m^3	1.6E-11	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.4E-09	3.6E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.6E-7
				Cobalt	1.1E-09	mg/m^3	2.0E-12	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	1.8E-11	2.4E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000004
				Iron	2.4E-06	mg/m^3	4.5E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.3E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	5.2E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.1E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00001
				Thallium	4.8E-12	mg/m^3	9.1E-15	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.1E-13	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.4E-09					0.00002
		Exposure Point Total									1.4E-09					0.00002
	Exposure Medium Total										1.4E-09					0.00002
Medium Total											8.6E-06					0.1

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.6.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	2.4E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.7E-08	4.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	1.9E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.4E-07	3.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	1.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	9.3E-09	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	9.4E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	6.9E-10	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	3.3E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.4E-08	5.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	1.5E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.1E-08	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	2.6E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	5.2E-07	9.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	1.5E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.0E-08	5.3E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0008
				Antimony	0.81	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.7E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0002
				Chromium VI	18.2	mg/kg	8.6E-07	(mg/kg/day)	6.0E-01	(mg/kg/day)$^{-1}$	4.3E-07	1.5E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0005
				Cobalt	11.2	mg/kg	2.6E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	9.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Iron	25300	mg/kg	5.9E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.1E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Manganese	314	mg/kg	7.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.6E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.001
				Thallium	0.056	mg/kg	1.3E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.2E-06					0.009
			Dermal	Benzo(a)anthracene	0.51	mg/kg	2.6E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.9E-08	4.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	2.1E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.5E-07	3.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	1.4E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.0E-08	2.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	1.0E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	7.5E-10	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	3.6E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.6E-08	6.3E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	1.6E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.2E-08	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	3.1E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	6.1E-07	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	3.9E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	5.0E-09	1.4E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0002
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								8.4E-07					0.0002
		Exposure Point Total									2.0E-06					0.009
	Exposure Medium Total										2.0E-06					0.009
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	5.8E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	6.4E-14	1.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	4.7E-13	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	5.1E-13	8.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	3.1E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.4E-14	6.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	2.3E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.5E-14	4.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	8.0E-14	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	9.6E-14	1.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	3.6E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	4.0E-14	6.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	6.3E-12	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	3.6E-12	2.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	3.7E-18	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	1.4E-13	1.3E-17	(mg/m^3)	4.0E-08	(mg/m^3)	3.2E-10
				Antimony	7.4E-11	mg/m^3	4.6E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	2.1E-11	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.7E-09	3.6E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.6E-7
				Cobalt	1.0E-09	mg/m^3	6.4E-12	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	5.7E-11	2.2E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000004
				Iron	2.3E-06	mg/m^3	1.4E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.0E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	1.8E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.3E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00001
				Thallium	5.1E-12	mg/m^3	3.2E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.1E-13	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.8E-09					0.00002
		Exposure Point Total									1.8E-09					0.00002
	Exposure Medium Total										1.8E-09					0.00002
Medium Total											2.0E-06					0.009

TABLE 7.6.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	2.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.6E-08	3.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	1.4E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.0E-07	2.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	2.7E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.0E-08	4.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	7.0E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	5.1E-10	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	2.4E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.8E-08	4.3E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	1.4E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	9.9E-09	2.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	1.6E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	3.3E-07	5.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	1.2E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.6E-08	4.3E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0006
				Aluminum	13700	mg/kg	3.2E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.1E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.001
				Antimony	0.34	mg/kg	8.0E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.6E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00007
				Arsenic	7.1	mg/kg	1.0E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.5E-07	3.5E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				Chromium VI	18.1	mg/kg	8.5E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	4.3E-07	1.5E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0005
				Cobalt	11.8	mg/kg	2.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	9.7E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Iron	26400	mg/kg	6.2E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.2E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Manganese	305	mg/kg	7.2E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.5E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.001
				Thallium	0.053	mg/kg	1.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.4E-09	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.1E-06					0.01
			Dermal	Benzo(a)anthracene	0.48	mg/kg	2.5E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.8E-08	4.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	1.5E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.1E-07	2.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	3.0E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.2E-08	5.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	7.7E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	5.6E-10	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	2.7E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.0E-08	4.7E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	1.5E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.1E-08	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	1.9E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	3.9E-07	6.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	3.1E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	4.0E-09	1.1E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0002
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	4.2E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	6.3E-08	1.5E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0005
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								6.4E-07					0.0006
		Exposure Point Total									1.7E-06					0.01
	Exposure Medium Total										1.7E-06					0.01

TABLE 7.6.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	5.5E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	6.0E-14	9.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	3.4E-13	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	3.8E-13	6.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-11	mg/m^3	6.6E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	7.3E-14	1.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	1.7E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.9E-14	3.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	5.9E-14	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	7.1E-14	1.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	3.3E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.6E-14	5.8E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	4.0E-12	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	2.3E-12	1.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	3.0E-18	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	1.1E-13	1.0E-17	(mg/m^3)	4.0E-08	(mg/m^3)	2.8E-10
				Aluminum	1.2E-06	mg/m^3	7.8E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.7E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000005
				Antimony	3.1E-11	mg/m^3	1.9E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	4.0E-12	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	1.7E-11	1.4E-11	(mg/m^3)	1.5E-05	(mg/m^3)	9.4E-7
				Chromium VI	1.6E-09	mg/m^3	2.1E-11	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.7E-09	3.6E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.6E-7
				Cobalt	1.1E-09	mg/m^3	6.7E-12	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	6.0E-11	2.4E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000004
				Iron	2.4E-06	mg/m^3	1.5E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.3E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	1.7E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.1E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00001
				Thallium	4.8E-12	mg/m^3	3.0E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.1E-13	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.8E-09					0.00002
		Exposure Point Total									1.8E-09					0.00002
	Exposure Medium Total										1.8E-09					0.00002
Medium Total											1.7E-06					0.01

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	3.0E-06	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.2E-06	6.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	2.4E-06	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.7E-05	5.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	1.6E-06	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.2E-06	3.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	1.2E-06	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	8.5E-08	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	4.1E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.0E-06	8.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	1.9E-06	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.4E-06	4.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	1.2E-05	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.4E-05	1.4E-04	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	7.1E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	9.3E-07	8.3E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.1
				Antimony	0.81	mg/kg	8.9E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.0E-05	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.03
				Chromium VI	18.2	mg/kg	1.1E-04	(mg/kg/day)	6.0E-01	(mg/kg/day)$^{-1}$	6.3E-05	2.3E-04	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.08
				Cobalt	11.2	mg/kg	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.4E-04	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.5
				Iron	25300	mg/kg	2.8E-02	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.2E-01	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.5
				Manganese	314	mg/kg	3.4E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.0E-03	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.2
				Thallium	0.056	mg/kg	6.1E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	7.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.0E-04					1.3
			Dermal	Benzo(a)anthracene	0.51	mg/kg	1.0E-06	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	7.6E-07	2.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	8.4E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	6.1E-06	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	5.5E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.0E-07	1.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	4.1E-07	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	3.0E-08	8.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	1.4E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.0E-06	3.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	6.5E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.8E-07	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	4.5E-06	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	9.1E-06	5.3E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	5.7E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	7.5E-08	6.7E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.010
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.8E-05					0.010
		Exposure Point Total									1.2E-04					1.3
	Exposure Medium Total										1.2E-04					1.3
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	2.0E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.2E-12	4.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	1.6E-11	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	1.8E-11	3.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	1.1E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.2E-12	2.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	8.0E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	8.8E-13	1.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	2.8E-12	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	3.3E-12	6.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	1.3E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.4E-12	2.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	8.2E-11	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	4.7E-11	9.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	4.9E-17	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	1.8E-12	6.7E-16	(mg/m^3)	4.0E-08	(mg/m^3)	1.4E-8
				Antimony	7.4E-11	mg/m^3	6.1E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	7.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	7.3E-10	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	6.1E-08	1.6E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00002
				Cobalt	1.0E-09	mg/m^3	8.4E-11	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	7.5E-10	9.6E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.0002
				Iron	2.3E-06	mg/m^3	1.9E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.2E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	2.3E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.7E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0005
				Thallium	5.1E-12	mg/m^3	4.2E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	4.9E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								6.2E-08					0.0007
		Exposure Point Total									6.2E-08					0.0007
	Exposure Medium Total										6.2E-08					0.0007
Medium Total											1.2E-04					1.3

TABLE 7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	2.8E-06	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.0E-06	6.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	1.8E-06	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.3E-05	3.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	3.4E-06	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.5E-06	7.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	8.8E-07	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	6.4E-08	1.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	3.0E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.2E-06	6.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	1.7E-06	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.2E-06	3.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	7.7E-06	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.5E-05	8.9E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	5.7E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	7.4E-07	6.6E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.09
				Aluminum	13700	mg/kg	1.5E-02	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.6E-01	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.2
				Antimony	0.34	mg/kg	3.7E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.3E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.01
				Arsenic	7.1	mg/kg	4.7E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	7.0E-06	5.4E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.2
				Chromium VI	18.1	mg/kg	1.1E-04	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	5.3E-05	2.3E-04	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.08
				Cobalt	11.8	mg/kg	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.5E-04	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.5
				Iron	26400	mg/kg	2.9E-02	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.4E-01	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.5
				Manganese	305	mg/kg	3.3E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.9E-03	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.2
				Thallium	0.053	mg/kg	5.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								9.7E-06					1.7
			Dermal	Benzo(a)anthracene	0.48	mg/kg	9.8E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	7.2E-07	2.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	6.1E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	4.5E-06	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	1.2E-06	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	8.7E-07	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	3.1E-07	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	2.2E-08	6.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	1.1E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	7.8E-07	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	5.9E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.3E-07	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	2.9E-06	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	5.8E-06	3.4E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	4.6E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	6.0E-08	5.4E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.008
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	6.3E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	9.4E-07	7.3E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.4E-05					0.03
		Exposure Point Total									1.1E-04					1.7
	Exposure Medium Total										1.1E-04					1.7

TABLE 7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	1.9E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.1E-12	4.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	1.2E-11	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	1.3E-11	2.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-11	mg/m^3	2.3E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.5E-12	5.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	6.0E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	6.6E-13	1.3E-11	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	2.1E-12	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	2.5E-12	4.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	1.2E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.3E-12	2.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	5.2E-11	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	3.0E-11	6.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	3.9E-17	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	1.5E-12	4.5E-16	(mg/m^3)	4.0E-08	(mg/m^3)	1.1E-8
				Aluminum	1.2E-06	mg/m^3	1.0E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.2E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.0002
				Antimony	3.1E-11	mg/m^3	2.5E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	5.3E-11	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	2.3E-10	6.2E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00004
				Chromium VI	1.6E-09	mg/m^3	7.2E-10	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	6.1E-08	1.6E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00002
				Cobalt	1.1E-09	mg/m^3	8.8E-11	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	7.9E-10	1.0E-09	(mg/m^3)	6.0E-06	(mg/m^3)	0.0002
				Iron	2.4E-06	mg/m^3	2.0E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.3E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	2.3E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.7E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0005
				Thallium	4.8E-12	mg/m^3	4.0E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	4.6E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								6.2E-08					0.0010
		Exposure Point Total									6.2E-08					0.0010
	Exposure Medium Total										6.2E-08					0.0010
Medium Total											1.1E-04					1.7

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.8.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	3.5E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.6E-07	6.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	2.8E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.1E-06	4.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	1.8E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.4E-07	3.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	1.4E-07	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.0E-08	2.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	4.8E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.5E-07	8.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	2.2E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.6E-07	3.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	3.8E-06	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	7.6E-06	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	2.2E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.9E-07	7.6E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.01
				Antimony	0.81	mg/kg	2.8E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	9.7E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.002
				Chromium VI	18.2	mg/kg	1.2E-05	(mg/kg/day)	6.0E-01	(mg/kg/day)$^{-1}$	6.2E-06	2.2E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.007
				Cobalt	11.2	mg/kg	3.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.3E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.04
				Iron	25300	mg/kg	8.7E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.0E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.04
				Manganese	314	mg/kg	1.1E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.6E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.02
				Thallium	0.056	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.7E-05					0.1
			Dermal	Benzo(a)anthracene	0.51	mg/kg	1.9E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.4E-07	3.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	1.5E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.1E-06	2.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	1.0E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	7.4E-08	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	7.5E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	5.5E-09	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	2.6E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.9E-07	4.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	1.2E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	8.8E-08	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	2.2E-06	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	4.5E-06	7.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	2.8E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	3.7E-08	9.9E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.001
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								6.1E-06					0.001
		Exposure Point Total									2.3E-05					0.1
	Exposure Medium Total										2.3E-05					0.1
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	2.5E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.8E-12	4.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	2.0E-11	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	2.2E-11	3.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	1.3E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.5E-12	2.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	1.0E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.1E-12	1.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	3.5E-12	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	4.2E-12	6.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	1.6E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.8E-12	2.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	2.7E-10	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	1.5E-10	9.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	1.6E-16	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	6.2E-12	5.7E-16	(mg/m^3)	4.0E-08	(mg/m^3)	1.4E-8
				Antimony	7.4E-11	mg/m^3	2.0E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	7.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	9.1E-10	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	7.6E-08	1.6E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00002
				Cobalt	1.0E-09	mg/m^3	2.8E-10	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	2.6E-09	9.6E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.0002
				Iron	2.3E-06	mg/m^3	6.3E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.2E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	7.9E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.7E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0005
				Thallium	5.1E-12	mg/m^3	1.4E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	4.9E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								7.9E-08					0.0007
		Exposure Point Total									7.9E-08					0.0007
	Exposure Medium Total										7.9E-08					0.0007
Medium Total											2.3E-05					0.1

TABLE 7.8.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	3.3E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.4E-07	6.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	2.1E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.5E-06	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	4.0E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.9E-07	7.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	1.0E-07	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	7.5E-09	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	3.6E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.6E-07	6.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	2.0E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.5E-07	3.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	2.4E-06	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	4.8E-06	8.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	1.8E-12	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.3E-07	6.2E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.009
				Aluminum	13700	mg/kg	4.7E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.6E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.02
				Antimony	0.34	mg/kg	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.1E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.001
				Arsenic	7.1	mg/kg	1.5E-06	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.2E-06	5.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Chromium VI	18.1	mg/kg	1.2E-05	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	6.2E-06	2.2E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.007
				Cobalt	11.8	mg/kg	4.0E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.4E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.05
				Iron	26400	mg/kg	9.0E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.2E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.05
				Manganese	305	mg/kg	1.0E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.7E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.02
				Thallium	0.053	mg/kg	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.6E-05					0.2
			Dermal	Benzo(a)anthracene	0.48	mg/kg	1.8E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.3E-07	3.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	1.1E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	8.2E-07	2.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	2.2E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.6E-07	3.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	5.8E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	4.1E-09	9.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	2.0E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.4E-07	3.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	1.1E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	8.0E-08	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	1.4E-06	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.8E-06	5.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	2.3E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.9E-08	7.9E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.001
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	3.1E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.6E-07	1.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								4.7E-06					0.005
		Exposure Point Total									2.1E-05					0.2
	Exposure Medium Total										2.1E-05					0.2

TABLE 7.8.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	2.4E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.6E-12	4.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	1.5E-11	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	1.6E-11	2.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-11	mg/m^3	2.9E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.2E-12	5.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	7.5E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	8.2E-13	1.3E-11	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	2.6E-12	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	3.1E-12	4.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	1.4E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.6E-12	2.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	1.7E-10	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	1.0E-10	6.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	1.3E-16	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	4.9E-12	4.5E-16	(mg/m^3)	4.0E-08	(mg/m^3)	1.1E-8
				Aluminum	1.2E-06	mg/m^3	3.4E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.2E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.0002
				Antimony	3.1E-11	mg/m^3	8.5E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	1.8E-10	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	7.6E-10	6.2E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00004
				Chromium VI	1.6E-09	mg/m^3	9.0E-10	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	7.6E-08	1.6E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00002
				Cobalt	1.1E-09	mg/m^3	2.9E-10	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	2.6E-09	1.0E-09	(mg/m^3)	6.0E-06	(mg/m^3)	0.0002
				Iron	2.4E-06	mg/m^3	6.6E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.3E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	7.6E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.7E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0005
				Thallium	4.8E-12	mg/m^3	1.3E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	4.6E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								7.9E-08					0.0010
		Exposure Point Total									7.9E-08					0.0010
	Exposure Medium Total										7.9E-08					0.0010
Medium Total											2.1E-05					0.2

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.1.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	8.6E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	6.3E-09	3.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	6.9E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	5.1E-08	2.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	4.6E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.3E-09	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	3.4E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	2.5E-10	1.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	1.2E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	8.6E-09	4.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	5.4E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.9E-09	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	6.2E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.2E-07	7.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	3.7E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	4.8E-09	4.3E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0006
				Antimony	0.81	mg/kg	4.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.3E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0001
				Chromium VI	18.2	mg/kg	3.1E-07	(mg/kg/day)	6.0E-01	(mg/kg/day)$^{-1}$	1.5E-07	1.2E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				Cobalt	11.2	mg/kg	6.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	7.4E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.002
				Iron	25300	mg/kg	1.4E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.7E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.002
				Manganese	314	mg/kg	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.1E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0009
				Thallium	0.056	mg/kg	3.2E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.7E-09	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								3.6E-07					0.007
			Dermal	Benzo(a)anthracene	0.51	mg/kg	3.8E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.7E-09	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	2.9E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.1E-08	1.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	1.9E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.4E-09	7.5E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	1.4E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.0E-10	5.5E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	5.0E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.6E-09	1.9E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	2.3E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.7E-09	8.9E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	2.8E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	5.6E-08	3.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	3.6E-15	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	4.6E-10	4.2E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00006
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								8.7E-08					0.00006
		Exposure Point Total									4.4E-07					0.007
	Exposure Medium Total										4.4E-07					0.007
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	1.3E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.4E-14	5.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	1.1E-13	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	1.2E-13	4.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	6.9E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	7.6E-15	2.7E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	5.1E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.6E-15	2.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	1.9E-14	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	2.2E-14	7.0E-14	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	8.2E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	9.0E-15	3.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	9.4E-13	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	5.4E-13	1.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	5.6E-19	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	2.1E-14	6.5E-18	(mg/m^3)	4.0E-08	(mg/m^3)	1.6E-10
				Antimony	7.4E-11	mg/m^3	6.9E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	8.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	4.7E-12	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	3.9E-10	1.6E-11	(mg/m^3)	1.0E-04	(mg/m^3)	1.6E-7
				Cobalt	1.0E-09	mg/m^3	9.6E-13	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	8.6E-12	1.1E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000002
				Iron	2.3E-06	mg/m^3	2.2E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	2.7E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.1E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000006
				Thallium	5.1E-12	mg/m^3	4.8E-15	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.6E-14	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								4.0E-10					0.000008
		Exposure Point Total									4.0E-10					0.000008
	Exposure Medium Total										4.0E-10					0.000008
Medium Total											4.4E-07					0.007

TABLE 7.1.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	8.1E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	5.9E-09	3.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	5.1E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.7E-08	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	9.8E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	7.2E-09	3.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	2.5E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.9E-10	9.9E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	8.8E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	6.4E-09	3.4E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	4.9E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.6E-09	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	3.9E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	7.9E-08	4.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	2.8E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	3.8E-09	3.4E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0005
				Aluminum	13700	mg/kg	7.7E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	9.0E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0009
				Antimony	0.34	mg/kg	1.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.2E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00006
				Arsenic	7.1	mg/kg	2.4E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.6E-08	2.6E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0009
				Chromium VI	18.1	mg/kg	3.1E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	1.5E-07	1.2E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				Cobalt	11.8	mg/kg	6.7E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	7.6E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Iron	26400	mg/kg	1.5E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.7E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.002
				Manganese	305	mg/kg	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.0E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0008
				Thallium	0.053	mg/kg	3.0E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.5E-09	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								3.3E-07					0.009
			Dermal	Benzo(a)anthracene	0.48	mg/kg	3.4E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.5E-09	1.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	2.1E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.6E-08	8.3E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	4.1E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.0E-09	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	1.1E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	7.8E-11	4.2E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	3.7E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.7E-09	1.4E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	2.1E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.5E-09	8.0E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	1.6E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	3.2E-08	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	2.8E-15	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	3.7E-10	3.3E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00005
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	3.9E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	5.8E-09	4.5E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								6.7E-08					0.0002
		Exposure Point Total									4.0E-07					0.009
	Exposure Medium Total										4.0E-07					0.009

TABLE 7.1.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	1.2E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.4E-14	4.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	7.7E-14	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	8.5E-14	3.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-11	mg/m^3	1.5E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.6E-14	5.8E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	3.8E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	4.2E-15	1.5E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	1.3E-14	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	1.6E-14	5.2E-14	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	7.4E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	8.2E-15	2.9E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	6.0E-13	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	3.4E-13	7.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	4.4E-19	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	1.7E-14	5.2E-16	(mg/m^3)	4.0E-08	(mg/m^3)	1.3E-10
				Aluminum	1.2E-06	mg/m^3	1.2E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.4E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.000003
				Antimony	3.1E-11	mg/m^3	2.9E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	6.1E-13	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	2.6E-12	7.1E-12	(mg/m^3)	1.5E-05	(mg/m^3)	4.7E-7
				Chromium VI	1.6E-09	mg/m^3	4.6E-12	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	3.9E-10	1.8E-11	(mg/m^3)	1.0E-04	(mg/m^3)	1.8E-7
				Cobalt	1.1E-09	mg/m^3	1.0E-12	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	9.1E-12	1.2E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000002
				Iron	2.4E-06	mg/m^3	2.3E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	2.6E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.0E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000006
				Thallium	4.8E-12	mg/m^3	4.5E-15	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.3E-14	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								4.0E-10					0.00001
		Exposure Point Total									4.0E-10					0.00001
	Exposure Medium Total										4.0E-10					0.00001
Medium Total											4.0E-07					0.009

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.2.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	1.4E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.0E-09	8.7E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	1.1E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	8.1E-09	7.0E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	7.3E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	5.3E-10	4.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	5.4E-10	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	3.9E-11	3.4E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	1.9E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.4E-09	1.2E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	8.6E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	6.3E-10	5.5E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	1.9E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	3.8E-08	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	1.1E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.4E-09	1.1E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0002
				Antimony	0.81	mg/kg	1.4E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.4E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00003
				Chromium VI	18.2	mg/kg	4.9E-08	(mg/kg/day)	6.0E-01	(mg/kg/day)$^{-1}$	2.4E-08	3.1E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Cobalt	11.2	mg/kg	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.9E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0006
				Iron	25300	mg/kg	4.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.3E-04	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.0006
				Manganese	314	mg/kg	5.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	5.4E-06	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0002
				Thallium	0.056	mg/kg	9.6E-11	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	9.6E-10	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								7.5E-09					0.002
			Dermal	Benzo(a)anthracene	0.51	mg/kg	2.2E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.6E-10	1.4E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	1.7E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.3E-09	1.1E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	1.1E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	8.3E-11	7.3E-10	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	8.4E-11	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	6.2E-12	5.4E-10	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	3.0E-11	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.2E-10	1.9E-10	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	1.4E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	9.9E-11	8.6E-10	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	3.2E-09	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	6.4E-09	3.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	4.0E-16	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	5.2E-11	4.0E-15	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.000006
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								8.2E-09					0.000006
		Exposure Point Total									8.3E-08					0.002
	Exposure Medium Total										8.3E-08					0.002
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	3.3E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.7E-15	2.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	2.7E-14	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	2.9E-14	1.7E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	1.8E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.9E-15	1.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	1.3E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.4E-15	8.3E-14	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	4.6E-15	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	5.5E-15	2.9E-14	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	2.1E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.3E-15	1.3E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	4.6E-13	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	2.6E-13	4.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	2.7E-19	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	1.0E-14	2.7E-18	(mg/m^3)	4.0E-08	(mg/m^3)	6.7E-11
				Antimony	7.4E-11	mg/m^3	3.4E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	1.2E-12	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.0E-10	7.6E-12	(mg/m^3)	1.0E-04	(mg/m^3)	7.6E-8
				Cobalt	1.0E-09	mg/m^3	4.6E-13	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	4.2E-12	4.6E-12	(mg/m^3)	6.0E-06	(mg/m^3)	7.7E-7
				Iron	2.3E-06	mg/m^3	1.1E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.1E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	1.3E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.3E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000003
				Thallium	5.1E-12	mg/m^3	2.3E-15	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.3E-14	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.0E-10					0.000003
		Exposure Point Total									1.0E-10					0.000003
	Exposure Medium Total										1.0E-10					0.000003
Medium Total											8.4E-08					0.002

TABLE 7.2.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	1.3E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	9.4E-10	8.2E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	8.1E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	5.9E-09	5.1E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	1.6E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.1E-09	9.9E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	4.0E-10	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	2.9E-11	2.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	1.4E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.0E-09	8.9E-10	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	7.8E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	5.7E-10	5.0E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	1.2E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.4E-08	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	8.9E-15	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.2E-09	8.9E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0001
				Aluminum	13700	mg/kg	2.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.3E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0002
				Antimony	0.34	mg/kg	5.8E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	5.8E-09	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00001
				Arsenic	7.1	mg/kg	7.3E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.1E-08	7.3E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Chromium VI	18.1	mg/kg	4.9E-08	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	2.4E-08	3.1E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Cobalt	11.8	mg/kg	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0007
				Iron	26400	mg/kg	4.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.5E-04	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.0006
				Manganese	305	mg/kg	5.2E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	5.2E-06	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0002
				Thallium	0.053	mg/kg	9.1E-11	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	9.1E-10	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								7.0E-08					0.002
			Dermal	Benzo(a)anthracene	0.48	mg/kg	2.0E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.5E-10	1.3E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	1.3E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	9.2E-10	8.1E-10	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	2.4E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.8E-10	1.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	6.3E-11	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	4.6E-12	4.0E-10	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	2.2E-11	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.6E-10	1.4E-10	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	1.2E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	8.9E-11	7.8E-10	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	2.0E-09	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	4.0E-09	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	3.2E-16	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	4.2E-11	3.2E-15	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.000005
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	4.4E-10	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	6.6E-10	4.4E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00001
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								6.3E-09					0.00002
		Exposure Point Total									7.6E-08					0.002
	Exposure Medium Total										7.6E-08					0.002

TABLE 7.2.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	3.1E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.4E-15	2.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	2.0E-14	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	2.2E-14	1.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-11	mg/m^3	3.8E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	4.2E-15	2.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	9.8E-15	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.1E-15	6.2E-14	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	3.4E-15	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	4.1E-15	2.2E-14	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	1.9E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.1E-15	1.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	2.9E-13	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	1.7E-13	2.9E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	2.2E-19	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	8.2E-15	2.2E-18	(mg/m^3)	4.0E-08	(mg/m^3)	5.4E-11
				Aluminum	1.2E-06	mg/m^3	5.7E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.7E-09	(mg/m^3)	5.0E-03	(mg/m^3)	0.000001
				Antimony	3.1E-11	mg/m^3	1.4E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	2.9E-13	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	1.3E-12	2.9E-12	(mg/m^3)	1.5E-05	(mg/m^3)	2.0E-7
				Chromium VI	1.6E-09	mg/m^3	1.2E-12	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	9.9E-11	7.5E-12	(mg/m^3)	1.0E-04	(mg/m^3)	7.5E-8
				Cobalt	1.1E-09	mg/m^3	4.9E-13	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	4.4E-12	4.9E-12	(mg/m^3)	6.0E-06	(mg/m^3)	8.2E-7
				Iron	2.4E-06	mg/m^3	1.1E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.1E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	1.3E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.3E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000003
				Thallium	4.8E-12	mg/m^3	2.2E-15	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.2E-14	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.1E-10					0.000005
		Exposure Point Total									1.1E-10					0.000005
	Exposure Medium Total										1.1E-10					0.000005
Medium Total											7.6E-08					0.002

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.3.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	4.3E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.1E-09	3.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	3.4E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.5E-08	2.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	2.3E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.7E-09	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	1.7E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.2E-10	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	5.9E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	4.3E-09	4.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	2.7E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.0E-09	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	9.2E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.8E-07	6.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	5.5E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	7.1E-09	3.8E-12	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.0002
				Antimony	0.81	mg/kg	6.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.6E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.001
				Chromium VI	18.2	mg/kg	1.5E-07	(mg/kg/day)	6.0E-01	(mg/kg/day)$^{-1}$	7.5E-08	1.1E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.002
				Cobalt	11.2	mg/kg	9.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.6E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Iron	25300	mg/kg	2.1E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.5E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.02
				Manganese	314	mg/kg	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.8E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.008
				Thallium	0.056	mg/kg	4.7E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								3.0E-07					0.03
			Dermal	Benzo(a)anthracene	0.51	mg/kg	5.9E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.3E-10	4.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	4.7E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.4E-09	3.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	3.1E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.3E-10	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	2.3E-10	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.7E-11	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	8.0E-11	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	5.9E-10	5.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	3.7E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.7E-10	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	1.4E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.7E-08	9.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	1.7E-15	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.2E-10	1.2E-13	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.000006
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-03	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								3.2E-08					0.000006
		Exposure Point Total									3.4E-07					0.03
	Exposure Medium Total										3.4E-07					0.03
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	3.6E-07	mg/m^3	2.5E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.7E-11	1.7E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.9E-07	mg/m^3	2.0E-10	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	2.2E-10	1.4E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	1.9E-07	mg/m^3	1.3E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.4E-11	9.2E-09	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-07	mg/m^3	9.7E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.1E-11	6.8E-09	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.0E-08	mg/m^3	3.4E-11	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	4.1E-11	2.4E-09	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.3E-07	mg/m^3	1.6E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.7E-11	1.1E-08	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	7.9E-06	mg/m^3	5.3E-09	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	3.0E-09	3.7E-07	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.6E-12	mg/m^3	3.1E-15	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	1.2E-10	2.2E-13	(mg/m^3)	4.0E-08	(mg/m^3)	0.000006
				Antimony	5.8E-07	mg/m^3	3.9E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.7E-08	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.3E-05	mg/m^3	8.8E-09	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	7.4E-07	6.2E-07	(mg/m^3)	3.0E-04	(mg/m^3)	0.002
				Cobalt	8.0E-06	mg/m^3	5.4E-09	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	4.9E-08	3.6E-07	(mg/m^3)	2.0E-05	(mg/m^3)	0.02
				Iron	1.8E-02	mg/m^3	1.2E-06	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	8.6E-04	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.2E-04	mg/m^3	1.5E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.1E-05	(mg/m^3)	5.0E-05	(mg/m^3)	0.2
				Thallium	4.0E-08	mg/m^3	2.7E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.9E-09	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								7.9E-07					0.2
		Exposure Point Total									7.9E-07					0.2
	Exposure Medium Total										7.9E-07					0.2
Medium Total											1.1E-06					0.3

TABLE 7.3.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	4.0E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.9E-09	2.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	2.5E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.8E-08	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	4.9E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.6E-09	3.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	1.3E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	9.2E-11	8.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	4.4E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.2E-09	3.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	2.4E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.8E-09	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	5.9E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.2E-07	4.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	4.4E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	5.7E-09	3.1E-12	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.0002
				Aluminum	13700	mg/kg	1.2E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	8.1E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.008
				Antimony	0.34	mg/kg	2.9E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.0E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0005
				Arsenic	7.1	mg/kg	3.6E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	5.4E-08	2.5E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.008
				Chromium VI	18.1	mg/kg	1.5E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	7.5E-08	1.1E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.002
				Cobalt	11.8	mg/kg	9.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.9E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Iron	26400	mg/kg	2.2E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.5E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.02
				Manganese	305	mg/kg	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.8E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.007
				Thallium	0.053	mg/kg	4.4E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.8E-07					0.05
			Dermal	Benzo(a)anthracene	0.48	mg/kg	5.5E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.0E-10	3.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	3.4E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.5E-09	2.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	6.7E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.9E-10	4.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	1.7E-10	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.3E-11	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	6.0E-11	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	4.4E-10	4.2E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	3.3E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.4E-10	2.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	8.7E-09	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.7E-08	6.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	1.4E-15	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.8E-10	9.8E-14	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.000005
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.9E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.8E-09	1.3E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0004
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-03	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.4E-08					0.0004
		Exposure Point Total									3.1E-07					0.05
	Exposure Medium Total										3.1E-07					0.05

TABLE 7.3.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	3.4E-07	mg/m^3	2.3E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.6E-11	1.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.1E-07	mg/m^3	1.5E-10	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	1.6E-10	1.0E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	4.1E-07	mg/m^3	2.8E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.1E-11	2.0E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.1E-07	mg/m^3	7.3E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	8.0E-12	5.1E-09	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	3.7E-08	mg/m^3	2.5E-11	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	3.0E-11	1.6E-09	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.1E-07	mg/m^3	1.4E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.5E-11	9.8E-09	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	5.0E-06	mg/m^3	3.4E-09	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	1.9E-09	2.4E-07	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	3.7E-12	mg/m^3	2.5E-15	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	9.6E-11	1.6E-13	(mg/m^3)	4.0E-08	(mg/m^3)	0.000004
				Aluminum	9.8E-03	mg/m^3	6.6E-06	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	4.6E-04	(mg/m^3)	5.0E-03	(mg/m^3)	0.09
				Antimony	2.4E-07	mg/m^3	1.6E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.2E-08	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	5.1E-06	mg/m^3	3.4E-09	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	1.5E-08	2.4E-07	(mg/m^3)	1.5E-05	(mg/m^3)	0.02
				Chromium VI	1.3E-05	mg/m^3	8.8E-09	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	7.4E-07	6.1E-07	(mg/m^3)	3.0E-04	(mg/m^3)	0.002
				Cobalt	8.4E-06	mg/m^3	5.7E-09	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	5.1E-08	4.0E-07	(mg/m^3)	2.0E-05	(mg/m^3)	0.02
				Iron	1.9E-02	mg/m^3	1.3E-05	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	9.0E-04	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.2E-04	mg/m^3	1.5E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.0E-05	(mg/m^3)	5.0E-05	(mg/m^3)	0.2
				Thallium	3.8E-08	mg/m^3	2.6E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.6E-09	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								8.1E-07					0.3
		Exposure Point Total									8.1E-07					0.3
	Exposure Medium Total										8.1E-07					0.3
Medium Total											1.1E-06					0.4

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.4.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	2.5E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.8E-08	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	2.0E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.4E-07	1.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	1.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	9.5E-09	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	9.6E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	7.0E-10	7.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	3.4E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.5E-08	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	1.5E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.1E-08	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	5.3E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.1E-06	4.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	3.1E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	4.1E-08	2.4E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.003
				Antimony	0.81	mg/kg	3.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.0E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0008
				Chromium VI	18.2	mg/kg	8.8E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	4.4E-07	6.6E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Cobalt	11.2	mg/kg	5.4E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.2E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Iron	25300	mg/kg	1.2E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	9.5E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Manganese	314	mg/kg	1.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.2E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.005
				Thallium	0.056	mg/kg	2.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.7E-06					0.04
			Dermal	Benzo(a)anthracene	0.51	mg/kg	4.4E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.2E-09	3.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	3.6E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.6E-08	2.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	2.3E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.7E-09	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	1.7E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.3E-10	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	6.1E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	4.4E-09	4.7E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	2.8E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.0E-09	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	1.0E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.1E-07	8.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	1.3E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.7E-09	1.0E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0001
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.6E-07					0.0001
		Exposure Point Total									2.0E-06					0.04
	Exposure Medium Total										2.0E-06					0.04
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	1.2E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.3E-13	9.3E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	9.6E-13	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	1.1E-12	7.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	6.3E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	6.9E-14	4.9E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	4.7E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.1E-14	3.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	1.6E-13	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	2.0E-13	1.3E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	7.5E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	8.2E-14	5.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	2.6E-11	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	1.5E-11	2.0E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	1.5E-17	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	5.8E-13	1.2E-16	(mg/m^3)	4.0E-08	(mg/m^3)	3.0E-9
				Antimony	7.4E-11	mg/m^3	1.9E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	4.3E-11	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	3.6E-09	3.3E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000003
				Cobalt	1.0E-09	mg/m^3	2.6E-11	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	2.4E-10	2.0E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00003
				Iron	2.3E-06	mg/m^3	5.9E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	4.6E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	7.3E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.7E-09	(mg/m^3)	5.0E-05	(mg/m^3)	0.0001
				Thallium	5.1E-12	mg/m^3	1.3E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.0E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								3.8E-08					0.0002
		Exposure Point Total									3.8E-09					0.0002
	Exposure Medium Total										3.8E-09					0.0002
Medium Total											2.0E-06					0.04

TABLE 7.4.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	2.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.7E-08	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	1.4E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.1E-07	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	2.8E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.0E-08	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	7.2E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	5.3E-10	5.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	2.5E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.8E-08	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	1.4E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.0E-08	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	3.4E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	6.8E-07	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	2.5E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	3.3E-08	2.0E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.003
				Aluminum	13700	mg/kg	6.6E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	5.1E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.005
				Antimony	0.34	mg/kg	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.3E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0003
				Arsenic	7.1	mg/kg	2.1E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	3.1E-07	1.6E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.005
				Chromium VI	18.1	mg/kg	8.7E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	4.4E-07	6.6E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Cobalt	11.8	mg/kg	5.7E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.4E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Iron	26400	mg/kg	1.3E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	9.9E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Manganese	305	mg/kg	1.5E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.1E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.005
				Thallium	0.053	mg/kg	2.6E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.6E-06					0.06
			Dermal	Benzo(a)anthracene	0.48	mg/kg	4.2E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.0E-09	3.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	2.6E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.9E-08	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	5.0E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.7E-09	3.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	1.3E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	9.5E-11	1.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	4.5E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.3E-09	3.5E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	2.5E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.8E-09	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	6.6E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.3E-07	5.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	1.0E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.4E-09	8.1E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0001
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.4E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.1E-09	1.1E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0004
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.8E-07					0.0005
		Exposure Point Total									1.8E-06					0.06
	Exposure Medium Total										1.8E-06					0.06

TABLE 7.4.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	1.1E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.2E-13	8.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	7.0E-13	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	7.7E-13	5.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-11	mg/m^3	1.4E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.5E-13	1.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	3.5E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.9E-14	2.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	1.2E-13	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	1.5E-13	9.5E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	6.8E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	7.5E-14	5.3E-12	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	1.6E-11	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	9.3E-12	1.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	1.2E-17	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	4.6E-13	9.5E-17	(mg/m^3)	4.0E-08	(mg/m^3)	2.4E-9
				Aluminum	1.2E-06	mg/m^3	3.2E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.5E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.00005
				Antimony	3.1E-11	mg/m^3	7.9E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	6.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	1.7E-11	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	7.1E-11	1.3E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.000009
				Chromium VI	1.6E-09	mg/m^3	4.2E-11	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	3.5E-09	3.3E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000003
				Cobalt	1.1E-09	mg/m^3	2.8E-11	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	2.5E-10	2.1E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00004
				Iron	2.4E-06	mg/m^3	6.2E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	4.6E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	7.1E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.5E-09	(mg/m^3)	5.0E-05	(mg/m^3)	0.0001
				Thallium	4.8E-12	mg/m^3	1.2E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	9.5E-13	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								3.9E-09					0.0002
		Exposure Point Total									3.9E-09					0.0002
	Exposure Medium Total										3.9E-09					0.0002
Medium Total											1.8E-06					0.05

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.5.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	2.1E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.5E-08	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	1.7E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.2E-07	9.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	1.1E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	8.0E-09	5.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	8.1E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	5.9E-10	4.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	2.8E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.1E-08	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	1.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	9.5E-09	7.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	6.9E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.4E-07	2.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	4.1E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	5.3E-09	1.4E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.002
				Antimony	0.81	mg/kg	5.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.8E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0004
				Chromium VI	18.2	mg/kg	7.4E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	3.7E-07	4.0E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.001
				Cobalt	11.2	mg/kg	7.0E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.5E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.008
				Iron	25300	mg/kg	1.6E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	5.5E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.008
				Manganese	314	mg/kg	2.0E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.9E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.003
				Thallium	0.056	mg/kg	3.5E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								6.9E-07					0.02
			Dermal	Benzo(a)anthracene	0.51	mg/kg	5.8E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.2E-09	3.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	4.7E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.4E-08	2.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	3.1E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.2E-09	1.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	2.3E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.7E-10	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	8.0E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	5.8E-09	4.3E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	3.6E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.7E-09	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	2.1E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	4.2E-08	7.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	2.6E-15	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	3.4E-10	9.2E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0001
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								9.1E-08					0.0001
		Exposure Point Total									7.8E-07					0.02
	Exposure Medium Total										7.8E-07					0.02
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	9.4E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.0E-14	5.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	7.6E-14	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	8.3E-14	4.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	5.0E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.5E-15	2.7E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	3.7E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	4.1E-15	2.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	1.3E-14	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	1.6E-14	7.0E-14	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	5.9E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	6.5E-15	3.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	3.1E-13	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	1.8E-13	1.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	1.9E-19	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	7.0E-15	6.5E-18	(mg/m^3)	4.0E-08	(mg/m^3)	1.6E-10
				Antimony	7.4E-11	mg/m^3	2.3E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	8.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	3.4E-12	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	2.8E-10	1.6E-11	(mg/m^3)	1.0E-04	(mg/m^3)	1.6E-7
				Cobalt	1.0E-09	mg/m^3	3.2E-13	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	2.9E-12	1.1E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000002
				Iron	2.3E-06	mg/m^3	7.2E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.5E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	8.9E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.1E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000006
				Thallium	5.1E-12	mg/m^3	1.6E-15	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.6E-14	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								2.9E-10					0.000008
		Exposure Point Total									2.9E-10					0.000008
	Exposure Medium Total										2.9E-10					0.000008
Medium Total											7.8E-07					0.02

TABLE 7.5.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	2.0E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.4E-08	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	1.2E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	8.9E-08	6.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	2.4E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.7E-08	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	6.1E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	4.5E-10	3.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	2.1E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.5E-08	1.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	1.2E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	8.6E-09	6.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	4.4E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	8.8E-08	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	3.3E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	4.2E-09	1.1E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.002
				Aluminum	13700	mg/kg	8.6E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.0E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.003
				Antimony	0.34	mg/kg	2.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	7.5E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0002
				Arsenic	7.1	mg/kg	2.7E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.0E-08	9.3E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Chromium VI	18.1	mg/kg	7.4E-07	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	3.7E-07	4.0E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.001
				Cobalt	11.8	mg/kg	7.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.6E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.009
				Iron	26400	mg/kg	1.7E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	5.8E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.008
				Manganese	305	mg/kg	1.9E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.7E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.003
				Thallium	0.053	mg/kg	3.3E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								6.5E-07					0.03
			Dermal	Benzo(a)anthracene	0.48	mg/kg	5.5E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.0E-09	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	3.4E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.5E-08	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	6.6E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.8E-09	3.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	1.7E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.2E-10	9.2E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	5.9E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	4.3E-09	3.2E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	3.3E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.4E-09	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	1.3E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.6E-08	4.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	2.1E-15	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.7E-10	7.4E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0001
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	2.9E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.3E-09	1.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0003
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								7.2E-08					0.0004
		Exposure Point Total									7.2E-07					0.03
	Exposure Medium Total										7.2E-07					0.03

TABLE 7.5.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	8.9E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	9.8E-15	4.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	5.6E-14	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	6.1E-14	3.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-11	mg/m^3	1.1E-13	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.2E-14	5.8E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	2.8E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.1E-15	1.5E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	9.6E-15	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	1.2E-14	5.2E-14	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	5.4E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.9E-15	2.9E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	2.0E-13	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	1.1E-13	7.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	1.5E-19	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	5.8E-15	5.2E-16	(mg/m^3)	4.0E-08	(mg/m^3)	1.3E-10
				Aluminum	1.2E-06	mg/m^3	3.9E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.4E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.000003
				Antimony	3.1E-11	mg/m^3	9.7E-15	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	2.0E-13	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	8.7E-13	7.1E-12	(mg/m^3)	1.5E-05	(mg/m^3)	4.7E-7
				Chromium VI	1.6E-09	mg/m^3	3.3E-12	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	2.8E-10	1.8E-11	(mg/m^3)	1.0E-04	(mg/m^3)	1.8E-7
				Cobalt	1.1E-09	mg/m^3	3.4E-13	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	3.0E-12	1.2E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000002
				Iron	2.4E-06	mg/m^3	7.5E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	8.7E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.0E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000006
				Thallium	4.8E-12	mg/m^3	1.5E-15	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.3E-14	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								2.9E-10					0.00001
		Exposure Point Total									2.9E-10					0.00001
	Exposure Medium Total										2.9E-10					0.00001
Medium Total											7.2E-07					0.03

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.6.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	1.6E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.2E-09	1.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	1.3E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	9.7E-09	8.4E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	8.7E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	6.4E-10	5.5E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	6.5E-10	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	4.7E-11	4.1E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	2.3E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.7E-09	1.4E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	1.0E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	7.5E-10	6.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	2.3E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	4.6E-08	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	1.3E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.7E-09	1.3E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0002
				Antimony	0.81	mg/kg	1.7E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.7E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00004
				Chromium VI	18.2	mg/kg	5.9E-08	(mg/kg/day)	6.0E-01	(mg/kg/day)$^{-1}$	2.9E-08	3.7E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Cobalt	11.2	mg/kg	2.3E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.3E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0008
				Iron	25300	mg/kg	5.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	5.2E-04	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.0007
				Manganese	314	mg/kg	6.5E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.5E-06	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0003
				Thallium	0.056	mg/kg	1.2E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.2E-09	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								9.0E-08					0.002
			Dermal	Benzo(a)anthracene	0.51	mg/kg	5.2E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.8E-10	3.3E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	4.2E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.0E-09	2.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	2.7E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.0E-10	1.7E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	2.0E-10	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.5E-11	1.3E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	7.1E-11	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	5.2E-10	4.5E-10	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	3.2E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.4E-10	2.1E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	7.6E-09	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.5E-08	7.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	9.7E-16	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.3E-10	9.7E-15	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00001
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.0E-08					0.00001
		Exposure Point Total									1.1E-07					0.002
	Exposure Medium Total										1.1E-07					0.002
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	8.0E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	8.8E-15	5.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	6.4E-14	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	7.1E-14	4.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	4.2E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	4.6E-15	2.7E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	3.1E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.4E-15	2.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	1.1E-14	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	1.3E-14	7.0E-14	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	5.0E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.5E-15	3.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	1.1E-12	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	6.3E-13	1.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	6.5E-19	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	2.5E-14	6.5E-18	(mg/m^3)	4.0E-08	(mg/m^3)	1.6E-10
				Antimony	7.4E-11	mg/m^3	8.1E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	8.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	2.8E-12	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	2.4E-13	1.6E-11	(mg/m^3)	1.0E-04	(mg/m^3)	1.6E-7
				Cobalt	1.0E-09	mg/m^3	1.1E-12	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	1.0E-11	1.1E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000002
				Iron	2.3E-06	mg/m^3	2.6E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	3.1E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.1E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000006
				Thallium	5.1E-12	mg/m^3	5.6E-15	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.6E-14	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								2.5E-10					0.000008
		Exposure Point Total									2.5E-10					0.000008
	Exposure Medium Total										2.5E-10					0.000008
Medium Total											1.1E-07					0.002

TABLE 7.6.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	1.6E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.1E-09	9.9E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	9.7E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	7.1E-09	6.2E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	1.9E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.4E-09	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	4.8E-10	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	3.5E-11	3.1E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	1.7E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.2E-09	1.1E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	9.4E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	6.8E-10	6.0E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	1.4E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.9E-08	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	1.1E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.4E-09	1.1E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0002
				Aluminum	13700	mg/kg	2.8E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.8E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0003
				Antimony	0.34	mg/kg	7.0E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	7.0E-09	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00002
				Arsenic	7.1	mg/kg	8.8E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.3E-08	8.6E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0003
				Chromium VI	18.1	mg/kg	5.8E-08	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	2.9E-08	3.7E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Cobalt	11.8	mg/kg	2.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.4E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0008
				Iron	26400	mg/kg	5.4E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	5.4E-04	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.0008
				Manganese	305	mg/kg	6.3E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	6.3E-06	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0003
				Thallium	0.053	mg/kg	1.1E-10	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.1E-09	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								8.4E-08					0.003
			Dermal	Benzo(a)anthracene	0.48	mg/kg	4.9E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.5E-10	3.1E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	3.0E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.2E-09	1.9E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	5.9E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.3E-10	3.7E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	1.5E-10	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.1E-11	9.7E-10	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	5.3E-11	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.8E-10	3.4E-10	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	2.9E-10	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.1E-10	1.9E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	4.9E-09	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	9.7E-09	4.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	7.7E-16	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.0E-10	7.7E-15	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00001
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.1E-09	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.6E-09	1.1E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00004
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.5E-08					0.00005
		Exposure Point Total									9.9E-08					0.003
	Exposure Medium Total										9.9E-08					0.003

TABLE 7.6.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	7.6E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	8.3E-15	4.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	4.7E-14	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	5.2E-14	3.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-11	mg/m^3	9.1E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.0E-14	5.8E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	2.3E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.6E-15	1.5E-13	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	8.1E-15	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	9.8E-15	5.2E-14	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	4.5E-14	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.0E-15	2.9E-13	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	7.0E-13	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	4.0E-13	7.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	5.2E-19	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	2.0E-14	5.2E-18	(mg/m^3)	4.0E-08	(mg/m^3)	1.3E-10
				Aluminum	1.2E-06	mg/m^3	1.4E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.4E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000003
				Antimony	3.1E-11	mg/m^3	3.4E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	7.1E-13	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	3.0E-12	7.1E-12	(mg/m^3)	1.5E-05	(mg/m^3)	4.7E-7
				Chromium VI	1.6E-09	mg/m^3	2.8E-12	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	2.4E-10	1.6E-11	(mg/m^3)	1.0E-04	(mg/m^3)	1.6E-7
				Cobalt	1.1E-09	mg/m^3	1.2E-12	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	1.1E-11	1.2E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000002
				Iron	2.4E-06	mg/m^3	2.6E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	3.0E-11	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.0E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000006
				Thallium	4.8E-12	mg/m^3	5.3E-15	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	5.3E-14	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								2.6E-10					0.00001
		Exposure Point Total									2.6E-10					0.00001
	Exposure Medium Total										2.6E-10					0.00001
Medium Total											9.9E-08					0.003

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.7.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	4.0E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.0E-07	2.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	3.3E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.4E-06	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	2.1E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.5E-07	1.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	1.6E-07	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.2E-08	8.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	5.6E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	4.1E-07	3.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	2.5E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.9E-07	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	1.3E-06	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.7E-06	4.7E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	7.9E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.0E-07	2.8E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.04
				Antimony	0.81	mg/kg	8.9E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.5E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.009
				Chromium VI	18.2	mg/kg	1.4E-05	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	7.2E-06	7.8E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.03
				Cobalt	11.2	mg/kg	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.8E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.2
				Iron	25300	mg/kg	3.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.1E-01	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.2
				Manganese	314	mg/kg	3.8E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.3E-03	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.06
				Thallium	0.056	mg/kg	6.8E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.3E-05					0.4
			Dermal	Benzo(a)anthracene	0.51	mg/kg	5.7E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.1E-08	3.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	4.6E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.3E-07	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	3.0E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.2E-08	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	2.2E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.6E-09	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	7.8E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	5.7E-08	4.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	3.5E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.6E-08	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	2.0E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	4.0E-07	7.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	2.6E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	3.3E-09	9.0E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.001
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								8.9E-07					0.001
		Exposure Point Total									1.4E-05					0.4
	Exposure Medium Total										1.4E-05					0.4
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	5.5E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	6.1E-13	3.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	4.4E-12	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	4.9E-12	2.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	2.9E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.2E-13	1.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	2.2E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.4E-13	1.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	7.6E-13	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	9.1E-13	4.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	3.5E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.9E-13	1.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	1.8E-11	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	1.0E-11	6.4E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	1.1E-17	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	4.1E-13	3.6E-16	(mg/m^3)	4.0E-08	(mg/m^3)	9.5E-9
				Antimony	7.4E-11	mg/m^3	1.3E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	4.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	2.0E-10	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.7E-08	1.1E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00001
				Cobalt	1.0E-09	mg/m^3	1.9E-11	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	1.7E-10	6.5E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.0001
				Iron	2.3E-06	mg/m^3	4.2E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.5E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	5.2E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.8E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0004
				Thallium	5.1E-12	mg/m^3	9.3E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.3E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.7E-08					0.0005
		Exposure Point Total									1.7E-08					0.0005
	Exposure Medium Total										1.7E-08					0.0005
Medium Total											1.4E-05					0.4

TABLE 7.7.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	3.8E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.8E-07	2.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	2.4E-07	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.7E-06	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	4.6E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.4E-07	2.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	1.2E-07	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	8.7E-09	6.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	4.1E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.0E-07	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	2.3E-07	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.7E-07	1.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	8.5E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.7E-06	3.0E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	6.3E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	8.3E-08	2.2E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.03
				Aluminum	13700	mg/kg	1.7E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	5.9E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.06
				Antimony	0.34	mg/kg	4.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.5E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.004
				Arsenic	7.1	mg/kg	5.2E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	7.8E-07	1.8E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.06
				Chromium VI	18.1	mg/kg	1.4E-05	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	7.2E-06	7.7E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.03
				Cobalt	11.8	mg/kg	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	5.0E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.2
				Iron	26400	mg/kg	3.2E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.1E-01	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.2
				Manganese	305	mg/kg	3.7E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.3E-03	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.05
				Thallium	0.053	mg/kg	6.5E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.3E-05					0.6
			Dermal	Benzo(a)anthracene	0.48	mg/kg	5.3E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.9E-08	2.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	3.3E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.4E-07	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	6.4E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.7E-08	3.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	1.7E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.2E-09	9.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	5.8E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	4.2E-08	3.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	3.2E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.4E-08	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	1.3E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	2.6E-07	4.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	2.0E-14	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.7E-09	7.2E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.001
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	8.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	2.8E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	4.2E-08	9.8E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								7.0E-07					0.004
		Exposure Point Total									1.3E-05					0.6
	Exposure Medium Total										1.3E-05					0.6

TABLE 7.7.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	5.2E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.7E-13	2.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	3.2E-12	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	3.6E-12	1.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-11	mg/m^3	6.3E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	6.9E-13	3.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	1.6E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.8E-13	8.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	5.6E-13	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	6.8E-13	3.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	3.1E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.5E-13	1.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	1.2E-11	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	6.7E-12	4.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	8.7E-18	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	3.3E-13	3.0E-16	(mg/m^3)	4.0E-08	(mg/m^3)	7.6E-9
				Aluminum	1.2E-06	mg/m^3	2.3E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	8.0E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.0002
				Antimony	3.1E-11	mg/m^3	5.7E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	1.2E-11	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	5.1E-11	4.1E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00003
				Chromium VI	1.6E-09	mg/m^3	2.0E-10	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.6E-08	1.1E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00001
				Cobalt	1.1E-09	mg/m^3	2.0E-11	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	1.8E-10	6.9E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.0001
				Iron	2.4E-06	mg/m^3	4.4E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.5E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	5.1E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.6E-06	(mg/m^3)	5.0E-05	(mg/m^3)	0.0004
				Thallium	4.8E-12	mg/m^3	8.8E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.1E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.7E-08					0.0007
		Exposure Point Total									1.7E-08					0.0007
	Exposure Medium Total										1.7E-08					0.0007
Medium Total											1.3E-05					0.6

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.8.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.51	mg/kg	3.2E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.3E-08	2.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	2.6E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.9E-07	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	1.7E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.2E-08	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	1.3E-08	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	9.2E-10	8.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	4.4E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.2E-08	2.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	2.0E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.5E-08	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	4.4E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	8.8E-07	4.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	2.6E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	3.4E-08	2.6E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.004
				Antimony	0.81	mg/kg	3.2E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	3.2E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0008
				Chromium VI	18.2	mg/kg	1.1E-06	(mg/kg/day)	6.0E-01	(mg/kg/day)$^{-1}$	6.7E-07	7.3E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Cobalt	11.2	mg/kg	4.5E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.5E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Iron	25300	mg/kg	1.0E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.0E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Manganese	314	mg/kg	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.3E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.005
				Thallium	0.056	mg/kg	2.2E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.8E-06					0.04
			Dermal	Benzo(a)anthracene	0.51	mg/kg	5.0E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.7E-09	3.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.41	mg/kg	4.0E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.0E-08	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.27	mg/kg	2.7E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.9E-09	1.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.2	mg/kg	2.0E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.4E-10	1.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.07	mg/kg	6.9E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	5.0E-09	4.4E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.32	mg/kg	3.2E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.3E-09	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	11	mg/kg	7.4E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	1.5E-07	7.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000065	mg/kg	9.4E-15	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	1.2E-09	9.4E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0001
				Antimony	0.81	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	18.2	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.2	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	25300	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	314	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.056	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.9E-07					0.0001
		Exposure Point Total									2.0E-06					0.04
	Exposure Medium Total										2.0E-06					0.04
	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.6E-11	mg/m^3	4.7E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.1E-13	3.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.7E-11	mg/m^3	3.8E-12	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	4.1E-12	2.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.5E-11	mg/m^3	2.5E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.7E-13	1.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	0.0E+00	mg/m^3	0.0E+00	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	0.0E+00	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.8E-11	mg/m^3	1.8E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.0E-13	1.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	0.0E+00	mg/m^3	0.0E+00	(mg/m^3)	1.1E-05	(ug/m^3)$^{-1}$	--	0.0E+00	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	6.4E-12	mg/m^3	6.4E-13	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	7.7E-13	4.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.9E-11	mg/m^3	2.9E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.2E-13	1.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	1.0E-09	mg/m^3	6.4E-11	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	3.7E-11	6.4E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	5.9E-16	mg/m^3	3.8E-17	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	1.4E-12	3.8E-16	(mg/m^3)	4.0E-08	(mg/m^3)	9.5E-9
				Antimony	7.4E-11	mg/m^3	4.7E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	4.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.7E-09	mg/m^3	1.7E-10	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.4E-08	1.1E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00001
				Cobalt	1.0E-09	mg/m^3	6.5E-11	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	5.9E-10	6.5E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.0001
				Iron	2.3E-06	mg/m^3	1.5E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.5E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.9E-08	mg/m^3	1.8E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.8E-08	(mg/m^3)	6.0E-05	(mg/m^3)	0.0004
				Thallium	5.1E-12	mg/m^3	3.3E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.3E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.5E-08					0.0005
		Exposure Point Total									1.5E-08					0.0005
	Exposure Medium Total										1.6E-08					0.0005
Medium Total											2.0E-06					0.04

TABLE 7.8.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Ingestion	Benzo(a)anthracene	0.48	mg/kg	3.0E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.2E-08	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	1.9E-08	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	1.4E-07	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	3.7E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.7E-08	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	9.4E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	6.9E-10	6.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	3.3E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.4E-08	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	1.8E-08	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	1.3E-08	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	2.8E-07	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	5.6E-07	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	2.1E-13	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	2.7E-08	2.1E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.003
				Aluminum	13700	mg/kg	5.5E-04	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	5.5E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.005
				Antimony	0.34	mg/kg	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.4E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0003
				Arsenic	7.1	mg/kg	1.7E-07	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	2.6E-07	1.7E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.006
				Chromium VI	18.1	mg/kg	1.1E-06	(mg/kg/day)	5.0E-01	(mg/kg/day)$^{-1}$	5.7E-07	7.3E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Cobalt	11.8	mg/kg	4.7E-07	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	4.7E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Iron	26400	mg/kg	1.1E-03	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.1E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.02
				Manganese	305	mg/kg	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	1.2E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.005
				Thallium	0.053	mg/kg	2.1E-09	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.6E-06					0.05
			Dermal	Benzo(a)anthracene	0.48	mg/kg	4.7E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	3.5E-09	3.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	0.3	mg/kg	3.0E-09	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	2.2E-08	1.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	0.58	mg/kg	5.7E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	4.2E-09	3.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(k)fluoranthene	0.15	mg/kg	1.5E-09	(mg/kg/day)	7.3E-02	(mg/kg/day)$^{-1}$	1.1E-10	9.4E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.052	mg/kg	5.1E-10	(mg/kg/day)	7.3E+00	(mg/kg/day)$^{-1}$	3.7E-09	3.3E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	0.29	mg/kg	2.9E-09	(mg/kg/day)	7.3E-01	(mg/kg/day)$^{-1}$	2.1E-09	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Aroclor-1260	7	mg/kg	4.7E-08	(mg/kg/day)	2.0E+00	(mg/kg/day)$^{-1}$	9.5E-08	4.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000052	mg/kg	7.5E-15	(mg/kg/day)	1.3E+05	(mg/kg/day)$^{-1}$	9.8E-10	7.5E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0001
				Aluminum	13700	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.34	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.0E-08	(mg/kg/day)	1.5E+00	(mg/kg/day)$^{-1}$	1.5E-08	1.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0003
				Chromium VI	18.1	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	11.8	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	305	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
				Thallium	0.053	mg/kg	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)$^{-1}$	--	0.0E+00	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.5E-07					0.0005
		Exposure Point Total									1.8E-06					0.05
	Exposure Medium Total										1.8E-06					0.05

TABLE 7.8.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Air	Tank Farm 2	Inhalation	Benzo(a)anthracene	4.4E-11	mg/m^3	4.4E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	4.8E-13	2.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.7E-11	mg/m^3	2.7E-12	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	3.0E-12	1.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-11	mg/m^3	5.3E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	5.8E-13	3.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.4E-11	mg/m^3	1.4E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.5E-13	8.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.7E-12	mg/m^3	4.8E-13	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	5.7E-13	3.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.6E-11	mg/m^3	2.7E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.9E-13	1.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Aroclor-1260	6.4E-10	mg/m^3	4.1E-11	(mg/m^3)	5.7E-04	(ug/m^3)$^{-1}$	2.3E-11	4.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	4.7E-16	mg/m^3	3.0E-17	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	1.2E-12	3.0E-16	(mg/m^3)	4.0E-08	(mg/m^3)	7.6E-9
				Aluminum	1.2E-06	mg/m^3	8.0E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	8.0E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.0002
				Antimony	3.1E-11	mg/m^3	2.0E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	2.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.5E-10	mg/m^3	4.1E-11	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	1.8E-10	4.1E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00003
				Chromium VI	1.6E-09	mg/m^3	1.7E-10	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.4E-08	1.1E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00001
				Cobalt	1.1E-09	mg/m^3	6.9E-11	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	6.2E-10	6.9E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.0001
				Iron	2.4E-06	mg/m^3	1.5E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.5E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.8E-08	mg/m^3	1.8E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	1.8E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0004
				Thallium	4.8E-12	mg/m^3	3.1E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	--	3.1E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.5E-08					0.0007
		Exposure Point Total									1.5E-08					0.0007
	Exposure Medium Total										1.5E-08					0.0007
Medium Total											1.8E-06					0.05

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

AOC-001

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	6.1E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.4E-07	1.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	5.0E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.7E-06	9.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	7.8E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	5.7E-07	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	8.1E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.7E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00002
				Benzo(k)fluoranthene	1.7	mg/kg	2.3E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.7E-08	4.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	6.6E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	4.8E-09	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	8.0E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	5.8E-07	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	3.8E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.8E-07	7.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.2E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.6E-08	7.1E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.001
				Antimony	0.17	mg/kg	7.7E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.5E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0001
				Chromium VI	17	mg/kg	2.3E-06	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	1.1E-06	4.5E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.001
				Cobalt	13.7	mg/kg	6.2E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.6E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Iron	26400	mg/kg	1.2E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.9E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.010
				Manganese	379	mg/kg	1.7E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.004
			Exp. Route Total								6.7E-06					0.03
			Dermal	Benzo(a)anthracene	4.5	mg/kg	1.3E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	9.4E-07	2.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	1.1E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	7.7E-06	2.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	1.7E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.2E-06	3.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	1.7E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00003
				Benzo(k)fluoranthene	1.7	mg/kg	4.8E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	3.5E-08	9.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	1.4E-06	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.0E-08	2.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	1.7E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.2E-06	3.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	8.0E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	5.8E-07	1.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	5.9E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	7.7E-09	3.5E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0005
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								1.2E-05					0.0005
		Exposure Point Total									1.8E-05					0.03
	Exposure Medium Total										1.8E-05					0.03
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	4.6E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	5.1E-13	9.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	3.8E-12	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	4.2E-12	7.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	5.9E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	6.5E-13	1.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	6.1E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	1.7E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.9E-13	3.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	5.0E-12	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	5.5E-14	9.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	6.0E-13	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	7.3E-13	1.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	2.9E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.2E-13	5.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	9.2E-19	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	3.5E-14	5.4E-18	(mg/m^3)	4.0E-08	(mg/m^3)	1.3E-10
				Antimony	1.5E-11	mg/m^3	5.8E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	1.7E-11	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.5E-09	3.4E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.4E-7
				Cobalt	1.2E-09	mg/m^3	4.7E-12	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	4.2E-11	2.7E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000005
				Iron	2.4E-06	mg/m^3	9.0E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.3E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	1.3E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.6E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00002
			Exp. Route Total								1.5E-09					0.00002
		Exposure Point Total									1.5E-09					0.00002
	Exposure Medium Total										1.5E-09					0.00002
Medium Total											1.8E-05					0.03

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	3.4E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.5E-07	6.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	2.8E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.1E-06	5.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	4.3E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.2E-07	8.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	4.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.6E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000009
				Benzo(k)fluoranthene	0.95	mg/kg	1.3E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	9.4E-09	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	3.5E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	2.6E-09	6.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	4.3E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.2E-07	8.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	2.2E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.6E-07	4.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.2E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.6E-08	7.1E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.001
				Aluminum	15200	mg/kg	6.9E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.0E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.004
				Antimony	0.12	mg/kg	5.4E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.2E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00008
				Arsenic	8.4	mg/kg	2.3E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.4E-07	1.3E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Chromium VI	18.4	mg/kg	2.5E-06	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	1.2E-06	4.8E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Cobalt	14.5	mg/kg	6.5E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.8E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Iron	28000	mg/kg	1.3E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.4E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Manganese	339	mg/kg	1.5E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.9E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.004
			Exp. Route Total								4.7E-06					0.04
			Dermal	Benzo(a)anthracene	2.5	mg/kg	7.1E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	5.2E-07	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	6.0E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.4E-06	1.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	9.1E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	6.7E-07	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	9.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.5E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00002
				Benzo(k)fluoranthene	0.95	mg/kg	2.7E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.0E-08	5.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	7.4E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	5.4E-09	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	9.1E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	6.7E-07	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	4.6E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.3E-07	8.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	5.9E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	7.7E-09	3.5E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0005
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	1.8E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.8E-07	1.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								6.9E-06					0.004
		Exposure Point Total									1.2E-05					0.04
	Exposure Medium Total										1.2E-05					0.04

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	2.6E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.8E-13	5.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	2.2E-12	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	2.4E-12	4.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	3.3E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.6E-13	6.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	3.4E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	9.7E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.1E-13	1.9E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	2.7E-12	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	2.9E-14	5.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	3.3E-13	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	3.9E-13	6.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	1.6E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.8E-13	3.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	9.2E-19	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	3.5E-14	5.4E-18	(mg/m^3)	4.0E-08	(mg/m^3)	1.3E-10
				Aluminum	1.4E-06	mg/m^3	5.2E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.0E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000006
				Antimony	1.1E-11	mg/m^3	4.1E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	2.9E-12	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.2E-11	1.7E-11	(mg/m^3)	1.5E-05	(mg/m^3)	0.000001
				Chromium VI	1.7E-09	mg/m^3	1.9E-11	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.6E-09	3.7E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.7E-7
				Cobalt	1.3E-09	mg/m^3	5.0E-12	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	4.5E-11	2.9E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000005
				Iron	2.5E-06	mg/m^3	9.6E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	1.2E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.8E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00001
			Exp. Route Total								1.6E-09					0.00003
		Exposure Point Total									1.6E-09					0.00003
	Exposure Medium Total										1.6E-09					0.00003
Medium Total											1.2E-05					0.04
										Total of Receptor Risks Across All Media	3.0E-05			Total of Receptor Hazards Across All Media		0.07

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	1.8E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.3E-07	3.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	1.4E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.1E-06	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	2.3E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.7E-07	4.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	3.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000004
				Benzo(k)fluoranthene	1.7	mg/kg	6.7E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	4.9E-09	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	1.9E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.4E-09	3.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	2.3E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.7E-07	4.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	1.1E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	8.0E-08	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	5.3E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	6.9E-09	1.8E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0003
				Antimony	0.17	mg/kg	3.3E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00003
				Chromium VI	17	mg/kg	6.7E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	3.3E-07	1.2E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				Cobalt	13.7	mg/kg	2.7E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	9.4E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Iron	26400	mg/kg	5.2E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.8E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Manganese	379	mg/kg	7.4E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.6E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.001
			Exp. Route Total								1.9E-06					0.007
			Dermal	Benzo(a)anthracene	4.5	mg/kg	9.7E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	7.1E-08	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	7.9E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	5.8E-07	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	1.2E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	9.1E-08	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	1.9E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.8E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				Benzo(k)fluoranthene	1.7	mg/kg	3.7E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.7E-09	6.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	1.1E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	7.7E-10	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	1.3E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	9.3E-08	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	6.0E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.4E-08	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	6.7E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	8.7E-10	2.3E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00003
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								8.8E-07					0.00004
		Exposure Point Total									2.8E-06					0.008
	Exposure Medium Total										2.8E-06					0.008
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	4.3E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	4.7E-13	7.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	3.5E-12	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	3.9E-12	6.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	5.5E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	6.1E-13	9.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	8.5E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	1.6E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.8E-13	2.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	4.6E-12	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	5.1E-14	8.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	5.6E-13	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	6.7E-13	9.8E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	2.7E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.9E-13	4.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	1.3E-18	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	4.9E-14	4.5E-18	(mg/m^3)	4.0E-08	(mg/m^3)	1.1E-10
				Antimony	1.5E-11	mg/m^3	8.1E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.8E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	1.6E-11	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.4E-09	2.8E-11	(mg/m^3)	1.0E-04	(mg/m^3)	2.8E-7
				Cobalt	1.2E-09	mg/m^3	6.5E-12	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	5.8E-11	2.3E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000004
				Iron	2.4E-06	mg/m^3	1.3E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.4E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	1.8E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.3E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00001
			Exp. Route Total								1.4E-09					0.00002
		Exposure Point Total									1.4E-09					0.00002
	Exposure Medium Total										1.4E-09					0.00002
Medium Total											2.8E-06					0.008

TABLE 7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	9.8E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	7.1E-08	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	8.2E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	6.0E-07	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	1.3E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	9.1E-08	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	2.0E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.8E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				Benzo(k)fluoranthene	0.95	mg/kg	3.7E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.7E-09	6.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	1.0E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	7.4E-10	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	1.3E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	9.1E-08	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	6.3E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.6E-08	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	5.3E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	6.9E-09	1.8E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0003
				Aluminum	15200	mg/kg	3.0E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.001
				Antimony	0.12	mg/kg	2.3E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.2E-09	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00002
				Arsenic	8.4	mg/kg	9.9E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.5E-07	3.5E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				Chromium VI	18.4	mg/kg	7.2E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	3.6E-07	1.3E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				Cobalt	14.5	mg/kg	2.8E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	9.9E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Iron	28000	mg/kg	5.5E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.9E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Manganese	339	mg/kg	6.6E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.3E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0010
			Exp. Route Total								1.4E-06					0.010
			Dermal	Benzo(a)anthracene	2.5	mg/kg	5.4E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.9E-08	9.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	4.5E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.3E-07	7.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	6.9E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	5.0E-08	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	1.1E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.8E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000001
				Benzo(k)fluoranthene	0.95	mg/kg	2.0E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.5E-09	3.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	5.6E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	4.1E-10	9.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	6.9E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	5.0E-08	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	3.4E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.5E-08	6.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	6.7E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	8.7E-10	2.3E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00003
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	2.1E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.1E-08	7.3E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								5.3E-07					0.0003
		Exposure Point Total									1.9E-06					0.01
	Exposure Medium Total										1.9E-06					0.01

TABLE 7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	2.4E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.6E-13	4.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	2.0E-12	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	2.2E-12	3.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	3.0E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.3E-13	5.3E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	4.7E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	9.0E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	9.9E-14	1.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	2.5E-12	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	2.7E-14	4.3E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	3.0E-13	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	3.6E-13	5.3E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	1.5E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.7E-13	2.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	1.3E-18	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	4.9E-14	4.5E-18	(mg/m^3)	4.0E-08	(mg/m^3)	1.1E-10
				Aluminum	1.4E-06	mg/m^3	7.2E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.5E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000005
				Antimony	1.1E-11	mg/m^3	5.7E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.0E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	4.0E-12	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.7E-11	1.4E-11	(mg/m^3)	1.5E-05	(mg/m^3)	9.3E-7
				Chromium VI	1.7E-09	mg/m^3	1.7E-11	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.5E-09	3.1E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.1E-7
				Cobalt	1.3E-09	mg/m^3	6.9E-12	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	6.2E-11	2.4E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000004
				Iron	2.5E-06	mg/m^3	1.3E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	1.6E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.6E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00001
			Exp. Route Total								1.5E-09					0.00002
		Exposure Point Total									1.5E-09					0.00002
	Exposure Medium Total										1.5E-09					0.00002
Medium Total											1.9E-06					0.01
											Total of Receptor Risks Across All Media	4.8E-06		Total of Receptor Hazards Across All Media		0.02

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	9.4E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	6.9E-08	6.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	7.8E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	5.7E-07	5.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	1.2E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	8.9E-08	8.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	3.8E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.6E-06	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.000009
				Benzo(k)fluoranthene	1.7	mg/kg	3.6E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.6E-09	2.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	1.0E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	7.5E-10	7.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	1.2E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	9.0E-08	8.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	5.9E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.3E-08	4.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	5.7E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	7.4E-09	4.0E-12	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.0002
				Antimony	0.17	mg/kg	3.6E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.5E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0006
				Chromium VI	17	mg/kg	3.6E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	1.8E-07	2.5E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.005
				Cobalt	13.7	mg/kg	2.9E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.0E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.007
				Iron	26400	mg/kg	5.5E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.9E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.06
				Manganese	379	mg/kg	8.0E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.6E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.02
			Exp. Route Total								1.0E-06					0.09
			Dermal	Benzo(a)anthracene	4.5	mg/kg	3.9E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.8E-08	2.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	3.2E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.3E-07	2.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	5.0E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.6E-08	3.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	1.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-06	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.000004
				Benzo(k)fluoranthene	1.7	mg/kg	1.5E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.1E-09	1.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	4.2E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	3.1E-10	3.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	5.1E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.7E-08	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	2.4E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.8E-08	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	5.4E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	7.0E-10	3.8E-13	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.00002
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-03	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								3.5E-07					0.00002
		Exposure Point Total									1.4E-06					0.09
	Exposure Medium Total										1.4E-06					0.09
	Air	AOC-001	Inhalation	Benzo(a)anthracene	3.2E-06	mg/m^3	5.5E-09	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	6.0E-10	3.8E-07	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.6E-06	mg/m^3	4.5E-09	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	4.9E-09	3.1E-07	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	4.1E-06	mg/m^3	7.0E-09	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	7.7E-10	4.9E-07	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.3E-06	mg/m^3	2.2E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-07	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.2E-06	mg/m^3	2.1E-09	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.3E-10	1.4E-07	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	3.5E-06	mg/m^3	5.9E-09	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	6.5E-11	4.2E-07	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.2E-07	mg/m^3	7.1E-10	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	8.6E-10	5.0E-08	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.0E-06	mg/m^3	3.4E-09	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.7E-10	2.4E-07	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	1.9E-12	mg/m^3	3.3E-15	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	1.2E-10	2.3E-13	(mg/m^3)	4.0E-08	(mg/m^3)	0.000006
				Antimony	1.2E-07	mg/m^3	2.1E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.4E-08	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.2E-05	mg/m^3	2.1E-08	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.7E-06	1.4E-06	(mg/m^3)	3.0E-04	(mg/m^3)	0.005
				Cobalt	9.8E-06	mg/m^3	1.7E-08	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	1.5E-07	1.2E-06	(mg/m^3)	2.0E-05	(mg/m^3)	0.06
				Iron	1.9E-02	mg/m^3	3.2E-05	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.2E-03	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.7E-04	mg/m^3	4.6E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.2E-05	(mg/m^3)	5.0E-05	(mg/m^3)	0.6
			Exp. Route Total								1.9E-06					0.7
		Exposure Point Total									1.9E-06					0.7
	Exposure Medium Total										1.9E-06					0.7
Medium Total											3.3E-06					0.8

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	5.2E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.8E-08	3.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	4.4E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.2E-07	3.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	6.7E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.9E-08	4.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	2.1E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.5E-06	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.000005
				Benzo(k)fluoranthene	0.95	mg/kg	2.0E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.5E-09	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	5.5E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	4.0E-10	3.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	6.7E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.9E-08	4.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	3.4E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.5E-08	2.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	5.7E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	7.4E-09	4.0E-12	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.0002
				Aluminum	15200	mg/kg	3.2E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.2E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.02
				Antimony	0.12	mg/kg	2.5E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.8E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0004
				Arsenic	8.4	mg/kg	1.1E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.6E-07	7.4E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Chromium VI	18.4	mg/kg	3.9E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	1.9E-07	2.7E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.005
				Cobalt	14.5	mg/kg	3.0E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.1E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.007
				Iron	28000	mg/kg	5.9E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.1E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.06
				Manganese	339	mg/kg	7.1E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.0E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.02
			Exp. Route Total								8.4E-07					0.1
			Dermal	Benzo(a)anthracene	2.5	mg/kg	2.2E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.6E-08	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	1.8E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.3E-07	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	2.8E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.0E-08	1.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	8.6E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.0E-07	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.000002
				Benzo(k)fluoranthene	0.95	mg/kg	8.2E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	6.0E-10	5.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	2.2E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.6E-10	1.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	2.8E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.0E-08	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	1.4E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.0E-08	9.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	5.4E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	7.0E-10	3.8E-13	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.00002
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	1.7E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.5E-08	1.2E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-03	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								2.2E-07					0.004
		Exposure Point Total									1.1E-06					0.1
	Exposure Medium Total										1.1E-06					0.1

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	1.8E-06	mg/m^3	3.0E-09	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.3E-10	2.1E-07	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.5E-06	mg/m^3	2.5E-09	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	2.8E-09	1.8E-07	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.3E-06	mg/m^3	3.9E-09	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	4.3E-10	2.7E-07	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	7.1E-07	mg/m^3	1.2E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	8.5E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	6.8E-07	mg/m^3	1.2E-09	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.3E-10	8.1E-08	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	1.9E-06	mg/m^3	3.1E-09	(mg/m^3)	1.1E-05	(ug/m^3)$^{-1}$	3.5E-11	2.2E-07	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.3E-07	mg/m^3	3.9E-10	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	4.7E-10	2.7E-08	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.1E-06	mg/m^3	1.9E-09	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.1E-10	1.4E-07	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	1.9E-12	mg/m^3	3.3E-15	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	1.2E-10	2.3E-13	(mg/m^3)	4.0E-08	(mg/m^3)	0.000006
				Aluminum	1.1E-02	mg/m^3	1.8E-05	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	1.3E-03	(mg/m^3)	5.0E-03	(mg/m^3)	0.3
				Antimony	8.6E-08	mg/m^3	1.5E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	1.0E-08	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.0E-06	mg/m^3	1.0E-08	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	4.4E-08	7.1E-07	(mg/m^3)	1.5E-05	(mg/m^3)	0.05
				Chromium VI	1.3E-05	mg/m^3	2.2E-08	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.9E-06	1.6E-06	(mg/m^3)	3.0E-04	(mg/m^3)	0.005
				Cobalt	1.0E-05	mg/m^3	1.8E-08	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	1.6E-07	1.2E-06	(mg/m^3)	2.0E-05	(mg/m^3)	0.06
				Iron	2.0E-02	mg/m^3	3.4E-05	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.4E-03	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.4E-04	mg/m^3	4.1E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.9E-05	(mg/m^3)	5.0E-05	(mg/m^3)	0.6
			Exp. Route Total								2.1E-06					0.9
		Exposure Point Total									2.1E-06					0.9
	Exposure Medium Total										2.1E-06					0.9
Medium Total											3.1E-06					1.1
										Total of Receptor Risks Across All Media	6.4E-06			Total of Receptor Hazards Across All Media		1.9

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	1.4E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.0E-06	3.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	1.1E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	8.3E-06	3.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	1.8E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.3E-06	5.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	5.5E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.5E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00005
				Benzo(k)fluoranthene	1.7	mg/kg	5.2E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	3.8E-08	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	1.5E-06	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.1E-08	4.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	1.8E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.3E-06	5.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	8.6E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	6.3E-07	2.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	8.3E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.1E-07	2.3E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.003
				Antimony	0.17	mg/kg	5.2E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.5E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0004
				Chromium VI	17	mg/kg	5.2E-06	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	2.6E-06	1.5E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Cobalt	13.7	mg/kg	4.2E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.04
				Iron	26400	mg/kg	8.1E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.3E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.03
				Manganese	379	mg/kg	1.2E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.2E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.01
			Exp. Route Total								1.5E-05					0.09
			Dermal	Benzo(a)anthracene	4.5	mg/kg	7.4E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	5.4E-07	2.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	6.1E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.5E-06	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	9.6E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	7.0E-07	2.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	3.0E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.3E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00003
				Benzo(k)fluoranthene	1.7	mg/kg	2.8E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.1E-08	7.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	8.1E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	5.9E-09	2.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	9.8E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	7.1E-07	2.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	4.6E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.4E-07	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.0E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.3E-08	2.9E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0004
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								6.8E-06					0.0004
		Exposure Point Total									2.2E-05					0.09
	Exposure Medium Total										2.2E-05					0.09
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	3.3E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.7E-12	9.3E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	2.7E-11	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	3.0E-11	7.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	4.3E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	4.7E-12	1.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	1.3E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	1.3E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.4E-12	3.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	3.6E-11	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	4.0E-13	1.0E-10	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	4.4E-12	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	5.2E-12	1.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	2.1E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.3E-12	5.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	2.0E-17	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	7.6E-13	5.6E-17	(mg/m^3)	4.0E-08	(mg/m^3)	1.4E-9
				Antimony	1.5E-11	mg/m^3	1.3E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	1.3E-10	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.1E-08	3.5E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000004
				Cobalt	1.2E-09	mg/m^3	1.0E-10	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	9.1E-10	2.8E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00005
				Iron	2.4E-06	mg/m^3	2.0E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.5E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	2.8E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.9E-09	(mg/m^3)	5.0E-05	(mg/m^3)	0.0002
			Exp. Route Total								1.2E-08					0.0002
		Exposure Point Total									1.2E-08					0.0002
	Exposure Medium Total										1.2E-08					0.0002
Medium Total											2.2E-05					0.09

TABLE 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	7.6E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	5.6E-07	2.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	6.4E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.7E-06	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	9.8E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	7.1E-07	2.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	3.1E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.6E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00003
				Benzo(k)fluoranthene	0.95	mg/kg	2.9E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.1E-08	8.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	8.0E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	5.8E-09	2.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	9.8E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	7.1E-07	2.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	4.9E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.6E-07	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	8.3E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.1E-07	2.3E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.003
				Aluminum	15200	mg/kg	4.6E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.3E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.01
				Antimony	0.12	mg/kg	3.7E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0003
				Arsenic	8.4	mg/kg	1.5E-06	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.3E-06	4.3E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Chromium VI	18.4	mg/kg	5.6E-06	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	2.8E-06	1.6E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Cobalt	14.5	mg/kg	4.4E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.04
				Iron	28000	mg/kg	8.6E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.4E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.03
				Manganese	339	mg/kg	1.0E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.9E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.01
			Exp. Route Total								1.2E-05					0.1
			Dermal	Benzo(a)anthracene	2.5	mg/kg	4.1E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.0E-07	1.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	3.5E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.5E-06	9.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	5.3E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.9E-07	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	1.7E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.6E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00002
				Benzo(k)fluoranthene	0.95	mg/kg	1.6E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.1E-08	4.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	4.3E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	3.1E-09	1.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	5.3E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.9E-07	1.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	2.6E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.9E-07	7.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.0E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.3E-08	2.9E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0004
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	3.2E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	4.8E-07	9.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								4.3E-06					0.003
		Exposure Point Total									1.7E-05					0.1
	Exposure Medium Total										1.7E-05					0.1

TABLE 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	1.9E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.0E-12	5.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	1.6E-11	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	1.7E-11	4.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	2.4E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.6E-12	6.6E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	7.4E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	7.0E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	7.7E-13	2.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	1.9E-11	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	2.1E-13	5.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	2.4E-12	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	2.8E-12	6.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	1.2E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.3E-12	3.3E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	2.0E-17	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	7.6E-13	5.6E-17	(mg/m^3)	4.0E-08	(mg/m^3)	1.4E-9
				Aluminum	1.4E-06	mg/m^3	1.1E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.2E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.00006
				Antimony	1.1E-11	mg/m^3	8.9E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	6.2E-11	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	2.7E-10	1.7E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00001
				Chromium VI	1.7E-09	mg/m^3	1.4E-10	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.1E-08	3.8E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000004
				Cobalt	1.3E-09	mg/m^3	1.1E-10	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	9.7E-10	3.0E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00005
				Iron	2.5E-06	mg/m^3	2.1E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.8E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	2.5E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.0E-09	(mg/m^3)	5.0E-05	(mg/m^3)	0.0001
			Exp. Route Total								1.3E-08					0.0003
		Exposure Point Total									1.3E-08					0.0003
	Exposure Medium Total										1.3E-08					0.0003
Medium Total											1.7E-05					0.1
										Total of Receptor Risks Across All Media	3.9E-05			Total of Receptor Hazards Across All Media		0.2

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	1.8E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.3E-06	3.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	1.5E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.1E-05	3.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	2.3E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.7E-06	5.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	1.4E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.6E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00005
				Benzo(k)fluoranthene	1.7	mg/kg	6.8E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	5.0E-08	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	2.0E-06	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.4E-08	4.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	2.4E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.7E-06	5.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	1.1E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	8.2E-07	2.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	2.0E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	2.6E-08	2.4E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.003
				Antimony	0.17	mg/kg	1.3E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.5E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0004
				Chromium VI	17	mg/kg	6.8E-06	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	3.4E-06	1.5E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Cobalt	13.7	mg/kg	1.0E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.04
				Iron	26400	mg/kg	2.0E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.3E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.03
				Manganese	379	mg/kg	2.8E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.3E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.01
			Exp. Route Total								2.0E-05					0.10
			Dermal	Benzo(a)anthracene	4.5	mg/kg	1.3E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	9.2E-07	2.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	1.0E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	7.6E-06	2.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	1.6E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.2E-06	3.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	9.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00004
				Benzo(k)fluoranthene	1.7	mg/kg	4.8E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	3.5E-08	1.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	1.4E-06	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.0E-08	3.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	1.7E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.2E-06	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	7.8E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	5.7E-07	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	3.3E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	4.3E-09	3.8E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0005
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								1.2E-05					0.0006
		Exposure Point Total									3.1E-05					0.10
	Exposure Medium Total										3.1E-05					0.10
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	4.1E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	4.5E-13	9.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	3.4E-12	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	3.7E-12	7.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	5.3E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	5.8E-13	1.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	3.1E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	1.5E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.7E-13	3.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	4.5E-12	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	4.9E-14	9.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	5.4E-13	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	6.4E-13	1.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	2.6E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.8E-13	5.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	4.6E-19	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	1.8E-14	5.4E-18	(mg/m^3)	4.0E-08	(mg/m^3)	1.3E-10
				Antimony	1.5E-11	mg/m^3	2.9E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	1.5E-11	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.3E-09	3.4E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.4E-7
				Cobalt	1.2E-09	mg/m^3	2.3E-12	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	2.1E-11	2.7E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000005
				Iron	2.4E-06	mg/m^3	4.5E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.3E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	6.5E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.6E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00002
			Exp. Route Total								1.3E-09					0.00002
		Exposure Point Total									1.3E-09					0.00002
	Exposure Medium Total										1.3E-09					0.00002
Medium Total											3.1E-05					0.10

TABLE 7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	1.0E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	7.3E-07	2.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	8.4E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	6.1E-06	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	1.3E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	9.4E-07	2.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	7.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.8E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00003
				Benzo(k)fluoranthene	0.95	mg/kg	3.8E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.8E-08	8.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	1.0E-06	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	7.6E-09	2.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	1.3E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	9.4E-07	2.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	6.4E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.7E-07	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	2.0E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	2.6E-08	2.4E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.003
				Aluminum	15200	mg/kg	1.1E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.3E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.01
				Antimony	0.12	mg/kg	9.0E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0003
				Arsenic	8.4	mg/kg	3.8E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	5.7E-07	4.4E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Chromium VI	18.4	mg/kg	7.4E-06	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	3.7E-06	1.6E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.005
				Cobalt	14.5	mg/kg	1.1E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.3E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.04
				Iron	28000	mg/kg	2.1E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.5E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.04
				Manganese	339	mg/kg	2.5E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.0E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.01
			Exp. Route Total								1.4E-05					0.1
			Dermal	Benzo(a)anthracene	2.5	mg/kg	7.0E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	5.1E-07	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	5.9E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.3E-06	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	9.0E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	6.5E-07	2.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	5.3E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.1E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00002
				Benzo(k)fluoranthene	0.95	mg/kg	2.7E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.9E-08	5.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	7.3E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	5.3E-09	1.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	9.0E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	6.5E-07	2.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	4.5E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.3E-07	9.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	3.3E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	4.3E-09	3.8E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0005
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	1.0E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.5E-07	1.2E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								6.6E-06					0.005
		Exposure Point Total									2.0E-05					0.1
	Exposure Medium Total										2.0E-05					0.1

TABLE 7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	2.3E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.5E-13	5.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	1.9E-12	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	2.1E-12	4.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	2.9E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.2E-13	6.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	1.7E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	8.7E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	9.5E-14	1.9E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	2.4E-12	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	2.6E-14	5.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	2.9E-13	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	3.5E-13	6.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	1.5E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.6E-13	3.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	4.6E-19	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	1.8E-14	5.4E-18	(mg/m^3)	4.0E-08	(mg/m^3)	1.3E-10
				Aluminum	1.4E-06	mg/m^3	2.6E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.0E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000006
				Antimony	1.1E-11	mg/m^3	2.0E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	1.4E-12	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	6.2E-12	1.7E-11	(mg/m^3)	1.5E-05	(mg/m^3)	0.000001
				Chromium VI	1.7E-09	mg/m^3	1.7E-11	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.4E-09	3.7E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.7E-7
				Cobalt	1.3E-09	mg/m^3	2.5E-12	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	2.2E-11	2.9E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000005
				Iron	2.5E-06	mg/m^3	4.8E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	5.8E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.8E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00001
			Exp. Route Total								1.4E-09					0.00003
		Exposure Point Total									1.4E-09					0.00003
	Exposure Medium Total										1.4E-09					0.00003
Medium Total											2.0E-05					0.1
											Total of Receptor Risks Across All Media	5.2E-05		Total of Receptor Hazards Across All Media		0.2

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.6.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	2.1E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.5E-07	3.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	1.7E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.3E-06	3.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	2.7E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.0E-07	4.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	4.2E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.5E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000005
				Benzo(k)fluoranthene	1.7	mg/kg	8.0E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	5.8E-09	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	2.3E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.7E-09	4.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	2.8E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.0E-07	4.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	1.3E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	9.6E-08	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	6.3E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	8.2E-09	2.2E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0003
				Antimony	0.17	mg/kg	4.0E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.4E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00003
				Chromium VI	17	mg/kg	8.0E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	4.0E-07	1.4E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0005
				Cobalt	13.7	mg/kg	3.2E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Iron	26400	mg/kg	6.2E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.2E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Manganese	379	mg/kg	8.9E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.1E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.001
			Exp. Route Total								2.3E-06					0.009
			Dermal	Benzo(a)anthracene	4.5	mg/kg	2.3E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.7E-07	4.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	1.9E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.4E-06	3.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	3.0E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.2E-07	5.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	4.6E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.6E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000005
				Benzo(k)fluoranthene	1.7	mg/kg	8.8E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	6.4E-09	1.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	2.5E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.8E-09	4.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	3.0E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.2E-07	5.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	1.4E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.1E-07	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.6E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	2.1E-09	5.6E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00008
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								2.1E-06					0.00009
		Exposure Point Total									4.5E-06					0.009
	Exposure Medium Total										4.5E-06					0.009
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	5.1E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	5.6E-13	9.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	4.2E-12	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	4.6E-12	7.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	6.6E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	7.3E-13	1.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	1.0E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	1.9E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.1E-13	3.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	5.6E-12	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	6.1E-14	9.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	6.7E-13	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	8.1E-13	1.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	3.2E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.5E-13	5.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	1.5E-18	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	5.8E-14	5.4E-18	(mg/m^3)	4.0E-08	(mg/m^3)	1.3E-10
				Antimony	1.5E-11	mg/m^3	9.7E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	1.9E-11	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.6E-09	3.4E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.4E-7
				Cobalt	1.2E-09	mg/m^3	7.8E-12	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	7.0E-11	2.7E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000005
				Iron	2.4E-06	mg/m^3	1.5E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.3E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	2.2E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.6E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00002
			Exp. Route Total								1.7E-09					0.00002
		Exposure Point Total									1.7E-09					0.00002
	Exposure Medium Total										1.7E-09					0.00002
Medium Total											4.5E-06					0.009

TABLE 7.6.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	1.2E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	8.6E-08	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	9.9E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	7.2E-07	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	1.5E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.1E-07	2.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	2.3E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.2E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000003
				Benzo(k)fluoranthene	0.95	mg/kg	4.5E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	3.3E-09	7.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	1.2E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	8.9E-10	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	1.5E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.1E-07	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	7.5E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	5.5E-08	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	6.3E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	8.2E-09	2.2E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0003
				Aluminum	15200	mg/kg	3.6E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.001
				Antimony	0.12	mg/kg	2.8E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	9.9E-09	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00002
				Arsenic	8.4	mg/kg	1.2E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.8E-07	4.1E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				Chromium VI	18.4	mg/kg	8.6E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	4.3E-07	1.5E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0005
				Cobalt	14.5	mg/kg	3.4E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Iron	28000	mg/kg	6.6E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.3E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Manganese	339	mg/kg	8.0E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.8E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.001
			Exp. Route Total								1.7E-06					0.01
			Dermal	Benzo(a)anthracene	2.5	mg/kg	1.3E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	9.4E-08	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	1.1E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	7.9E-07	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	1.6E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.2E-07	2.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	2.6E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	9.0E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000003
				Benzo(k)fluoranthene	0.95	mg/kg	4.9E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	3.6E-09	8.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	1.3E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	9.8E-10	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	1.6E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.2E-07	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	8.2E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	6.0E-08	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.6E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	2.1E-09	5.6E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00008
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	5.0E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	7.5E-08	1.7E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0006
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								1.3E-06					0.0007
		Exposure Point Total									3.0E-06					0.01
	Exposure Medium Total										3.0E-06					0.01

TABLE 7.6.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	2.8E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	3.1E-13	5.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	2.4E-12	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	2.6E-12	4.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	3.6E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	4.0E-13	6.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	5.7E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	1.1E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.2E-13	1.9E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	3.0E-12	(mg/m^3)	1.1E-05	(ug/m^3)$^{-1}$	3.3E-14	5.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	3.6E-13	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	4.4E-13	6.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	1.8E-12	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	2.0E-13	3.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	1.5E-18	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	5.8E-14	5.4E-18	(mg/m^3)	4.0E-08	(mg/m^3)	1.3E-10
				Aluminum	1.4E-06	mg/m^3	8.7E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	3.0E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000006
				Antimony	1.1E-11	mg/m^3	6.8E-14	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	4.8E-12	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	2.1E-11	1.7E-11	(mg/m^3)	1.5E-05	(mg/m^3)	0.000001
				Chromium VI	1.7E-09	mg/m^3	2.1E-11	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	1.8E-09	3.7E-11	(mg/m^3)	1.0E-04	(mg/m^3)	3.7E-7
				Cobalt	1.3E-09	mg/m^3	8.3E-12	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	7.4E-11	2.9E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000005
				Iron	2.5E-06	mg/m^3	1.6E-08	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	5.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	1.9E-10	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	6.8E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.00001
			Exp. Route Total								1.9E-09					0.00003
		Exposure Point Total									1.9E-09					0.00003
	Exposure Medium Total										1.9E-09					0.00003
Medium Total											3.0E-06					0.01
										Total of Receptor Risks Across All Media	7.4E-06			Total of Receptor Hazards Across All Media		0.02

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	2.6E-05	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.9E-05	5.8E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	2.2E-05	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.6E-04	4.7E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	3.4E-05	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.5E-05	7.4E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	2.0E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.3E-05	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0008
				Benzo(k)fluoranthene	1.7	mg/kg	9.9E-06	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	7.3E-07	2.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	2.9E-05	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	2.1E-07	6.3E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	3.4E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.5E-05	7.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	1.6E-05	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.2E-05	3.6E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	3.0E-12	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	3.8E-07	3.5E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.05
				Antimony	0.17	mg/kg	1.9E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.2E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.005
				Chromium VI	17	mg/kg	9.9E-05	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	5.0E-05	2.2E-04	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.07
				Cobalt	13.7	mg/kg	1.5E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.8E-04	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.6
				Iron	26400	mg/kg	2.9E-02	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.4E-01	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.5
				Manganese	379	mg/kg	4.2E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.8E-03	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.2
			Exp. Route Total								2.9E-04					1.4
			Dermal	Benzo(a)anthracene	4.5	mg/kg	9.2E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	6.7E-06	2.0E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	7.6E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	5.5E-05	1.7E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	1.2E-05	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	8.7E-06	2.6E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	6.9E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.0E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0003
				Benzo(k)fluoranthene	1.7	mg/kg	3.5E-06	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.5E-07	7.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	1.0E-05	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	7.3E-08	2.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	1.2E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	8.8E-06	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	5.7E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.2E-06	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	2.4E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	3.1E-08	2.8E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.004
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								8.4E-05					0.004
		Exposure Point Total									3.7E-04					1.4
	Exposure Medium Total										3.7E-04					1.4
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	1.8E-10	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.0E-11	3.9E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	1.5E-10	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	1.6E-10	3.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	2.3E-10	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.5E-11	5.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	1.3E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	6.8E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	7.5E-12	1.5E-10	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	2.0E-10	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	2.1E-12	4.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	2.4E-11	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	2.8E-11	5.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	1.1E-10	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.2E-11	2.4E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	2.0E-17	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	7.7E-13	2.4E-16	(mg/m^3)	4.0E-08	(mg/m^3)	5.9E-9
				Antimony	1.5E-11	mg/m^3	1.3E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	6.8E-10	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	5.7E-08	1.5E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00001
				Cobalt	1.2E-09	mg/m^3	1.0E-10	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	9.2E-10	1.2E-09	(mg/m^3)	6.0E-06	(mg/m^3)	0.0002
				Iron	2.4E-06	mg/m^3	2.0E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.3E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	2.8E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.3E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0007
			Exp. Route Total								5.8E-08					0.0009
		Exposure Point Total									5.8E-08					0.0009
	Exposure Medium Total										5.8E-08					0.0009
Medium Total											3.7E-04					1.4

TABLE 7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	1.5E-05	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.1E-05	3.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	1.2E-05	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	9.0E-05	2.7E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	1.9E-05	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.4E-05	4.1E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	1.1E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.3E-05	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0004
				Benzo(k)fluoranthene	0.95	mg/kg	5.6E-06	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	4.1E-07	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	1.5E-05	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.1E-07	3.3E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	1.9E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.4E-05	4.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	9.4E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	6.8E-06	2.0E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	3.0E-12	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	3.8E-07	3.5E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.05
				Aluminum	15200	mg/kg	1.7E-02	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.9E-01	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.2
				Antimony	0.12	mg/kg	1.3E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.5E-06	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.004
				Arsenic	8.4	mg/kg	5.5E-06	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	8.3E-06	6.4E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.2
				Chromium VI	18.4	mg/kg	1.1E-04	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	5.4E-05	2.4E-04	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.08
				Cobalt	14.5	mg/kg	1.6E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.9E-04	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.6
				Iron	28000	mg/kg	3.1E-02	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.6E-01	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.5
				Manganese	339	mg/kg	3.7E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.3E-03	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.2
			Exp. Route Total								2.0E-04					1.9
			Dermal	Benzo(a)anthracene	2.5	mg/kg	5.1E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.7E-06	1.1E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	4.3E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.1E-05	9.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	6.5E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.8E-06	1.4E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	3.8E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.5E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0001
				Benzo(k)fluoranthene	0.95	mg/kg	1.9E-06	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.4E-07	4.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	5.3E-06	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	3.9E-08	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	6.5E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.8E-06	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	3.3E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.4E-06	7.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	2.4E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	3.1E-08	2.8E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.004
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	7.4E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.1E-06	8.7E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.03
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								4.8E-05					0.03
		Exposure Point Total									2.5E-04					1.9
	Exposure Medium Total										2.5E-04					1.9

TABLE 7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	1.0E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.1E-11	2.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	8.4E-11	(mg/m^3)	1.1E-03	(ug/m^3)$^{-1}$	9.2E-11	1.8E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	1.3E-10	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	1.4E-11	2.8E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	7.5E-12	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	8.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	3.8E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	4.2E-12	8.3E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	1.0E-10	(mg/m^3)	1.1E-05	(ug/m^3)$^{-1}$	1.1E-12	2.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	1.3E-11	(mg/m^3)	1.2E-03	(ug/m^3)$^{-1}$	1.5E-11	2.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	6.4E-11	(mg/m^3)	1.1E-04	(ug/m^3)$^{-1}$	7.0E-12	1.4E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	2.0E-17	(mg/m^3)	3.8E+01	(ug/m^3)$^{-1}$	7.7E-13	2.4E-16	(mg/m^3)	4.0E-08	(mg/m^3)	5.9E-9
				Aluminum	1.4E-06	mg/m^3	1.1E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	1.3E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.0003
				Antimony	1.1E-11	mg/m^3	9.0E-13	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	1.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	6.3E-11	(mg/m^3)	4.3E-03	(ug/m^3)$^{-1}$	2.7E-10	7.3E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00005
				Chromium VI	1.7E-09	mg/m^3	7.3E-10	(mg/m^3)	8.4E-02	(ug/m^3)$^{-1}$	6.2E-08	1.6E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00002
				Cobalt	1.3E-09	mg/m^3	1.1E-10	(mg/m^3)	9.0E-03	(ug/m^3)$^{-1}$	9.8E-10	1.3E-09	(mg/m^3)	6.0E-06	(mg/m^3)	0.0002
				Iron	2.5E-06	mg/m^3	2.1E-07	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	2.4E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	2.5E-09	(mg/m^3)	NA	(ug/m^3)$^{-1}$	- -	3.0E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0006
			Exp. Route Total								6.3E-08					0.001
		Exposure Point Total									6.3E-08					0.001
	Exposure Medium Total										6.3E-08					0.001
Medium Total											2.5E-04					1.9
										Total of Receptor Risks Across All Media	6.2E-04			Total of Receptor Hazards Across All Media		3.3

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.8.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	3.1E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.3E-06	5.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	2.5E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.9E-05	4.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	4.0E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.9E-06	7.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	6.2E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.2E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00007
				Benzo(k)fluoranthene	1.7	mg/kg	1.2E-06	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	8.5E-08	2.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	3.4E-06	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	2.5E-08	5.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	4.0E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.0E-06	7.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	1.9E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.4E-06	3.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	9.2E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.2E-07	3.2E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.005
				Antimony	0.17	mg/kg	5.8E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.0E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0005
				Chromium VI	17	mg/kg	1.2E-05	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	5.8E-06	2.0E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.007
				Cobalt	13.7	mg/kg	4.7E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.6E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.05
				Iron	26400	mg/kg	9.0E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.2E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.05
				Manganese	379	mg/kg	1.3E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.5E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.02
			Exp. Route Total								3.4E-05					0.1
			Dermal	Benzo(a)anthracene	4.5	mg/kg	1.7E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.2E-06	3.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	1.4E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.0E-05	2.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	2.2E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.6E-06	3.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	3.4E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00004
				Benzo(k)fluoranthene	1.7	mg/kg	6.4E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	4.7E-08	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	1.8E-06	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.3E-08	3.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	2.2E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.6E-06	3.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	1.1E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	7.7E-07	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.2E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.5E-08	4.1E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0006
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								1.5E-05					0.0006
		Exposure Point Total									4.9E-05					0.1
	Exposure Medium Total										4.9E-05					0.1
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	2.2E-10	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.5E-11	3.9E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	1.8E-10	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	2.0E-10	3.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	2.9E-10	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.2E-11	5.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	4.5E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	8.5E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	9.3E-12	1.5E-10	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	2.4E-10	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	2.7E-12	4.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	2.9E-11	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	3.5E-11	5.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	1.4E-10	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.5E-11	2.4E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	6.7E-17	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	2.6E-12	2.4E-16	(mg/m^3)	4.0E-08	(mg/m^3)	5.9E-9
				Antimony	1.5E-11	mg/m^3	4.2E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	8.5E-10	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	7.1E-08	1.5E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00001
				Cobalt	1.2E-09	mg/m^3	3.4E-10	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	3.1E-09	1.2E-09	(mg/m^3)	6.0E-06	(mg/m^3)	0.0002
				Iron	2.4E-06	mg/m^3	6.6E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.3E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	9.4E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.3E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0007
			Exp. Route Total								7.5E-08					0.0009
		Exposure Point Total									7.5E-08					0.0009
	Exposure Medium Total										7.5E-08					0.0009
Medium Total											5.0E-05					0.1

TABLE 7.8.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	1.7E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.3E-06	3.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	1.4E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.1E-05	2.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	2.2E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.6E-06	3.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	3.4E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00004
				Benzo(k)fluoranthene	0.95	mg/kg	6.5E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	4.8E-08	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	1.8E-06	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.3E-08	3.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	2.2E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.6E-06	3.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	1.1E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	8.0E-07	1.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	9.2E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.2E-07	3.2E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.005
				Aluminum	15200	mg/kg	5.2E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.8E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.02
				Antimony	0.12	mg/kg	4.1E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.4E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0004
				Arsenic	8.4	mg/kg	1.7E-06	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.6E-06	6.0E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Chromium VI	18.4	mg/kg	1.3E-05	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	6.3E-06	2.2E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.007
				Cobalt	14.5	mg/kg	5.0E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.7E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.06
				Iron	28000	mg/kg	9.6E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.4E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.05
				Manganese	339	mg/kg	1.2E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.1E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.02
			Exp. Route Total								2.5E-05					0.2
			Dermal	Benzo(a)anthracene	2.5	mg/kg	9.4E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	6.9E-07	1.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	7.9E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	5.8E-06	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	1.2E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	8.8E-07	2.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	1.9E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.6E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00002
				Benzo(k)fluoranthene	0.95	mg/kg	3.6E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.6E-08	6.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	9.8E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	7.1E-09	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	1.2E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	8.8E-07	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	6.0E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.4E-07	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.2E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.5E-08	4.1E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0006
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	3.6E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	5.5E-07	1.3E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								9.2E-06					0.005
		Exposure Point Total									3.4E-05					0.2
	Exposure Medium Total										3.4E-05					0.2

TABLE 7.8.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	1.2E-10	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.4E-11	2.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	1.0E-10	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	1.2E-10	1.8E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	1.6E-10	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.8E-11	2.8E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	2.5E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	4.7E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	5.2E-12	8.3E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	1.3E-10	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	1.4E-12	2.3E-10	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	1.6E-11	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	1.9E-11	2.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	8.0E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	8.8E-12	1.4E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	6.7E-17	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	2.6E-12	2.4E-16	(mg/m^3)	4.0E-08	(mg/m^3)	5.9E-9
				Aluminum	1.4E-06	mg/m^3	3.8E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.3E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.0003
				Antimony	1.1E-11	mg/m^3	3.0E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.0E-11	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	2.1E-10	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	9.0E-10	7.3E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00005
				Chromium VI	1.7E-09	mg/m^3	9.2E-10	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	7.7E-08	1.6E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00002
				Cobalt	1.3E-09	mg/m^3	3.6E-10	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	3.3E-09	1.3E-09	(mg/m^3)	6.0E-06	(mg/m^3)	0.0002
				Iron	2.5E-06	mg/m^3	7.0E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.4E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	8.4E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.0E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0006
			Exp. Route Total								8.1E-08					0.001
		Exposure Point Total									8.1E-08					0.001
	Exposure Medium Total										8.1E-08					0.001
Medium Total											3.4E-05					0.2
										Total of Receptor Risks Across All Media	8.4E-05			Total of Receptor Hazards Across All Media		0.3

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.1.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	7.6E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	5.6E-08	3.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	6.3E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.6E-07	2.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	9.8E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	7.2E-08	3.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	1.0E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000004
				Benzo(k)fluoranthene	1.7	mg/kg	2.9E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.1E-09	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	8.3E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	6.0E-10	3.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	1.0E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	7.3E-08	3.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	4.7E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.5E-08	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.5E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	2.0E-09	1.8E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0003
				Antimony	0.17	mg/kg	9.6E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00003
				Chromium VI	17	mg/kg	2.9E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	1.4E-07	1.1E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				Cobalt	13.7	mg/kg	7.7E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	9.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Iron	26400	mg/kg	1.5E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.7E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.002
				Manganese	379	mg/kg	2.1E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.5E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.001
			Exp. Route Total								8.4E-07					0.007
			Dermal	Benzo(a)anthracene	4.5	mg/kg	3.2E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.3E-08	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	2.6E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.9E-07	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	4.1E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.0E-08	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	4.3E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.0E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				Benzo(k)fluoranthene	1.7	mg/kg	1.2E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	8.8E-10	4.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	3.5E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	2.5E-10	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	4.2E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.1E-08	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	2.0E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.5E-08	7.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.5E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.9E-10	1.7E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00002
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								2.9E-07					0.00003
		Exposure Point Total									1.1E-06					0.007
	Exposure Medium Total										1.1E-06					0.007
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	1.2E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.3E-13	4.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	9.5E-13	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	1.0E-12	3.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	1.5E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.6E-13	5.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	1.5E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	4.4E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	4.8E-14	1.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	1.3E-12	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	1.4E-14	4.9E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	1.5E-13	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	1.8E-13	5.9E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	7.2E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	7.9E-14	2.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	2.3E-19	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	8.8E-15	2.7E-18	(mg/m^3)	4.0E-08	(mg/m^3)	6.7E-11
				Antimony	1.5E-11	mg/m^3	1.5E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.7E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	4.4E-12	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	3.7E-10	1.7E-11	(mg/m^3)	1.0E-04	(mg/m^3)	1.7E-7
				Cobalt	1.2E-09	mg/m^3	1.2E-12	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	1.1E-11	1.4E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000002
				Iron	2.4E-06	mg/m^3	2.3E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	3.2E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.8E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000008
			Exp. Route Total								3.8E-10					0.000010
		Exposure Point Total									3.8E-10					0.000010
	Exposure Medium Total										3.8E-10					0.000010
Medium Total											1.1E-06					0.007

TABLE 7.1.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	4.2E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.1E-08	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	3.6E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.6E-07	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	5.4E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.9E-08	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	5.6E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.6E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				Benzo(k)fluoranthene	0.95	mg/kg	1.6E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.2E-09	6.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	4.4E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	3.2E-10	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	5.4E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.9E-08	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	2.7E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.0E-08	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.5E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	2.0E-09	1.8E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0003
				Aluminum	15200	mg/kg	8.6E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0010
				Antimony	0.12	mg/kg	6.8E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.9E-09	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00002
				Arsenic	8.4	mg/kg	2.8E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	4.3E-08	3.3E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
				Chromium VI	18.4	mg/kg	3.1E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	1.6E-07	1.2E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0004
				Cobalt	14.5	mg/kg	8.2E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	9.5E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
				Iron	28000	mg/kg	1.6E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.8E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.003
				Manganese	339	mg/kg	1.9E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.2E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0009
			Exp. Route Total								5.9E-07					0.010
			Dermal	Benzo(a)anthracene	2.5	mg/kg	1.8E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.3E-08	6.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	1.5E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.1E-07	5.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	2.3E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.7E-08	8.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	2.4E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.8E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	9.2E-7
				Benzo(k)fluoranthene	0.95	mg/kg	6.8E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	4.9E-10	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	1.9E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.4E-10	7.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	2.3E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.7E-08	8.9E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	1.1E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	8.3E-09	4.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.5E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.9E-10	1.7E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00002
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	4.6E-09	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	6.9E-09	5.4E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								1.7E-07					0.0002
		Exposure Point Total									7.6E-07					0.010
	Exposure Medium Total										7.6E-07					0.010

TABLE 7.1.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	6.4E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	7.0E-14	2.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	5.4E-13	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	5.9E-13	2.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	8.2E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	9.0E-14	3.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	8.5E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	2.4E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.7E-14	9.5E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	6.7E-13	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	7.3E-15	2.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	8.2E-14	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	9.8E-14	3.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	4.1E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	4.5E-14	1.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	2.3E-19	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	8.8E-15	2.7E-18	(mg/m^3)	4.0E-08	(mg/m^3)	6.7E-11
				Aluminum	1.4E-06	mg/m^3	1.3E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000003
				Antimony	1.1E-11	mg/m^3	1.0E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	7.2E-13	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	3.1E-12	8.4E-12	(mg/m^3)	1.5E-05	(mg/m^3)	5.6E-7
				Chromium VI	1.7E-09	mg/m^3	4.7E-12	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	4.0E-10	1.8E-11	(mg/m^3)	1.0E-04	(mg/m^3)	1.8E-7
				Cobalt	1.3E-09	mg/m^3	1.2E-12	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	1.1E-11	1.4E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000002
				Iron	2.5E-06	mg/m^3	2.4E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.8E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	2.9E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.4E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000007
			Exp. Route Total								4.1E-10					0.00001
		Exposure Point Total									4.1E-10					0.00001
	Exposure Medium Total										4.1E-10					0.00001
Medium Total											7.6E-07					0.010
										Total of Receptor Risks Across All Media	1.9E-06			Total of Receptor Hazards Across All Media		0.02

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.2.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	1.2E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	8.8E-09	7.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	1.0E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	7.3E-08	6.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	1.6E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.1E-08	9.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	3.1E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.1E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000001
				Benzo(k)fluoranthene	1.7	mg/kg	4.6E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	3.3E-10	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	1.3E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	9.6E-11	8.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	1.6E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.2E-08	1.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	7.5E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	5.5E-09	4.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	4.6E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	6.0E-10	4.6E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00007
				Antimony	0.17	mg/kg	2.9E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.9E-09	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.000007
				Chromium VI	17	mg/kg	4.6E-08	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	2.3E-08	2.9E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.00010
				Cobalt	13.7	mg/kg	2.3E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.3E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0008
				Iron	26400	mg/kg	4.5E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.5E-04	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.0006
				Manganese	379	mg/kg	6.5E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.5E-06	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0003
			Exp. Route Total								1.3E-07					0.002
			Dermal	Benzo(a)anthracene	4.5	mg/kg	1.9E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.4E-09	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	1.6E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.1E-08	9.9E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	2.4E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.8E-09	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	4.8E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.8E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	1.6E-7
				Benzo(k)fluoranthene	1.7	mg/kg	7.2E-10	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	5.2E-11	4.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	2.1E-09	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.5E-11	1.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	2.5E-10	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.8E-09	1.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	1.2E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	8.6E-10	7.5E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.7E-16	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	2.2E-11	1.7E-15	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.000002
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								1.7E-08					0.000003
		Exposure Point Total									1.5E-07					0.002
	Exposure Medium Total										1.5E-07					0.002
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	2.9E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.2E-14	1.9E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	2.4E-13	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	2.7E-13	1.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	3.8E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	4.2E-14	2.4E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	7.5E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.5E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	1.1E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.2E-14	7.1E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	3.2E-13	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	3.5E-15	2.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	3.8E-14	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	4.6E-14	2.4E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	1.8E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.0E-14	1.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	1.1E-19	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	4.3E-15	1.1E-18	(mg/m^3)	4.0E-08	(mg/m^3)	2.8E-11
				Antimony	1.5E-11	mg/m^3	7.1E-15	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.1E-14	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	1.1E-12	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	9.3E-11	7.1E-12	(mg/m^3)	1.0E-04	(mg/m^3)	7.1E-8
				Cobalt	1.2E-09	mg/m^3	5.7E-13	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	5.1E-12	5.7E-12	(mg/m^3)	6.0E-06	(mg/m^3)	9.5E-7
				Iron	2.4E-06	mg/m^3	1.1E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	1.6E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.6E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000003
			Exp. Route Total								9.9E-11					0.000004
		Exposure Point Total									9.9E-11					0.000004
	Exposure Medium Total										9.9E-11					0.000004
Medium Total											1.5E-07					0.002

TABLE 7.2.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	6.7E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.9E-09	4.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	5.7E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.1E-08	3.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	8.6E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	6.3E-09	5.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	1.7E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.7E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	5.7E-7
				Benzo(k)fluoranthene	0.95	mg/kg	2.6E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.9E-10	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	7.0E-09	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	5.1E-11	4.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	8.6E-10	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	6.3E-09	5.5E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	4.3E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.1E-09	2.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	4.6E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	6.0E-10	4.6E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00007
				Aluminum	15200	mg/kg	2.6E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.6E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0003
				Antimony	0.12	mg/kg	2.1E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.1E-09	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.000005
				Arsenic	8.4	mg/kg	8.6E-09	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.3E-08	8.6E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0003
				Chromium VI	18.4	mg/kg	5.0E-08	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	2.5E-08	3.2E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Cobalt	14.5	mg/kg	2.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.5E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0008
				Iron	28000	mg/kg	4.8E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.8E-04	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.0007
				Manganese	339	mg/kg	5.8E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.8E-06	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0002
			Exp. Route Total								1.0E-07					0.002
			Dermal	Benzo(a)anthracene	2.5	mg/kg	1.1E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	7.7E-10	6.7E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	8.9E-10	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	6.5E-09	5.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	1.4E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	9.9E-10	8.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	2.7E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.7E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	9.0E-8
				Benzo(k)fluoranthene	0.95	mg/kg	4.0E-10	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.9E-11	2.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	1.1E-09	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	8.0E-12	7.0E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	1.4E-10	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	9.9E-10	8.6E-10	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	6.8E-10	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.9E-10	4.3E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.7E-16	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	2.2E-11	1.7E-15	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.000002
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	5.2E-10	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	7.8E-10	5.2E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00002
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								1.1E-08					0.00002
		Exposure Point Total									1.1E-07					0.002
	Exposure Medium Total										1.1E-07					0.002

TABLE 7.2.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	1.6E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.8E-14	1.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	1.4E-13	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	1.5E-13	8.7E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	2.1E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.3E-14	1.3E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	4.2E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	6.2E-14	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	6.8E-15	3.9E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	1.7E-13	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	1.9E-15	1.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	2.1E-14	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	2.5E-14	1.3E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	1.0E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.1E-14	6.6E-13	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	1.1E-19	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	4.3E-15	1.1E-18	(mg/m^3)	4.0E-08	(mg/m^3)	2.8E-11
				Aluminum	1.4E-06	mg/m^3	6.3E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.3E-09	(mg/m^3)	5.0E-03	(mg/m^3)	0.000001
				Antimony	1.1E-11	mg/m^3	5.0E-15	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.0E-14	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	3.5E-13	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.5E-12	3.5E-12	(mg/m^3)	1.5E-05	(mg/m^3)	2.3E-7
				Chromium VI	1.7E-09	mg/m^3	1.2E-12	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.0E-10	7.6E-12	(mg/m^3)	1.0E-04	(mg/m^3)	7.6E-8
				Cobalt	1.3E-09	mg/m^3	6.0E-13	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	5.4E-12	6.0E-12	(mg/m^3)	6.0E-06	(mg/m^3)	0.000001
				Iron	2.5E-06	mg/m^3	1.2E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.2E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	1.4E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.4E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000003
			Exp. Route Total								1.1E-10					0.000005
		Exposure Point Total									1.1E-10					0.000005
	Exposure Medium Total										1.1E-10					0.000005
Medium Total											1.1E-07					0.003
											Total of Receptor Risks Across All Media	2.6E-07		Total of Receptor Hazards Across All Media		0.004

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.3.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	3.8E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.8E-08	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	3.1E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.3E-07	2.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	4.9E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.6E-08	3.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	1.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-06	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.000004
				Benzo(k)fluoranthene	1.7	mg/kg	1.4E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.0E-09	1.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	4.1E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	3.0E-10	2.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	5.0E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.6E-08	3.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	2.4E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.7E-08	1.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	2.3E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	2.9E-09	1.6E-12	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.00008
				Antimony	0.17	mg/kg	1.4E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.0E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0002
				Chromium VI	17	mg/kg	1.4E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	7.1E-08	1.0E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.002
				Cobalt	13.7	mg/kg	1.2E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.1E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.003
				Iron	26400	mg/kg	2.2E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.6E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.02
				Manganese	379	mg/kg	3.2E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.2E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.009
			Exp. Route Total								4.2E-07					0.04
			Dermal	Benzo(a)anthracene	4.5	mg/kg	5.2E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.8E-09	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	4.2E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.1E-08	3.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	6.7E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.9E-09	4.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	2.1E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.4E-07	(mg/kg/day)	3.0E-01	(mg/kg/day)	4.8E-7
				Benzo(k)fluoranthene	1.7	mg/kg	2.0E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.4E-10	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	5.6E-09	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	4.1E-11	3.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	6.8E-10	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.9E-09	4.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	3.2E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.3E-09	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	7.2E-16	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	9.3E-11	5.0E-14	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.000003
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-03	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								4.7E-08					0.000003
		Exposure Point Total									4.7E-07					0.04
	Exposure Medium Total										4.7E-07					0.04
	Air	AOC-001	Inhalation	Benzo(a)anthracene	3.2E-06	mg/m^3	2.2E-09	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.4E-10	1.5E-07	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	2.6E-06	mg/m^3	1.8E-09	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	2.0E-09	1.3E-07	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	4.1E-06	mg/m^3	2.8E-09	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.1E-10	2.0E-07	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.3E-06	mg/m^3	8.7E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.1E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.2E-06	mg/m^3	8.2E-10	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	9.1E-11	5.8E-08	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	3.5E-06	mg/m^3	2.4E-09	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	2.6E-11	1.7E-07	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	4.2E-07	mg/m^3	2.9E-10	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	3.4E-10	2.0E-08	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.0E-06	mg/m^3	1.4E-09	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.5E-10	9.5E-08	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	1.9E-12	mg/m^3	1.3E-15	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	5.0E-11	9.2E-14	(mg/m^3)	4.0E-08	(mg/m^3)	0.000002
				Antimony	1.2E-07	mg/m^3	8.2E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.8E-09	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.2E-05	mg/m^3	8.2E-09	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	6.9E-07	5.8E-07	(mg/m^3)	3.0E-04	(mg/m^3)	0.002
				Cobalt	9.8E-06	mg/m^3	6.6E-09	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	6.0E-08	4.6E-07	(mg/m^3)	2.0E-05	(mg/m^3)	0.02
				Iron	1.9E-02	mg/m^3	1.3E-05	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.0E-04	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.7E-04	mg/m^3	1.8E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.3E-05	(mg/m^3)	5.0E-05	(mg/m^3)	0.3
			Exp. Route Total								7.5E-07					0.3
		Exposure Point Total									7.5E-07					0.3
	Exposure Medium Total										7.5E-07					0.3
Medium Total											1.2E-06					0.3

TABLE 7.3.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	2.1E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.5E-08	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	1.8E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.3E-07	1.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	2.7E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.0E-08	1.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	8.4E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.9E-07	(mg/kg/day)	3.0E-01	(mg/kg/day)	0.000002
				Benzo(k)fluoranthene	0.95	mg/kg	8.0E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	5.8E-10	5.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	2.2E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.6E-10	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	2.7E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.0E-08	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	1.3E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	9.8E-09	9.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	2.3E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	2.9E-09	1.6E-12	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.00008
				Aluminum	15200	mg/kg	1.3E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.9E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.009
				Antimony	0.12	mg/kg	1.0E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.1E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0002
				Arsenic	8.4	mg/kg	4.2E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	6.3E-08	3.0E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.010
				Chromium VI	18.4	mg/kg	1.5E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	7.7E-08	1.1E-05	(mg/kg/day)	5.0E-03	(mg/kg/day)	0.002
				Cobalt	14.5	mg/kg	1.2E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.5E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.003
				Iron	28000	mg/kg	2.4E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.6E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.02
				Manganese	339	mg/kg	2.8E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.0E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.008
			Exp. Route Total								3.4E-07					0.06
			Dermal	Benzo(a)anthracene	2.5	mg/kg	2.9E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.1E-09	2.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	2.4E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.8E-08	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	3.7E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.7E-09	2.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	1.1E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.0E-08	(mg/kg/day)	3.0E-01	(mg/kg/day)	2.7E-7
				Benzo(k)fluoranthene	0.95	mg/kg	1.1E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	8.0E-11	7.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	3.0E-09	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	2.2E-11	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	3.7E-10	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.7E-09	2.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	1.8E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.3E-09	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	7.2E-16	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	9.3E-11	5.0E-14	(mg/kg/day)	2.0E-08	(mg/kg/day)	0.000003
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	2.2E-09	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.3E-09	1.6E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0005
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.3E-04	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-03	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								3.0E-08					0.0005
		Exposure Point Total									3.7E-07					0.06
	Exposure Medium Total										3.7E-07					0.06

TABLE 7.3.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	1.8E-06	mg/m^3	1.2E-09	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.3E-10	8.5E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.5E-06	mg/m^3	1.0E-09	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	1.1E-09	7.1E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.3E-06	mg/m^3	1.6E-09	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.7E-10	1.1E-07	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	7.1E-07	mg/m^3	4.8E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.4E-08	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	6.8E-07	mg/m^3	4.6E-10	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	5.1E-11	3.2E-08	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	1.9E-06	mg/m^3	1.3E-09	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	1.4E-11	8.8E-08	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.3E-07	mg/m^3	1.6E-10	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	1.9E-10	1.1E-08	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.1E-06	mg/m^3	7.8E-10	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	8.5E-11	5.4E-08	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	1.9E-12	mg/m^3	1.3E-15	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	5.0E-11	9.2E-14	(mg/m^3)	4.0E-08	(mg/m^3)	0.000002
				Aluminum	1.1E-02	mg/m^3	7.4E-06	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.2E-04	(mg/m^3)	5.0E-03	(mg/m^3)	0.1
				Antimony	8.6E-08	mg/m^3	5.8E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.1E-09	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	6.0E-06	mg/m^3	4.1E-09	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.8E-08	2.8E-07	(mg/m^3)	1.5E-05	(mg/m^3)	0.02
				Chromium VI	1.3E-05	mg/m^3	8.9E-09	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	7.5E-07	6.2E-07	(mg/m^3)	3.0E-04	(mg/m^3)	0.002
				Cobalt	1.0E-05	mg/m^3	7.0E-09	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	6.3E-08	4.9E-07	(mg/m^3)	2.0E-05	(mg/m^3)	0.02
				Iron	2.0E-02	mg/m^3	1.4E-05	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.5E-04	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	2.4E-04	mg/m^3	1.6E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.1E-05	(mg/m^3)	5.0E-05	(mg/m^3)	0.2
			Exp. Route Total								8.3E-07					0.4
		Exposure Point Total									8.3E-07					0.4
	Exposure Medium Total										8.3E-07					0.4
Medium Total											1.2E-06					0.4
										Total of Receptor Risks Across All Media	2.4E-06			Total of Receptor Hazards Across All Media		0.8

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.4.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	2.2E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.6E-07	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	1.8E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.3E-06	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	2.8E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.0E-07	2.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	8.7E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.8E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00002
				Benzo(k)fluoranthene	1.7	mg/kg	8.2E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	6.0E-09	6.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	2.4E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.7E-09	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	2.8E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.1E-07	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	1.4E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	9.9E-08	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.3E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.7E-08	1.0E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.001
				Antimony	0.17	mg/kg	8.2E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.4E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0002
				Chromium VI	17	mg/kg	8.2E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	4.1E-07	6.4E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Cobalt	13.7	mg/kg	6.6E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Iron	26400	mg/kg	1.3E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	9.9E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.01
				Manganese	379	mg/kg	1.8E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.4E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.006
			Exp. Route Total								2.4E-06					0.04
			Dermal	Benzo(a)anthracene	4.5	mg/kg	3.9E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.9E-08	3.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	3.2E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.3E-07	2.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	5.0E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.7E-08	3.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	1.6E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000004
				Benzo(k)fluoranthene	1.7	mg/kg	1.5E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.1E-09	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	4.3E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	3.1E-10	3.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	5.1E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.7E-08	4.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	2.4E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.8E-08	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	5.4E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	7.0E-10	4.2E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00006
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								3.6E-07					0.00006
		Exposure Point Total									2.8E-06					0.04
	Exposure Medium Total										2.8E-06					0.04
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	1.1E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.2E-12	8.2E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	8.6E-12	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	9.5E-12	6.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	1.4E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.5E-12	1.1E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	4.2E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.3E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	4.0E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	4.4E-13	3.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	1.1E-11	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	1.3E-13	8.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	1.4E-12	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	1.7E-12	1.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	6.5E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	7.2E-13	5.1E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	6.3E-18	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	2.4E-13	4.9E-17	(mg/m^3)	4.0E-08	(mg/m^3)	1.2E-9
				Antimony	1.5E-11	mg/m^3	4.0E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	4.0E-11	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	3.3E-09	3.1E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000003
				Cobalt	1.2E-09	mg/m^3	3.2E-11	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	2.9E-10	2.5E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00004
				Iron	2.4E-06	mg/m^3	6.2E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	4.8E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	8.9E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.9E-09	(mg/m^3)	5.0E-05	(mg/m^3)	0.0001
			Exp. Route Total								3.6E-09					0.0002
		Exposure Point Total									3.6E-09					0.0002
	Exposure Medium Total										3.6E-09					0.0002
Medium Total											2.8E-06					0.04

TABLE 7.4.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	1.2E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	8.8E-08	9.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	1.0E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	7.4E-07	7.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	1.5E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.1E-07	1.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	4.8E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.8E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00001
				Benzo(k)fluoranthene	0.95	mg/kg	4.6E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	3.3E-09	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	1.3E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	9.2E-10	9.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	1.5E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.1E-07	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	7.7E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	5.6E-08	6.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.3E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.7E-08	1.0E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.001
				Aluminum	15200	mg/kg	7.3E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.7E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.006
				Antimony	0.12	mg/kg	5.8E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.5E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0001
				Arsenic	8.4	mg/kg	2.4E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.6E-07	1.9E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.006
				Chromium VI	18.4	mg/kg	8.9E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	4.4E-07	6.9E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Cobalt	14.5	mg/kg	7.0E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.4E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Iron	28000	mg/kg	1.4E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.02
				Manganese	339	mg/kg	1.6E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.3E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.005
			Exp. Route Total								1.9E-06					0.05
			Dermal	Benzo(a)anthracene	2.5	mg/kg	2.2E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.6E-08	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	1.8E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.3E-07	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	2.8E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.0E-08	2.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	8.7E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.8E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				Benzo(k)fluoranthene	0.95	mg/kg	8.3E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	6.0E-10	6.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	2.3E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.7E-10	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	2.8E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.0E-08	2.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	1.4E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.0E-08	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	5.4E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	7.0E-10	4.2E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00006
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	1.7E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.5E-08	1.3E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0004
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								2.3E-07					0.0005
		Exposure Point Total									2.2E-06					0.05
	Exposure Medium Total										2.2E-06					0.05

TABLE 7.4.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	5.8E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	6.4E-13	4.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	4.9E-12	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	5.4E-12	3.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	7.5E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	8.2E-13	5.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	2.3E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	2.2E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.4E-13	1.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	6.1E-12	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	6.7E-14	4.7E-11	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	7.5E-13	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	9.0E-13	5.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	3.7E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	4.1E-13	2.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	6.3E-18	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	2.4E-13	4.9E-17	(mg/m^3)	4.0E-08	(mg/m^3)	1.2E-9
				Aluminum	1.4E-06	mg/m^3	3.6E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.8E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.00006
				Antimony	1.1E-11	mg/m^3	2.8E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	2.0E-11	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	8.4E-11	1.5E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00001
				Chromium VI	1.7E-09	mg/m^3	4.3E-11	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	3.6E-09	3.3E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000003
				Cobalt	1.3E-09	mg/m^3	3.4E-11	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	3.1E-10	2.6E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.00004
				Iron	2.5E-06	mg/m^3	6.5E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.1E-07	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	7.9E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	6.2E-09	(mg/m^3)	5.0E-05	(mg/m^3)	0.0001
			Exp. Route Total								4.0E-09					0.0002
		Exposure Point Total									4.0E-09					0.0002
	Exposure Medium Total										4.0E-09					0.0002
Medium Total											2.2E-06					0.06
										Total of Receptor Risks Across All Media	4.9E-06			Total of Receptor Hazards Across All Media		0.10

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.5.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	1.8E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.3E-07	9.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	1.5E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.1E-06	8.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	2.4E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.7E-07	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	1.1E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.9E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00001
				Benzo(k)fluoranthene	1.7	mg/kg	6.9E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	5.1E-09	3.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	2.0E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.5E-09	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	2.4E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.8E-07	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	1.1E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	8.3E-08	6.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.7E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	2.2E-09	5.9E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0008
				Antimony	0.17	mg/kg	1.1E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.7E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00009
				Chromium VI	17	mg/kg	6.9E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	3.5E-07	3.7E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.001
				Cobalt	13.7	mg/kg	8.6E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.0E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Iron	26400	mg/kg	1.7E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.8E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.008
				Manganese	379	mg/kg	2.4E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	8.3E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.003
			Exp. Route Total								2.0E-06					0.02
			Dermal	Benzo(a)anthracene	4.5	mg/kg	5.1E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.7E-08	2.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	4.2E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.1E-07	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	6.6E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.8E-08	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	3.2E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000004
				Benzo(k)fluoranthene	1.7	mg/kg	1.9E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.4E-09	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	5.6E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	4.1E-10	3.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	6.7E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.9E-08	3.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	3.2E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.3E-08	1.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.1E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.4E-10	3.8E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00005
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								4.7E-07					0.00006
		Exposure Point Total									2.5E-06					0.02
	Exposure Medium Total										2.5E-06					0.02
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	8.3E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	9.2E-14	4.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	6.8E-13	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	7.5E-13	3.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	1.1E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.2E-13	5.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	5.1E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	3.1E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.5E-14	1.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	9.1E-13	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	1.0E-14	4.9E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	1.1E-13	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	1.3E-13	5.9E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	5.2E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	5.7E-14	2.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	7.7E-20	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	2.9E-15	2.7E-18	(mg/m^3)	4.0E-08	(mg/m^3)	6.7E-11
				Antimony	1.5E-11	mg/m^3	4.8E-15	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.7E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	3.1E-12	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	2.6E-10	1.7E-11	(mg/m^3)	1.0E-04	(mg/m^3)	1.7E-7
				Cobalt	1.2E-09	mg/m^3	3.9E-13	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	3.5E-12	1.4E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000002
				Iron	2.4E-06	mg/m^3	7.5E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	1.1E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.8E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000008
			Exp. Route Total								2.7E-10					0.000010
		Exposure Point Total									2.7E-10					0.000010
	Exposure Medium Total										2.7E-10					0.000010
Medium Total											2.5E-06					0.02

TABLE 7.5.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	1.0E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	7.4E-08	5.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	8.5E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	6.2E-07	4.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	1.3E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	9.5E-08	7.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	6.3E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.2E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000007
				Benzo(k)fluoranthene	0.95	mg/kg	3.9E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.8E-09	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	1.1E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	7.7E-10	5.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	1.3E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	9.5E-08	7.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	6.5E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.8E-08	3.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.7E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	2.2E-09	5.9E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0008
				Aluminum	15200	mg/kg	9.5E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.3E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.003
				Antimony	0.12	mg/kg	7.5E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.6E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.00007
				Arsenic	8.4	mg/kg	3.2E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	4.7E-08	1.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Chromium VI	18.4	mg/kg	7.5E-07	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	3.7E-07	4.0E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.001
				Cobalt	14.5	mg/kg	9.1E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.2E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
				Iron	28000	mg/kg	1.8E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.1E-03	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.009
				Manganese	339	mg/kg	2.1E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.4E-05	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.003
			Exp. Route Total								1.4E-06					0.03
			Dermal	Benzo(a)anthracene	2.5	mg/kg	2.8E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.1E-08	1.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	2.4E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.7E-07	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	3.6E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.7E-08	2.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	1.8E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.1E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				Benzo(k)fluoranthene	0.95	mg/kg	1.1E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	7.9E-10	5.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	3.0E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	2.2E-10	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	3.6E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.7E-08	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	1.8E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.3E-08	9.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.1E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.4E-10	3.8E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00005
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	3.4E-09	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	5.1E-09	1.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0004
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								2.7E-07					0.0005
		Exposure Point Total									1.6E-06					0.03
	Exposure Medium Total										1.6E-06					0.03

TABLE 7.5.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	4.6E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	5.1E-14	2.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	3.9E-13	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	4.3E-13	2.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	5.9E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	6.5E-14	3.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	2.8E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	1.8E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.9E-14	9.5E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	4.8E-13	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	5.3E-15	2.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	5.9E-14	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	7.1E-14	3.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	3.0E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.3E-14	1.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	7.7E-20	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	2.9E-15	2.7E-18	(mg/m^3)	4.0E-08	(mg/m^3)	6.7E-11
				Aluminum	1.4E-06	mg/m^3	4.3E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000003
				Antimony	1.1E-11	mg/m^3	3.4E-15	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	2.4E-13	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.0E-12	8.4E-12	(mg/m^3)	1.5E-05	(mg/m^3)	5.6E-7
				Chromium VI	1.7E-09	mg/m^3	3.4E-12	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	2.9E-10	1.8E-11	(mg/m^3)	1.0E-04	(mg/m^3)	1.8E-7
				Cobalt	1.3E-09	mg/m^3	4.1E-13	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	3.7E-12	1.4E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000002
				Iron	2.5E-06	mg/m^3	8.0E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.8E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	9.6E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.4E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000007
			Exp. Route Total								2.9E-10					0.00001
		Exposure Point Total									2.9E-10					0.00001
	Exposure Medium Total										2.9E-10					0.00001
Medium Total											1.6E-06					0.03
										Total of Receptor Risks Across All Media	4.1E-06			Total of Receptor Hazards Across All Media		0.06

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.6.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	1.5E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.1E-08	9.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	1.2E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	8.7E-08	7.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	1.9E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.4E-08	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	3.7E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.7E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000001
				Benzo(k)fluoranthene	1.7	mg/kg	5.5E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	4.0E-10	3.5E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	1.6E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.2E-10	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	1.9E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.4E-08	1.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	9.0E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	6.6E-09	5.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	5.5E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	7.2E-10	5.5E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00008
				Antimony	0.17	mg/kg	3.5E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.5E-09	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.000009
				Chromium VI	17	mg/kg	5.5E-08	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	2.7E-08	3.5E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Cobalt	13.7	mg/kg	2.8E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.8E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0009
				Iron	26400	mg/kg	5.4E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.4E-04	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.0008
				Manganese	379	mg/kg	7.8E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.8E-06	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0003
			Exp. Route Total								1.6E-07					0.002
			Dermal	Benzo(a)anthracene	4.5	mg/kg	4.6E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.3E-09	2.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	3.7E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.7E-08	2.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	5.9E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.3E-09	3.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	1.2E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	3.9E-7
				Benzo(k)fluoranthene	1.7	mg/kg	1.7E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.3E-10	1.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	5.0E-09	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	3.6E-11	3.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	6.0E-10	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.4E-09	3.8E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	2.8E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.1E-09	1.8E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	4.0E-16	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	5.2E-11	4.0E-15	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.000006
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								4.2E-08					0.000006
		Exposure Point Total									2.0E-07					0.002
	Exposure Medium Total										2.0E-07					0.002
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	7.0E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	7.7E-14	4.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	5.8E-13	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	6.4E-13	3.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	9.1E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.0E-13	5.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	1.8E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	2.7E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.9E-14	1.7E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	7.7E-13	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	8.4E-15	4.9E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	9.2E-14	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	1.1E-13	5.9E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	4.4E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	4.8E-14	2.8E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	2.7E-19	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	1.0E-14	2.7E-18	(mg/m^3)	4.0E-08	(mg/m^3)	6.7E-11
				Antimony	1.5E-11	mg/m^3	1.7E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.7E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	2.7E-12	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	2.2E-10	1.7E-11	(mg/m^3)	1.0E-04	(mg/m^3)	1.7E-7
				Cobalt	1.2E-09	mg/m^3	1.4E-12	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	1.2E-11	1.4E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000002
				Iron	2.4E-06	mg/m^3	2.6E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.6E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	3.8E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.8E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000008
			Exp. Route Total								2.4E-10					0.000010
		Exposure Point Total									2.4E-10					0.000010
	Exposure Medium Total										2.4E-10					0.000010
Medium Total											2.0E-07					0.002

TABLE 7.6.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	8.1E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	5.9E-09	5.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	6.8E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	5.0E-08	4.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	1.0E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	7.5E-09	6.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	2.1E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.1E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	6.8E-7
				Benzo(k)fluoranthene	0.95	mg/kg	3.1E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	2.2E-10	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	8.4E-09	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	6.1E-11	5.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	1.0E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	7.5E-09	6.6E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	5.2E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.8E-09	3.3E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	5.5E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	7.2E-10	5.5E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00008
				Aluminum	15200	mg/kg	3.1E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.1E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0003
				Antimony	0.12	mg/kg	2.5E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	2.5E-09	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.000006
				Arsenic	8.4	mg/kg	1.0E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.6E-08	1.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0003
				Chromium VI	18.4	mg/kg	5.9E-08	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	3.0E-08	3.8E-07	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.0001
				Cobalt	14.5	mg/kg	3.0E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	3.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0010
				Iron	28000	mg/kg	5.8E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.8E-04	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.0008
				Manganese	339	mg/kg	7.0E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.0E-06	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.0003
			Exp. Route Total								1.2E-07					0.003
			Dermal	Benzo(a)anthracene	2.5	mg/kg	2.5E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.8E-09	1.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	2.1E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.6E-08	1.4E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	3.2E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.4E-09	2.1E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	6.4E-10	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.4E-09	(mg/kg/day)	3.0E-02	(mg/kg/day)	2.1E-7
				Benzo(k)fluoranthene	0.95	mg/kg	9.6E-10	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	7.0E-11	6.1E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	2.6E-09	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.9E-11	1.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	3.2E-10	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.4E-09	2.1E-09	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	1.6E-09	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.2E-09	1.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	4.0E-16	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	5.2E-11	4.0E-15	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.000006
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	1.2E-09	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.9E-09	1.2E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00004
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								2.5E-08					0.00005
		Exposure Point Total									1.5E-07					0.003
	Exposure Medium Total										1.5E-07					0.003

TABLE 7.6.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	3.9E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	4.3E-14	2.5E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	3.3E-13	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	3.6E-13	2.1E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	5.0E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	5.5E-14	3.2E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	1.0E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	1.5E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.6E-14	9.5E-13	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	4.1E-13	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	4.5E-15	2.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	5.0E-14	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	6.0E-14	3.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	2.5E-13	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.8E-14	1.6E-12	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	2.7E-19	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	1.0E-14	2.7E-18	(mg/m^3)	4.0E-08	(mg/m^3)	6.7E-11
				Aluminum	1.4E-06	mg/m^3	1.5E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000003
				Antimony	1.1E-11	mg/m^3	1.2E-14	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.2E-13	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	8.4E-13	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	3.6E-12	8.4E-12	(mg/m^3)	1.5E-05	(mg/m^3)	5.6E-7
				Chromium VI	1.7E-09	mg/m^3	2.9E-12	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	2.4E-10	1.8E-11	(mg/m^3)	1.0E-04	(mg/m^3)	1.8E-7
				Cobalt	1.3E-09	mg/m^3	1.4E-12	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	1.3E-11	1.4E-11	(mg/m^3)	6.0E-06	(mg/m^3)	0.000002
				Iron	2.5E-06	mg/m^3	2.8E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.8E-08	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	3.4E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	3.4E-10	(mg/m^3)	5.0E-05	(mg/m^3)	0.000007
			Exp. Route Total								2.6E-10					0.00001
		Exposure Point Total									2.6E-10					0.00001
	Exposure Medium Total										2.6E-10					0.00001
Medium Total											1.5E-07					0.003
										Total of Receptor Risks Across All Media	3.5E-07			Total of Receptor Hazards Across All Media		0.005

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.7.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	3.6E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.6E-06	1.9E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	2.9E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.1E-05	1.6E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	4.6E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.4E-06	2.5E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	2.2E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.7E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0003
				Benzo(k)fluoranthene	1.7	mg/kg	1.3E-06	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	9.9E-08	7.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	3.9E-06	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	2.8E-08	2.1E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	4.7E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.4E-06	2.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	2.2E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.6E-06	1.2E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	3.3E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	4.3E-08	1.2E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.02
				Antimony	0.17	mg/kg	2.1E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.3E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.002
				Chromium VI	17	mg/kg	1.3E-05	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	6.7E-06	7.3E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.02
				Cobalt	13.7	mg/kg	1.7E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.9E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.2
				Iron	26400	mg/kg	3.2E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-01	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.2
				Manganese	379	mg/kg	4.6E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.6E-03	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.07
			Exp. Route Total								3.9E-05					0.5
			Dermal	Benzo(a)anthracene	4.5	mg/kg	5.0E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.6E-07	2.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	4.1E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	3.0E-06	2.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	6.4E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.7E-07	3.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	3.1E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00004
				Benzo(k)fluoranthene	1.7	mg/kg	1.9E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.4E-08	1.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	5.4E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	4.0E-09	2.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	6.6E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.8E-07	3.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	3.1E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.3E-07	1.7E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.1E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.4E-09	3.7E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0005
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								4.6E-06					0.0006
		Exposure Point Total									4.4E-05					0.5
	Exposure Medium Total										4.4E-05					0.5
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	4.9E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	5.4E-12	2.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	4.0E-11	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	4.4E-11	2.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	6.3E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	6.9E-12	3.4E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	3.0E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.0E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	1.8E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.0E-12	9.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	5.3E-11	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	5.8E-13	2.9E-10	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	6.4E-12	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	7.7E-12	3.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	3.0E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.3E-12	1.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	4.5E-18	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	1.7E-13	1.6E-16	(mg/m^3)	4.0E-08	(mg/m^3)	3.9E-9
				Antimony	1.5E-11	mg/m^3	2.8E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.9E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	1.8E-10	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.5E-08	9.9E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000010
				Cobalt	1.2E-09	mg/m^3	2.3E-11	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	2.1E-10	8.0E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.0001
				Iron	2.4E-06	mg/m^3	4.4E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	6.3E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.2E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0004
			Exp. Route Total								1.6E-08					0.0006
		Exposure Point Total									1.6E-08					0.0006
	Exposure Medium Total										1.6E-08					0.0006
Medium Total											4.4E-05					0.5

TABLE 7.7.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	2.0E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.4E-06	1.1E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	1.7E-06	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.2E-05	9.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	2.5E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.9E-06	1.4E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	1.2E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.3E-06	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.0001
				Benzo(k)fluoranthene	0.95	mg/kg	7.5E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	5.5E-08	4.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	2.1E-06	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.5E-08	1.1E-05	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	2.5E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.9E-06	1.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	1.3E-06	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	9.3E-07	6.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	3.3E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	4.3E-08	1.2E-11	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.02
				Aluminum	15200	mg/kg	1.9E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.5E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.06
				Antimony	0.12	mg/kg	1.5E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.1E-07	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.001
				Arsenic	8.4	mg/kg	6.2E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	9.2E-07	2.2E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.07
				Chromium VI	18.4	mg/kg	1.5E-05	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	7.3E-06	7.9E-05	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.03
				Cobalt	14.5	mg/kg	1.8E-06	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.2E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.2
				Iron	28000	mg/kg	3.4E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.2E-01	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.2
				Manganese	339	mg/kg	4.1E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.4E-03	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.06
			Exp. Route Total								2.7E-05					0.6
			Dermal	Benzo(a)anthracene	2.5	mg/kg	2.8E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.0E-07	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	2.3E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.7E-06	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	3.6E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.6E-07	1.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	1.7E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.0E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00002
				Benzo(k)fluoranthene	0.95	mg/kg	1.1E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	7.7E-09	5.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	2.9E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	2.1E-09	1.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	3.6E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.6E-07	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	1.8E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.3E-07	9.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.1E-14	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.4E-09	3.7E-13	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.0005
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	3.3E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	5.0E-08	1.2E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								2.6E-06					0.004
		Exposure Point Total									2.9E-05					0.6
	Exposure Medium Total										2.9E-05					0.6

TABLE 7.7.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	2.7E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.0E-12	1.5E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	2.3E-11	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	2.5E-11	1.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	3.5E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.8E-12	1.9E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	1.7E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	1.0E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.1E-12	5.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	2.8E-11	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	3.1E-13	1.5E-10	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	3.5E-12	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	4.2E-12	1.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	1.7E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.9E-12	9.3E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	4.5E-18	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	1.7E-13	1.6E-16	(mg/m^3)	4.0E-08	(mg/m^3)	3.9E-9
				Aluminum	1.4E-06	mg/m^3	2.5E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.9E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.0002
				Antimony	1.1E-11	mg/m^3	2.0E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	1.4E-11	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	6.0E-11	4.9E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00003
				Chromium VI	1.7E-09	mg/m^3	2.0E-10	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.7E-08	1.1E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00001
				Cobalt	1.3E-09	mg/m^3	2.4E-11	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	2.2E-10	8.5E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.0001
				Iron	2.5E-06	mg/m^3	4.7E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.6E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	5.6E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.0E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0004
			Exp. Route Total								1.7E-08					0.0008
		Exposure Point Total									1.7E-08					0.0008
	Exposure Medium Total										1.7E-08					0.0008
Medium Total											2.9E-05					0.6
										Total of Receptor Risks Across All Media	7.3E-05			Total of Receptor Hazards Across All Media		1.1

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.8.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	AOC-001	Ingestion	Benzo(a)anthracene	4.5	mg/kg	2.8E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.1E-07	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	2.3E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.7E-06	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	3.7E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.7E-07	2.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	7.2E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	7.2E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00002
				Benzo(k)fluoranthene	1.7	mg/kg	1.1E-07	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	7.8E-09	6.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	3.1E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	2.3E-09	2.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	3.7E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.7E-07	2.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	1.8E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.3E-07	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.1E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.4E-08	1.1E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.002
				Antimony	0.17	mg/kg	6.8E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.8E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0002
				Chromium VI	17	mg/kg	1.1E-06	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	5.4E-07	6.8E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Cobalt	13.7	mg/kg	5.5E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.5E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Iron	26400	mg/kg	1.1E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.02
				Manganese	379	mg/kg	1.5E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.5E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.006
			Exp. Route Total								3.1E-06					0.04
			Dermal	Benzo(a)anthracene	4.5	mg/kg	4.4E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	3.2E-08	2.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	3.7	mg/kg	3.7E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.7E-07	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	5.8	mg/kg	5.7E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	4.2E-08	3.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1.8	mg/kg	1.1E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000004
				Benzo(k)fluoranthene	1.7	mg/kg	1.7E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	1.2E-09	1.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	4.9	mg/kg	4.8E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	3.5E-10	3.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.59	mg/kg	5.8E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	4.3E-08	3.7E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	2.8	mg/kg	2.8E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.0E-08	1.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	3.9E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	5.1E-10	3.9E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00006
				Antimony	0.17	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Chromium VI	17	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	13.7	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	26400	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	379	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								4.1E-07					0.00006
		Exposure Point Total									3.5E-06					0.04
	Exposure Medium Total										3.5E-06					0.04
	Air	AOC-001	Inhalation	Benzo(a)anthracene	4.1E-10	mg/m^3	4.1E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	4.5E-12	2.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	3.4E-10	mg/m^3	3.4E-11	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	3.7E-11	2.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	5.3E-10	mg/m^3	5.3E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	5.8E-12	3.4E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	1.6E-10	mg/m^3	1.0E-11	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.0E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	1.5E-10	mg/m^3	1.6E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.7E-12	9.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	4.5E-10	mg/m^3	4.5E-11	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	4.9E-13	2.9E-10	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	5.4E-11	mg/m^3	5.4E-12	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	6.5E-12	3.4E-11	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	2.5E-10	mg/m^3	2.6E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.8E-12	1.6E-10	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	1.6E-17	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	6.0E-13	1.6E-16	(mg/m^3)	4.0E-08	(mg/m^3)	3.9E-9
				Antimony	1.5E-11	mg/m^3	9.9E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	9.9E-12	(mg/m^3)	NA	(mg/m^3)	--
				Chromium VI	1.5E-09	mg/m^3	1.6E-10	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.3E-08	9.9E-10	(mg/m^3)	1.0E-04	(mg/m^3)	0.000010
				Cobalt	1.2E-09	mg/m^3	8.0E-11	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	7.2E-10	8.0E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.0001
				Iron	2.4E-06	mg/m^3	1.5E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.5E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.4E-08	mg/m^3	2.2E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.2E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0004
			Exp. Route Total								1.4E-08					0.0006
		Exposure Point Total									1.4E-08					0.0006
	Exposure Medium Total										1.4E-08					0.0006
Medium Total											3.6E-06					0.04

TABLE 7.8.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Ingestion	Benzo(a)anthracene	2.5	mg/kg	1.6E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.1E-07	1.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	1.3E-07	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	9.7E-07	8.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	2.0E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.5E-07	1.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	4.0E-08	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.0E-07	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.00001
				Benzo(k)fluoranthene	0.95	mg/kg	6.0E-08	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	4.4E-09	3.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	1.6E-07	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.2E-09	1.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	2.0E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.5E-07	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	1.0E-07	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	7.4E-08	6.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	1.1E-13	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	1.4E-08	1.1E-12	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.002
				Aluminum	15200	mg/kg	6.1E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.1E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.006
				Antimony	0.12	mg/kg	4.8E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	4.8E-08	(mg/kg/day)	4.0E-04	(mg/kg/day)	0.0001
				Arsenic	8.4	mg/kg	2.0E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.0E-07	2.0E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.007
				Chromium VI	18.4	mg/kg	1.2E-06	(mg/kg/day)	5.0E-01	$(mg/kg/day)^{-1}$	5.8E-07	7.4E-06	(mg/kg/day)	3.0E-03	(mg/kg/day)	0.002
				Cobalt	14.5	mg/kg	5.8E-07	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	5.8E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
				Iron	28000	mg/kg	1.1E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.1E-02	(mg/kg/day)	7.0E-01	(mg/kg/day)	0.02
				Manganese	339	mg/kg	1.4E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	1.4E-04	(mg/kg/day)	2.4E-02	(mg/kg/day)	0.006
			Exp. Route Total								2.3E-06					0.06
			Dermal	Benzo(a)anthracene	2.5	mg/kg	2.5E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.8E-08	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(a)pyrene	2.1	mg/kg	2.1E-08	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	1.5E-07	1.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(b)fluoranthene	3.2	mg/kg	3.2E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	2.3E-08	2.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Benzo(g,h,i)perylene	1	mg/kg	6.3E-09	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	6.3E-08	(mg/kg/day)	3.0E-02	(mg/kg/day)	0.000002
				Benzo(k)fluoranthene	0.95	mg/kg	9.4E-09	(mg/kg/day)	7.3E-02	$(mg/kg/day)^{-1}$	6.8E-10	6.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Chrysene	2.6	mg/kg	2.6E-08	(mg/kg/day)	7.3E-03	$(mg/kg/day)^{-1}$	1.9E-10	1.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				Dibenzo(a,h)anthracene	0.32	mg/kg	3.2E-09	(mg/kg/day)	7.3E+00	$(mg/kg/day)^{-1}$	2.3E-08	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
				Indeno(1,2,3-cd)pyrene	1.6	mg/kg	1.6E-08	(mg/kg/day)	7.3E-01	$(mg/kg/day)^{-1}$	1.2E-08	1.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
				2,3,7,8-TCDD Equivalents	0.0000027	mg/kg	3.9E-15	(mg/kg/day)	1.3E+05	$(mg/kg/day)^{-1}$	5.1E-10	3.9E-14	(mg/kg/day)	7.0E-10	(mg/kg/day)	0.00006
				Aluminum	15200	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Antimony	0.12	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	6.0E-05	(mg/kg/day)	--
				Arsenic	8.4	mg/kg	1.2E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.8E-08	1.2E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0004
				Chromium VI	18.4	mg/kg	0.0E+00	(mg/kg/day)	2.0E+01	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.5E-05	(mg/kg/day)	--
				Cobalt	14.5	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	3.0E-04	(mg/kg/day)	--
				Iron	28000	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	7.0E-01	(mg/kg/day)	--
				Manganese	339	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	- -	0.0E+00	(mg/kg/day)	9.6E-04	(mg/kg/day)	--
			Exp. Route Total								2.5E-07					0.0005
		Exposure Point Total									2.6E-06					0.06
	Exposure Medium Total										2.6E-06					0.06

TABLE 7.8.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
							Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
					Value	Units	Value	Units	Value	Units		Value	Units	Value	Units	
Surface/Subsurface Soil (Continued)	Air	AOC-001	Inhalation	Benzo(a)anthracene	2.3E-10	mg/m^3	2.3E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	2.5E-12	1.5E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(a)pyrene	1.9E-10	mg/m^3	1.9E-11	(mg/m^3)	1.1E-03	$(ug/m^3)^{-1}$	2.1E-11	1.2E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(b)fluoranthene	2.9E-10	mg/m^3	2.9E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	3.2E-12	1.9E-10	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(g,h,i)perylene	9.1E-11	mg/m^3	5.8E-12	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	5.8E-11	(mg/m^3)	NA	(mg/m^3)	--
				Benzo(k)fluoranthene	8.6E-11	mg/m^3	8.7E-12	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	9.6E-13	5.5E-11	(mg/m^3)	NA	(mg/m^3)	--
				Chrysene	2.4E-10	mg/m^3	2.4E-11	(mg/m^3)	1.1E-05	$(ug/m^3)^{-1}$	2.6E-13	1.5E-10	(mg/m^3)	NA	(mg/m^3)	--
				Dibenzo(a,h)anthracene	2.9E-11	mg/m^3	2.9E-12	(mg/m^3)	1.2E-03	$(ug/m^3)^{-1}$	3.5E-12	1.9E-11	(mg/m^3)	NA	(mg/m^3)	--
				Indeno(1,2,3-cd)pyrene	1.5E-10	mg/m^3	1.5E-11	(mg/m^3)	1.1E-04	$(ug/m^3)^{-1}$	1.6E-12	9.3E-11	(mg/m^3)	NA	(mg/m^3)	--
				2,3,7,8-TCDD Equivalents	2.5E-16	mg/m^3	1.6E-17	(mg/m^3)	3.8E+01	$(ug/m^3)^{-1}$	6.0E-13	1.6E-16	(mg/m^3)	4.0E-08	(mg/m^3)	3.9E-9
				Aluminum	1.4E-06	mg/m^3	8.9E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	8.9E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.0002
				Antimony	1.1E-11	mg/m^3	7.0E-13	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	7.0E-12	(mg/m^3)	NA	(mg/m^3)	--
				Arsenic	7.6E-10	mg/m^3	4.9E-11	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	2.1E-10	4.9E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00003
				Chromium VI	1.7E-09	mg/m^3	1.7E-10	(mg/m^3)	8.4E-02	$(ug/m^3)^{-1}$	1.4E-08	1.1E-09	(mg/m^3)	1.0E-04	(mg/m^3)	0.00001
				Cobalt	1.3E-09	mg/m^3	8.5E-11	(mg/m^3)	9.0E-03	$(ug/m^3)^{-1}$	7.6E-10	8.5E-10	(mg/m^3)	6.0E-06	(mg/m^3)	0.0001
				Iron	2.5E-06	mg/m^3	1.6E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	1.6E-06	(mg/m^3)	NA	(mg/m^3)	--
				Manganese	3.1E-08	mg/m^3	2.0E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	- -	2.0E-08	(mg/m^3)	5.0E-05	(mg/m^3)	0.0004
			Exp. Route Total								1.5E-08					0.0008
		Exposure Point Total									1.5E-08					0.0008
	Exposure Medium Total										1.5E-08					0.0008
Medium Total											2.6E-06					0.06
										Total of Receptor Risks Across All Media	6.2E-06			Total of Receptor Hazards Across All Media		0.1

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Building 219

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	5.0E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	9.9E-07	2.9E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								9.9E-07					--
			Dermal	Aroclor-1260	11	mg/kg	1.1E-06	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.2E-06	6.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.2E-06					--
		Exposure Point Total									3.2E-06					--
	Exposure Medium Total										3.2E-06					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	3.8E-12	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	2.1E-12	2.2E-11	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								2.1E-12					--
		Exposure Point Total									2.1E-12					--
	Exposure Medium Total										2.1E-12					--
Medium Total											3.2E-06					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	3.2E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	6.3E-07	1.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								6.3E-07					--
			Dermal	Aroclor-1260	7	mg/kg	7.2E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.4E-06	4.2E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.4E-06					--
		Exposure Point Total									2.1E-06					--
	Exposure Medium Total										2.1E-06					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	2.4E-12	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	1.4E-12	1.4E-11	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.4E-12					--
		Exposure Point Total									1.4E-12					--
	Exposure Medium Total										1.4E-12					--
Medium Total											2.1E-06					--
Total of Receptor Risks Across All Media											5.3E-06	Total of Receptor Hazards Across All Media				--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	2.2E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	4.3E-07	7.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								4.3E-07					--
			Dermal	Aroclor-1260	11	mg/kg	1.3E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.5E-07	4.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.5E-07					--
		Exposure Point Total									6.9E-07					--
	Exposure Medium Total										6.9E-07					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	5.2E-12	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	3.0E-12	1.8E-11	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								3.0E-12					--
		Exposure Point Total									3.0E-12					--
	Exposure Medium Total										3.0E-12					--
Medium Total											6.9E-07					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	1.4E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.7E-07	4.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.7E-07					--
			Dermal	Aroclor-1260	7	mg/kg	8.1E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.6E-07	2.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.6E-07					--
		Exposure Point Total									4.4E-07					--
	Exposure Medium Total										4.4E-07					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	3.3E-12	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	1.9E-12	1.2E-11	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.9E-12					--
		Exposure Point Total									1.9E-12					--
	Exposure Medium Total										1.9E-12					--
Medium Total											4.4E-07					--
										Total of Receptor Risks Across All Media	1.1E-06				Total of Receptor Hazards Across All Media	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC Value	EPC Units	Cancer Risk Calculations: Intake/Exposure Concentration Value	Intake/Exposure Concentration Units	CSF/Unit Risk Value	CSF/Unit Risk Units	Cancer Risk	Non-Cancer Hazard Calculations: Intake/Exposure Concentration Value	Intake/Exposure Concentration Units	RfD/RfC Value	RfD/RfC Units	Hazard Quotient
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	2.3E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	4.6E-07	1.6E-05	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								4.6E-07					--
			Dermal	Aroclor-1260	11	mg/kg	1.0E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.0E-07	7.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.0E-07					--
		Exposure Point Total									6.7E-07					--
	Exposure Medium Total										6.7E-07					--
	Air	Building 219	Inhalation	Aroclor-1260	7.9E-06	mg/m^3	1.3E-08	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	7.6E-09	9.3E-07	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								7.6E-09					--
		Exposure Point Total									7.6E-09					--
	Exposure Medium Total										7.6E-09					--
Medium Total											6.7E-07					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	1.5E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.9E-07	1.0E-05	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.9E-07					--
			Dermal	Aroclor-1260	7	mg/kg	6.5E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.3E-07	4.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.3E-07					--
		Exposure Point Total									4.2E-07					--
	Exposure Medium Total										4.2E-07					--
	Air	Building 219	Inhalation	Aroclor-1260	5.0E-06	mg/m^3	8.5E-09	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	4.8E-09	5.9E-07	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								4.8E-09					--
		Exposure Point Total									4.8E-09					--
	Exposure Medium Total										4.8E-09					--
Medium Total											4.3E-07					--
										Total of Receptor Risks Across All Media	1.1E-06			Total of Receptor Hazards Across All Media		--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	3.4E-06	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	6.7E-06	9.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								6.7E-06					--
			Dermal	Aroclor-1260	11	mg/kg	2.0E-06	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	3.9E-06	5.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								3.9E-06					--
		Exposure Point Total									1.1E-05					--
	Exposure Medium Total										1.1E-05					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	8.2E-11	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	4.7E-11	2.3E-10	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								4.7E-11					--
		Exposure Point Total									4.7E-11					--
	Exposure Medium Total										4.7E-11					--
Medium Total											1.1E-05					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	2.1E-06	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	4.3E-06	6.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								4.3E-06					--
			Dermal	Aroclor-1260	7	mg/kg	1.2E-06	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.5E-06	3.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.5E-06					--
		Exposure Point Total									6.8E-06					--
	Exposure Medium Total										6.8E-06					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	5.2E-11	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	3.0E-11	1.5E-10	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								3.0E-11					--
		Exposure Point Total									3.0E-11					--
	Exposure Medium Total										3.0E-11					--
Medium Total											6.8E-06					--
										Total of Receptor Risks Across All Media	1.7E-05				Total of Receptor Hazards Across All Media	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	8.3E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.7E-06	9.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.7E-06					--
			Dermal	Aroclor-1260	11	mg/kg	6.2E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.2E-06	7.3E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.2E-06					--
		Exposure Point Total									2.9E-06					--
	Exposure Medium Total										2.9E-06					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	1.9E-12	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	1.1E-12	2.2E-11	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.1E-12					--
		Exposure Point Total									1.1E-12					--
	Exposure Medium Total										1.1E-12					--
Medium Total											2.9E-06					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	5.3E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.1E-06	6.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.1E-06					--
			Dermal	Aroclor-1260	7	mg/kg	4.0E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	7.9E-07	4.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								7.9E-07					--
		Exposure Point Total									1.8E-06					--
	Exposure Medium Total										1.8E-06					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	1.2E-12	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	6.8E-13	1.4E-11	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								6.8E-13					--
		Exposure Point Total									6.8E-13					--
	Exposure Medium Total										6.8E-13					--
Medium Total											1.8E-06					--
										Total of Receptor Risks Across All Media	4.7E-06			Total of Receptor Hazards Across All Media		--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.6.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	2.6E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	5.2E-07	9.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								5.2E-07					--
			Dermal	Aroclor-1260	11	mg/kg	3.1E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	6.1E-07	1.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								6.1E-07					--
		Exposure Point Total									1.1E-06					--
	Exposure Medium Total										1.1E-06					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	6.3E-12	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	3.6E-12	2.2E-11	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								3.6E-12					--
		Exposure Point Total									3.6E-12					--
	Exposure Medium Total										3.6E-12					--
Medium Total											1.1E-06					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	1.6E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	3.3E-07	5.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								3.3E-07					--
			Dermal	Aroclor-1260	7	mg/kg	1.9E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	3.9E-07	6.8E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								3.9E-07					--
		Exposure Point Total									7.2E-07					--
	Exposure Medium Total										7.2E-07					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	4.0E-12	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	2.3E-12	1.4E-11	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								2.3E-12					--
		Exposure Point Total									2.3E-12					--
	Exposure Medium Total										2.3E-12					--
Medium Total											7.2E-07					--
										Total of Receptor Risks Across All Media	1.8E-06				Total of Receptor Hazards Across All Media	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	1.2E-05	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.4E-05	1.4E-04	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.4E-05					--
			Dermal	Aroclor-1260	11	mg/kg	4.5E-06	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	9.1E-06	5.3E-05	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								9.1E-06					--
		Exposure Point Total									3.3E-05					--
	Exposure Medium Total										3.3E-05					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	8.2E-11	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	4.7E-11	9.6E-10	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								4.7E-11					--
		Exposure Point Total									4.7E-11					--
	Exposure Medium Total										4.7E-11					--
Medium Total											3.3E-05					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	7.7E-06	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.5E-05	8.9E-05	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.5E-05					--
			Dermal	Aroclor-1260	7	mg/kg	2.9E-06	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	5.8E-06	3.4E-05	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								5.8E-06					--
		Exposure Point Total									2.1E-05					--
	Exposure Medium Total										2.1E-05					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	5.2E-11	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	3.0E-11	6.1E-10	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								3.0E-11					--
		Exposure Point Total									3.0E-11					--
	Exposure Medium Total										3.0E-11					--
Medium Total											2.1E-05					--
										Total of Receptor Risks Across All Media	5.4E-05			Total of Receptor Hazards Across All Media		--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.8.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	3.8E-06	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	7.5E-06	1.3E-05	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								7.5E-06					--
			Dermal	Aroclor-1260	11	mg/kg	2.2E-06	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	4.5E-06	7.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								4.5E-06					--
		Exposure Point Total									1.2E-05					--
	Exposure Medium Total										1.2E-05					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	2.7E-10	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	1.6E-10	9.6E-10	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.6E-10					--
		Exposure Point Total									1.6E-10					--
	Exposure Medium Total										1.6E-10					--
Medium Total											1.2E-05					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	2.4E-06	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	4.8E-06	8.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								4.8E-06					--
			Dermal	Aroclor-1260	7	mg/kg	1.4E-06	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.8E-06	5.0E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.8E-06					--
		Exposure Point Total									7.6E-06					--
	Exposure Medium Total										7.6E-06					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	1.7E-10	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	1.0E-10	6.1E-10	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.0E-10					--
		Exposure Point Total									1.0E-10					--
	Exposure Medium Total										1.0E-10					--
Medium Total											7.6E-06					--
										Total of Receptor Risks Across All Media	2.0E-05			Total of Receptor Hazards Across All Media		--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.1.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	6.2E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.2E-07	7.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.2E-07					--
			Dermal	Aroclor-1260	11	mg/kg	2.8E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	5.6E-08	3.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								5.6E-08					--
		Exposure Point Total									1.8E-07					--
	Exposure Medium Total										1.8E-07					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	9.4E-13	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	5.4E-13	1.1E-11	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								5.4E-13					--
		Exposure Point Total									5.4E-13					--
	Exposure Medium Total										5.4E-13					--
Medium Total											1.8E-07					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	3.9E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	7.9E-08	4.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								7.9E-08					--
			Dermal	Aroclor-1260	7	mg/kg	1.8E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	3.6E-08	2.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								3.6E-08					--
		Exposure Point Total									1.1E-07					--
	Exposure Medium Total										1.1E-07					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	6.0E-13	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	3.4E-13	7.0E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								3.4E-13					--
		Exposure Point Total									3.4E-13					--
	Exposure Medium Total										3.4E-13					--
Medium Total											1.1E-07					--
										Total of Receptor Risks Across All Media	2.9E-07			Total of Receptor Hazards Across All Media		--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.2.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	1.9E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	3.8E-08	1.9E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								3.8E-08					--
			Dermal	Aroclor-1260	11	mg/kg	3.2E-09	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	6.4E-09	3.2E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								6.4E-09					--
		Exposure Point Total									4.4E-08					--
	Exposure Medium Total										4.4E-08					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	4.6E-13	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	2.6E-13	4.6E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								2.6E-13					--
		Exposure Point Total									2.6E-13					--
	Exposure Medium Total										2.6E-13					--
Medium Total											4.4E-08					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	1.2E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.4E-08	1.2E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.4E-08					--
			Dermal	Aroclor-1260	7	mg/kg	2.0E-09	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	4.0E-09	2.0E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								4.0E-09					--
		Exposure Point Total									2.8E-08					--
	Exposure Medium Total										2.8E-08					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	2.9E-13	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	1.7E-13	2.9E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.7E-13					--
		Exposure Point Total									1.7E-13					--
	Exposure Medium Total										1.7E-13					--
Medium Total											2.8E-08					--
										Total of Receptor Risks Across All Media	7.2E-08				Total of Receptor Hazards Across All Media	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.3.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	9.2E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.8E-07	6.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.8E-07					--
			Dermal	Aroclor-1260	11	mg/kg	1.4E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.7E-08	9.5E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.7E-08					--
		Exposure Point Total									2.1E-07					--
	Exposure Medium Total										2.1E-07					--
	Air	Building 219	Inhalation	Aroclor-1260	7.9E-06	mg/m^3	5.3E-09	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	3.0E-09	3.7E-07	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								3.0E-09					--
		Exposure Point Total									3.0E-09					--
	Exposure Medium Total										3.0E-09					--
Medium Total											2.1E-07					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	5.9E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.2E-07	4.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.2E-07					--
			Dermal	Aroclor-1260	7	mg/kg	8.7E-09	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.7E-08	6.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.7E-08					--
		Exposure Point Total									1.3E-07					--
	Exposure Medium Total										1.3E-07					--
	Air	Building 219	Inhalation	Aroclor-1260	5.0E-06	mg/m^3	3.4E-09	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	1.9E-09	2.4E-07	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.9E-09					--
		Exposure Point Total									1.9E-09					--
	Exposure Medium Total										1.9E-09					--
Medium Total											1.4E-07					--
										Total of Receptor Risks Across All Media	3.5E-07				Total of Receptor Hazards Across All Media	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.4.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	5.3E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.1E-06	4.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.1E-06					--
			Dermal	Aroclor-1260	11	mg/kg	1.0E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.1E-07	8.0E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.1E-07					--
		Exposure Point Total									1.3E-06					--
	Exposure Medium Total										1.3E-06					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	2.6E-11	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	1.5E-11	2.0E-10	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.5E-11					--
		Exposure Point Total									1.5E-11					--
	Exposure Medium Total										1.5E-11					--
Medium Total											1.3E-06					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	3.4E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	6.8E-07	2.6E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								6.8E-07					--
			Dermal	Aroclor-1260	7	mg/kg	6.6E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.3E-07	5.1E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.3E-07					--
		Exposure Point Total									8.1E-07					--
	Exposure Medium Total										8.1E-07					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	1.6E-11	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	9.3E-12	1.3E-10	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								9.3E-12					--
		Exposure Point Total									9.3E-12					--
	Exposure Medium Total										9.3E-12					--
Medium Total											8.1E-07					--
										Total of Receptor Risks Across All Media	2.1E-06			Total of Receptor Hazards Across All Media		--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.5.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	6.9E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.4E-07	2.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.4E-07					--
			Dermal	Aroclor-1260	11	mg/kg	2.1E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	4.2E-08	7.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								4.2E-08					--
		Exposure Point Total									1.8E-07					--
	Exposure Medium Total										1.8E-07					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	3.1E-13	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	1.8E-13	1.1E-11	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.8E-13					--
		Exposure Point Total									1.8E-13					--
	Exposure Medium Total										1.8E-13					--
Medium Total											1.8E-07					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	4.4E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	8.8E-08	1.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								8.8E-08					--
			Dermal	Aroclor-1260	7	mg/kg	1.3E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.6E-08	4.6E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.6E-08					--
		Exposure Point Total									1.1E-07					--
	Exposure Medium Total										1.1E-07					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	2.0E-13	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	1.1E-13	7.0E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.1E-13					--
		Exposure Point Total									1.1E-13					--
	Exposure Medium Total										1.1E-13					--
Medium Total											1.1E-07					--
Total of Receptor Risks Across All Media											2.9E-07	Total of Receptor Hazards Across All Media				--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.6.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	2.3E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	4.5E-08	2.3E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								4.5E-08					--
			Dermal	Aroclor-1260	11	mg/kg	7.6E-09	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.5E-08	7.6E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.5E-08					--
		Exposure Point Total									6.0E-08					--
	Exposure Medium Total										6.0E-08					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	1.1E-12	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	6.3E-13	1.1E-11	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								6.3E-13					--
		Exposure Point Total									6.3E-13					--
	Exposure Medium Total										6.3E-13					--
Medium Total											6.0E-08					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	1.4E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.9E-08	1.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.9E-08					--
			Dermal	Aroclor-1260	7	mg/kg	4.9E-09	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	9.7E-09	4.9E-08	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								9.7E-09					--
		Exposure Point Total									3.8E-08					--
	Exposure Medium Total										3.8E-08					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	7.0E-13	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	4.0E-13	7.0E-12	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								4.0E-13					--
		Exposure Point Total									4.0E-13					--
	Exposure Medium Total										4.0E-13					--
Medium Total											3.8E-08					--
										Total of Receptor Risks Across All Media	9.9E-08			Total of Receptor Hazards Across All Media		--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.7.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	1.3E-06	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.7E-06	4.7E-05	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.7E-06					--
			Dermal	Aroclor-1260	11	mg/kg	2.0E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	4.0E-07	7.1E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								4.0E-07					--
		Exposure Point Total									3.1E-06					--
	Exposure Medium Total										3.1E-06					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	1.8E-11	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	1.0E-11	6.4E-10	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								1.0E-11					--
		Exposure Point Total									1.0E-11					--
	Exposure Medium Total										1.0E-11					--
Medium Total											3.1E-06					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	8.5E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.7E-06	3.0E-05	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.7E-06					--
			Dermal	Aroclor-1260	7	mg/kg	1.3E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	2.6E-07	4.5E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								2.6E-07					--
		Exposure Point Total									2.0E-06					--
	Exposure Medium Total										2.0E-06					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	1.2E-11	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	6.7E-12	4.1E-10	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								6.7E-12					--
		Exposure Point Total									6.7E-12					--
	Exposure Medium Total										6.7E-12					--
Medium Total											2.0E-06					--
										Total of Receptor Risks Across All Media	5.1E-06				Total of Receptor Hazards Across All Media	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.8.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Building 219	Ingestion	Aroclor-1260	11	mg/kg	4.4E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	8.8E-07	4.4E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								8.8E-07					--
			Dermal	Aroclor-1260	11	mg/kg	7.4E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	1.5E-07	7.4E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								1.5E-07					--
		Exposure Point Total									1.0E-06					--
	Exposure Medium Total										1.0E-06					--
	Air	Building 219	Inhalation	Aroclor-1260	1.0E-09	mg/m^3	6.4E-11	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	3.7E-11	6.4E-10	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								3.7E-11					--
		Exposure Point Total									3.7E-11					--
	Exposure Medium Total										3.7E-11					--
Medium Total											1.0E-06					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Ingestion	Aroclor-1260	7	mg/kg	2.8E-07	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	5.6E-07	2.8E-06	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								5.6E-07					--
			Dermal	Aroclor-1260	7	mg/kg	4.7E-08	(mg/kg/day)	2.0E+00	$(mg/kg/day)^{-1}$	9.5E-08	4.7E-07	(mg/kg/day)	NA	(mg/kg/day)	--
			Exp. Route Total								9.5E-08					--
		Exposure Point Total									6.6E-07					--
	Exposure Medium Total										6.6E-07					--
	Air	Building 219	Inhalation	Aroclor-1260	6.4E-10	mg/m^3	4.1E-11	(mg/m^3)	5.7E-04	$(ug/m^3)^{-1}$	2.3E-11	4.1E-10	(mg/m^3)	NA	(mg/m^3)	--
			Exp. Route Total								2.3E-11					--
		Exposure Point Total									2.3E-11					--
	Exposure Medium Total										2.3E-11					--
Medium Total											6.6E-07					--
										Total of Receptor Risks Across All Media	1.7E-06				Total of Receptor Hazards Across All Media	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

RAGS Part D Table 9

Summary of Receptor Risks and Hazards for COPCs

LIST OF TABLES
RAGS PART D TABLE 9
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

Table No.

REASONABLE MAXIMUM EXPOSURES

9.1.RME Adolescent Trespassers
9.2.RME Adult Bow Hunters
9.3.RME Construction Workers
9.4.RME Industrial Workers
9.5.RME Child Recreational Users
9.6.RME Adult Recreational Users
9.7.RME Lifelong Recreational Users
9.8.RME Child Residents
9.9.RME Adult Residents
9.10.RME Lifelong Residents

CENTRAL TENDENCY EXPOSURES

9.1.CTE Adolescent Trespassers
9.2.CTE Adult Bow Hunters
9.3.CTE Construction Workers
9.4.CTE Industrial Workers
9.5.CTE Child Recreational Users
9.6.CTE Adult Recreational Users
9.7.CTE Lifelong Recreational Users
9.8.CTE Child Residents
9.9.CTE Adult Residents
9.10.RME Lifelong Residents

Tank Farm 2 (Entire Site)

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	5E-08	–	1E-07	–	2E-07	NA	–	–	–	–
			Benzo(a)pyrene	4E-07	–	9E-07	–	1E-06	NA	–	–	–	–
			Benzo(b)fluoranthene	3E-08	–	6E-08	–	9E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	2E-09	–	4E-09	–	6E-09	NA	–	–	–	–
			Dibenzo(a,h)anthracene	7E-08	–	1E-07	–	2E-07	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	3E-08	–	7E-08	–	1E-07	NA	–	–	–	–
			Aroclor-1260	1E-06	–	2E-06	–	3E-06	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	4E-08	–	2E-08	–	6E-08	Reproductive	0.002	–	0.001	0.004
			Antimony	--	–	--	–	--	Blood	0.0005	–	–	0.0005
			Chromium VI	1E-06	–	--	–	1E-06	None Reported	0.002	–	–	0.002
			Cobalt	--	–	--	–	--	Thyroid	0.010	–	–	0.010
			Iron	--	–	--	–	--	GS	0.010	–	–	0.010
			Manganese	--	–	--	–	--	CNS	0.003	–	–	0.003
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	3E-06	–	3E-06	–	6E-06		0.03	–	0.001	0.03
		Exposure Point Total						6E-06					0.03
	Exposure Medium Total							6E-06					0.03
	Air	Tank Farm 2	Benzo(a)anthracene	–	6E-14	–	–	6E-14	NA	–	–	–	–
			Benzo(a)pyrene	–	5E-13	–	–	5E-13	NA	–	–	–	–
			Benzo(b)fluoranthene	–	3E-14	–	–	3E-14	NA	–	–	–	–
			Benzo(k)fluoranthene	–	2E-14	–	–	2E-14	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	9E-14	–	–	9E-14	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	4E-14	–	–	4E-14	NA	–	–	–	–
			Aroclor-1260	–	2E-12	–	–	2E-12	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	8E-14	–	–	8E-14	Reproductive	–	3E-10	–	3E-10
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	2E-09	–	–	2E-09	Respiratory	–	0.0000004	–	0.0000004
			Cobalt	–	3E-11	–	–	3E-11	Respiratory	–	0.000004	–	0.000004
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.00001	–	0.00001
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	2E-09	–	–	2E-09		--	0.00002	--	0.00002
		Exposure Point Total						2E-09					0.00002
	Exposure Medium Total							2E-09					0.00002
Medium Total								6E-06					0.03

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	5E-08	–	1E-07	–	1E-07	NA	–	–	–	–
			Benzo(a)pyrene	3E-07	–	6E-07	–	9E-07	NA	–	–	–	–
			Benzo(b)fluoranthene	6E-08	–	1E-07	–	2E-07	NA	–	–	–	–
			Benzo(k)fluoranthene	1E-09	–	3E-09	–	5E-09	NA	–	–	–	–
			Dibenzo(a,h)anthracene	5E-08	–	1E-07	–	2E-07	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	3E-08	–	6E-08	–	9E-08	NA	–	–	–	–
			Aroclor-1260	6E-07	–	1E-06	–	2E-06	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	3E-08	–	1E-08	–	5E-08	Reproductive	0.002	–	0.0009	0.003
			Aluminum	--	–	--	–	--	CNS	0.004	–	–	0.004
			Antimony	--	–	--	–	--	Blood	0.0002	–	–	0.0002
			Arsenic	3E-07	–	2E-07	–	5E-07	Skin, CVS	0.004	–	0.003	0.007
			Chromium VI	1E-06	–	--	–	1E-06	None Reported	0.002	–	–	0.002
			Cobalt	--	–	--	–	--	Thyroid	0.01	–	–	0.01
			Iron	--	–	--	–	--	GS	0.010	–	–	0.010
			Manganese	--	–	--	–	--	CNS	0.003	–	–	0.003
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	3E-06	–	3E-06	–	5E-06		0.03	–	0.004	0.04
		Exposure Point Total						5E-06					0.04
	Exposure Medium Total							5E-06					0.04
	Air	Tank Farm 2	Benzo(a)anthracene	–	5E-14	–	–	5E-14	NA	–	–	–	–
			Benzo(a)pyrene	–	3E-13	–	–	3E-13	NA	–	–	–	–
			Benzo(b)fluoranthene	–	7E-14	–	–	7E-14	NA	–	–	–	–
			Benzo(k)fluoranthene	–	2E-14	–	–	2E-14	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	6E-14	–	–	6E-14	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	3E-14	–	–	3E-14	NA	–	–	–	–
			Aroclor-1260	–	1E-12	–	–	1E-12	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	7E-14	–	–	7E-14	Reproductive	–	3E-10	–	3E-10
			Aluminum	–	--	–	–	--	CNS	–	0.000005	–	0.000005
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	1E-11	–	–	1E-11	Skin, CVS	–	0.0000009	–	0.0000009
			Chromium VI	–	2E-09	–	–	2E-09	Respiratory	–	0.0000004	–	0.0000004
			Cobalt	–	4E-11	–	–	4E-11	Respiratory	–	0.000004	–	0.000004
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.00001	–	0.00001
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	2E-09	–	–	2E-09		--	0.00002	--	0.00002
		Exposure Point Total						2E-09					0.00002
	Exposure Medium Total							2E-09					0.00002
Medium Total								5E-06					0.04

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.0008
Total CNS HI	0.01
Total CVS HI	0.007
Total GS HI	0.02
Total Respiratory HI	0.000008
Total Skin HI	0.007
Total Thyroid HI	0.02
Total Reproductive HI	0.007

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	1E-08	–	8E-09	–	2E-08	NA	–	–	–	–
			Benzo(a)pyrene	1E-07	–	6E-08	–	2E-07	NA	–	–	–	–
			Benzo(b)fluoranthene	8E-09	–	4E-09	–	1E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	6E-10	–	3E-10	–	9E-10	NA	–	–	–	–
			Dibenzo(a,h)anthracene	2E-08	–	1E-08	–	3E-08	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	9E-09	–	5E-09	–	1E-08	NA	–	–	–	–
			Aroclor-1260	4E-07	–	3E-07	–	7E-07	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	2E-08	–	2E-09	–	2E-08	Reproductive	0.0006	–	0.00008	0.0007
			Antimony	--	–	--	–	--	Blood	0.0001	–	–	0.0001
			Chromium VI	4E-07	–	--	–	4E-07	None Reported	0.0004	–	–	0.0004
			Cobalt	--	–	--	–	--	Thyroid	0.003	–	–	0.003
			Iron	--	–	--	–	--	GS	0.002	–	–	0.002
			Manganese	--	–	--	–	--	CNS	0.0009	–	–	0.0009
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	1E-06	–	3E-07	–	1E-06		0.007	–	0.00008	0.007
		Exposure Point Total						1E-06					0.007
	Exposure Medium Total							1E-06					0.007
	Air	Tank Farm 2	Benzo(a)anthracene	–	5E-14	–	–	5E-14	NA	–	–	–	–
			Benzo(a)pyrene	–	4E-13	–	–	4E-13	NA	–	–	–	–
			Benzo(b)fluoranthene	–	3E-14	–	–	3E-14	NA	–	–	–	–
			Benzo(k)fluoranthene	–	2E-14	–	–	2E-14	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	8E-14	–	–	8E-14	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	3E-14	–	–	3E-14	NA	–	–	–	–
			Aroclor-1260	–	3E-12	–	–	3E-12	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	1E-13	–	–	1E-13	Reproductive	–	3E-10	–	3E-10
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	1E-09	–	–	1E-09	Respiratory	–	0.0000003	–	0.0000003
			Cobalt	–	5E-11	–	–	5E-11	Respiratory	–	0.000003	–	0.000003
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.00001	–	0.00001
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	2E-09	–	–	2E-09		--	0.00001	--	0.00001
		Exposure Point Total						2E-09					0.00001
	Exposure Medium Total							2E-09					0.00001
Medium Total								1E-06					0.007

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	1E-08	–	8E-09	–	2E-08	NA	–	–	–	–
			Benzo(a)pyrene	9E-08	–	5E-08	–	1E-07	NA	–	–	–	–
			Benzo(b)fluoranthene	2E-08	–	9E-09	–	3E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	4E-10	–	2E-10	–	7E-10	NA	–	–	–	–
			Dibenzo(a,h)anthracene	1E-08	–	8E-09	–	2E-08	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	8E-09	–	5E-09	–	1E-08	NA	–	–	–	–
			Aroclor-1260	3E-07	–	2E-07	–	4E-07	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	1E-08	–	2E-09	–	1E-08	Reproductive	0.0005	–	0.00006	0.0006
			Aluminum	--	–	--	–	--	CNS	0.0009	–	–	0.0009
			Antimony	--	–	--	–	--	Blood	0.00006	–	–	0.00006
			Arsenic	1E-07	–	3E-08	–	2E-07	Skin, CVS	0.0010	–	0.0002	0.001
			Chromium VI	4E-07	–	--	–	4E-07	None Reported	0.0004	–	–	0.0004
			Cobalt	--	–	--	–	--	Thyroid	0.003	–	–	0.003
			Iron	--	–	--	–	--	GS	0.003	–	–	0.003
			Manganese	--	–	--	–	--	CNS	0.0009	–	–	0.0009
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	9E-07	–	3E-07	–	1E-06		0.009	–	0.0003	0.009
		Exposure Point Total						1E-06					0.009
	Exposure Medium Total							1E-06					0.009
	Air	Tank Farm 2	Benzo(a)anthracene	–	5E-14	–	–	5E-14	NA	–	–	–	–
			Benzo(a)pyrene	–	3E-13	–	–	3E-13	NA	–	–	–	–
			Benzo(b)fluoranthene	–	6E-14	–	–	6E-14	NA	–	–	–	–
			Benzo(k)fluoranthene	–	2E-14	–	–	2E-14	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	6E-14	–	–	6E-14	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	3E-14	–	–	3E-14	NA	–	–	–	–
			Aroclor-1260	–	2E-12	–	–	2E-12	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	9E-14	–	–	9E-14	Reproductive	–	2E-10	–	2E-10
			Aluminum	–	--	–	–	--	CNS	–	0.000005	–	0.000005
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	1E-11	–	–	1E-11	Skin, CVS	–	0.0000008	–	0.0000008
			Chromium VI	–	1E-09	–	–	1E-09	Respiratory	–	0.0000003	–	0.0000003
			Cobalt	–	5E-11	–	–	5E-11	Respiratory	–	0.000003	–	0.000003
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.00001	–	0.00001
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	2E-09	–	–	2E-09		--	0.00002	--	0.00002
		Exposure Point Total						2E-09					0.00002
	Exposure Medium Total							2E-09					0.00002
Medium Total								1E-06					0.009

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.0002
Total CNS HI	0.003
Total CVS HI	0.001
Total GS HI	0.005
Total Respiratory HI	0.000007
Total Skin HI	0.001
Total Thyroid HI	0.005
Total Reproductive HI	0.001

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	8E-09	–	3E-09	–	1E-08	NA	–	–	–	–
			Benzo(a)pyrene	6E-08	–	3E-08	–	9E-08	NA	–	–	–	–
			Benzo(b)fluoranthene	4E-09	–	2E-09	–	6E-09	NA	–	–	–	–
			Benzo(k)fluoranthene	3E-10	–	1E-10	–	4E-10	NA	–	–	–	–
			Dibenzo(a,h)anthracene	1E-08	–	4E-09	–	2E-08	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	5E-09	–	2E-09	–	7E-09	NA	–	–	–	–
			Aroclor-1260	5E-07	–	2E-07	–	7E-07	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	2E-08	–	2E-09	–	2E-08	Immune	0.0005	–	0.00005	0.0005
			Antimony	--	–	--	–	--	Blood	0.003	–	–	0.003
			Chromium VI	2E-07	–	--	–	2E-07	None Reported	0.005	–	–	0.005
			Cobalt	--	–	--	–	--	Thyroid	0.005	–	–	0.005
			Iron	--	–	--	–	--	GS	0.05	–	–	0.05
			Manganese	--	–	--	–	--	CNS	0.02	–	–	0.02
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	8E-07	–	2E-07	–	1E-06		0.09	–	0.00005	0.09
		Exposure Point Total						1E-06					0.09
	Exposure Medium Total							1E-06					0.09
	Air	Tank Farm 2	Benzo(a)anthracene	–	7E-11	–	–	7E-11	NA	–	–	–	–
			Benzo(a)pyrene	–	5E-10	–	–	5E-10	NA	–	–	–	–
			Benzo(b)fluoranthene	–	4E-11	–	–	4E-11	NA	–	–	–	–
			Benzo(k)fluoranthene	–	3E-11	–	–	3E-11	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	1E-10	–	–	1E-10	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	4E-11	–	–	4E-11	NA	–	–	–	–
			Aroclor-1260	–	8E-09	–	–	8E-09	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	3E-10	–	–	3E-10	Reproductive	–	0.00001	–	0.00001
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	2E-06	–	–	2E-06	Respiratory	–	0.005	–	0.005
			Cobalt	–	1E-07	–	–	1E-07	Respiratory	–	0.05	–	0.05
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.5	–	0.5
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	2E-06	–	–	2E-06		--	0.6	--	0.6
		Exposure Point Total						2E-06					0.6
	Exposure Medium Total							2E-06					0.6
Medium Total								3E-06					0.7

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	7E-09	–	3E-09	–	1E-08	NA	–	–	–	–
			Benzo(a)pyrene	5E-08	–	2E-08	–	6E-08	NA	–	–	–	–
			Benzo(b)fluoranthene	9E-09	–	4E-09	–	1E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	2E-10	–	9E-11	–	3E-10	NA	–	–	–	–
			Dibenzo(a,h)anthracene	8E-09	–	3E-09	–	1E-08	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	4E-09	–	2E-09	–	6E-09	NA	–	–	–	–
			Aroclor-1260	3E-07	–	1E-07	–	4E-07	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	1E-08	–	1E-09	–	2E-08	Immune	0.0004	–	0.00004	0.0004
			Aluminum	--	–	--	–	--	CNS	0.02	–	–	0.02
			Antimony	--	–	--	–	--	Blood	0.001	–	–	0.001
			Arsenic	1E-07	–	2E-08	–	2E-07	Skin, CVS	0.02	–	0.003	0.02
			Chromium VI	2E-07	–	--	–	2E-07	None Reported	0.005	–	–	0.005
			Cobalt	--	–	--	–	--	Thyroid	0.006	–	–	0.006
			Iron	--	–	--	–	--	GS	0.06	–	–	0.06
			Manganese	--	–	--	–	--	CNS	0.02	–	–	0.02
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	7E-07	–	2E-07	–	9E-07		0.1	–	0.003	0.1
		Exposure Point Total						9E-07					0.1
	Exposure Medium Total							9E-07					0.1
	Air	Tank Farm 2	Benzo(a)anthracene	–	6E-11	–	–	6E-11	NA	–	–	–	–
			Benzo(a)pyrene	–	4E-10	–	–	4E-10	NA	–	–	–	–
			Benzo(b)fluoranthene	–	8E-11	–	–	8E-11	NA	–	–	–	–
			Benzo(k)fluoranthene	–	2E-11	–	–	2E-11	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	8E-11	–	–	8E-11	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	4E-11	–	–	4E-11	NA	–	–	–	–
			Aroclor-1260	–	5E-09	–	–	5E-09	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	2E-10	–	–	2E-10	Reproductive	–	0.00001	–	0.00001
			Aluminum	–	--	–	–	--	CNS	–	0.2	–	0.2
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	4E-08	–	–	4E-08	Skin, CVS	–	0.04	–	0.04
			Chromium VI	–	2E-06	–	–	2E-06	Respiratory	–	0.005	–	0.005
			Cobalt	–	1E-07	–	–	1E-07	Respiratory	–	0.05	–	0.05
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.5	–	0.5
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	2E-06	–	–	2E-06		--	0.8	--	0.8
		Exposure Point Total						2E-06					0.8
	Exposure Medium Total							2E-06					0.8
Medium Total								3E-06					1.0

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.004
Total CNS HI	1
Total CVS HI	0.06
Total GS HI	0.1
Total Immune HI	0.0009
Total Respiratory HI	0.1
Total Skin HI	0.06
Total Thyroid HI	0.01
Total Reproductive HI	0.00002

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	1E-07	–	6E-08	–	2E-07	NA	–	–	–	–
			Benzo(a)pyrene	9E-07	–	5E-07	–	1E-06	NA	–	–	–	–
			Benzo(b)fluoranthene	6E-08	–	3E-08	–	9E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	4E-08	–	2E-08	–	7E-08	NA	–	–	–	–
			Dibenzo(a,h)anthracene	2E-07	–	8E-08	–	2E-07	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	7E-08	–	4E-08	–	1E-07	NA	–	–	–	–
			Aroclor-1260	7E-06	–	4E-06	–	1E-05	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	3E-07	–	3E-08	–	3E-07	Reproductive	0.008	–	0.0010	0.009
			Antimony	--	–	--	–	--	Blood	0.002	–	–	0.002
			Chromium VI	3E-06	–	--	–	3E-06	None Reported	0.005	–	–	0.005
			Cobalt	--	–	--	–	--	Thyroid	0.03	–	–	0.03
			Iron	--	–	--	–	--	GS	0.03	–	–	0.03
			Manganese	--	–	--	–	--	CNS	0.01	–	–	0.01
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	1E-05	–	5E-06	–	2E-05		0.09	–	0.0010	0.09
		Exposure Point Total						2E-05					0.09
	Exposure Medium Total							2E-05					0.09
	Air	Tank Farm 2	Benzo(a)anthracene	–	4E-13	–	–	4E-13	NA	–	–	–	–
			Benzo(a)pyrene	–	3E-12	–	–	3E-12	NA	–	–	–	–
			Benzo(b)fluoranthene	–	2E-13	–	–	2E-13	NA	–	–	–	–
			Benzo(k)fluoranthene	–	2E-13	–	–	2E-13	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	6E-13	–	–	6E-13	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	3E-13	–	–	3E-13	NA	–	–	–	–
			Aroclor-1260	–	5E-11	–	–	5E-11	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	2E-12	–	–	2E-12	Reproductive	–	3E-9	–	3E-9
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	1E-08	–	–	1E-08	Respiratory	–	0.000004	–	0.000004
			Cobalt	–	7E-10	–	–	7E-10	Respiratory	–	0.00004	–	0.00004
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.0001	–	0.0001
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	1E-08	–	–	1E-08		--	0.0002	--	0.0002
		Exposure Point Total						1E-08					0.0002
	Exposure Medium Total							1E-08					0.0002
Medium Total								2E-05					0.09

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	1E-07	–	6E-08	–	2E-07	NA	–	–	–	–
			Benzo(a)pyrene	7E-07	–	4E-07	–	1E-06	NA	–	–	–	–
			Benzo(b)fluoranthene	1E-07	–	7E-08	–	2E-07	NA	–	–	–	–
			Benzo(k)fluoranthene	3E-08	–	2E-08	–	5E-08	NA	–	–	–	–
			Dibenzo(a,h)anthracene	1E-07	–	6E-08	–	2E-07	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	6E-08	–	4E-08	–	1E-07	NA	–	–	–	–
			Aroclor-1260	4E-06	–	2E-06	–	7E-06	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	2E-07	–	3E-08	–	2E-07	Reproductive	0.006	–	0.0008	0.007
			Aluminum	--	–	--	–	--	CNS	0.01	–	–	0.01
			Antimony	--	–	--	–	--	Blood	0.0007	–	–	0.0007
			Arsenic	2E-06	–	4E-07	–	2E-06	Skin, CVS	0.01	–	0.003	0.01
			Chromium VI	3E-06	–	--	–	3E-06	None Reported	0.005	–	–	0.005
			Cobalt	--	–	--	–	--	Thyroid	0.03	–	–	0.03
			Iron	--	–	--	–	--	GS	0.03	–	–	0.03
			Manganese	--	–	--	–	--	CNS	0.01	–	–	0.01
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	1E-05	–	4E-06	–	1E-05		0.1	–	0.003	0.1
		Exposure Point Total						1E-05					0.1
	Exposure Medium Total							1E-05					0.1
	Air	Tank Farm 2	Benzo(a)anthracene	–	4E-13	–	–	4E-13	NA	–	–	–	–
			Benzo(a)pyrene	–	2E-12	–	–	2E-12	NA	–	–	–	–
			Benzo(b)fluoranthene	–	5E-13	–	–	5E-13	NA	–	–	–	–
			Benzo(k)fluoranthene	–	1E-13	–	–	1E-13	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	5E-13	–	–	5E-13	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	2E-13	–	–	2E-13	NA	–	–	–	–
			Aroclor-1260	–	3E-11	–	–	3E-11	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	1E-12	–	–	1E-12	Reproductive	–	3E-9	–	3E-9
			Aluminum	–	--	–	–	--	CNS	–	0.00006	–	0.00006
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	2E-10	–	–	2E-10	Skin, CVS	–	0.000010	–	0.000010
			Chromium VI	–	1E-08	–	–	1E-08	Respiratory	–	0.000004	–	0.000004
			Cobalt	–	8E-10	–	–	8E-10	Respiratory	–	0.00004	–	0.00004
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.0001	–	0.0001
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	1E-08	–	–	1E-08		--	0.0002	--	0.0002
		Exposure Point Total						1E-08					0.0002
	Exposure Medium Total							1E-08					0.0002
Medium Total								1E-05					0.1

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.002
Total CNS HI	0.03
Total CVS HI	0.01
Total GS HI	0.06
Total Respiratory HI	0.00009
Total Skin HI	0.01
Total Thyroid HI	0.07
Total Reproductive HI	0.02

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	1E-07	–	1E-07	–	3E-07	NA	–	–	–	–
			Benzo(a)pyrene	1E-06	–	8E-07	–	2E-06	NA	–	–	–	–
			Benzo(b)fluoranthene	8E-08	–	6E-08	–	1E-07	NA	–	–	–	–
			Benzo(k)fluoranthene	6E-09	–	4E-09	–	1E-08	NA	–	–	–	–
			Dibenzo(a,h)anthracene	2E-07	–	1E-07	–	3E-07	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	9E-08	–	7E-08	–	2E-07	NA	–	–	–	–
			Aroclor-1260	2E-06	–	1E-06	–	3E-06	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	6E-08	–	1E-08	–	7E-08	Reproductive	0.008	–	0.001	0.009
			Antimony	--	–	--	–	--	Blood	0.002	–	–	0.002
			Chromium VI	4E-06	–	--	–	4E-06	None Reported	0.005	–	–	0.005
			Cobalt	--	–	--	–	--	Thyroid	0.03	–	–	0.03
			Iron	--	–	--	–	--	GS	0.03	–	–	0.03
			Manganese	--	–	--	–	--	CNS	0.01	–	–	0.01
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	7E-06	–	2E-06	–	1E-05		0.09	–	0.001	0.09
		Exposure Point Total						1E-05					0.09
	Exposure Medium Total							1E-05					0.09
	Air	Tank Farm 2	Benzo(a)anthracene	–	5E-14	–	–	5E-14	NA	–	–	–	–
			Benzo(a)pyrene	–	4E-13	–	–	4E-13	NA	–	–	–	–
			Benzo(b)fluoranthene	–	3E-14	–	–	3E-14	NA	–	–	–	–
			Benzo(k)fluoranthene	–	2E-14	–	–	2E-14	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	8E-14	–	–	8E-14	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	3E-14	–	–	3E-14	NA	–	–	–	–
			Aroclor-1260	–	1E-12	–	–	1E-12	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	4E-14	–	–	4E-14	Reproductive	–	3E-10	–	3E-10
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	1E-09	–	–	1E-09	Respiratory	–	0.0000004	–	0.0000004
			Cobalt	–	2E-11	–	–	2E-11	Respiratory	–	0.000004	–	0.000004
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.00001	–	0.00001
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	1E-09	–	–	1E-09		--	0.00002	--	0.00002
		Exposure Point Total						1E-09					0.00002
	Exposure Medium Total							1E-09					0.00002
Medium Total								1E-05					0.09

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	1E-07	–	1E-07	–	2E-07	NA	–	–	–	–
			Benzo(a)pyrene	9E-07	–	6E-07	–	1E-06	NA	–	–	–	–
			Benzo(b)fluoranthene	2E-07	–	1E-07	–	3E-07	NA	–	–	–	–
			Benzo(k)fluoranthene	4E-08	–	3E-08	–	7E-08	NA	–	–	–	–
			Dibenzo(a,h)anthracene	2E-07	–	1E-07	–	3E-07	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	8E-08	–	6E-08	–	1E-07	NA	–	–	–	–
			Aroclor-1260	1E-06	–	8E-07	–	2E-06	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	5E-08	–	8E-09	–	6E-08	Reproductive	0.007	–	0.001	0.008
			Aluminum	--	–	--	–	--	CNS	0.01	–	–	0.01
			Antimony	--	–	--	–	--	Blood	0.0007	–	–	0.0007
			Arsenic	5E-07	–	1E-07	–	6E-07	Skin, CVS	0.01	–	0.003	0.02
			Chromium VI	4E-06	–	--	–	4E-06	None Reported	0.005	–	–	0.005
			Cobalt	--	–	--	–	--	Thyroid	0.03	–	–	0.03
			Iron	--	–	--	–	--	GS	0.03	–	–	0.03
			Manganese	--	–	--	–	--	CNS	0.01	–	–	0.01
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	7E-06	–	2E-06	–	9E-06		0.1	–	0.004	0.1
		Exposure Point Total						9E-06					0.1
	Exposure Medium Total							9E-06					0.1
	Air	Tank Farm 2	Benzo(a)anthracene	–	5E-14	–	–	5E-14	NA	–	–	–	–
			Benzo(a)pyrene	–	3E-13	–	–	3E-13	NA	–	–	–	–
			Benzo(b)fluoranthene	–	6E-14	–	–	6E-14	NA	–	–	–	–
			Benzo(k)fluoranthene	–	2E-14	–	–	2E-14	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	6E-14	–	–	6E-14	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	3E-14	–	–	3E-14	NA	–	–	–	–
			Aroclor-1260	–	7E-13	–	–	7E-13	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	3E-14	–	–	3E-14	Reproductive	–	3E-10	–	3E-10
			Aluminum	–	--	–	–	--	CNS	–	0.000005	–	0.000005
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	5E-12	–	–	5E-12	Skin, CVS	–	0.0000009	–	0.0000009
			Chromium VI	–	1E-09	–	–	1E-09	Respiratory	–	0.0000004	–	0.0000004
			Cobalt	–	2E-11	–	–	2E-11	Respiratory	–	0.000004	–	0.000004
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.00001	–	0.00001
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	1E-09	–	–	1E-09		--	0.00002	--	0.00002
		Exposure Point Total						1E-09					0.00002
	Exposure Medium Total							1E-09					0.00002
Medium Total								9E-06					0.1

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.003
Total CNS HI	0.03
Total CVS HI	0.02
Total GS HI	0.06
Total Respiratory HI	0.000008
Total Skin HI	0.02
Total Thyroid HI	0.07
Total Reproductive HI	0.02

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	2E-08	–	2E-08	–	4E-08	NA	–	–	–	–
			Benzo(a)pyrene	1E-07	–	2E-07	–	3E-07	NA	–	–	–	–
			Benzo(b)fluoranthene	9E-09	–	1E-08	–	2E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	7E-10	–	8E-10	–	1E-09	NA	–	–	–	–
			Dibenzo(a,h)anthracene	2E-08	–	3E-08	–	5E-08	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	1E-08	–	1E-08	–	2E-08	NA	–	–	–	–
			Aroclor-1260	5E-07	–	6E-07	–	1E-06	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	2E-08	–	5E-09	–	2E-08	Reproductive	0.0008	–	0.0002	0.0010
			Antimony	--	–	--	–	--	Blood	0.0002	–	–	0.0002
			Chromium VI	4E-07	–	--	–	4E-07	None Reported	0.0005	–	–	0.0005
			Cobalt	--	–	--	–	--	Thyroid	0.003	–	–	0.003
			Iron	--	–	--	–	--	GS	0.003	–	–	0.003
			Manganese	--	–	--	–	--	CNS	0.001	–	–	0.001
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	1E-06	–	8E-07	–	2E-06		0.009	–	0.0002	0.009
		Exposure Point Total						2E-06					0.009
	Exposure Medium Total							2E-06					0.009
	Air	Tank Farm 2	Benzo(a)anthracene	–	6E-14	–	–	6E-14	NA	–	–	–	–
			Benzo(a)pyrene	–	5E-13	–	–	5E-13	NA	–	–	–	–
			Benzo(b)fluoranthene	–	3E-14	–	–	3E-14	NA	–	–	–	–
			Benzo(k)fluoranthene	–	3E-14	–	–	3E-14	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	1E-13	–	–	1E-13	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	4E-14	–	–	4E-14	NA	–	–	–	–
			Aroclor-1260	–	4E-12	–	–	4E-12	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	1E-13	–	–	1E-13	Reproductive	–	3E-10	–	3E-10
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	2E-09	–	–	2E-09	Respiratory	–	0.0000004	–	0.0000004
			Cobalt	–	6E-11	–	–	6E-11	Respiratory	–	0.000004	–	0.000004
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.00001	–	0.00001
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	2E-09	–	–	2E-09		--	0.00002	--	0.00002
		Exposure Point Total						2E-09					0.00002
	Exposure Medium Total							2E-09					0.00002
Medium Total								2E-06					0.009

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	2E-08	–	2E-08	–	3E-08	NA	–	–	–	–
			Benzo(a)pyrene	1E-07	–	1E-07	–	2E-07	NA	–	–	–	–
			Benzo(b)fluoranthene	2E-08	–	2E-08	–	4E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	5E-10	–	6E-10	–	1E-09	NA	–	–	–	–
			Dibenzo(a,h)anthracene	2E-08	–	2E-08	–	4E-08	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	1E-08	–	1E-08	–	2E-08	NA	–	–	–	–
			Aroclor-1260	3E-07	–	4E-07	–	7E-07	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	2E-08	–	4E-09	–	2E-08	Reproductive	0.0006	–	0.0002	0.0008
			Aluminum	--	–	--	–	--	CNS	0.001	–	–	0.001
			Antimony	--	–	--	–	--	Blood	0.00007	–	–	0.00007
			Arsenic	2E-07	–	6E-08	–	2E-07	Skin, CVS	0.001	–	0.0005	0.002
			Chromium VI	4E-07	–	--	–	4E-07	None Reported	0.0005	–	–	0.0005
			Cobalt	--	–	--	–	--	Thyroid	0.003	–	–	0.003
			Iron	--	–	--	–	--	GS	0.003	–	–	0.003
			Manganese	--	–	--	–	--	CNS	0.001	–	–	0.001
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	1E-06	–	6E-07	–	2E-06		0.01	–	0.0006	0.01
		Exposure Point Total						2E-06					0.01
	Exposure Medium Total							2E-06					0.01
	Air	Tank Farm 2	Benzo(a)anthracene	–	6E-14	–	–	6E-14	NA	–	–	–	–
			Benzo(a)pyrene	–	4E-13	–	–	4E-13	NA	–	–	–	–
			Benzo(b)fluoranthene	–	7E-14	–	–	7E-14	NA	–	–	–	–
			Benzo(k)fluoranthene	–	2E-14	–	–	2E-14	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	7E-14	–	–	7E-14	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	4E-14	–	–	4E-14	NA	–	–	–	–
			Aroclor-1260	–	2E-12	–	–	2E-12	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	1E-13	–	–	1E-13	Reproductive	–	3E-10	–	3E-10
			Aluminum	–	--	–	–	--	CNS	–	0.000005	–	0.000005
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	2E-11	–	–	2E-11	Skin, CVS	–	0.0000009	–	0.0000009
			Chromium VI	–	2E-09	–	–	2E-09	Respiratory	–	0.0000004	–	0.0000004
			Cobalt	–	6E-11	–	–	6E-11	Respiratory	–	0.000004	–	0.000004
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.00001	–	0.00001
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	2E-09	–	–	2E-09		--	0.00002	--	0.00002
		Exposure Point Total						2E-09					0.00002
	Exposure Medium Total							2E-09					0.00002
Medium Total								2E-06					0.01

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.0002
Total CNS HI	0.003
Total CVS HI	0.002
Total GS HI	0.006
Total Respiratory HI	0.000008
Total Skin HI	0.002
Total Thyroid HI	0.006
Total Reproductive HI	0.002

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	2E-07	–	1E-07	–	3E-07					
			Benzo(a)pyrene	1E-06	–	1E-06	–	2E-06					
			Benzo(b)fluoranthene	9E-08	–	7E-08	–	2E-07					
			Benzo(k)fluoranthene	7E-09	–	5E-09	–	1E-08					
			Dibenzo(a,h)anthracene	2E-07	–	2E-07	–	4E-07					
			Indeno(1,2,3-cd)pyrene	1E-07	–	8E-08	–	2E-07					
			Aroclor-1260	2E-06	–	2E-06	–	4E-06					
			2,3,7,8-TCDD Equivalents	8E-08	–	2E-08	–	1E-07					
			Antimony	--	–	--	–	--					
			Chromium VI	4E-06	–	--	–	4E-06					
			Cobalt	--	–	--	–	--					
			Iron	--	–	--	–	--					
			Manganese	--	–	--	–	--					
			Thallium	--	–	--	–	--					
			Chemical Total	8E-06	–	3E-06	–	1E-05					
		Exposure Point Total						1E-05					
	Exposure Medium Total							1E-05					
	Air	Tank Farm 2	Benzo(a)anthracene	–	1E-13	–	–	1E-13					
			Benzo(a)pyrene	–	9E-13	–	–	9E-13					
			Benzo(b)fluoranthene	–	6E-14	–	–	6E-14					
			Benzo(k)fluoranthene	–	5E-14	–	–	5E-14					
			Dibenzo(a,h)anthracene	–	2E-13	–	–	2E-13					
			Indeno(1,2,3-cd)pyrene	–	7E-14	–	–	7E-14					
			Aroclor-1260	–	5E-12	–	–	5E-12					
			2,3,7,8-TCDD Equivalents	–	2E-13	–	–	2E-13					
			Antimony	–	--	–	–	--					
			Chromium VI	–	3E-09	–	–	3E-09					
			Cobalt	–	7E-11	–	–	7E-11					
			Iron	–	--	–	–	--					
			Manganese	–	--	–	–	--					
			Thallium	–	--	–	–	--					
			Chemical Total	–	3E-09	–	–	3E-09					
		Exposure Point Total						3E-09					
	Exposure Medium Total							3E-09					
Medium Total								1E-05					

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	2E-07	–	1E-07	–	3E-07					
			Benzo(a)pyrene	1E-06	–	7E-07	–	2E-06					
			Benzo(b)fluoranthene	2E-07	–	1E-07	–	3E-07					
			Benzo(k)fluoranthene	5E-09	–	4E-09	–	9E-09					
			Dibenzo(a,h)anthracene	2E-07	–	1E-07	–	3E-07					
			Indeno(1,2,3-cd)pyrene	9E-08	–	7E-08	–	2E-07					
			Aroclor-1260	1E-06	–	1E-06	–	3E-06					
			2,3,7,8-TCDD Equivalents	7E-08	–	1E-08	–	8E-08					
			Aluminum	--	–	--	–	--					
			Antimony	--	–	--	–	--					
			Arsenic	6E-07	–	2E-07	–	8E-07					
			Chromium VI	4E-06	–	--	–	4E-06					
			Cobalt	--	–	--	–	--					
			Iron	--	–	--	–	--					
			Manganese	--	–	--	–	--					
			Thallium	--	–	--	–	--					
			Chemical Total	8E-06	–	3E-06	–	1E-05					
		Exposure Point Total						1E-05					
	Exposure Medium Total							1E-05					
	Air	Tank Farm 2	Benzo(a)anthracene	–	1E-13	–	–	1E-13					
			Benzo(a)pyrene	–	7E-13	–	–	7E-13					
			Benzo(b)fluoranthene	–	1E-13	–	–	1E-13					
			Benzo(k)fluoranthene	–	3E-14	–	–	3E-14					
			Dibenzo(a,h)anthracene	–	1E-13	–	–	1E-13					
			Indeno(1,2,3-cd)pyrene	–	7E-14	–	–	7E-14					
			Aroclor-1260	–	3E-12	–	–	3E-12					
			2,3,7,8-TCDD Equivalents	–	1E-13	–	–	1E-13					
			Aluminum	–	--	–	–	--					
			Antimony	–	--	–	–	--					
			Arsenic	–	2E-11	–	–	2E-11					
			Chromium VI	–	3E-09	–	–	3E-09					
			Cobalt	–	8E-11	–	–	8E-11					
			Iron	–	--	–	–	--					
			Manganese	–	--	–	–	--					
			Thallium	–	--	–	–	--					
			Chemical Total	–	3E-09	–	–	3E-09					
		Exposure Point Total						3E-09					
	Exposure Medium Total							3E-09					
Medium Total								1E-05					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	2E-06	–	8E-07	–	3E-06	NA	–	–	–	–
			Benzo(a)pyrene	2E-05	–	6E-06	–	2E-05	NA	–	–	–	–
			Benzo(b)fluoranthene	1E-06	–	4E-07	–	2E-06	NA	–	–	–	–
			Benzo(k)fluoranthene	9E-08	–	3E-08	–	1E-07	NA	–	–	–	–
			Dibenzo(a,h)anthracene	3E-06	–	1E-06	–	4E-06	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	1E-06	–	5E-07	–	2E-06	NA	–	–	–	–
			Aroclor-1260	2E-05	–	9E-06	–	3E-05	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	9E-07	–	7E-08	–	1E-06	Reproductive	0.1	–	0.010	0.1
			Antimony	--	–	--	–	--	Blood	0.03	–	–	0.03
			Chromium VI	5E-05	–	--	–	5E-05	None Reported	0.08	–	–	0.08
			Cobalt	--	–	--	–	--	Thyroid	0.5	–	–	0.5
			Iron	--	–	--	–	--	GS	0.5	–	–	0.5
			Manganese	--	–	--	–	--	CNS	0.2	–	–	0.2
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	1E-04	–	2E-05	–	1E-04		1	–	0.010	1
		Exposure Point Total						1E-04					1
	Exposure Medium Total							1E-04					1
	Air	Tank Farm 2	Benzo(a)anthracene	–	2E-12	–	–	2E-12	NA	–	–	–	–
			Benzo(a)pyrene	–	2E-11	–	–	2E-11	NA	–	–	–	–
			Benzo(b)fluoranthene	–	1E-12	–	–	1E-12	NA	–	–	–	–
			Benzo(k)fluoranthene	–	9E-13	–	–	9E-13	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	3E-12	–	–	3E-12	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	1E-12	–	–	1E-12	NA	–	–	–	–
			Aroclor-1260	–	5E-11	–	–	5E-11	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	2E-12	–	–	2E-12	Reproductive	–	1E-8	–	1E-8
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	6E-08	–	–	6E-08	Respiratory	–	0.00002	–	0.00002
			Cobalt	–	8E-10	–	–	8E-10	Respiratory	–	0.0002	–	0.0002
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.0005	–	0.0005
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	6E-08	–	–	6E-08		--	0.0007	--	0.0007
		Exposure Point Total						6E-08					0.0007
	Exposure Medium Total							6E-08					0.0007
Medium Total								1E-04					1

TABLE 9.8.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	2E-06	–	7E-07	–	3E-06	NA	–	–	–	–
			Benzo(a)pyrene	1E-05	–	4E-06	–	2E-05	NA	–	–	–	–
			Benzo(b)fluoranthene	2E-06	–	9E-07	–	3E-06	NA	–	–	–	–
			Benzo(k)fluoranthene	6E-08	–	2E-08	–	9E-08	NA	–	–	–	–
			Dibenzo(a,h)anthracene	2E-06	–	8E-07	–	3E-06	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	1E-06	–	4E-07	–	2E-06	NA	–	–	–	–
			Aroclor-1260	2E-05	–	6E-06	–	2E-05	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	7E-07	–	6E-08	–	8E-07	Reproductive	0.09	–	0.008	0.1
			Aluminum	--	–	--	–	--	CNS	0.2	–	–	0.2
			Antimony	--	–	--	–	--	Blood	0.01	–	–	0.01
			Arsenic	7E-06	–	9E-07	–	8E-06	Skin, CVS	0.2	–	0.02	0.2
			Chromium VI	5E-05	–	--	–	5E-05	None Reported	0.08	–	–	0.08
			Cobalt	--	–	--	–	--	Thyroid	0.5	–	–	0.5
			Iron	--	–	--	–	--	GS	0.5	–	–	0.5
			Manganese	--	–	--	–	--	CNS	0.2	–	–	0.2
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	1E-04	–	1E-05	–	1E-04		2	–	0.03	2
		Exposure Point Total						1E-04					2
	Exposure Medium Total							1E-04					2
	Air	Tank Farm 2	Benzo(a)anthracene	–	2E-12	–	–	2E-12	NA	–	–	–	–
			Benzo(a)pyrene	–	1E-11	–	–	1E-11	NA	–	–	–	–
			Benzo(b)fluoranthene	–	3E-12	–	–	3E-12	NA	–	–	–	–
			Benzo(k)fluoranthene	–	7E-13	–	–	7E-13	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	2E-12	–	–	2E-12	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	1E-12	–	–	1E-12	NA	–	–	–	–
			Aroclor-1260	–	3E-11	–	–	3E-11	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	1E-12	–	–	1E-12	Reproductive	–	1E-8	–	1E-8
			Aluminum	–	--	–	–	--	CNS	–	0.0002	–	0.0002
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	2E-10	–	–	2E-10	Skin, CVS	–	0.00004	–	0.00004
			Chromium VI	–	6E-08	–	–	6E-08	Respiratory	–	0.00002	–	0.00002
			Cobalt	–	8E-10	–	–	8E-10	Respiratory	–	0.0002	–	0.0002
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.0005	–	0.0005
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	6E-08	–	–	6E-08		--	0.0010	--	0.0010
		Exposure Point Total						6E-08					0.0010
	Exposure Medium Total							6E-08					0.0010
Medium Total								1E-04					2

TABLE 9.8.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.04
Total CNS HI	0.5
Total CVS HI	0.2
Total GS HI	0.9
Total Respiratory HI	0.0004
Total Skin HI	0.2
Total Thyroid HI	1.0
Total Reproductive HI	0.2

TABLE 9.9.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	3E-07	–	1E-07	–	4E-07	NA	–	–	–	–
			Benzo(a)pyrene	2E-06	–	1E-06	–	3E-06	NA	–	–	–	–
			Benzo(b)fluoranthene	1E-07	–	7E-08	–	2E-07	NA	–	–	–	–
			Benzo(k)fluoranthene	1E-08	–	5E-09	–	2E-08	NA	–	–	–	–
			Dibenzo(a,h)anthracene	4E-07	–	2E-07	–	5E-07	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	2E-07	–	9E-08	–	2E-07	NA	–	–	–	–
			Aroclor-1260	8E-06	–	4E-06	–	1E-05	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	3E-07	–	4E-08	–	3E-07	Reproductive	0.01	–	0.001	0.01
			Antimony	--	–	--	–	--	Blood	0.002	–	–	0.002
			Chromium VI	6E-06	–	--	–	6E-06	None Reported	0.007	–	–	0.007
			Cobalt	--	–	--	–	--	Thyroid	0.04	–	–	0.04
			Iron	--	–	--	–	--	GS	0.04	–	–	0.04
			Manganese	--	–	--	–	--	CNS	0.02	–	–	0.02
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	2E-05	–	6E-06	–	2E-05		0.1	–	0.001	0.1
		Exposure Point Total						2E-05					0.1
	Exposure Medium Total							2E-05					0.1
	Air	Tank Farm 2	Benzo(a)anthracene	–	3E-12	–	–	3E-12	NA	–	–	–	–
			Benzo(a)pyrene	–	2E-11	–	–	2E-11	NA	–	–	–	–
			Benzo(b)fluoranthene	–	1E-12	–	–	1E-12	NA	–	–	–	–
			Benzo(k)fluoranthene	–	1E-12	–	–	1E-12	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	4E-12	–	–	4E-12	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	2E-12	–	–	2E-12	NA	–	–	–	–
			Aroclor-1260	–	2E-10	–	–	2E-10	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	6E-12	–	–	6E-12	Reproductive	–	1E-8	–	1E-8
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	8E-08	–	–	8E-08	Respiratory	–	0.00002	–	0.00002
			Cobalt	–	3E-09	–	–	3E-09	Respiratory	–	0.0002	–	0.0002
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.0005	–	0.0005
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	8E-08	–	–	8E-08		--	0.0007	--	0.0007
		Exposure Point Total						8E-08					0.0007
	Exposure Medium Total							8E-08					0.0007
Medium Total								2E-05					0.1

TABLE 9.9.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	2E-07	–	1E-07	–	4E-07	NA	–	–	–	–
			Benzo(a)pyrene	2E-06	–	8E-07	–	2E-06	NA	–	–	–	–
			Benzo(b)fluoranthene	3E-07	–	2E-07	–	4E-07	NA	–	–	–	–
			Benzo(k)fluoranthene	8E-09	–	4E-09	–	1E-08	NA	–	–	–	–
			Dibenzo(a,h)anthracene	3E-07	–	1E-07	–	4E-07	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	1E-07	–	8E-08	–	2E-07	NA	–	–	–	–
			Aroclor-1260	5E-06	–	3E-06	–	8E-06	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	2E-07	–	3E-08	–	3E-07	Reproductive	0.009	–	0.001	0.01
			Aluminum	--	–	--	–	--	CNS	0.02	–	–	0.02
			Antimony	--	–	--	–	--	Blood	0.001	–	–	0.001
			Arsenic	2E-06	–	5E-07	–	3E-06	Skin, CVS	0.02	–	0.004	0.02
			Chromium VI	6E-06	–	--	–	6E-06	None Reported	0.007	–	–	0.007
			Cobalt	--	–	--	–	--	Thyroid	0.05	–	–	0.05
			Iron	--	–	--	–	--	GS	0.05	–	–	0.05
			Manganese	--	–	--	–	--	CNS	0.02	–	–	0.02
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	2E-05	–	5E-06	–	2E-05		0.2	–	0.005	0.2
		Exposure Point Total						2E-05					0.2
	Exposure Medium Total							2E-05					0.2
	Air	Tank Farm 2	Benzo(a)anthracene	–	3E-12	–	–	3E-12	NA	–	–	–	–
			Benzo(a)pyrene	–	2E-11	–	–	2E-11	NA	–	–	–	–
			Benzo(b)fluoranthene	–	3E-12	–	–	3E-12	NA	–	–	–	–
			Benzo(k)fluoranthene	–	8E-13	–	–	8E-13	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	3E-12	–	–	3E-12	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	2E-12	–	–	2E-12	NA	–	–	–	–
			Aroclor-1260	–	1E-10	–	–	1E-10	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	5E-12	–	–	5E-12	Reproductive	–	1E-8	–	1E-8
			Aluminum	–	--	–	–	--	CNS	–	0.0002	–	0.0002
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	8E-10	–	–	8E-10	Skin, CVS	–	0.00004	–	0.00004
			Chromium VI	–	8E-08	–	–	8E-08	Respiratory	–	0.00002	–	0.00002
			Cobalt	–	3E-09	–	–	3E-09	Respiratory	–	0.0002	–	0.0002
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.0005	–	0.0005
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	8E-08	–	–	8E-08		--	0.0010	--	0.0010
		Exposure Point Total						8E-08					0.0010
	Exposure Medium Total							8E-08					0.0010
Medium Total								2E-05					0.2

TABLE 9.9.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.003
Total CNS HI	0.05
Total CVS HI	0.02
Total GS HI	0.09
Total Respiratory HI	0.0004
Total Skin HI	0.02
Total Thyroid HI	0.09
Total Reproductive HI	0.02

TABLE 9.10.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	2E-06	–	9E-07	–	3E-06					
			Benzo(a)pyrene	2E-05	–	7E-06	–	3E-05					
			Benzo(b)fluoranthene	1E-06	–	5E-07	–	2E-06					
			Benzo(k)fluoranthene	1E-07	–	4E-08	–	1E-07					
			Dibenzo(a,h)anthracene	3E-06	–	1E-06	–	5E-06					
			Indeno(1,2,3-cd)pyrene	2E-06	–	6E-07	–	2E-06					
			Aroclor-1260	3E-05	–	1E-05	–	5E-05					
			2,3,7,8-TCDD Equivalents	1E-06	–	1E-07	–	1E-06					
			Antimony	--	–	--	–	--					
			Chromium VI	6E-05	–	--	–	6E-05					
			Cobalt	--	–	--	–	--					
			Iron	--	–	--	–	--					
			Manganese	--	–	--	–	--					
			Thallium	--	–	--	–	--					
			Chemical Total	1E-04	–	2E-05	–	1E-04					
		Exposure Point Total						1E-04					
	Exposure Medium Total							1E-04					
	Air	Tank Farm 2	Benzo(a)anthracene	–	5E-12	–	–	5E-12					
			Benzo(a)pyrene	–	4E-11	–	–	4E-11					
			Benzo(b)fluoranthene	–	3E-12	–	–	3E-12					
			Benzo(k)fluoranthene	–	2E-12	–	–	2E-12					
			Dibenzo(a,h)anthracene	–	8E-12	–	–	8E-12					
			Indeno(1,2,3-cd)pyrene	–	3E-12	–	–	3E-12					
			Aroclor-1260	–	2E-10	–	–	2E-10					
			2,3,7,8-TCDD Equivalents	–	8E-12	–	–	8E-12					
			Antimony	–	--	–	–	--					
			Chromium VI	–	1E-07	–	–	1E-07					
			Cobalt	–	3E-09	–	–	3E-09					
			Iron	–	--	–	–	--					
			Manganese	–	--	–	–	--					
			Thallium	–	--	–	–	--					
			Chemical Total	–	1E-07	–	–	1E-07					
		Exposure Point Total						1E-07					
	Exposure Medium Total							1E-07					
Medium Total								1E-04					

TABLE 9.10.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	2E-06	–	8E-07	–	3E-06					
			Benzo(a)pyrene	1E-05	–	5E-06	–	2E-05					
			Benzo(b)fluoranthene	3E-06	–	1E-06	–	4E-06					
			Benzo(k)fluoranthene	8E-09	–	4E-09	–	1E-08					
			Dibenzo(a,h)anthracene	2E-06	–	9E-07	–	3E-06					
			Indeno(1,2,3-cd)pyrene	1E-06	–	5E-07	–	2E-06					
			Aroclor-1260	2E-05	–	9E-06	–	3E-05					
			2,3,7,8-TCDD Equivalents	1E-06	–	9E-08	–	1E-06					
			Aluminum	--	–	--	–	--					
			Antimony	--	–	--	–	--					
			Arsenic	9E-06	–	1E-06	–	1E-05					
			Chromium VI	6E-05	–	--	–	6E-05					
			Cobalt	--	–	--	–	--					
			Iron	--	–	--	–	--					
			Manganese	--	–	--	–	--					
			Thallium	--	–	--	–	--					
			Chemical Total	1E-04	–	2E-05	–	1E-04					
		Exposure Point Total						1E-04					
	Exposure Medium Total							1E-04					
	Air	Tank Farm 2	Benzo(a)anthracene	–	5E-12	–	–	5E-12					
			Benzo(a)pyrene	–	3E-11	–	–	3E-11					
			Benzo(b)fluoranthene	–	6E-12	–	–	6E-12					
			Benzo(k)fluoranthene	–	8E-13	–	–	8E-13					
			Dibenzo(a,h)anthracene	–	6E-12	–	–	6E-12					
			Indeno(1,2,3-cd)pyrene	–	3E-12	–	–	3E-12					
			Aroclor-1260	–	1E-10	–	–	1E-10					
			2,3,7,8-TCDD Equivalents	–	6E-12	–	–	6E-12					
			Aluminum	–	--	–	–	--					
			Antimony	–	--	–	–	--					
			Arsenic	–	1E-09	–	–	1E-09					
			Chromium VI	–	1E-07	–	–	1E-07					
			Cobalt	–	3E-09	–	–	3E-09					
			Iron	–	--	–	–	--					
			Manganese	–	--	–	–	--					
			Thallium	–	--	–	–	--					
			Chemical Total	–	1E-07	–	–	1E-07					
		Exposure Point Total						1E-07					
	Exposure Medium Total							1E-07					
Medium Total								1E-04					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	6E-09	–	3E-09	–	9E-09	NA	–	–	–	–
			Benzo(a)pyrene	5E-08	–	2E-08	–	7E-08	NA	–	–	–	–
			Benzo(b)fluoranthene	3E-09	–	1E-09	–	5E-09	NA	–	–	–	–
			Benzo(k)fluoranthene	2E-10	–	1E-10	–	4E-10	NA	–	–	–	–
			Dibenzo(a,h)anthracene	9E-09	–	4E-09	–	1E-08	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	4E-09	–	2E-09	–	6E-09	NA	–	–	–	–
			Aroclor-1260	1E-07	–	6E-08	–	2E-07	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	5E-09	–	5E-10	–	5E-09	Reproductive	0.0006	–	0.00006	0.0007
			Antimony	--	–	--	–	--	Blood	0.0001	–	–	0.0001
			Chromium VI	2E-07	–	--	–	2E-07	None Reported	0.0004	–	–	0.0004
			Cobalt	--	–	--	–	--	Thyroid	0.002	–	–	0.002
			Iron	--	–	--	–	--	GS	0.002	–	–	0.002
			Manganese	--	–	--	–	--	CNS	0.0009	–	–	0.0009
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	4E-07	–	9E-08	–	4E-07		0.007	–	0.00006	0.007
		Exposure Point Total						4E-07					0.007
	Exposure Medium Total							4E-07					0.007
	Air	Tank Farm 2	Benzo(a)anthracene	–	1E-14	–	–	1E-14	NA	–	–	–	–
			Benzo(a)pyrene	–	1E-13	–	–	1E-13	NA	–	–	–	–
			Benzo(b)fluoranthene	–	8E-15	–	–	8E-15	NA	–	–	–	–
			Benzo(k)fluoranthene	–	6E-15	–	–	6E-15	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	2E-14	–	–	2E-14	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	9E-15	–	–	9E-15	NA	–	–	–	–
			Aroclor-1260	–	5E-13	–	–	5E-13	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	2E-14	–	–	2E-14	Reproductive	–	2E-10	–	2E-10
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	4E-10	–	–	4E-10	Respiratory	–	0.0000002	–	0.0000002
			Cobalt	–	9E-12	–	–	9E-12	Respiratory	–	0.000002	–	0.000002
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.000006	–	0.000006
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	4E-10	–	–	4E-10		--	0.000008	--	0.000008
		Exposure Point Total						4E-10					0.000008
	Exposure Medium Total							4E-10					0.000008
Medium Total								4E-07					0.007

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	6E-09	–	2E-09	–	8E-09	NA	–	–	–	–
			Benzo(a)pyrene	4E-08	–	2E-08	–	5E-08	NA	–	–	–	–
			Benzo(b)fluoranthene	7E-09	–	3E-09	–	1E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	2E-10	–	8E-11	–	3E-10	NA	–	–	–	–
			Dibenzo(a,h)anthracene	6E-09	–	3E-09	–	9E-09	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	4E-09	–	2E-09	–	5E-09	NA	–	–	–	–
			Aroclor-1260	8E-08	–	4E-08	–	1E-07	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	4E-09	–	4E-10	–	4E-09	Reproductive	0.0005	–	0.00005	0.0005
			Aluminum	--	–	--	–	--	CNS	0.0009	–	–	0.0009
			Antimony	--	–	--	–	--	Blood	0.00006	–	–	0.00006
			Arsenic	4E-08	–	6E-09	–	4E-08	Skin, CVS	0.0009	–	0.0002	0.001
			Chromium VI	2E-07	–	--	–	2E-07	None Reported	0.0004	–	–	0.0004
			Cobalt	--	–	--	–	--	Thyroid	0.003	–	–	0.003
			Iron	--	–	--	–	--	GS	0.002	–	–	0.002
			Manganese	--	–	--	–	--	CNS	0.0008	–	–	0.0008
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	3E-07	–	7E-08	–	4E-07		0.009	–	0.0002	0.009
		Exposure Point Total						4E-07					0.009
	Exposure Medium Total							4E-07					0.009
	Air	Tank Farm 2	Benzo(a)anthracene	–	1E-14	–	–	1E-14	NA	–	–	–	–
			Benzo(a)pyrene	–	8E-14	–	–	8E-14	NA	–	–	–	–
			Benzo(b)fluoranthene	–	2E-14	–	–	2E-14	NA	–	–	–	–
			Benzo(k)fluoranthene	–	4E-15	–	–	4E-15	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	2E-14	–	–	2E-14	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	8E-15	–	–	8E-15	NA	–	–	–	–
			Aroclor-1260	–	3E-13	–	–	3E-13	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	2E-14	–	–	2E-14	Reproductive	–	1E-10	–	1E-10
			Aluminum	–	--	–	–	--	CNS	–	0.000003	–	0.000003
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	3E-12	–	–	3E-12	Skin, CVS	–	0.0000005	–	0.0000005
			Chromium VI	–	4E-10	–	–	4E-10	Respiratory	–	0.0000002	–	0.0000002
			Cobalt	–	9E-12	–	–	9E-12	Respiratory	–	0.000002	–	0.000002
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.000006	–	0.000006
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	4E-10	–	–	4E-10		--	0.00001	--	0.00001
		Exposure Point Total						4E-10					0.00001
	Exposure Medium Total							4E-10					0.00001
Medium Total								4E-07					0.009

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.0002
Total CNS HI	0.003
Total CVS HI	0.001
Total GS HI	0.005
Total Respiratory HI	0.000004
Total Skin HI	0.001
Total Thyroid HI	0.005
Total Reproductive HI	0.001

TABLE 9.2.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	1E-09	–	2E-10	–	1E-09	NA	–	–	–	–
			Benzo(a)pyrene	8E-09	–	1E-09	–	9E-09	NA	–	–	–	–
			Benzo(b)fluoranthene	5E-10	–	8E-11	–	6E-10	NA	–	–	–	–
			Benzo(k)fluoranthene	4E-11	–	6E-12	–	5E-11	NA	–	–	–	–
			Dibenzo(a,h)anthracene	1E-09	–	2E-10	–	2E-09	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	6E-10	–	1E-10	–	7E-10	NA	–	–	–	–
			Aroclor-1260	4E-08	–	6E-09	–	4E-08	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	1E-09	–	5E-11	–	1E-09	Reproductive	0.0002	–	0.000006	0.0002
			Antimony	--	–	--	–	--	Blood	0.00003	–	–	0.00003
			Chromium VI	2E-08	–	--	–	2E-08	None Reported	0.0001	–	–	0.0001
			Cobalt	--	–	--	–	--	Thyroid	0.0006	–	–	0.0006
			Iron	--	–	--	–	--	GS	0.0005	–	–	0.0005
			Manganese	--	–	--	–	--	CNS	0.0002	–	–	0.0002
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	8E-08	–	8E-09	–	8E-08		0.002	–	0.000006	0.002
		Exposure Point Total						8E-08					0.002
	Exposure Medium Total							8E-08					0.002
	Air	Tank Farm 2	Benzo(a)anthracene	–	4E-15	–	–	4E-15	NA	–	–	–	–
			Benzo(a)pyrene	–	3E-14	–	–	3E-14	NA	–	–	–	–
			Benzo(b)fluoranthene	–	2E-15	–	–	2E-15	NA	–	–	–	–
			Benzo(k)fluoranthene	–	1E-15	–	–	1E-15	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	5E-15	–	–	5E-15	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	2E-15	–	–	2E-15	NA	–	–	–	–
			Aroclor-1260	–	3E-13	–	–	3E-13	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	1E-14	–	–	1E-14	Reproductive	–	7E-11	–	7E-11
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	1E-10	–	–	1E-10	Respiratory	–	8E-8	–	8E-8
			Cobalt	–	4E-12	–	–	4E-12	Respiratory	–	0.0000008	–	0.0000008
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.000003	–	0.000003
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	1E-10	–	–	1E-10		--	0.000003	--	0.000003
		Exposure Point Total						1E-10					0.000003
	Exposure Medium Total							1E-10					0.000003
Medium Total								8E-08					0.002

TABLE 9.2.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Subsurface Soil	Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	9E-10	–	1E-10	–	1E-09	NA	–	–	–	–
			Benzo(a)pyrene	6E-09	–	9E-10	–	7E-09	NA	–	–	–	–
			Benzo(b)fluoranthene	1E-09	–	2E-10	–	1E-09	NA	–	–	–	–
			Benzo(k)fluoranthene	3E-11	–	5E-12	–	3E-11	NA	–	–	–	–
			Dibenzo(a,h)anthracene	1E-09	–	2E-10	–	1E-09	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	6E-10	–	9E-11	–	7E-10	NA	–	–	–	–
			Aroclor-1260	2E-08	–	4E-09	–	3E-08	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	1E-09	–	4E-11	–	1E-09	Reproductive	0.0001	–	0.000005	0.0001
			Aluminum	--	–	--	–	--	CNS	0.0002	–	–	0.0002
			Antimony	--	–	--	–	--	Blood	0.00001	–	–	0.00001
			Arsenic	1E-08	–	7E-10	–	1E-08	Skin, CVS	0.0002	–	0.00001	0.0003
			Chromium VI	2E-08	–	--	–	2E-08	None Reported	0.0001	–	–	0.0001
			Cobalt	--	–	--	–	--	Thyroid	0.0007	–	–	0.0007
			Iron	--	–	--	–	--	GS	0.0006	–	–	0.0006
			Manganese	--	–	--	–	--	CNS	0.0002	–	–	0.0002
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	7E-08	–	6E-09	–	8E-08		0.002	–	0.00002	0.002
		Exposure Point Total						8E-08					0.002
	Exposure Medium Total							8E-08					0.002
	Air	Tank Farm 2	Benzo(a)anthracene	–	3E-15	–	–	3E-15	NA	–	–	–	–
			Benzo(a)pyrene	–	2E-14	–	–	2E-14	NA	–	–	–	–
			Benzo(b)fluoranthene	–	4E-15	–	–	4E-15	NA	–	–	–	–
			Benzo(k)fluoranthene	–	1E-15	–	–	1E-15	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	4E-15	–	–	4E-15	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	2E-15	–	–	2E-15	NA	–	–	–	–
			Aroclor-1260	–	2E-13	–	–	2E-13	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	8E-15	–	–	8E-15	Reproductive	–	5E-11	–	5E-11
			Aluminum	–	--	–	–	--	CNS	–	0.000001	–	0.000001
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	1E-12	–	–	1E-12	Skin, CVS	–	0.0000002	–	0.0000002
			Chromium VI	–	1E-10	–	–	1E-10	Respiratory	–	8E-8	–	8E-8
			Cobalt	–	4E-12	–	–	4E-12	Respiratory	–	0.0000008	–	0.0000008
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.000003	–	0.000003
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	1E-10	–	–	1E-10		--	0.000005	--	0.000005
		Exposure Point Total						1E-10					0.000005
	Exposure Medium Total							1E-10					0.000005
Medium Total								8E-08					0.002

TABLE 9.2.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.00005
Total CNS HI	0.0007
Total CVS HI	0.0003
Total GS HI	0.001
Total Respiratory HI	0.000002
Total Skin HI	0.0003
Total Thyroid HI	0.001
Total Reproductive HI	0.0003

TABLE 9.3.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	3E-09	–	4E-10	–	4E-09	NA	–	–	–	–
			Benzo(a)pyrene	3E-08	–	3E-09	–	3E-08	NA	–	–	–	–
			Benzo(b)fluoranthene	2E-09	–	2E-10	–	2E-09	NA	–	–	–	–
			Benzo(k)fluoranthene	1E-10	–	2E-11	–	1E-10	NA	–	–	–	–
			Dibenzo(a,h)anthracene	4E-09	–	6E-10	–	5E-09	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	2E-09	–	3E-10	–	2E-09	NA	–	–	–	–
			Aroclor-1260	2E-07	–	3E-08	–	2E-07	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	7E-09	–	2E-10	–	7E-09	Immune	0.0002	–	0.000006	0.0002
			Antimony	--	–	--	–	--	Blood	0.001	–	–	0.001
			Chromium VI	8E-08	–	--	–	8E-08	None Reported	0.002	–	–	0.002
			Cobalt	--	–	--	–	--	Thyroid	0.002	–	–	0.002
			Iron	--	–	--	–	--	GS	0.02	–	–	0.02
			Manganese	--	–	--	–	--	CNS	0.008	–	–	0.008
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	3E-07	–	3E-08	–	3E-07		0.03	–	0.000006	0.03
		Exposure Point Total						3E-07					0.03
	Exposure Medium Total							3E-07					0.03
	Air	Tank Farm 2	Benzo(a)anthracene	–	3E-11	–	–	3E-11	NA	–	–	–	–
			Benzo(a)pyrene	–	2E-10	–	–	2E-10	NA	–	–	–	–
			Benzo(b)fluoranthene	–	1E-11	–	–	1E-11	NA	–	–	–	–
			Benzo(k)fluoranthene	–	1E-11	–	–	1E-11	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	4E-11	–	–	4E-11	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	2E-11	–	–	2E-11	NA	–	–	–	–
			Aroclor-1260	–	3E-09	–	–	3E-09	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	1E-10	–	–	1E-10	Reproductive	–	0.000006	–	0.000006
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	7E-07	–	–	7E-07	Respiratory	–	0.002	–	0.002
			Cobalt	–	5E-08	–	–	5E-08	Respiratory	–	0.02	–	0.02
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.2	–	0.2
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	8E-07	–	–	8E-07		--	0.2	--	0.2
		Exposure Point Total						8E-07					0.2
	Exposure Medium Total							8E-07					0.2
Medium Total								1E-06					0.3

TABLE 9.3.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	3E-09	–	4E-10	–	3E-09	NA	–	–	–	–
			Benzo(a)pyrene	2E-08	–	3E-09	–	2E-08	NA	–	–	–	–
			Benzo(b)fluoranthene	4E-09	–	5E-10	–	4E-09	NA	–	–	–	–
			Benzo(k)fluoranthene	9E-11	–	1E-11	–	1E-10	NA	–	–	–	–
			Dibenzo(a,h)anthracene	3E-09	–	4E-10	–	4E-09	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	2E-09	–	2E-10	–	2E-09	NA	–	–	–	–
			Aroclor-1260	1E-07	–	2E-08	–	1E-07	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	6E-09	–	2E-10	–	6E-09	Immune	0.0002	–	0.000005	0.0002
			Aluminum	--	–	--	–	--	CNS	0.008	–	–	0.008
			Antimony	--	–	--	–	--	Blood	0.0005	–	–	0.0005
			Arsenic	5E-08	–	3E-09	–	6E-08	Skin, CVS	0.008	–	0.0004	0.009
			Chromium VI	8E-08	–	--	–	8E-08	None Reported	0.002	–	–	0.002
			Cobalt	--	–	--	–	--	Thyroid	0.002	–	–	0.002
			Iron	--	–	--	–	--	GS	0.02	–	–	0.02
			Manganese	--	–	--	–	--	CNS	0.007	–	–	0.007
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	3E-07	–	2E-08	–	3E-07		0.05	–	0.0004	0.05
		Exposure Point Total						3E-07					0.05
	Exposure Medium Total							3E-07					0.05
	Air	Tank Farm 2	Benzo(a)anthracene	–	3E-11	–	–	3E-11	NA	–	–	–	–
			Benzo(a)pyrene	–	2E-10	–	–	2E-10	NA	–	–	–	–
			Benzo(b)fluoranthene	–	3E-11	–	–	3E-11	NA	–	–	–	–
			Benzo(k)fluoranthene	–	8E-12	–	–	8E-12	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	3E-11	–	–	3E-11	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	2E-11	–	–	2E-11	NA	–	–	–	–
			Aroclor-1260	–	2E-09	–	–	2E-09	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	1E-10	–	–	1E-10	Reproductive	–	0.000004	–	0.000004
			Aluminum	–	--	–	–	--	CNS	–	0.09	–	0.09
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	1E-08	–	–	1E-08	Skin, CVS	–	0.02	–	0.02
			Chromium VI	–	7E-07	–	–	7E-07	Respiratory	–	0.002	–	0.002
			Cobalt	–	5E-08	–	–	5E-08	Respiratory	–	0.02	–	0.02
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.2	–	0.2
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	8E-07	–	–	8E-07		--	0.3	--	0.3
		Exposure Point Total						8E-07					0.3
	Exposure Medium Total							8E-07					0.3
Medium Total								1E-06					0.4

TABLE 9.3.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.002
Total CNS HI	0.5
Total CVS HI	0.02
Total GS HI	0.04
Total Immune HI	0.0004
Total Respiratory HI	0.04
Total Skin HI	0.02
Total Thyroid HI	0.005
Total Reproductive HI	0.000010

TABLE 9.4.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	2E-08	–	3E-09	–	2E-08	NA	–	–	–	–
			Benzo(a)pyrene	1E-07	–	3E-08	–	2E-07	NA	–	–	–	–
			Benzo(b)fluoranthene	1E-08	–	2E-09	–	1E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	7E-10	–	1E-10	–	8E-10	NA	–	–	–	–
			Dibenzo(a,h)anthracene	2E-08	–	4E-09	–	3E-08	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	1E-08	–	2E-09	–	1E-08	NA	–	–	–	–
			Aroclor-1260	1E-06	–	2E-07	–	1E-06	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	4E-08	–	2E-09	–	4E-08	Reproductive	0.003	–	0.0001	0.004
			Antimony	--	–	--	–	--	Blood	0.0008	–	–	0.0008
			Chromium VI	4E-07	–	--	–	4E-07	None Reported	0.002	–	–	0.002
			Cobalt	--	–	--	–	--	Thyroid	0.01	–	–	0.01
			Iron	--	–	--	–	--	GS	0.01	–	–	0.01
			Manganese	--	–	--	–	--	CNS	0.005	–	–	0.005
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	2E-06	–	2E-07	–	2E-06		0.04	–	0.0001	0.04
		Exposure Point Total						2E-06					0.04
	Exposure Medium Total							2E-06					0.04
	Air	Tank Farm 2	Benzo(a)anthracene	–	1E-13	–	–	1E-13	NA	–	–	–	–
			Benzo(a)pyrene	–	1E-12	–	–	1E-12	NA	–	–	–	–
			Benzo(b)fluoranthene	–	7E-14	–	–	7E-14	NA	–	–	–	–
			Benzo(k)fluoranthene	–	5E-14	–	–	5E-14	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	2E-13	–	–	2E-13	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	8E-14	–	–	8E-14	NA	–	–	–	–
			Aroclor-1260	–	1E-11	–	–	1E-11	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	6E-13	–	–	6E-13	Reproductive	–	3E-9	–	3E-9
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	4E-09	–	–	4E-09	Respiratory	–	0.000003	–	0.000003
			Cobalt	–	2E-10	–	–	2E-10	Respiratory	–	0.00003	–	0.00003
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.0001	–	0.0001
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	4E-09	–	–	4E-09		--	0.0002	--	0.0002
		Exposure Point Total						4E-09					0.0002
	Exposure Medium Total							4E-09					0.0002
Medium Total								2E-06					0.04

TABLE 9.4.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	2E-08	–	3E-09	–	2E-08	NA	–	–	–	–
			Benzo(a)pyrene	1E-07	–	2E-08	–	1E-07	NA	–	–	–	–
			Benzo(b)fluoranthene	2E-08	–	4E-09	–	2E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	5E-10	–	1E-10	–	6E-10	NA	–	–	–	–
			Dibenzo(a,h)anthracene	2E-08	–	3E-09	–	2E-08	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	1E-08	–	2E-09	–	1E-08	NA	–	–	–	–
			Aroclor-1260	7E-07	–	1E-07	–	8E-07	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	3E-08	–	1E-09	–	3E-08	Reproductive	0.003	–	0.0001	0.003
			Aluminum	--	–	--	–	--	CNS	0.005	–	–	0.005
			Antimony	--	–	--	–	--	Blood	0.0003	–	–	0.0003
			Arsenic	3E-07	–	2E-08	–	3E-07	Skin, CVS	0.005	–	0.0004	0.006
			Chromium VI	4E-07	–	--	–	4E-07	None Reported	0.002	–	–	0.002
			Cobalt	--	–	--	–	--	Thyroid	0.01	–	–	0.01
			Iron	--	–	--	–	--	GS	0.01	–	–	0.01
			Manganese	--	–	--	–	--	CNS	0.005	–	–	0.005
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	2E-06	–	2E-07	–	2E-06		0.05	–	0.0005	0.05
		Exposure Point Total						2E-06					0.05
	Exposure Medium Total							2E-06					0.05
	Air	Tank Farm 2	Benzo(a)anthracene	–	1E-13	–	–	1E-13	NA	–	–	–	–
			Benzo(a)pyrene	–	8E-13	–	–	8E-13	NA	–	–	–	–
			Benzo(b)fluoranthene	–	1E-13	–	–	1E-13	NA	–	–	–	–
			Benzo(k)fluoranthene	–	4E-14	–	–	4E-14	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	1E-13	–	–	1E-13	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	7E-14	–	–	7E-14	NA	–	–	–	–
			Aroclor-1260	–	9E-12	–	–	9E-12	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	5E-13	–	–	5E-13	Reproductive	–	2E-9	–	2E-9
			Aluminum	–	--	–	–	--	CNS	–	0.00005	–	0.00005
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	7E-11	–	–	7E-11	Skin, CVS	–	0.000009	–	0.000009
			Chromium VI	–	4E-09	–	–	4E-09	Respiratory	–	0.000003	–	0.000003
			Cobalt	–	2E-10	–	–	2E-10	Respiratory	–	0.00004	–	0.00004
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.0001	–	0.0001
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	4E-09	–	–	4E-09		--	0.0002	--	0.0002
		Exposure Point Total						4E-09					0.0002
	Exposure Medium Total							4E-09					0.0002
Medium Total								2E-06					0.05

TABLE 9.4.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.001
Total CNS HI	0.02
Total CVS HI	0.006
Total GS HI	0.03
Total Respiratory HI	0.00008
Total Skin HI	0.006
Total Thyroid HI	0.03
Total Reproductive HI	0.007

TABLE 9.5.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	2E-08	–	4E-09	–	2E-08	NA	–	–	–	–
			Benzo(a)pyrene	1E-07	–	3E-08	–	2E-07	NA	–	–	–	–
			Benzo(b)fluoranthene	8E-09	–	2E-09	–	1E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	6E-10	–	2E-10	–	8E-10	NA	–	–	–	–
			Dibenzo(a,h)anthracene	2E-08	–	6E-09	–	3E-08	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	1E-08	–	3E-09	–	1E-08	NA	–	–	–	–
			Aroclor-1260	1E-07	–	4E-08	–	2E-07	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	5E-09	–	3E-10	–	6E-09	Reproductive	0.002	–	0.0001	0.002
			Antimony	--	–	--	–	--	Blood	0.0004	–	–	0.0004
			Chromium VI	4E-07	–	--	–	4E-07	None Reported	0.001	–	–	0.001
			Cobalt	--	–	--	–	--	Thyroid	0.008	–	–	0.008
			Iron	--	–	--	–	--	GS	0.008	–	–	0.008
			Manganese	--	–	--	–	--	CNS	0.003	–	–	0.003
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	7E-07	–	9E-08	–	8E-07		0.02	–	0.0001	0.02
		Exposure Point Total						8E-07					0.02
	Exposure Medium Total							8E-07					0.02
	Air	Tank Farm 2	Benzo(a)anthracene	–	1E-14	–	–	1E-14	NA	–	–	–	–
			Benzo(a)pyrene	–	8E-14	–	–	8E-14	NA	–	–	–	–
			Benzo(b)fluoranthene	–	5E-15	–	–	5E-15	NA	–	–	–	–
			Benzo(k)fluoranthene	–	4E-15	–	–	4E-15	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	2E-14	–	–	2E-14	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	7E-15	–	–	7E-15	NA	–	–	–	–
			Aroclor-1260	–	2E-13	–	–	2E-13	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	7E-15	–	–	7E-15	Reproductive	–	2E-10	–	2E-10
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	3E-10	–	–	3E-10	Respiratory	–	0.0000002	–	0.0000002
			Cobalt	–	3E-12	–	–	3E-12	Respiratory	–	0.000002	–	0.000002
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.000006	–	0.000006
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	3E-10	–	–	3E-10		--	0.000008	--	0.000008
		Exposure Point Total						3E-10					0.000008
	Exposure Medium Total							3E-10					0.000008
Medium Total								8E-07					0.02

TABLE 9.5.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	1E-08	–	4E-09	–	2E-08	NA	–	–	–	–
			Benzo(a)pyrene	9E-08	–	2E-08	–	1E-07	NA	–	–	–	–
			Benzo(b)fluoranthene	2E-08	–	5E-09	–	2E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	4E-10	–	1E-10	–	6E-10	NA	–	–	–	–
			Dibenzo(a,h)anthracene	2E-08	–	4E-09	–	2E-08	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	9E-09	–	2E-09	–	1E-08	NA	–	–	–	–
			Aroclor-1260	9E-08	–	3E-08	–	1E-07	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	4E-09	–	3E-10	–	5E-09	Reproductive	0.002	–	0.0001	0.002
			Aluminum	--	–	--	–	--	CNS	0.003	–	–	0.003
			Antimony	--	–	--	–	--	Blood	0.0002	–	–	0.0002
			Arsenic	4E-08	–	4E-09	–	4E-08	Skin, CVS	0.003	–	0.0003	0.003
			Chromium VI	4E-07	–	--	–	4E-07	None Reported	0.001	–	–	0.001
			Cobalt	--	–	--	–	--	Thyroid	0.009	–	–	0.009
			Iron	--	–	--	–	--	GS	0.008	–	–	0.008
			Manganese	--	–	--	–	--	CNS	0.003	–	–	0.003
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	6E-07	–	7E-08	–	7E-07		0.03	–	0.0004	0.03
		Exposure Point Total						7E-07					0.03
	Exposure Medium Total							7E-07					0.03
	Air	Tank Farm 2	Benzo(a)anthracene	–	1E-14	–	–	1E-14	NA	–	–	–	–
			Benzo(a)pyrene	–	6E-14	–	–	6E-14	NA	–	–	–	–
			Benzo(b)fluoranthene	–	1E-14	–	–	1E-14	NA	–	–	–	–
			Benzo(k)fluoranthene	–	3E-15	–	–	3E-15	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	1E-14	–	–	1E-14	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	6E-15	–	–	6E-15	NA	–	–	–	–
			Aroclor-1260	–	1E-13	–	–	1E-13	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	6E-15	–	–	6E-15	Reproductive	–	1E-10	–	1E-10
			Aluminum	–	--	–	–	--	CNS	–	0.000003	–	0.000003
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	9E-13	–	–	9E-13	Skin, CVS	–	0.0000005	–	0.0000005
			Chromium VI	–	3E-10	–	–	3E-10	Respiratory	–	0.0000002	–	0.0000002
			Cobalt	–	3E-12	–	–	3E-12	Respiratory	–	0.000002	–	0.000002
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.000006	–	0.000006
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	3E-10	–	–	3E-10		--	0.00001	--	0.00001
		Exposure Point Total						3E-10					0.00001
	Exposure Medium Total							3E-10					0.00001
Medium Total								7E-07					0.03

TABLE 9.5.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.0006
Total CNS HI	0.009
Total CVS HI	0.003
Total GS HI	0.02
Total Respiratory HI	0.000004
Total Skin HI	0.003
Total Thyroid HI	0.02
Total Reproductive HI	0.004

TABLE 9.6.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	1E-09	–	4E-10	–	2E-09	NA	–	–	–	–
			Benzo(a)pyrene	1E-08	–	3E-09	–	1E-08	NA	–	–	–	–
			Benzo(b)fluoranthene	6E-10	–	2E-10	–	8E-10	NA	–	–	–	–
			Benzo(k)fluoranthene	5E-11	–	1E-11	–	6E-11	NA	–	–	–	–
			Dibenzo(a,h)anthracene	2E-09	–	5E-10	–	2E-09	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	8E-10	–	2E-10	–	1E-09	NA	–	–	–	–
			Aroclor-1260	5E-08	–	2E-08	–	6E-08	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	2E-09	–	1E-10	–	2E-09	Reproductive	0.0002	–	0.00001	0.0002
			Antimony	--	–	--	–	--	Blood	0.00004	–	–	0.00004
			Chromium VI	3E-08	–	--	–	3E-08	None Reported	0.0001	–	–	0.0001
			Cobalt	--	–	--	–	--	Thyroid	0.0008	–	–	0.0008
			Iron	--	–	--	–	--	GS	0.0007	–	–	0.0007
			Manganese	--	–	--	–	--	CNS	0.0003	–	–	0.0003
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	9E-08	–	2E-08	–	1E-07		0.002	–	0.00001	0.002
		Exposure Point Total						1E-07					0.002
	Exposure Medium Total							1E-07					0.002
	Air	Tank Farm 2	Benzo(a)anthracene	–	9E-15	–	–	9E-15	NA	–	–	–	–
			Benzo(a)pyrene	–	7E-14	–	–	7E-14	NA	–	–	–	–
			Benzo(b)fluoranthene	–	5E-15	–	–	5E-15	NA	–	–	–	–
			Benzo(k)fluoranthene	–	3E-15	–	–	3E-15	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	1E-14	–	–	1E-14	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	6E-15	–	–	6E-15	NA	–	–	–	–
			Aroclor-1260	–	6E-13	–	–	6E-13	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	2E-14	–	–	2E-14	Reproductive	–	2E-10	–	2E-10
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	2E-10	–	–	2E-10	Respiratory	–	0.0000002	–	0.0000002
			Cobalt	–	1E-11	–	–	1E-11	Respiratory	–	0.000002	–	0.000002
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.000006	–	0.000006
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	3E-10	–	–	3E-10		--	0.000008	--	0.000008
		Exposure Point Total						3E-10					0.000008
	Exposure Medium Total							3E-10					0.000008
Medium Total								1E-07					0.002

TABLE 9.6.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	1E-09	–	4E-10	–	1E-09	NA	–	–	–	–
			Benzo(a)pyrene	7E-09	–	2E-09	–	9E-09	NA	–	–	–	–
			Benzo(b)fluoranthene	1E-09	–	4E-10	–	2E-09	NA	–	–	–	–
			Benzo(k)fluoranthene	4E-11	–	1E-11	–	5E-11	NA	–	–	–	–
			Dibenzo(a,h)anthracene	1E-09	–	4E-10	–	2E-09	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	7E-10	–	2E-10	–	9E-10	NA	–	–	–	–
			Aroclor-1260	3E-08	–	1E-08	–	4E-08	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	1E-09	–	1E-10	–	1E-09	Reproductive	0.0002	–	0.00001	0.0002
			Aluminum	--	–	--	–	--	CNS	0.0003	–	–	0.0003
			Antimony	--	–	--	–	--	Blood	0.00002	–	–	0.00002
			Arsenic	1E-08	–	2E-09	–	1E-08	Skin, CVS	0.0003	–	0.00004	0.0003
			Chromium VI	3E-08	–	--	–	3E-08	None Reported	0.0001	–	–	0.0001
			Cobalt	--	–	--	–	--	Thyroid	0.0008	–	–	0.0008
			Iron	--	–	--	–	--	GS	0.0008	–	–	0.0008
			Manganese	--	–	--	–	--	CNS	0.0003	–	–	0.0003
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	8E-08	–	2E-08	–	1E-07		0.003	–	0.00005	0.003
		Exposure Point Total						1E-07					0.003
	Exposure Medium Total							1E-07					0.003
	Air	Tank Farm 2	Benzo(a)anthracene	–	8E-15	–	–	8E-15	NA	–	–	–	–
			Benzo(a)pyrene	–	5E-14	–	–	5E-14	NA	–	–	–	–
			Benzo(b)fluoranthene	–	1E-14	–	–	1E-14	NA	–	–	–	–
			Benzo(k)fluoranthene	–	3E-15	–	–	3E-15	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	1E-14	–	–	1E-14	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	5E-15	–	–	5E-15	NA	–	–	–	–
			Aroclor-1260	–	4E-13	–	–	4E-13	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	2E-14	–	–	2E-14	Reproductive	–	1E-10	–	1E-10
			Aluminum	–	--	–	–	--	CNS	–	0.000003	–	0.000003
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	3E-12	–	–	3E-12	Skin, CVS	–	0.0000005	–	0.0000005
			Chromium VI	–	2E-10	–	–	2E-10	Respiratory	–	0.0000002	–	0.0000002
			Cobalt	–	1E-11	–	–	1E-11	Respiratory	–	0.000002	–	0.000002
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.000006	–	0.000006
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	3E-10	–	–	3E-10		--	0.00001	--	0.00001
		Exposure Point Total						3E-10					0.00001
	Exposure Medium Total							3E-10					0.00001
Medium Total								1E-07					0.003

TABLE 9.6.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.00006
Total CNS HI	0.0008
Total CVS HI	0.0003
Total GS HI	0.002
Total Kidney HI	--
Total Respiratory HI	0.000004
Total Skin HI	0.0003
Total Thyroid HI	0.002
Total Reproductive HI	0.0004

TABLE 9.7.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	2E-08	–	5E-09	–	2E-08					
			Benzo(a)pyrene	1E-07	–	4E-08	–	2E-07					
			Benzo(b)fluoranthene	9E-09	–	2E-09	–	1E-08					
			Benzo(k)fluoranthene	6E-10	–	2E-10	–	8E-10					
			Dibenzo(a,h)anthracene	2E-08	–	6E-09	–	3E-08					
			Indeno(1,2,3-cd)pyrene	1E-08	–	3E-09	–	1E-08					
			Aroclor-1260	2E-07	–	6E-08	–	2E-07					
			2,3,7,8-TCDD Equivalents	7E-09	–	5E-10	–	7E-09					
			Antimony	--	–	--	–	--					
			Chromium VI	4E-07	–	--	–	4E-07					
			Cobalt	--	–	--	–	--					
			Iron	--	–	--	–	--					
			Manganese	--	–	--	–	--					
			Thallium	--	–	--	–	--					
			Chemical Total	8E-07	–	1E-07	–	9E-07					
		Exposure Point Total						9E-07					
	Exposure Medium Total							9E-07					
	Air	Tank Farm 2	Benzo(a)anthracene	–	2E-14	–	–	2E-14					
			Benzo(a)pyrene	–	2E-13	–	–	2E-13					
			Benzo(b)fluoranthene	–	1E-14	–	–	1E-14					
			Benzo(k)fluoranthene	–	8E-15	–	–	8E-15					
			Dibenzo(a,h)anthracene	–	3E-14	–	–	3E-14					
			Indeno(1,2,3-cd)pyrene	–	1E-14	–	–	1E-14					
			Aroclor-1260	–	8E-13	–	–	8E-13					
			2,3,7,8-TCDD Equivalents	–	3E-14	–	–	3E-14					
			Antimony	–	--	–	–	--					
			Chromium VI	–	5E-10	–	–	5E-10					
			Cobalt	–	1E-11	–	–	1E-11					
			Iron	–	--	–	–	--					
			Manganese	–	--	–	–	--					
			Thallium	–	--	–	–	--					
			Chemical Total	–	5E-10	–	–	5E-10					
		Exposure Point Total						5E-10					
	Exposure Medium Total							5E-10					
Medium Total								9E-07					

TABLE 9.7.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	2E-08	–	4E-09	–	2E-08					
			Benzo(a)pyrene	1E-07	–	3E-08	–	1E-07					
			Benzo(b)fluoranthene	2E-08	–	5E-09	–	2E-08					
			Benzo(k)fluoranthene	5E-10	–	1E-10	–	6E-10					
			Dibenzo(a,h)anthracene	2E-08	–	5E-09	–	2E-08					
			Indeno(1,2,3-cd)pyrene	9E-09	–	3E-09	–	1E-08					
			Aroclor-1260	1E-07	–	4E-08	–	2E-07					
			2,3,7,8-TCDD Equivalents	6E-09	–	4E-10	–	6E-09					
			Aluminum	--	–	--	–	--					
			Antimony	--	–	--	–	--					
			Arsenic	5E-08	–	6E-09	–	6E-08					
			Chromium VI	4E-07	–	--	–	4E-07					
			Cobalt	--	–	--	–	--					
			Iron	--	–	--	–	--					
			Manganese	--	–	--	–	--					
			Thallium	--	–	--	–	--					
			Chemical Total	7E-07	–	9E-08	–	8E-07					
		Exposure Point Total						8E-07					
	Exposure Medium Total							8E-07					
	Air	Tank Farm 2	Benzo(a)anthracene	–	2E-14	–	–	2E-14					
			Benzo(a)pyrene	–	1E-13	–	–	1E-13					
			Benzo(b)fluoranthene	–	2E-14	–	–	2E-14					
			Benzo(k)fluoranthene	–	6E-15	–	–	6E-15					
			Dibenzo(a,h)anthracene	–	2E-14	–	–	2E-14					
			Indeno(1,2,3-cd)pyrene	–	1E-14	–	–	1E-14					
			Aroclor-1260	–	5E-13	–	–	5E-13					
			2,3,7,8-TCDD Equivalents	–	3E-14	–	–	3E-14					
			Aluminum	–	--	–	–	--					
			Antimony	–	--	–	–	--					
			Arsenic	–	4E-12	–	–	4E-12					
			Chromium VI	–	5E-10	–	–	5E-10					
			Cobalt	–	1E-11	–	–	1E-11					
			Iron	–	--	–	–	--					
			Manganese	–	--	–	–	--					
			Thallium	–	--	–	–	--					
			Chemical Total	–	5E-10	–	–	5E-10					
		Exposure Point Total						5E-10					
	Exposure Medium Total							5E-10					
Medium Total								8E-07					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.8.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	3E-07	–	4E-08	–	3E-07	NA	–	–	–	–
			Benzo(a)pyrene	2E-06	–	3E-07	–	3E-06	NA	–	–	–	–
			Benzo(b)fluoranthene	2E-07	–	2E-08	–	2E-07	NA	–	–	–	–
			Benzo(k)fluoranthene	1E-08	–	2E-09	–	1E-08	NA	–	–	–	–
			Dibenzo(a,h)anthracene	4E-07	–	6E-08	–	5E-07	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	2E-07	–	3E-08	–	2E-07	NA	–	–	–	–
			Aroclor-1260	3E-06	–	4E-07	–	3E-06	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	1E-07	–	3E-09	–	1E-07	Reproductive	0.04	–	0.001	0.04
			Antimony	--	–	--	–	--	Blood	0.009	–	–	0.009
			Chromium VI	7E-06	–	--	–	7E-06	None Reported	0.03	–	–	0.03
			Cobalt	--	–	--	–	--	Thyroid	0.2	–	–	0.2
			Iron	--	–	--	–	--	GS	0.2	–	–	0.2
			Manganese	--	–	--	–	--	CNS	0.06	–	–	0.06
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	1E-05	–	9E-07	–	1E-05		0.4	–	0.001	0.4
		Exposure Point Total						1E-05					0.4
	Exposure Medium Total							1E-05					0.4
	Air	Tank Farm 2	Benzo(a)anthracene	–	6E-13	–	–	6E-13	NA	–	–	–	–
			Benzo(a)pyrene	–	5E-12	–	–	5E-12	NA	–	–	–	–
			Benzo(b)fluoranthene	–	3E-13	–	–	3E-13	NA	–	–	–	–
			Benzo(k)fluoranthene	–	2E-13	–	–	2E-13	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	9E-13	–	–	9E-13	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	4E-13	–	–	4E-13	NA	–	–	–	–
			Aroclor-1260	–	1E-11	–	–	1E-11	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	4E-13	–	–	4E-13	Reproductive	–	9E-9	–	9E-9
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	2E-08	–	–	2E-08	Respiratory	–	0.00001	–	0.00001
			Cobalt	–	2E-10	–	–	2E-10	Respiratory	–	0.0001	–	0.0001
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.0004	–	0.0004
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	2E-08	–	–	2E-08		--	0.0005	--	0.0005
		Exposure Point Total						2E-08					0.0005
	Exposure Medium Total							2E-08					0.0005
Medium Total								1E-05					0.4

TABLE 9.6.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	3E-07	–	4E-08	–	3E-07	NA	–	–	–	–
			Benzo(a)pyrene	2E-06	–	2E-07	–	2E-06	NA	–	–	–	–
			Benzo(b)fluoranthene	3E-07	–	5E-08	–	4E-07	NA	–	–	–	–
			Benzo(k)fluoranthene	9E-09	–	1E-09	–	1E-08	NA	–	–	–	–
			Dibenzo(a,h)anthracene	3E-07	–	4E-08	–	3E-07	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	2E-07	–	2E-08	–	2E-07	NA	–	–	–	–
			Aroclor-1260	2E-06	–	3E-07	–	2E-06	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	8E-08	–	3E-09	–	9E-08	Reproductive	0.03	–	0.001	0.03
			Aluminum	--	–	--	–	--	CNS	0.06	–	–	0.06
			Antimony	--	–	--	–	--	Blood	0.004	–	–	0.004
			Arsenic	8E-07	–	4E-08	–	8E-07	Skin, CVS	0.06	–	0.003	0.06
			Chromium VI	7E-06	–	--	–	7E-06	None Reported	0.03	–	–	0.03
			Cobalt	--	–	--	–	--	Thyroid	0.2	–	–	0.2
			Iron	--	–	--	–	--	GS	0.2	–	–	0.2
			Manganese	--	–	--	–	--	CNS	0.05	–	–	0.05
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	1E-05	–	7E-07	–	1E-05		0.6	–	0.004	0.6
		Exposure Point Total						1E-05					0.6
	Exposure Medium Total							1E-05					0.6
	Air	Tank Farm 2	Benzo(a)anthracene	–	6E-13	–	–	6E-13	NA	–	–	–	–
			Benzo(a)pyrene	–	4E-12	–	–	4E-12	NA	–	–	–	–
			Benzo(b)fluoranthene	–	7E-13	–	–	7E-13	NA	–	–	–	–
			Benzo(k)fluoranthene	–	2E-13	–	–	2E-13	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	7E-13	–	–	7E-13	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	3E-13	–	–	3E-13	NA	–	–	–	–
			Aroclor-1260	–	7E-12	–	–	7E-12	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	3E-13	–	–	3E-13	Reproductive	–	8E-9	–	8E-9
			Aluminum	–	--	–	–	--	CNS	–	0.0002	–	0.0002
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	5E-11	–	–	5E-11	Skin, CVS	–	0.00003	–	0.00003
			Chromium VI	–	2E-08	–	–	2E-08	Respiratory	–	0.00001	–	0.00001
			Cobalt	–	2E-10	–	–	2E-10	Respiratory	–	0.0001	–	0.0001
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.0004	–	0.0004
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	2E-08	–	–	2E-08		--	0.0007	--	0.0007
		Exposure Point Total						2E-08					0.0007
	Exposure Medium Total							2E-08					0.0007
Medium Total								1E-05					0.6

TABLE 9.8.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.01
Total CNS HI	0.2
Total CVS HI	0.06
Total GS HI	0.3
Total Respiratory HI	0.0002
Total Skin HI	0.06
Total Thyroid HI	0.3
Total Reproductive HI	0.07

TABLE 9.9.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	2E-08	–	4E-09	–	3E-08	NA	–	–	–	–
			Benzo(a)pyrene	2E-07	–	3E-08	–	2E-07	NA	–	–	–	–
			Benzo(b)fluoranthene	1E-08	–	2E-09	–	1E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	9E-10	–	1E-10	–	1E-09	NA	–	–	–	–
			Dibenzo(a,h)anthracene	3E-08	–	5E-09	–	4E-08	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	1E-08	–	2E-09	–	2E-08	NA	–	–	–	–
			Aroclor-1260	9E-07	–	1E-07	–	1E-06	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	3E-08	–	1E-09	–	4E-08	Reproductive	0.004	–	0.0001	0.004
			Antimony	--	–	--	–	--	Blood	0.0008	–	–	0.0008
			Chromium VI	6E-07	–	--	–	6E-07	None Reported	0.002	–	–	0.002
			Cobalt	--	–	--	–	--	Thyroid	0.01	–	–	0.01
			Iron	--	–	--	–	--	GS	0.01	–	–	0.01
			Manganese	--	–	--	–	--	CNS	0.005	–	–	0.005
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	2E-06	–	2E-07	–	2E-06		0.04	–	0.0001	0.04
		Exposure Point Total						2E-06					0.04
	Exposure Medium Total							2E-06					0.04
	Air	Tank Farm 2	Benzo(a)anthracene	–	5E-13	–	–	5E-13	NA	–	–	–	–
			Benzo(a)pyrene	–	4E-12	–	–	4E-12	NA	–	–	–	–
			Benzo(b)fluoranthene	–	3E-13	–	–	3E-13	NA	–	–	–	–
			Benzo(k)fluoranthene	–	2E-13	–	–	2E-13	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	8E-13	–	–	8E-13	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	3E-13	–	–	3E-13	NA	–	–	–	–
			Aroclor-1260	–	4E-11	–	–	4E-11	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	1E-12	–	–	1E-12	Reproductive	–	9E-9	–	9E-9
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Chromium VI	–	1E-08	–	–	1E-08	Respiratory	–	0.00001	–	0.00001
			Cobalt	–	6E-10	–	–	6E-10	Respiratory	–	0.0001	–	0.0001
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.0004	–	0.0004
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	1E-08	–	–	1E-08		--	0.0005	--	0.0005
		Exposure Point Total						1E-08					0.0005
	Exposure Medium Total							1E-08					0.0005
Medium Total								2E-06					0.04

TABLE 9.9.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	2E-08	–	3E-09	–	3E-08	NA	–	–	–	–
			Benzo(a)pyrene	1E-07	–	2E-08	–	2E-07	NA	–	–	–	–
			Benzo(b)fluoranthene	3E-08	–	4E-09	–	3E-08	NA	–	–	–	–
			Benzo(k)fluoranthene	7E-10	–	1E-10	–	8E-10	NA	–	–	–	–
			Dibenzo(a,h)anthracene	2E-08	–	4E-09	–	3E-08	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	1E-08	–	2E-09	–	2E-08	NA	–	–	–	–
			Aroclor-1260	6E-07	–	9E-08	–	7E-07	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	3E-08	–	1E-09	–	3E-08	Reproductive	0.003	–	0.0001	0.003
			Aluminum	--	–	--	–	--	CNS	0.005	–	–	0.005
			Antimony	--	–	--	–	--	Blood	0.0003	–	–	0.0003
			Arsenic	3E-07	–	2E-08	–	3E-07	Skin, CVS	0.006	–	0.0003	0.006
			Chromium VI	6E-07	–	--	–	6E-07	None Reported	0.002	–	–	0.002
			Cobalt	--	–	--	–	--	Thyroid	0.02	–	–	0.02
			Iron	--	–	--	–	--	GS	0.02	–	–	0.02
			Manganese	--	–	--	–	--	CNS	0.005	–	–	0.005
			Thallium	--	–	--	–	--	NA	–	–	–	–
			Chemical Total	2E-06	–	1E-07	–	2E-06		0.05	–	0.0005	0.05
		Exposure Point Total						2E-06					0.05
	Exposure Medium Total							2E-06					0.05
	Air	Tank Farm 2	Benzo(a)anthracene	–	5E-13	–	–	5E-13	NA	–	–	–	–
			Benzo(a)pyrene	–	3E-12	–	–	3E-12	NA	–	–	–	–
			Benzo(b)fluoranthene	–	6E-13	–	–	6E-13	NA	–	–	–	–
			Benzo(k)fluoranthene	–	2E-13	–	–	2E-13	NA	–	–	–	–
			Dibenzo(a,h)anthracene	–	6E-13	–	–	6E-13	NA	–	–	–	–
			Indeno(1,2,3-cd)pyrene	–	3E-13	–	–	3E-13	NA	–	–	–	–
			Aroclor-1260	–	2E-11	–	–	2E-11	NA	–	–	–	–
			2,3,7,8-TCDD Equivalents	–	1E-12	–	–	1E-12	Reproductive	–	8E-9	–	8E-9
			Aluminum	–	--	–	–	--	CNS	–	0.0002	–	0.0002
			Antimony	–	--	–	–	--	NA	–	–	–	–
			Arsenic	–	2E-10	–	–	2E-10	Skin, CVS	–	0.00003	–	0.00003
			Chromium VI	–	1E-08	–	–	1E-08	Respiratory	–	0.00001	–	0.00001
			Cobalt	–	6E-10	–	–	6E-10	Respiratory	–	0.0001	–	0.0001
			Iron	–	--	–	–	--	NA	–	–	–	–
			Manganese	–	--	–	–	--	CNS	–	0.0004	–	0.0004
			Thallium	–	--	–	–	--	NA	–	–	–	–
			Chemical Total	–	1E-08	–	–	1E-08		--	0.0007	--	0.0007
		Exposure Point Total						1E-08					0.0007
	Exposure Medium Total							1E-08					0.0007
Medium Total								2E-06					0.05

TABLE 9.9.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.001
Total CNS HI	0.02
Total CVS HI	0.006
Total GS HI	0.03
Total Respiratory HI	0.0002
Total Skin HI	0.006
Total Thyroid HI	0.03
Total Reproductive HI	0.007

TABLE 9.10.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Benzo(a)anthracene	3E-07	–	5E-08	–	4E-07					
			Benzo(a)pyrene	3E-06	–	4E-07	–	3E-06					
			Benzo(b)fluoranthene	2E-07	–	2E-08	–	2E-07					
			Benzo(k)fluoranthene	1E-08	–	2E-09	–	1E-08					
			Dibenzo(a,h)anthracene	4E-07	–	6E-08	–	5E-07					
			Indeno(1,2,3-cd)pyrene	2E-07	–	3E-08	–	2E-07					
			Aroclor-1260	4E-06	–	6E-07	–	4E-06					
			2,3,7,8-TCDD Equivalents	1E-07	–	5E-09	–	1E-07					
			Antimony	--	–	--	–	--					
			Chromium VI	8E-06	–	--	–	8E-06					
			Cobalt	--	–	--	–	--					
			Iron	--	–	--	–	--					
			Manganese	--	–	--	–	--					
			Thallium	--	–	--	–	--					
			Chemical Total	2E-05	–	1E-06	–	2E-05					
		Exposure Point Total						2E-05					
	Exposure Medium Total							2E-05					
	Air	Tank Farm 2	Benzo(a)anthracene	–	1E-12	–	–	1E-12					
			Benzo(a)pyrene	–	9E-12	–	–	9E-12					
			Benzo(b)fluoranthene	–	6E-13	–	–	6E-13					
			Benzo(k)fluoranthene	–	4E-13	–	–	4E-13					
			Dibenzo(a,h)anthracene	–	2E-12	–	–	2E-12					
			Indeno(1,2,3-cd)pyrene	–	7E-13	–	–	7E-13					
			Aroclor-1260	–	5E-11	–	–	5E-11					
			2,3,7,8-TCDD Equivalents	–	2E-12	–	–	2E-12					
			Antimony	–	--	–	–	--					
			Chromium VI	–	3E-08	–	–	3E-08					
			Cobalt	–	8E-10	–	–	8E-10					
			Iron	–	--	–	–	--					
			Manganese	–	--	–	–	--					
			Thallium	–	--	–	–	--					
			Chemical Total	–	3E-08	–	–	3E-08					
		Exposure Point Total						3E-08					
	Exposure Medium Total							3E-08					
Medium Total								2E-05					

TABLE 9.10.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	Tank Farm 2	Benzo(a)anthracene	3E-07	–	4E-08	–	3E-07					
			Benzo(a)pyrene	2E-06	–	3E-07	–	2E-06					
			Benzo(b)fluoranthene	4E-07	–	5E-08	–	4E-07					
			Benzo(k)fluoranthene	7E-10	–	1E-10	–	8E-10					
			Dibenzo(a,h)anthracene	3E-07	–	5E-08	–	4E-07					
			Indeno(1,2,3-cd)pyrene	2E-07	–	3E-08	–	2E-07					
			Aroclor-1260	2E-06	–	4E-07	–	3E-06					
			2,3,7,8-TCDD Equivalents	1E-07	–	4E-09	–	1E-07					
			Aluminum	--	–	--	–	--					
			Antimony	--	–	--	–	--					
			Arsenic	1E-06	–	6E-08	–	1E-06					
			Chromium VI	8E-06	–	--	–	8E-06					
			Cobalt	--	–	--	–	--					
			Iron	--	–	--	–	--					
			Manganese	--	–	--	–	--					
			Thallium	--	–	--	–	--					
			Chemical Total	1E-05	–	8E-07	–	2E-05					
		Exposure Point Total						2E-05					
	Exposure Medium Total							2E-05					
	Air	Tank Farm 2	Benzo(a)anthracene	–	1E-12	–	–	1E-12					
			Benzo(a)pyrene	–	7E-12	–	–	7E-12					
			Benzo(b)fluoranthene	–	1E-12	–	–	1E-12					
			Benzo(k)fluoranthene	–	2E-13	–	–	2E-13					
			Dibenzo(a,h)anthracene	–	1E-12	–	–	1E-12					
			Indeno(1,2,3-cd)pyrene	–	6E-13	–	–	6E-13					
			Aroclor-1260	–	3E-11	–	–	3E-11					
			2,3,7,8-TCDD Equivalents	–	1E-12	–	–	1E-12					
			Aluminum	–	--	–	–	--					
			Antimony	–	--	–	–	--					
			Arsenic	–	2E-10	–	–	2E-10					
			Chromium VI	–	3E-08	–	–	3E-08					
			Cobalt	–	8E-10	–	–	8E-10					
			Iron	–	--	–	–	--					
			Manganese	–	--	–	–	--					
			Thallium	–	--	–	–	--					
			Chemical Total	–	3E-08	–	–	3E-08					
		Exposure Point Total						3E-08					
	Exposure Medium Total							3E-08					
Medium Total								2E-05					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

AOC-001

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	4E-07	--	9E-07	--	1E-06	NA	--	--	--	--
			Benzo(a)pyrene	4E-06	--	8E-06	--	1E-05	NA	--	--	--	--
			Benzo(b)fluoranthene	6E-07	--	1E-06	--	2E-06	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.00002	--	0.00003	0.00005
			Benzo(k)fluoranthene	2E-08	--	4E-08	--	5E-08	NA	--	--	--	--
			Chrysene	5E-09	--	1E-08	--	2E-08	NA	--	--	--	--
			Dibenzo(a,h)anthracene	6E-07	--	1E-06	--	2E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	3E-07	--	6E-07	--	9E-07	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	2E-08	--	8E-09	--	2E-08	Reproductive	0.001	--	0.0005	0.002
			Antimony	- -	--	- -	--	- -	Blood	0.0001	--	--	0.0001
			Chromium VI	1E-06	--	- -	--	1E-06	None Reported	0.001	--	--	0.001
			Cobalt	- -	--	- -	--	- -	Thyroid	0.01	--	--	0.01
			Iron	- -	--	- -	--	- -	GS	0.010	--	--	0.010
			Manganese	- -	--	- -	--	- -	CNS	0.004	--	--	0.004
			Chemical Total	7E-06	--	1E-05	--	2E-05		0.03	--	0.0005	0.03
		Exposure Point Total						2E-05					0.03
	Exposure Medium Total							2E-05					0.03
	Air	AOC-001	Benzo(a)anthracene	--	5E-13	--	--	5E-13	NA	--	--	--	--
			Benzo(a)pyrene	--	4E-12	--	--	4E-12	NA	--	--	--	--
			Benzo(b)fluoranthene	--	7E-13	--	--	7E-13	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2E-13	--	--	2E-13	NA	--	--	--	--
			Chrysene	--	6E-14	--	--	6E-14	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	7E-13	--	--	7E-13	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	4E-14	--	--	4E-14	Reproductive	--	1E-10	--	1E-10
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	1E-09	--	--	1E-09	Respiratory	--	0.0000003	--	0.0000003
			Cobalt	--	4E-11	--	--	4E-11	Respiratory	--	0.000005	--	0.000005
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.00002	--	0.00002
			Chemical Total	--	2E-09	--	--	2E-09		- -	0.00002	- -	0.00002
		Exposure Point Total						2E-09					0.00002
	Exposure Medium Total							2E-09					0.00002
Medium Total								2E-05					0.03

TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	2E-07	--	5E-07	--	8E-07	NA	--	--	--	--
			Benzo(a)pyrene	2E-06	--	4E-06	--	6E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	3E-07	--	7E-07	--	1E-06	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000009	--	0.00002	0.00003
			Benzo(k)fluoranthene	9E-09	--	2E-08	--	3E-08	NA	--	--	--	--
			Chrysene	3E-09	--	5E-09	--	8E-09	NA	--	--	--	--
			Dibenzo(a,h)anthracene	3E-07	--	7E-07	--	1E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	2E-07	--	3E-07	--	5E-07	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	2E-08	--	8E-09	--	2E-08	Reproductive	0.001	--	0.0005	0.002
			Aluminum	- -	--	- -	--	- -	CNS	0.004	--	--	0.004
			Antimony	- -	--	- -	--	- -	Blood	0.00008	--	--	0.00008
			Arsenic	3E-07	--	3E-07	--	6E-07	Skin, CVS	0.004	--	0.004	0.008
			Chromium VI	1E-06	--	- -	--	1E-06	None Reported	0.002	--	--	0.002
			Cobalt	- -	--	- -	--	- -	Thyroid	0.01	--	--	0.01
			Iron	- -	--	- -	--	- -	GS	0.01	--	--	0.01
			Manganese	- -	--	- -	--	- -	CNS	0.004	--	--	0.004
			Chemical Total	5E-06	--	7E-06	--	1E-05		0.04	--	0.004	0.04
		Exposure Point Total						1E-05					0.04
	Exposure Medium Total							1E-05					0.04
	Air	AOC-001	Benzo(a)anthracene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			Benzo(a)pyrene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			Benzo(b)fluoranthene	--	4E-13	--	--	4E-13	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1E-13	--	--	1E-13	NA	--	--	--	--
			Chrysene	--	3E-14	--	--	3E-14	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	4E-13	--	--	4E-13	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2E-13	--	--	2E-13	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	4E-14	--	--	4E-14	Reproductive	--	1E-10	--	1E-10
			Aluminum	--	- -	--	--	- -	CNS	--	0.000006	--	0.000006
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	1E-11	--	--	1E-11	Skin, CVS	--	0.000001	--	0.000001
			Chromium VI	--	2E-09	--	--	2E-09	Respiratory	--	0.0000004	--	0.0000004
			Cobalt	--	4E-11	--	--	4E-11	Respiratory	--	0.000005	--	0.000005
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.00001	--	0.00001
			Chemical Total	--	2E-09	--	--	2E-09		- -	0.00003	- -	0.00003
		Exposure Point Total						2E-09					0.00003
	Exposure Medium Total							2E-09					0.00003
Medium Total								1E-05					0.04
Receptor Total							Receptor Risk Total	3E-05				Receptor HI Total	0.07

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.0002
Total CNS HI	0.01
Total CVS HI	0.008
Total GS HI	0.02
Total Kidney HI	0.00008
Total Respiratory HI	0.00001
Total Skin HI	0.008
Total Thyroid HI	0.02
Total Reproductive HI	0.003

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	1E-07	--	7E-08	--	2E-07	NA	--	--	--	--
			Benzo(a)pyrene	1E-06	--	6E-07	--	2E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	2E-07	--	9E-08	--	3E-07	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000004	--	0.000002	0.000006
			Benzo(k)fluoranthene	5E-09	--	3E-09	--	8E-09	NA	--	--	--	--
			Chrysene	1E-09	--	8E-10	--	2E-09	NA	--	--	--	--
			Dibenzo(a,h)anthracene	2E-07	--	9E-08	--	3E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	8E-08	--	4E-08	--	1E-07	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	7E-09	--	9E-10	--	8E-09	Reproductive	0.0003	--	0.00003	0.0003
			Antimony	- -	--	- -	--	- -	Blood	0.00003	--	--	0.00003
			Chromium VI	3E-07	--	- -	--	3E-07	None Reported	0.0004	--	--	0.0004
			Cobalt	- -	--	- -	--	- -	Thyroid	0.003	--	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.003	--	--	0.003
			Manganese	- -	--	- -	--	- -	CNS	0.001	--	--	0.001
			Chemical Total	2E-06	--	9E-07	--	3E-06		0.007	--	0.00004	0.008
		Exposure Point Total						3E-06					0.008
	Exposure Medium Total							3E-06					0.008
	Air	AOC-001	Benzo(a)anthracene	--	5E-13	--	--	5E-13	NA	--	--	--	--
			Benzo(a)pyrene	--	4E-12	--	--	4E-12	NA	--	--	--	--
			Benzo(b)fluoranthene	--	6E-13	--	--	6E-13	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2E-13	--	--	2E-13	NA	--	--	--	--
			Chrysene	--	5E-14	--	--	5E-14	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	7E-13	--	--	7E-13	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	5E-14	--	--	5E-14	Reproductive	--	1E-10	--	1E-10
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	1E-09	--	--	1E-09	Respiratory	--	0.0000003	--	0.0000003
			Cobalt	--	6E-11	--	--	6E-11	Respiratory	--	0.000004	--	0.000004
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.00001	--	0.00001
			Chemical Total	--	1E-09	--	--	1E-09		- -	0.00002	- -	0.00002
		Exposure Point Total						1E-09					0.00002
	Exposure Medium Total							1E-09					0.00002
Medium Total								3E-06					0.008

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	7E-08	--	4E-08	--	1E-07	NA	--	--	--	--
			Benzo(a)pyrene	6E-07	--	3E-07	--	9E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	9E-08	--	5E-08	--	1E-07	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000002	--	0.000001	0.000004
			Benzo(k)fluoranthene	3E-09	--	1E-09	--	4E-09	NA	--	--	--	--
			Chrysene	7E-10	--	4E-10	--	1E-09	NA	--	--	--	--
			Dibenzo(a,h)anthracene	9E-08	--	5E-08	--	1E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	5E-08	--	3E-08	--	7E-08	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	7E-09	--	9E-10	--	8E-09	Reproductive	0.0003	--	0.00003	0.0003
			Aluminum	- -	--	- -	--	- -	CNS	0.001	--	--	0.001
			Antimony	- -	--	- -	--	- -	Blood	0.00002	--	--	0.00002
			Arsenic	1E-07	--	3E-08	--	2E-07	Skin, CVS	0.001	--	0.0002	0.001
			Chromium VI	4E-07	--	- -	--	4E-07	None Reported	0.0004	--	--	0.0004
			Cobalt	- -	--	- -	--	- -	Thyroid	0.003	--	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.003	--	--	0.003
			Manganese	- -	--	- -	--	- -	CNS	0.0010	--	--	0.0010
			Chemical Total	1E-06	--	5E-07	--	2E-06		0.010	--	0.0003	0.01
		Exposure Point Total						2E-06					0.01
	Exposure Medium Total							2E-06					0.01
	Air	AOC-001	Benzo(a)anthracene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			Benzo(a)pyrene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			Benzo(b)fluoranthene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1E-13	--	--	1E-13	NA	--	--	--	--
			Chrysene	--	3E-14	--	--	3E-14	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	4E-13	--	--	4E-13	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2E-13	--	--	2E-13	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	5E-14	--	--	5E-14	Reproductive	--	1E-10	--	1E-10
			Aluminum	--	- -	--	--	- -	CNS	--	0.000005	--	0.000005
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	2E-11	--	--	2E-11	Skin, CVS	--	0.0000009	--	0.0000009
			Chromium VI	--	1E-09	--	--	1E-09	Respiratory	--	0.0000003	--	0.0000003
			Cobalt	--	6E-11	--	--	6E-11	Respiratory	--	0.000004	--	0.000004
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.00001	--	0.00001
			Chemical Total	--	2E-09	--	--	2E-09		- -	0.00002	- -	0.00002
		Exposure Point Total						2E-09					0.00002
	Exposure Medium Total							2E-09					0.00002
Medium Total								2E-06					0.01
Receptor Total							Receptor Risk Total	5E-06				Receptor HI Total	0.02

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.00005
Total CNS HI	0.003
Total CVS HI	0.001
Total GS HI	0.005
Total Kidney HI	0.000010
Total Respiratory HI	0.000008
Total Skin HI	0.001
Total Thyroid HI	0.006
Total Reproductive HI	0.0006

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	7E-08	--	3E-08	--	1E-07	NA	--	--	--	--
			Benzo(a)pyrene	6E-07	--	2E-07	--	8E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	9E-08	--	4E-08	--	1E-07	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000009	--	0.000004	0.00001
			Benzo(k)fluoranthene	3E-09	--	1E-09	--	4E-09	NA	--	--	--	--
			Chrysene	8E-10	--	3E-10	--	1E-09	NA	--	--	--	--
			Dibenzo(a,h)anthracene	9E-08	--	4E-08	--	1E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	4E-08	--	2E-08	--	6E-08	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	7E-09	--	7E-10	--	8E-09	Immune	0.0002	--	0.00002	0.0002
			Antimony	- -	--	- -	--	- -	Blood	0.0006	--	--	0.0006
			Chromium VI	2E-07	--	- -	--	2E-07	None Reported	0.005	--	--	0.005
			Cobalt	- -	--	- -	--	- -	Thyroid	0.007	--	--	0.007
			Iron	- -	--	- -	--	- -	GS	0.06	--	--	0.06
			Manganese	- -	--	- -	--	- -	CNS	0.02	--	--	0.02
			Chemical Total	1E-06	--	4E-07	--	1E-06		0.09	--	0.00002	0.09
		Exposure Point Total						1E-06					0.09
	Exposure Medium Total							1E-06					0.09
	Air	AOC-001	Benzo(a)anthracene	--	6E-10	--	--	6E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	5E-09	--	--	5E-09	NA	--	--	--	--
			Benzo(b)fluoranthene	--	8E-10	--	--	8E-10	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2E-10	--	--	2E-10	NA	--	--	--	--
			Chrysene	--	7E-11	--	--	7E-11	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	9E-10	--	--	9E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	4E-10	--	--	4E-10	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	1E-10	--	--	1E-10	Reproductive	--	0.000006	--	0.000006
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	2E-06	--	--	2E-06	Respiratory	--	0.005	--	0.005
			Cobalt	--	1E-07	--	--	1E-07	Respiratory	--	0.06	--	0.06
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.6	--	0.6
			Chemical Total	--	2E-06	--	--	2E-06		- -	0.7	- -	0.7
		Exposure Point Total						2E-06					0.7
	Exposure Medium Total							2E-06					0.7
Medium Total								3E-06					0.8

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	4E-08	--	2E-08	--	5E-08	NA	--	--	--	--
			Benzo(a)pyrene	3E-07	--	1E-07	--	5E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	5E-08	--	2E-08	--	7E-08	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000005	--	0.000002	0.000007
			Benzo(k)fluoranthene	1E-09	--	6E-10	--	2E-09	NA	--	--	--	--
			Chrysene	4E-10	--	2E-10	--	6E-10	NA	--	--	--	--
			Dibenzo(a,h)anthracene	5E-08	--	2E-08	--	7E-08	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	2E-08	--	1E-08	--	3E-08	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	7E-09	--	7E-10	--	8E-09	Immune	0.0002	--	0.00002	0.0002
			Aluminum	- -	--	- -	--	- -	CNS	0.02	--	--	0.02
			Antimony	- -	--	- -	--	- -	Blood	0.0004	--	--	0.0004
			Arsenic	2E-07	--	3E-08	--	2E-07	Skin, CVS	0.02	--	0.004	0.03
			Chromium VI	2E-07	--	- -	--	2E-07	None Reported	0.005	--	--	0.005
			Cobalt	- -	--	- -	--	- -	Thyroid	0.007	--	--	0.007
			Iron	- -	--	- -	--	- -	GS	0.06	--	--	0.06
			Manganese	- -	--	- -	--	- -	CNS	0.02	--	--	0.02
			Chemical Total	8E-07	--	2E-07	--	1E-06		0.1	--	0.004	0.1
		Exposure Point Total						1E-06					0.1
	Exposure Medium Total							1E-06					0.1
	Air	AOC-001	Benzo(a)anthracene	--	3E-10	--	--	3E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	3E-09	--	--	3E-09	NA	--	--	--	--
			Benzo(b)fluoranthene	--	4E-10	--	--	4E-10	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1E-10	--	--	1E-10	NA	--	--	--	--
			Chrysene	--	3E-11	--	--	3E-11	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	5E-10	--	--	5E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2E-10	--	--	2E-10	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	1E-10	--	--	1E-10	Reproductive	--	0.000006	--	0.000006
			Aluminum	--	- -	--	--	- -	CNS	--	0.3	--	0.3
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	4E-08	--	--	4E-08	Skin, CVS	--	0.05	--	0.05
			Chromium VI	--	2E-06	--	--	2E-06	Respiratory	--	0.005	--	0.005
			Cobalt	--	2E-07	--	--	2E-07	Respiratory	--	0.06	--	0.06
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.6	--	0.6
			Chemical Total	--	2E-06	--	--	2E-06		- -	0.9	- -	0.9
		Exposure Point Total						2E-06					0.9
	Exposure Medium Total							2E-06					0.9
Medium Total								3E-06					1
Receptor Total							Receptor Risk Total	6E-06				Receptor HI Total	2

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.001
Total CNS HI	2
Total CVS HI	0.08
Total GS HI	0.1
Total Immune HI	0.0004
Total Kidney HI	0.00002
Total Respiratory HI	0.1
Total Skin HI	0.08
Total Thyroid HI	0.01
Total Reproductive HI	0.00001

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	1E-06	--	5E-07	--	2E-06	NA	--	--	--	--
			Benzo(a)pyrene	8E-06	--	4E-06	--	1E-05	NA	--	--	--	--
			Benzo(b)fluoranthene	1E-06	--	7E-07	--	2E-06	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.00005	--	0.00003	0.00008
			Benzo(k)fluoranthene	4E-08	--	2E-08	--	6E-08	NA	--	--	--	--
			Chrysene	1E-08	--	6E-09	--	2E-08	NA	--	--	--	--
			Dibenzo(a,h)anthracene	1E-06	--	7E-07	--	2E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	6E-07	--	3E-07	--	1E-06	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	1E-07	--	1E-08	--	1E-07	Reproductive	0.003	--	0.0004	0.004
			Antimony	- -	--	- -	--	- -	Blood	0.0004	--	--	0.0004
			Chromium VI	3E-06	--	- -	--	3E-06	None Reported	0.005	--	--	0.005
			Cobalt	- -	--	- -	--	- -	Thyroid	0.04	--	--	0.04
			Iron	- -	--	- -	--	- -	GS	0.03	--	--	0.03
			Manganese	- -	--	- -	--	- -	CNS	0.01	--	--	0.01
			Chemical Total	2E-05	--	7E-06	--	2E-05		0.09	--	0.0004	0.09
		Exposure Point Total						2E-05					0.09
	Exposure Medium Total							2E-05					0.09
	Air	AOC-001	Benzo(a)anthracene	--	4E-12	--	--	4E-12	NA	--	--	--	--
			Benzo(a)pyrene	--	3E-11	--	--	3E-11	NA	--	--	--	--
			Benzo(b)fluoranthene	--	5E-12	--	--	5E-12	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1E-12	--	--	1E-12	NA	--	--	--	--
			Chrysene	--	4E-13	--	--	4E-13	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	5E-12	--	--	5E-12	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	8E-13	--	--	8E-13	Reproductive	--	1E-9	--	1E-9
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	1E-08	--	--	1E-08	Respiratory	--	0.000004	--	0.000004
			Cobalt	--	9E-10	--	--	9E-10	Respiratory	--	0.00005	--	0.00005
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0002	--	0.0002
			Chemical Total	--	1E-08	--	--	1E-08		- -	0.0002	- -	0.0002
		Exposure Point Total						1E-08					0.0002
	Exposure Medium Total							1E-08					0.0002
Medium Total								2E-05					0.09

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	6E-07	--	3E-07	--	9E-07	NA	--	--	--	--
			Benzo(a)pyrene	5E-06	--	3E-06	--	7E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	7E-07	--	4E-07	--	1E-06	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.00003	--	0.00002	0.00004
			Benzo(k)fluoranthene	2E-08	--	1E-08	--	3E-08	NA	--	--	--	--
			Chrysene	6E-09	--	3E-09	--	9E-09	NA	--	--	--	--
			Dibenzo(a,h)anthracene	7E-07	--	4E-07	--	1E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	4E-07	--	2E-07	--	6E-07	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	1E-07	--	1E-08	--	1E-07	Reproductive	0.003	--	0.0004	0.004
			Aluminum	- -	--	- -	--	- -	CNS	0.01	--	--	0.01
			Antimony	- -	--	- -	--	- -	Blood	0.0003	--	--	0.0003
			Arsenic	2E-06	--	5E-07	--	3E-06	Skin, CVS	0.01	--	0.003	0.02
			Chromium VI	3E-06	--	- -	--	3E-06	None Reported	0.005	--	--	0.005
			Cobalt	- -	--	- -	--	- -	Thyroid	0.04	--	--	0.04
			Iron	- -	--	- -	--	- -	GS	0.03	--	--	0.03
			Manganese	- -	--	- -	--	- -	CNS	0.01	--	--	0.01
			Chemical Total	1E-05	--	4E-06	--	2E-05		0.1	--	0.003	0.1
		Exposure Point Total						2E-05					0.1
	Exposure Medium Total							2E-05					0.1
	Air	AOC-001	Benzo(a)anthracene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			Benzo(a)pyrene	--	2E-11	--	--	2E-11	NA	--	--	--	--
			Benzo(b)fluoranthene	--	3E-12	--	--	3E-12	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	8E-13	--	--	8E-13	NA	--	--	--	--
			Chrysene	--	2E-13	--	--	2E-13	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	3E-12	--	--	3E-12	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	1E-12	--	--	1E-12	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	8E-13	--	--	8E-13	Reproductive	--	1E-9	--	1E-9
			Aluminum	--	- -	--	--	- -	CNS	--	0.00006	--	0.00006
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	3E-10	--	--	3E-10	Skin, CVS	--	0.00001	--	0.00001
			Chromium VI	--	1E-08	--	--	1E-08	Respiratory	--	0.000004	--	0.000004
			Cobalt	--	1E-09	--	--	1E-09	Respiratory	--	0.00005	--	0.00005
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0001	--	0.0001
			Chemical Total	--	1E-08	--	--	1E-08		- -	0.0003	- -	0.0003
		Exposure Point Total						1E-08					0.0003
	Exposure Medium Total							1E-08					0.0003
Medium Total								2E-05					0.1
Receptor Total							Receptor Risk Total	4E-05				Receptor HI Total	0.2

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.0006
Total CNS HI	0.04
Total CVS HI	0.02
Total GS HI	0.07
Total Kidney HI	0.0001
Total Respiratory HI	0.0001
Total Skin HI	0.02
Total Thyroid HI	0.08
Total Reproductive HI	0.007

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	1E-06	--	9E-07	--	2E-06	NA	--	--	--	--
			Benzo(a)pyrene	1E-05	--	8E-06	--	2E-05	NA	--	--	--	--
			Benzo(b)fluoranthene	2E-06	--	1E-06	--	3E-06	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.00005	--	0.00004	0.00009
			Benzo(k)fluoranthene	5E-08	--	3E-08	--	8E-08	NA	--	--	--	--
			Chrysene	1E-08	--	1E-08	--	2E-08	NA	--	--	--	--
			Dibenzo(a,h)anthracene	2E-06	--	1E-06	--	3E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	8E-07	--	6E-07	--	1E-06	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	3E-08	--	4E-09	--	3E-08	Reproductive	0.003	--	0.0005	0.004
			Antimony	- -	--	- -	--	- -	Blood	0.0004	--	--	0.0004
			Chromium VI	3E-06	--	- -	--	3E-06	None Reported	0.005	--	--	0.005
			Cobalt	- -	--	- -	--	- -	Thyroid	0.04	--	--	0.04
			Iron	- -	--	- -	--	- -	GS	0.03	--	--	0.03
			Manganese	- -	--	- -	--	- -	CNS	0.01	--	--	0.01
			Chemical Total	2E-05	--	1E-05	--	3E-05		0.10	--	0.0006	0.10
		Exposure Point Total						3E-05					0.10
	Exposure Medium Total							3E-05					0.10
	Air	AOC-001	Benzo(a)anthracene	--	5E-13	--	--	5E-13	NA	--	--	--	--
			Benzo(a)pyrene	--	4E-12	--	--	4E-12	NA	--	--	--	--
			Benzo(b)fluoranthene	--	6E-13	--	--	6E-13	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2E-13	--	--	2E-13	NA	--	--	--	--
			Chrysene	--	5E-14	--	--	5E-14	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	6E-13	--	--	6E-13	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	2E-14	--	--	2E-14	Reproductive	--	1E-10	--	1E-10
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	1E-09	--	--	1E-09	Respiratory	--	0.0000003	--	0.0000003
			Cobalt	--	2E-11	--	--	2E-11	Respiratory	--	0.000005	--	0.000005
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.00002	--	0.00002
			Chemical Total	--	1E-09	--	--	1E-09		- -	0.00002	- -	0.00002
		Exposure Point Total						1E-09					0.00002
	Exposure Medium Total							1E-09					0.00002
Medium Total								3E-05					0.10

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	7E-07	--	5E-07	--	1E-06	NA	--	--	--	--
			Benzo(a)pyrene	6E-06	--	4E-06	--	1E-05	NA	--	--	--	--
			Benzo(b)fluoranthene	9E-07	--	7E-07	--	2E-06	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.00003	--	0.00002	0.00005
			Benzo(k)fluoranthene	3E-08	--	2E-08	--	5E-08	NA	--	--	--	--
			Chrysene	8E-09	--	5E-09	--	1E-08	NA	--	--	--	--
			Dibenzo(a,h)anthracene	9E-07	--	7E-07	--	2E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	5E-07	--	3E-07	--	8E-07	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	3E-08	--	4E-09	--	3E-08	Reproductive	0.003	--	0.0005	0.004
			Aluminum	- -	--	- -	--	- -	CNS	0.01	--	--	0.01
			Antimony	- -	--	- -	--	- -	Blood	0.0003	--	--	0.0003
			Arsenic	6E-07	--	2E-07	--	7E-07	Skin, CVS	0.01	--	0.004	0.02
			Chromium VI	4E-06	--	- -	--	4E-06	None Reported	0.005	--	--	0.005
			Cobalt	- -	--	- -	--	- -	Thyroid	0.04	--	--	0.04
			Iron	- -	--	- -	--	- -	GS	0.04	--	--	0.04
			Manganese	- -	--	- -	--	- -	CNS	0.01	--	--	0.01
			Chemical Total	1E-05	--	7E-06	--	2E-05		0.1	--	0.005	0.1
		Exposure Point Total						2E-05					0.1
	Exposure Medium Total							2E-05					0.1
	Air	AOC-001	Benzo(a)anthracene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			Benzo(a)pyrene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			Benzo(b)fluoranthene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1E-13	--	--	1E-13	NA	--	--	--	--
			Chrysene	--	3E-14	--	--	3E-14	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2E-13	--	--	2E-13	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	2E-14	--	--	2E-14	Reproductive	--	1E-10	--	1E-10
			Aluminum	--	- -	--	--	- -	CNS	--	0.000006	--	0.000006
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	6E-12	--	--	6E-12	Skin, CVS	--	0.000001	--	0.000001
			Chromium VI	--	1E-09	--	--	1E-09	Respiratory	--	0.0000004	--	0.0000004
			Cobalt	--	2E-11	--	--	2E-11	Respiratory	--	0.000005	--	0.000005
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.00001	--	0.00001
			Chemical Total	--	1E-09	--	--	1E-09		- -	0.00003	- -	0.00003
		Exposure Point Total						1E-09					0.00003
	Exposure Medium Total							1E-09					0.00003
Medium Total								2E-05					0.1
Receptor Total							Receptor Risk Total	5E-05				Receptor HI Total	0.2

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.0006
Total CNS HI	0.04
Total CVS HI	0.02
Total GS HI	0.07
Total Kidney HI	0.0001
Total Respiratory HI	0.00001
Total Skin HI	0.02
Total Thyroid HI	0.08
Total Reproductive HI	0.008

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	2E-07	--	2E-07	--	3E-07	NA	--	--	--	--
			Benzo(a)pyrene	1E-06	--	1E-06	--	3E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	2E-07	--	2E-07	--	4E-07	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000005	--	0.000005	0.00001
			Benzo(k)fluoranthene	6E-09	--	6E-09	--	1E-08	NA	--	--	--	--
			Chrysene	2E-09	--	2E-09	--	4E-09	NA	--	--	--	--
			Dibenzo(a,h)anthracene	2E-07	--	2E-07	--	4E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1E-07	--	1E-07	--	2E-07	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	8E-09	--	2E-09	--	1E-08	Reproductive	0.0003	--	0.00008	0.0004
			Antimony	- -	--	- -	--	- -	Blood	0.00003	--	--	0.00003
			Chromium VI	4E-07	--	- -	--	4E-07	None Reported	0.0005	--	--	0.0005
			Cobalt	- -	--	- -	--	- -	Thyroid	0.004	--	--	0.004
			Iron	- -	--	- -	--	- -	GS	0.003	--	--	0.003
			Manganese	- -	--	- -	--	- -	CNS	0.001	--	--	0.001
			Chemical Total	2E-06	--	2E-06	--	4E-06		0.009	--	0.00009	0.009
		Exposure Point Total						4E-06					0.009
	Exposure Medium Total							4E-06					0.009
	Air	AOC-001	Benzo(a)anthracene	--	6E-13	--	--	6E-13	NA	--	--	--	--
			Benzo(a)pyrene	--	5E-12	--	--	5E-12	NA	--	--	--	--
			Benzo(b)fluoranthene	--	7E-13	--	--	7E-13	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2E-13	--	--	2E-13	NA	--	--	--	--
			Chrysene	--	6E-14	--	--	6E-14	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	8E-13	--	--	8E-13	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	4E-13	--	--	4E-13	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	6E-14	--	--	6E-14	Reproductive	--	1E-10	--	1E-10
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	2E-09	--	--	2E-09	Respiratory	--	0.0000003	--	0.0000003
			Cobalt	--	7E-11	--	--	7E-11	Respiratory	--	0.000005	--	0.000005
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.00002	--	0.00002
			Chemical Total	--	2E-09	--	--	2E-09		- -	0.00002	- -	0.00002
		Exposure Point Total						2E-09					0.00002
	Exposure Medium Total							2E-09					0.00002
Medium Total								4E-06					0.009

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	9E-08	--	9E-08	--	2E-07	NA	--	--	--	--
			Benzo(a)pyrene	7E-07	--	8E-07	--	2E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	1E-07	--	1E-07	--	2E-07	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000003	--	0.000003	0.000006
			Benzo(k)fluoranthene	3E-09	--	4E-09	--	7E-09	NA	--	--	--	--
			Chrysene	9E-10	--	1E-09	--	2E-09	NA	--	--	--	--
			Dibenzo(a,h)anthracene	1E-07	--	1E-07	--	2E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	5E-08	--	6E-08	--	1E-07	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	8E-09	--	2E-09	--	1E-08	Reproductive	0.0003	--	0.00008	0.0004
			Aluminum	- -	--	- -	--	- -	CNS	0.001	--	--	0.001
			Antimony	- -	--	- -	--	- -	Blood	0.00002	--	--	0.00002
			Arsenic	2E-07	--	7E-08	--	3E-07	Skin, CVS	0.001	--	0.0006	0.002
			Chromium VI	4E-07	--	- -	--	4E-07	None Reported	0.0005	--	--	0.0005
			Cobalt	- -	--	- -	--	- -	Thyroid	0.004	--	--	0.004
			Iron	- -	--	- -	--	- -	GS	0.003	--	--	0.003
			Manganese	- -	--	- -	--	- -	CNS	0.001	--	--	0.001
			Chemical Total	2E-06	--	1E-06	--	3E-06		0.01	--	0.0007	0.01
		Exposure Point Total						3E-06					0.01
	Exposure Medium Total							3E-06					0.01
	Air	AOC-001	Benzo(a)anthracene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			Benzo(a)pyrene	--	3E-12	--	--	3E-12	NA	--	--	--	--
			Benzo(b)fluoranthene	--	4E-13	--	--	4E-13	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1E-13	--	--	1E-13	NA	--	--	--	--
			Chrysene	--	3E-14	--	--	3E-14	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	4E-13	--	--	4E-13	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2E-13	--	--	2E-13	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	6E-14	--	--	6E-14	Reproductive	--	1E-10	--	1E-10
			Aluminum	--	- -	--	--	- -	CNS	--	0.000006	--	0.000006
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	2E-11	--	--	2E-11	Skin, CVS	--	0.000001	--	0.000001
			Chromium VI	--	2E-09	--	--	2E-09	Respiratory	--	0.0000004	--	0.0000004
			Cobalt	--	7E-11	--	--	7E-11	Respiratory	--	0.000005	--	0.000005
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.00001	--	0.00001
			Chemical Total	--	2E-09	--	--	2E-09		- -	0.00003	- -	0.00003
		Exposure Point Total						2E-09					0.00003
	Exposure Medium Total							2E-09					0.00003
Medium Total								3E-06					0.01
Receptor Total							Receptor Risk Total	7E-06				Receptor HI Total	0.02

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.00006
Total CNS HI	0.004
Total CVS HI	0.002
Total GS HI	0.006
Total Kidney HI	0.00002
Total Respiratory HI	0.00001
Total Skin HI	0.002
Total Thyroid HI	0.008
Total Reproductive HI	0.0008

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	1E-06	--	1E-06	--	3E-06					
			Benzo(a)pyrene	1E-05	--	9E-06	--	2E-05					
			Benzo(b)fluoranthene	2E-06	--	1E-06	--	3E-06					
			Benzo(g,h,i)perylene	- -	--	- -	--	- -					
			Benzo(k)fluoranthene	6E-08	--	4E-08	--	1E-07					
			Chrysene	2E-08	--	1E-08	--	3E-08					
			Dibenzo(a,h)anthracene	2E-06	--	1E-06	--	3E-06					
			Indeno(1,2,3-cd)pyrene	9E-07	--	7E-07	--	2E-06					
			2,3,7,8-TCDD Equivalents	3E-08	--	6E-09	--	4E-08					
			Antimony	- -	--	- -	--	- -					
			Chromium VI	4E-06	--	- -	--	4E-06					
			Cobalt	- -	--	- -	--	- -					
			Iron	- -	--	- -	--	- -					
			Manganese	- -	--	- -	--	- -					
			Chemical Total	2E-05	--	1E-05	--	4E-05					
		Exposure Point Total						4E-05					
	Exposure Medium Total							4E-05					
	Air	AOC-001	Benzo(a)anthracene	--	1E-12	--	--	1E-12					
			Benzo(a)pyrene	--	8E-12	--	--	8E-12					
			Benzo(b)fluoranthene	--	1E-12	--	--	1E-12					
			Benzo(g,h,i)perylene	--	- -	--	--	- -					
			Benzo(k)fluoranthene	--	4E-13	--	--	4E-13					
			Chrysene	--	1E-13	--	--	1E-13					
			Dibenzo(a,h)anthracene	--	1E-12	--	--	1E-12					
			Indeno(1,2,3-cd)pyrene	--	6E-13	--	--	6E-13					
			2,3,7,8-TCDD Equivalents	--	8E-14	--	--	8E-14					
			Antimony	--	- -	--	--	- -					
			Chromium VI	--	3E-09	--	--	3E-09					
			Cobalt	--	9E-11	--	--	9E-11					
			Iron	--	- -	--	--	- -					
			Manganese	--	- -	--	--	- -					
			Chemical Total	--	3E-09	--	--	3E-09					
		Exposure Point Total						3E-09					
	Exposure Medium Total							3E-09					
Medium Total								4E-05					

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	8E-07	--	6E-07	--	1E-06					
			Benzo(a)pyrene	7E-06	--	5E-06	--	1E-05					
			Benzo(b)fluoranthene	1E-06	--	8E-07	--	2E-06					
			Benzo(g,h,i)perylene	- -	--	- -	--	- -					
			Benzo(k)fluoranthene	3E-08	--	2E-08	--	5E-08					
			Chrysene	8E-09	--	6E-09	--	1E-08					
			Dibenzo(a,h)anthracene	1E-06	--	8E-07	--	2E-06					
			Indeno(1,2,3-cd)pyrene	5E-07	--	4E-07	--	9E-07					
			2,3,7,8-TCDD Equivalents	3E-08	--	6E-09	--	4E-08					
			Aluminum	- -	--	- -	--	- -					
			Antimony	- -	--	- -	--	- -					
			Arsenic	7E-07	--	2E-07	--	1E-06					
			Chromium VI	4E-06	--	- -	--	4E-06					
			Cobalt	- -	--	- -	--	- -					
			Iron	- -	--	- -	--	- -					
			Manganese	- -	--	- -	--	- -					
			Chemical Total	2E-05	--	8E-06	--	2E-05					
		Exposure Point Total						2E-05					
	Exposure Medium Total							2E-05					
	Air	AOC-001	Benzo(a)anthracene	--	6E-13	--	--	6E-13					
			Benzo(a)pyrene	--	5E-12	--	--	5E-12					
			Benzo(b)fluoranthene	--	7E-13	--	--	7E-13					
			Benzo(g,h,i)perylene	--	- -	--	--	- -					
			Benzo(k)fluoranthene	--	2E-13	--	--	2E-13					
			Chrysene	--	6E-14	--	--	6E-14					
			Dibenzo(a,h)anthracene	--	8E-13	--	--	8E-13					
			Indeno(1,2,3-cd)pyrene	--	4E-13	--	--	4E-13					
			2,3,7,8-TCDD Equivalents	--	8E-14	--	--	8E-14					
			Aluminum	--	- -	--	--	- -					
			Antimony	--	- -	--	--	- -					
			Arsenic	--	3E-11	--	--	3E-11					
			Chromium VI	--	3E-09	--	--	3E-09					
			Cobalt	--	1E-10	--	--	1E-10					
			Iron	--	- -	--	--	- -					
			Manganese	--	- -	--	--	- -					
			Chemical Total	--	3E-09	--	--	3E-09					
		Exposure Point Total						3E-09					
	Exposure Medium Total							3E-09					
Medium Total								2E-05					
Receptor Total							Receptor Risk Total	6E-05					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.8.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	2E-05	--	7E-06	--	3E-05	NA	--	--	--	--
			Benzo(a)pyrene	2E-04	--	6E-05	--	2E-04	NA	--	--	--	--
			Benzo(b)fluoranthene	2E-05	--	9E-06	--	3E-05	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.0008	--	0.0003	0.001
			Benzo(k)fluoranthene	7E-07	--	3E-07	--	1E-06	NA	--	--	--	--
			Chrysene	2E-07	--	7E-08	--	3E-07	NA	--	--	--	--
			Dibenzo(a,h)anthracene	3E-05	--	9E-06	--	3E-05	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1E-05	--	4E-06	--	2E-05	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	4E-07	--	3E-08	--	4E-07	Reproductive	0.05	--	0.004	0.05
			Antimony	- -	--	- -	--	- -	Blood	0.005	--	--	0.005
			Chromium VI	5E-05	--	- -	--	5E-05	None Reported	0.07	--	--	0.07
			Cobalt	- -	--	- -	--	- -	Thyroid	0.6	--	--	0.6
			Iron	- -	--	- -	--	- -	GS	0.5	--	--	0.5
			Manganese	- -	--	- -	--	- -	CNS	0.2	--	--	0.2
			Chemical Total	3E-04	--	8E-05	--	4E-04		1	--	0.004	1
		Exposure Point Total						4E-04					1
	Exposure Medium Total							4E-04					1
	Air	AOC-001	Benzo(a)anthracene	--	2E-11	--	--	2E-11	NA	--	--	--	--
			Benzo(a)pyrene	--	2E-10	--	--	2E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	3E-11	--	--	3E-11	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	7E-12	--	--	7E-12	NA	--	--	--	--
			Chrysene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	3E-11	--	--	3E-11	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	1E-11	--	--	1E-11	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	8E-13	--	--	8E-13	Reproductive	--	6E-9	--	6E-9
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	6E-08	--	--	6E-08	Respiratory	--	0.00001	--	0.00001
			Cobalt	--	9E-10	--	--	9E-10	Respiratory	--	0.0002	--	0.0002
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0007	--	0.0007
			Chemical Total	--	6E-08	--	--	6E-08		- -	0.0009	- -	0.0009
		Exposure Point Total						6E-08					0.0009
	Exposure Medium Total							6E-08					0.0009
Medium Total								4E-04					1

TABLE 9.8.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	1E-05	--	4E-06	--	1E-05	NA	--	--	--	--
			Benzo(a)pyrene	9E-05	--	3E-05	--	1E-04	NA	--	--	--	--
			Benzo(b)fluoranthene	1E-05	--	5E-06	--	2E-05	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.0004	--	0.0001	0.0006
			Benzo(k)fluoranthene	4E-07	--	1E-07	--	5E-07	NA	--	--	--	--
			Chrysene	1E-07	--	4E-08	--	1E-07	NA	--	--	--	--
			Dibenzo(a,h)anthracene	1E-05	--	5E-06	--	2E-05	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	7E-06	--	2E-06	--	9E-06	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	4E-07	--	3E-08	--	4E-07	Reproductive	0.05	--	0.004	0.05
			Aluminum	- -	--	- -	--	- -	CNS	0.2	--	--	0.2
			Antimony	- -	--	- -	--	- -	Blood	0.004	--	--	0.004
			Arsenic	8E-06	--	1E-06	--	9E-06	Skin, CVS	0.2	--	0.03	0.2
			Chromium VI	5E-05	--	- -	--	5E-05	None Reported	0.08	--	--	0.08
			Cobalt	- -	--	- -	--	- -	Thyroid	0.6	--	--	0.6
			Iron	- -	--	- -	--	- -	GS	0.5	--	--	0.5
			Manganese	- -	--	- -	--	- -	CNS	0.2	--	--	0.2
			Chemical Total	2E-04	--	5E-05	--	2E-04		2	--	0.03	2
		Exposure Point Total						2E-04					2
	Exposure Medium Total							2E-04					2
	Air	AOC-001	Benzo(a)anthracene	--	1E-11	--	--	1E-11	NA	--	--	--	--
			Benzo(a)pyrene	--	9E-11	--	--	9E-11	NA	--	--	--	--
			Benzo(b)fluoranthene	--	1E-11	--	--	1E-11	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	4E-12	--	--	4E-12	NA	--	--	--	--
			Chrysene	--	1E-12	--	--	1E-12	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	2E-11	--	--	2E-11	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	7E-12	--	--	7E-12	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	8E-13	--	--	8E-13	Reproductive	--	6E-9	--	6E-9
			Aluminum	--	- -	--	--	- -	CNS	--	0.0003	--	0.0003
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	3E-10	--	--	3E-10	Skin, CVS	--	0.00005	--	0.00005
			Chromium VI	--	6E-08	--	--	6E-08	Respiratory	--	0.00002	--	0.00002
			Cobalt	--	1E-09	--	--	1E-09	Respiratory	--	0.0002	--	0.0002
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0006	--	0.0006
			Chemical Total	--	6E-08	--	--	6E-08		- -	0.001	- -	0.001
		Exposure Point Total						6E-08					0.001
	Exposure Medium Total							6E-08					0.001
Medium Total								2E-04					2
Receptor Total							Receptor Risk Total	6E-04				Receptor HI Total	3

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.009
Total CNS HI	0.6
Total CVS HI	0.2
Total GS HI	1.0
Total Kidney HI	0.002
Total Respiratory HI	0.0004
Total Skin HI	0.2
Total Thyroid HI	1
Total Reproductive HI	0.1

TABLE 9.9.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	2E-06	--	1E-06	--	3E-06	NA	--	--	--	--
			Benzo(a)pyrene	2E-05	--	1E-05	--	3E-05	NA	--	--	--	--
			Benzo(b)fluoranthene	3E-06	--	2E-06	--	4E-06	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.00007	--	0.00004	0.0001
			Benzo(k)fluoranthene	9E-08	--	5E-08	--	1E-07	NA	--	--	--	--
			Chrysene	2E-08	--	1E-08	--	4E-08	NA	--	--	--	--
			Dibenzo(a,h)anthracene	3E-06	--	2E-06	--	5E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1E-06	--	8E-07	--	2E-06	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	1E-07	--	2E-08	--	1E-07	Reproductive	0.005	--	0.0006	0.005
			Antimony	- -	--	- -	--	- -	Blood	0.0005	--	--	0.0005
			Chromium VI	6E-06	--	- -	--	6E-06	None Reported	0.007	--	--	0.007
			Cobalt	- -	--	- -	--	- -	Thyroid	0.05	--	--	0.05
			Iron	- -	--	- -	--	- -	GS	0.05	--	--	0.05
			Manganese	- -	--	- -	--	- -	CNS	0.02	--	--	0.02
			Chemical Total	3E-05	--	2E-05	--	5E-05		0.1	--	0.0006	0.1
		Exposure Point Total						5E-05					0.1
	Exposure Medium Total							5E-05					0.1
	Air	AOC-001	Benzo(a)anthracene	--	2E-11	--	--	2E-11	NA	--	--	--	--
			Benzo(a)pyrene	--	2E-10	--	--	2E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	3E-11	--	--	3E-11	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	9E-12	--	--	9E-12	NA	--	--	--	--
			Chrysene	--	3E-12	--	--	3E-12	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	4E-11	--	--	4E-11	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2E-11	--	--	2E-11	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	3E-12	--	--	3E-12	Reproductive	--	6E-9	--	6E-9
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	7E-08	--	--	7E-08	Respiratory	--	0.00001	--	0.00001
			Cobalt	--	3E-09	--	--	3E-09	Respiratory	--	0.0002	--	0.0002
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0007	--	0.0007
			Chemical Total	--	7E-08	--	--	7E-08		- -	0.0009	- -	0.0009
		Exposure Point Total						7E-08					0.0009
	Exposure Medium Total							7E-08					0.0009
Medium Total								5E-05					0.1

TABLE 9.9.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	1E-06	--	7E-07	--	2E-06	NA	--	--	--	--
			Benzo(a)pyrene	1E-05	--	6E-06	--	2E-05	NA	--	--	--	--
			Benzo(b)fluoranthene	2E-06	--	9E-07	--	2E-06	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.00004	--	0.00002	0.00006
			Benzo(k)fluoranthene	5E-08	--	3E-08	--	7E-08	NA	--	--	--	--
			Chrysene	1E-08	--	7E-09	--	2E-08	NA	--	--	--	--
			Dibenzo(a,h)anthracene	2E-06	--	9E-07	--	2E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	8E-07	--	4E-07	--	1E-06	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	1E-07	--	2E-08	--	1E-07	Reproductive	0.005	--	0.0006	0.005
			Aluminum	- -	--	- -	--	- -	CNS	0.02	--	--	0.02
			Antimony	- -	--	- -	--	- -	Blood	0.0004	--	--	0.0004
			Arsenic	3E-06	--	5E-07	--	3E-06	Skin, CVS	0.02	--	0.004	0.02
			Chromium VI	6E-06	--	- -	--	6E-06	None Reported	0.007	--	--	0.007
			Cobalt	- -	--	- -	--	- -	Thyroid	0.06	--	--	0.06
			Iron	- -	--	- -	--	- -	GS	0.05	--	--	0.05
			Manganese	- -	--	- -	--	- -	CNS	0.02	--	--	0.02
			Chemical Total	2E-05	--	9E-06	--	3E-05		0.2	--	0.005	0.2
		Exposure Point Total						3E-05					0.2
	Exposure Medium Total							3E-05					0.2
	Air	AOC-001	Benzo(a)anthracene	--	1E-11	--	--	1E-11	NA	--	--	--	--
			Benzo(a)pyrene	--	1E-10	--	--	1E-10	NA	--	--	--	--
			Benzo(b)fluoranthene	--	2E-11	--	--	2E-11	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	5E-12	--	--	5E-12	NA	--	--	--	--
			Chrysene	--	1E-12	--	--	1E-12	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	2E-11	--	--	2E-11	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	9E-12	--	--	9E-12	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	3E-12	--	--	3E-12	Reproductive	--	6E-9	--	6E-9
			Aluminum	--	- -	--	--	- -	CNS	--	0.0003	--	0.0003
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	9E-10	--	--	9E-10	Skin, CVS	--	0.00005	--	0.00005
			Chromium VI	--	8E-08	--	--	8E-08	Respiratory	--	0.00002	--	0.00002
			Cobalt	--	3E-09	--	--	3E-09	Respiratory	--	0.0002	--	0.0002
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0006	--	0.0006
			Chemical Total	--	8E-08	--	--	8E-08		- -	0.001	- -	0.001
		Exposure Point Total						8E-08					0.001
	Exposure Medium Total							8E-08					0.001
Medium Total								3E-05					0.2
Receptor Total							Receptor Risk Total	8E-05				Receptor HI Total	0.3

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.0009
Total CNS HI	0.06
Total CVS HI	0.02
Total GS HI	0.09
Total Kidney HI	0.0002
Total Respiratory HI	0.0004
Total Skin HI	0.02
Total Thyroid HI	0.1
Total Reproductive HI	0.01

TABLE 9.10.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	2E-05	--	8E-06	--	3E-05					
			Benzo(a)pyrene	2E-04	--	7E-05	--	2E-04					
			Benzo(b)fluoranthene	3E-05	--	1E-05	--	4E-05					
			Benzo(g,h,i)perylene	- -	--	- -	--	- -					
			Benzo(k)fluoranthene	8E-07	--	3E-07	--	1E-06					
			Chrysene	2E-07	--	9E-08	--	3E-07					
			Dibenzo(a,h)anthracene	3E-05	--	1E-05	--	4E-05					
			Indeno(1,2,3-cd)pyrene	1E-05	--	5E-06	--	2E-05					
			2,3,7,8-TCDD Equivalents	5E-07	--	5E-08	--	6E-07					
			Antimony	- -	--	- -	--	- -					
			Chromium VI	6E-05	--	- -	--	6E-05					
			Cobalt	- -	--	- -	--	- -					
			Iron	- -	--	- -	--	- -					
			Manganese	- -	--	- -	--	- -					
			Chemical Total	3E-04	--	1E-04	--	4E-04					
		Exposure Point Total						4E-04					
	Exposure Medium Total							4E-04					
	Air	AOC-001	Benzo(a)anthracene	--	4E-11	--	--	4E-11					
			Benzo(a)pyrene	--	4E-10	--	--	4E-10					
			Benzo(b)fluoranthene	--	6E-11	--	--	6E-11					
			Benzo(g,h,i)perylene	--	- -	--	--	- -					
			Benzo(k)fluoranthene	--	2E-11	--	--	2E-11					
			Chrysene	--	5E-12	--	--	5E-12					
			Dibenzo(a,h)anthracene	--	6E-11	--	--	6E-11					
			Indeno(1,2,3-cd)pyrene	--	3E-11	--	--	3E-11					
			2,3,7,8-TCDD Equivalents	--	3E-12	--	--	3E-12					
			Antimony	--	- -	--	--	- -					
			Chromium VI	--	1E-07	--	--	1E-07					
			Cobalt	--	4E-09	--	--	4E-09					
			Iron	--	- -	--	--	- -					
			Manganese	--	- -	--	--	- -					
			Chemical Total	--	1E-07	--	--	1E-07					
		Exposure Point Total						1E-07					
	Exposure Medium Total							1E-07					
Medium Total								4E-04					

TABLE 9.10.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	1E-05	--	4E-06	--	2E-05					
			Benzo(a)pyrene	1E-04	--	4E-05	--	1E-04					
			Benzo(b)fluoranthene	2E-05	--	6E-06	--	2E-05					
			Benzo(g,h,i)perylene	- -	--	- -	--	- -					
			Benzo(k)fluoranthene	5E-07	--	2E-07	--	6E-07					
			Chrysene	1E-07	--	5E-08	--	2E-07					
			Dibenzo(a,h)anthracene	2E-05	--	6E-06	--	2E-05					
			Indeno(1,2,3-cd)pyrene	8E-06	--	3E-06	--	1E-05					
			2,3,7,8-TCDD Equivalents	5E-07	--	5E-08	--	6E-07					
			Aluminum	- -	--	- -	--	- -					
			Antimony	- -	--	- -	--	- -					
			Arsenic	1E-05	--	2E-06	--	1E-05					
			Chromium VI	6E-05	--	- -	--	6E-05					
			Cobalt	- -	--	- -	--	- -					
			Iron	- -	--	- -	--	- -					
			Manganese	- -	--	- -	--	- -					
			Chemical Total	2E-04	--	6E-05	--	3E-04					
		Exposure Point Total						3E-04					
	Exposure Medium Total							3E-04					
	Air	AOC-001	Benzo(a)anthracene	--	2E-11	--	--	2E-11					
			Benzo(a)pyrene	--	2E-10	--	--	2E-10					
			Benzo(b)fluoranthene	--	3E-11	--	--	3E-11					
			Benzo(g,h,i)perylene	--	- -	--	--	- -					
			Benzo(k)fluoranthene	--	9E-12	--	--	9E-12					
			Chrysene	--	3E-12	--	--	3E-12					
			Dibenzo(a,h)anthracene	--	3E-11	--	--	3E-11					
			Indeno(1,2,3-cd)pyrene	--	2E-11	--	--	2E-11					
			2,3,7,8-TCDD Equivalents	--	3E-12	--	--	3E-12					
			Aluminum	--	- -	--	--	- -					
			Antimony	--	- -	--	--	- -					
			Arsenic	--	1E-09	--	--	1E-09					
			Chromium VI	--	1E-07	--	--	1E-07					
			Cobalt	--	4E-09	--	--	4E-09					
			Iron	--	- -	--	--	- -					
			Manganese	--	- -	--	--	- -					
			Chemical Total	--	1E-07	--	--	1E-07					
		Exposure Point Total						1E-07					
	Exposure Medium Total							1E-07					
Medium Total								3E-04					
Receptor Total							Receptor Risk Total	7E-04					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	6E-08	--	2E-08	--	8E-08	NA	--	--	--	--
			Benzo(a)pyrene	5E-07	--	2E-07	--	6E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	7E-08	--	3E-08	--	1E-07	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000004	--	0.000002	0.000006
			Benzo(k)fluoranthene	2E-09	--	9E-10	--	3E-09	NA	--	--	--	--
			Chrysene	6E-10	--	3E-10	--	9E-10	NA	--	--	--	--
			Dibenzo(a,h)anthracene	7E-08	--	3E-08	--	1E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	3E-08	--	1E-08	--	5E-08	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	2E-09	--	2E-10	--	2E-09	Reproductive	0.0003	--	0.00002	0.0003
			Antimony	- -	--	- -	--	- -	Blood	0.00003	--	--	0.00003
			Chromium VI	1E-07	--	- -	--	1E-07	None Reported	0.0004	--	--	0.0004
			Cobalt	- -	--	- -	--	- -	Thyroid	0.003	--	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.002	--	--	0.002
			Manganese	- -	--	- -	--	- -	CNS	0.001	--	--	0.001
			Chemical Total	8E-07	--	3E-07	--	1E-06		0.007	--	0.00003	0.007
		Exposure Point Total						1E-06					0.007
	Exposure Medium Total							1E-06					0.007
	Air	AOC-001	Benzo(a)anthracene	--	1E-13	--	--	1E-13	NA	--	--	--	--
			Benzo(a)pyrene	--	1E-12	--	--	1E-12	NA	--	--	--	--
			Benzo(b)fluoranthene	--	2E-13	--	--	2E-13	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	5E-14	--	--	5E-14	NA	--	--	--	--
			Chrysene	--	1E-14	--	--	1E-14	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	2E-13	--	--	2E-13	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	8E-14	--	--	8E-14	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	9E-15	--	--	9E-15	Reproductive	--	7E-11	--	7E-11
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	4E-10	--	--	4E-10	Respiratory	--	0.0000002	--	0.0000002
			Cobalt	--	1E-11	--	--	1E-11	Respiratory	--	0.000002	--	0.000002
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.000008	--	0.000008
			Chemical Total	--	4E-10	--	--	4E-10		- -	0.000010	- -	0.000010
		Exposure Point Total						4E-10					0.000010
	Exposure Medium Total							4E-10					0.000010
Medium Total								1E-06					0.007

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	3E-08	--	1E-08	--	4E-08	NA	--	--	--	--
			Benzo(a)pyrene	3E-07	--	1E-07	--	4E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	4E-08	--	2E-08	--	6E-08	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000002	--	0.0000009	0.000003
			Benzo(k)fluoranthene	1E-09	--	5E-10	--	2E-09	NA	--	--	--	--
			Chrysene	3E-10	--	1E-10	--	5E-10	NA	--	--	--	--
			Dibenzo(a,h)anthracene	4E-08	--	2E-08	--	6E-08	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	2E-08	--	8E-09	--	3E-08	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	2E-09	--	2E-10	--	2E-09	Reproductive	0.0003	--	0.00002	0.0003
			Aluminum	- -	--	- -	--	- -	CNS	0.0010	--	--	0.0010
			Antimony	- -	--	- -	--	- -	Blood	0.00002	--	--	0.00002
			Arsenic	4E-08	--	7E-09	--	5E-08	Skin, CVS	0.001	--	0.0002	0.001
			Chromium VI	2E-07	--	- -	--	2E-07	None Reported	0.0004	--	--	0.0004
			Cobalt	- -	--	- -	--	- -	Thyroid	0.003	--	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.003	--	--	0.003
			Manganese	- -	--	- -	--	- -	CNS	0.0009	--	--	0.0009
			Chemical Total	6E-07	--	2E-07	--	8E-07		0.010	--	0.0002	0.010
		Exposure Point Total						8E-07					0.010
	Exposure Medium Total							8E-07					0.010
	Air	AOC-001	Benzo(a)anthracene	--	7E-14	--	--	7E-14	NA	--	--	--	--
			Benzo(a)pyrene	--	6E-13	--	--	6E-13	NA	--	--	--	--
			Benzo(b)fluoranthene	--	9E-14	--	--	9E-14	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	3E-14	--	--	3E-14	NA	--	--	--	--
			Chrysene	--	7E-15	--	--	7E-15	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	1E-13	--	--	1E-13	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	5E-14	--	--	5E-14	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	9E-15	--	--	9E-15	Reproductive	--	7E-11	--	7E-11
			Aluminum	--	- -	--	--	- -	CNS	--	0.000003	--	0.000003
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	3E-12	--	--	3E-12	Skin, CVS	--	0.0000006	--	0.0000006
			Chromium VI	--	4E-10	--	--	4E-10	Respiratory	--	0.0000002	--	0.0000002
			Cobalt	--	1E-11	--	--	1E-11	Respiratory	--	0.000002	--	0.000002
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.000007	--	0.000007
			Chemical Total	--	4E-10	--	--	4E-10		- -	0.00001	- -	0.00001
		Exposure Point Total						4E-10					0.00001
	Exposure Medium Total							4E-10					0.00001
Medium Total								8E-07					0.010
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	0.02

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.00005
Total CNS HI	0.003
Total CVS HI	0.001
Total GS HI	0.005
Total Kidney HI	0.000009
Total Respiratory HI	0.000005
Total Skin HI	0.001
Total Thyroid HI	0.006
Total Reproductive HI	0.0006

TABLE 9.2.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	9E-09	--	1E-09	--	1E-08	NA	--	--	--	--
			Benzo(a)pyrene	7E-08	--	1E-08	--	8E-08	NA	--	--	--	--
			Benzo(b)fluoranthene	1E-08	--	2E-09	--	1E-08	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000001	--	0.0000002	0.000001
			Benzo(k)fluoranthene	3E-10	--	5E-11	--	4E-10	NA	--	--	--	--
			Chrysene	1E-10	--	2E-11	--	1E-10	NA	--	--	--	--
			Dibenzo(a,h)anthracene	1E-08	--	2E-09	--	1E-08	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	6E-09	--	9E-10	--	6E-09	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	6E-10	--	2E-11	--	6E-10	Reproductive	0.00007	--	0.000002	0.00007
			Antimony	- -	--	- -	--	- -	Blood	0.000007	--	--	0.000007
			Chromium VI	2E-08	--	- -	--	2E-08	None Reported	0.00010	--	--	0.00010
			Cobalt	- -	--	- -	--	- -	Thyroid	0.0008	--	--	0.0008
			Iron	- -	--	- -	--	- -	GS	0.0006	--	--	0.0006
			Manganese	- -	--	- -	--	- -	CNS	0.0003	--	--	0.0003
			Chemical Total	1E-07	--	2E-08	--	2E-07		0.002	--	0.000003	0.002
		Exposure Point Total						2E-07					0.002
	Exposure Medium Total							2E-07					0.002
	Air	AOC-001	Benzo(a)anthracene	--	3E-14	--	--	3E-14	NA	--	--	--	--
			Benzo(a)pyrene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			Benzo(b)fluoranthene	--	4E-14	--	--	4E-14	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1E-14	--	--	1E-14	NA	--	--	--	--
			Chrysene	--	4E-15	--	--	4E-15	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	5E-14	--	--	5E-14	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2E-14	--	--	2E-14	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	4E-15	--	--	4E-15	Reproductive	--	3E-11	--	3E-11
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	9E-11	--	--	9E-11	Respiratory	--	7E-8	--	7E-8
			Cobalt	--	5E-12	--	--	5E-12	Respiratory	--	0.0000009	--	0.0000009
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.000003	--	0.000003
			Chemical Total	--	1E-10	--	--	1E-10		- -	0.000004	- -	0.000004
		Exposure Point Total						1E-10					0.000004
	Exposure Medium Total							1E-10					0.000004
Medium Total								2E-07					0.002

TABLE 9.2.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	5E-09	--	8E-10	--	6E-09	NA	--	--	--	--
			Benzo(a)pyrene	4E-08	--	6E-09	--	5E-08	NA	--	--	--	--
			Benzo(b)fluoranthene	6E-09	--	1E-09	--	7E-09	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.0000006	--	9E-8	0.0000007
			Benzo(k)fluoranthene	2E-10	--	3E-11	--	2E-10	NA	--	--	--	--
			Chrysene	5E-11	--	8E-12	--	6E-11	NA	--	--	--	--
			Dibenzo(a,h)anthracene	6E-09	--	1E-09	--	7E-09	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	3E-09	--	5E-10	--	4E-09	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	6E-10	--	2E-11	--	6E-10	Reproductive	0.00007	--	0.000002	0.00007
			Aluminum	- -	--	- -	--	- -	CNS	0.0003	--	--	0.0003
			Antimony	- -	--	- -	--	- -	Blood	0.000005	--	--	0.000005
			Arsenic	1E-08	--	8E-10	--	1E-08	Skin, CVS	0.0003	--	0.00002	0.0003
			Chromium VI	2E-08	--	- -	--	2E-08	None Reported	0.0001	--	--	0.0001
			Cobalt	- -	--	- -	--	- -	Thyroid	0.0008	--	--	0.0008
			Iron	- -	--	- -	--	- -	GS	0.0007	--	--	0.0007
			Manganese	- -	--	- -	--	- -	CNS	0.0002	--	--	0.0002
			Chemical Total	1E-07	--	1E-08	--	1E-07		0.002	--	0.00002	0.002
		Exposure Point Total						1E-07					0.002
	Exposure Medium Total							1E-07					0.002
	Air	AOC-001	Benzo(a)anthracene	--	2E-14	--	--	2E-14	NA	--	--	--	--
			Benzo(a)pyrene	--	2E-13	--	--	2E-13	NA	--	--	--	--
			Benzo(b)fluoranthene	--	2E-14	--	--	2E-14	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	7E-15	--	--	7E-15	NA	--	--	--	--
			Chrysene	--	2E-15	--	--	2E-15	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	3E-14	--	--	3E-14	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	1E-14	--	--	1E-14	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	4E-15	--	--	4E-15	Reproductive	--	3E-11	--	3E-11
			Aluminum	--	- -	--	--	- -	CNS	--	0.000001	--	0.000001
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	1E-12	--	--	1E-12	Skin, CVS	--	0.0000002	--	0.0000002
			Chromium VI	--	1E-10	--	--	1E-10	Respiratory	--	8E-8	--	8E-8
			Cobalt	--	5E-12	--	--	5E-12	Respiratory	--	0.000001	--	0.000001
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.000003	--	0.000003
			Chemical Total	--	1E-10	--	--	1E-10		- -	0.000005	- -	0.000005
		Exposure Point Total						1E-10					0.000005
	Exposure Medium Total							1E-10					0.000005
Medium Total								1E-07					0.003
Receptor Total							Receptor Risk Total	3E-07				Receptor HI Total	0.004

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.00001
Total CNS HI	0.0008
Total CVS HI	0.0003
Total GS HI	0.001
Total Kidney HI	0.000002
Total Respiratory HI	0.000002
Total Skin HI	0.0003
Total Thyroid HI	0.002
Total Reproductive HI	0.0001

TABLE 9.3.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	3E-08	--	4E-09	--	3E-08	NA	--	--	--	--
			Benzo(a)pyrene	2E-07	--	3E-08	--	3E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	4E-08	--	5E-09	--	4E-08	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000004	--	0.0000005	0.000004
			Benzo(k)fluoranthene	1E-09	--	1E-10	--	1E-09	NA	--	--	--	--
			Chrysene	3E-10	--	4E-11	--	3E-10	NA	--	--	--	--
			Dibenzo(a,h)anthracene	4E-08	--	5E-09	--	4E-08	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	2E-08	--	2E-09	--	2E-08	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	3E-09	--	9E-11	--	3E-09	Immune	0.00008	--	0.000003	0.00008
			Antimony	- -	--	- -	--	- -	Blood	0.0002	--	--	0.0002
			Chromium VI	7E-08	--	- -	--	7E-08	None Reported	0.002	--	--	0.002
			Cobalt	- -	--	- -	--	- -	Thyroid	0.003	--	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.02	--	--	0.02
			Manganese	- -	--	- -	--	- -	CNS	0.009	--	--	0.009
			Chemical Total	4E-07	--	5E-08	--	5E-07		0.04	--	0.000003	0.04
		Exposure Point Total						5E-07					0.04
	Exposure Medium Total							5E-07					0.04
	Air	AOC-001	Benzo(a)anthracene	--	2E-10	--	--	2E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	2E-09	--	--	2E-09	NA	--	--	--	--
			Benzo(b)fluoranthene	--	3E-10	--	--	3E-10	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	9E-11	--	--	9E-11	NA	--	--	--	--
			Chrysene	--	3E-11	--	--	3E-11	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	3E-10	--	--	3E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	1E-10	--	--	1E-10	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	5E-11	--	--	5E-11	Reproductive	--	0.000002	--	0.000002
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	7E-07	--	--	7E-07	Respiratory	--	0.002	--	0.002
			Cobalt	--	6E-08	--	--	6E-08	Respiratory	--	0.02	--	0.02
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.3	--	0.3
			Chemical Total	--	8E-07	--	--	8E-07		- -	0.3	- -	0.3
		Exposure Point Total						8E-07					0.3
	Exposure Medium Total							8E-07					0.3
Medium Total								1E-06					0.3

TABLE 9.3.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	2E-08	--	2E-09	--	2E-08	NA	--	--	--	--
			Benzo(a)pyrene	1E-07	--	2E-08	--	1E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	2E-08	--	3E-09	--	2E-08	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000002	--	0.0000003	0.000002
			Benzo(k)fluoranthene	6E-10	--	8E-11	--	7E-10	NA	--	--	--	--
			Chrysene	2E-10	--	2E-11	--	2E-10	NA	--	--	--	--
			Dibenzo(a,h)anthracene	2E-08	--	3E-09	--	2E-08	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1E-08	--	1E-09	--	1E-08	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	3E-09	--	9E-11	--	3E-09	Immune	0.00008	--	0.000003	0.00008
			Aluminum	- -	--	- -	--	- -	CNS	0.009	--	--	0.009
			Antimony	- -	--	- -	--	- -	Blood	0.0002	--	--	0.0002
			Arsenic	6E-08	--	3E-09	--	7E-08	Skin, CVS	0.010	--	0.0005	0.01
			Chromium VI	8E-08	--	- -	--	8E-08	None Reported	0.002	--	--	0.002
			Cobalt	- -	--	- -	--	- -	Thyroid	0.003	--	--	0.003
			Iron	- -	--	- -	--	- -	GS	0.02	--	--	0.02
			Manganese	- -	--	- -	--	- -	CNS	0.008	--	--	0.008
			Chemical Total	3E-07	--	3E-08	--	4E-07		0.06	--	0.0005	0.06
		Exposure Point Total						4E-07					0.06
	Exposure Medium Total							4E-07					0.06
	Air	AOC-001	Benzo(a)anthracene	--	1E-10	--	--	1E-10	NA	--	--	--	--
			Benzo(a)pyrene	--	1E-09	--	--	1E-09	NA	--	--	--	--
			Benzo(b)fluoranthene	--	2E-10	--	--	2E-10	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	5E-11	--	--	5E-11	NA	--	--	--	--
			Chrysene	--	1E-11	--	--	1E-11	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	2E-10	--	--	2E-10	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	9E-11	--	--	9E-11	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	5E-11	--	--	5E-11	Reproductive	--	0.000002	--	0.000002
			Aluminum	--	- -	--	--	- -	CNS	--	0.1	--	0.1
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	2E-08	--	--	2E-08	Skin, CVS	--	0.02	--	0.02
			Chromium VI	--	7E-07	--	--	7E-07	Respiratory	--	0.002	--	0.002
			Cobalt	--	6E-08	--	--	6E-08	Respiratory	--	0.02	--	0.02
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.2	--	0.2
			Chemical Total	--	8E-07	--	--	8E-07		- -	0.4	- -	0.4
		Exposure Point Total						8E-07					0.4
	Exposure Medium Total							8E-07					0.4
Medium Total								1E-06					0.4
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	0.8

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.0004
Total CNS HI	0.6
Total CVS HI	0.03
Total GS HI	0.05
Total Immune HI	0.0002
Total Kidney HI	0.000006
Total Respiratory HI	0.05
Total Skin HI	0.03
Total Thyroid HI	0.006
Total Reproductive HI	0.000005

TABLE 9.4.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	2E-07	--	3E-08	--	2E-07	NA	--	--	--	--
			Benzo(a)pyrene	1E-06	--	2E-07	--	2E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	2E-07	--	4E-08	--	2E-07	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.00002	--	0.000004	0.00003
			Benzo(k)fluoranthene	6E-09	--	1E-09	--	7E-09	NA	--	--	--	--
			Chrysene	2E-09	--	3E-10	--	2E-09	NA	--	--	--	--
			Dibenzo(a,h)anthracene	2E-07	--	4E-08	--	2E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1E-07	--	2E-08	--	1E-07	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	2E-08	--	7E-10	--	2E-08	Reproductive	0.001	--	0.00006	0.002
			Antimony	- -	--	- -	--	- -	Blood	0.0002	--	--	0.0002
			Chromium VI	4E-07	--	- -	--	4E-07	None Reported	0.002	--	--	0.002
			Cobalt	- -	--	- -	--	- -	Thyroid	0.02	--	--	0.02
			Iron	- -	--	- -	--	- -	GS	0.01	--	--	0.01
			Manganese	- -	--	- -	--	- -	CNS	0.006	--	--	0.006
			Chemical Total	2E-06	--	4E-07	--	3E-06		0.04	--	0.00006	0.04
		Exposure Point Total						3E-06					0.04
	Exposure Medium Total							3E-06					0.04
	Air	AOC-001	Benzo(a)anthracene	--	1E-12	--	--	1E-12	NA	--	--	--	--
			Benzo(a)pyrene	--	1E-11	--	--	1E-11	NA	--	--	--	--
			Benzo(b)fluoranthene	--	1E-12	--	--	1E-12	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	4E-13	--	--	4E-13	NA	--	--	--	--
			Chrysene	--	1E-13	--	--	1E-13	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	7E-13	--	--	7E-13	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	2E-13	--	--	2E-13	Reproductive	--	1E-9	--	1E-9
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	3E-09	--	--	3E-09	Respiratory	--	0.000003	--	0.000003
			Cobalt	--	3E-10	--	--	3E-10	Respiratory	--	0.00004	--	0.00004
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0001	--	0.0001
			Chemical Total	--	4E-09	--	--	4E-09		- -	0.0002	- -	0.0002
		Exposure Point Total						4E-09					0.0002
	Exposure Medium Total							4E-09					0.0002
Medium Total								3E-06					0.04

TABLE 9.4.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	9E-08	--	2E-08	--	1E-07	NA	--	--	--	--
			Benzo(a)pyrene	7E-07	--	1E-07	--	9E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	1E-07	--	2E-08	--	1E-07	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.00001	--	0.000002	0.00001
			Benzo(k)fluoranthene	3E-09	--	6E-10	--	4E-09	NA	--	--	--	--
			Chrysene	9E-10	--	2E-10	--	1E-09	NA	--	--	--	--
			Dibenzo(a,h)anthracene	1E-07	--	2E-08	--	1E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	6E-08	--	1E-08	--	7E-08	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	2E-08	--	7E-10	--	2E-08	Reproductive	0.001	--	0.00006	0.002
			Aluminum	- -	--	- -	--	- -	CNS	0.006	--	--	0.006
			Antimony	- -	--	- -	--	- -	Blood	0.0001	--	--	0.0001
			Arsenic	4E-07	--	3E-08	--	4E-07	Skin, CVS	0.006	--	0.0004	0.007
			Chromium VI	4E-07	--	- -	--	4E-07	None Reported	0.002	--	--	0.002
			Cobalt	- -	--	- -	--	- -	Thyroid	0.02	--	--	0.02
			Iron	- -	--	- -	--	- -	GS	0.02	--	--	0.02
			Manganese	- -	--	- -	--	- -	CNS	0.005	--	--	0.005
			Chemical Total	2E-06	--	2E-07	--	2E-06		0.05	--	0.0005	0.05
		Exposure Point Total						2E-06					0.05
	Exposure Medium Total							2E-06					0.05
	Air	AOC-001	Benzo(a)anthracene	--	6E-13	--	--	6E-13	NA	--	--	--	--
			Benzo(a)pyrene	--	5E-12	--	--	5E-12	NA	--	--	--	--
			Benzo(b)fluoranthene	--	8E-13	--	--	8E-13	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2E-13	--	--	2E-13	NA	--	--	--	--
			Chrysene	--	7E-14	--	--	7E-14	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	9E-13	--	--	9E-13	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	4E-13	--	--	4E-13	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	2E-13	--	--	2E-13	Reproductive	--	1E-9	--	1E-9
			Aluminum	--	- -	--	--	- -	CNS	--	0.00006	--	0.00006
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	8E-11	--	--	8E-11	Skin, CVS	--	0.00001	--	0.00001
			Chromium VI	--	4E-09	--	--	4E-09	Respiratory	--	0.000003	--	0.000003
			Cobalt	--	3E-10	--	--	3E-10	Respiratory	--	0.00004	--	0.00004
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0001	--	0.0001
			Chemical Total	--	4E-09	--	--	4E-09		- -	0.0002	- -	0.0002
		Exposure Point Total						4E-09					0.0002
	Exposure Medium Total							4E-09					0.0002
Medium Total								2E-06					0.06
Receptor Total							Receptor Risk Total	5E-06				Receptor HI Total	0.10

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.0003
Total CNS HI	0.02
Total CVS HI	0.007
Total GS HI	0.03
Total Kidney HI	0.00004
Total Respiratory HI	0.00009
Total Skin HI	0.007
Total Thyroid HI	0.04
Total Reproductive HI	0.003

TABLE 9.5.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	1E-07	--	4E-08	--	2E-07	NA	--	--	--	--
			Benzo(a)pyrene	1E-06	--	3E-07	--	1E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	2E-07	--	5E-08	--	2E-07	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.00001	--	0.000004	0.00002
			Benzo(k)fluoranthene	5E-09	--	1E-09	--	6E-09	NA	--	--	--	--
			Chrysene	1E-09	--	4E-10	--	2E-09	NA	--	--	--	--
			Dibenzo(a,h)anthracene	2E-07	--	5E-08	--	2E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	8E-08	--	2E-08	--	1E-07	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	2E-09	--	1E-10	--	2E-09	Reproductive	0.0008	--	0.00005	0.0009
			Antimony	- -	--	- -	--	- -	Blood	0.00009	--	--	0.00009
			Chromium VI	3E-07	--	- -	--	3E-07	None Reported	0.001	--	--	0.001
			Cobalt	- -	--	- -	--	- -	Thyroid	0.01	--	--	0.01
			Iron	- -	--	- -	--	- -	GS	0.008	--	--	0.008
			Manganese	- -	--	- -	--	- -	CNS	0.003	--	--	0.003
			Chemical Total	2E-06	--	5E-07	--	2E-06		0.02	--	0.00006	0.02
		Exposure Point Total						2E-06					0.02
	Exposure Medium Total							2E-06					0.02
	Air	AOC-001	Benzo(a)anthracene	--	9E-14	--	--	9E-14	NA	--	--	--	--
			Benzo(a)pyrene	--	8E-13	--	--	8E-13	NA	--	--	--	--
			Benzo(b)fluoranthene	--	1E-13	--	--	1E-13	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	3E-14	--	--	3E-14	NA	--	--	--	--
			Chrysene	--	1E-14	--	--	1E-14	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	1E-13	--	--	1E-13	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	6E-14	--	--	6E-14	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	3E-15	--	--	3E-15	Reproductive	--	7E-11	--	7E-11
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	3E-10	--	--	3E-10	Respiratory	--	0.0000002	--	0.0000002
			Cobalt	--	4E-12	--	--	4E-12	Respiratory	--	0.000002	--	0.000002
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.000008	--	0.000008
			Chemical Total	--	3E-10	--	--	3E-10		- -	0.000010	- -	0.000010
		Exposure Point Total						3E-10					0.000010
	Exposure Medium Total							3E-10					0.000010
Medium Total								2E-06					0.02

TABLE 9.5.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	7E-08	--	2E-08	--	1E-07	NA	--	--	--	--
			Benzo(a)pyrene	6E-07	--	2E-07	--	8E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	1E-07	--	3E-08	--	1E-07	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000007	--	0.000002	0.000009
			Benzo(k)fluoranthene	3E-09	--	8E-10	--	4E-09	NA	--	--	--	--
			Chrysene	8E-10	--	2E-10	--	1E-09	NA	--	--	--	--
			Dibenzo(a,h)anthracene	1E-07	--	3E-08	--	1E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	5E-08	--	1E-08	--	6E-08	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	2E-09	--	1E-10	--	2E-09	Reproductive	0.0008	--	0.00005	0.0009
			Aluminum	- -	--	- -	--	- -	CNS	0.003	--	--	0.003
			Antimony	- -	--	- -	--	- -	Blood	0.00007	--	--	0.00007
			Arsenic	5E-08	--	5E-09	--	5E-08	Skin, CVS	0.004	--	0.0004	0.004
			Chromium VI	4E-07	--	- -	--	4E-07	None Reported	0.001	--	--	0.001
			Cobalt	- -	--	- -	--	- -	Thyroid	0.01	--	--	0.01
			Iron	- -	--	- -	--	- -	GS	0.009	--	--	0.009
			Manganese	- -	--	- -	--	- -	CNS	0.003	--	--	0.003
			Chemical Total	1E-06	--	3E-07	--	2E-06		0.03	--	0.0005	0.03
		Exposure Point Total						2E-06					0.03
	Exposure Medium Total							2E-06					0.03
	Air	AOC-001	Benzo(a)anthracene	--	5E-14	--	--	5E-14	NA	--	--	--	--
			Benzo(a)pyrene	--	4E-13	--	--	4E-13	NA	--	--	--	--
			Benzo(b)fluoranthene	--	7E-14	--	--	7E-14	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2E-14	--	--	2E-14	NA	--	--	--	--
			Chrysene	--	5E-15	--	--	5E-15	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	7E-14	--	--	7E-14	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	3E-14	--	--	3E-14	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	3E-15	--	--	3E-15	Reproductive	--	7E-11	--	7E-11
			Aluminum	--	- -	--	--	- -	CNS	--	0.000003	--	0.000003
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	1E-12	--	--	1E-12	Skin, CVS	--	0.0000006	--	0.0000006
			Chromium VI	--	3E-10	--	--	3E-10	Respiratory	--	0.0000002	--	0.0000002
			Cobalt	--	4E-12	--	--	4E-12	Respiratory	--	0.000002	--	0.000002
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.000007	--	0.000007
			Chemical Total	--	3E-10	--	--	3E-10		- -	0.00001	- -	0.00001
		Exposure Point Total						3E-10					0.00001
	Exposure Medium Total							3E-10					0.00001
Medium Total								2E-06					0.03
Receptor Total							Receptor Risk Total	4E-06				Receptor HI Total	0.06

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.0002
Total CNS HI	0.010
Total CVS HI	0.004
Total GS HI	0.02
Total Kidney HI	0.00003
Total Respiratory HI	0.000005
Total Skin HI	0.004
Total Thyroid HI	0.02
Total Reproductive HI	0.002

TABLE 9.6.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	1E-08	--	3E-09	--	1E-08	NA	--	--	--	--
			Benzo(a)pyrene	9E-08	--	3E-08	--	1E-07	NA	--	--	--	--
			Benzo(b)fluoranthene	1E-08	--	4E-09	--	2E-08	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.000001	--	0.0000004	0.000002
			Benzo(k)fluoranthene	4E-10	--	1E-10	--	5E-10	NA	--	--	--	--
			Chrysene	1E-10	--	4E-11	--	2E-10	NA	--	--	--	--
			Dibenzo(a,h)anthracene	1E-08	--	4E-09	--	2E-08	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	7E-09	--	2E-09	--	9E-09	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	7E-10	--	5E-11	--	8E-10	Reproductive	0.00008	--	0.000006	0.00008
			Antimony	- -	--	- -	--	- -	Blood	0.000009	--	--	0.000009
			Chromium VI	3E-08	--	- -	--	3E-08	None Reported	0.0001	--	--	0.0001
			Cobalt	- -	--	- -	--	- -	Thyroid	0.0009	--	--	0.0009
			Iron	- -	--	- -	--	- -	GS	0.0008	--	--	0.0008
			Manganese	- -	--	- -	--	- -	CNS	0.0003	--	--	0.0003
			Chemical Total	2E-07	--	4E-08	--	2E-07		0.002	--	0.000006	0.002
		Exposure Point Total						2E-07					0.002
	Exposure Medium Total							2E-07					0.002
	Air	AOC-001	Benzo(a)anthracene	--	8E-14	--	--	8E-14	NA	--	--	--	--
			Benzo(a)pyrene	--	6E-13	--	--	6E-13	NA	--	--	--	--
			Benzo(b)fluoranthene	--	1E-13	--	--	1E-13	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	3E-14	--	--	3E-14	NA	--	--	--	--
			Chrysene	--	8E-15	--	--	8E-15	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	1E-13	--	--	1E-13	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	5E-14	--	--	5E-14	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	1E-14	--	--	1E-14	Reproductive	--	7E-11	--	7E-11
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	2E-10	--	--	2E-10	Respiratory	--	0.0000002	--	0.0000002
			Cobalt	--	1E-11	--	--	1E-11	Respiratory	--	0.000002	--	0.000002
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.000008	--	0.000008
			Chemical Total	--	2E-10	--	--	2E-10		- -	0.000010	- -	0.000010
		Exposure Point Total						2E-10					0.000010
	Exposure Medium Total							2E-10					0.000010
Medium Total								2E-07					0.002

TABLE 9.6.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	6E-09	--	2E-09	--	8E-09	NA	--	--	--	--
			Benzo(a)pyrene	5E-08	--	2E-08	--	7E-08	NA	--	--	--	--
			Benzo(b)fluoranthene	8E-09	--	2E-09	--	1E-08	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.0000007	--	0.0000002	0.0000009
			Benzo(k)fluoranthene	2E-10	--	7E-11	--	3E-10	NA	--	--	--	--
			Chrysene	6E-11	--	2E-11	--	8E-11	NA	--	--	--	--
			Dibenzo(a,h)anthracene	8E-09	--	2E-09	--	1E-08	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	4E-09	--	1E-09	--	5E-09	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	7E-10	--	5E-11	--	8E-10	Reproductive	0.00008	--	0.000006	0.00008
			Aluminum	- -	--	- -	--	- -	CNS	0.0003	--	--	0.0003
			Antimony	- -	--	- -	--	- -	Blood	0.000006	--	--	0.000006
			Arsenic	2E-08	--	2E-09	--	2E-08	Skin, CVS	0.0003	--	0.00004	0.0004
			Chromium VI	3E-08	--	- -	--	3E-08	None Reported	0.0001	--	--	0.0001
			Cobalt	- -	--	- -	--	- -	Thyroid	0.0010	--	--	0.0010
			Iron	- -	--	- -	--	- -	GS	0.0008	--	--	0.0008
			Manganese	- -	--	- -	--	- -	CNS	0.0003	--	--	0.0003
			Chemical Total	1E-07	--	3E-08	--	1E-07		0.003	--	0.00005	0.003
		Exposure Point Total						1E-07					0.003
	Exposure Medium Total							1E-07					0.003
	Air	AOC-001	Benzo(a)anthracene	--	4E-14	--	--	4E-14	NA	--	--	--	--
			Benzo(a)pyrene	--	4E-13	--	--	4E-13	NA	--	--	--	--
			Benzo(b)fluoranthene	--	6E-14	--	--	6E-14	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2E-14	--	--	2E-14	NA	--	--	--	--
			Chrysene	--	4E-15	--	--	4E-15	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	6E-14	--	--	6E-14	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	3E-14	--	--	3E-14	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	1E-14	--	--	1E-14	Reproductive	--	7E-11	--	7E-11
			Aluminum	--	- -	--	--	- -	CNS	--	0.000003	--	0.000003
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	4E-12	--	--	4E-12	Skin, CVS	--	0.0000006	--	0.0000006
			Chromium VI	--	2E-10	--	--	2E-10	Respiratory	--	0.0000002	--	0.0000002
			Cobalt	--	1E-11	--	--	1E-11	Respiratory	--	0.000002	--	0.000002
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.000007	--	0.000007
			Chemical Total	--	3E-10	--	--	3E-10		- -	0.00001	- -	0.00001
		Exposure Point Total						3E-10					0.00001
	Exposure Medium Total							3E-10					0.00001
Medium Total								1E-07					0.003
Receptor Total							Receptor Risk Total	3E-07				Receptor HI Total	0.005

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.00001
Total CNS HI	0.0009
Total CVS HI	0.0004
Total GS HI	0.002
Total Kidney HI	0.000003
Total Respiratory HI	0.000005
Total Skin HI	0.0004
Total Thyroid HI	0.002
Total Reproductive HI	0.0002

TABLE 9.7.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	1E-07	--	4E-08	--	2E-07					
			Benzo(a)pyrene	1E-06	--	3E-07	--	2E-06					
			Benzo(b)fluoranthene	2E-07	--	5E-08	--	2E-07					
			Benzo(g,h,i)perylene	- -	--	- -	--	- -					
			Benzo(k)fluoranthene	5E-09	--	2E-09	--	7E-09					
			Chrysene	2E-09	--	4E-10	--	2E-09					
			Dibenzo(a,h)anthracene	2E-07	--	5E-08	--	2E-07					
			Indeno(1,2,3-cd)pyrene	9E-08	--	3E-08	--	1E-07					
			2,3,7,8-TCDD Equivalents	3E-09	--	2E-10	--	3E-09					
			Antimony	- -	--	- -	--	- -					
			Chromium VI	4E-07	--	- -	--	4E-07					
			Cobalt	- -	--	- -	--	- -					
			Iron	- -	--	- -	--	- -					
			Manganese	- -	--	- -	--	- -					
			Chemical Total	2E-06	--	5E-07	--	3E-06					
		Exposure Point Total						3E-06					
	Exposure Medium Total							3E-06					
	Air	AOC-001	Benzo(a)anthracene	--	2E-13	--	--	2E-13					
			Benzo(a)pyrene	--	1E-12	--	--	1E-12					
			Benzo(b)fluoranthene	--	2E-13	--	--	2E-13					
			Benzo(g,h,i)perylene	--	- -	--	--	- -					
			Benzo(k)fluoranthene	--	6E-14	--	--	6E-14					
			Chrysene	--	2E-14	--	--	2E-14					
			Dibenzo(a,h)anthracene	--	2E-13	--	--	2E-13					
			Indeno(1,2,3-cd)pyrene	--	1E-13	--	--	1E-13					
			2,3,7,8-TCDD Equivalents	--	1E-14	--	--	1E-14					
			Antimony	--	- -	--	--	- -					
			Chromium VI	--	5E-10	--	--	5E-10					
			Cobalt	--	2E-11	--	--	2E-11					
			Iron	--	- -	--	--	- -					
			Manganese	--	- -	--	--	- -					
			Chemical Total	--	5E-10	--	--	5E-10					
		Exposure Point Total						5E-10					
	Exposure Medium Total							5E-10					
Medium Total								3E-06					

TABLE 9.7.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	8E-08	--	2E-08	--	1E-07					
			Benzo(a)pyrene	7E-07	--	2E-07	--	9E-07					
			Benzo(b)fluoranthene	1E-07	--	3E-08	--	1E-07					
			Benzo(g,h,i)perylene	- -	--	- -	--	- -					
			Benzo(k)fluoranthene	3E-09	--	9E-10	--	4E-09					
			Chrysene	8E-10	--	2E-10	--	1E-09					
			Dibenzo(a,h)anthracene	1E-07	--	3E-08	--	1E-07					
			Indeno(1,2,3-cd)pyrene	5E-08	--	1E-08	--	7E-08					
			2,3,7,8-TCDD Equivalents	3E-09	--	2E-10	--	3E-09					
			Aluminum	- -	--	- -	--	- -					
			Antimony	- -	--	- -	--	- -					
			Arsenic	6E-08	--	7E-09	--	7E-08					
			Chromium VI	4E-07	--	- -	--	4E-07					
			Cobalt	- -	--	- -	--	- -					
			Iron	- -	--	- -	--	- -					
			Manganese	- -	--	- -	--	- -					
			Chemical Total	1E-06	--	3E-07	--	2E-06					
		Exposure Point Total						2E-06					
	Exposure Medium Total							2E-06					
	Air	AOC-001	Benzo(a)anthracene	--	9E-14	--	--	9E-14					
			Benzo(a)pyrene	--	8E-13	--	--	8E-13					
			Benzo(b)fluoranthene	--	1E-13	--	--	1E-13					
			Benzo(g,h,i)perylene	--	- -	--	--	- -					
			Benzo(k)fluoranthene	--	4E-14	--	--	4E-14					
			Chrysene	--	1E-14	--	--	1E-14					
			Dibenzo(a,h)anthracene	--	1E-13	--	--	1E-13					
			Indeno(1,2,3-cd)pyrene	--	6E-14	--	--	6E-14					
			2,3,7,8-TCDD Equivalents	--	1E-14	--	--	1E-14					
			Aluminum	--	- -	--	--	- -					
			Antimony	--	- -	--	--	- -					
			Arsenic	--	5E-12	--	--	5E-12					
			Chromium VI	--	5E-10	--	--	5E-10					
			Cobalt	--	2E-11	--	--	2E-11					
			Iron	--	- -	--	--	- -					
			Manganese	--	- -	--	--	- -					
			Chemical Total	--	6E-10	--	--	6E-10					
		Exposure Point Total						6E-10					
	Exposure Medium Total							6E-10					
Medium Total								2E-06					
Receptor Total							Receptor Risk Total	4E-06					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.8.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	3E-06	--	4E-07	--	3E-06	NA	--	--	--	--
			Benzo(a)pyrene	2E-05	--	3E-06	--	2E-05	NA	--	--	--	--
			Benzo(b)fluoranthene	3E-06	--	5E-07	--	4E-06	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.0003	--	0.00004	0.0003
			Benzo(k)fluoranthene	1E-07	--	1E-08	--	1E-07	NA	--	--	--	--
			Chrysene	3E-08	--	4E-09	--	3E-08	NA	--	--	--	--
			Dibenzo(a,h)anthracene	3E-06	--	5E-07	--	4E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	2E-06	--	2E-07	--	2E-06	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	4E-08	--	1E-09	--	4E-08	Reproductive	0.02	--	0.0005	0.02
			Antimony	- -	--	- -	--	- -	Blood	0.002	--	--	0.002
			Chromium VI	7E-06	--	- -	--	7E-06	None Reported	0.02	--	--	0.02
			Cobalt	- -	--	- -	--	- -	Thyroid	0.2	--	--	0.2
			Iron	- -	--	- -	--	- -	GS	0.2	--	--	0.2
			Manganese	- -	--	- -	--	- -	CNS	0.07	--	--	0.07
			Chemical Total	4E-05	--	5E-06	--	4E-05		0.5	--	0.0006	0.5
		Exposure Point Total						4E-05					0.5
	Exposure Medium Total							4E-05					0.5
	Air	AOC-001	Benzo(a)anthracene	--	5E-12	--	--	5E-12	NA	--	--	--	--
			Benzo(a)pyrene	--	4E-11	--	--	4E-11	NA	--	--	--	--
			Benzo(b)fluoranthene	--	7E-12	--	--	7E-12	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			Chrysene	--	6E-13	--	--	6E-13	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	8E-12	--	--	8E-12	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	3E-12	--	--	3E-12	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	2E-13	--	--	2E-13	Reproductive	--	4E-9	--	4E-9
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	2E-08	--	--	2E-08	Respiratory	--	0.000010	--	0.000010
			Cobalt	--	2E-10	--	--	2E-10	Respiratory	--	0.0001	--	0.0001
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0004	--	0.0004
			Chemical Total	--	2E-08	--	--	2E-08		- -	0.0006	- -	0.0006
		Exposure Point Total						2E-08					0.0006
	Exposure Medium Total							2E-08					0.0006
Medium Total								4E-05					0.5

TABLE 9.8.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	1E-06	--	2E-07	--	2E-06	NA	--	--	--	--
			Benzo(a)pyrene	1E-05	--	2E-06	--	1E-05	NA	--	--	--	--
			Benzo(b)fluoranthene	2E-06	--	3E-07	--	2E-06	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.0001	--	0.00002	0.0002
			Benzo(k)fluoranthene	6E-08	--	8E-09	--	6E-08	NA	--	--	--	--
			Chrysene	2E-08	--	2E-09	--	2E-08	NA	--	--	--	--
			Dibenzo(a,h)anthracene	2E-06	--	3E-07	--	2E-06	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	9E-07	--	1E-07	--	1E-06	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	4E-08	--	1E-09	--	4E-08	Reproductive	0.02	--	0.0005	0.02
			Aluminum	- -	--	- -	--	- -	CNS	0.06	--	--	0.06
			Antimony	- -	--	- -	--	- -	Blood	0.001	--	--	0.001
			Arsenic	9E-07	--	5E-08	--	1E-06	Skin, CVS	0.07	--	0.004	0.08
			Chromium VI	7E-06	--	- -	--	7E-06	None Reported	0.03	--	--	0.03
			Cobalt	- -	--	- -	--	- -	Thyroid	0.2	--	--	0.2
			Iron	- -	--	- -	--	- -	GS	0.2	--	--	0.2
			Manganese	- -	--	- -	--	- -	CNS	0.06	--	--	0.06
			Chemical Total	3E-05	--	3E-06	--	3E-05		0.6	--	0.004	0.6
		Exposure Point Total						3E-05					0.6
	Exposure Medium Total							3E-05					0.6
	Air	AOC-001	Benzo(a)anthracene	--	3E-12	--	--	3E-12	NA	--	--	--	--
			Benzo(a)pyrene	--	3E-11	--	--	3E-11	NA	--	--	--	--
			Benzo(b)fluoranthene	--	4E-12	--	--	4E-12	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1E-12	--	--	1E-12	NA	--	--	--	--
			Chrysene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	4E-12	--	--	4E-12	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	2E-13	--	--	2E-13	Reproductive	--	4E-9	--	4E-9
			Aluminum	--	- -	--	--	- -	CNS	--	0.0002	--	0.0002
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	6E-11	--	--	6E-11	Skin, CVS	--	0.00003	--	0.00003
			Chromium VI	--	2E-08	--	--	2E-08	Respiratory	--	0.00001	--	0.00001
			Cobalt	--	2E-10	--	--	2E-10	Respiratory	--	0.0001	--	0.0001
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0004	--	0.0004
			Chemical Total	--	2E-08	--	--	2E-08		- -	0.0008	- -	0.0008
		Exposure Point Total						2E-08					0.0008
	Exposure Medium Total							2E-08					0.0008
Medium Total								3E-05					0.6
Receptor Total							Receptor Risk Total	7E-05				Receptor HI Total	1

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.003
Total CNS HI	0.2
Total CVS HI	0.08
Total GS HI	0.3
Total Kidney HI	0.0005
Total Respiratory HI	0.0003
Total Skin HI	0.08
Total Thyroid HI	0.4
Total Reproductive HI	0.03

TABLE 9.9.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	2E-07	--	3E-08	--	2E-07	NA	--	--	--	--
			Benzo(a)pyrene	2E-06	--	3E-07	--	2E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	3E-07	--	4E-08	--	3E-07	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.00002	--	0.000004	0.00003
			Benzo(k)fluoranthene	8E-09	--	1E-09	--	9E-09	NA	--	--	--	--
			Chrysene	2E-09	--	4E-10	--	3E-09	NA	--	--	--	--
			Dibenzo(a,h)anthracene	3E-07	--	4E-08	--	3E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	1E-07	--	2E-08	--	1E-07	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	1E-08	--	5E-10	--	1E-08	Reproductive	0.002	--	0.00006	0.002
			Antimony	- -	--	- -	--	- -	Blood	0.0002	--	--	0.0002
			Chromium VI	5E-07	--	- -	--	5E-07	None Reported	0.002	--	--	0.002
			Cobalt	- -	--	- -	--	- -	Thyroid	0.02	--	--	0.02
			Iron	- -	--	- -	--	- -	GS	0.02	--	--	0.02
			Manganese	- -	--	- -	--	- -	CNS	0.006	--	--	0.006
			Chemical Total	3E-06	--	4E-07	--	4E-06		0.04	--	0.00006	0.04
		Exposure Point Total						4E-06					0.04
	Exposure Medium Total							4E-06					0.04
	Air	AOC-001	Benzo(a)anthracene	--	5E-12	--	--	5E-12	NA	--	--	--	--
			Benzo(a)pyrene	--	4E-11	--	--	4E-11	NA	--	--	--	--
			Benzo(b)fluoranthene	--	6E-12	--	--	6E-12	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			Chrysene	--	5E-13	--	--	5E-13	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	6E-12	--	--	6E-12	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	3E-12	--	--	3E-12	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	6E-13	--	--	6E-13	Reproductive	--	4E-9	--	4E-9
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Chromium VI	--	1E-08	--	--	1E-08	Respiratory	--	0.000010	--	0.000010
			Cobalt	--	7E-10	--	--	7E-10	Respiratory	--	0.0001	--	0.0001
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0004	--	0.0004
			Chemical Total	--	1E-08	--	--	1E-08		- -	0.0006	- -	0.0006
		Exposure Point Total						1E-08					0.0006
	Exposure Medium Total							1E-08					0.0006
Medium Total								4E-06					0.04

TABLE 9.9.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	1E-07	--	2E-08	--	1E-07	NA	--	--	--	--
			Benzo(a)pyrene	1E-06	--	2E-07	--	1E-06	NA	--	--	--	--
			Benzo(b)fluoranthene	1E-07	--	2E-08	--	2E-07	NA	--	--	--	--
			Benzo(g,h,i)perylene	- -	--	- -	--	- -	Kidney	0.00001	--	0.000002	0.00002
			Benzo(k)fluoranthene	4E-09	--	7E-10	--	5E-09	NA	--	--	--	--
			Chrysene	1E-09	--	2E-10	--	1E-09	NA	--	--	--	--
			Dibenzo(a,h)anthracene	1E-07	--	2E-08	--	2E-07	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	7E-08	--	1E-08	--	9E-08	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	1E-08	--	5E-10	--	1E-08	Reproductive	0.002	--	0.00006	0.002
			Aluminum	- -	--	- -	--	- -	CNS	0.006	--	--	0.006
			Antimony	- -	--	- -	--	- -	Blood	0.0001	--	--	0.0001
			Arsenic	3E-07	--	2E-08	--	3E-07	Skin, CVS	0.007	--	0.0004	0.007
			Chromium VI	6E-07	--	- -	--	6E-07	None Reported	0.002	--	--	0.002
			Cobalt	- -	--	- -	--	- -	Thyroid	0.02	--	--	0.02
			Iron	- -	--	- -	--	- -	GS	0.02	--	--	0.02
			Manganese	- -	--	- -	--	- -	CNS	0.006	--	--	0.006
			Chemical Total	2E-06	--	2E-07	--	3E-06		0.06	--	0.0005	0.06
		Exposure Point Total						3E-06					0.06
	Exposure Medium Total							3E-06					0.06
	Air	AOC-001	Benzo(a)anthracene	--	3E-12	--	--	3E-12	NA	--	--	--	--
			Benzo(a)pyrene	--	2E-11	--	--	2E-11	NA	--	--	--	--
			Benzo(b)fluoranthene	--	3E-12	--	--	3E-12	NA	--	--	--	--
			Benzo(g,h,i)perylene	--	- -	--	--	- -	NA	--	--	--	--
			Benzo(k)fluoranthene	--	1E-12	--	--	1E-12	NA	--	--	--	--
			Chrysene	--	3E-13	--	--	3E-13	NA	--	--	--	--
			Dibenzo(a,h)anthracene	--	4E-12	--	--	4E-12	NA	--	--	--	--
			Indeno(1,2,3-cd)pyrene	--	2E-12	--	--	2E-12	NA	--	--	--	--
			2,3,7,8-TCDD Equivalents	--	6E-13	--	--	6E-13	Reproductive	--	4E-9	--	4E-9
			Aluminum	--	- -	--	--	- -	CNS	--	0.0002	--	0.0002
			Antimony	--	- -	--	--	- -	NA	--	--	--	--
			Arsenic	--	2E-10	--	--	2E-10	Skin, CVS	--	0.00003	--	0.00003
			Chromium VI	--	1E-08	--	--	1E-08	Respiratory	--	0.00001	--	0.00001
			Cobalt	--	8E-10	--	--	8E-10	Respiratory	--	0.0001	--	0.0001
			Iron	--	- -	--	--	- -	NA	--	--	--	--
			Manganese	--	- -	--	--	- -	CNS	--	0.0004	--	0.0004
			Chemical Total	--	2E-08	--	--	2E-08		- -	0.0008	- -	0.0008
		Exposure Point Total						2E-08					0.0008
	Exposure Medium Total							2E-08					0.0008
Medium Total								3E-06					0.06
Receptor Total							Receptor Risk Total	6E-06				Receptor HI Total	0.1

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total Blood HI	0.0003
Total CNS HI	0.02
Total CVS HI	0.007
Total GS HI	0.03
Total Kidney HI	0.00004
Total Respiratory HI	0.0003
Total Skin HI	0.007
Total Thyroid HI	0.04
Total Reproductive HI	0.003

TABLE 9.10.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	AOC-001	Benzo(a)anthracene	3E-06	--	4E-07	--	3E-06					
			Benzo(a)pyrene	2E-05	--	3E-06	--	3E-05					
			Benzo(b)fluoranthene	4E-06	--	5E-07	--	4E-06					
			Benzo(g,h,i)perylene	- -	--	- -	--	- -					
			Benzo(k)fluoranthene	1E-07	--	2E-08	--	1E-07					
			Chrysene	3E-08	--	4E-09	--	3E-08					
			Dibenzo(a,h)anthracene	4E-06	--	5E-07	--	4E-06					
			Indeno(1,2,3-cd)pyrene	2E-06	--	2E-07	--	2E-06					
			2,3,7,8-TCDD Equivalents	6E-08	--	2E-09	--	6E-08					
			Antimony	- -	--	- -	--	- -					
			Chromium VI	7E-06	--	- -	--	7E-06					
			Cobalt	- -	--	- -	--	- -					
			Iron	- -	--	- -	--	- -					
			Manganese	- -	--	- -	--	- -					
			Chemical Total	4E-05	--	5E-06	--	5E-05					
		Exposure Point Total						5E-05					
	Exposure Medium Total							5E-05					
	Air	AOC-001	Benzo(a)anthracene	--	1E-11	--	--	1E-11					
			Benzo(a)pyrene	--	8E-11	--	--	8E-11					
			Benzo(b)fluoranthene	--	1E-11	--	--	1E-11					
			Benzo(g,h,i)perylene	--	- -	--	--	- -					
			Benzo(k)fluoranthene	--	4E-12	--	--	4E-12					
			Chrysene	--	1E-12	--	--	1E-12					
			Dibenzo(a,h)anthracene	--	1E-11	--	--	1E-11					
			Indeno(1,2,3-cd)pyrene	--	6E-12	--	--	6E-12					
			2,3,7,8-TCDD Equivalents	--	8E-13	--	--	8E-13					
			Antimony	--	- -	--	--	- -					
			Chromium VI	--	3E-08	--	--	3E-08					
			Cobalt	--	9E-10	--	--	9E-10					
			Iron	--	- -	--	--	- -					
			Manganese	--	- -	--	--	- -					
			Chemical Total	--	3E-08	--	--	3E-08					
		Exposure Point Total						3E-08					
	Exposure Medium Total							3E-08					
Medium Total								5E-05					

TABLE 9.10.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface/Subsurface Soil	Surface/Subsurface Soil	AOC-001	Benzo(a)anthracene	2E-06	--	2E-07	--	2E-06					
			Benzo(a)pyrene	1E-05	--	2E-06	--	1E-05					
			Benzo(b)fluoranthene	2E-06	--	3E-07	--	2E-06					
			Benzo(g,h,i)perylene	- -	--	- -	--	- -					
			Benzo(k)fluoranthene	6E-08	--	8E-09	--	7E-08					
			Chrysene	2E-08	--	2E-09	--	2E-08					
			Dibenzo(a,h)anthracene	2E-06	--	3E-07	--	2E-06					
			Indeno(1,2,3-cd)pyrene	1E-06	--	1E-07	--	1E-06					
			2,3,7,8-TCDD Equivalents	6E-08	--	2E-09	--	6E-08					
			Aluminum	- -	--	- -	--	- -					
			Antimony	- -	--	- -	--	- -					
			Arsenic	1E-06	--	7E-08	--	1E-06					
			Chromium VI	8E-06	--	- -	--	8E-06					
			Cobalt	- -	--	- -	--	- -					
			Iron	- -	--	- -	--	- -					
			Manganese	- -	--	- -	--	- -					
			Chemical Total	3E-05	--	3E-06	--	3E-05					
		Exposure Point Total						3E-05					
	Exposure Medium Total							3E-05					
	Air	AOC-001	Benzo(a)anthracene	--	5E-12	--	--	5E-12					
			Benzo(a)pyrene	--	5E-11	--	--	5E-11					
			Benzo(b)fluoranthene	--	7E-12	--	--	7E-12					
			Benzo(g,h,i)perylene	--	- -	--	--	- -					
			Benzo(k)fluoranthene	--	2E-12	--	--	2E-12					
			Chrysene	--	6E-13	--	--	6E-13					
			Dibenzo(a,h)anthracene	--	8E-12	--	--	8E-12					
			Indeno(1,2,3-cd)pyrene	--	4E-12	--	--	4E-12					
			2,3,7,8-TCDD Equivalents	--	8E-13	--	--	8E-13					
			Aluminum	--	- -	--	--	- -					
			Antimony	--	- -	--	--	- -					
			Arsenic	--	3E-10	--	--	3E-10					
			Chromium VI	--	3E-08	--	--	3E-08					
			Cobalt	--	1E-09	--	--	1E-09					
			Iron	--	- -	--	--	- -					
			Manganese	--	- -	--	--	- -					
			Chemical Total	--	3E-08	--	--	3E-08					
		Exposure Point Total						3E-08					
	Exposure Medium Total							3E-08					
Medium Total								3E-05					
Receptor Total							Receptor Risk Total	8E-05					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

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TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	1E-06	--	2E-06	--	3E-06	NA	--	--	--	--
			Chemical Total	1E-06	--	2E-06	--	3E-06		--	--	--	--
		Exposure Point Total						3E-06					--
	Exposure Medium Total							3E-06					--
	Air	Building 219	Aroclor-1260	--	2E-12	--	--	2E-12	NA	--	--	--	--
			Chemical Total	--	2E-12	--	--	2E-12		- -	--	- -	--
		Exposure Point Total						2E-12					--
	Exposure Medium Total							2E-12					--
Medium Total								3E-06					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	6E-07	--	1E-06	--	2E-06	NA	--	--	--	--
			Chemical Total	6E-07	--	1E-06	--	2E-06		--	--	--	--
		Exposure Point Total						2E-06					--
	Exposure Medium Total							2E-06					--
	Air	Building 219	Aroclor-1260	--	1E-12	--	--	1E-12	NA	--	--	--	--
			Chemical Total	--	1E-12	--	--	1E-12		- -	--	- -	--
		Exposure Point Total						1E-12					--
	Exposure Medium Total							1E-12					--
Medium Total								2E-06					--
Receptor Total							Receptor Risk Total	5E-06				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	4E-07	--	3E-07	--	7E-07	NA	--	--	--	--
			Chemical Total	4E-07	--	3E-07	--	7E-07		--	--	--	--
		Exposure Point Total						7E-07					--
	Exposure Medium Total							7E-07					--
	Air	Building 219	Aroclor-1260	--	3E-12	--	--	3E-12	NA	--	--	--	--
			Chemical Total	--	3E-12	--	--	3E-12		- -	--	- -	--
		Exposure Point Total						3E-12					--
	Exposure Medium Total							3E-12					--
Medium Total								7E-07					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	3E-07	--	2E-07	--	4E-07	NA	--	--	--	--
			Chemical Total	3E-07	--	2E-07	--	4E-07		--	--	--	--
		Exposure Point Total						4E-07					--
	Exposure Medium Total							4E-07					--
	Air	Building 219	Aroclor-1260	--	2E-12	--	--	2E-12	NA	--	--	--	--
			Chemical Total	--	2E-12	--	--	2E-12		- -	--	- -	--
		Exposure Point Total						2E-12					--
	Exposure Medium Total							2E-12					--
Medium Total								4E-07					--
Receptor Total							Receptor Risk Total	1E-06				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	5E-07	--	2E-07	--	7E-07	NA	--	--	--	--
			Chemical Total	5E-07	--	2E-07	--	7E-07		--	--	--	--
		Exposure Point Total						7E-07					--
	Exposure Medium Total							7E-07					--
	Air	Building 219	Aroclor-1260	--	8E-09	--	--	8E-09	NA	--	--	--	--
			Chemical Total	--	8E-09	--	--	8E-09		- -	--	- -	--
		Exposure Point Total						8E-09					--
	Exposure Medium Total							8E-09					--
Medium Total								7E-07					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	3E-07	--	1E-07	--	4E-07	NA	--	--	--	--
			Chemical Total	3E-07	--	1E-07	--	4E-07		--	--	--	--
		Exposure Point Total						4E-07					--
	Exposure Medium Total							4E-07					--
	Air	Building 219	Aroclor-1260	--	5E-09	--	--	5E-09	NA	--	--	--	--
			Chemical Total	--	5E-09	--	--	5E-09		- -	--	- -	--
		Exposure Point Total						5E-09					--
	Exposure Medium Total							5E-09					--
Medium Total								4E-07					--
Receptor Total							Receptor Risk Total	1E-06				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	7E-06	--	4E-06	--	1E-05	NA	--	--	--	--
			Chemical Total	7E-06	--	4E-06	--	1E-05		--	--	--	--
		Exposure Point Total						1E-05					--
	Exposure Medium Total							1E-05					--
	Air	Building 219	Aroclor-1260	--	5E-11	--	--	5E-11	NA	--	--	--	--
			Chemical Total	--	5E-11	--	--	5E-11		- -	--	- -	--
		Exposure Point Total						5E-11					--
	Exposure Medium Total							5E-11					--
Medium Total								1E-05					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	4E-06	--	2E-06	--	7E-06	NA	--	--	--	--
			Chemical Total	4E-06	--	2E-06	--	7E-06		--	--	--	--
		Exposure Point Total						7E-06					--
	Exposure Medium Total							7E-06					--
	Air	Building 219	Aroclor-1260	--	3E-11	--	--	3E-11	NA	--	--	--	--
			Chemical Total	--	3E-11	--	--	3E-11		- -	--	- -	--
		Exposure Point Total						3E-11					--
	Exposure Medium Total							3E-11					--
Medium Total								7E-06					--
Receptor Total							Receptor Risk Total	2E-05				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	2E-06	--	1E-06	--	3E-06	NA	--	--	--	--
			Chemical Total	2E-06	--	1E-06	--	3E-06		--	--	--	--
		Exposure Point Total						3E-06					--
	Exposure Medium Total							3E-06					--
	Air	Building 219	Aroclor-1260	--	1E-12	--	--	1E-12	NA	--	--	--	--
			Chemical Total	--	1E-12	--	--	1E-12		- -	--	- -	--
		Exposure Point Total						1E-12					--
	Exposure Medium Total							1E-12					--
Medium Total								3E-06					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	1E-06	--	8E-07	--	2E-06	NA	--	--	--	--
			Chemical Total	1E-06	--	8E-07	--	2E-06		--	--	--	--
		Exposure Point Total						2E-06					--
	Exposure Medium Total							2E-06					--
	Air	Building 219	Aroclor-1260	--	7E-13	--	--	7E-13	NA	--	--	--	--
			Chemical Total	--	7E-13	--	--	7E-13		- -	--	- -	--
		Exposure Point Total						7E-13					--
	Exposure Medium Total							7E-13					--
Medium Total								2E-06					--
Receptor Total							Receptor Risk Total	5E-06				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	5E-07	--	6E-07	--	1E-06	NA	--	--	--	--
			Chemical Total	5E-07	--	6E-07	--	1E-06		--	--	--	--
		Exposure Point Total						1E-06					--
	Exposure Medium Total							1E-06					--
	Air	Building 219	Aroclor-1260	--	4E-12	--	--	4E-12	NA	--	--	--	--
			Chemical Total	--	4E-12	--	--	4E-12		- -	--	- -	--
		Exposure Point Total						4E-12					--
	Exposure Medium Total							4E-12					--
Medium Total								1E-06					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	3E-07	--	4E-07	--	7E-07	NA	--	--	--	--
			Chemical Total	3E-07	--	4E-07	--	7E-07		--	--	--	--
		Exposure Point Total						7E-07					--
	Exposure Medium Total							7E-07					--
	Air	Building 219	Aroclor-1260	--	2E-12	--	--	2E-12	NA	--	--	--	--
			Chemical Total	--	2E-12	--	--	2E-12		- -	--	- -	--
		Exposure Point Total						2E-12					--
	Exposure Medium Total							2E-12					--
Medium Total								7E-07					--
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	2E-06	--	2E-06	--	4E-06					
			Chemical Total	2E-06	--	2E-06	--	4E-06					
		Exposure Point Total						4E-06					
	Exposure Medium Total							4E-06					
	Air	Building 219	Aroclor-1260	--	5E-12	--	--	5E-12					
			Chemical Total	--	5E-12	--	--	5E-12					
		Exposure Point Total						5E-12					
	Exposure Medium Total							5E-12					
Medium Total								4E-06					
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	1E-06	--	1E-06	--	3E-06					
			Chemical Total	1E-06	--	1E-06	--	3E-06					
		Exposure Point Total						3E-06					
	Exposure Medium Total							3E-06					
	Air	Building 219	Aroclor-1260	--	3E-12	--	--	3E-12					
			Chemical Total	--	3E-12	--	--	3E-12					
		Exposure Point Total						3E-12					
	Exposure Medium Total							3E-12					
Medium Total								3E-06					
Receptor Total							Receptor Risk Total	7E-06					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.8.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	2E-05	--	9E-06	--	3E-05	NA	--	--	--	--
			Chemical Total	2E-05	--	9E-06	--	3E-05		--	--	--	--
		Exposure Point Total						3E-05					--
	Exposure Medium Total							3E-05					--
	Air	Building 219	Aroclor-1260	--	5E-11	--	--	5E-11	NA	--	--	--	--
			Chemical Total	--	5E-11	--	--	5E-11		- -	--	- -	--
		Exposure Point Total						5E-11					--
	Exposure Medium Total							5E-11					--
Medium Total								3E-05					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	2E-05	--	6E-06	--	2E-05	NA	--	--	--	--
			Chemical Total	2E-05	--	6E-06	--	2E-05		--	--	--	--
		Exposure Point Total						2E-05					--
	Exposure Medium Total							2E-05					--
	Air	Building 219	Aroclor-1260	--	3E-11	--	--	3E-11	NA	--	--	--	--
			Chemical Total	--	3E-11	--	--	3E-11		- -	--	- -	--
		Exposure Point Total						3E-11					--
	Exposure Medium Total							3E-11					--
Medium Total								2E-05					--
Receptor Total							Receptor Risk Total	5E-05				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.9.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	8E-06	--	4E-06	--	1E-05	NA	--	--	--	--
			Chemical Total	8E-06	--	4E-06	--	1E-05		--	--	--	--
		Exposure Point Total						1E-05					--
	Exposure Medium Total							1E-05					--
	Air	Building 219	Aroclor-1260	--	2E-10	--	--	2E-10	NA	--	--	--	--
			Chemical Total	--	2E-10	--	--	2E-10		- -	--	- -	--
		Exposure Point Total						2E-10					--
	Exposure Medium Total							2E-10					--
Medium Total								1E-05					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	5E-06	--	3E-06	--	8E-06	NA	--	--	--	--
			Chemical Total	5E-06	--	3E-06	--	8E-06		--	--	--	--
		Exposure Point Total						8E-06					--
	Exposure Medium Total							8E-06					--
	Air	Building 219	Aroclor-1260	--	1E-10	--	--	1E-10	NA	--	--	--	--
			Chemical Total	--	1E-10	--	--	1E-10		- -	--	- -	--
		Exposure Point Total						1E-10					--
	Exposure Medium Total							1E-10					--
Medium Total								8E-06					--
Receptor Total							Receptor Risk Total	2E-05				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.10.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	3E-05	--	1E-05	--	5E-05					
			Chemical Total	3E-05	--	1E-05	--	5E-05					
		Exposure Point Total						5E-05					
	Exposure Medium Total							5E-05					
	Air	Building 219	Aroclor-1260	--	2E-10	--	--	2E-10					
			Chemical Total	--	2E-10	--	--	2E-10					
		Exposure Point Total						2E-10					
	Exposure Medium Total							2E-10					
Medium Total								5E-05					
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	2E-05	--	9E-06	--	3E-05					
			Chemical Total	2E-05	--	9E-06	--	3E-05					
		Exposure Point Total						3E-05					
	Exposure Medium Total							3E-05					
	Air	Building 219	Aroclor-1260	--	1E-10	--	--	1E-10					
			Chemical Total	--	1E-10	--	--	1E-10					
		Exposure Point Total						1E-10					
	Exposure Medium Total							1E-10					
Medium Total								3E-05					
Receptor Total							Receptor Risk Total	7E-05					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	1E-07	--	6E-08	--	2E-07	NA	--	--	--	--
			Chemical Total	1E-07	--	6E-08	--	2E-07		--	--	--	--
		Exposure Point Total						2E-07					--
	Exposure Medium Total							2E-07					--
	Air	Building 219	Aroclor-1260	--	5E-13	--	--	5E-13	NA	--	--	--	--
			Chemical Total	--	5E-13	--	--	5E-13		- -	--	- -	--
		Exposure Point Total						5E-13					--
	Exposure Medium Total							5E-13					--
Medium Total								2E-07					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	8E-08	--	4E-08	--	1E-07	NA	--	--	--	--
			Chemical Total	8E-08	--	4E-08	--	1E-07		--	--	--	--
		Exposure Point Total						1E-07					--
	Exposure Medium Total							1E-07					--
	Air	Building 219	Aroclor-1260	--	3E-13	--	--	3E-13	NA	--	--	--	--
			Chemical Total	--	3E-13	--	--	3E-13		- -	--	- -	--
		Exposure Point Total						3E-13					--
	Exposure Medium Total							3E-13					--
Medium Total								1E-07					--
Receptor Total							Receptor Risk Total	3E-07				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.2.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	4E-08	--	6E-09	--	4E-08	NA	--	--	--	--
			Chemical Total	4E-08	--	6E-09	--	4E-08		--	--	--	--
		Exposure Point Total						4E-08					--
	Exposure Medium Total							4E-08					--
	Air	Building 219	Aroclor-1260	--	3E-13	--	--	3E-13	NA	--	--	--	--
			Chemical Total	--	3E-13	--	--	3E-13		- -	--	- -	--
		Exposure Point Total						3E-13					--
	Exposure Medium Total							3E-13					--
Medium Total								4E-08					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	2E-08	--	4E-09	--	3E-08	NA	--	--	--	--
			Chemical Total	2E-08	--	4E-09	--	3E-08		--	--	--	--
		Exposure Point Total						3E-08					--
	Exposure Medium Total							3E-08					--
	Air	Building 219	Aroclor-1260	--	2E-13	--	--	2E-13	NA	--	--	--	--
			Chemical Total	--	2E-13	--	--	2E-13		- -	--	- -	--
		Exposure Point Total						2E-13					--
	Exposure Medium Total							2E-13					--
Medium Total								3E-08					--
Receptor Total							Receptor Risk Total	7E-08				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.3.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	2E-07	--	3E-08	--	2E-07	NA	--	--	--	--
			Chemical Total	2E-07	--	3E-08	--	2E-07		--	--	--	--
		Exposure Point Total						2E-07					--
	Exposure Medium Total							2E-07					--
	Air	Building 219	Aroclor-1260	--	3E-09	--	--	3E-09	NA	--	--	--	--
			Chemical Total	--	3E-09	--	--	3E-09		- -	--	- -	--
		Exposure Point Total						3E-09					--
	Exposure Medium Total							3E-09					--
Medium Total								2E-07					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	1E-07	--	2E-08	--	1E-07	NA	--	--	--	--
			Chemical Total	1E-07	--	2E-08	--	1E-07		--	--	--	--
		Exposure Point Total						1E-07					--
	Exposure Medium Total							1E-07					--
	Air	Building 219	Aroclor-1260	--	2E-09	--	--	2E-09	NA	--	--	--	--
			Chemical Total	--	2E-09	--	--	2E-09		- -	--	- -	--
		Exposure Point Total						2E-09					--
	Exposure Medium Total							2E-09					--
Medium Total								1E-07					--
Receptor Total							Receptor Risk Total	4E-07				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.4.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	1E-06	--	2E-07	--	1E-06	NA	--	--	--	--
			Chemical Total	1E-06	--	2E-07	--	1E-06		--	--	--	--
		Exposure Point Total						1E-06					--
	Exposure Medium Total							1E-06					--
	Air	Building 219	Aroclor-1260	--	1E-11	--	--	1E-11	NA	--	--	--	--
			Chemical Total	--	1E-11	--	--	1E-11		- -	--	- -	--
		Exposure Point Total						1E-11					--
	Exposure Medium Total							1E-11					--
Medium Total								1E-06					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	7E-07	--	1E-07	--	8E-07	NA	--	--	--	--
			Chemical Total	7E-07	--	1E-07	--	8E-07		--	--	--	--
		Exposure Point Total						8E-07					--
	Exposure Medium Total							8E-07					--
	Air	Building 219	Aroclor-1260	--	9E-12	--	--	9E-12	NA	--	--	--	--
			Chemical Total	--	9E-12	--	--	9E-12		- -	--	- -	--
		Exposure Point Total						9E-12					--
	Exposure Medium Total							9E-12					--
Medium Total								8E-07					--
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.5.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	1E-07	--	4E-08	--	2E-07	NA	--	--	--	--
			Chemical Total	1E-07	--	4E-08	--	2E-07		--	--	--	--
		Exposure Point Total						2E-07					--
	Exposure Medium Total							2E-07					--
	Air	Building 219	Aroclor-1260	--	2E-13	--	--	2E-13	NA	--	--	--	--
			Chemical Total	--	2E-13	--	--	2E-13		- -	--	- -	--
		Exposure Point Total						2E-13					--
	Exposure Medium Total							2E-13					--
Medium Total								2E-07					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	9E-08	--	3E-08	--	1E-07	NA	--	--	--	--
			Chemical Total	9E-08	--	3E-08	--	1E-07		--	--	--	--
		Exposure Point Total						1E-07					--
	Exposure Medium Total							1E-07					--
	Air	Building 219	Aroclor-1260	--	1E-13	--	--	1E-13	NA	--	--	--	--
			Chemical Total	--	1E-13	--	--	1E-13		- -	--	- -	--
		Exposure Point Total						1E-13					--
	Exposure Medium Total							1E-13					--
Medium Total								1E-07					--
Receptor Total							Receptor Risk Total	3E-07				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.6.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	5E-08	--	2E-08	--	6E-08	NA	--	--	--	--
			Chemical Total	5E-08	--	2E-08	--	6E-08		--	--	--	--
		Exposure Point Total						6E-08					--
	Exposure Medium Total							6E-08					--
	Air	Building 219	Aroclor-1260	--	6E-13	--	--	6E-13	NA	--	--	--	--
			Chemical Total	--	6E-13	--	--	6E-13		- -	--	- -	--
		Exposure Point Total						6E-13					--
	Exposure Medium Total							6E-13					--
Medium Total								6E-08					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	3E-08	--	1E-08	--	4E-08	NA	--	--	--	--
			Chemical Total	3E-08	--	1E-08	--	4E-08		--	--	--	--
		Exposure Point Total						4E-08					--
	Exposure Medium Total							4E-08					--
	Air	Building 219	Aroclor-1260	--	4E-13	--	--	4E-13	NA	--	--	--	--
			Chemical Total	--	4E-13	--	--	4E-13		- -	--	- -	--
		Exposure Point Total						4E-13					--
	Exposure Medium Total							4E-13					--
Medium Total								4E-08					--
Receptor Total							Receptor Risk Total	1E-07				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.7.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	2E-07	--	6E-08	--	2E-07					
			Chemical Total	2E-07	--	6E-08	--	2E-07					
		Exposure Point Total						2E-07					
	Exposure Medium Total							2E-07					
	Air	Building 219	Aroclor-1260	--	8E-13	--	--	8E-13					
			Chemical Total	--	8E-13	--	--	8E-13					
		Exposure Point Total						8E-13					
	Exposure Medium Total							8E-13					
Medium Total								2E-07					
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	1E-07	--	4E-08	--	2E-07					
			Chemical Total	1E-07	--	4E-08	--	2E-07					
		Exposure Point Total						2E-07					
	Exposure Medium Total							2E-07					
	Air	Building 219	Aroclor-1260	--	5E-13	--	--	5E-13					
			Chemical Total	--	5E-13	--	--	5E-13					
		Exposure Point Total						5E-13					
	Exposure Medium Total							5E-13					
Medium Total								2E-07					
Receptor Total							Receptor Risk Total	4E-07					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.8.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	3E-06	--	4E-07	--	3E-06	NA	--	--	--	--
			Chemical Total	3E-06	--	4E-07	--	3E-06		--	--	--	--
		Exposure Point Total						3E-06					--
	Exposure Medium Total							3E-06					--
	Air	Building 219	Aroclor-1260	--	1E-11	--	--	1E-11	NA	--	--	--	--
			Chemical Total	--	1E-11	--	--	1E-11		- -	--	- -	--
		Exposure Point Total						1E-11					--
	Exposure Medium Total							1E-11					--
Medium Total								3E-06					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	2E-06	--	3E-07	--	2E-06	NA	--	--	--	--
			Chemical Total	2E-06	--	3E-07	--	2E-06		--	--	--	--
		Exposure Point Total						2E-06					--
	Exposure Medium Total							2E-06					--
	Air	Building 219	Aroclor-1260	--	7E-12	--	--	7E-12	NA	--	--	--	--
			Chemical Total	--	7E-12	--	--	7E-12		- -	--	- -	--
		Exposure Point Total						7E-12					--
	Exposure Medium Total							7E-12					--
Medium Total								2E-06					--
Receptor Total							Receptor Risk Total	5E-06				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.9.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	9E-07	--	1E-07	--	1E-06	NA	--	--	--	--
			Chemical Total	9E-07	--	1E-07	--	1E-06		--	--	--	--
		Exposure Point Total						1E-06					--
	Exposure Medium Total							1E-06					--
	Air	Building 219	Aroclor-1260	--	4E-11	--	--	4E-11	NA	--	--	--	--
			Chemical Total	--	4E-11	--	--	4E-11		- -	--	- -	--
		Exposure Point Total						4E-11					--
	Exposure Medium Total							4E-11					--
Medium Total								1E-06					--
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	6E-07	--	9E-08	--	7E-07	NA	--	--	--	--
			Chemical Total	6E-07	--	9E-08	--	7E-07		--	--	--	--
		Exposure Point Total						7E-07					--
	Exposure Medium Total							7E-07					--
	Air	Building 219	Aroclor-1260	--	2E-11	--	--	2E-11	NA	--	--	--	--
			Chemical Total	--	2E-11	--	--	2E-11		- -	--	- -	--
		Exposure Point Total						2E-11					--
	Exposure Medium Total							2E-11					--
Medium Total								7E-07					--
Receptor Total							Receptor Risk Total	2E-06				Receptor HI Total	--

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.10.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Building 219	Aroclor-1260	4E-06	--	6E-07	--	4E-06					
			Chemical Total	4E-06	--	6E-07	--	4E-06					
		Exposure Point Total						4E-06					
	Exposure Medium Total							4E-06					
	Air	Building 219	Aroclor-1260	--	5E-11	--	--	5E-11					
			Chemical Total	--	5E-11	--	--	5E-11					
		Exposure Point Total						5E-11					
	Exposure Medium Total							5E-11					
Medium Total								4E-06					
Surface/Subsurface Soil	Surface/Subsurface Soil	Building 219	Aroclor-1260	2E-06	--	4E-07	--	3E-06					
			Chemical Total	2E-06	--	4E-07	--	3E-06					
		Exposure Point Total						3E-06					
	Exposure Medium Total							3E-06					
	Air	Building 219	Aroclor-1260	--	3E-11	--	--	3E-11					
			Chemical Total	--	3E-11	--	--	3E-11					
		Exposure Point Total						3E-11					
	Exposure Medium Total							3E-11					
Medium Total								3E-06					
Receptor Total							Receptor Risk Total	7E-06					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

APPENDIX H.3

PROUCL OUTPUTS

Tank Farm 2 (Entire Site)

PROUCL OUTPUT - SURFACE SOIL

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	4/4/2014 5:58:10 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo(a)anthracene

General Statistics

Total Number of Observations	69	Number of Distinct Observations	57
		Number of Missing Observations	2
Number of Detects	67	Number of Non-Detects	2
Number of Distinct Detects	56	Number of Distinct Non-Detects	2
Minimum Detect	2.9	Minimum Non-Detect	11
Maximum Detect	4500	Maximum Non-Detect	26
Variance Detects	351671	Percent Non-Detects	2.899%
Mean Detects	205.2	SD Detects	593
Median Detects	45	CV Detects	2.89
Skewness Detects	6.173	Kurtosis Detects	43.04
Mean of Logged Detects	4.072	SD of Logged Detects	1.399

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.349	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.367	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.108	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	199.5	Standard Error of Mean	70.46
SD	580.9	95% KM (BCA) UCL	330.7
95% KM (t) UCL	317	95% KM (Percentile Bootstrap) UCL	320.7
95% KM (z) UCL	315.4	95% KM Bootstrap t UCL	522.2
90% KM Chebyshev UCL	410.9	95% KM Chebyshev UCL	506.7
97.5% KM Chebyshev UCL	639.6	99% KM Chebyshev UCL	900.6

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	4.935	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.816	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.215	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.115	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.506	k star (bias corrected MLE)	0.494
Theta hat (MLE)	405.2	Theta star (bias corrected MLE)	415.7
nu hat (MLE)	67.85	nu star (bias corrected)	66.14
MLE Mean (bias corrected)	205.2	MLE Sd (bias corrected)	292

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.118	nu hat (KM)	16.28
Approximate Chi Square Value (16.28, α)	8.161	Adjusted Chi Square Value (16.28, β)	8.038
95% Gamma Approximate KM-UCL (use when n>=50)	398.1	95% Gamma Adjusted KM-UCL (use when n<50)	404.2

Benzo(a)anthracene (continued)						
Gamma ROS Statistics using Imputed Non-Detects						
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs						
GROS may not be used when kstar of detected data is small such as < 0.1						
For such situations, GROS method tends to yield inflated values of UCLs and BTVs						
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates						
Minimum	0.01	Mean	199.2			
Maximum	4500	Median	45			
SD	585.3	CV	2.938			
k hat (MLE)	0.44	k star (bias corrected MLE)	0.43			
Theta hat (MLE)	453.1	Theta star (bias corrected MLE)	463.1			
nu hat (MLE)	60.68	nu star (bias corrected)	59.37			
MLE Mean (bias corrected)	199.2	MLE Sd (bias corrected)	303.7			
		Adjusted Level of Significance (β)	0.0465			
Approximate Chi Square Value (59.37, α)	42.65	Adjusted Chi Square Value (59.37, β)	42.35			
95% Gamma Approximate UCL (use when n>=50)	277.3	95% Gamma Adjusted UCL (use when n<50)	279.3			
Lognormal GOF Test on Detected Observations Only						
Lilliefors Test Statistic	0.106	**Lilliefors GOF Test**				
5% Lilliefors Critical Value	0.108	Detected Data appear Lognormal at 5% Significance Level				
Detected Data appear Lognormal at 5% Significance Level						
Lognormal ROS Statistics Using Imputed Non-Detects						
Mean in Original Scale	199.5	Mean in Log Scale	4.012			
SD in Original Scale	585.2	SD in Log Scale	1.425			
95% t UCL (assumes normality of ROS data)	317	95% Percentile Bootstrap UCL	339			
95% BCA Bootstrap UCL	398.1	95% Bootstrap t UCL	515.5			
95% H-UCL (Log ROS)	224					
UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed						
KM Mean (logged)	4.015	95% H-UCL (KM -Log)	219.2			
KM SD (logged)	1.413	95% Critical H Value (KM-Log)	2.204			
KM Standard Error of Mean (logged)	0.172					
DL/2 Statistics						
DL/2 Normal		**DL/2 Log-Transformed**				
Mean in Original Scale	199.5	Mean in Log Scale	4.016			
SD in Original Scale	585.2	SD in Log Scale	1.419			
95% t UCL (Assumes normality)	317	95% H-Stat UCL	221.9			
DL/2 is not a recommended method, provided for comparisons and historical reasons						
Nonparametric Distribution Free UCL Statistics						
Detected Data appear Lognormal Distributed at 5% Significance Level						
Suggested UCL to Use						
95% KM (Chebyshev) UCL	506.7					
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.						
Recommendations are based upon data size, data distribution, and skewness.						
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).						
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.						

PROUCL OUTPUT - SURFACE SOIL

Benzo(a)pyrene

General Statistics			
Total Number of Observations	69	Number of Distinct Observations	59
		Number of Missing Observations	2
Number of Detects	68	Number of Non-Detects	1
Number of Distinct Detects	58	Number of Distinct Non-Detects	1
Minimum Detect	4.2	Minimum Non-Detect	10
Maximum Detect	3700	Maximum Non-Detect	10
Variance Detects	227817	Percent Non-Detects	1.449%
Mean Detects	159.2	SD Detects	477.3
Median Detects	43	CV Detects	2.998
Skewness Detects	6.491	Kurtosis Detects	46.77
Mean of Logged Detects	3.924	SD of Logged Detects	1.292

Normal GOF Test on Detects Only		
Shapiro Wilk Test Statistic	0.323	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.373	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.107	Detected Data Not Normal at 5% Significance Level
Detected Data Not Normal at 5% Significance Level		

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	157	Standard Error of Mean	57.09
SD	470.7	95% KM (BCA) UCL	256.9
95% KM (t) UCL	252.2	95% KM (Percentile Bootstrap) UCL	256
95% KM (z) UCL	250.9	95% KM Bootstrap t UCL	418
90% KM Chebyshev UCL	328.2	95% KM Chebyshev UCL	405.8
97.5% KM Chebyshev UCL	513.5	99% KM Chebyshev UCL	725

Gamma GOF Tests on Detected Observations Only		
A-D Test Statistic	5.121	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.812	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.212	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.114	Detected Data Not Gamma Distributed at 5% Significance Level
Detected Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics on Detected Data Only			
k hat (MLE)	0.547	k star (bias corrected MLE)	0.532
Theta hat (MLE)	291.2	Theta star (bias corrected MLE)	299
nu hat (MLE)	74.36	nu star (bias corrected)	72.41
MLE Mean (bias corrected)	159.2	MLE Sd (bias corrected)	218.2

Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.111	nu hat (KM)	15.35
Approximate Chi Square Value (15.35, α)	7.505	Adjusted Chi Square Value (15.35, β)	7.388
95% Gamma Approximate KM-UCL (use when n>=50)	321	95% Gamma Adjusted KM-UCL (use when n<50)	326.1

PROUCL OUTPUT - SURFACE SOIL

Benzo(a)pyrene (continued)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	156.9
Maximum	3700	Median	40
SD	474.2	CV	3.022
k hat (MLE)	0.505	k star (bias corrected MLE)	0.493
Theta hat (MLE)	310.5	Theta star (bias corrected MLE)	318.2
nu hat (MLE)	69.74	nu star (bias corrected)	68.04
MLE Mean (bias corrected)	156.9	MLE Sd (bias corrected)	223.4
		Adjusted Level of Significance (β)	0.0465
Approximate Chi Square Value (68.04, α)	50.05	Adjusted Chi Square Value (68.04, β)	49.72
95% Gamma Approximate UCL (use when n>=50)	213.3	95% Gamma Adjusted UCL (use when n<50)	214.7

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.0851	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.107	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	157	Mean in Log Scale	3.889
SD in Original Scale	474.1	SD in Log Scale	1.315
95% t UCL (assumes normality of ROS data)	252.1	95% Percentile Bootstrap UCL	264.4
95% BCA Bootstrap UCL	317.2	95% Bootstrap t UCL	424
95% H-UCL (Log ROS)	162.6		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	3.894	95% H-UCL (KM -Log)	158.7
KM SD (logged)	1.298	95% Critical H Value (KM-Log)	2.105
KM Standard Error of Mean (logged)	0.157		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	157	Mean in Log Scale	3.891
SD in Original Scale	474.1	SD in Log Scale	1.312
95% t UCL (Assumes normality)	252.1	95% H-Stat UCL	162

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	405.8

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PROUCL OUTPUT - SURFACE SOIL

Benzo(k)fluoranthene

General Statistics			
Total Number of Observations	69	Number of Distinct Observations	53
		Number of Missing Observations	2
Number of Detects	67	Number of Non-Detects	2
Number of Distinct Detects	53	Number of Distinct Non-Detects	2
Minimum Detect	4.3	Minimum Non-Detect	10
Maximum Detect	1700	Maximum Non-Detect	11
Variance Detects	49967	Percent Non-Detects	2.899%
Mean Detects	83.32	SD Detects	223.5
Median Detects	27	CV Detects	2.683
Skewness Detects	6.209	Kurtosis Detects	43.06
Mean of Logged Detects	3.444	SD of Logged Detects	1.205

Normal GOF Test on Detects Only		
Shapiro Wilk Test Statistic	0.348	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.362	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.108	Detected Data Not Normal at 5% Significance Level
Detected Data Not Normal at 5% Significance Level		

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	81.1	Standard Error of Mean	26.56
SD	219	95% KM (BCA) UCL	129.6
95% KM (t) UCL	125.4	95% KM (Percentile Bootstrap) UCL	129.6
95% KM (z) UCL	124.8	95% KM Bootstrap t UCL	205.3
90% KM Chebyshev UCL	160.8	95% KM Chebyshev UCL	196.9
97.5% KM Chebyshev UCL	247	99% KM Chebyshev UCL	345.4

Gamma GOF Tests on Detected Observations Only		
A-D Test Statistic	4.395	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.804	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.21	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.114	Detected Data Not Gamma Distributed at 5% Significance Level
Detected Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics on Detected Data Only			
k hat (MLE)	0.627	k star (bias corrected MLE)	0.609
Theta hat (MLE)	132.9	Theta star (bias corrected MLE)	136.8
nu hat (MLE)	84.03	nu star (bias corrected)	81.6
MLE Mean (bias corrected)	83.32	MLE Sd (bias corrected)	106.8

Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.137	nu hat (KM)	18.93
Approximate Chi Square Value (18.93, α)	10.06	Adjusted Chi Square Value (18.93, β)	9.926
95% Gamma Approximate KM-UCL (use when n>=50)	152.5	95% Gamma Adjusted KM-UCL (use when n<50)	154.6

PROUCL OUTPUT - SURFACE SOIL

Benzo(k)fluoranthene (continued)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	80.9
Maximum	1700	Median	26
SD	220.7	CV	2.728
k hat (MLE)	0.532	k star (bias corrected MLE)	0.518
Theta hat (MLE)	152.1	Theta star (bias corrected MLE)	156.1
nu hat (MLE)	73.4	nu star (bias corrected)	71.54
MLE Mean (bias corrected)	80.9	MLE Sd (bias corrected)	112.4
		Adjusted Level of Significance (β)	0.0465
Approximate Chi Square Value (71.54, α)	53.07	Adjusted Chi Square Value (71.54, β)	52.73
95% Gamma Approximate UCL (use when n>=50)	109.1	95% Gamma Adjusted UCL (use when n<50)	109.8

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.083	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.108	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	81.08	Mean in Log Scale	3.396
SD in Original Scale	220.6	SD in Log Scale	1.219
95% t UCL (assumes normality of ROS data)	125.4	95% Percentile Bootstrap UCL	129.3
95% BCA Bootstrap UCL	160.6	95% Bootstrap t UCL	214.7
95% H-UCL (Log ROS)	86.01		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	3.399	95% H-UCL (KM -Log)	84.96
KM SD (logged)	1.207	95% Critical H Value (KM-Log)	2.149
KM Standard Error of Mean (logged)	0.147		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	81.05	Mean in Log Scale	3.392
SD in Original Scale	220.6	SD in Log Scale	1.225
95% t UCL (Assumes normality)	125.3	95% H-Stat UCL	86.29

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	196.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PROUCL OUTPUT - SURFACE SOIL

Dibenzo(a,h)anthracene

General Statistics			
Total Number of Observations	69	Number of Distinct Observations	57
		Number of Missing Observations	2
Number of Detects	65	Number of Non-Detects	4
Number of Distinct Detects	56	Number of Distinct Non-Detects	3
Minimum Detect	1.8	Minimum Non-Detect	1.9
Maximum Detect	590	Maximum Non-Detect	11
Variance Detects	6091	Percent Non-Detects	5.797%
Mean Detects	32.03	SD Detects	78.04
Median Detects	11.5	CV Detects	2.436
Skewness Detects	6.12	Kurtosis Detects	42.23
Mean of Logged Detects	2.638	SD of Logged Detects	1.098

Normal GOF Test on Detects Only		
Shapiro Wilk Test Statistic	0.367	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.349	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.11	Detected Data Not Normal at 5% Significance Level
Detected Data Not Normal at 5% Significance Level		

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	30.47	Standard Error of Mean	9.151
SD	75.43	95% KM (BCA) UCL	49.39
95% KM (t) UCL	45.73	95% KM (Percentile Bootstrap) UCL	47.11
95% KM (z) UCL	45.53	95% KM Bootstrap t UCL	70.13
90% KM Chebyshev UCL	57.93	95% KM Chebyshev UCL	70.36
97.5% KM Chebyshev UCL	87.62	99% KM Chebyshev UCL	121.5

Gamma GOF Tests on Detected Observations Only		
A-D Test Statistic	4.404	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.795	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.204	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.115	Detected Data Not Gamma Distributed at 5% Significance Level
Detected Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics on Detected Data Only			
k hat (MLE)	0.725	k star (bias corrected MLE)	0.702
Theta hat (MLE)	44.16	Theta star (bias corrected MLE)	45.62
nu hat (MLE)	94.29	nu star (bias corrected)	91.28
MLE Mean (bias corrected)	32.03	MLE Sd (bias corrected)	38.23

Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.163	nu hat (KM)	22.52
Approximate Chi Square Value (22.52, α)	12.73	Adjusted Chi Square Value (22.52, β)	12.57
95% Gamma Approximate KM-UCL (use when n>=50)	53.91	95% Gamma Adjusted KM-UCL (use when n<50)	54.58

PROUCL OUTPUT - SURFACE SOIL

Dibenzo(a,h)anthracene (continued)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	30.18
Maximum	590	Median	11
SD	76.09	CV	2.521
k hat (MLE)	0.529	k star (bias corrected MLE)	0.516
Theta hat (MLE)	57	Theta star (bias corrected MLE)	58.48
nu hat (MLE)	73.06	nu star (bias corrected)	71.22
MLE Mean (bias corrected)	30.18	MLE Sd (bias corrected)	42.01
		Adjusted Level of Significance (β)	0.0465
Approximate Chi Square Value (71.22, α)	52.79	Adjusted Chi Square Value (71.22, β)	52.45
95% Gamma Approximate UCL (use when n>=50)	40.71	95% Gamma Adjusted UCL (use when n<50)	40.98

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.14	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.11	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	30.45	Mean in Log Scale	2.562
SD in Original Scale	75.99	SD in Log Scale	1.123
95% t UCL (assumes normality of ROS data)	45.7	95% Percentile Bootstrap UCL	46.82
95% BCA Bootstrap UCL	58.05	95% Bootstrap t UCL	70.7
95% H-UCL (Log ROS)	32.99		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	30.42	Mean in Log Scale	2.555
SD in Original Scale	76	SD in Log Scale	1.131
95% t UCL (Assumes normality)	45.67	95% H-Stat UCL	33.1

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	70.36

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PROUCL OUTPUT - SURFACE SOIL

Indeno(1,2,3-cd)pyrene

General Statistics			
Total Number of Observations	69	Number of Distinct Observations	57
		Number of Missing Observations	2
Number of Detects	66	Number of Non-Detects	3
Number of Distinct Detects	55	Number of Distinct Non-Detects	2
Minimum Detect	2.4	Minimum Non-Detect	9.85
Maximum Detect	2800	Maximum Non-Detect	10
Variance Detects	135065	Percent Non-Detects	4.348%
Mean Detects	139.5	SD Detects	367.5
Median Detects	40.5	CV Detects	2.635
Skewness Detects	6.208	Kurtosis Detects	43.57
Mean of Logged Detects	3.921	SD of Logged Detects	1.28

Normal GOF Test on Detects Only		
Shapiro Wilk Test Statistic	0.359	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.355	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.109	Detected Data Not Normal at 5% Significance Level
Detected Data Not Normal at 5% Significance Level		

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	133.6	Standard Error of Mean	43.4
SD	357.7	95% KM (BCA) UCL	218.7
95% KM (t) UCL	206	95% KM (Percentile Bootstrap) UCL	209.4
95% KM (z) UCL	205	95% KM Bootstrap t UCL	320.2
90% KM Chebyshev UCL	263.8	95% KM Chebyshev UCL	322.8
97.5% KM Chebyshev UCL	404.6	99% KM Chebyshev UCL	565.4

Gamma GOF Tests on Detected Observations Only		
A-D Test Statistic	4.208	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.806	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.194	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.115	Detected Data Not Gamma Distributed at 5% Significance Level
Detected Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics on Detected Data Only			
k hat (MLE)	0.607	k star (bias corrected MLE)	0.589
Theta hat (MLE)	229.9	Theta star (bias corrected MLE)	236.7
nu hat (MLE)	80.07	nu star (bias corrected)	77.76
MLE Mean (bias corrected)	139.5	MLE Sd (bias corrected)	181.7

Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.14	nu hat (KM)	19.25
Approximate Chi Square Value (19.25, α)	10.3	Adjusted Chi Square Value (19.25, β)	10.16
95% Gamma Approximate KM-UCL (use when n>=50)	249.7	95% Gamma Adjusted KM-UCL (use when n<50)	253.2

Indeno(1,2,3-cd)pyrene (continued)

Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detected data is small such as < 0.1			
For such situations, GROS method tends to yield inflated values of UCLs and BTVs			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	133.4
Maximum	2800	Median	38
SD	360.5	CV	2.702
k hat (MLE)	0.476	k star (bias corrected MLE)	0.465
Theta hat (MLE)	280	Theta star (bias corrected MLE)	286.6
nu hat (MLE)	65.75	nu star (bias corrected)	64.22
MLE Mean (bias corrected)	133.4	MLE Sd (bias corrected)	195.5
		Adjusted Level of Significance (β)	0.0465
Approximate Chi Square Value (64.22, α)	46.79	Adjusted Chi Square Value (64.22, β)	46.47
95% Gamma Approximate UCL (use when n>=50)	183.1	95% Gamma Adjusted UCL (use when n<50)	184.4
Lognormal GOF Test on Detected Observations Only			
Lilliefors Test Statistic	0.0929	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.109	Detected Data appear Lognormal at 5% Significance Level	
Detected Data appear Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	133.6	Mean in Log Scale	3.821
SD in Original Scale	360.4	SD in Log Scale	1.337
95% t UCL (assumes normality of ROS data)	206	95% Percentile Bootstrap UCL	217.1
95% BCA Bootstrap UCL	258.2	95% Bootstrap t UCL	308.7
95% H-UCL (Log ROS)	157.7		
UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed			
KM Mean (logged)	3.818	95% H-UCL (KM -Log)	156.9
KM SD (logged)	1.336	95% Critical H Value (KM-Log)	2.129
KM Standard Error of Mean (logged)	0.163		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	133.6	Mean in Log Scale	3.82
SD in Original Scale	360.4	SD in Log Scale	1.339
95% t UCL (Assumes normality)	206	95% H-Stat UCL	157.9
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Detected Data appear Lognormal Distributed at 5% Significance Level			
Suggested UCL to Use			
95% KM (Chebyshev) UCL	322.8		
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			

PROUCL OUTPUT - SURFACE SOIL

Antimony

General Statistics			
Total Number of Observations	69	Number of Distinct Observations	35
		Number of Missing Observations	2
Number of Detects	68	Number of Non-Detects	1
Number of Distinct Detects	35	Number of Distinct Non-Detects	1
Minimum Detect	0.05	Minimum Non-Detect	0.07
Maximum Detect	6.6	Maximum Non-Detect	0.07
Variance Detects	0.725	Percent Non-Detects	1.449%
Mean Detects	0.375	SD Detects	0.852
Median Detects	0.18	CV Detects	2.272
Skewness Detects	6.341	Kurtosis Detects	44.35
Mean of Logged Detects	-1.539	SD of Logged Detects	0.808

Normal GOF Test on Detects Only		
Shapiro Wilk Test Statistic	0.322	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.357	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.107	Detected Data Not Normal at 5% Significance Level
Detected Data Not Normal at 5% Significance Level		

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	0.37	Standard Error of Mean	0.102
SD	0.84	95% KM (BCA) UCL	0.551
95% KM (t) UCL	0.54	95% KM (Percentile Bootstrap) UCL	0.553
95% KM (z) UCL	0.538	95% KM Bootstrap t UCL	0.855
90% KM Chebyshev UCL	0.676	95% KM Chebyshev UCL	0.814
97.5% KM Chebyshev UCL	1.006	99% KM Chebyshev UCL	1.384

Gamma GOF Tests on Detected Observations Only		
A-D Test Statistic	6.921	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.78	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.244	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.111	Detected Data Not Gamma Distributed at 5% Significance Level
Detected Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics on Detected Data Only			
k hat (MLE)	1.031	k star (bias corrected MLE)	0.995
Theta hat (MLE)	0.364	Theta star (bias corrected MLE)	0.377
nu hat (MLE)	140.2	nu star (bias corrected)	135.3
MLE Mean (bias corrected)	0.375	MLE Sd (bias corrected)	0.376

Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.194	nu hat (KM)	26.8
Approximate Chi Square Value (26.80, α)	15.99	Adjusted Chi Square Value (26.80, β)	15.82
95% Gamma Approximate KM-UCL (use when n>=50)	0.62	95% Gamma Adjusted KM-UCL (use when n<50)	0.627

PROUCL OUTPUT - SURFACE SOIL

Antimony (continued)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.37
Maximum	6.6	Median	0.18
SD	0.846	CV	2.29
k hat (MLE)	0.983	k star (bias corrected MLE)	0.95
Theta hat (MLE)	0.376	Theta star (bias corrected MLE)	0.389
nu hat (MLE)	135.7	nu star (bias corrected)	131.1
MLE Mean (bias corrected)	0.37	MLE Sd (bias corrected)	0.379
		Adjusted Level of Significance (β)	0.0465
Approximate Chi Square Value (131.10, α)	105.6	Adjusted Chi Square Value (131.10, β)	105.2
95% Gamma Approximate UCL (use when n>=50)	0.459	95% Gamma Adjusted UCL (use when n<50)	0.461

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.142	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.107	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.37	Mean in Log Scale	-1.565
SD in Original Scale	0.846	SD in Log Scale	0.83
95% t UCL (assumes normality of ROS data)	0.54	95% Percentile Bootstrap UCL	0.562
95% BCA Bootstrap UCL	0.657	95% Bootstrap t UCL	0.854
95% H-UCL (Log ROS)	0.365		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.37	Mean in Log Scale	-1.566
SD in Original Scale	0.846	SD in Log Scale	0.831
95% t UCL (Assumes normality)	0.54	95% H-Stat UCL	0.366

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.814

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PROUCL OUTPUT - SURFACE SOIL

Thallium

General Statistics			
Total Number of Observations	69	Number of Distinct Observations	10
		Number of Missing Observations	2
Number of Detects	56	Number of Non-Detects	13
Number of Distinct Detects	9	Number of Distinct Non-Detects	6
Minimum Detect	0.03	Minimum Non-Detect	0.033
Maximum Detect	0.1	Maximum Non-Detect	0.07
Variance Detects	1.5646E-4	Percent Non-Detects	18.84%
Mean Detects	0.0516	SD Detects	0.0125
Median Detects	0.05	CV Detects	0.242
Skewness Detects	1.303	Kurtosis Detects	3.28
Mean of Logged Detects	-2.99	SD of Logged Detects	0.228

Normal GOF Test on Detects Only		
Shapiro Wilk Test Statistic	0.878	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	5.5148E-6	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.212	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.118	Detected Data Not Normal at 5% Significance Level
Detected Data Not Normal at 5% Significance Level		

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	0.049	Standard Error of Mean	0.0016
SD	0.0129	95% KM (BCA) UCL	0.0518
95% KM (t) UCL	0.0516	95% KM (Percentile Bootstrap) UCL	0.0517
95% KM (z) UCL	0.0516	95% KM Bootstrap t UCL	0.0518
90% KM Chebyshev UCL	0.0538	95% KM Chebyshev UCL	0.0559
97.5% KM Chebyshev UCL	0.0589	99% KM Chebyshev UCL	0.0649

Gamma GOF Tests on Detected Observations Only		
A-D Test Statistic	1.949	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.749	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.185	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.119	Detected Data Not Gamma Distributed at 5% Significance Level
Detected Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics on Detected Data Only			
k hat (MLE)	19.16	k star (bias corrected MLE)	18.14
Theta hat (MLE)	0.00269	Theta star (bias corrected MLE)	0.00284
nu hat (MLE)	2146	nu star (bias corrected)	2032
MLE Mean (bias corrected)	0.0516	MLE Sd (bias corrected)	0.0121

Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	14.38	nu hat (KM)	1984
Approximate Chi Square Value (N/A, α)	1882	Adjusted Chi Square Value (N/A, β)	1879
95% Gamma Approximate KM-UCL (use when n>=50)	0.0516	95% Gamma Adjusted KM-UCL (use when n<50)	0.0517

PROUCL OUTPUT - SURFACE SOIL

Thallium (continued)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0268	Mean	0.049
Maximum	0.1	Median	0.05
SD	0.0129	CV	0.263
k hat (MLE)	15.93	k star (bias corrected MLE)	15.24
Theta hat (MLE)	0.00308	Theta star (bias corrected MLE)	0.00321
nu hat (MLE)	2198	nu star (bias corrected)	2104
MLE Mean (bias corrected)	0.049	MLE Sd (bias corrected)	0.0125
		Adjusted Level of Significance (β)	0.0465
Approximate Chi Square Value (N/A, α)	1998	Adjusted Chi Square Value (N/A, β)	1996
95% Gamma Approximate UCL (use when n>=50)	0.0516	95% Gamma Adjusted UCL (use when n<50)	0.0516

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.17	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.118	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0492	Mean in Log Scale	-3.042
SD in Original Scale	0.0126	SD in Log Scale	0.242
95% t UCL (assumes normality of ROS data)	0.0517	95% Percentile Bootstrap UCL	0.0517
95% BCA Bootstrap UCL	0.052	95% Bootstrap t UCL	0.0519
95% H-UCL (Log ROS)	0.0517		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0467	Mean in Log Scale	-3.124
SD in Original Scale	0.0155	SD in Log Scale	0.358
95% t UCL (Assumes normality)	0.0498	95% H-Stat UCL	0.0507

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.0559

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PROUCL OUTPUT - SURFACE SOIL

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	4/4/2014 5:55:34 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo(b)fluoranthene

General Statistics

Total Number of Observations	69	Number of Distinct Observations	59
		Number of Missing Observations	2
Minimum	5.2	Mean	253.4
Maximum	5800	Median	74
SD	747.1	Std. Error of Mean	89.94
Coefficient of Variation	2.948	Skewness	6.455

Normal GOF Test

Shapiro Wilk Test Statistic	0.325	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.37	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.107	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	403.4	95% Adjusted-CLT UCL (Chen-1995)	476.1
		95% Modified-t UCL (Johnson-1978)	415.1

Gamma GOF Test

A-D Test Statistic	4.641	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.811	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.197	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.113	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.558	k star (bias corrected MLE)	0.544
Theta hat (MLE)	454	Theta star (bias corrected MLE)	466.2
nu hat (MLE)	77.03	nu star (bias corrected)	75.01
MLE Mean (bias corrected)	253.4	MLE Sd (bias corrected)	343.7
		Approximate Chi Square Value (0.05)	56.06
Adjusted Level of Significance	0.0465	Adjusted Chi Square Value	55.72

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	339.1	95% Adjusted Gamma UCL (use when n<50)	341.2

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.974	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	0.376	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0658	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.107	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

PROUCL OUTPUT - SURFACE SOIL

Benzo(b)fluoranthene (continued)

Lognormal Statistics			
Minimum of Logged Data	1.649	Mean of logged Data	4.416
Maximum of Logged Data	8.666	SD of logged Data	1.302
Assuming Lognormal Distribution			
95% H-UCL	269.6	90% Chebyshev (MVUE) UCL	303.8
95% Chebyshev (MVUE) UCL	355.8	97.5% Chebyshev (MVUE) UCL	427.9
99% Chebyshev (MVUE) UCL	569.7		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	401.4	95% Jackknife UCL	403.4
95% Standard Bootstrap UCL	398.6	95% Bootstrap-t UCL	701.2
95% Hall's Bootstrap UCL	890.5	95% Percentile Bootstrap UCL	411.6
95% BCA Bootstrap UCL	507.4		
90% Chebyshev(Mean, Sd) UCL	523.3	95% Chebyshev(Mean, Sd) UCL	645.5
97.5% Chebyshev(Mean, Sd) UCL	815.1	99% Chebyshev(Mean, Sd) UCL	1148
Suggested UCL to Use			
95% H-UCL	269.6		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.

H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.

It is therefore recommended to avoid the use of H-statistic based 95% UCLs.

Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

PROUCL OUTPUT - SURFACE SOIL

2,3,7,8-TCDD Equivalents

General Statistics			
Total Number of Observations	69	Number of Distinct Observations	69
		Number of Missing Observations	2
Minimum	1.504	Mean	5.764
Maximum	31.18	Median	4.619
SD	4.609	Std. Error of Mean	0.555
Coefficient of Variation	0.8	Skewness	3.085
Normal GOF Test			
Shapiro Wilk Test Statistic	0.719	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.209	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.107	Data Not Normal at 5% Significance Level	
Data Not Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6.689	95% Adjusted-CLT UCL (Chen-1995)	6.897
		95% Modified-t UCL (Johnson-1978)	6.723
Gamma GOF Test			
A-D Test Statistic	1.42	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.76	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.113	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.108	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	2.603	k star (bias corrected MLE)	2.499
Theta hat (MLE)	2.215	Theta star (bias corrected MLE)	2.306
nu hat (MLE)	359.2	nu star (bias corrected)	344.9
MLE Mean (bias corrected)	5.764	MLE Sd (bias corrected)	3.646
		Approximate Chi Square Value (0.05)	302.9
Adjusted Level of Significance	0.0465	Adjusted Chi Square Value	302
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	6.564	95% Adjusted Gamma UCL (use when n<50)	6.582
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.965	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk P Value	0.147	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0713	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.107	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	0.408	Mean of logged Data	1.547
Maximum of Logged Data	3.44	SD of logged Data	0.606
Assuming Lognormal Distribution			
95% H-UCL	6.516	90% Chebyshev (MVUE) UCL	6.958
95% Chebyshev (MVUE) UCL	7.559	97.5% Chebyshev (MVUE) UCL	8.394
99% Chebyshev (MVUE) UCL	10.03		

PROUCL OUTPUT - SURFACE SOIL

2,3,7,8-TCDD Equivalents (continued)

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	6.677	95% Jackknife UCL	6.689
95% Standard Bootstrap UCL	6.693	95% Bootstrap-t UCL	7.083
95% Hall's Bootstrap UCL	7.515	95% Percentile Bootstrap UCL	6.731
95% BCA Bootstrap UCL	6.996		
90% Chebyshev(Mean, Sd) UCL	7.428	95% Chebyshev(Mean, Sd) UCL	8.183
97.5% Chebyshev(Mean, Sd) UCL	9.229	99% Chebyshev(Mean, Sd) UCL	11.29

Suggested UCL to Use

95% H-UCL	6.516

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.

H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.

It is therefore recommended to avoid the use of H-statistic based 95% UCLs.

Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

PROUCL OUTPUT - SURFACE SOIL

Chromium

General Statistics			
Total Number of Observations	69	Number of Distinct Observations	58
		Number of Missing Observations	2
Minimum	7.1	Mean	17.21
Maximum	44.5	Median	17
SD	4.971	Std. Error of Mean	0.598
Coefficient of Variation	0.289	Skewness	2.339
Normal GOF Test			
Shapiro Wilk Test Statistic	0.856	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	6.1776E-9	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.105	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.107	Data appear Normal at 5% Significance Level	
Data appear Approximate Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.21	95% Adjusted-CLT UCL (Chen-1995)	18.37
		95% Modified-t UCL (Johnson-1978)	18.23
Gamma GOF Test			
A-D Test Statistic	0.568	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.75	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.0668	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.107	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	14.34	k star (bias corrected MLE)	13.73
Theta hat (MLE)	1.2	Theta star (bias corrected MLE)	1.253
nu hat (MLE)	1979	nu star (bias corrected)	1895
MLE Mean (bias corrected)	17.21	MLE Sd (bias corrected)	4.644
		Approximate Chi Square Value (0.05)	1795
Adjusted Level of Significance	0.0465	Adjusted Chi Square Value	1793
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	18.17	95% Adjusted Gamma UCL (use when n<50)	18.19
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.971	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk P Value	0.28	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0695	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.107	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	1.96	Mean of logged Data	2.81
Maximum of Logged Data	3.795	SD of logged Data	0.264
Assuming Lognormal Distribution			
95% H-UCL	18.19	90% Chebyshev (MVUE) UCL	18.86
95% Chebyshev (MVUE) UCL	19.61	97.5% Chebyshev (MVUE) UCL	20.66
99% Chebyshev (MVUE) UCL	22.72		

PROUCL OUTPUT - SURFACE SOIL

Chromium (continued)

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	18.19	95% Jackknife UCL	18.21
95% Standard Bootstrap UCL	18.18	95% Bootstrap-t UCL	18.44
95% Hall's Bootstrap UCL	18.8	95% Percentile Bootstrap UCL	18.2
95% BCA Bootstrap UCL	18.41		
90% Chebyshev(Mean, Sd) UCL	19	95% Chebyshev(Mean, Sd) UCL	19.82
97.5% Chebyshev(Mean, Sd) UCL	20.95	99% Chebyshev(Mean, Sd) UCL	23.16

Suggested UCL to Use

95% Student's-t UCL	18.21

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - SURFACE SOIL

Cobalt

General Statistics			
Total Number of Observations	69	Number of Distinct Observations	50
		Number of Missing Observations	2
Minimum	3.3	Mean	10.61
Maximum	16.6	Median	10.9
SD	2.716	Std. Error of Mean	0.327
Coefficient of Variation	0.256	Skewness	-0.0305
Normal GOF Test			
Shapiro Wilk Test Statistic	0.979	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0.593	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.0686	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.107	Data appear Normal at 5% Significance Level	
Data appear Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.15	95% Adjusted-CLT UCL (Chen-1995)	11.14
		95% Modified-t UCL (Johnson-1978)	11.15
Gamma GOF Test			
A-D Test Statistic	0.645	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.75	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.0993	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.107	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	13.76	k star (bias corrected MLE)	13.18
Theta hat (MLE)	0.771	Theta star (bias corrected MLE)	0.805
nu hat (MLE)	1900	nu star (bias corrected)	1818
MLE Mean (bias corrected)	10.61	MLE Sd (bias corrected)	2.922
		Approximate Chi Square Value (0.05)	1720
Adjusted Level of Significance	0.0465	Adjusted Chi Square Value	1718
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	11.21	95% Adjusted Gamma UCL (use when n<50)	11.23
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.933	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk P Value	0.00144	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.114	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.107	Data Not Lognormal at 5% Significance Level	
Data Not Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	1.194	Mean of logged Data	2.325
Maximum of Logged Data	2.809	SD of logged Data	0.286
Assuming Lognormal Distribution			
95% H-UCL	11.32	90% Chebyshev (MVUE) UCL	11.77
95% Chebyshev (MVUE) UCL	12.27	97.5% Chebyshev (MVUE) UCL	12.98
99% Chebyshev (MVUE) UCL	14.36		

PROUCL OUTPUT - SURFACE SOIL

Cobalt (continued)

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	11.15	95% Jackknife UCL	11.15
95% Standard Bootstrap UCL	11.15	95% Bootstrap-t UCL	11.15
95% Hall's Bootstrap UCL	11.14	95% Percentile Bootstrap UCL	11.14
95% BCA Bootstrap UCL	11.13		
90% Chebyshev(Mean, Sd) UCL	11.59	95% Chebyshev(Mean, Sd) UCL	12.03
97.5% Chebyshev(Mean, Sd) UCL	12.65	99% Chebyshev(Mean, Sd) UCL	13.86

Suggested UCL to Use

95% Student's-t UCL	11.15

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PROUCL OUTPUT - SURFACE SOIL

Iron

General Statistics			
Total Number of Observations	69	Number of Distinct Observations	55
		Number of Missing Observations	2
Minimum	9760	Mean	24196
Maximum	36250	Median	24100
SD	5605	Std. Error of Mean	674.7
Coefficient of Variation	0.232	Skewness	-0.211
Normal GOF Test			
Shapiro Wilk Test Statistic	0.981	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0.66	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.0641	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.107	Data appear Normal at 5% Significance Level	
Data appear Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	25321	95% Adjusted-CLT UCL (Chen-1995)	25287
		95% Modified-t UCL (Johnson-1978)	25318
Gamma GOF Test			
A-D Test Statistic	0.586	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.75	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.0886	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.107	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	17.02	k star (bias corrected MLE)	16.28
Theta hat (MLE)	1422	Theta star (bias corrected MLE)	1486
nu hat (MLE)	2348	nu star (bias corrected)	2247
MLE Mean (bias corrected)	24196	MLE Sd (bias corrected)	5996
		Approximate Chi Square Value (0.05)	2138
Adjusted Level of Significance	0.0465	Adjusted Chi Square Value	2136
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	25431	95% Adjusted Gamma UCL (use when n<50)	25457
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.945	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk P Value	0.00895	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.106	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.107	Data appear Lognormal at 5% Significance Level	
Data appear Approximate Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	9.186	Mean of logged Data	10.06
Maximum of Logged Data	10.5	SD of logged Data	0.255
Assuming Lognormal Distribution			
95% H-UCL	25598	90% Chebyshev (MVUE) UCL	26511
95% Chebyshev (MVUE) UCL	27535	97.5% Chebyshev (MVUE) UCL	28957
99% Chebyshev (MVUE) UCL	31749		

PROUCL OUTPUT - SURFACE SOIL

Iron (continued)

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	25306	95% Jackknife UCL	25321
95% Standard Bootstrap UCL	25282	95% Bootstrap-t UCL	25315
95% Hall's Bootstrap UCL	25278	95% Percentile Bootstrap UCL	25257
95% BCA Bootstrap UCL	25314		
90% Chebyshev(Mean, Sd) UCL	26220	95% Chebyshev(Mean, Sd) UCL	27137
97.5% Chebyshev(Mean, Sd) UCL	28409	99% Chebyshev(Mean, Sd) UCL	30909

Suggested UCL to Use

95% Student's-t UCL	25321

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PROUCL OUTPUT - SURFACE SOIL

Manganese

General Statistics			
Total Number of Observations	69	Number of Distinct Observations	58
		Number of Missing Observations	2
Minimum	155	Mean	294
Maximum	658	Median	269.5
SD	95.56	Std. Error of Mean	11.5
Coefficient of Variation	0.325	Skewness	1.893
Normal GOF Test			
Shapiro Wilk Test Statistic	0.835	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	2.309E-10	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.165	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.107	Data Not Normal at 5% Significance Level	
Data Not Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	313.2	95% Adjusted-CLT UCL (Chen-1995)	315.7
		95% Modified-t UCL (Johnson-1978)	313.6
Gamma GOF Test			
A-D Test Statistic	1.536	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.75	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.122	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.107	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	11.89	k star (bias corrected MLE)	11.38
Theta hat (MLE)	24.72	Theta star (bias corrected MLE)	25.82
nu hat (MLE)	1641	nu star (bias corrected)	1571
MLE Mean (bias corrected)	294	MLE Sd (bias corrected)	87.13
		Approximate Chi Square Value (0.05)	1480
Adjusted Level of Significance	0.0465	Adjusted Chi Square Value	1478
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	312.1	95% Adjusted Gamma UCL (use when n<50)	312.5
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.95	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk P Value	0.0187	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.105	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.107	Data appear Lognormal at 5% Significance Level	
Data appear Approximate Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	5.043	Mean of logged Data	5.641
Maximum of Logged Data	6.489	SD of logged Data	0.284
Assuming Lognormal Distribution			
95% H-UCL	311.5	90% Chebyshev (MVUE) UCL	323.6
95% Chebyshev (MVUE) UCL	337.5	97.5% Chebyshev (MVUE) UCL	356.7
99% Chebyshev (MVUE) UCL	394.4		

PROUCL OUTPUT - SURFACE SOIL

Manganese (continued)

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	312.9	95% Jackknife UCL	313.2
95% Standard Bootstrap UCL	313.2	95% Bootstrap-t UCL	316.1
95% Hall's Bootstrap UCL	316.7	95% Percentile Bootstrap UCL	313.4
95% BCA Bootstrap UCL	315		
90% Chebyshev(Mean, Sd) UCL	328.5	95% Chebyshev(Mean, Sd) UCL	344.1
97.5% Chebyshev(Mean, Sd) UCL	365.8	99% Chebyshev(Mean, Sd) UCL	408.4

Suggested UCL to Use

95% Student's-t UCL	313.2	or 95% Modified-t UCL	313.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - SURFACE SOIL

UCL Statistics for Uncensored Full Data Sets	
User Selected Options	
Date/Time of Computation	5/8/2014 4:52:39 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Aroclor-1260

General Statistics

Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	24	Mean	3780
Maximum	18000	Median	1850
SD	5441	Std. Error of Mean	1571
Coefficient of Variation	1.44	Skewness	2.042

Normal GOF Test

Shapiro Wilk Test Statistic	0.716	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.288	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.256	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6600	95% Adjusted-CLT UCL (Chen-1995)	7353
		95% Modified-t UCL (Johnson-1978)	6755

Gamma GOF Test

A-D Test Statistic	0.186	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.785	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.114	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.259	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.503	k star (bias corrected MLE)	0.433
Theta hat (MLE)	7518	Theta star (bias corrected MLE)	8737
nu hat (MLE)	12.07	nu star (bias corrected)	10.38
MLE Mean (bias corrected)	3780	MLE Sd (bias corrected)	5746
		Approximate Chi Square Value (0.05)	4.182
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	3.602

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	9383	95% Adjusted Gamma UCL (use when n<50)	10896

Aroclor-1260 (continued)

Lognormal GOF Test											
Shapiro Wilk Test Statistic	0.943	**Shapiro Wilk Lognormal GOF Test**									
5% Shapiro Wilk Critical Value	0.859	Data appear Lognormal at 5% Significance Level									
Lilliefors Test Statistic	0.153	**Lilliefors Lognormal GOF Test**									
5% Lilliefors Critical Value	0.256	Data appear Lognormal at 5% Significance Level									
Data appear Lognormal at 5% Significance Level											
Lognormal Statistics											
Minimum of Logged Data	3.178	Mean of logged Data	6.975								
Maximum of Logged Data	9.798	SD of logged Data	2.059								
Assuming Lognormal Distribution											
95% H-UCL	209845	90% Chebyshev (MVUE) UCL	17514								
95% Chebyshev (MVUE) UCL	22733	97.5% Chebyshev (MVUE) UCL	29978								
99% Chebyshev (MVUE) UCL	44210										
Nonparametric Distribution Free UCL Statistics											
Data appear to follow a Discernible Distribution at 5% Significance Level											
Nonparametric Distribution Free UCLs											
95% CLT UCL	6363	95% Jackknife UCL	6600								
95% Standard Bootstrap UCL	6240	95% Bootstrap-t UCL	11279								
95% Hall's Bootstrap UCL	19574	95% Percentile Bootstrap UCL	6388								
95% BCA Bootstrap UCL	7557										
90% Chebyshev(Mean, Sd) UCL	8492	95% Chebyshev(Mean, Sd) UCL	10626								
97.5% Chebyshev(Mean, Sd) UCL	13588	99% Chebyshev(Mean, Sd) UCL	19407								
Suggested UCL to Use											
95% Adjusted Gamma UCL	10896										
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
For additional insight the user may want to consult a statistician.											

PROUCL OUTPUT - SURFACE SOIL

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	4/4/2014 5:59:47 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Aluminum

General Statistics

Total Number of Observations	69	Number of Distinct Observations	51
		Number of Missing Observations	2
Minimum	4950	Mean	12524
Maximum	18200	Median	12700
SD	2635	Std. Error of Mean	317.2
Coefficient of Variation	0.21	Skewness	-0.341

Normal GOF Test

Shapiro Wilk Test Statistic	0.977	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0.493	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.094	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.107	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13053	95% Adjusted-CLT UCL (Chen-1995)	13032
		95% Modified-t UCL (Johnson-1978)	13051

Gamma GOF Test

A-D Test Statistic	0.877	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.749	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.113	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.107	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	20.4	k star (bias corrected MLE)	19.52
Theta hat (MLE)	613.9	Theta star (bias corrected MLE)	641.4
nu hat (MLE)	2815	nu star (bias corrected)	2694
MLE Mean (bias corrected)	12524	MLE Sd (bias corrected)	2834
		Approximate Chi Square Value (0.05)	2575
Adjusted Level of Significance	0.0465	Adjusted Chi Square Value	2572

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	13106	95% Adjusted Gamma UCL (use when n<50)	13118

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.933	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	0.00139	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.118	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.107	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

PROUCL OUTPUT - SURFACE SOIL

Aluminum (continued)

Lognormal Statistics			
Minimum of Logged Data	8.507	Mean of logged Data	9.411
Maximum of Logged Data	9.809	SD of logged Data	0.233
Assuming Lognormal Distribution			
95% H-UCL	13182	90% Chebyshev (MVUE) UCL	13617
95% Chebyshev (MVUE) UCL	14101	97.5% Chebyshev (MVUE) UCL	14773
99% Chebyshev (MVUE) UCL	16092		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	13046	95% Jackknife UCL	13053
95% Standard Bootstrap UCL	13047	95% Bootstrap-t UCL	13030
95% Hall's Bootstrap UCL	13063	95% Percentile Bootstrap UCL	13066
95% BCA Bootstrap UCL	13020		
90% Chebyshev(Mean, Sd) UCL	13476	95% Chebyshev(Mean, Sd) UCL	13907
97.5% Chebyshev(Mean, Sd) UCL	14505	99% Chebyshev(Mean, Sd) UCL	15680
Suggested UCL to Use			
95% Student's-t UCL	13053		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PROUCL OUTPUT - SURFACE SOIL

Arsenic

General Statistics			
Total Number of Observations	69	Number of Distinct Observations	45
		Number of Missing Observations	2
Minimum	2.2	Mean	6.729
Maximum	11.4	Median	6.6
SD	1.632	Std. Error of Mean	0.196
Coefficient of Variation	0.243	Skewness	0.238
Normal GOF Test			
Shapiro Wilk Test Statistic	0.981	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0.683	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.0726	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.107	Data appear Normal at 5% Significance Level	
Data appear Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.057	95% Adjusted-CLT UCL (Chen-1995)	7.058
		95% Modified-t UCL (Johnson-1978)	7.058
Gamma GOF Test			
A-D Test Statistic	0.467	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.75	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.0611	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.107	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	15.95	k star (bias corrected MLE)	15.27
Theta hat (MLE)	0.422	Theta star (bias corrected MLE)	0.441
nu hat (MLE)	2201	nu star (bias corrected)	2107
MLE Mean (bias corrected)	6.729	MLE Sd (bias corrected)	1.722
		Approximate Chi Square Value (0.05)	2001
Adjusted Level of Significance	0.0465	Adjusted Chi Square Value	1999
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	7.084	95% Adjusted Gamma UCL (use when n<50)	7.092
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.944	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk P Value	0.00766	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0721	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.107	Data appear Lognormal at 5% Significance Level	
Data appear Approximate Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	0.788	Mean of logged Data	1.875
Maximum of Logged Data	2.434	SD of logged Data	0.264
Assuming Lognormal Distribution			
95% H-UCL	7.136	90% Chebyshev (MVUE) UCL	7.398
95% Chebyshev (MVUE) UCL	7.694	97.5% Chebyshev (MVUE) UCL	8.104
99% Chebyshev (MVUE) UCL	8.909		

PROUCL OUTPUT - SURFACE SOIL

Arsenic (continued)

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	7.052	95% Jackknife UCL	7.057
95% Standard Bootstrap UCL	7.051	95% Bootstrap-t UCL	7.064
95% Hall's Bootstrap UCL	7.061	95% Percentile Bootstrap UCL	7.036
95% BCA Bootstrap UCL	7.054		
90% Chebyshev(Mean, Sd) UCL	7.318	95% Chebyshev(Mean, Sd) UCL	7.585
97.5% Chebyshev(Mean, Sd) UCL	7.956	99% Chebyshev(Mean, Sd) UCL	8.684

Suggested UCL to Use

95% Student's-t UCL	7.057

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

UCL Statistics for Data Sets with Non-Detects	
User Selected Options	
Date/Time of Computation	4/18/2014 11:44:35 AM
From File	ProUCL Input - SS.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Benzo(a)anthracene

General Statistics

Total Number of Observations	128	Number of Distinct Observations	98
		Number of Missing Observations	3
Number of Detects	117	Number of Non-Detects	11
Number of Distinct Detects	96	Number of Distinct Non-Detects	4
Minimum Detect	2	Minimum Non-Detect	10
Maximum Detect	4500	Maximum Non-Detect	26
Variance Detects	306970	Percent Non-Detects	8.594%
Mean Detects	198.5	SD Detects	554
Median Detects	36	CV Detects	2.792
Skewness Detects	5.514	Kurtosis Detects	35.79
Mean of Logged Detects	3.641	SD of Logged Detects	1.785

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.392	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.361	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0819	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	181.8	Standard Error of Mean	47.07
SD	530.2	95% KM (BCA) UCL	269.3
95% KM (t) UCL	259.8	95% KM (Percentile Bootstrap) UCL	265.7
95% KM (z) UCL	259.2	95% KM Bootstrap t UCL	324.1
90% KM Chebyshev UCL	323	95% KM Chebyshev UCL	387
97.5% KM Chebyshev UCL	475.7	99% KM Chebyshev UCL	650.1

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	5.907	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.844	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.178	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.0912	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Benzo(a)anthracene (continued)

Gamma Statistics on Detected Data Only										
k hat (MLE)	0.399							k star (bias corrected MLE)	0.394	
Theta hat (MLE)	497.4							Theta star (bias corrected MLE)	503.1	
nu hat (MLE)	93.36							nu star (bias corrected)	92.3	
MLE Mean (bias corrected)	198.5							MLE Sd (bias corrected)	316	
Gamma Kaplan-Meier (KM) Statistics										
k hat (KM)	0.118							nu hat (KM)	30.1	
Approximate Chi Square Value (30.10, α)	18.57							Adjusted Chi Square Value (30.10, β)	18.47	
95% Gamma Approximate KM-UCL (use when n>=50)	294.7							95% Gamma Adjusted KM-UCL (use when n<50)	296.3	
Gamma ROS Statistics using Imputed Non-Detects										
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs										
GROS may not be used when kstar of detected data is small such as < 0.1										
For such situations, GROS method tends to yield inflated values of UCLs and BTVs										
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates										
Minimum	0.01							Mean	181.4	
Maximum	4500							Median	31.5	
SD	532.4							CV	2.935	
k hat (MLE)	0.303							k star (bias corrected MLE)	0.301	
Theta hat (MLE)	597.9							Theta star (bias corrected MLE)	601.7	
nu hat (MLE)	77.66							nu star (bias corrected)	77.18	
MLE Mean (bias corrected)	181.4							MLE Sd (bias corrected)	330.4	
								Adjusted Level of Significance (β)	0.0481	
Approximate Chi Square Value (77.18, α)	57.94							Adjusted Chi Square Value (77.18, β)	57.75	
95% Gamma Approximate UCL (use when n>=50)	241.6							95% Gamma Adjusted UCL (use when n<50)	242.4	
Lognormal GOF Test on Detected Observations Only										
Lilliefors Test Statistic	0.0592							**Lilliefors GOF Test**		
5% Lilliefors Critical Value	0.0819							Detected Data appear Lognormal at 5% Significance Level		
Detected Data appear Approximate Lognormal at 5% Significance Level										
Lognormal ROS Statistics Using Imputed Non-Detects										
Mean in Original Scale	181.9							Mean in Log Scale	3.458	
SD in Original Scale	532.3							SD in Log Scale	1.816	
95% t UCL (assumes normality of ROS data)	259.8							95% Percentile Bootstrap UCL	265.4	
95% BCA Bootstrap UCL	293.5							95% Bootstrap t UCL	321.3	
95% H-UCL (Log ROS)	269.8									
UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed										
KM Mean (logged)	3.45							95% H-UCL (KM -Log)	267	
KM SD (logged)	1.815							95% Critical H Value (KM-Log)	3.042	
KM Standard Error of Mean (logged)	0.162									

Benzo(a)anthracene (continued)

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	181.9	Mean in Log Scale	3.478
SD in Original Scale	532.3	SD in Log Scale	1.789
95% t UCL (Assumes normality)	259.9	95% H-Stat UCL	259

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	475.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

Benzo(a)pyrene			
General Statistics			
Total Number of Observations	128	Number of Distinct Observations	87
		Number of Missing Observations	3
Number of Detects	104	Number of Non-Detects	24
Number of Distinct Detects	83	Number of Distinct Non-Detects	7
Minimum Detect	3.6	Minimum Non-Detect	9.2
Maximum Detect	3700	Maximum Non-Detect	12
Variance Detects	216358	Percent Non-Detects	18.75%
Mean Detects	167.9	SD Detects	465.1
Median Detects	39.5	CV Detects	2.771
Skewness Detects	5.594	Kurtosis Detects	36.06
Mean of Logged Detects	3.799	SD of Logged Detects	1.494
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.374	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.362	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0869	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	137.4	Standard Error of Mean	37.48
SD	422	95% KM (BCA) UCL	198.7
95% KM (t) UCL	199.5	95% KM (Percentile Bootstrap) UCL	205
95% KM (z) UCL	199.1	95% KM Bootstrap t UCL	258.7
90% KM Chebyshev UCL	249.9	95% KM Chebyshev UCL	300.8
97.5% KM Chebyshev UCL	371.5	99% KM Chebyshev UCL	510.4
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	6.092	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.823	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.185	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.0937	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.482	k star (bias corrected MLE)	0.475
Theta hat (MLE)	347.9	Theta star (bias corrected MLE)	353.4
nu hat (MLE)	100.4	nu star (bias corrected)	98.79
MLE Mean (bias corrected)	167.9	MLE Sd (bias corrected)	243.6
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.106	nu hat (KM)	27.15
Approximate Chi Square Value (27.15, α)	16.27	Adjusted Chi Square Value (27.15, β)	16.17
95% Gamma Approximate KM-UCL (use when n>=50)	229.4	95% Gamma Adjusted KM-UCL (use when n<50)	230.7

Benzo(a)pyrene (continued)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	136.4
Maximum	3700	Median	28.75
SD	424	CV	3.109
k hat (MLE)	0.262	k star (bias corrected MLE)	0.261
Theta hat (MLE)	520.8	Theta star (bias corrected MLE)	522.6
nu hat (MLE)	67.04	nu star (bias corrected)	66.8
MLE Mean (bias corrected)	136.4	MLE Sd (bias corrected)	267
		Adjusted Level of Significance (β)	0.0481
Approximate Chi Square Value (66.80, α)	48.99	Adjusted Chi Square Value (66.80, β)	48.82
95% Gamma Approximate UCL (use when n>=50)	186	95% Gamma Adjusted UCL (use when n<50)	186.6

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.0511	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0869	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	137.4	Mean in Log Scale	3.375
SD in Original Scale	423.7	SD in Log Scale	1.633
95% t UCL (assumes normality of ROS data)	199.5	95% Percentile Bootstrap UCL	204.1
95% BCA Bootstrap UCL	232.5	95% Bootstrap t UCL	253
95% H-UCL (Log ROS)	167.2		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	3.402	95% H-UCL (KM -Log)	154.3
KM SD (logged)	1.58	95% Critical H Value (KM-Log)	2.776
KM Standard Error of Mean (logged)	0.141		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	137.4	Mean in Log Scale	3.396
SD in Original Scale	423.7	SD in Log Scale	1.588
95% t UCL (Assumes normality)	199.4	95% H-Stat UCL	155.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	300.8

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

Benzo(b)fluoranthene			
General Statistics			
Total Number of Observations	128	Number of Distinct Observations	93
		Number of Missing Observations	3
Number of Detects	124	Number of Non-Detects	4
Number of Distinct Detects	92	Number of Distinct Non-Detects	3
Minimum Detect	3.1	Minimum Non-Detect	9.8
Maximum Detect	5800	Maximum Non-Detect	11
Variance Detects	452087	Percent Non-Detects	3.125%
Mean Detects	222.5	SD Detects	672.4
Median Detects	48.5	CV Detects	3.022
Skewness Detects	6.088	Kurtosis Detects	42.98
Mean of Logged Detects	3.942	SD of Logged Detects	1.562
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.347	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.372	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0796	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	215.8	Standard Error of Mean	58.59
SD	660.2	95% KM (BCA) UCL	312.8
95% KM (t) UCL	312.9	95% KM (Percentile Bootstrap) UCL	321.5
95% KM (z) UCL	312.2	95% KM Bootstrap t UCL	382
90% KM Chebyshev UCL	391.6	95% KM Chebyshev UCL	471.2
97.5% KM Chebyshev UCL	581.7	99% KM Chebyshev UCL	798.7
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	7.674	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.833	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.178	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.0887	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.443	k star (bias corrected MLE)	0.437
Theta hat (MLE)	502.7	Theta star (bias corrected MLE)	508.8
nu hat (MLE)	109.8	nu star (bias corrected)	108.4
MLE Mean (bias corrected)	222.5	MLE Sd (bias corrected)	336.5
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.107	nu hat (KM)	27.35
Approximate Chi Square Value (27.35, α)	16.42	Adjusted Chi Square Value (27.35, β)	16.33
95% Gamma Approximate KM-UCL (use when n>=50)	359.4	95% Gamma Adjusted KM-UCL (use when n<50)	361.5

Benzo(b)fluoranthene (continued)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	215.5
Maximum	5800	Median	42.5
SD	662.8	CV	3.075
k hat (MLE)	0.389	k star (bias corrected MLE)	0.385
Theta hat (MLE)	553.8	Theta star (bias corrected MLE)	559.4
nu hat (MLE)	99.64	nu star (bias corrected)	98.64
MLE Mean (bias corrected)	215.5	MLE Sd (bias corrected)	347.2
		Adjusted Level of Significance (β)	0.0481
Approximate Chi Square Value (98.64, α)	76.73	Adjusted Chi Square Value (98.64, β)	76.51
95% Gamma Approximate UCL (use when n>=50)	277.1	95% Gamma Adjusted UCL (use when n<50)	277.9

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.0907	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0796	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	215.8	Mean in Log Scale	3.878
SD in Original Scale	662.8	SD in Log Scale	1.579
95% t UCL (assumes normality of ROS data)	312.8	95% Percentile Bootstrap UCL	315.2
95% BCA Bootstrap UCL	366.1	95% Bootstrap t UCL	400.4
95% H-UCL (Log ROS)	247.8		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	215.7	Mean in Log Scale	3.871
SD in Original Scale	662.8	SD in Log Scale	1.588
95% t UCL (Assumes normality)	312.8	95% H-Stat UCL	250.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	581.7

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Benzo(k)fluoranthene			
General Statistics			
Total Number of Observations	128	Number of Distinct Observations	78
		Number of Missing Observations	3
Number of Detects	97	Number of Non-Detects	31
Number of Distinct Detects	73	Number of Distinct Non-Detects	9
Minimum Detect	3.5	Minimum Non-Detect	3.1
Maximum Detect	1700	Maximum Non-Detect	12
Variance Detects	50532	Percent Non-Detects	24.22%
Mean Detects	91.49	SD Detects	224.8
Median Detects	26	CV Detects	2.457
Skewness Detects	5.159	Kurtosis Detects	30.78
Mean of Logged Detects	3.432	SD of Logged Detects	1.313
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.408	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.348	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.09	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	70.79	Standard Error of Mean	17.6
SD	198.1	95% KM (BCA) UCL	102.9
95% KM (t) UCL	99.95	95% KM (Percentile Bootstrap) UCL	101.4
95% KM (z) UCL	99.74	95% KM Bootstrap t UCL	127.3
90% KM Chebyshev UCL	123.6	95% KM Chebyshev UCL	147.5
97.5% KM Chebyshev UCL	180.7	99% KM Chebyshev UCL	245.9
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	6.005	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.811	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.195	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.0956	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.574	k star (bias corrected MLE)	0.563
Theta hat (MLE)	159.4	Theta star (bias corrected MLE)	162.5
nu hat (MLE)	111.3	nu star (bias corrected)	109.2
MLE Mean (bias corrected)	91.49	MLE Sd (bias corrected)	121.9
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.128	nu hat (KM)	32.69
Approximate Chi Square Value (32.69, α)	20.62	Adjusted Chi Square Value (32.69, β)	20.51
95% Gamma Approximate KM-UCL (use when n>=50)	112.2	95% Gamma Adjusted KM-UCL (use when n<50)	112.8

Benzo(k)fluoranthene (continued)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	69.33
Maximum	1700	Median	18.25
SD	199.4	CV	2.875
k hat (MLE)	0.257	k star (bias corrected MLE)	0.256
Theta hat (MLE)	269.9	Theta star (bias corrected MLE)	270.8
nu hat (MLE)	65.76	nu star (bias corrected)	65.55
MLE Mean (bias corrected)	69.33	MLE Sd (bias corrected)	137
		Adjusted Level of Significance (β)	0.0481
Approximate Chi Square Value (65.55, α)	47.92	Adjusted Chi Square Value (65.55, β)	47.75
95% Gamma Approximate UCL (use when n>=50)	94.84	95% Gamma Adjusted UCL (use when n<50)	95.18

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.0722	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.09	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	70.58	Mean in Log Scale	2.943
SD in Original Scale	198.9	SD in Log Scale	1.483
95% t UCL (assumes normality of ROS data)	99.72	95% Percentile Bootstrap UCL	102.5
95% BCA Bootstrap UCL	110.8	95% Bootstrap t UCL	125.2
95% H-UCL (Log ROS)	80.97		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	3.02	95% H-UCL (KM -Log)	70.61
KM SD (logged)	1.364	95% Critical H Value (KM-Log)	2.543
KM Standard Error of Mean (logged)	0.123		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	70.54	Mean in Log Scale	2.982
SD in Original Scale	199	SD in Log Scale	1.402
95% t UCL (Assumes normality)	99.67	95% H-Stat UCL	72.65

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	147.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Dibenzo(a,h)anthracene			
General Statistics			
Total Number of Observations	128	Number of Distinct Observations	83
		Number of Missing Observations	3
Number of Detects	98	Number of Non-Detects	30
Number of Distinct Detects	79	Number of Distinct Non-Detects	7
Minimum Detect	1.8	Minimum Non-Detect	1.9
Maximum Detect	590	Maximum Non-Detect	12
Variance Detects	5456	Percent Non-Detects	23.44%
Mean Detects	33.59	SD Detects	73.87
Median Detects	11.75	CV Detects	2.199
Skewness Detects	5.479	Kurtosis Detects	35.74
Mean of Logged Detects	2.686	SD of Logged Detects	1.13
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.422	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.333	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0895	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	27.16	Standard Error of Mean	5.808
SD	65.35	95% KM (BCA) UCL	37.6
95% KM (t) UCL	36.79	95% KM (Percentile Bootstrap) UCL	37.1
95% KM (z) UCL	36.72	95% KM Bootstrap t UCL	46.84
90% KM Chebyshev UCL	44.59	95% KM Chebyshev UCL	52.48
97.5% KM Chebyshev UCL	63.43	99% KM Chebyshev UCL	84.95
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	6.052	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.797	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.199	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.0941	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.726	k star (bias corrected MLE)	0.711
Theta hat (MLE)	46.25	Theta star (bias corrected MLE)	47.25
nu hat (MLE)	142.3	nu star (bias corrected)	139.3
MLE Mean (bias corrected)	33.59	MLE Sd (bias corrected)	39.84
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.173	nu hat (KM)	44.23
Approximate Chi Square Value (44.23, α)	29.98	Adjusted Chi Square Value (44.23, β)	29.84
95% Gamma Approximate KM-UCL (use when n>=50)	40.08	95% Gamma Adjusted KM-UCL (use when n<50)	40.26

Dibenzo(a,h)anthracene (continued)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	25.86
Maximum	590	Median	8.302
SD	66.07	CV	2.555
k hat (MLE)	0.325	k star (bias corrected MLE)	0.323
Theta hat (MLE)	79.51	Theta star (bias corrected MLE)	80.1
nu hat (MLE)	83.26	nu star (bias corrected)	82.64
MLE Mean (bias corrected)	25.86	MLE Sd (bias corrected)	45.51
		Adjusted Level of Significance (β)	0.0481
Approximate Chi Square Value (82.64, α)	62.69	Adjusted Chi Square Value (82.64, β)	62.49
95% Gamma Approximate UCL (use when n>=50)	34.09	95% Gamma Adjusted UCL (use when n<50)	34.19

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.132	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0895	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	27.17	Mean in Log Scale	2.444
SD in Original Scale	65.62	SD in Log Scale	1.126
95% t UCL (assumes normality of ROS data)	36.78	95% Percentile Bootstrap UCL	37.28
95% BCA Bootstrap UCL	40.32	95% Bootstrap t UCL	44.34
95% H-UCL (Log ROS)	27.34		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	26.91	Mean in Log Scale	2.431
SD in Original Scale	65.68	SD in Log Scale	1.101
95% t UCL (Assumes normality)	36.53	95% H-Stat UCL	26.06

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	52.48

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

Indeno(1,2,3-cd)pyrene			
General Statistics			
Total Number of Observations	128	Number of Distinct Observations	93
		Number of Missing Observations	3
Number of Detects	115	Number of Non-Detects	13
Number of Distinct Detects	89	Number of Distinct Non-Detects	5
Minimum Detect	2.1	Minimum Non-Detect	9.6
Maximum Detect	2800	Maximum Non-Detect	11
Variance Detects	114145	Percent Non-Detects	10.16%
Mean Detects	125.7	SD Detects	337.9
Median Detects	33	CV Detects	2.687
Skewness Detects	5.735	Kurtosis Detects	38.51
Mean of Logged Detects	3.518	SD of Logged Detects	1.534
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.385	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.357	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0826	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	113.5	Standard Error of Mean	28.49
SD	320.9	95% KM (BCA) UCL	167.7
95% KM (t) UCL	160.7	95% KM (Percentile Bootstrap) UCL	161.4
95% KM (z) UCL	160.4	95% KM Bootstrap t UCL	202.5
90% KM Chebyshev UCL	199	95% KM Chebyshev UCL	237.7
97.5% KM Chebyshev UCL	291.4	99% KM Chebyshev UCL	397
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	5.593	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.823	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.166	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.0907	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.485	k star (bias corrected MLE)	0.478
Theta hat (MLE)	259.3	Theta star (bias corrected MLE)	263
nu hat (MLE)	111.5	nu star (bias corrected)	109.9
MLE Mean (bias corrected)	125.7	MLE Sd (bias corrected)	181.9
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.125	nu hat (KM)	32.05
Approximate Chi Square Value (32.05, α)	20.11	Adjusted Chi Square Value (32.05, β)	20
95% Gamma Approximate KM-UCL (use when n>=50)	180.9	95% Gamma Adjusted KM-UCL (use when n<50)	181.9

Indeno(1,2,3-cd)pyrene (continued)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	113
Maximum	2800	Median	26
SD	322.4	CV	2.854
k hat (MLE)	0.333	k star (bias corrected MLE)	0.331
Theta hat (MLE)	339	Theta star (bias corrected MLE)	341.7
nu hat (MLE)	85.3	nu star (bias corrected)	84.64
MLE Mean (bias corrected)	113	MLE Sd (bias corrected)	196.5
		Adjusted Level of Significance (β)	0.0481
Approximate Chi Square Value (84.64, α)	64.43	Adjusted Chi Square Value (84.64, β)	64.23
95% Gamma Approximate UCL (use when n>=50)	148.4	95% Gamma Adjusted UCL (use when n<50)	148.8

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.0749	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0826	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	113.6	Mean in Log Scale	3.336
SD in Original Scale	322.1	SD in Log Scale	1.56
95% t UCL (assumes normality of ROS data)	160.8	95% Percentile Bootstrap UCL	166.4
95% BCA Bootstrap UCL	185.1	95% Bootstrap t UCL	206.8
95% H-UCL (Log ROS)	138.9		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	3.329	95% H-UCL (KM -Log)	137.4
KM SD (logged)	1.558	95% Critical H Value (KM-Log)	2.752
KM Standard Error of Mean (logged)	0.139		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	113.5	Mean in Log Scale	3.326
SD in Original Scale	322.2	SD in Log Scale	1.562
95% t UCL (Assumes normality)	160.7	95% H-Stat UCL	138.1

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	291.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

Antimony			
General Statistics			
Total Number of Observations	128	Number of Distinct Observations	41
		Number of Missing Observations	3
Number of Detects	106	Number of Non-Detects	22
Number of Distinct Detects	40	Number of Distinct Non-Detects	10
Minimum Detect	0.03	Minimum Non-Detect	0.03
Maximum Detect	6.6	Maximum Non-Detect	0.12
Variance Detects	0.481	Percent Non-Detects	17.19%
Mean Detects	0.277	SD Detects	0.694
Median Detects	0.15	CV Detects	2.509
Skewness Detects	7.815	Kurtosis Detects	68.01
Mean of Logged Detects	-1.852	SD of Logged Detects	0.82
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.287	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.361	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0861	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	0.237	Standard Error of Mean	0.0563
SD	0.634	95% KM (BCA) UCL	0.342
95% KM (t) UCL	0.33	95% KM (Percentile Bootstrap) UCL	0.338
95% KM (z) UCL	0.329	95% KM Bootstrap t UCL	0.546
90% KM Chebyshev UCL	0.406	95% KM Chebyshev UCL	0.482
97.5% KM Chebyshev UCL	0.589	99% KM Chebyshev UCL	0.797
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	8.573	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.783	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.22	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.0905	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	1.017	k star (bias corrected MLE)	0.994
Theta hat (MLE)	0.272	Theta star (bias corrected MLE)	0.278
nu hat (MLE)	215.5	nu star (bias corrected)	210.8
MLE Mean (bias corrected)	0.277	MLE Sd (bias corrected)	0.277
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.139	nu hat (KM)	35.68
Approximate Chi Square Value (35.68, α)	23.01	Adjusted Chi Square Value (35.68, β)	22.9
95% Gamma Approximate KM-UCL (use when n>=50)	0.367	95% Gamma Adjusted KM-UCL (use when n<50)	0.369

Antimony (continued)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.231
Maximum	6.6	Median	0.12
SD	0.639	CV	2.769
k hat (MLE)	0.703	k star (bias corrected MLE)	0.692
Theta hat (MLE)	0.328	Theta star (bias corrected MLE)	0.333
nu hat (MLE)	180	nu star (bias corrected)	177.2
MLE Mean (bias corrected)	0.231	MLE Sd (bias corrected)	0.277
		Adjusted Level of Significance (β)	0.0481
Approximate Chi Square Value (177.15, α)	147.4	Adjusted Chi Square Value (177.15, β)	147.1
95% Gamma Approximate UCL (use when n>=50)	0.277	95% Gamma Adjusted UCL (use when n<50)	0.278

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.11	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0861	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.235	Mean in Log Scale	-2.109
SD in Original Scale	0.637	SD in Log Scale	0.95
95% t UCL (assumes normality of ROS data)	0.329	95% Percentile Bootstrap UCL	0.33
95% BCA Bootstrap UCL	0.411	95% Bootstrap t UCL	0.494
95% H-UCL (Log ROS)	0.228		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.235	Mean in Log Scale	-2.114
SD in Original Scale	0.637	SD in Log Scale	0.951
95% t UCL (Assumes normality)	0.328	95% H-Stat UCL	0.228

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	0.342

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Thallium			
General Statistics			
Total Number of Observations	128	Number of Distinct Observations	21
		Number of Missing Observations	3
Number of Detects	100	Number of Non-Detects	28
Number of Distinct Detects	17	Number of Distinct Non-Detects	10
Minimum Detect	0.02	Minimum Non-Detect	0.028
Maximum Detect	0.25	Maximum Non-Detect	0.07
Variance Detects	9.1558E-4	Percent Non-Detects	21.88%
Mean Detects	0.0539	SD Detects	0.0303
Median Detects	0.05	CV Detects	0.562
Skewness Detects	4.069	Kurtosis Detects	22.24
Mean of Logged Detects	-3.015	SD of Logged Detects	0.404
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.645	**Normal GOF Test on Detected Observations Only**	
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0886	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	0.0487	Standard Error of Mean	0.00258
SD	0.0287	95% KM (BCA) UCL	0.0533
95% KM (t) UCL	0.053	95% KM (Percentile Bootstrap) UCL	0.0532
95% KM (z) UCL	0.0529	95% KM Bootstrap t UCL	0.0543
90% KM Chebyshev UCL	0.0564	95% KM Chebyshev UCL	0.0599
97.5% KM Chebyshev UCL	0.0648	99% KM Chebyshev UCL	0.0744
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	3.749	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.754	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.192	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.0896	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	5.523	k star (bias corrected MLE)	5.364
Theta hat (MLE)	0.00975	Theta star (bias corrected MLE)	0.01
nu hat (MLE)	1105	nu star (bias corrected)	1073
MLE Mean (bias corrected)	0.0539	MLE Sd (bias corrected)	0.0233
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	2.869	nu hat (KM)	734.3
Approximate Chi Square Value (734.34, α)	672.5	Adjusted Chi Square Value (734.34, β)	671.8
95% Gamma Approximate KM-UCL (use when n>=50)	0.0532	95% Gamma Adjusted KM-UCL (use when n<50)	0.0532

Thallium (continued)

Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detected data is small such as < 0.1			
For such situations, GROS method tends to yield inflated values of UCLs and BTVs			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	0.0475
Maximum	0.25	Median	0.0435
SD	0.0298	CV	0.628
k hat (MLE)	3.69	k star (bias corrected MLE)	3.608
Theta hat (MLE)	0.0129	Theta star (bias corrected MLE)	0.0132
nu hat (MLE)	944.6	nu star (bias corrected)	923.8
MLE Mean (bias corrected)	0.0475	MLE Sd (bias corrected)	0.025
		Adjusted Level of Significance (β)	0.0481
Approximate Chi Square Value (923.78, α)	854.2	Adjusted Chi Square Value (923.78, β)	853.5
95% Gamma Approximate UCL (use when n>=50)	0.0514	95% Gamma Adjusted UCL (use when n<50)	0.0514
Lognormal GOF Test on Detected Observations Only			
Lilliefors Test Statistic	0.161	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0886	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	0.0488	Mean in Log Scale	-3.124
SD in Original Scale	0.0286	SD in Log Scale	0.43
95% t UCL (assumes normality of ROS data)	0.053	95% Percentile Bootstrap UCL	0.053
95% BCA Bootstrap UCL	0.0543	95% Bootstrap t UCL	0.0544
95% H-UCL (Log ROS)	0.0516		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0471	Mean in Log Scale	-3.189
SD in Original Scale	0.0298	SD in Log Scale	0.505
95% t UCL (Assumes normality)	0.0515	95% H-Stat UCL	0.0508
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
95% KM (BCA) UCL	0.0533		
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			

PROUCL OUTPUT - ALL SOIL

UCL Statistics for Data Sets with Non-Detects	
User Selected Options	
Date/Time of Computation	5/12/2014 10:16:16 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Aroclor-1260

General Statistics			
Total Number of Observations	22	Number of Distinct Observations	19
		Number of Missing Observations	1
Number of Detects	15	Number of Non-Detects	7
Number of Distinct Detects	15	Number of Distinct Non-Detects	4
Minimum Detect	24	Minimum Non-Detect	8.6
Maximum Detect	18000	Maximum Non-Detect	9.1
Variance Detects	25614253	Percent Non-Detects	31.82%
Mean Detects	3038	SD Detects	5061
Median Detects	600	CV Detects	1.666
Skewness Detects	2.331	Kurtosis Detects	5.389
Mean of Logged Detects	6.407	SD of Logged Detects	2.189

Normal GOF Test on Detects Only		
Shapiro Wilk Test Statistic	0.654	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.276	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.229	Detected Data Not Normal at 5% Significance Level
Detected Data Not Normal at 5% Significance Level		

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	2074	Standard Error of Mean	943.8
SD	4277	95% KM (BCA) UCL	3727
95% KM (t) UCL	3698	95% KM (Percentile Bootstrap) UCL	3683
95% KM (z) UCL	3627	95% KM Bootstrap t UCL	6766
90% KM Chebyshev UCL	4906	95% KM Chebyshev UCL	6188
97.5% KM Chebyshev UCL	7969	99% KM Chebyshev UCL	11465

Gamma GOF Tests on Detected Observations Only		
A-D Test Statistic	0.378	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.813	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.143	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.237	Detected data appear Gamma Distributed at 5% Significance Level
Detected data appear Gamma Distributed at 5% Significance Level		

Gamma Statistics on Detected Data Only			
k hat (MLE)	0.407	k star (bias corrected MLE)	0.37
Theta hat (MLE)	7464	Theta star (bias corrected MLE)	8209
nu hat (MLE)	12.21	nu star (bias corrected)	11.1

MLE Mean (bias corrected)	3038	MLE Sd (bias corrected)	4994

Aroclor-1260 (continued)

Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.235	nu hat (KM)	10.35
Approximate Chi Square Value (10.35, α)	4.162	Adjusted Chi Square Value (10.35, β)	3.873
95% Gamma Approximate KM-UCL (use when n>=50)	5159	95% Gamma Adjusted KM-UCL (use when n<50)	5544
Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detected data is small such as < 0.1			
For such situations, GROS method tends to yield inflated values of UCLs and BTVs			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	2072
Maximum	18000	Median	97
SD	4379	CV	2.114
k hat (MLE)	0.161	k star (bias corrected MLE)	0.169
Theta hat (MLE)	12887	Theta star (bias corrected MLE)	12249
nu hat (MLE)	7.073	nu star (bias corrected)	7.442
MLE Mean (bias corrected)	2072	MLE Sd (bias corrected)	5037
		Adjusted Level of Significance (β)	0.0386
Approximate Chi Square Value (7.44, α)	2.416	Adjusted Chi Square Value (7.44, β)	2.208
95% Gamma Approximate UCL (use when n>=50)	6381	95% Gamma Adjusted UCL (use when n<50)	6983
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.944	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.881	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.135	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.229	Detected Data appear Lognormal at 5% Significance Level	
Detected Data appear Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	2073	Mean in Log Scale	4.73
SD in Original Scale	4378	SD in Log Scale	3.116
95% t UCL (assumes normality of ROS data)	3679	95% Percentile Bootstrap UCL	3735
95% BCA Bootstrap UCL	4250	95% Bootstrap t UCL	6664
95% H-UCL (Log ROS)	978747		
UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed			
KM Mean (logged)	5.053	95% H-UCL (KM -Log)	110515
KM SD (logged)	2.642	95% Critical H Value (KM-Log)	5.326
KM Standard Error of Mean (logged)	0.583		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2073	Mean in Log Scale	4.842
SD in Original Scale	4378	SD in Log Scale	2.949
95% t UCL (Assumes normality)	3679	95% H-Stat UCL	433140
DL/2 is not a recommended method, provided for comparisons and historical reasons			

Aroclor-1260 (continued)

Nonparametric Distribution Free UCL Statistics	
Detected Data appear Gamma Distributed at 5% Significance Level	
Suggested UCL to Use	
95% KM (BCA) UCL	3727
95% Adjusted Gamma KM-UCL	5544
95% GROS Adjusted Gamma UCL	6983

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	4/18/2014 11:42:30 AM
From File	ProUCL Input - SS.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2,3,7,8-TCDD Equivalents

General Statistics

Total Number of Observations	108	Number of Distinct Observations	108
		Number of Missing Observations	23
Minimum	0.55	Mean	4.604
Maximum	31.18	Median	3.237
SD	4.243	Std. Error of Mean	0.408
Coefficient of Variation	0.921	Skewness	3.057

Normal GOF Test

Shapiro Wilk Test Statistic	0.749	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.17	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0853	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	5.281	95% Adjusted-CLT UCL (Chen-1995)	5.404
		95% Modified-t UCL (Johnson-1978)	5.301

Gamma GOF Test

A-D Test Statistic	0.83	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.768	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0867	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.0888	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.744	k star (bias corrected MLE)	1.701
Theta hat (MLE)	2.641	Theta star (bias corrected MLE)	2.706
nu hat (MLE)	376.6	nu star (bias corrected)	367.5
MLE Mean (bias corrected)	4.604	MLE Sd (bias corrected)	3.53
		Approximate Chi Square Value (0.05)	324.1
Adjusted Level of Significance	0.0478	Adjusted Chi Square Value	323.5

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	5.221	95% Adjusted Gamma UCL (use when n<50)	5.23

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.982	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	0.627	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0427	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.0853	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

2,3,7,8-TCDD Equivalents (continued)

Lognormal Statistics			
Minimum of Logged Data	-0.598	Mean of logged Data	1.214
Maximum of Logged Data	3.44	SD of logged Data	0.8
Assuming Lognormal Distribution			
95% H-UCL	5.428	90% Chebyshev (MVUE) UCL	5.828
95% Chebyshev (MVUE) UCL	6.377	97.5% Chebyshev (MVUE) UCL	7.138
99% Chebyshev (MVUE) UCL	8.633		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	5.276	95% Jackknife UCL	5.281
95% Standard Bootstrap UCL	5.255	95% Bootstrap-t UCL	5.491
95% Hall's Bootstrap UCL	5.567	95% Percentile Bootstrap UCL	5.273
95% BCA Bootstrap UCL	5.427		
90% Chebyshev(Mean, Sd) UCL	5.829	95% Chebyshev(Mean, Sd) UCL	6.384
97.5% Chebyshev(Mean, Sd) UCL	7.154	99% Chebyshev(Mean, Sd) UCL	8.666
Suggested UCL to Use			
95% Approximate Gamma UCL	5.221		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

Aluminum			
General Statistics			
Total Number of Observations	128	Number of Distinct Observations	78
		Number of Missing Observations	3
Minimum	4950	Mean	13256
Maximum	21000	Median	13200
SD	2799	Std. Error of Mean	247.4
Coefficient of Variation	0.211	Skewness	0.237
Normal GOF Test			
Shapiro Wilk Test Statistic	0.981	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	0.528	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.0457	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0783	Data appear Normal at 5% Significance Level	
Data appear Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13666	95% Adjusted-CLT UCL (Chen-1995)	13668
		95% Modified-t UCL (Johnson-1978)	13666
Gamma GOF Test			
A-D Test Statistic	0.411	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.75	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.0533	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.082	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	21.61	k star (bias corrected MLE)	21.11
Theta hat (MLE)	613.4	Theta star (bias corrected MLE)	627.9
nu hat (MLE)	5532	nu star (bias corrected)	5404
MLE Mean (bias corrected)	13256	MLE Sd (bias corrected)	2885
		Approximate Chi Square Value (0.05)	5234
Adjusted Level of Significance	0.0481	Adjusted Chi Square Value	5232
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	13686	95% Adjusted Gamma UCL (use when n<50)	13691
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.97	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk P Value	0.0782	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0613	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.0783	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			

Aluminum (continued)

Lognormal Statistics			
Minimum of Logged Data	8.507	Mean of logged Data	9.469
Maximum of Logged Data	9.952	SD of logged Data	0.222
Assuming Lognormal Distribution			
95% H-UCL	13725	90% Chebyshev (MVUE) UCL	14060
95% Chebyshev (MVUE) UCL	14418	97.5% Chebyshev (MVUE) UCL	14914
99% Chebyshev (MVUE) UCL	15890		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	13663	95% Jackknife UCL	13666
95% Standard Bootstrap UCL	13658	95% Bootstrap-t UCL	13657
95% Hall's Bootstrap UCL	13693	95% Percentile Bootstrap UCL	13656
95% BCA Bootstrap UCL	13673		
90% Chebyshev(Mean, Sd) UCL	13998	95% Chebyshev(Mean, Sd) UCL	14334
97.5% Chebyshev(Mean, Sd) UCL	14801	99% Chebyshev(Mean, Sd) UCL	15717
Suggested UCL to Use			
95% Student's-t UCL	13666		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

Arsenic

General Statistics			
Total Number of Observations	128	Number of Distinct Observations	62
		Number of Missing Observations	3
Minimum	2.2	Mean	6.833
Maximum	14.3	Median	6.6
SD	2.007	Std. Error of Mean	0.177
Coefficient of Variation	0.294	Skewness	1.044

Normal GOF Test		
Shapiro Wilk Test Statistic	0.935	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	2.9489E-6	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.0823	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0783	Data Not Normal at 5% Significance Level
Data Not Normal at 5% Significance Level		

Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	7.127	95% Adjusted-CLT UCL (Chen-1995)	7.142
		95% Modified-t UCL (Johnson-1978)	7.129

Gamma GOF Test		
A-D Test Statistic	0.836	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.751	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.071	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.0821	Detected data appear Gamma Distributed at 5% Significance Level
Detected data follow Appr. Gamma Distribution at 5% Significance Level		

Gamma Statistics			
k hat (MLE)	12.27	k star (bias corrected MLE)	11.99
Theta hat (MLE)	0.557	Theta star (bias corrected MLE)	0.57
nu hat (MLE)	3141	nu star (bias corrected)	3069
MLE Mean (bias corrected)	6.833	MLE Sd (bias corrected)	1.974
		Approximate Chi Square Value (0.05)	2941
Adjusted Level of Significance	0.0481	Adjusted Chi Square Value	2940

Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50)	7.13	95% Adjusted Gamma UCL (use when n<50)	7.133

Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.976	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	0.272	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0719	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.0783	Data appear Lognormal at 5% Significance Level
Data appear Lognormal at 5% Significance Level		

Arsenic (continued)

Lognormal Statistics			
Minimum of Logged Data	0.788	Mean of logged Data	1.88
Maximum of Logged Data	2.66	SD of logged Data	0.291
Assuming Lognormal Distribution			
95% H-UCL	7.152	90% Chebyshev (MVUE) UCL	7.376
95% Chebyshev (MVUE) UCL	7.62	97.5% Chebyshev (MVUE) UCL	7.959
99% Chebyshev (MVUE) UCL	8.623		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	7.125	95% Jackknife UCL	7.127
95% Standard Bootstrap UCL	7.128	95% Bootstrap-t UCL	7.147
95% Hall's Bootstrap UCL	7.161	95% Percentile Bootstrap UCL	7.12
95% BCA Bootstrap UCL	7.133		
90% Chebyshev(Mean, Sd) UCL	7.365	95% Chebyshev(Mean, Sd) UCL	7.606
97.5% Chebyshev(Mean, Sd) UCL	7.94	99% Chebyshev(Mean, Sd) UCL	8.597
Suggested UCL to Use			
95% Approximate Gamma UCL	7.13		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

Chromium

General Statistics

Total Number of Observations	128	Number of Distinct Observations	86
		Number of Missing Observations	3
Minimum	7.1	Mean	17.42
Maximum	44.5	Median	17
SD	4.47	Std. Error of Mean	0.395
Coefficient of Variation	0.257	Skewness	1.969

Normal GOF Test

Shapiro Wilk Test Statistic	0.904	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	2.201E-11	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.102	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0783	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.07	95% Adjusted-CLT UCL (Chen-1995)	18.14
		95% Modified-t UCL (Johnson-1978)	18.08

Gamma GOF Test

A-D Test Statistic	0.642	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.75	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.0685	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.0821	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	17.52	k star (bias corrected MLE)	17.12
Theta hat (MLE)	0.994	Theta star (bias corrected MLE)	1.018
nu hat (MLE)	4485	nu star (bias corrected)	4382
MLE Mean (bias corrected)	17.42	MLE Sd (bias corrected)	4.21
		Approximate Chi Square Value (0.05)	4229
Adjusted Level of Significance	0.0481	Adjusted Chi Square Value	4227

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	18.05	95% Adjusted Gamma UCL (use when n<50)	18.05

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.989	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk P Value	0.922	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0559	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.0783	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Chromium (continued)

Lognormal Statistics			
Minimum of Logged Data	1.96	Mean of logged Data	2.829
Maximum of Logged Data	3.795	SD of logged Data	0.238
Assuming Lognormal Distribution			
95% H-UCL	18.05	90% Chebyshev (MVUE) UCL	18.52
95% Chebyshev (MVUE) UCL	19.02	97.5% Chebyshev (MVUE) UCL	19.72
99% Chebyshev (MVUE) UCL	21.09		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	18.07	95% Jackknife UCL	18.07
95% Standard Bootstrap UCL	18.07	95% Bootstrap-t UCL	18.17
95% Hall's Bootstrap UCL	18.16	95% Percentile Bootstrap UCL	18.1
95% BCA Bootstrap UCL	18.09		
90% Chebyshev(Mean, Sd) UCL	18.6	95% Chebyshev(Mean, Sd) UCL	19.14
97.5% Chebyshev(Mean, Sd) UCL	19.89	99% Chebyshev(Mean, Sd) UCL	21.35
Suggested UCL to Use			
95% Approximate Gamma UCL	18.05		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

Cobalt

General Statistics			
Total Number of Observations	128	Number of Distinct Observations	82
		Number of Missing Observations	3
Minimum	3.3	Mean	11.24
Maximum	30.3	Median	10.85
SD	4.033	Std. Error of Mean	0.356
Coefficient of Variation	0.359	Skewness	1.812
Normal GOF Test			
Shapiro Wilk Test Statistic	0.877	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk P Value	3.331E-16	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.136	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.0783	Data Not Normal at 5% Significance Level	
Data Not Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	11.83	95% Adjusted-CLT UCL (Chen-1995)	11.89
		95% Modified-t UCL (Johnson-1978)	11.84
Gamma GOF Test			
A-D Test Statistic	1.183	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.752	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.0891	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.0822	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	9.273	k star (bias corrected MLE)	9.061
Theta hat (MLE)	1.212	Theta star (bias corrected MLE)	1.241
nu hat (MLE)	2374	nu star (bias corrected)	2320
MLE Mean (bias corrected)	11.24	MLE Sd (bias corrected)	3.734
		Approximate Chi Square Value (0.05)	2209
Adjusted Level of Significance	0.0481	Adjusted Chi Square Value	2208
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	11.81	95% Adjusted Gamma UCL (use when n<50)	11.81
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.983	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk P Value	0.643	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.068	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.0783	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			

Cobalt (continued)

Lognormal Statistics

Minimum of Logged Data	1.194	Mean of logged Data	2.365
Maximum of Logged Data	3.411	SD of logged Data	0.328

Assuming Lognormal Distribution

95% H-UCL	11.81	90% Chebyshev (MVUE) UCL	12.23
95% Chebyshev (MVUE) UCL	12.68	97.5% Chebyshev (MVUE) UCL	13.31
99% Chebyshev (MVUE) UCL	14.54		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	11.83	95% Jackknife UCL	11.83
95% Standard Bootstrap UCL	11.83	95% Bootstrap-t UCL	11.9
95% Hall's Bootstrap UCL	11.89	95% Percentile Bootstrap UCL	11.86
95% BCA Bootstrap UCL	11.91		
90% Chebyshev(Mean, Sd) UCL	12.31	95% Chebyshev(Mean, Sd) UCL	12.79
97.5% Chebyshev(Mean, Sd) UCL	13.47	99% Chebyshev(Mean, Sd) UCL	14.79

Suggested UCL to Use

95% Student's-t UCL	11.83	or 95% Modified-t UCL	11.84
or 95% H-UCL	11.81		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.

H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.

It is therefore recommended to avoid the use of H-statistic based 95% UCLs.

Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

PROUCL OUTPUT - ALL SOIL

Iron

General Statistics

Total Number of Observations	128	Number of Distinct Observations	92
		Number of Missing Observations	3
Minimum	9760	Mean	25480
Maximum	45200	Median	24750
SD	6593	Std. Error of Mean	582.7
Coefficient of Variation	0.259	Skewness	0.665

Normal GOF Test

Shapiro Wilk Test Statistic	0.961	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0.00979	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.0645	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0783	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26445	95% Adjusted-CLT UCL (Chen-1995)	26475
		95% Modified-t UCL (Johnson-1978)	26451

Gamma GOF Test

A-D Test Statistic	0.285	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.751	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.047	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.0821	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	15.28	k star (bias corrected MLE)	14.92
Theta hat (MLE)	1668	Theta star (bias corrected MLE)	1707
nu hat (MLE)	3910	nu star (bias corrected)	3820
MLE Mean (bias corrected)	25480	MLE Sd (bias corrected)	6596
		Approximate Chi Square Value (0.05)	3677
Adjusted Level of Significance	0.0481	Adjusted Chi Square Value	3676

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	26468	95% Adjusted Gamma UCL (use when n<50)	26479

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.983	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	0.656	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0493	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.0783	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Iron (continued)

Lognormal Statistics			
Minimum of Logged Data	9.186	Mean of logged Data	10.11
Maximum of Logged Data	10.72	SD of logged Data	0.261
Assuming Lognormal Distribution			
95% H-UCL	26535	90% Chebyshev (MVUE) UCL	27287
95% Chebyshev (MVUE) UCL	28098	97.5% Chebyshev (MVUE) UCL	29224
99% Chebyshev (MVUE) UCL	31436		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	26438	95% Jackknife UCL	26445
95% Standard Bootstrap UCL	26421	95% Bootstrap-t UCL	26486
95% Hall's Bootstrap UCL	26483	95% Percentile Bootstrap UCL	26399
95% BCA Bootstrap UCL	26534		
90% Chebyshev(Mean, Sd) UCL	27228	95% Chebyshev(Mean, Sd) UCL	28020
97.5% Chebyshev(Mean, Sd) UCL	29119	99% Chebyshev(Mean, Sd) UCL	31278
Suggested UCL to Use			
95% Student's-t UCL	26445		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

Manganese

General Statistics			
Total Number of Observations	128	Number of Distinct Observations	107
		Number of Missing Observations	3
Minimum	155	Mean	292.9
Maximum	658	Median	275.5
SD	86.55	Std. Error of Mean	7.65
Coefficient of Variation	0.296	Skewness	1.516

Normal GOF Test		
Shapiro Wilk Test Statistic	0.896	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	7.961E-13	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.116	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0783	Data Not Normal at 5% Significance Level
Data Not Normal at 5% Significance Level		

Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	305.5	95% Adjusted-CLT UCL (Chen-1995)	306.5
		95% Modified-t UCL (Johnson-1978)	305.7

Gamma GOF Test		
A-D Test Statistic	1	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.751	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0759	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.0821	Detected data appear Gamma Distributed at 5% Significance Level
Detected data follow Appr. Gamma Distribution at 5% Significance Level		

Gamma Statistics			
k hat (MLE)	13.34	k star (bias corrected MLE)	13.03
Theta hat (MLE)	21.96	Theta star (bias corrected MLE)	22.48
nu hat (MLE)	3414	nu star (bias corrected)	3336
MLE Mean (bias corrected)	292.9	MLE Sd (bias corrected)	81.13
		Approximate Chi Square Value (0.05)	3203
Adjusted Level of Significance	0.0481	Adjusted Chi Square Value	3201

Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50)	305	95% Adjusted Gamma UCL (use when n<50)	305.2

Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.975	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	0.217	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0578	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.0783	Data appear Lognormal at 5% Significance Level
Data appear Lognormal at 5% Significance Level		

Manganese (continued)

Lognormal Statistics			
Minimum of Logged Data	5.043	Mean of logged Data	5.642
Maximum of Logged Data	6.489	SD of logged Data	0.271
Assuming Lognormal Distribution			
95% H-UCL	304.8	90% Chebyshev (MVUE) UCL	313.7
95% Chebyshev (MVUE) UCL	323.4	97.5% Chebyshev (MVUE) UCL	336.8
99% Chebyshev (MVUE) UCL	363.2		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	305.4	95% Jackknife UCL	305.5
95% Standard Bootstrap UCL	305.3	95% Bootstrap-t UCL	307.3
95% Hall's Bootstrap UCL	307.1	95% Percentile Bootstrap UCL	304.9
95% BCA Bootstrap UCL	306.5		
90% Chebyshev(Mean, Sd) UCL	315.8	95% Chebyshev(Mean, Sd) UCL	326.2
97.5% Chebyshev(Mean, Sd) UCL	340.6	99% Chebyshev(Mean, Sd) UCL	369
Suggested UCL to Use			
95% Approximate Gamma UCL	305		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

AOC-001

PROUCL OUTPUT - SURFACE SOIL

UCL Statistics for Data Sets with Non-Detects	
User Selected Options	
Date/Time of Computation	11/13/2014 2:06:48 PM
From File	ProUCL Input - SS - AOC 001.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)ANTHRACENE

General Statistics			
Total Number of Observations	11	Number of Distinct Observations	10
Number of Detects	10	Number of Non-Detects	1
Number of Distinct Detects	9	Number of Distinct Non-Detects	1
Minimum Detect	5.2	Minimum Non-Detect	11
Maximum Detect	4500	Maximum Non-Detect	11
Variance Detects	2025016	Percent Non-Detects	9.091%
Mean Detects	589.1	SD Detects	1423
Median Detects	27.5	CV Detects	2.416
Skewness Detects	2.824	Kurtosis Detects	8.163
Mean of Logged Detects	3.954	SD of Logged Detects	2.112

Normal GOF Test on Detects Only		
Shapiro Wilk Test Statistic	0.487	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.449	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.28	Detected Data Not Normal at 5% Significance Level
Detected Data Not Normal at 5% Significance Level		

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	536	Standard Error of Mean	412.6
SD	1298	95% KM (BCA) UCL	1351
95% KM (t) UCL	1284	95% KM (Percentile Bootstrap) UCL	1247
95% KM (z) UCL	1215	95% KM Bootstrap t UCL	55344
90% KM Chebyshev UCL	1774	95% KM Chebyshev UCL	2334
97.5% KM Chebyshev UCL	3112	99% KM Chebyshev UCL	4641

Gamma GOF Tests on Detected Observations Only		
A-D Test Statistic	1.666	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.819	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.43	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.289	Detected Data Not Gamma Distributed at 5% Significance Level
Detected Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics on Detected Data Only			
k hat (MLE)	0.287	k star (bias corrected MLE)	0.267
Theta hat (MLE)	2056	Theta star (bias corrected MLE)	2204
nu hat (MLE)	5.731	nu star (bias corrected)	5.345
MLE Mean (bias corrected)	589.1	MLE Sd (bias corrected)	1140

BENZO(A)ANTHRACENE (CONTINUED)			
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.171	nu hat (KM)	3.752
Approximate Chi Square Value (3.75, α)	0.626	Adjusted Chi Square Value (3.75, β)	0.454
95% Gamma Approximate KM-UCL (use when n>=50)	3212	95% Gamma Adjusted KM-UCL (use when n<50)	4430
Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detected data is small such as < 0.1			
For such situations, GROS method tends to yield inflated values of UCLs and BTVs			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	535.6
Maximum	4500	Median	24
SD	1362	CV	2.542
k hat (MLE)	0.231	k star (bias corrected MLE)	0.229
Theta hat (MLE)	2314	Theta star (bias corrected MLE)	2340
nu hat (MLE)	5.092	nu star (bias corrected)	5.036
MLE Mean (bias corrected)	535.6	MLE Sd (bias corrected)	1119
		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (5.04, α)	1.169	Adjusted Chi Square Value (5.04, β)	0.897
95% Gamma Approximate UCL (use when n>=50)	2307	95% Gamma Adjusted UCL (use when n<50)	3007
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.795	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.328	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.28	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	535.7	Mean in Log Scale	3.65
SD in Original Scale	1362	SD in Log Scale	2.243
95% t UCL (assumes normality of ROS data)	1280	95% Percentile Bootstrap UCL	1247
95% BCA Bootstrap UCL	1648	95% Bootstrap t UCL	53871
95% H-UCL (Log ROS)	27397		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	536.1	Mean in Log Scale	3.75
SD in Original Scale	1361	SD in Log Scale	2.116
95% t UCL (Assumes normality)	1280	95% H-Stat UCL	14954
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
99% KM (Chebyshev) UCL	4641		
Warning: Recommended UCL exceeds the maximum observation			
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			

PROUCL OUTPUT - SURFACE SOIL

BENZO(G,H,I)PERYLENE

General Statistics			
Total Number of Observations	11	Number of Distinct Observations	9
Number of Detects	10	Number of Non-Detects	1
Number of Distinct Detects	8	Number of Distinct Non-Detects	1
Minimum Detect	2.7	Minimum Non-Detect	11
Maximum Detect	1800	Maximum Non-Detect	11
Variance Detects	320527	Percent Non-Detects	9.091%
Mean Detects	229	SD Detects	566.2
Median Detects	12.5	CV Detects	2.472
Skewness Detects	2.908	Kurtosis Detects	8.643
Mean of Logged Detects	3.061	SD of Logged Detects	2.061

Normal GOF Test on Detects Only		
Shapiro Wilk Test Statistic	0.473	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.447	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.28	Detected Data Not Normal at 5% Significance Level
Detected Data Not Normal at 5% Significance Level		

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	208.8	Standard Error of Mean	164
SD	516.1	95% KM (BCA) UCL	534.1
95% KM (t) UCL	506	95% KM (Percentile Bootstrap) UCL	498.7
95% KM (z) UCL	478.5	95% KM Bootstrap t UCL	21176
90% KM Chebyshev UCL	700.8	95% KM Chebyshev UCL	923.7
97.5% KM Chebyshev UCL	1233	99% KM Chebyshev UCL	1841

Gamma GOF Tests on Detected Observations Only		
A-D Test Statistic	1.671	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.817	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.444	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.288	Detected Data Not Gamma Distributed at 5% Significance Level
Detected Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics on Detected Data Only			
k hat (MLE)	0.292	k star (bias corrected MLE)	0.271
Theta hat (MLE)	784.4	Theta star (bias corrected MLE)	844.9
nu hat (MLE)	5.839	nu star (bias corrected)	5.42
MLE Mean (bias corrected)	229	MLE Sd (bias corrected)	439.9

Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.164	nu hat (KM)	3.6
Approximate Chi Square Value (3.60, α)	0.57	Adjusted Chi Square Value (3.60, β)	0.41
95% Gamma Approximate KM-UCL (use when n>=50)	1318	95% Gamma Adjusted KM-UCL (use when n<50)	1831

BENZO(G,H,I)PERYLENE (CONTINUED)

Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detected data is small such as < 0.1			
For such situations, GROS method tends to yield inflated values of UCLs and BTVs			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	208.2
Maximum	1800	Median	9
SD	541.5	CV	2.601
k hat (MLE)	0.24	k star (bias corrected MLE)	0.235
Theta hat (MLE)	866.2	Theta star (bias corrected MLE)	884.4
nu hat (MLE)	5.287	nu star (bias corrected)	5.179
MLE Mean (bias corrected)	208.2	MLE Sd (bias corrected)	429.1
		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (5.18, α)	1.236	Adjusted Chi Square Value (5.18, β)	0.953
95% Gamma Approximate UCL (use when n>=50)	872.5	95% Gamma Adjusted UCL (use when n<50)	1131
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.792	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.356	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.28	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	208.7	Mean in Log Scale	2.937
SD in Original Scale	541.3	SD in Log Scale	1.998
95% t UCL (assumes normality of ROS data)	504.5	95% Percentile Bootstrap UCL	532.9
95% BCA Bootstrap UCL	696.7	95% Bootstrap t UCL	22502
95% H-UCL (Log ROS)	3597		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	208.7	Mean in Log Scale	2.938
SD in Original Scale	541.3	SD in Log Scale	1.998
95% t UCL (Assumes normality)	504.5	95% H-Stat UCL	3594
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
99% KM (Chebyshev) UCL	1841		
Warning: Recommended UCL exceeds the maximum observation			
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			

PROUCL OUTPUT - SURFACE SOIL

BENZO(K)FLUORANTHENE			
General Statistics			
Total Number of Observations	11	Number of Distinct Observations	10
Number of Detects	10	Number of Non-Detects	1
Number of Distinct Detects	10	Number of Distinct Non-Detects	1
Minimum Detect	5.2	Minimum Non-Detect	11
Maximum Detect	1700	Maximum Non-Detect	11
Variance Detects	283137	Percent Non-Detects	9.091%
Mean Detects	219.3	SD Detects	532.1
Median Detects	19.5	CV Detects	2.426
Skewness Detects	2.933	Kurtosis Detects	8.787
Mean of Logged Detects	3.418	SD of Logged Detects	1.826
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.472	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.442	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.28	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	199.9	Standard Error of Mean	154.2
SD	485.2	95% KM (BCA) UCL	506.6
95% KM (t) UCL	479.4	95% KM (Percentile Bootstrap) UCL	473.9
95% KM (z) UCL	453.6	95% KM Bootstrap t UCL	13533
90% KM Chebyshev UCL	662.6	95% KM Chebyshev UCL	872.1
97.5% KM Chebyshev UCL	1163	99% KM Chebyshev UCL	1734
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	1.645	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.806	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.432	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.286	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.342	k star (bias corrected MLE)	0.306
Theta hat (MLE)	640.9	Theta star (bias corrected MLE)	716.2
nu hat (MLE)	6.844	nu star (bias corrected)	6.124
MLE Mean (bias corrected)	219.3	MLE Sd (bias corrected)	396.3
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.17	nu hat (KM)	3.736
Approximate Chi Square Value (3.74, α)	0.62	Adjusted Chi Square Value (3.74, β)	0.449
95% Gamma Approximate KM-UCL (use when n>=50)	1204	95% Gamma Adjusted KM-UCL (use when n<50)	1662
Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detected data is small such as < 0.1			
For such situations, GROS method tends to yield inflated values of UCLs and BTVs			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			

BENZO(K)FLUORANTHENE (CONTINUED)			
Minimum	0.01	Mean	199.4
Maximum	1700	Median	17
SD	509.1	CV	2.554
k hat (MLE)	0.269	k star (bias corrected MLE)	0.256
Theta hat (MLE)	740.4	Theta star (bias corrected MLE)	777.5
nu hat (MLE)	5.924	nu star (bias corrected)	5.642
MLE Mean (bias corrected)	199.4	MLE Sd (bias corrected)	393.7
		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (5.64, α)	1.46	Adjusted Chi Square Value (5.64, β)	1.143
95% Gamma Approximate UCL (use when n>=50)	770.6	95% Gamma Adjusted UCL (use when n<50)	984.1
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.794	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.339	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.28	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	199.7	Mean in Log Scale	3.214
SD in Original Scale	509	SD in Log Scale	1.86
95% t UCL (assumes normality of ROS data)	477.8	95% Percentile Bootstrap UCL	476
95% BCA Bootstrap UCL	628.1	95% Bootstrap t UCL	12387
95% H-UCL (Log ROS)	2413		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	199.9	Mean in Log Scale	3.263
SD in Original Scale	508.9	SD in Log Scale	1.807
95% t UCL (Assumes normality)	478	95% H-Stat UCL	1982
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
99% KM (Chebyshev) UCL	1734		
Warning: Recommended UCL exceeds the maximum observation			
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			

PROUCL OUTPUT - SURFACE SOIL

DIBENZO(A,H)ANTHRACENE			
General Statistics			
Total Number of Observations	11	Number of Distinct Observations	11
Number of Detects	9	Number of Non-Detects	2
Number of Distinct Detects	9	Number of Distinct Non-Detects	2
Minimum Detect	3.5	Minimum Non-Detect	1.9
Maximum Detect	590	Maximum Non-Detect	11
Variance Detects	37684	Percent Non-Detects	18.18%
Mean Detects	84.16	SD Detects	194.1
Median Detects	5.65	CV Detects	2.307
Skewness Detects	2.77	Kurtosis Detects	7.83
Mean of Logged Detects	2.524	SD of Logged Detects	1.816
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.497	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.829	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.431	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.295	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	69.48	Standard Error of Mean	53.87
SD	168.5	95% KM (BCA) UCL	175.5
95% KM (t) UCL	167.1	95% KM (Percentile Bootstrap) UCL	165.5
95% KM (z) UCL	158.1	95% KM Bootstrap t UCL	6182
90% KM Chebyshev UCL	231.1	95% KM Chebyshev UCL	304.3
97.5% KM Chebyshev UCL	405.9	99% KM Chebyshev UCL	605.5
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	1.688	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.798	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.447	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.3	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.352	k star (bias corrected MLE)	0.309
Theta hat (MLE)	239.1	Theta star (bias corrected MLE)	272.6
nu hat (MLE)	6.336	nu star (bias corrected)	5.557
MLE Mean (bias corrected)	84.16	MLE Sd (bias corrected)	151.5
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.17	nu hat (KM)	3.743
Approximate Chi Square Value (3.74, α)	0.623	Adjusted Chi Square Value (3.74, β)	0.451
95% Gamma Approximate KM-UCL (use when n>=50)	417.6	95% Gamma Adjusted KM-UCL (use when n<50)	576.2

DIBENZO(A,H)ANTHRACENE (CONTINUED)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	68.86
Maximum	590	Median	4.8
SD	176.9	CV	2.569
k hat (MLE)	0.238	k star (bias corrected MLE)	0.234
Theta hat (MLE)	289	Theta star (bias corrected MLE)	294.4
nu hat (MLE)	5.242	nu star (bias corrected)	5.146
MLE Mean (bias corrected)	68.86	MLE Sd (bias corrected)	142.4
		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (5.15, α)	1.22	Adjusted Chi Square Value (5.15, β)	0.94
95% Gamma Approximate UCL (use when n>=50)	290.4	95% Gamma Adjusted UCL (use when n<50)	377

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.7	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	69.35	Mean in Log Scale	2.1
SD in Original Scale	176.7	SD in Log Scale	1.984
95% t UCL (assumes normality of ROS data)	165.9	95% Percentile Bootstrap UCL	164.9
95% BCA Bootstrap UCL	229.3	95% Bootstrap t UCL	5930
95% H-UCL (Log ROS)	1448		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	69.45	Mean in Log Scale	2.216
SD in Original Scale	176.7	SD in Log Scale	1.807
95% t UCL (Assumes normality)	166	95% H-Stat UCL	693.1

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	605.5

Warning: Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

PROUCL OUTPUT - SURFACE SOIL

INDENO(1,2,3-CD)PYRENE			
General Statistics			
Total Number of Observations	11	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	3.2	Mean	332
Maximum	2800	Median	19.5
SD	843.9	Std. Error of Mean	254.4
Coefficient of Variation	2.542	Skewness	3.01
Normal GOF Test			
Shapiro Wilk Test Statistic	0.457	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.457	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.267	Data Not Normal at 5% Significance Level	
Data Not Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	793.2	95% Adjusted-CLT UCL (Chen-1995)	997.3
		95% Modified-t UCL (Johnson-1978)	831.6
Gamma GOF Test			
A-D Test Statistic	1.8	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.822	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.431	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.276	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	0.295	k star (bias corrected MLE)	0.275
Theta hat (MLE)	1126	Theta star (bias corrected MLE)	1207
nu hat (MLE)	6.484	nu star (bias corrected)	6.049
MLE Mean (bias corrected)	332	MLE Sd (bias corrected)	633.2
		Approximate Chi Square Value (0.05)	1.665
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	1.319
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	1206	95% Adjusted Gamma UCL (use when n<50)	1522
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.817	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.317	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.267	Data Not Lognormal at 5% Significance Level	
Data Not Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	1.163	Mean of logged Data	3.459
Maximum of Logged Data	7.937	SD of logged Data	2.013

INDENO(1,2,3-CD)PYRENE (CONTINUED)											
Assuming Lognormal Distribution											
95% H-UCL	6526					90% Chebyshev (MVUE) UCL	473.1				
95% Chebyshev (MVUE) UCL	614					97.5% Chebyshev (MVUE) UCL	809.7				
99% Chebyshev (MVUE) UCL	1194										
Nonparametric Distribution Free UCL Statistics											
Data do not follow a Discernible Distribution (0.05)											
Nonparametric Distribution Free UCLs											
95% CLT UCL	750.5					95% Jackknife UCL	793.2				
95% Standard Bootstrap UCL	736.5					95% Bootstrap-t UCL	29436				
95% Hall's Bootstrap UCL	8468					95% Percentile Bootstrap UCL	777.8				
95% BCA Bootstrap UCL	1091										
90% Chebyshev(Mean, Sd) UCL	1095					95% Chebyshev(Mean, Sd) UCL	1441				
97.5% Chebyshev(Mean, Sd) UCL	1921					99% Chebyshev(Mean, Sd) UCL	2864				
Suggested UCL to Use											
99% Chebyshev (Mean, Sd) UCL	2864										
Recommended UCL exceeds the maximum observation											
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
For additional insight the user may want to consult a statistician.											

PROUCL OUTPUT - SURFACE SOIL

ANTIMONY			
General Statistics			
Total Number of Observations	11	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.08	Mean	0.133
Maximum	0.26	Median	0.12
SD	0.0616	Std. Error of Mean	0.0186
Coefficient of Variation	0.462	Skewness	0.929
Normal GOF Test			
Shapiro Wilk Test Statistic	0.847	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.238	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.267	Data appear Normal at 5% Significance Level	
Data appear Approximate Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.167	95% Adjusted-CLT UCL (Chen-1995)	0.169
		95% Modified-t UCL (Johnson-1978)	0.168
Gamma GOF Test			
A-D Test Statistic	0.704	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.731	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.257	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.256	Data Not Gamma Distributed at 5% Significance Level	
Detected data follow Appr. Gamma Distribution at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	5.687	k star (bias corrected MLE)	4.197
Theta hat (MLE)	0.0234	Theta star (bias corrected MLE)	0.0317
nu hat (MLE)	125.1	nu star (bias corrected)	92.33
MLE Mean (bias corrected)	0.133	MLE Sd (bias corrected)	0.065
		Approximate Chi Square Value (0.05)	71.17
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	68.15
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	0.173	95% Adjusted Gamma UCL (use when n<50)	0.18
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.857	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.248	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.267	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	-2.526	Mean of logged Data	-2.107
Maximum of Logged Data	-1.347	SD of logged Data	0.439

ANTIMONY (CONTINUED)			
Assuming Lognormal Distribution			
95% H-UCL	0.179	90% Chebyshev (MVUE) UCL	0.186
95% Chebyshev (MVUE) UCL	0.211	97.5% Chebyshev (MVUE) UCL	0.244
99% Chebyshev (MVUE) UCL	0.31		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	0.164	95% Jackknife UCL	0.167
95% Standard Bootstrap UCL	0.163	95% Bootstrap-t UCL	0.177
95% Hall's Bootstrap UCL	0.167	95% Percentile Bootstrap UCL	0.164
95% BCA Bootstrap UCL	0.172		
90% Chebyshev(Mean, Sd) UCL	0.189	95% Chebyshev(Mean, Sd) UCL	0.214
97.5% Chebyshev(Mean, Sd) UCL	0.249	99% Chebyshev(Mean, Sd) UCL	0.318
Suggested UCL to Use			
95% Student's-t UCL	0.167		
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)			
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.			
For additional insight the user may want to consult a statistician.			

PROUCL OUTPUT - SURFACE SOIL

UCL Statistics for Uncensored Full Data Sets	
User Selected Options	
Date/Time of Computation	11/13/2014 2:52:33 PM
From File	ProUCL Input - SS - AOC 001.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)PYRENE

General Statistics			
Total Number of Observations	11	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	4.2	Mean	431.9
Maximum	3700	Median	23
SD	1114	Std. Error of Mean	336
Coefficient of Variation	2.58	Skewness	3.035

Normal GOF Test		
Shapiro Wilk Test Statistic	0.451	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.457	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Data Not Normal at 5% Significance Level
Data Not Normal at 5% Significance Level		

Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1041	95% Adjusted-CLT UCL (Chen-1995)	1313
		95% Modified-t UCL (Johnson-1978)	1092

Gamma GOF Test		
A-D Test Statistic	1.894	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.826	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.44	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.277	Data Not Gamma Distributed at 5% Significance Level
Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics			
k hat (MLE)	0.284	k star (bias corrected MLE)	0.268
Theta hat (MLE)	1518	Theta star (bias corrected MLE)	1615
nu hat (MLE)	6.259	nu star (bias corrected)	5.885
MLE Mean (bias corrected)	431.9	MLE Sd (bias corrected)	835.1
		Approximate Chi Square Value (0.05)	1.581
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	1.247

Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	1607	95% Adjusted Gamma UCL (use when n<50)	2038

BENZO(A)PYRENE (CONTINUED)

Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.794	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.331	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.267	Data Not Lognormal at 5% Significance Level	
Data Not Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	1.435	Mean of logged Data	3.623
Maximum of Logged Data	8.216	SD of logged Data	2.039
Assuming Lognormal Distribution			
95% H-UCL	8802	90% Chebyshev (MVUE) UCL	583.7
95% Chebyshev (MVUE) UCL	758.2	97.5% Chebyshev (MVUE) UCL	1000
99% Chebyshev (MVUE) UCL	1476		
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution (0.05)			
Nonparametric Distribution Free UCLs			
95% CLT UCL	984.5	95% Jackknife UCL	1041
95% Standard Bootstrap UCL	959.6	95% Bootstrap-t UCL	45861
95% Hall's Bootstrap UCL	13866	95% Percentile Bootstrap UCL	1098
95% BCA Bootstrap UCL	1360		
90% Chebyshev(Mean, Sd) UCL	1440	95% Chebyshev(Mean, Sd) UCL	1896
97.5% Chebyshev(Mean, Sd) UCL	2530	99% Chebyshev(Mean, Sd) UCL	3775
Suggested UCL to Use			
99% Chebyshev (Mean, Sd) UCL	3775		
Recommended UCL exceeds the maximum observation			

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - SURFACE SOIL

BENZO(B)FLUORANTHENE			
General Statistics			
Total Number of Observations	11	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	6.5	Mean	688.8
Maximum	5800	Median	37
SD	1752	Std. Error of Mean	528.1
Coefficient of Variation	2.543	Skewness	2.99
Normal GOF Test			
Shapiro Wilk Test Statistic	0.458	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.46	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.267	Data Not Normal at 5% Significance Level	
Data Not Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1646	95% Adjusted-CLT UCL (Chen-1995)	2066
		95% Modified-t UCL (Johnson-1978)	1725
Gamma GOF Test			
A-D Test Statistic	1.95	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.825	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.449	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.277	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	0.288	k star (bias corrected MLE)	0.27
Theta hat (MLE)	2393	Theta star (bias corrected MLE)	2551
nu hat (MLE)	6.333	nu star (bias corrected)	5.939
MLE Mean (bias corrected)	688.8	MLE Sd (bias corrected)	1326
		Approximate Chi Square Value (0.05)	1.609
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	1.271
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	2543	95% Adjusted Gamma UCL (use when n<50)	3219
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.783	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.348	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.267	Data Not Lognormal at 5% Significance Level	
Data Not Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	1.872	Mean of logged Data	4.123
Maximum of Logged Data	8.666	SD of logged Data	2.025

BENZO(B)FLUORANTHENE (CONTINUED)

Assuming Lognormal Distribution											
95% H-UCL	13515					90% Chebyshev (MVUE) UCL	939.4				
95% Chebyshev (MVUE) UCL	1220					97.5% Chebyshev (MVUE) UCL	1609				
99% Chebyshev (MVUE) UCL	2373										
Nonparametric Distribution Free UCL Statistics											
Data do not follow a Discernible Distribution (0.05)											
Nonparametric Distribution Free UCLs											
95% CLT UCL	1557					95% Jackknife UCL	1646				
95% Standard Bootstrap UCL	1533					95% Bootstrap-t UCL	79831				
95% Hall's Bootstrap UCL	23333					95% Percentile Bootstrap UCL	1730				
95% BCA Bootstrap UCL	2255										
90% Chebyshev(Mean, Sd) UCL	2273					95% Chebyshev(Mean, Sd) UCL	2991				
97.5% Chebyshev(Mean, Sd) UCL	3987					99% Chebyshev(Mean, Sd) UCL	5944				
Suggested UCL to Use											
99% Chebyshev (Mean, Sd) UCL	5944										
Recommended UCL exceeds the maximum observation											

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - SURFACE SOIL

CHRYSENE			
General Statistics			
Total Number of Observations	11	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	6.4	Mean	564.3
Maximum	4900	Median	28
SD	1474	Std. Error of Mean	444.4
Coefficient of Variation	2.612	Skewness	3.063
Normal GOF Test			
Shapiro Wilk Test Statistic	0.446	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.456	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.267	Data Not Normal at 5% Significance Level	
Data Not Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	1370	95% Adjusted-CLT UCL (Chen-1995)	1734
		95% Modified-t UCL (Johnson-1978)	1438
Gamma GOF Test			
A-D Test Statistic	1.899	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.829	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.435	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.277	Data Not Gamma Distributed at 5% Significance Level	
Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	0.278	k star (bias corrected MLE)	0.263
Theta hat (MLE)	2030	Theta star (bias corrected MLE)	2148
nu hat (MLE)	6.115	nu star (bias corrected)	5.781
MLE Mean (bias corrected)	564.3	MLE Sd (bias corrected)	1101
		Approximate Chi Square Value (0.05)	1.529
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	1.202
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	2134	95% Adjusted Gamma UCL (use when n<50)	2714
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.786	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.322	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.267	Data Not Lognormal at 5% Significance Level	
Data Not Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	1.856	Mean of logged Data	3.824
Maximum of Logged Data	8.497	SD of logged Data	2.063

CHRYSENE (CONTINUED)

Assuming Lognormal Distribution											
95% H-UCL	12207							90% Chebyshev (MVUE) UCL	744.2		
95% Chebyshev (MVUE) UCL	967.5							97.5% Chebyshev (MVUE) UCL	1277		
99% Chebyshev (MVUE) UCL	1886										
Nonparametric Distribution Free UCL Statistics											
Data do not follow a Discernible Distribution (0.05)											
Nonparametric Distribution Free UCLs											
95% CLT UCL	1295							95% Jackknife UCL	1370		
95% Standard Bootstrap UCL	1266							95% Bootstrap-t UCL	64385		
95% Hall's Bootstrap UCL	16966							95% Percentile Bootstrap UCL	1357		
95% BCA Bootstrap UCL	1798										
90% Chebyshev(Mean, Sd) UCL	1898							95% Chebyshev(Mean, Sd) UCL	2501		
97.5% Chebyshev(Mean, Sd) UCL	3340							99% Chebyshev(Mean, Sd) UCL	4986		
Suggested UCL to Use											
99% Chebyshev (Mean, Sd) UCL	4986										
Recommended UCL exceeds the maximum observation											

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

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PROUCL OUTPUT - SURFACE SOIL

UCL Statistics for Uncensored Full Data Sets	
User Selected Options	
Date/Time of Computation	11/13/2014 2:05:03 PM
From File	ProUCL Input - SS - AOC 001.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2,3,7,8-TCDD EQUIVALENTS

General Statistics			
Total Number of Observations	11	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	1.809	Mean	2.436
Maximum	3.201	Median	2.503
SD	0.403	Std. Error of Mean	0.121
Coefficient of Variation	0.165	Skewness	0.303

Normal GOF Test		
Shapiro Wilk Test Statistic	0.985	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.112	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Data appear Normal at 5% Significance Level
Data appear Normal at 5% Significance Level		

Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.656	95% Adjusted-CLT UCL (Chen-1995)	2.647
		95% Modified-t UCL (Johnson-1978)	2.658

Gamma GOF Test		
A-D Test Statistic	0.136	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.728	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.135	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.255	Detected data appear Gamma Distributed at 5% Significance Level
Detected data appear Gamma Distributed at 5% Significance Level		

Gamma Statistics			
k hat (MLE)	40.28	k star (bias corrected MLE)	29.35
Theta hat (MLE)	0.0605	Theta star (bias corrected MLE)	0.083
nu hat (MLE)	886.1	nu star (bias corrected)	645.8
MLE Mean (bias corrected)	2.436	MLE Sd (bias corrected)	0.45
		Approximate Chi Square Value (0.05)	587.8
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	578.8

Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	2.676	95% Adjusted Gamma UCL (use when n<50)	2.717

2,3,7,8-TCDD EQUIVALENTS (CONTINUED)

Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.989	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.14	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.267	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	0.593	Mean of logged Data	0.878
Maximum of Logged Data	1.163	SD of logged Data	0.166
Assuming Lognormal Distribution			
95% H-UCL	2.685	90% Chebyshev (MVUE) UCL	2.802
95% Chebyshev (MVUE) UCL	2.968	97.5% Chebyshev (MVUE) UCL	3.199
99% Chebyshev (MVUE) UCL	3.652		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	2.635	95% Jackknife UCL	2.656
95% Standard Bootstrap UCL	2.626	95% Bootstrap-t UCL	2.664
95% Hall's Bootstrap UCL	2.685	95% Percentile Bootstrap UCL	2.636
95% BCA Bootstrap UCL	2.648		
90% Chebyshev(Mean, Sd) UCL	2.8	95% Chebyshev(Mean, Sd) UCL	2.965
97.5% Chebyshev(Mean, Sd) UCL	3.194	99% Chebyshev(Mean, Sd) UCL	3.644
Suggested UCL to Use			
95% Student's-t UCL	2.656		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - SURFACE SOIL

CHROMIUM			
General Statistics			
Total Number of Observations	11	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	14.9	Mean	16.46
Maximum	17.65	Median	16.6
SD	0.922	Std. Error of Mean	0.278
Coefficient of Variation	0.056	Skewness	-0.483
Normal GOF Test			
Shapiro Wilk Test Statistic	0.943	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.154	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.267	Data appear Normal at 5% Significance Level	
Data appear Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	16.96	95% Adjusted-CLT UCL (Chen-1995)	16.87
		95% Modified-t UCL (Johnson-1978)	16.96
Gamma GOF Test			
A-D Test Statistic	0.296	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.726	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.162	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.254	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	344.5	k star (bias corrected MLE)	250.6
Theta hat (MLE)	0.0478	Theta star (bias corrected MLE)	0.0657
nu hat (MLE)	7578	nu star (bias corrected)	5513
MLE Mean (bias corrected)	16.46	MLE Sd (bias corrected)	1.04
		Approximate Chi Square Value (0.05)	5341
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	5314
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	16.99	95% Adjusted Gamma UCL (use when n<50)	17.08
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.937	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.164	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.267	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	2.701	Mean of logged Data	2.799
Maximum of Logged Data	2.871	SD of logged Data	0.0568

CHROMIUM (CONTINUED)

Assuming Lognormal Distribution											
95% H-UCL					N/A	90% Chebyshev (MVUE) UCL					17.3
95% Chebyshev (MVUE) UCL					17.69	97.5% Chebyshev (MVUE) UCL					18.22
99% Chebyshev (MVUE) UCL					19.26						
Nonparametric Distribution Free UCL Statistics											
Data appear to follow a Discernible Distribution at 5% Significance Level											
Nonparametric Distribution Free UCLs											
95% CLT UCL					16.92	95% Jackknife UCL					16.96
95% Standard Bootstrap UCL					16.9	95% Bootstrap-t UCL					16.93
95% Hall's Bootstrap UCL					16.87	95% Percentile Bootstrap UCL					16.85
95% BCA Bootstrap UCL					16.86						
90% Chebyshev(Mean, Sd) UCL					17.29	95% Chebyshev(Mean, Sd) UCL					17.67
97.5% Chebyshev(Mean, Sd) UCL					18.2	99% Chebyshev(Mean, Sd) UCL					19.23
Suggested UCL to Use											
95% Student's-t UCL					16.96						

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PROUCL OUTPUT - SURFACE SOIL

COBALT			
General Statistics			
Total Number of Observations	11	Number of Distinct Observations	10
		Number of Missing Observations	0
Minimum	9.6	Mean	12.43
Maximum	16.6	Median	11.6
SD	2.279	Std. Error of Mean	0.687
Coefficient of Variation	0.183	Skewness	0.706
Normal GOF Test			
Shapiro Wilk Test Statistic	0.927	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.187	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.267	Data appear Normal at 5% Significance Level	
Data appear Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	13.67	95% Adjusted-CLT UCL (Chen-1995)	13.71
		95% Modified-t UCL (Johnson-1978)	13.7
Gamma GOF Test			
A-D Test Statistic	0.32	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.729	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.179	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.255	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	34.3	k star (bias corrected MLE)	25.01
Theta hat (MLE)	0.362	Theta star (bias corrected MLE)	0.497
nu hat (MLE)	754.6	nu star (bias corrected)	550.1
MLE Mean (bias corrected)	12.43	MLE Sd (bias corrected)	2.485
		Approximate Chi Square Value (0.05)	496.7
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	488.5
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	13.76	95% Adjusted Gamma UCL (use when n<50)	14
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.948	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.165	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.267	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	2.262	Mean of logged Data	2.505
Maximum of Logged Data	2.809	SD of logged Data	0.178

COBALT (CONTINUED)

Assuming Lognormal Distribution											
95% H-UCL					13.8	90% Chebyshev (MVUE) UCL					14.43
95% Chebyshev (MVUE) UCL					15.33	97.5% Chebyshev (MVUE) UCL					16.59
99% Chebyshev (MVUE) UCL					19.07						
Nonparametric Distribution Free UCL Statistics											
Data appear to follow a Discernible Distribution at 5% Significance Level											
Nonparametric Distribution Free UCLs											
95% CLT UCL					13.56	95% Jackknife UCL					13.67
95% Standard Bootstrap UCL					13.52	95% Bootstrap-t UCL					13.95
95% Hall's Bootstrap UCL					13.78	95% Percentile Bootstrap UCL					13.55
95% BCA Bootstrap UCL					13.58						
90% Chebyshev(Mean, Sd) UCL					14.49	95% Chebyshev(Mean, Sd) UCL					15.42
97.5% Chebyshev(Mean, Sd) UCL					16.72	99% Chebyshev(Mean, Sd) UCL					19.26
Suggested UCL to Use											
95% Student's-t UCL					13.67						

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

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PROUCL OUTPUT - SURFACE SOIL

IRON			
General Statistics			
Total Number of Observations	11	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	22600	Mean	25377
Maximum	27800	Median	25600
SD	1876	Std. Error of Mean	565.6
Coefficient of Variation	0.0739	Skewness	-0.13
Normal GOF Test			
Shapiro Wilk Test Statistic	0.933	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.14	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.267	Data appear Normal at 5% Significance Level	
Data appear Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26402	95% Adjusted-CLT UCL (Chen-1995)	26284
		95% Modified-t UCL (Johnson-1978)	26399
Gamma GOF Test			
A-D Test Statistic	0.307	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.726	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.152	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.254	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	199.6	k star (bias corrected MLE)	145.2
Theta hat (MLE)	127.1	Theta star (bias corrected MLE)	174.7
nu hat (MLE)	4392	nu star (bias corrected)	3195
MLE Mean (bias corrected)	25377	MLE Sd (bias corrected)	2106
		Approximate Chi Square Value (0.05)	3065
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	3044
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	26457	95% Adjusted Gamma UCL (use when n<50)	26638
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.932	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.142	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.267	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	10.03	Mean of logged Data	10.14
Maximum of Logged Data	10.23	SD of logged Data	0.0744

IRON (CONTINUED)

Assuming Lognormal Distribution											
95% H-UCL	N/A					90% Chebyshev (MVUE) UCL	27087				
95% Chebyshev (MVUE) UCL	27862					97.5% Chebyshev (MVUE) UCL	28937				
99% Chebyshev (MVUE) UCL	31048										
Nonparametric Distribution Free UCL Statistics											
Data appear to follow a Discernible Distribution at 5% Significance Level											
Nonparametric Distribution Free UCLs											
95% CLT UCL	26308					95% Jackknife UCL	26402				
95% Standard Bootstrap UCL	26280					95% Bootstrap-t UCL	26425				
95% Hall's Bootstrap UCL	26231					95% Percentile Bootstrap UCL	26218				
95% BCA Bootstrap UCL	26218										
90% Chebyshev(Mean, Sd) UCL	27074					95% Chebyshev(Mean, Sd) UCL	27843				
97.5% Chebyshev(Mean, Sd) UCL	28909					99% Chebyshev(Mean, Sd) UCL	31005				
Suggested UCL to Use											
95% Student's-t UCL	26402										

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

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and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be

reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

PROUCL OUTPUT - SURFACE SOIL

MANGANESE

General Statistics			
Total Number of Observations	11	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	267	Mean	342.1
Maximum	459	Median	314
SD	68.08	Std. Error of Mean	20.53
Coefficient of Variation	0.199	Skewness	0.882

Normal GOF Test		
Shapiro Wilk Test Statistic	0.877	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.206	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Data appear Normal at 5% Significance Level
Data appear Normal at 5% Significance Level		

Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	379.3	95% Adjusted-CLT UCL (Chen-1995)	381.7
		95% Modified-t UCL (Johnson-1978)	380.2

Gamma GOF Test		
A-D Test Statistic	0.478	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.729	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.201	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.255	Detected data appear Gamma Distributed at 5% Significance Level
Detected data appear Gamma Distributed at 5% Significance Level		

Gamma Statistics			
k hat (MLE)	29.75	k star (bias corrected MLE)	21.7
Theta hat (MLE)	11.5	Theta star (bias corrected MLE)	15.77
nu hat (MLE)	654.6	nu star (bias corrected)	477.4
MLE Mean (bias corrected)	342.1	MLE Sd (bias corrected)	73.45
		Approximate Chi Square Value (0.05)	427.7
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	420.1

Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	381.9	95% Adjusted Gamma UCL (use when n<50)	388.8

Lognormal GOF Test		
Shapiro Wilk Test Statistic	0.909	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.187	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.267	Data appear Lognormal at 5% Significance Level
Data appear Lognormal at 5% Significance Level		

Lognormal Statistics			
Minimum of Logged Data	5.587	Mean of logged Data	5.818
Maximum of Logged Data	6.129	SD of logged Data	0.19

MANGANESE (CONTINUED)

Assuming Lognormal Distribution											
95% H-UCL	382.8					90% Chebyshev (MVUE) UCL	400.9				
95% Chebyshev (MVUE) UCL	427.6					97.5% Chebyshev (MVUE) UCL	464.7				
99% Chebyshev (MVUE) UCL	537.4										
Nonparametric Distribution Free UCL Statistics											
Data appear to follow a Discernible Distribution at 5% Significance Level											
Nonparametric Distribution Free UCLs											
95% CLT UCL	375.9					95% Jackknife UCL	379.3				
95% Standard Bootstrap UCL	373.8					95% Bootstrap-t UCL	396.3				
95% Hall's Bootstrap UCL	392					95% Percentile Bootstrap UCL	375.1				
95% BCA Bootstrap UCL	378.5										
90% Chebyshev(Mean, Sd) UCL	403.7					95% Chebyshev(Mean, Sd) UCL	431.6				
97.5% Chebyshev(Mean, Sd) UCL	470.3					99% Chebyshev(Mean, Sd) UCL	546.4				
Suggested UCL to Use											
95% Student's-t UCL	379.3										

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - SURFACE SOIL

THALLIUM			
General Statistics			
Total Number of Observations	11	Number of Distinct Observations	6
		Number of Missing Observations	0
Minimum	0.03	Mean	0.0495
Maximum	0.08	Median	0.05
SD	0.0135	Std. Error of Mean	0.00407
Coefficient of Variation	0.272	Skewness	1.011
Normal GOF Test			
Shapiro Wilk Test Statistic	0.919	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.214	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.267	Data appear Normal at 5% Significance Level	
Data appear Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.0569	95% Adjusted-CLT UCL (Chen-1995)	0.0576
		95% Modified-t UCL (Johnson-1978)	0.0571
Gamma GOF Test			
A-D Test Statistic	0.33	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.729	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.179	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.255	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	15.86	k star (bias corrected MLE)	11.59
Theta hat (MLE)	0.00312	Theta star (bias corrected MLE)	0.00427
nu hat (MLE)	348.8	nu star (bias corrected)	255
MLE Mean (bias corrected)	0.0495	MLE Sd (bias corrected)	0.0146
		Approximate Chi Square Value (0.05)	219.1
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	213.6
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	0.0577	95% Adjusted Gamma UCL (use when n<50)	0.0592
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.961	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.165	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.267	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	-3.507	Mean of logged Data	-3.037
Maximum of Logged Data	-2.526	SD of logged Data	0.263

THALLIUM (CONTINUED)											
Assuming Lognormal Distribution											
95% H-UCL					0.0582	90% Chebyshev (MVUE) UCL					0.0614
95% Chebyshev (MVUE) UCL					0.0667	97.5% Chebyshev (MVUE) UCL					0.0742
99% Chebyshev (MVUE) UCL					0.0888						
Nonparametric Distribution Free UCL Statistics											
Data appear to follow a Discernible Distribution at 5% Significance Level											
Nonparametric Distribution Free UCLs											
95% CLT UCL					0.0562	95% Jackknife UCL					0.0569
95% Standard Bootstrap UCL					0.0562	95% Bootstrap-t UCL					0.0594
95% Hall's Bootstrap UCL					0.062	95% Percentile Bootstrap UCL					0.0564
95% BCA Bootstrap UCL					0.0573						
90% Chebyshev(Mean, Sd) UCL					0.0618	95% Chebyshev(Mean, Sd) UCL					0.0673
97.5% Chebyshev(Mean, Sd) UCL					0.075	99% Chebyshev(Mean, Sd) UCL					0.09
Suggested UCL to Use											
95% Student's-t UCL					0.0569						
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
For additional insight the user may want to consult a statistician.											

PROUCL OUTPUT - ALL SOIL

UCL Statistics for Uncensored Full Data Sets	
User Selected Options	
Date/Time of Computation	11/13/2014 11:04:46 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2,3,7,8-TCDD Equivalents

General Statistics

Total Number of Observations	23	Number of Distinct Observations	23
		Number of Missing Observations	4
Minimum	1.479	Mean	2.399
Maximum	5.99	Median	2.216
SD	0.888	Std. Error of Mean	0.185
Coefficient of Variation	0.37	Skewness	3.192

Normal GOF Test

Shapiro Wilk Test Statistic	0.667	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.914	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.226	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.185	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.717	95% Adjusted-CLT UCL (Chen-1995)	2.835
		95% Modified-t UCL (Johnson-1978)	2.737

Gamma GOF Test

A-D Test Statistic	1.084	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.744	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.165	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.181	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	11.43	k star (bias corrected MLE)	9.968
Theta hat (MLE)	0.21	Theta star (bias corrected MLE)	0.241
nu hat (MLE)	525.8	nu star (bias corrected)	458.5
MLE Mean (bias corrected)	2.399	MLE Sd (bias corrected)	0.76
		Approximate Chi Square Value (0.05)	409.9
Adjusted Level of Significance	0.0389	Adjusted Chi Square Value	406.6

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	2.684	95% Adjusted Gamma UCL (use when n<50)	2.706

2,3,7,8-TCDD Equivalents (continued)

Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.865	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.914	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.14	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.185	Data appear Lognormal at 5% Significance Level	
Data appear Approximate Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	0.391	Mean of logged Data	0.831
Maximum of Logged Data	1.79	SD of logged Data	0.281
Assuming Lognormal Distribution			
95% H-UCL	2.66	90% Chebyshev (MVUE) UCL	2.807
95% Chebyshev (MVUE) UCL	2.999	97.5% Chebyshev (MVUE) UCL	3.266
99% Chebyshev (MVUE) UCL	3.79		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	2.703	95% Jackknife UCL	2.717
95% Standard Bootstrap UCL	2.695	95% Bootstrap-t UCL	2.969
95% Hall's Bootstrap UCL	4.051	95% Percentile Bootstrap UCL	2.714
95% BCA Bootstrap UCL	2.831		
90% Chebyshev(Mean, Sd) UCL	2.954	95% Chebyshev(Mean, Sd) UCL	3.206
97.5% Chebyshev(Mean, Sd) UCL	3.555	99% Chebyshev(Mean, Sd) UCL	4.241
Suggested UCL to Use			
95% Adjusted Gamma UCL	2.706		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

Aluminum

General Statistics			
Total Number of Observations	26	Number of Distinct Observations	22
		Number of Missing Observations	1
Minimum	10640	Mean	14361
Maximum	21000	Median	14100
SD	2397	Std. Error of Mean	470.1
Coefficient of Variation	0.167	Skewness	1.34
Normal GOF Test			
Shapiro Wilk Test Statistic	0.889	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.155	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.174	Data appear Normal at 5% Significance Level	
Data appear Approximate Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	15164	95% Adjusted-CLT UCL (Chen-1995)	15266
		95% Modified-t UCL (Johnson-1978)	15185
Gamma GOF Test			
A-D Test Statistic	0.567	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.743	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.13	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.171	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	41.09	k star (bias corrected MLE)	36.37
Theta hat (MLE)	349.5	Theta star (bias corrected MLE)	394.8
nu hat (MLE)	2136	nu star (bias corrected)	1891
MLE Mean (bias corrected)	14361	MLE Sd (bias corrected)	2381
		Approximate Chi Square Value (0.05)	1791
Adjusted Level of Significance	0.0398	Adjusted Chi Square Value	1785
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	15163	95% Adjusted Gamma UCL (use when n<50)	15217
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.944	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.122	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.174	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	9.272	Mean of logged Data	9.56
Maximum of Logged Data	9.952	SD of logged Data	0.156

Aluminum (continued)

Assuming Lognormal Distribution

95% H-UCL	15162	90% Chebyshev (MVUE) UCL	15680
95% Chebyshev (MVUE) UCL	16281	97.5% Chebyshev (MVUE) UCL	17114
99% Chebyshev (MVUE) UCL	18752		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	15134	95% Jackknife UCL	15164
95% Standard Bootstrap UCL	15119	95% Bootstrap-t UCL	15374
95% Hall's Bootstrap UCL	15548	95% Percentile Bootstrap UCL	15149
95% BCA Bootstrap UCL	15192		
90% Chebyshev(Mean, Sd) UCL	15771	95% Chebyshev(Mean, Sd) UCL	16410
97.5% Chebyshev(Mean, Sd) UCL	17297	99% Chebyshev(Mean, Sd) UCL	19038

Suggested UCL to Use

95% Student's-t UCL	15164

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

Arsenic			
General Statistics			
Total Number of Observations	26	Number of Distinct Observations	23
		Number of Missing Observations	1
Minimum	4.1	Mean	7.475
Maximum	14.3	Median	6.85
SD	2.487	Std. Error of Mean	0.488
Coefficient of Variation	0.333	Skewness	1.36
Normal GOF Test			
Shapiro Wilk Test Statistic	0.865	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.201	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.174	Data Not Normal at 5% Significance Level	
Data Not Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8.308	95% Adjusted-CLT UCL (Chen-1995)	8.416
		95% Modified-t UCL (Johnson-1978)	8.33
Gamma GOF Test			
A-D Test Statistic	0.748	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.744	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.157	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.171	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data follow Appr. Gamma Distribution at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	11.01	k star (bias corrected MLE)	9.767
Theta hat (MLE)	0.679	Theta star (bias corrected MLE)	0.765
nu hat (MLE)	572.6	nu star (bias corrected)	507.9
MLE Mean (bias corrected)	7.475	MLE Sd (bias corrected)	2.392
		Approximate Chi Square Value (0.05)	456.6
Adjusted Level of Significance	0.0398	Adjusted Chi Square Value	453.4
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50)	8.314	95% Adjusted Gamma UCL (use when n<50)	8.373
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.951	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.14	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.174	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	1.411	Mean of logged Data	1.965
Maximum of Logged Data	2.66	SD of logged Data	0.301

Arsenic (continued)

Assuming Lognormal Distribution			
95% H-UCL	8.331	90% Chebyshev (MVUE) UCL	8.795
95% Chebyshev (MVUE) UCL	9.402	97.5% Chebyshev (MVUE) UCL	10.24
99% Chebyshev (MVUE) UCL	11.9		
Nonparametric Distribution Free UCL Statistics			
Data appear to follow a Discernible Distribution at 5% Significance Level			
Nonparametric Distribution Free UCLs			
95% CLT UCL	8.277	95% Jackknife UCL	8.308
95% Standard Bootstrap UCL	8.271	95% Bootstrap-t UCL	8.61
95% Hall's Bootstrap UCL	8.46	95% Percentile Bootstrap UCL	8.344
95% BCA Bootstrap UCL	8.392		
90% Chebyshev(Mean, Sd) UCL	8.938	95% Chebyshev(Mean, Sd) UCL	9.601
97.5% Chebyshev(Mean, Sd) UCL	10.52	99% Chebyshev(Mean, Sd) UCL	12.33
Suggested UCL to Use			
95% Adjusted Gamma UCL	8.373		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

Chromium			
General Statistics			
Total Number of Observations	26	Number of Distinct Observations	23
		Number of Missing Observations	1
Minimum	13.1	Mean	17.32
Maximum	26.5	Median	16.65
SD	2.99	Std. Error of Mean	0.586
Coefficient of Variation	0.173	Skewness	1.878
Normal GOF Test			
Shapiro Wilk Test Statistic	0.814	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.179	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.174	Data Not Normal at 5% Significance Level	
Data Not Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	18.32	95% Adjusted-CLT UCL (Chen-1995)	18.52
		95% Modified-t UCL (Johnson-1978)	18.36
Gamma GOF Test			
A-D Test Statistic	1.058	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.743	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.15	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.171	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data follow Appr. Gamma Distribution at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	40.46	k star (bias corrected MLE)	35.82
Theta hat (MLE)	0.428	Theta star (bias corrected MLE)	0.484
nu hat (MLE)	2104	nu star (bias corrected)	1862
MLE Mean (bias corrected)	17.32	MLE Sd (bias corrected)	2.894
		Approximate Chi Square Value (0.05)	1763
Adjusted Level of Significance	0.0398	Adjusted Chi Square Value	1757
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50)	18.3	95% Adjusted Gamma UCL (use when n<50)	18.36
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.89	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.14	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.174	Data appear Lognormal at 5% Significance Level	
Data appear Approximate Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	2.573	Mean of logged Data	2.84
Maximum of Logged Data	3.277	SD of logged Data	0.155

Chromium (continued)

Assuming Lognormal Distribution											
95% H-UCL					18.28	90% Chebyshev (MVUE) UCL					18.9
95% Chebyshev (MVUE) UCL					19.62	97.5% Chebyshev (MVUE) UCL					20.62
99% Chebyshev (MVUE) UCL					22.58						
Nonparametric Distribution Free UCL Statistics											
Data appear to follow a Discernible Distribution at 5% Significance Level											
Nonparametric Distribution Free UCLs											
95% CLT UCL					18.29	95% Jackknife UCL					18.32
95% Standard Bootstrap UCL					18.25	95% Bootstrap-t UCL					18.79
95% Hall's Bootstrap UCL					23.02	95% Percentile Bootstrap UCL					18.35
95% BCA Bootstrap UCL					18.5						
90% Chebyshev(Mean, Sd) UCL					19.08	95% Chebyshev(Mean, Sd) UCL					19.88
97.5% Chebyshev(Mean, Sd) UCL					20.98	99% Chebyshev(Mean, Sd) UCL					23.16
Suggested UCL to Use											
95% Adjusted Gamma UCL					18.36						

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

Cobalt			
General Statistics			
Total Number of Observations	26	Number of Distinct Observations	24
		Number of Missing Observations	1
Minimum	6.2	Mean	12.58
Maximum	30.3	Median	11.4
SD	5.636	Std. Error of Mean	1.105
Coefficient of Variation	0.448	Skewness	1.499
Normal GOF Test			
Shapiro Wilk Test Statistic	0.879	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.155	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.174	Data appear Normal at 5% Significance Level	
Data appear Approximate Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.47	95% Adjusted-CLT UCL (Chen-1995)	14.74
		95% Modified-t UCL (Johnson-1978)	14.52
Gamma GOF Test			
A-D Test Statistic	0.299	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.746	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.102	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.171	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	6.175	k star (bias corrected MLE)	5.489
Theta hat (MLE)	2.037	Theta star (bias corrected MLE)	2.291
nu hat (MLE)	321.1	nu star (bias corrected)	285.4
MLE Mean (bias corrected)	12.58	MLE Sd (bias corrected)	5.368
		Approximate Chi Square Value (0.05)	247.3
Adjusted Level of Significance	0.0398	Adjusted Chi Square Value	244.9
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	14.52	95% Adjusted Gamma UCL (use when n<50)	14.65
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.973	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.0747	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.174	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	1.825	Mean of logged Data	2.449
Maximum of Logged Data	3.411	SD of logged Data	0.406

Cobalt (continued)											
Assuming Lognormal Distribution											
95% H-UCL					14.66	90% Chebyshev (MVUE) UCL					15.61
95% Chebyshev (MVUE) UCL					17	97.5% Chebyshev (MVUE) UCL					18.94
99% Chebyshev (MVUE) UCL					22.74						
Nonparametric Distribution Free UCL Statistics											
Data appear to follow a Discernible Distribution at 5% Significance Level											
Nonparametric Distribution Free UCLs											
95% CLT UCL					14.4	95% Jackknife UCL					14.47
95% Standard Bootstrap UCL					14.36	95% Bootstrap-t UCL					14.93
95% Hall's Bootstrap UCL					15.5	95% Percentile Bootstrap UCL					14.38
95% BCA Bootstrap UCL					14.8						
90% Chebyshev(Mean, Sd) UCL					15.89	95% Chebyshev(Mean, Sd) UCL					17.4
97.5% Chebyshev(Mean, Sd) UCL					19.48	99% Chebyshev(Mean, Sd) UCL					23.58
Suggested UCL to Use											
95% Student's-t UCL					14.47						
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
For additional insight the user may want to consult a statistician.											

PROUCL OUTPUT - ALL SOIL

Iron

General Statistics

Total Number of Observations	26	Number of Distinct Observations	26
		Number of Missing Observations	1
Minimum	17000	Mean	25758
Maximum	45100	Median	25200
SD	6640	Std. Error of Mean	1302
Coefficient of Variation	0.258	Skewness	1.422

Normal GOF Test

Shapiro Wilk Test Statistic	0.869	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.92	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.164	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.174	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	27982	95% Adjusted-CLT UCL (Chen-1995)	28288
		95% Modified-t UCL (Johnson-1978)	28042

Gamma GOF Test

A-D Test Statistic	0.551	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.744	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.128	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.171	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	17.76	k star (bias corrected MLE)	15.74
Theta hat (MLE)	1450	Theta star (bias corrected MLE)	1637
nu hat (MLE)	923.6	nu star (bias corrected)	818.4
MLE Mean (bias corrected)	25758	MLE Sd (bias corrected)	6493
		Approximate Chi Square Value (0.05)	753
Adjusted Level of Significance	0.0398	Adjusted Chi Square Value	748.9

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	27994	95% Adjusted Gamma UCL (use when n<50)	28149

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.942	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.92	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.117	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.174	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	9.741	Mean of logged Data	10.13
Maximum of Logged Data	10.72	SD of logged Data	0.238

Iron (continued)

Assuming Lognormal Distribution											
95% H-UCL	28031					90% Chebyshev (MVUE) UCL	29364				
95% Chebyshev (MVUE) UCL	31012					97.5% Chebyshev (MVUE) UCL	33298				
99% Chebyshev (MVUE) UCL	37791										
Nonparametric Distribution Free UCL Statistics											
Data appear to follow a Discernible Distribution at 5% Significance Level											
Nonparametric Distribution Free UCLs											
95% CLT UCL	27900					95% Jackknife UCL	27982				
95% Standard Bootstrap UCL	27922					95% Bootstrap-t UCL	28710				
95% Hall's Bootstrap UCL	29568					95% Percentile Bootstrap UCL	27883				
95% BCA Bootstrap UCL	28254										
90% Chebyshev(Mean, Sd) UCL	29664					95% Chebyshev(Mean, Sd) UCL	31434				
97.5% Chebyshev(Mean, Sd) UCL	33890					99% Chebyshev(Mean, Sd) UCL	38714				
Suggested UCL to Use											
95% Student's-t UCL	27982										

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

Manganese

General Statistics			
Total Number of Observations	26	Number of Distinct Observations	25
		Number of Missing Observations	1
Minimum	163	Mean	308.3
Maximum	459	Median	307.8
SD	90.12	Std. Error of Mean	17.67
Coefficient of Variation	0.292	Skewness	0.122
Normal GOF Test			
Shapiro Wilk Test Statistic	0.954	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.121	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.174	Data appear Normal at 5% Significance Level	
Data appear Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	338.5	95% Adjusted-CLT UCL (Chen-1995)	337.8
		95% Modified-t UCL (Johnson-1978)	338.6
Gamma GOF Test			
A-D Test Statistic	0.319	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.744	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.118	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.171	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	11.6	k star (bias corrected MLE)	10.29
Theta hat (MLE)	26.57	Theta star (bias corrected MLE)	29.96
nu hat (MLE)	603.3	nu star (bias corrected)	535.1
MLE Mean (bias corrected)	308.3	MLE Sd (bias corrected)	96.11
		Approximate Chi Square Value (0.05)	482.4
Adjusted Level of Significance	0.0398	Adjusted Chi Square Value	479.1
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	342	95% Adjusted Gamma UCL (use when n<50)	344.3
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.951	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.107	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.174	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	5.094	Mean of logged Data	5.687
Maximum of Logged Data	6.129	SD of logged Data	0.307

Manganese (continued)

Assuming Lognormal Distribution

95% H-UCL	346	90% Chebyshev (MVUE) UCL	365.6
95% Chebyshev (MVUE) UCL	391.3	97.5% Chebyshev (MVUE) UCL	427
99% Chebyshev (MVUE) UCL	497.1		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	337.4	95% Jackknife UCL	338.5
95% Standard Bootstrap UCL	337.3	95% Bootstrap-t UCL	338.8
95% Hall's Bootstrap UCL	337.9	95% Percentile Bootstrap UCL	337
95% BCA Bootstrap UCL	335.9		
90% Chebyshev(Mean, Sd) UCL	361.3	95% Chebyshev(Mean, Sd) UCL	385.3
97.5% Chebyshev(Mean, Sd) UCL	418.7	99% Chebyshev(Mean, Sd) UCL	484.2

Suggested UCL to Use

95% Student's-t UCL	338.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)

and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

Thallium			
General Statistics			
Total Number of Observations	26	Number of Distinct Observations	12
		Number of Missing Observations	1
Minimum	0.02	Mean	0.0588
Maximum	0.12	Median	0.05
SD	0.0236	Std. Error of Mean	0.00463
Coefficient of Variation	0.401	Skewness	0.644
Normal GOF Test			
Shapiro Wilk Test Statistic	0.952	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.185	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.174	Data Not Normal at 5% Significance Level	
Data appear Approximate Normal at 5% Significance Level			
Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.0667	95% Adjusted-CLT UCL (Chen-1995)	0.0671
		95% Modified-t UCL (Johnson-1978)	0.0668
Gamma GOF Test			
A-D Test Statistic	0.413	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.746	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.14	**Kolmogrov-Smirnoff Gamma GOF Test**	
5% K-S Critical Value	0.171	Detected data appear Gamma Distributed at 5% Significance Level	
Detected data appear Gamma Distributed at 5% Significance Level			
Gamma Statistics			
k hat (MLE)	6.175	k star (bias corrected MLE)	5.488
Theta hat (MLE)	0.00953	Theta star (bias corrected MLE)	0.0107
nu hat (MLE)	321.1	nu star (bias corrected)	285.4
MLE Mean (bias corrected)	0.0588	MLE Sd (bias corrected)	0.0251
		Approximate Chi Square Value (0.05)	247.3
Adjusted Level of Significance	0.0398	Adjusted Chi Square Value	244.9
Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50))	0.0679	95% Adjusted Gamma UCL (use when n<50)	0.0686
Lognormal GOF Test			
Shapiro Wilk Test Statistic	0.944	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.92	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.158	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.174	Data appear Lognormal at 5% Significance Level	
Data appear Lognormal at 5% Significance Level			
Lognormal Statistics			
Minimum of Logged Data	-3.912	Mean of logged Data	-2.916
Maximum of Logged Data	-2.12	SD of logged Data	0.433

Thallium (continued)											
Assuming Lognormal Distribution											
95% H-UCL					0.0702	90% Chebyshev (MVUE) UCL					0.0748
95% Chebyshev (MVUE) UCL					0.0818	97.5% Chebyshev (MVUE) UCL					0.0916
99% Chebyshev (MVUE) UCL					0.111						
Nonparametric Distribution Free UCL Statistics											
Data appear to follow a Discernible Distribution at 5% Significance Level											
Nonparametric Distribution Free UCLs											
95% CLT UCL					0.0665	95% Jackknife UCL					0.0667
95% Standard Bootstrap UCL					0.0663	95% Bootstrap-t UCL					0.0678
95% Hall's Bootstrap UCL					0.0679	95% Percentile Bootstrap UCL					0.0667
95% BCA Bootstrap UCL					0.0667						
90% Chebyshev(Mean, Sd) UCL					0.0727	95% Chebyshev(Mean, Sd) UCL					0.079
97.5% Chebyshev(Mean, Sd) UCL					0.0877	99% Chebyshev(Mean, Sd) UCL					0.105
Suggested UCL to Use											
95% Student's-t UCL					0.0667						
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)											
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.											
For additional insight the user may want to consult a statistician.											

UCL Statistics for Data Sets with Non-Detects	
User Selected Options	
Date/Time of Computation	11/13/2014 1:29:48 PM
From File	ProUCL Input - All Soil AOC 001.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ANTIMONY

General Statistics			
Total Number of Observations	26	Number of Distinct Observations	16
Number of Detects	25	Number of Non-Detects	1
Number of Distinct Detects	16	Number of Distinct Non-Detects	1
Minimum Detect	0.03	Minimum Non-Detect	0.03
Maximum Detect	0.26	Maximum Non-Detect	0.03
Variance Detects	0.00276	Percent Non-Detects	3.846%
Mean Detects	0.103	SD Detects	0.0526
Median Detects	0.085	CV Detects	0.508
Skewness Detects	1.468	Kurtosis Detects	2.173
Mean of Logged Detects	-2.377	SD of Logged Detects	0.47

Normal GOF Test on Detects Only		
Shapiro Wilk Test Statistic	0.859	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.918	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.241	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.177	Detected Data Not Normal at 5% Significance Level
Detected Data Not Normal at 5% Significance Level		

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	0.101	Standard Error of Mean	0.0105
SD	0.0524	95% KM (BCA) UCL	0.118
95% KM (t) UCL	0.119	95% KM (Percentile Bootstrap) UCL	0.119
95% KM (z) UCL	0.118	95% KM Bootstrap t UCL	0.124
90% KM Chebyshev UCL	0.132	95% KM Chebyshev UCL	0.146
97.5% KM Chebyshev UCL	0.166	99% KM Chebyshev UCL	0.205

Gamma GOF Tests on Detected Observations Only		
A-D Test Statistic	0.719	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.747	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.196	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.175	Detected Data Not Gamma Distributed at 5% Significance Level
Detected data follow Appr. Gamma Distribution at 5% Significance Level		

Gamma Statistics on Detected Data Only			
k hat (MLE)	4.779	k star (bias corrected MLE)	4.232
Theta hat (MLE)	0.0216	Theta star (bias corrected MLE)	0.0244
nu hat (MLE)	238.9	nu star (bias corrected)	211.6
MLE Mean (bias corrected)	0.103	MLE Sd (bias corrected)	0.0503

ANTIMONY (CONTINUED)

Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	3.678	nu hat (KM)	191.2
Approximate Chi Square Value (191.24, α)	160.2	Adjusted Chi Square Value (191.24, β)	158.4
95% Gamma Approximate KM-UCL (use when n>=50)	0.12	95% Gamma Adjusted KM-UCL (use when n<50)	0.121
Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detected data is small such as < 0.1			
For such situations, GROS method tends to yield inflated values of UCLs and BTVs			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.0109	Mean	0.0998
Maximum	0.26	Median	0.0825
SD	0.0546	CV	0.547
k hat (MLE)	3.37	k star (bias corrected MLE)	3.007
Theta hat (MLE)	0.0296	Theta star (bias corrected MLE)	0.0332
nu hat (MLE)	175.2	nu star (bias corrected)	156.3
MLE Mean (bias corrected)	0.0998	MLE Sd (bias corrected)	0.0576
		Adjusted Level of Significance (β)	0.0398
Approximate Chi Square Value (156.34, α)	128.4	Adjusted Chi Square Value (156.34, β)	126.8
95% Gamma Approximate UCL (use when n>=50)	0.122	95% Gamma Adjusted UCL (use when n<50)	0.123
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.963	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.918	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.166	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.177	Detected Data appear Lognormal at 5% Significance Level	
Detected Data appear Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	0.101	Mean in Log Scale	-2.422
SD in Original Scale	0.0535	SD in Log Scale	0.513
95% t UCL (assumes normality of ROS data)	0.118	95% Percentile Bootstrap UCL	0.118
95% BCA Bootstrap UCL	0.121	95% Bootstrap t UCL	0.124
95% H-UCL (Log ROS)	0.124		
UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed			
KM Mean (logged)	-2.421	95% H-UCL (KM -Log)	0.123
KM SD (logged)	0.501	95% Critical H Value (KM-Log)	1.965
KM Standard Error of Mean (logged)	0.1		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.1	Mean in Log Scale	-2.447
SD in Original Scale	0.0544	SD in Log Scale	0.583
95% t UCL (Assumes normality)	0.118	95% H-Stat UCL	0.13
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Detected Data appear Approximate Gamma Distributed at 5% Significance Level			
Suggested UCL to Use			
95% KM (BCA) UCL	0.118	95% GROS Adjusted Gamma UCL	0.123
95% Adjusted Gamma KM-UCL	0.121		
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			

BENZO(A)ANTHRACENE			
General Statistics			
Total Number of Observations	26	Number of Distinct Observations	20
Number of Detects	20	Number of Non-Detects	6
Number of Distinct Detects	17	Number of Distinct Non-Detects	3
Minimum Detect	3.6	Minimum Non-Detect	10
Maximum Detect	4500	Maximum Non-Detect	12
Variance Detects	1456217	Percent Non-Detects	23.08%
Mean Detects	541.9	SD Detects	1207
Median Detects	21.75	CV Detects	2.227
Skewness Detects	2.484	Kurtosis Detects	5.908
Mean of Logged Detects	3.72	SD of Logged Detects	2.238
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.523	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.905	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.455	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.198	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	417.9	Standard Error of Mean	212.5
SD	1056	95% KM (BCA) UCL	785.7
95% KM (t) UCL	780.9	95% KM (Percentile Bootstrap) UCL	793.7
95% KM (z) UCL	767.5	95% KM Bootstrap t UCL	1311
90% KM Chebyshev UCL	1055	95% KM Chebyshev UCL	1344
97.5% KM Chebyshev UCL	1745	99% KM Chebyshev UCL	2532
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	2.759	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.858	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.377	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.211	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.272	k star (bias corrected MLE)	0.265
Theta hat (MLE)	1992	Theta star (bias corrected MLE)	2048
nu hat (MLE)	10.88	nu star (bias corrected)	10.58
MLE Mean (bias corrected)	541.9	MLE Sd (bias corrected)	1053
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.157	nu hat (KM)	8.143
Approximate Chi Square Value (8.14, α)	2.818	Adjusted Chi Square Value (8.14, β)	2.615
95% Gamma Approximate KM-UCL (use when n>=50)	1208	95% Gamma Adjusted KM-UCL (use when n<50)	1302

BENZO(A)ANTHRACENE (CONTINUED)

Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detected data is small such as < 0.1			
For such situations, GROS method tends to yield inflated values of UCLs and BTVs			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	416.8
Maximum	4500	Median	15.5
SD	1077	CV	2.585
k hat (MLE)	0.177	k star (bias corrected MLE)	0.182
Theta hat (MLE)	2354	Theta star (bias corrected MLE)	2287
nu hat (MLE)	9.209	nu star (bias corrected)	9.48
MLE Mean (bias corrected)	416.8	MLE Sd (bias corrected)	976.3
		Adjusted Level of Significance (β)	0.0398
Approximate Chi Square Value (9.48, α)	3.619	Adjusted Chi Square Value (9.48, β)	3.383
95% Gamma Approximate UCL (use when n>=50)	1092	95% Gamma Adjusted UCL (use when n<50)	1168
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.828	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.905	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.237	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.198	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	417.7	Mean in Log Scale	3.116
SD in Original Scale	1077	SD in Log Scale	2.277
95% t UCL (assumes normality of ROS data)	778.5	95% Percentile Bootstrap UCL	794.6
95% BCA Bootstrap UCL	911.5	95% Bootstrap t UCL	1296
95% H-UCL (Log ROS)	2306		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	418.1	Mean in Log Scale	3.255
SD in Original Scale	1077	SD in Log Scale	2.135
95% t UCL (Assumes normality)	778.9	95% H-Stat UCL	1541
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
99% KM (Chebyshev) UCL	2532		
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			

BENZO(A)PYRENE

General Statistics			
Total Number of Observations	26	Number of Distinct Observations	20
Number of Detects	20	Number of Non-Detects	6
Number of Distinct Detects	18	Number of Distinct Non-Detects	3
Minimum Detect	4.2	Minimum Non-Detect	10
Maximum Detect	3700	Maximum Non-Detect	12
Variance Detects	955844	Percent Non-Detects	23.08%
Mean Detects	437.4	SD Detects	977.7
Median Detects	19.5	CV Detects	2.235
Skewness Detects	2.546	Kurtosis Detects	6.343
Mean of Logged Detects	3.661	SD of Logged Detects	2.121

Normal GOF Test on Detects Only		
Shapiro Wilk Test Statistic	0.52	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.905	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.446	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.198	Detected Data Not Normal at 5% Significance Level
Detected Data Not Normal at 5% Significance Level		

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	337.9	Standard Error of Mean	172.1
SD	855.3	95% KM (BCA) UCL	649.9
95% KM (t) UCL	631.9	95% KM (Percentile Bootstrap) UCL	657.1
95% KM (z) UCL	621	95% KM Bootstrap t UCL	1012
90% KM Chebyshev UCL	854.2	95% KM Chebyshev UCL	1088
97.5% KM Chebyshev UCL	1413	99% KM Chebyshev UCL	2050

Gamma GOF Tests on Detected Observations Only		
A-D Test Statistic	2.886	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.851	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.376	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.211	Detected Data Not Gamma Distributed at 5% Significance Level
Detected Data Not Gamma Distributed at 5% Significance Level		

Gamma Statistics on Detected Data Only			
k hat (MLE)	0.287	k star (bias corrected MLE)	0.277
Theta hat (MLE)	1524	Theta star (bias corrected MLE)	1577
nu hat (MLE)	11.48	nu star (bias corrected)	11.09
MLE Mean (bias corrected)	437.4	MLE Sd (bias corrected)	830.6

Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.156	nu hat (KM)	8.118
Approximate Chi Square Value (8.12, α)	2.803	Adjusted Chi Square Value (8.12, β)	2.601
95% Gamma Approximate KM-UCL (use when n>=50)	978.5	95% Gamma Adjusted KM-UCL (use when n<50)	1055

BENZO(A)PYRENE (CONTINUED)

Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detected data is small such as < 0.1			
For such situations, GROS method tends to yield inflated values of UCLs and BTVs			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	336.5
Maximum	3700	Median	13
SD	872.8	CV	2.594
k hat (MLE)	0.183	k star (bias corrected MLE)	0.188
Theta hat (MLE)	1834	Theta star (bias corrected MLE)	1790
nu hat (MLE)	9.54	nu star (bias corrected)	9.773
MLE Mean (bias corrected)	336.5	MLE Sd (bias corrected)	776.1
		Adjusted Level of Significance (β)	0.0398
Approximate Chi Square Value (9.77, α)	3.8	Adjusted Chi Square Value (9.77, β)	3.557
95% Gamma Approximate UCL (use when n>=50)	865.3	95% Gamma Adjusted UCL (use when n<50)	924.5
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.811	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.905	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.27	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.198	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	337.4	Mean in Log Scale	3.098
SD in Original Scale	872.4	SD in Log Scale	2.149
95% t UCL (assumes normality of ROS data)	629.7	95% Percentile Bootstrap UCL	634.2
95% BCA Bootstrap UCL	789.5	95% Bootstrap t UCL	1024
95% H-UCL (Log ROS)	1387		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	337.7	Mean in Log Scale	3.209
SD in Original Scale	872.3	SD in Log Scale	2.032
95% t UCL (Assumes normality)	629.9	95% H-Stat UCL	1014
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
99% KM (Chebyshev) UCL	2050		
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			

BENZO(B)FLUORANTHENE			
General Statistics			
Total Number of Observations	26	Number of Distinct Observations	21
Number of Detects	24	Number of Non-Detects	2
Number of Distinct Detects	20	Number of Distinct Non-Detects	1
Minimum Detect	3.1	Minimum Non-Detect	11
Maximum Detect	5800	Maximum Non-Detect	11
Variance Detects	1987680	Percent Non-Detects	7.692%
Mean Detects	571.8	SD Detects	1410
Median Detects	26.5	CV Detects	2.465
Skewness Detects	2.862	Kurtosis Detects	8.312
Mean of Logged Detects	3.703	SD of Logged Detects	2.163
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.472	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.916	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.464	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.181	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	528.3	Standard Error of Mean	267.4
SD	1335	95% KM (BCA) UCL	1020
95% KM (t) UCL	985	95% KM (Percentile Bootstrap) UCL	1008
95% KM (z) UCL	968.1	95% KM Bootstrap t UCL	1592
90% KM Chebyshev UCL	1330	95% KM Chebyshev UCL	1694
97.5% KM Chebyshev UCL	2198	99% KM Chebyshev UCL	3189
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	3.482	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.867	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.38	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.195	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.266	k star (bias corrected MLE)	0.26
Theta hat (MLE)	2152	Theta star (bias corrected MLE)	2197
nu hat (MLE)	12.76	nu star (bias corrected)	12.5
MLE Mean (bias corrected)	571.8	MLE Sd (bias corrected)	1121
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.157	nu hat (KM)	8.148
Approximate Chi Square Value (8.15, α)	2.821	Adjusted Chi Square Value (8.15, β)	2.618
95% Gamma Approximate KM-UCL (use when n>=50)	1526	95% Gamma Adjusted KM-UCL (use when n<50)	1644

BENZO(B)FLUORANTHENE (CONTINUED)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	527.9
Maximum	5800	Median	21.5
SD	1361	CV	2.579
k hat (MLE)	0.225	k star (bias corrected MLE)	0.225
Theta hat (MLE)	2343	Theta star (bias corrected MLE)	2346
nu hat (MLE)	11.72	nu star (bias corrected)	11.7
MLE Mean (bias corrected)	527.9	MLE Sd (bias corrected)	1113
		Adjusted Level of Significance (β)	0.0398
Approximate Chi Square Value (11.70, α)	5.029	Adjusted Chi Square Value (11.70, β)	4.742
95% Gamma Approximate UCL (use when n>=50)	1228	95% Gamma Adjusted UCL (use when n<50)	1302

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.836	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.916	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.242	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.181	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	528.2	Mean in Log Scale	3.527
SD in Original Scale	1361	SD in Log Scale	2.171
95% t UCL (assumes normality of ROS data)	984.2	95% Percentile Bootstrap UCL	1015
95% BCA Bootstrap UCL	1169	95% Bootstrap t UCL	1621
95% H-UCL (Log ROS)	2307		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	528.3	Mean in Log Scale	3.549
SD in Original Scale	1361	SD in Log Scale	2.145
95% t UCL (Assumes normality)	984.2	95% H-Stat UCL	2142

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	3189

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(G,H,I)PERYLENE			
General Statistics			
Total Number of Observations	26	Number of Distinct Observations	20
Number of Detects	18	Number of Non-Detects	8
Number of Distinct Detects	16	Number of Distinct Non-Detects	4
Minimum Detect	2.3	Minimum Non-Detect	2.2
Maximum Detect	1800	Maximum Non-Detect	12
Variance Detects	246339	Percent Non-Detects	30.77%
Mean Detects	236.2	SD Detects	496.3
Median Detects	11.5	CV Detects	2.101
Skewness Detects	2.378	Kurtosis Detects	5.431
Mean of Logged Detects	3.139	SD of Logged Detects	2.159
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.551	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.425	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.209	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	165	Standard Error of Mean	83.81
SD	415.3	95% KM (BCA) UCL	330.9
95% KM (t) UCL	308.2	95% KM (Percentile Bootstrap) UCL	310.9
95% KM (z) UCL	302.9	95% KM Bootstrap t UCL	432.7
90% KM Chebyshev UCL	416.4	95% KM Chebyshev UCL	530.3
97.5% KM Chebyshev UCL	688.4	99% KM Chebyshev UCL	998.9
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	2.335	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.843	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.375	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.221	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.297	k star (bias corrected MLE)	0.285
Theta hat (MLE)	795.2	Theta star (bias corrected MLE)	830.1
nu hat (MLE)	10.69	nu star (bias corrected)	10.24
MLE Mean (bias corrected)	236.2	MLE Sd (bias corrected)	442.8
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.158	nu hat (KM)	8.209
Approximate Chi Square Value (8.21, α)	2.857	Adjusted Chi Square Value (8.21, β)	2.652
95% Gamma Approximate KM-UCL (use when n>=50)	474.2	95% Gamma Adjusted KM-UCL (use when n<50)	510.8

BENZO(G,H,I)PERYLENE (CONTINUED)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	163.5
Maximum	1800	Median	5.7
SD	424.1	CV	2.594
k hat (MLE)	0.173	k star (bias corrected MLE)	0.179
Theta hat (MLE)	943.5	Theta star (bias corrected MLE)	913.7
nu hat (MLE)	9.012	nu star (bias corrected)	9.306
MLE Mean (bias corrected)	163.5	MLE Sd (bias corrected)	386.5
		Adjusted Level of Significance (β)	0.0398
Approximate Chi Square Value (9.31, α)	3.513	Adjusted Chi Square Value (9.31, β)	3.28
95% Gamma Approximate UCL (use when n>=50)	433.2	95% Gamma Adjusted UCL (use when n<50)	463.8

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.825	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.29	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.209	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	164.9	Mean in Log Scale	2.454
SD in Original Scale	423.5	SD in Log Scale	2.2
95% t UCL (assumes normality of ROS data)	306.8	95% Percentile Bootstrap UCL	309.5
95% BCA Bootstrap UCL	356.8	95% Bootstrap t UCL	478.4
95% H-UCL (Log ROS)	882.1		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	165	Mean in Log Scale	2.635
SD in Original Scale	423.5	SD in Log Scale	1.963
95% t UCL (Assumes normality)	306.9	95% H-Stat UCL	450.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	998.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

BENZO(K)FLUORANTHENE			
General Statistics			
Total Number of Observations	26	Number of Distinct Observations	19
Number of Detects	19	Number of Non-Detects	7
Number of Distinct Detects	18	Number of Distinct Non-Detects	3
Minimum Detect	4.3	Minimum Non-Detect	10
Maximum Detect	1700	Maximum Non-Detect	12
Variance Detects	211492	Percent Non-Detects	26.92%
Mean Detects	215	SD Detects	459.9
Median Detects	15	CV Detects	2.139
Skewness Detects	2.47	Kurtosis Detects	5.839
Mean of Logged Detects	3.358	SD of Logged Detects	1.902
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.535	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.901	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.438	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.203	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	158.8	Standard Error of Mean	79.32
SD	393.7	95% KM (BCA) UCL	311.8
95% KM (t) UCL	294.3	95% KM (Percentile Bootstrap) UCL	299.4
95% KM (z) UCL	289.3	95% KM Bootstrap t UCL	422.5
90% KM Chebyshev UCL	396.8	95% KM Chebyshev UCL	504.6
97.5% KM Chebyshev UCL	654.2	99% KM Chebyshev UCL	948.1
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	2.69	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.836	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.361	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.214	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.336	k star (bias corrected MLE)	0.318
Theta hat (MLE)	639.3	Theta star (bias corrected MLE)	675.5
nu hat (MLE)	12.78	nu star (bias corrected)	12.09
MLE Mean (bias corrected)	215	MLE Sd (bias corrected)	381.1
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.163	nu hat (KM)	8.462
Approximate Chi Square Value (8.46, α)	3.005	Adjusted Chi Square Value (8.46, β)	2.794
95% Gamma Approximate KM-UCL (use when n>=50)	447.2	95% Gamma Adjusted KM-UCL (use when n<50)	481

BENZO(K)FLUORANTHENE (CONTINUED)

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	157.1
Maximum	1700	Median	10.15
SD	402.2	CV	2.56
k hat (MLE)	0.193	k star (bias corrected MLE)	0.196
Theta hat (MLE)	815.7	Theta star (bias corrected MLE)	801.5
nu hat (MLE)	10.02	nu star (bias corrected)	10.19
MLE Mean (bias corrected)	157.1	MLE Sd (bias corrected)	354.9
		Adjusted Level of Significance (β)	0.0398
Approximate Chi Square Value (10.19, α)	4.063	Adjusted Chi Square Value (10.19, β)	3.81
95% Gamma Approximate UCL (use when n>=50)	394.2	95% Gamma Adjusted UCL (use when n<50)	420.4

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.802	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.901	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.262	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.203	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	158.5	Mean in Log Scale	2.849
SD in Original Scale	401.6	SD in Log Scale	1.859
95% t UCL (assumes normality of ROS data)	293.1	95% Percentile Bootstrap UCL	290.1
95% BCA Bootstrap UCL	364	95% Bootstrap t UCL	475.4
95% H-UCL (Log ROS)	396.9		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	158.6	Mean in Log Scale	2.913
SD in Original Scale	401.6	SD in Log Scale	1.779
95% t UCL (Assumes normality)	293.1	95% H-Stat UCL	328.6

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	948.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

CHRYSENE			
General Statistics			
Total Number of Observations	26	Number of Distinct Observations	24
Number of Detects	22	Number of Non-Detects	4
Number of Distinct Detects	21	Number of Distinct Non-Detects	3
Minimum Detect	2.7	Minimum Non-Detect	10
Maximum Detect	4900	Maximum Non-Detect	12
Variance Detects	1453386	Percent Non-Detects	15.38%
Mean Detects	498.7	SD Detects	1206
Median Detects	20	CV Detects	2.418
Skewness Detects	2.875	Kurtosis Detects	8.553
Mean of Logged Detects	3.635	SD of Logged Detects	2.134
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.481	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.461	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.189	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	423	Standard Error of Mean	220.4
SD	1098	95% KM (BCA) UCL	855.3
95% KM (t) UCL	799.4	95% KM (Percentile Bootstrap) UCL	815.4
95% KM (z) UCL	785.5	95% KM Bootstrap t UCL	1364
90% KM Chebyshev UCL	1084	95% KM Chebyshev UCL	1384
97.5% KM Chebyshev UCL	1799	99% KM Chebyshev UCL	2616
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	3.333	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.861	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.392	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.202	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.272	k star (bias corrected MLE)	0.265
Theta hat (MLE)	1834	Theta star (bias corrected MLE)	1881
nu hat (MLE)	11.97	nu star (bias corrected)	11.67
MLE Mean (bias corrected)	498.7	MLE Sd (bias corrected)	968.4
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.148	nu hat (KM)	7.718
Approximate Chi Square Value (7.72, α)	2.573	Adjusted Chi Square Value (7.72, β)	2.381
95% Gamma Approximate KM-UCL (use when n>=50)	1269	95% Gamma Adjusted KM-UCL (use when n<50)	1371

CHRYSENE (CONTINUED)

Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detected data is small such as < 0.1			
For such situations, GROS method tends to yield inflated values of UCLs and BTVs			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	421.9
Maximum	4900	Median	16
SD	1120	CV	2.654
k hat (MLE)	0.2	k star (bias corrected MLE)	0.203
Theta hat (MLE)	2109	Theta star (bias corrected MLE)	2082
nu hat (MLE)	10.41	nu star (bias corrected)	10.54
MLE Mean (bias corrected)	421.9	MLE Sd (bias corrected)	937.3
		Adjusted Level of Significance (β)	0.0398
Approximate Chi Square Value (10.54, α)	4.281	Adjusted Chi Square Value (10.54, β)	4.02
95% Gamma Approximate UCL (use when n>=50)	1039	95% Gamma Adjusted UCL (use when n<50)	1106
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.817	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.246	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.189	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	422.7	Mean in Log Scale	3.315
SD in Original Scale	1120	SD in Log Scale	2.105
95% t UCL (assumes normality of ROS data)	797.8	95% Percentile Bootstrap UCL	790.2
95% BCA Bootstrap UCL	995.3	95% Bootstrap t UCL	1367
95% H-UCL (Log ROS)	1469		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	422.8	Mean in Log Scale	3.338
SD in Original Scale	1120	SD in Log Scale	2.081
95% t UCL (Assumes normality)	797.9	95% H-Stat UCL	1376
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
99% KM (Chebyshev) UCL	2616		
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			

DIBENZO(A,H)ANTHRACENE			
General Statistics			
Total Number of Observations	26	Number of Distinct Observations	19
Number of Detects	16	Number of Non-Detects	10
Number of Distinct Detects	15	Number of Distinct Non-Detects	4
Minimum Detect	2.5	Minimum Non-Detect	1.9
Maximum Detect	590	Maximum Non-Detect	12
Variance Detects	27229	Percent Non-Detects	38.46%
Mean Detects	83.33	SD Detects	165
Median Detects	5.875	CV Detects	1.98
Skewness Detects	2.394	Kurtosis Detects	5.712
Mean of Logged Detects	2.612	SD of Logged Detects	1.858
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.574	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.411	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.222	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	52.94	Standard Error of Mean	26.56
SD	131.1	95% KM (BCA) UCL	105.1
95% KM (t) UCL	98.3	95% KM (Percentile Bootstrap) UCL	101.1
95% KM (z) UCL	96.62	95% KM Bootstrap t UCL	177.3
90% KM Chebyshev UCL	132.6	95% KM Chebyshev UCL	168.7
97.5% KM Chebyshev UCL	218.8	99% KM Chebyshev UCL	317.2
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	2.244	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.824	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.368	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.231	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.368	k star (bias corrected MLE)	0.341
Theta hat (MLE)	226.3	Theta star (bias corrected MLE)	244.4
nu hat (MLE)	11.78	nu star (bias corrected)	10.91
MLE Mean (bias corrected)	83.33	MLE Sd (bias corrected)	142.7
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.163	nu hat (KM)	8.48
Approximate Chi Square Value (8.48, α)	3.016	Adjusted Chi Square Value (8.48, β)	2.804
95% Gamma Approximate KM-UCL (use when n>=50)	148.9	95% Gamma Adjusted KM-UCL (use when n<50)	160.1

DIBENZO(A,H)ANTHRACENE (CONTINUED)

Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detected data is small such as < 0.1			
For such situations, GROS method tends to yield inflated values of UCLs and BTVs			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	54.05
Maximum	590	Median	4.65
SD	133.7	CV	2.474
k hat (MLE)	0.207	k star (bias corrected MLE)	0.209
Theta hat (MLE)	261.2	Theta star (bias corrected MLE)	259
nu hat (MLE)	10.76	nu star (bias corrected)	10.85
MLE Mean (bias corrected)	54.05	MLE Sd (bias corrected)	118.3
		Adjusted Level of Significance (β)	0.0398
Approximate Chi Square Value (10.85, α)	4.481	Adjusted Chi Square Value (10.85, β)	4.213
95% Gamma Approximate UCL (use when n>=50)	130.9	95% Gamma Adjusted UCL (use when n<50)	139.2
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.775	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.311	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.222	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	53.69	Mean in Log Scale	2.08
SD in Original Scale	133.5	SD in Log Scale	1.786
95% t UCL (assumes normality of ROS data)	98.4	95% Percentile Bootstrap UCL	100.8
95% BCA Bootstrap UCL	118.7	95% Bootstrap t UCL	174.3
95% H-UCL (Log ROS)	146.1		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	53.22	Mean in Log Scale	2.195
SD in Original Scale	133.6	SD in Log Scale	1.572
95% t UCL (Assumes normality)	97.97	95% H-Stat UCL	88.02
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
99% KM (Chebyshev) UCL	317.2		
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			

INDENO(1,2,3-CD)PYRENE			
General Statistics			
Total Number of Observations	26	Number of Distinct Observations	24
Number of Detects	23	Number of Non-Detects	3
Number of Distinct Detects	23	Number of Distinct Non-Detects	1
Minimum Detect	2.1	Minimum Non-Detect	11
Maximum Detect	2800	Maximum Non-Detect	11
Variance Detects	487156	Percent Non-Detects	11.54%
Mean Detects	292.6	SD Detects	698
Median Detects	14.5	CV Detects	2.385
Skewness Detects	2.758	Kurtosis Detects	7.592
Mean of Logged Detects	3.149	SD of Logged Detects	2.151
Normal GOF Test on Detects Only			
Shapiro Wilk Test Statistic	0.487	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.914	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.448	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.185	Detected Data Not Normal at 5% Significance Level	
Detected Data Not Normal at 5% Significance Level			
Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs			
Mean	259.5	Standard Error of Mean	130.1
SD	648.6	95% KM (BCA) UCL	513.5
95% KM (t) UCL	481.6	95% KM (Percentile Bootstrap) UCL	484.7
95% KM (z) UCL	473.4	95% KM Bootstrap t UCL	751
90% KM Chebyshev UCL	649.6	95% KM Chebyshev UCL	826.4
97.5% KM Chebyshev UCL	1072	99% KM Chebyshev UCL	1553
Gamma GOF Tests on Detected Observations Only			
A-D Test Statistic	3.085	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.86	Detected Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.363	**Kolmogrov-Smirnoff GOF**	
5% K-S Critical Value	0.198	Detected Data Not Gamma Distributed at 5% Significance Level	
Detected Data Not Gamma Distributed at 5% Significance Level			
Gamma Statistics on Detected Data Only			
k hat (MLE)	0.276	k star (bias corrected MLE)	0.269
Theta hat (MLE)	1059	Theta star (bias corrected MLE)	1087
nu hat (MLE)	12.71	nu star (bias corrected)	12.38
MLE Mean (bias corrected)	292.6	MLE Sd (bias corrected)	564
Gamma Kaplan-Meier (KM) Statistics			
k hat (KM)	0.16	nu hat (KM)	8.322
Approximate Chi Square Value (8.32, α)	2.923	Adjusted Chi Square Value (8.32, β)	2.715
95% Gamma Approximate KM-UCL (use when n>=50)	738.7	95% Gamma Adjusted KM-UCL (use when n<50)	795.3

INDENO(1,2,3-CD)PYRENE (CONTINUED)

Gamma ROS Statistics using Imputed Non-Detects			
GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs			
GROS may not be used when kstar of detected data is small such as < 0.1			
For such situations, GROS method tends to yield inflated values of UCLs and BTVs			
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates			
Minimum	0.01	Mean	258.9
Maximum	2800	Median	11
SD	661.7	CV	2.556
k hat (MLE)	0.22	k star (bias corrected MLE)	0.22
Theta hat (MLE)	1179	Theta star (bias corrected MLE)	1177
nu hat (MLE)	11.42	nu star (bias corrected)	11.44
MLE Mean (bias corrected)	258.9	MLE Sd (bias corrected)	552
		Adjusted Level of Significance (β)	0.0398
Approximate Chi Square Value (11.44, α)	4.858	Adjusted Chi Square Value (11.44, β)	4.577
95% Gamma Approximate UCL (use when n>=50)	609.4	95% Gamma Adjusted UCL (use when n<50)	646.9
Lognormal GOF Test on Detected Observations Only			
Shapiro Wilk Test Statistic	0.848	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.914	Detected Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.224	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.185	Detected Data Not Lognormal at 5% Significance Level	
Detected Data Not Lognormal at 5% Significance Level			
Lognormal ROS Statistics Using Imputed Non-Detects			
Mean in Original Scale	259.5	Mean in Log Scale	2.947
SD in Original Scale	661.4	SD in Log Scale	2.112
95% t UCL (assumes normality of ROS data)	481	95% Percentile Bootstrap UCL	495.6
95% BCA Bootstrap UCL	595	95% Bootstrap t UCL	771.1
95% H-UCL (Log ROS)	1041		
DL/2 Statistics			
DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	259.5	Mean in Log Scale	2.983
SD in Original Scale	661.4	SD in Log Scale	2.072
95% t UCL (Assumes normality)	481.1	95% H-Stat UCL	933
DL/2 is not a recommended method, provided for comparisons and historical reasons			
Nonparametric Distribution Free UCL Statistics			
Data do not follow a Discernible Distribution at 5% Significance Level			
Suggested UCL to Use			
99% KM (Chebyshev) UCL	1553		
Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
Recommendations are based upon data size, data distribution, and skewness.			
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).			
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.			

Building 219

PROUCL OUTPUT - SURFACE SOIL

UCL Statistics for Uncensored Full Data Sets	
User Selected Options	
Date/Time of Computation	5/8/2014 4:52:39 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Aroclor-1260

General Statistics			
Total Number of Observations	12	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	24	Mean	3780
Maximum	18000	Median	1850
SD	5441	Std. Error of Mean	1571
Coefficient of Variation	1.44	Skewness	2.042

Normal GOF Test		
Shapiro Wilk Test Statistic	0.716	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.288	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.256	Data Not Normal at 5% Significance Level
Data Not Normal at 5% Significance Level		

Assuming Normal Distribution			
95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6600	95% Adjusted-CLT UCL (Chen-1995)	7353
		95% Modified-t UCL (Johnson-1978)	6755

Gamma GOF Test		
A-D Test Statistic	0.186	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.785	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.114	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.259	Detected data appear Gamma Distributed at 5% Significance Level
Detected data appear Gamma Distributed at 5% Significance Level		

Gamma Statistics			
k hat (MLE)	0.503	k star (bias corrected MLE)	0.433
Theta hat (MLE)	7518	Theta star (bias corrected MLE)	8737
nu hat (MLE)	12.07	nu star (bias corrected)	10.38
MLE Mean (bias corrected)	3780	MLE Sd (bias corrected)	5746
		Approximate Chi Square Value (0.05)	4.182
Adjusted Level of Significance	0.029	Adjusted Chi Square Value	3.602

Assuming Gamma Distribution			
95% Approximate Gamma UCL (use when n>=50)	9383	95% Adjusted Gamma UCL (use when n<50)	10896

Aroclor-1260 (continued)

Lognormal GOF Test											
Shapiro Wilk Test Statistic					0.943	**Shapiro Wilk Lognormal GOF Test**					
5% Shapiro Wilk Critical Value					0.859	Data appear Lognormal at 5% Significance Level					
Lilliefors Test Statistic					0.153	**Lilliefors Lognormal GOF Test**					
5% Lilliefors Critical Value					0.256	Data appear Lognormal at 5% Significance Level					
Data appear Lognormal at 5% Significance Level											
Lognormal Statistics											
Minimum of Logged Data					3.178	Mean of logged Data					6.975
Maximum of Logged Data					9.798	SD of logged Data					2.059
Assuming Lognormal Distribution											
95% H-UCL					209845	90% Chebyshev (MVUE) UCL					17514
95% Chebyshev (MVUE) UCL					22733	97.5% Chebyshev (MVUE) UCL					29978
99% Chebyshev (MVUE) UCL					44210						
Nonparametric Distribution Free UCL Statistics											
Data appear to follow a Discernible Distribution at 5% Significance Level											
Nonparametric Distribution Free UCLs											
95% CLT UCL					6363	95% Jackknife UCL					6600
95% Standard Bootstrap UCL					6240	95% Bootstrap-t UCL					11279
95% Hall's Bootstrap UCL					19574	95% Percentile Bootstrap UCL					6388
95% BCA Bootstrap UCL					7557						
90% Chebyshev(Mean, Sd) UCL					8492	95% Chebyshev(Mean, Sd) UCL					10626
97.5% Chebyshev(Mean, Sd) UCL					13588	99% Chebyshev(Mean, Sd) UCL					19407
Suggested UCL to Use											
95% Adjusted Gamma UCL					10896						

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PROUCL OUTPUT - ALL SOIL

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/12/2014 10:16:16 AM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Aroclor-1260

General Statistics

Total Number of Observations	22	Number of Distinct Observations	19
		Number of Missing Observations	1
Number of Detects	15	Number of Non-Detects	7
Number of Distinct Detects	15	Number of Distinct Non-Detects	4
Minimum Detect	24	Minimum Non-Detect	8.6
Maximum Detect	18000	Maximum Non-Detect	9.1
Variance Detects	25614253	Percent Non-Detects	31.82%
Mean Detects	3038	SD Detects	5061
Median Detects	600	CV Detects	1.666
Skewness Detects	2.331	Kurtosis Detects	5.389
Mean of Logged Detects	6.407	SD of Logged Detects	2.189

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.654	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.276	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.229	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2074	Standard Error of Mean	943.8
SD	4277	95% KM (BCA) UCL	3727
95% KM (t) UCL	3698	95% KM (Percentile Bootstrap) UCL	3683
95% KM (z) UCL	3627	95% KM Bootstrap t UCL	6766
90% KM Chebyshev UCL	4906	95% KM Chebyshev UCL	6188
97.5% KM Chebyshev UCL	7969	99% KM Chebyshev UCL	11465

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.378	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.813	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.143	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.237	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.407	k star (bias corrected MLE)	0.37
Theta hat (MLE)	7464	Theta star (bias corrected MLE)	8209
nu hat (MLE)	12.21	nu star (bias corrected)	11.1
MLE Mean (bias corrected)	3038	MLE Sd (bias corrected)	4994

Aroclor-1260 (continued)

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.235	nu hat (KM)	10.35
Approximate Chi Square Value (10.35, α)	4.162	Adjusted Chi Square Value (10.35, β)	3.873
95% Gamma Approximate KM-UCL (use when n>=50)	5159	95% Gamma Adjusted KM-UCL (use when n<50)	5544

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	2072
Maximum	18000	Median	97
SD	4379	CV	2.114
k hat (MLE)	0.161	k star (bias corrected MLE)	0.169
Theta hat (MLE)	12887	Theta star (bias corrected MLE)	12249
nu hat (MLE)	7.073	nu star (bias corrected)	7.442
MLE Mean (bias corrected)	2072	MLE Sd (bias corrected)	5037
		Adjusted Level of Significance (β)	0.0386
Approximate Chi Square Value (7.44, α)	2.416	Adjusted Chi Square Value (7.44, β)	2.208
95% Gamma Approximate UCL (use when n>=50)	6381	95% Gamma Adjusted UCL (use when n<50)	6983

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.944	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.135	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.229	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2073	Mean in Log Scale	4.73
SD in Original Scale	4378	SD in Log Scale	3.116
95% t UCL (assumes normality of ROS data)	3679	95% Percentile Bootstrap UCL	3735
95% BCA Bootstrap UCL	4250	95% Bootstrap t UCL	6664
95% H-UCL (Log ROS)	978747		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	5.053	95% H-UCL (KM -Log)	110515
KM SD (logged)	2.642	95% Critical H Value (KM-Log)	5.326
KM Standard Error of Mean (logged)	0.583		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2073	Mean in Log Scale	4.842
SD in Original Scale	4378	SD in Log Scale	2.949
95% t UCL (Assumes normality)	3679	95% H-Stat UCL	433140

DL/2 is not a recommended method, provided for comparisons and historical reasons

Aroclor-1260 (continued)

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	3727	95% GROS Adjusted Gamma UCL	6983
95% Adjusted Gamma KM-UCL	5544		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

APPENDIX H.4

SAMPLE CALCULATIONS

CALCULATION WORKSHEET

CLIENT: NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM INCIDENTAL INGESTION OF SOIL INDUSTRIAL WORKERS		
BASED ON: USEPA, DECEMBER 1989		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

PURPOSE: To estimate intake, carcinogenic and noncarcinogenic risks from incidental ingestion of surface soil at Tank Farm 2.

EQUATION:

$$IEX = \frac{CS \times RBA \times IR \times EF \times ED \times FI \times CF}{BW \times AT}$$

Where:

IEX	=	estimated exposure intake (mg/kg/day)
Cs	=	exposure point concentration in soil (mg/kg)
RBA	=	relative bioavailability (unitless)
IR	=	incidental ingestion rate (mg/day)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
FI	=	fraction ingested from contaminated source (unitless)
CF	=	conversion factor (1E-06 kg/mg)
BW	=	body weight (kg)
AT	=	averaging time (days)
CSFo	=	oral carcinogenic slope factor ($(mg/kg/day)^{-1}$)
RfDo	=	oral noncarcinogenic reference dose (mg/kg/day)

RISKS:

ILCR (Carcinogens) = Intake (mg/kg/day) x CSFo (mg/kg/day)-1
HQ (Noncarcinogens) = Intake (mg/kg/day) / RFDo (mg/kg/day)

ASSUMPTIONS:

Cs	=	6.50E-06	mg/kg	Chemical: 2,3,7,8-TCDD Equivalents
RBA	=	1		
IR	=	100	mg/day	
EF	=	250	days/year	
ED	=	25	years	
FI	=	1		
CF	=	1E-06	kg/mg	
BW	=	80	kg	
ATc	=	25,550	days	
ATnc	=	9125	days	
CSFo	=	1.3E+05	$(mg/kg/day)^{-1}$	
RfDo	=	7.0E-10	(mg/kg/day)	

CLIENT: NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM INCIDENTAL INGESTION OF SOIL INDUSTRIAL WORKERS		
BASED ON: USEPA, DECEMBER 1989		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

EXAMPLE CARCINOGENIC CALCULATION

$$IEXc = \frac{0.0000065\ mg/kg \times 1 \times 100\ mg/day \times 250\ days/year \times 25\ years \times 1 \times 1E\text{-}06\ kg/mg}{80\ kg \times 25550\ days}$$

IEXc = 1.99E-12 mg/kg/day

ILCR = 1.99E-12 mg/kg/day x 1.30E+05 (mg/kg/day)-1 = Incremental Lifetime Cancer Risk

ILCR = 2.6E-07

EXAMPLE NONCARCINOGENIC CALCULATION

$$IEXnc = \frac{0.0000065\ mg/kg \times 1 \times 100\ mg/day \times 250\ days/year \times 25\ years \times 1 \times 1E\text{-}06\ kg/mg}{80\ kg \times 9125\ days}$$

IEXnc = 5.57E-12 mg/kg/day

HQ = 5.57E-12 mg/kg/day / 7.00E-10 (mg/kg/day) = Hazard Quotient

HQ = 8.0E-03

CALCULATION WORKSHEET

CLIENT: NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM DERMAL CONTACT WITH SOIL INDUSTRIAL WORKERS		
BASED ON: USEPA, JULY 2004		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

PURPOSE: To estimate intake, carcinogenic and noncarcinogenic risks from dermal contact with of surface soil at Tank Farm 2.

EQUATION:

$$DEX = \frac{Cs \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT}$$

Where:

DEX	=	estimated exposure intake (mg/kg/day)
Cs	=	exposure point concentration in soil (mg/kg)
CF	=	conversion factor (1E-06 kg/mg)
SA	=	skin surface available for contact (cm2/day)
ABS	=	absorption factor (unitless)
AF	=	adherence factor (mg/cm2)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
BW	=	body weight (kg)
AT	=	averaging time (days)
CSFd	=	dermal carcinogenic slope factor ((mg/kg/day)$^{-1}$)
RfDd	=	dermal noncarcinogenic reference dose (mg/kg/day)

RISKS:

ILCR (Carcinogens) = Intake (mg/kg/day) x CSFd (mg/kg/day)-1
HQ (Noncarcinogens) = Intake (mg/kg/day) / RFDd (mg/kg/day)

ASSUMPTIONS:

Cs	=	0.0000065	mg/kg	Chemical: 2,3,7,8-TCDD Equivalents
CF	=	1E-06	kg/mg	
SA	=	3,470	cm^2/day	
AF	=	0.12	mg/cm^2	
ABS	=	0.03		
EF	=	250	days/year	
ED	=	25	years	
BW	=	80	kg	
ATc	=	25,550	days	
ATnc	=	9125	days	
CSFd	=	1.3E+05	(mg/kg/day)$^{-1}$	
RfDd	=	7.0E-10	(mg/kg/day)	

CLIENT: NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM DERMAL CONTACT WITH SOIL INDUSTRIAL WORKERS		
BASED ON: USEPA, JULY 2004		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

EXAMPLE CARCINOGENIC CALCULATION

$$DEXc = \frac{0.0000065 \text{ mg/kg} \times 1E\text{-}06 \text{ kg/mg} \times 3470 \text{ cm2/day} \times 0.12 \text{ mg/cm2} \times 0.03 \times 250 \text{ days/year} \times 25 \text{ years}}{80 \text{ kg} \times 25550 \text{ days}}$$

DEXc = 2.48E-13 mg/kg/day

ILCR = 2.48E-13 mg/kg/day x 1.30E+05 (mg/kg/day)-1 = Incremental Lifetime Cancer Risk

ILCR = 3.2E-08

EXAMPLE NONCARCINOGENIC CALCULATION

$$DEXnc = \frac{0.0000065 \text{ mg/kg} \times 1E\text{-}06 \text{ kg/mg} \times 3470 \text{ cm2/day} \times 0.12 \text{ mg/cm2} \times 0.03 \times 250 \text{ days/year} \times 25 \text{ years}}{80 \text{ kg} \times 9125 \text{ days}}$$

DEXnc = 6.95E-13 mg/kg/day

HQ = 6.95E-13 mg/kg/day / 7.00E-10 (mg/kg/day) = Hazard Quotient

HQ = 9.9E-04

CLIENT: NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM INHALATION OF FUGATIVE DUST EMISSIONS INDUSTRIAL WORKERS		
BASED ON: USEPA, JANUARY 2009		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

PURPOSE: To estimate intake, carcinogenic and noncarcinogenic risks from inhalation of of surface soil at Tank Farm 2.

EQUATION:

$$EC = \frac{Ca \times ET \times EF \times ED}{AT \times 24\ hours/day}$$

Where:

EC	=	exposure concentration (mg/m3)
Ca	=	exposure point concentration in air (mg/m3)
	=	Cs x 1/PEF
Cs	=	exposure point concentration in soil (mg/kg)
PEF	=	particulate emission factor (m3/kg)
ET	=	exposure time (hrs/day)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
BW	=	body weight (kg)
AT	=	averaging time (hours)
IUR	=	inhalation unit risk ($(ug/m3)^{-1}$)
RfC	=	inhalation reference concentration (mg/m3)

RISKS:

ILCR (Carcinogens) = Exposure Concentration (mg/m3) x IURi (ug/m3)-1 x 1000 ug/mg
HQ (Noncarcinogens) = Exposure Concentration (mg/m3) / RFCi (mg/m3)

ASSUMPTIONS:

Cs	=	0.0000065	mg/kg	Chemical: 2,3,7,8-TCDD Equivalents
PEF	=	1.10E+10	m3/kg	
Ca	=	5.91E-16	mg/m3	
ET	=	8	hours/day	
EF	=	250	days/year	
ED	=	25	years	
ATc	=	25,550	days	
ATnc	=	9,125	days	
IUR	=	3.8E+01	$(ug/m3)^{-1}$	
RfC	=	4.0E-08	(mg/m3)	

CLIENT: NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM INHALATION OF FUGATIVE DUST EMISSIONS INDUSTRIAL WORKERS		
BASED ON: USEPA, JANUARY 2009		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

EXAMPLE CARCINOGENIC CALCULATION

$$IEXc = \frac{5.91E\text{-}16 \text{ mg/m3} \times 8 \text{ hours/day} \times 250 \text{ days/year} \times 25 \text{ years}}{25550 \text{ days} \times 24 \text{ hours/day}}$$

IEXc = 4.82E-17 mg/m3

ILCR = 4.82E-17 mg/m3 x 3.80E+01 (ug/m3)-1 x 1000 ug/mg = Incremental Lifetime Cancer Risk

ILCR = 1.8E-12

EXAMPLE NONCARCINOGENIC CALCULATION

$$IEXnc = \frac{5.91E\text{-}16 \text{ mg/m3} \times 8 \text{ hours/day} \times 250 \text{ days/year} \times 25 \text{ years}}{9125 \text{ days} \times 24 \text{ hours/day}}$$

IEXnc = 1.35E-16 mg/m3

HQ = 1.35E-16 mg/m3 / 4.00E-08 (mg/m3) = Hazard Quotient

HQ **3.4E-09**

CLIENT: NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF PARTICULATE EMISSION FACTOR FOR CONSTRUCTION WORKERS		
BASED ON: Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (USEPA, December 2002)		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

Equation 5-5
Derivation of the Particulate Emission Factor
Construction Scenario - Construction Worker

$$PEF_{sc} = Q/C_{sr} \times \frac{1}{F_D} \times \left[\frac{T \times A_R}{556 \times (W/3)^{0.4} \times \frac{(365d/yr - p)}{365d/yr} \times \Sigma VKT} \right]$$

Parameter/Definition (units)	Default
PEF_{sc}/subchronic road particulate emission factor (m^3/kg)	site-specific
Q/C_{sr}/ inverse of the ratio of the 1-h geometric mean air concentration to the emission flux along a straight road segment bisecting a square site (g/m^2-s per kg/m^3)	23.02[a] (Equation 5-6)
F_D/dispersion correction factor (unitless)	0.185 (Appendix E)
T/total time over which construction occurs (s)	site-specific
A_R/surface area of contaminated road segment (m^2) L_R/length of road segment (ft) W_R/width of road segment (ft)	274.213 ($A_R = L_R \times W_R \times 0.092903 m^2/ft^2$)
W/mean vehicle weight (tons)	site-specific
p/number of days with at least 0.01 inches of precipitation (days/year)	site-specific (Exhibit 5-2)
ΣVKT/sum of fleet vehicle kilometers traveled during the exposure duration (km)	site-specific

[a] Assumes a 0.5 acre site

Calculation of PEF for Construction Workers

Q/C	23.02	(g/m^2-s per kg/m^3)	
Fd	0.185	dispersion correction factor (unitless)	
T	3.74E+06	sec	3600 sec/hr x 8hr/day x 130 days/yr
A_R	274.213	m^2	
W	8	tons	
p	135	day/year	
VKT	175.5	km	30 vehicles x 0.045 km/day x 130 days

PEF = 1.40E+06 m^3/kg

CALCULATION WORKSHEET

CLIENT: NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM INCIDENTAL INGESTION OF SOIL FOR MUTAGENIC CHEMICALS - HYPOTHETICAL CHILD RESIDENTS		
BASED ON: USEPA, DECEMBER 1989, MARCH 2005		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

PURPOSE: To estimate intake and cancer risks for mutagenic chemicals from incidental ingestion of surface soil.

EQUATION:

$$IEX = \frac{CS \times IR \times EF \times ED \times FI \times CF}{BW \times AT} \times ADAF$$

Where:

IEX	=	estimated exposure intake (mg/kg/day)
Cs	=	exposure point concentration in soil (mg/kg)
IR	=	incidental ingestion rate (mg/day)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
FI	=	fraction ingested from contaminated source (unitless)
CF	=	conversion factor (1.0E-6 kg/mg)
BW	=	body weight (kg)
AT	=	averaging time (days)
ADAF	=	age-dependent adjustment factor
CSFo	=	oral carcinogenic slope factor ($(mg/kg/day)^{-1}$)

RISKS:

ILCR (Carcinogens) = Intake (mg/kg/day) x CSFo (mg/kg/day)-1

ASSUMPTIONS:

Cs	=	0.41	mg/kg	Chemical: Benzo(a)pyrene
IR	=	200	mg/day	
EF	=	350	days/year	
ED_1	=	2	years	
ED_2	=	4	years	
FI	=	1		
CF	=	1.0E-06	kg/mg	
BW	=	15	kg	
AT	=	25,550	days	
CSFo	=	7.3E+00	$(mg/kg/day)^{-1}$	
$ADAF_1$	=	10		
$ADAF_2$	=	3		

CLIENT: NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM INCIDENTAL INGESTION OF SOIL FOR MUTAGENIC CHEMICALS - HYPOTHETICAL CHILD RESIDENTS		
BASED ON: USEPA, DECEMBER 1989, MARCH 2005		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

EXAMPLE CARCINOGENIC CALCULATION

$$IEX_1 = \frac{0.41 \text{ mg/kg} \times 200 \text{ mg/day} \times 350 \text{ days/year} \times 2 \text{ years} \times 1 \times 1.0E\text{-}06 \text{ kg/mg}}{15 \text{ kg} \times 25550 \text{ days}} \times 10$$

IEX_1 = 1.50E-06 mg/kg/day

$$IEX_2 = \frac{0.41 \text{ mg/kg} \times 200 \text{ mg/day} \times 350 \text{ days/year} \times 4 \text{ years} \times 1 \times 1.0E\text{-}06 \text{ kg/mg}}{15 \text{ kg} \times 25550 \text{ days}} \times 3$$

IEX_2 = 8.99E-07 mg/kg/day

ILCR = (1.50E-06 mg/kg/day + 8.99E-07 mg/kg/day) x 7.30E+00 (mg/kg/day)-1

ILCR = 1.7E-05

CLIENT: NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND		JOB NUMBER: 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM DERMAL CONTACT WITH SOIL FOR MUTAGENIC CHEMICALS HYPOTHETICAL CHILD RESIDENTS		
BASED ON: USEPA, JULY 2004, MARCH 2005		
BY: L. CIOFANI	CHECKED BY:	DATE: 5/08/2014

PURPOSE: To estimate intake and cancer risks for mutagenic chemicals from dermal contact with surface soil.

EQUATION:

$$DEX = \frac{Cs \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT} \times ADAF$$

Where:

DEX	=	estimated exposure intake (mg/kg/day)
Cs	=	exposure point concentration in soil (mg/kg)
CF	=	conversion factor (1.0E-6 kg/mg)
SA	=	skin surface available for contact (cm^2/day)
ABS	=	absorption factor (unitless)
AF	=	adherence factor (mg/cm^2)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
BW	=	body weight (kg)
AT	=	averaging time (days)
ADAF	=	age-dependent adjustment factor
CSFd	=	dermal carcinogenic slope factor ($(mg/kg/day)^{-1}$)

RISKS:

ILCR (Carcinogens) = Intake (mg/kg/day) x CSFd (mg/kg/day)-1

ASSUMPTIONS:

Cs	=	0.41	mg/kg	Chemical: Benzo(a)pyrene
CF	=	1.0E-06	kg/mg	
SA	=	2,690	cm^2/day	
AF	=	0.2	mg/cm^2	
ABS	=	0.13		
EF	=	350	days/year	
ED_1	=	2	years	
ED_2	=	4	years	
BW	=	15	kg	
AT	=	25,550	days	
CSFd	=	7.3E+00	$(mg/kg/day)^{-1}$	
$ADAF_1$	=	10		
$ADAF_2$	=	3		

CLIENT: NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM DERMAL CONTACT WITH SOIL FOR MUTAGENIC CHEMICALS HYPOTHETICAL CHILD RESIDENTS		
BASED ON: USEPA, JULY 2004, MARCH 2005		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

EXAMPLE CARCINOGENIC CALCULATION

$$DEXc = \frac{0.41\ mg/kg \times 1.0E\text{-}06\ kg/mg \times 2690\ cm2/day \times 0.2\ mg/cm2 \times 0.13 \times 350\ days/year \times 2\ years}{15\ kg \times 25550\ days} \times 10$$

DEXc = 5.24E-07 mg/kg/day

$$DEXc = \frac{0.41\ mg/kg \times 1.0E\text{-}06\ kg/mg \times 2690\ cm2/day \times 0.2\ mg/cm2 \times 0.13 \times 350\ days/year \times 4\ years}{15\ kg \times 25550\ days} \times 3$$

DEXc = 3.14E-07 mg/kg/day

ILCR = (5.24E-07 mg/kg/day + 3.14E-07 mg/kg/day) x 7.30E+00 (mg/kg/day)-1

ILCR = 6.1E-06

CLIENT: NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM INHALATION OF FUGATIVE DUST EMISSIONS FOR MUTAGENIC CHEMICALS - HYPOTHETICAL CHILD RESIDENTS		
BASED ON: USEPA, DECEMBER 1989, MARCH 2005		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

PURPOSE: To estimate intake, carcinogenic risks for mutagenic chemicals from inhalation of surface soil.

EQUATION:

$$EC = \frac{Ca \times ET \times EF \times ED}{AT \times 24\ hours/day} \times ADAF$$

Where:

EC	=	estimated exposure concentration (mg/m3)
Ca	=	exposure point concentration in air (mg/m3)
	=	Cs x 1/PEF
Cs	=	exposure point concentration in soil (mg/kg)
PEF	=	particulate emission factor (m3/kg)
ET	=	exposure time (hrs/day)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
AT	=	averaging time (hours)
ADAF	=	age-dependent adjustment factor
IUR	=	inhalation unit risk($(ug/mg)^{-1}$)

RISKS:

ILCR = Exposure concentration (mg/m3) x IURi (ug/m3)-1 x 1000 ug/mg

ASSUMPTIONS:

Cs	=	0.41	mg/kg	Chemical: Benzo(a)pyrene
PEF	=	1.10E+10	m3/kg	
Ca	=	3.73E-11	mg/m3	
ET	=	24	hr/day	
EF	=	350	days/year	
ED_1	=	2	years	
ED_2	=	4	years	
ATc	=	25,550	days	
IUR	=	1.1E-03	$(ug/m3)^{-1}$	
$ADAF_1$	=	10		
$ADAF_2$	=	3		

CLIENT: NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM INHALATION OF FUGATIVE DUST EMISSIONS FOR MUTAGENIC CHEMICALS - HYPOTHETICAL CHILD RESIDENTS		
BASED ON: USEPA, DECEMBER 1989, MARCH 2005		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

EXAMPLE CARCINOGENIC CALCULATION

$$EC = \frac{3.73E\text{-}11\ mg/m3 \times 24\ hr/day \times 350\ days/year \times 2\ years}{25550\ days \times 24\ hours/day} \times 10$$

EC = 1.02E-11 mg/m3

$$EC = \frac{3.73E\text{-}11\ mg/m3 \times 24\ hr/day \times 350\ days/year \times 4\ years}{25550\ days \times 24\ hours/day} \times 3$$

EC = 6.13E-12 mg/m3

ILCR = (1.02E-11 mg/m3 + 6.13E-12 mg/m3) x 1.10E-03 (ug/m3)-1 x 1000 ug/mg

ILCR = 1.8E-11

CALCULATION WORKSHEET

CLIENT: NAVSTA NEWPORT, NEWPORT, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM INCIDENTAL INGESTION OF SOIL FOR MUTAGENIC CHEMICALS - HYPOTHETICAL ADULT RESIDENTS		
BASED ON: USEPA, DECEMBER 1989, MARCH 2005		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

PURPOSE: To estimate intake and cancer risks for mutagenic chemicals from incidental ingestion of surface soil.

EQUATION:

$$IEX = \frac{CS \times IR \times EF \times ED \times FI \times CF}{BW \times AT} \times ADAF$$

Where:

IEX	=	estimated exposure intake (mg/kg/day)
Cs	=	exposure point concentration in soil (mg/kg)
IR	=	incidental ingestion rate (mg/day)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
FI	=	fraction ingested from contaminated source (unitless)
CF	=	conversion factor (1.0E-6 kg/mg)
BW	=	body weight (kg)
AT	=	averaging time (days)
ADAF	=	age-dependent adjustment factor
CSFo	=	oral carcinogenic slope factor ($(mg/kg/day)^{-1}$)

RISKS:

ILCR (Carcinogens) = Intake (mg/kg/day) x CSFo (mg/kg/day)-1

ASSUMPTIONS:

Cs	=	0.41	mg/kg	Chemical: Benzo(a)pyrene
IR	=	100	mg/day	
EF	=	350	days/year	
ED_1	=	10	years	
ED_2	=	10	years	
FI	=	1		
CF	=	1.0E-06	kg/mg	
BW	=	80	kg	
AT	=	25,550	days	
CSFo	=	7.3E+00	$(mg/kg/day)^{-1}$	
$ADAF_1$	=	3		
$ADAF_2$	=	1		

CLIENT: NAVSTA NEWPORT, NEWPORT, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM INCIDENTAL INGESTION OF SOIL FOR MUTAGENIC CHEMICALS - HYPOTHETICAL ADULT RESIDENTS		
BASED ON: USEPA, DECEMBER 1989, MARCH 2005		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

EXAMPLE CARCINOGENIC CALCULATION

$$IEX_1 = \frac{0.41\ mg/kg \times 100\ mg/day \times 350\ days/year \times 10\ years \times 1 \times 1.0E\text{-}06\ kg/mg}{80\ kg \times 25550\ days} \times 3$$

IEX_1 = 2.11E-07 mg/kg/day

$$IEX_2 = \frac{0.41\ mg/kg \times 100\ mg/day \times 350\ days/year \times 10\ years \times 1 \times 1.0E\text{-}06\ kg/mg}{80\ kg \times 25550\ days} \times 1$$

IEX_2 = 7.02E-08 mg/kg/day

ILCR = (2.11E-07 mg/kg/day + 7.02E-08 mg/kg/day) x 7.30E+00 (mg/kg/day)-1

ILCR = 2.1E-06

CLIENT: NAVSTA NEWPORT, NEWPORT, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM DERMAL CONTACT WITH SOIL FOR MUTAGENIC CHEMICALS HYPOTHETICAL ADULT RESIDENTS		
BASED ON: USEPA, JULY 2004, MARCH 2005		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

PURPOSE: To estimate intake and cancer risks for mutagenic chemicals from dermal contact with surface soil.

EQUATION:

$$DEX = \frac{Cs \times CF \times SA \times AF \times ABS \times EF \times ED}{BW \times AT} \times ADAF$$

Where:

DEX	=	estimated exposure intake (mg/kg/day)
Cs	=	exposure point concentration in soil (mg/kg)
CF	=	conversion factor (1.0E-6 kg/mg)
SA	=	skin surface available for contact (cm^2/day)
ABS	=	absorption factor (unitless)
AF	=	adherence factor (mg/cm^2)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
BW	=	body weight (kg)
AT	=	averaging time (days)
ADAF	=	age-dependent adjustment factor
CSFd	=	dermal carcinogenic slope factor ($(mg/kg/day)^{-1}$)

RISKS:

ILCR (Carcinogens) = Intake (mg/kg/day) x CSFd (mg/kg/day)-1

ASSUMPTIONS:

Cs	=	0.41	mg/kg	Chemical: Benzo(a)pyrene
CF	=	1.0E-06	kg/mg	
SA	=	6,032	cm^2/day	
AF	=	0.07	mg/cm^2	
ABS	=	0.13		
EF	=	350	days/year	
ED_1	=	10	years	
ED_2	=	10	years	
BW	=	80	kg	
AT	=	25,550	days	
CSFd	=	7.3E+00	$(mg/kg/day)^{-1}$	
$ADAF_1$	=	3		
$ADAF_2$	=	1		

CLIENT: NAVSTA NEWPORT, NEWPORT, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM DERMAL CONTACT WITH SOIL FOR MUTAGENIC CHEMICALS HYPOTHETICAL ADULT RESIDENTS		
BASED ON: USEPA, JULY 2004, MARCH 2005		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

EXAMPLE CARCINOGENIC CALCULATION

$$DEXc = \frac{0.41\ mg/kg \times 1.0E\text{-}06\ kg/mg \times 6032\ cm2/day \times 0.07\ mg/cm2 \times 0.13 \times 350\ days/year \times 10\ years}{80\ kg \times 25550\ days} \times 3$$

DEXc = 1.16E-07 mg/kg/day

$$DEXc = \frac{0.41\ mg/kg \times 1.0E\text{-}06\ kg/mg \times 6032\ cm2/day \times 0.07\ mg/cm2 \times 0.13 \times 350\ days/year \times 10\ years}{80\ kg \times 25550\ days} \times 1$$

DEXc = 3.85E-08 mg/kg/day

ILCR = (1.16E-07 mg/kg/day + 3.85E-08 mg/kg/day) x 7.30E+00 (mg/kg/day)-1

ILCR = 1.1E-06

CALCULATION WORKSHEET

CLIENT: NAVSTA NEWPORT, NEWPORT, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM INHALATION OF FUGATIVE DUST EMISSIONS FOR MUTAGENIC CHEMICALS - HYPOTHETICAL ADULT RESIDENTS		
BASED ON: USEPA, DECEMBER 1989, MARCH 2005		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

PURPOSE: To estimate intake, carcinogenic risks for mutagenic chemicals from inhalation of surface soil.

EQUATION:

$$EC = \frac{Ca \times ET \times EF \times ED}{AT \times 24\ hours/day} \times ADAF$$

Where:

EC	=	estimated exposure intake (mg/kg/day)
Ca	=	exposure point concentration in air (mg/m3)
	=	Cs x 1/PEF
Cs	=	exposure point concentration in soil (mg/kg)
PEF	=	particulate emission factor (m3/kg)
ET	=	exposure time (hrs/day)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
BW	=	body weight (kg)
AT	=	averaging time (hours)
ADAF	=	age-dependent adjustment factor
IURi	=	inhalation unit risk($(ug/mg)^{-1}$)

RISKS:

ILCR = Exposure concentration (mg/m3) x IUR (ug/m3)-1 x 1000 ug/mg

ASSUMPTIONS:

Cs	=	0.41	mg/kg	Chemical: Benzo(a)pyrene
PEF	=	1.10E+10	m3/kg	
Ca	=	3.73E-11	mg/m3	
ET	=	24	hr/day	
EF	=	350	days/year	
ED_1	=	10	years	
ED_2	=	10	years	
ATc	=	25,550	days	
IUR	=	1.1E-03	$(ug/m3)^{-1}$	
$ADAF_1$	=	3		
$ADAF_2$	=	1		

CLIENT: NAVSTA NEWPORT, NEWPORT, RHODE ISLAND		**JOB NUMBER:** 112G03019
SUBJECT: CALCULATION OF INTAKE/RISK FROM INHALATION OF FUGATIVE DUST EMISSIONS FOR MUTAGENIC CHEMICALS - HYPOTHETICAL ADULT RESIDENTS		
BASED ON: USEPA, DECEMBER 1989, MARCH 2005		
BY: L. CIOFANI	**CHECKED BY:**	**DATE:** 5/08/2014

EXAMPLE CARCINOGENIC CALCULATION

$$EC = \frac{3.73E\text{-}11\ mg/m3 \times 24\ hr/day \times 350\ days/year \times 10\ years}{25550\ days \times 24\ hours/day} \times 3$$

EC = 1.53E-11 mg/m3

$$EC = \frac{3.73E\text{-}11\ mg/m3 \times 24\ hr/day \times 350\ days/year \times 10\ years}{25550\ days \times 24\ hours/day} \times 1$$

EC = 5.11E-12 mg/m3

ILCR = (1.53E-11 mg/m3 + 5.11E-12 mg/m3) x 1.10E-03 (ug/m3)-1 x 1000 ug/mg

ILCR = 2.2E-11

APPENDIX H.5

RAGS PART D TABLES FOR CHEMICALS PRESENT AT NATURALLY OCCURRING LEVELS

RAGS Part D Table 3

Medium-Specific Exposure Point Concentration Summary

LIST OF TABLES
RAGS PART D TABLE 3
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY

Table No.	Reasonable Maximum Exposures
3.1.RME	Surface Soil

TABLE 3.1.RME
EXPOSURE POINT CONCENTRATION SUMMARY
REASONABLE MAXIMUM EXPOSURE
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL (Distribution)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						Value	Units	Statistic	Rationale
Tank Farm 2	Aluminum	mg/kg	12500	13100 (NP)	18200	13100	mg/kg	95% Student's-t UCL	ProUCL 5.0.00
	Arsenic	mg/kg	6.7	7.1 (NP)	11.4	7.1	mg/kg	95% Student's-t UCL	ProUCL 5.0.00

NP = Non-parametric

Exposure point concentrations for the RME scenarios are also the exposure point concentrations for the CTE scenarios.

RAGS Part D Table 7

Calculation of Cancer Risks and Non-Cancer Hazards

LIST OF TABLES
RAGS PART D TABLE 7
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS

Table No.	
	REASONABLE MAXIMUM EXPOSURES
7.1.RME	Adolescent Trespassers
7.2.RME	Adult Bow Hunters
7.3.RME	Construction Workers
7.4.RME	Industrial Workers
7.5.RME	Child Recreational Users
7.6.RME	Adult Recreational Users
7.7.RME	Child Residents
7.8.RME	Adult Residents
	CENTRAL TENDENCY EXPOSURES
7.1.CTE	Adolescent Trespassers
7.2.CTE	Adult Bow Hunters
7.3.CTE	Construction Workers
7.4.CTE	Industrial Workers
7.5.CTE	Child Recreational Users
7.6.CTE	Adult Recreational Users
7.7.CTE	Child Residents
7.8.CTE	Adult Residents

TABLE 7.1.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	5.9E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	3.4E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.003
				Arsenic	7.1	mg/kg	1.9E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.9E-07	1.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
			Exp. Route Total								2.9E-07					0.007
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.8E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.3E-07	9.1E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
			Exp. Route Total								2.3E-07					0.003
		Exposure Point Total									5.2E-07					0.01
	Exposure Medium Total										5.2E-07					0.01
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	4.5E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	2.6E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.000005
				Arsenic	6.5E-10	mg/m^3	2.4E-12	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.0E-11	1.4E-11	(mg/m^3)	1.5E-05	(mg/m^3)	9.4E-7
			Exp. Route Total								1.0E-11					0.000006
		Exposure Point Total									1.0E-11					0.000006
	Exposure Medium Total										1.0E-11					0.000006
Medium Total											5.2E-07					0.01

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.2.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	2.6E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	9.0E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0009
				Arsenic	7.1	mg/kg	8.3E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.3E-07	2.9E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0010
			Exp. Route Total								1.3E-07					0.002
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.8E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.6E-08	6.2E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
			Exp. Route Total								2.6E-08					0.0002
		Exposure Point Total									1.5E-07					0.002
	Exposure Medium Total										1.5E-07					0.002
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	6.2E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	2.2E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.000004
				Arsenic	6.5E-10	mg/m^3	3.4E-12	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.4E-11	1.2E-11	(mg/m^3)	1.5E-05	(mg/m^3)	7.9E-7
			Exp. Route Total								1.4E-11					0.000005
		Exposure Point Total									1.4E-11					0.000005
	Exposure Medium Total										1.4E-11					0.000005
Medium Total											1.5E-07					0.002

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.3.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	2.7E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	1.9E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.02
				Arsenic	7.1	mg/kg	8.9E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.3E-07	6.3E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
			Exp. Route Total								1.3E-07					0.04
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.4E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.1E-08	9.9E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
			Exp. Route Total								2.1E-08					0.003
		Exposure Point Total									1.6E-07					0.04
	Exposure Medium Total										1.6E-07					0.04
	Air	Tank Farm 2	Inhalation	Aluminum	9.4E-03	mg/m^3	1.6E-05	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	1.1E-03	(mg/m^3)	5.0E-03	(mg/m^3)	0.2
				Arsenic	5.1E-06	mg/m^3	8.6E-09	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	3.7E-08	6.0E-07	(mg/m^3)	1.5E-05	(mg/m^3)	0.04
			Exp. Route Total								3.7E-08					0.3
		Exposure Point Total									3.7E-08					0.3
	Exposure Medium Total										3.7E-08					0.3
Medium Total											1.9E-07					0.3

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.4.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	4.0E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	1.1E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.01
				Arsenic	7.1	mg/kg	1.3E-06	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.0E-06	3.6E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
			Exp. Route Total								2.0E-06					0.02
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	2.7E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	4.1E-07	7.6E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
			Exp. Route Total								4.1E-07					0.003
		Exposure Point Total									2.4E-06					0.03
	Exposure Medium Total										2.4E-06					0.03
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	9.7E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	2.7E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.00005
				Arsenic	6.5E-10	mg/m^3	5.3E-11	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	2.3E-10	1.5E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.000010
			Exp. Route Total								2.3E-10					0.00006
		Exposure Point Total									2.3E-10					0.00006
	Exposure Medium Total										2.3E-10					0.00006
Medium Total											2.4E-06					0.03

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.5.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	9.8E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	1.1E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.01
				Arsenic	7.1	mg/kg	3.2E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	4.8E-07	3.7E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.01
			Exp. Route Total								4.8E-07					0.02
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	9.0E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.3E-07	1.0E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
			Exp. Route Total								1.3E-07					0.003
		Exposure Point Total									6.1E-07					0.03
	Exposure Medium Total										6.1E-07					0.03
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	2.2E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	2.6E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.000005
				Arsenic	6.5E-10	mg/m^3	1.2E-12	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	5.2E-12	1.4E-11	(mg/m^3)	1.5E-05	(mg/m^3)	9.4E-7
			Exp. Route Total								5.2E-12					0.000006
		Exposure Point Total									5.2E-12					0.000006
	Exposure Medium Total										5.2E-12					0.000006
Medium Total											6.1E-07					0.03

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.6.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	3.1E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	1.1E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.001
				Arsenic	7.1	mg/kg	1.0E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.5E-07	3.5E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.001
			Exp. Route Total								1.5E-07					0.002
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	4.2E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	6.3E-08	1.5E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0005
			Exp. Route Total								6.3E-08					0.0005
		Exposure Point Total									2.1E-07					0.003
	Exposure Medium Total										2.1E-07					0.003
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	7.5E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	2.6E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.000005
				Arsenic	6.5E-10	mg/m^3	4.0E-12	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.7E-11	1.4E-11	(mg/m^3)	1.5E-05	(mg/m^3)	9.4E-7
			Exp. Route Total								1.7E-11					0.000006
		Exposure Point Total									1.7E-11					0.000006
	Exposure Medium Total										1.7E-11					0.000006
Medium Total											2.1E-07					0.003

Notes:
1 – Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.7.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	1.4E-02	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	1.7E-01	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.2
				Arsenic	7.1	mg/kg	4.7E-06	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	7.0E-06	5.4E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.2
			Exp. Route Total								7.0E-06					0.3
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	6.3E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	9.4E-07	7.3E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
			Exp. Route Total								9.4E-07					0.02
		Exposure Point Total									7.9E-06					0.4
	Exposure Medium Total										7.9E-06					0.4
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	9.8E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	1.1E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.0002
				Arsenic	6.5E-10	mg/m^3	5.3E-11	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	2.3E-10	6.2E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00004
			Exp. Route Total								2.3E-10					0.0003
		Exposure Point Total									2.3E-10					0.0003
	Exposure Medium Total										2.3E-10					0.0003
Medium Total											7.9E-06					0.4

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.8.RME
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	4.5E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	1.6E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.02
				Arsenic	7.1	mg/kg	1.5E-06	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.2E-06	5.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.02
			Exp. Route Total								2.2E-06					0.03
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	3.1E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	4.6E-07	1.1E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.004
			Exp. Route Total								4.6E-07					0.004
		Exposure Point Total									2.7E-06					0.04
	Exposure Medium Total										2.7E-06					0.04
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	3.3E-07	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	1.1E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.0002
				Arsenic	6.5E-10	mg/m^3	1.8E-10	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	7.8E-10	6.2E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00004
			Exp. Route Total								7.8E-10					0.0003
		Exposure Point Total									7.8E-10					0.0003
	Exposure Medium Total										7.8E-10					0.0003
Medium Total											2.7E-06					0.04

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.1.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	7.4E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	8.6E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0009
				Arsenic	7.1	mg/kg	2.4E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.6E-08	2.8E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0009
			Exp. Route Total								3.6E-08					0.002
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	3.9E-09	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	5.8E-09	4.5E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
			Exp. Route Total								5.8E-09					0.0002
		Exposure Point Total									4.2E-08					0.002
	Exposure Medium Total										4.2E-08					0.002
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	1.1E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	1.3E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000003
				Arsenic	6.5E-10	mg/m^3	6.1E-13	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	2.6E-12	7.1E-12	(mg/m^3)	1.5E-05	(mg/m^3)	4.7E-7
			Exp. Route Total								2.6E-12					0.000003
		Exposure Point Total									2.6E-12					0.000003
	Exposure Medium Total										2.6E-12					0.000003
Medium Total											4.2E-08					0.002

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.2.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	2.2E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	2.2E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0002
				Arsenic	7.1	mg/kg	7.3E-09	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.1E-08	7.3E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0002
			Exp. Route Total								1.1E-08					0.0005
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	4.4E-10	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	6.6E-10	4.4E-09	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00001
			Exp. Route Total								6.6E-10					0.00001
		Exposure Point Total									1.2E-08					0.0005
	Exposure Medium Total										1.2E-08					0.0005
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	5.4E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	5.4E-09	(mg/m^3)	5.0E-03	(mg/m^3)	0.000001
				Arsenic	6.5E-10	mg/m^3	2.9E-13	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.3E-12	2.9E-12	(mg/m^3)	1.5E-05	(mg/m^3)	2.0E-7
			Exp. Route Total								1.3E-12					0.000001
		Exposure Point Total									1.3E-12					0.000001
	Exposure Medium Total										1.3E-12					0.000001
Medium Total											1.2E-08					0.0005

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.3.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	1.1E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	7.7E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.008
				Arsenic	7.1	mg/kg	3.6E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	5.4E-08	2.5E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.008
			Exp. Route Total								5.4E-08					0.02
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.9E-09	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.8E-09	1.3E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0004
			Exp. Route Total								2.8E-09					0.0004
		Exposure Point Total									5.6E-08					0.02
	Exposure Medium Total										5.6E-08					0.02
	Air	Tank Farm 2	Inhalation	Aluminum	9.4E-03	mg/m^3	6.3E-06	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	4.4E-04	(mg/m^3)	5.0E-03	(mg/m^3)	0.09
				Arsenic	5.1E-06	mg/m^3	3.4E-09	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.5E-08	2.4E-07	(mg/m^3)	1.5E-05	(mg/m^3)	0.02
			Exp. Route Total								1.5E-08					0.1
		Exposure Point Total									1.5E-08					0.1
	Exposure Medium Total										1.5E-08					0.1
Medium Total											7.1E-08					0.1

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.4.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	6.3E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	4.9E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.005
				Arsenic	7.1	mg/kg	2.1E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	3.1E-07	1.6E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.005
			Exp. Route Total								3.1E-07					0.01
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.4E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.1E-08	1.1E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0004
			Exp. Route Total								2.1E-08					0.0004
		Exposure Point Total									3.3E-07					0.01
	Exposure Medium Total										3.3E-07					0.01
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	3.1E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	2.4E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.00005
				Arsenic	6.5E-10	mg/m^3	1.7E-11	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	7.1E-11	1.3E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.000009
			Exp. Route Total								7.1E-11					0.00006
		Exposure Point Total									7.1E-11					0.00006
	Exposure Medium Total										7.1E-11					0.00006
Medium Total											3.3E-07					0.01

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.5.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	8.2E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	2.9E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.003
				Arsenic	7.1	mg/kg	2.7E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	4.0E-08	9.3E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
			Exp. Route Total								4.0E-08					0.006
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	3.0E-09	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	4.5E-09	1.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0003
			Exp. Route Total								4.5E-09					0.0003
		Exposure Point Total									4.4E-08					0.006
	Exposure Medium Total										4.4E-08					0.006
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	3.7E-10	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	1.3E-06	(mg/m^3)	5.0E-03	(mg/m^3)	0.000003
				Arsenic	6.5E-10	mg/m^3	2.0E-13	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	8.7E-13	7.1E-12	(mg/m^3)	1.5E-05	(mg/m^3)	4.7E-7
			Exp. Route Total								8.7E-13					0.000003
		Exposure Point Total									8.7E-13					0.000003
	Exposure Medium Total										8.7E-13					0.000003
Medium Total											4.4E-08					0.006

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.6.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	2.7E-05	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	2.7E-04	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.0003
				Arsenic	7.1	mg/kg	8.8E-09	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.3E-08	8.8E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0003
			Exp. Route Total								1.3E-08					0.0006
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.1E-09	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.6E-09	1.1E-08	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.00004
			Exp. Route Total								1.6E-09					0.00004
		Exposure Point Total									1.5E-08					0.0006
	Exposure Medium Total										1.5E-08					0.0006
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	1.3E-09	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	1.3E-08	(mg/m^3)	5.0E-03	(mg/m^3)	0.000003
				Arsenic	6.5E-10	mg/m^3	7.1E-13	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	3.0E-12	7.1E-12	(mg/m^3)	1.5E-05	(mg/m^3)	4.7E-7
			Exp. Route Total								3.0E-12					0.000003
		Exposure Point Total									3.0E-12					0.000003
	Exposure Medium Total										3.0E-12					0.000003
Medium Total											1.5E-08					0.0006

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.7.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	1.6E-03	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	5.6E-02	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.06
				Arsenic	7.1	mg/kg	5.2E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	7.8E-07	1.8E-05	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.06
			Exp. Route Total								7.8E-07					0.1
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	2.8E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	4.2E-08	9.6E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.003
			Exp. Route Total								4.2E-08					0.003
		Exposure Point Total									8.2E-07					0.1
	Exposure Medium Total										8.2E-07					0.1
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	2.2E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	7.6E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.0002
				Arsenic	6.5E-10	mg/m^3	1.2E-11	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	5.1E-11	4.1E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00003
			Exp. Route Total								5.1E-11					0.0002
		Exposure Point Total									5.1E-11					0.0002
	Exposure Medium Total										5.1E-11					0.0002
Medium Total											8.2E-07					0.1

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 7.8.CTE
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Exposure Route	Chemical of Potential Concern	EPC		Cancer Risk Calculations					Non-Cancer Hazard Calculations				
					Value	Units	Intake/Exposure Concentration		CSF/Unit Risk		Cancer Risk	Intake/Exposure Concentration		RfD/RfC		Hazard Quotient
							Value	Units	Value	Units		Value	Units	Value	Units	
Surface Soil	Surface Soil	Tank Farm 2	Ingestion	Aluminum	13100	mg/kg	5.2E-04	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	5.2E-03	(mg/kg/day)	1.0E+00	(mg/kg/day)	0.005
				Arsenic	7.1	mg/kg	1.7E-07	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	2.6E-07	1.7E-06	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.006
			Exp. Route Total								2.6E-07					0.01
			Dermal	Aluminum	13100	mg/kg	0.0E+00	(mg/kg/day)	NA	$(mg/kg/day)^{-1}$	--	0.0E+00	(mg/kg/day)	1.0E+00	(mg/kg/day)	--
				Arsenic	7.1	mg/kg	1.0E-08	(mg/kg/day)	1.5E+00	$(mg/kg/day)^{-1}$	1.5E-08	1.0E-07	(mg/kg/day)	3.0E-04	(mg/kg/day)	0.0003
			Exp. Route Total								1.5E-08					0.0003
		Exposure Point Total									2.7E-07					0.01
	Exposure Medium Total										2.7E-07					0.01
	Air	Tank Farm 2	Inhalation	Aluminum	1.2E-06	mg/m^3	7.6E-08	(mg/m^3)	NA	$(ug/m^3)^{-1}$	--	7.6E-07	(mg/m^3)	5.0E-03	(mg/m^3)	0.0002
				Arsenic	6.5E-10	mg/m^3	4.1E-11	(mg/m^3)	4.3E-03	$(ug/m^3)^{-1}$	1.8E-10	4.1E-10	(mg/m^3)	1.5E-05	(mg/m^3)	0.00003
			Exp. Route Total								1.8E-10					0.0002
		Exposure Point Total									1.8E-10					0.0002
	Exposure Medium Total										1.8E-10					0.0002
Medium Total											2.7E-07					0.01

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

RAGS Part D Table 9

Summary of Receptor Risks and Hazards for COPCs

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SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs

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CENTRAL TENDENCY EXPOSURES

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TABLE 9.1.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.003	--	--	0.003
			Arsenic	3E-07	--	2E-07	--	5E-07	Skin, CVS	0.004	--	0.003	0.007
			Chemical Total	3E-07	--	2E-07	--	5E-07		0.007	--	0.003	0.01
		Exposure Point Total						5E-07					0.01
	Exposure Medium Total							5E-07					0.01
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.000005	--	0.000005
			Arsenic	--	1E-11	--	--	1E-11	Skin, CVS	--	0.0000009	--	0.0000009
			Chemical Total	--	1E-11	--	--	1E-11		--	0.000006	--	0.000006
		Exposure Point Total						1E-11					0.000006
	Exposure Medium Total							1E-11					0.000006
Medium Total								5E-07					0.01

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.003
Total CVS HI	0.007
Total Skin HI	0.007

TABLE 9.2.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.0009	--	--	0.0009
			Arsenic	1E-07	--	3E-08	--	2E-07	Skin, CVS	0.0010	--	0.0002	0.001
			Chemical Total	1E-07	--	3E-08	--	2E-07		0.002	--	0.0002	0.002
		Exposure Point Total						2E-07					0.002
	Exposure Medium Total							2E-07					0.002
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.000004	--	0.000004
			Arsenic	--	1E-11	--	--	1E-11	Skin, CVS	--	0.0000008	--	0.0000008
			Chemical Total	--	1E-11	--	--	1E-11		--	0.000005	--	0.000005
		Exposure Point Total						1E-11					0.000005
	Exposure Medium Total							1E-11					0.000005
Medium Total								2E-07					0.002

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.0009
Total CVS HI	0.001
Total Skin HI	0.001

TABLE 9.3.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.02	--	--	0.02
			Arsenic	1E-07	--	2E-08	--	2E-07	Skin, CVS	0.02	--	0.003	0.02
			Chemical Total	1E-07	--	2E-08	--	2E-07		0.04	--	0.003	0.04
		Exposure Point Total						2E-07					0.04
	Exposure Medium Total							2E-07					0.04
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.2	--	0.2
			Arsenic	--	4E-08	--	--	4E-08	Skin, CVS	--	0.04	--	0.04
			Chemical Total	--	4E-08	--	--	4E-08		--	0.3	--	0.3
		Exposure Point Total						4E-08					0.3
	Exposure Medium Total							4E-08					0.3
Medium Total								2E-07					0.3

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.2
Total CVS HI	0.06
Total Skin HI	0.06

TABLE 9.4.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.01	--	--	0.01
			Arsenic	2E-06	--	4E-07	--	2E-06	Skin, CVS	0.01	--	0.003	0.01
			Chemical Total	2E-06	--	4E-07	--	2E-06		0.02	--	0.003	0.03
		Exposure Point Total						2E-06					0.03
	Exposure Medium Total							2E-06					0.03
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.00005	--	0.00005
			Arsenic	--	2E-10	--	--	2E-10	Skin, CVS	--	0.000010	--	0.000010
			Chemical Total	--	2E-10	--	--	2E-10		--	0.00006	--	0.00006
		Exposure Point Total						2E-10					0.00006
	Exposure Medium Total							2E-10					0.00006
Medium Total								2E-06					0.03

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.01
Total CVS HI	0.01
Total Skin HI	0.01

TABLE 9.5.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.01	--	--	0.01
			Arsenic	5E-07	--	1E-07	--	6E-07	Skin, CVS	0.01	--	0.003	0.02
			Chemical Total	5E-07	--	1E-07	--	6E-07		0.02	--	0.003	0.03
		Exposure Point Total						6E-07					0.03
	Exposure Medium Total							6E-07					0.03
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.000005	--	0.000005
			Arsenic	--	5E-12	--	--	5E-12	Skin, CVS	--	0.0000009	--	0.0000009
			Chemical Total	--	5E-12	--	--	5E-12		--	0.000006	--	0.000006
		Exposure Point Total						5E-12					0.000006
	Exposure Medium Total							5E-12					0.000006
Medium Total								6E-07					0.03

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.01
Total CVS HI	0.02
Total Skin HI	0.02

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.001	--	--	0.001
			Arsenic	2E-07	--	6E-08	--	2E-07	Skin, CVS	0.001	--	0.0005	0.002
			Chemical Total	2E-07	--	6E-08	--	2E-07		0.002	--	0.0005	0.003
		Exposure Point Total						2E-07					0.003
	Exposure Medium Total							2E-07					0.003
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.000005	--	0.000005
			Arsenic	--	2E-11	--	--	2E-11	Skin, CVS	--	0.0000009	--	0.0000009
			Chemical Total	--	2E-11	--	--	2E-11		--	0.000006	--	0.000006
		Exposure Point Total						2E-11					0.000006
	Exposure Medium Total							2E-11					0.000006
Medium Total								2E-07					0.003

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.001
Total CVS HI	0.002
Total Skin HI	0.002

TABLE 9.7.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--					
			Arsenic	6E-07	--	2E-07	--	8E-07					
			Chemical Total	6E-07	--	2E-07	--	8E-07					
		Exposure Point Total						8E-07					
	Exposure Medium Total							8E-07					
	Air	Tank Farm 2	Aluminum	--	--	--	--	--					
			Arsenic	--	2E-11	--	--	2E-11					
			Chemical Total	--	2E-11	--	--	2E-11					
		Exposure Point Total						2E-11					
	Exposure Medium Total							2E-11					
Medium Total								8E-07					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.6.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.2	--	--	0.2
			Arsenic	7E-06	--	9E-07	--	8E-06	Skin, CVS	0.2	--	0.02	0.2
			Chemical Total	7E-06	--	9E-07	--	8E-06		0.3	--	0.02	0.4
		Exposure Point Total						8E-06					0.4
	Exposure Medium Total							8E-06					0.4
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.0002	--	0.0002
			Arsenic	--	2E-10	--	--	2E-10	Skin, CVS	--	0.00004	--	0.00004
			Chemical Total	--	2E-10	--	--	2E-10		--	0.0003	--	0.0003
		Exposure Point Total						2E-10					0.0003
	Exposure Medium Total							2E-10					0.0003
Medium Total								8E-06					0.4

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.2
Total CVS HI	0.2
Total Skin HI	0.2

TABLE 9.9.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.02	--	--	0.02
			Arsenic	2E-06	--	5E-07	--	3E-06	Skin, CVS	0.02	--	0.004	0.02
			Chemical Total	2E-06	--	5E-07	--	3E-06		0.03	--	0.004	0.04
		Exposure Point Total						3E-06					0.04
	Exposure Medium Total							3E-06					0.04
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.0002	--	0.0002
			Arsenic	--	8E-10	--	--	8E-10	Skin, CVS	--	0.00004	--	0.00004
			Chemical Total	--	8E-10	--	--	8E-10		--	0.0003	--	0.0003
		Exposure Point Total						8E-10					0.0003
	Exposure Medium Total							8E-10					0.0003
Medium Total								3E-06					0.04

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.02
Total CVS HI	0.02
Total Skin HI	0.02

TABLE 9.10.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
REASONABLE MAXIMUM EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--					
			Arsenic	9E-06	--	1E-06	--	1E-05					
			Chemical Total	9E-06	--	1E-06	--	1E-05					
		Exposure Point Total						1E-05					
	Exposure Medium Total							1E-05					
	Air	Tank Farm 2	Aluminum	--	--	--	--	--					
			Arsenic	--	1E-09	--	--	1E-09					
			Chemical Total	--	1E-09	--	--	1E-09					
		Exposure Point Total						1E-09					
	Exposure Medium Total							1E-09					
Medium Total								1E-05					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.1.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Current/Future
Receptor Population: Trespassers
Receptor Age: Adolescent

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.0009	--	--	0.0009
			Arsenic	4E-08	--	6E-09	--	4E-08	Skin, CVS	0.0009	--	0.0002	0.001
			Chemical Total	4E-08	--	6E-09	--	4E-08		0.002	--	0.0002	0.002
		Exposure Point Total						4E-08					0.002
	Exposure Medium Total							4E-08					0.002
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.000003	--	0.000003
			Arsenic	--	3E-12	--	--	3E-12	Skin, CVS	--	0.0000005	--	0.0000005
			Chemical Total	--	3E-12	--	--	3E-12		--	0.000003	--	0.000003
		Exposure Point Total						3E-12					0.000003
	Exposure Medium Total							3E-12					0.000003
Medium Total								4E-08					0.002

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.0009
Total CVS HI	0.001
Total Skin HI	0.001

TABLE 9.2.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Bow Hunters
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.0002	--	--	0.0002
			Arsenic	1E-08	--	7E-10	--	1E-08	Skin, CVS	0.0002	--	0.00001	0.0003
			Chemical Total	1E-08	--	7E-10	--	1E-08		0.0005	--	0.00001	0.0005
		Exposure Point Total						1E-08					0.0005
	Exposure Medium Total							1E-08					0.0005
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.000001	--	0.000001
			Arsenic	--	1E-12	--	--	1E-12	Skin, CVS	--	0.0000002	--	0.0000002
			Chemical Total	--	1E-12	--	--	1E-12		--	0.000001	--	0.000001
		Exposure Point Total						1E-12					0.000001
	Exposure Medium Total							1E-12					0.000001
Medium Total								1E-08					0.0005

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.0002
Total CVS HI	0.0003
Total Skin HI	0.0003

TABLE 9.3.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Construction Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.008	--	--	0.008
			Arsenic	5E-08	--	3E-09	--	6E-08	Skin, CVS	0.008	--	0.0004	0.01
			Chemical Total	5E-08	--	3E-09	--	6E-08		0.02	--	0.0004	0.02
		Exposure Point Total						6E-08					0.02
	Exposure Medium Total							6E-08					0.02
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.09	--	0.09
			Arsenic	--	1E-08	--	--	1E-08	Skin, CVS	--	0.02	--	0.02
			Chemical Total	--	1E-08	--	--	1E-08		--	0.1	--	0.1
		Exposure Point Total						1E-08					0.1
	Exposure Medium Total							1E-08					0.1
Medium Total								7E-08					0.1

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.10
Total CVS HI	0.02
Total Skin HI	0.02

TABLE 9.4.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Industrial Workers
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.005	--	--	0.005
			Arsenic	3E-07	--	2E-08	--	3E-07	Skin, CVS	0.005	--	0.0004	0.006
			Chemical Total	3E-07	--	2E-08	--	3E-07		0.01	--	0.0004	0.01
		Exposure Point Total						3E-07					0.01
	Exposure Medium Total							3E-07					0.01
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.00005	--	0.00005
			Arsenic	--	7E-11	--	--	7E-11	Skin, CVS	--	0.000009	--	0.000009
			Chemical Total	--	7E-11	--	--	7E-11		--	0.00006	--	0.00006
		Exposure Point Total						7E-11					0.00006
	Exposure Medium Total							7E-11					0.00006
Medium Total								3E-07					0.01

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.005
Total CVS HI	0.006
Total Skin HI	0.006

TABLE 9.5.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.003	--	--	0.003
			Arsenic	4E-08	--	4E-09	--	4E-08	Skin, CVS	0.003	--	0.0003	0.003
			Chemical Total	4E-08	--	4E-09	--	4E-08		0.006	--	0.0003	0.006
		Exposure Point Total						4E-08					0.006
	Exposure Medium Total							4E-08					0.006
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.000003	--	0.000003
			Arsenic	--	9E-13	--	--	9E-13	Skin, CVS	--	0.0000005	--	0.0000005
			Chemical Total	--	9E-13	--	--	9E-13		--	0.000003	--	0.000003
		Exposure Point Total						9E-13					0.000003
	Exposure Medium Total							9E-13					0.000003
Medium Total								4E-08					0.006

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.003
Total CVS HI	0.003
Total Skin HI	0.003

TABLE 9.6.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.0003	--	--	0.0003
			Arsenic	1E-08	--	2E-09	--	1E-08	Skin, CVS	0.0003	--	0.00004	0.0003
			Chemical Total	1E-08	--	2E-09	--	1E-08		0.0006	--	0.00004	0.0006
		Exposure Point Total						1E-08					0.0006
	Exposure Medium Total							1E-08					0.0006
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.000003	--	0.000003
			Arsenic	--	3E-12	--	--	3E-12	Skin, CVS	--	0.0000005	--	0.0000005
			Chemical Total	--	3E-12	--	--	3E-12		--	0.000003	--	0.000003
		Exposure Point Total						3E-12					0.000003
	Exposure Medium Total							3E-12					0.000003
Medium Total								1E-08					0.0006

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.0003
Total CVS HI	0.0003
Total Skin HI	0.0003

TABLE 9.7.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Recreational Users
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--					
			Arsenic	5E-08	--	6E-09	--	6E-08					
			Chemical Total	5E-08	--	6E-09	--	6E-08					
		Exposure Point Total						6E-08					
	Exposure Medium Total							6E-08					
	Air	Tank Farm 2	Aluminum	--	--	--	--	--					
			Arsenic	--	4E-12	--	--	4E-12					
			Chemical Total	--	4E-12	--	--	4E-12					
		Exposure Point Total						4E-12					
	Exposure Medium Total							4E-12					
Medium Total								6E-08					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

TABLE 9.8.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Hypothetical
Receptor Population: Residents
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.06	--	--	0.06
			Arsenic	8E-07	--	4E-08	--	8E-07	Skin, CVS	0.06	--	0.003	0.06
			Chemical Total	8E-07	--	4E-08	--	8E-07		0.1	--	0.003	0.1
		Exposure Point Total						8E-07					0.1
	Exposure Medium Total							8E-07					0.1
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.0002	--	0.0002
			Arsenic	--	5E-11	--	--	5E-11	Skin, CVS	--	0.00003	--	0.00003
			Chemical Total	--	5E-11	--	--	5E-11		--	0.0002	--	0.0002
		Exposure Point Total						5E-11					0.0002
	Exposure Medium Total							5E-11					0.0002
Medium Total								8E-07					0.1

Notes:

1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.06
Total CVS HI	0.06
Total Skin HI	0.06

TABLE 9.9.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	0.005	--	--	0.005
			Arsenic	3E-07	--	2E-08	--	3E-07	Skin, CVS	0.006	--	0.0003	0.006
			Chemical Total	3E-07	--	2E-08	--	3E-07		0.01	--	0.0003	0.01
		Exposure Point Total						3E-07					0.01
	Exposure Medium Total							3E-07					0.01
	Air	Tank Farm 2	Aluminum	--	--	--	--	--	CNS	--	0.0002	--	0.0002
			Arsenic	--	2E-10	--	--	2E-10	Skin, CVS	--	0.00003	--	0.00003
			Chemical Total	--	2E-10	--	--	2E-10		--	0.0002	--	0.0002
		Exposure Point Total						2E-10					0.0002
	Exposure Medium Total							2E-10					0.0002
Medium Total								3E-07					0.01

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Total CNS HI	0.005
Total CVS HI	0.006
Total Skin HI	0.006

TABLE 9.10.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs
CENTRAL TENDENCY EXPOSURES
NAVSTA NEWPORT, PORTSMOUTH, RHODE ISLAND

Scenario Timeframe: Future
Receptor Population: Residents
Receptor Age: Lifelong (Child and Adult)

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	External (Radiation)	Exposure Routes Total	Primary Target Organ(s)	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Tank Farm 2	Aluminum	--	--	--	--	--					
			Arsenic	1E-06	--	6E-08	--	1E-06					
			Chemical Total	1E-06	--	6E-08	--	1E-06					
		Exposure Point Total						1E-06					
	Exposure Medium Total							1E-06					
	Air	Tank Farm 2	Aluminum	--	--	--	--	--					
			Arsenic	--	2E-10	--	--	2E-10					
			Chemical Total	--	2E-10	--	--	2E-10					
		Exposure Point Total						2E-10					
	Exposure Medium Total							2E-10					
Medium Total								1E-06					

Notes:
1 - Mutagenic chemicals were evaluated in accordance with USEPA's Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (2005).

Tetra Tech **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 27, 2014**

FROM: **EDWARD SEDLMYER** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PAH / GRO / Florida-PRO**
NAVSTA NEWPORT, CTO WE30
SDG SG8254

SAMPLES:

2/Aqueous/PAH/GRO/TPH

TF2-SS-RB03-1013	TF2-W-TB03-1013

34/Soil/PAH

TF2-003-SS-DUP06-1013	TF2-003-SS1011-000.8	TF2-003-SS1012-000.7
TF2-003-SS1013-000.7	TF2-003-SS1014-0001	TF2-003-SS1015-000.8
TF2-003-SS1016-000.9	TF2-003-SS1017-000.8	TF2-003-SS1018-000.8
TF2-003-SS1019-000.5	TF2-004/5-SS-DUP04-1013	TF2-004/5-SS-DUP05-1013
TF2-004/5-SS1050-000.6	TF2-004/5-SS1051-000.8	TF2-004/5-SS1052-000.6
TF2-004/5-SS1053-000.6	TF2-004/5-SS1054-000.6	TF2-004/5-SS1055-000.8
TF2-004/5-SS1056-000.6	TF2-004/5-SS1057-0001	TF2-004/5-SS1058-000.5
TF2-004/5-SS1059-000.6	TF2-004/5-SS1060-000.5	TF2-004/5-SS1061-000.6
TF2-004/5-SS1062-000.8	TF2-004/5-SS1063-000.6	TF2-004/5-SS1064-000.6
TF2-004/5-SS1065-000.5	TF2-004/5-SS1066-000.9	TF2-004/5-SS1067-000.7
TF2-004/5-SS1068-000.5		

5/Soil/GRO/TPH

TF2-003-SS1015-000.8	TF2-004/5-SS1051-000.8	TF2-004/5-SS1056-000.6
TF2-004/5-SS1065-000.5		

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG SG8254 consisted of thirty-one (31) soil samples, one (1) rinse blank, and one (1) trip blank. The samples were analyzed as listed above for polynuclear aromatic hydrocarbons (PAH), gasoline range organics (GRO), and Florida-PRO. Three (3) field duplicate sample pairs were included in this sample delivery group (SDG): TF2-003-SS1015-000.8 / TF2-003-SS-DUP06-1013, TF2-004/5-SS1061-000.6 / TF2-004/5-SS-DUP04-1013, and TF2-004/5-SS1065-000.5 / TF2-004/5-SS-DUP05-1013.

The samples were collected by Tetra Tech on October 21 and 22, 2013 and analyzed by Katahdin Analytical Services for all fractions. All analyses were conducted in accordance with EPA SW-846 Methods 8270D SIM, 8015B, and Florida-PRO analytical and reporting protocols. A Tier II validation was conducted on the referenced samples. The data was evaluated based on the following parameters:

* • Data Completeness
• Holding Times
* • GC/MS Instrument Tuning
• Blank Results

- Initial and Continuing Calibration
* • Surrogate Spike Recoveries
- Internal Standard Recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Results
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results
* • Field Duplicate Precision
* • Detection Limits
* • Compound Identification and Quantification

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report.

LABORATORY BLANKS

The following contaminants were detected in laboratory preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Benzo(a)anthracene[1]	6.6 ug/kg	33 ug/kg
Chrysene[1]	2.5 ug/kg	12.5 ug/kg
Chrysene[2]	0.044 ug/L	0.22 ug/L
Benzo(k)fluoranthene[2]	0.059 ug/L	0.259 ug/L

(1) Maximum concentration present in blank associated with batch WG133188-1 affecting samples .
(2) Maximum concentration present in blank WG133367 affecting sample TF2-SS-RB03-1013.

An action level of 5X the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the blank action level and greater than the LOD were qualified "U" as a result of laboratory blank contamination.

INITIAL AND CONTINUING CALIBRATION

The PAH continuing calibration verification analyzed on 11/01/13 @13:12 on instrument GCMS-N had %Ds greater than the 20% quality control limit for benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene. The detected results for samples TF2-SS-RB03-1013, TF2-003-SS1011-000.8, TF2-003-SS1012-000.7, TF2-003-SS1014-0001, TF2-003-SS1015-000.8, TF2-003-SS1016-000.9, TF2-003-SS1017-000.8, TF2-003-SS1018-000.8, and undiluted TF2-003-SS1019-000.5 were qualified as estimated (J).

The PAH continuing calibration verification analyzed on 11/04/13 @10:51 on instrument GCMS-N had %Ds greater than the 20% quality control limit for indeno(1,2,3-cd)pyrene and dibenzo(a,h)anthracene. The detected results for samples TF2-004/5-SS1050-000.6, TF2-004/5-SS1051-000.8, TF2-004/5-SS1052-000.6, TF2-004/5-SS1053-000.6, TF2-004/5-SS1054-000.6, TF2-004/5-SS1055-000.8, TF2-004/5-SS1058-000.5, TF2-004/5-SS1059-000.6, TF2-004/5-SS1060-000.5, TF2-004/5-SS1063-000.6, and TF2-004/5-SS1065-000.5 were qualified as estimated (J).

The PAH continuing calibration verification analyzed on 11/13/13 @12:29 on instrument GCMS-N had a %D greater than the 20% quality control limit for indeno(1,2,3-cd)pyrene. The detected results for samples TF2-003-SS-DUP06-1013 and diluted TF2-003-SS1013-000.7 were qualified as estimated (J).

HOLDING TIME

The Florida-PRO surrogate recovery for O-terphenyl was less than the laboratory control limit for sample TF2-004/5-SS1056-000.6. The sample was re-extracted 7 days outside the 14 day extraction hold time with acceptable surrogate recoveries. The re-extracted result was used for validation because the re-extracted result had a higher concentration. The detected result for sample TF2-004/5-SS1056-000.6 has been qualified as estimated (J).

MATRIX SPIKE / MATRIX SPIKE DUPLICATE (MS/MSD)

The PAH MS/MSD performed on sample TF2-003-SS1016-000.9 had several percent recoveries outside the quality control limit. The sample results were qualified as listed below.

Analyte	%MS	%MSD	RPD	Qualifier for sample result
Benzo(k)fluoranthene	32.8	13.2	Ok	J
Dibenzo(a,h)anthracene	46.1	44.8	Ok	J
Benzo(g,h,i)perylene	23.3	14.8	Ok	J

The PAH MS/MSD performed on sample TF2-004/5-SS1054-000.6 had several percent recoveries outside the quality control limit. The sample results were qualified as listed below.

Analyte	%MS	%MSD	RPD	Qualifier for sample result
Benzo(a)pyrene	46.4	48.4	Ok	J
Benzo(g,h,i)perylene	30.0	30.3	Ok	J

The PAH MS/MSD performed on sample TF2-004/5-SS1064-000.6 had several percent recoveries outside the quality control limit. In addition, a relative percent difference (RPD) exceeded the quality control limit. The sample results were qualified as listed below.

Analyte	%MS	%MSD	RPD	Qualifier for sample result
Phenanthrene	Ok	97.0	Ok	None
Fluoranthene	Ok	130	35	None
Pyrene	Ok	115	Ok	None
Benzo(a)pyrene	47.7	54.1	Ok	J
Indeno(1,2,3-cd)pyrene	33.4	43.2	Ok	J
Dibenzo(a,h)anthracene	47.0	52.1	Ok	J
Benzo(g,h,i)perylene	24.1	25.8	Ok	J

LABORATORY CONTROL SAMPLE/LABORATORY CONTROL SAMPLE DUPLICATE (LCS/LCSD)

The PAH LCS/LCSD associated with batch WG133188 had percent recoveries outside the quality control limit. In addition, a relative percent difference (RPD) exceeded the quality control limit. The affected sample results were qualified as listed below.

Analyte	%LCS	%LCSD	RPD	Qualifier for sample result
Benzo(b)fluoranthene	51.6	42.7	Ok	J
Benzo(a)pyrene	42.4	52.9	Ok	J
Indeno(1,2,3-cd)pyrene	Ok	43.9	Ok	None
Benzo(g,h,i)perylene	49.2	32.2	42	J

The PAH LCS/LCSD associated with batch WG133361 had percent recoveries outside the quality control limit. In addition, relative percent differences (RPDs) exceeded the quality control limit. The affected sample results were qualified as listed below.

Analyte	%LCS	%LCSD	RPD	Qualifier for sample result
Naphthalene	Ok	Ok	44	None
2-Methylnaphthalene	Ok	Ok	50	None
Acenaphthylene	Ok	Ok	45	None
Acenaphthene	Ok	Ok	43	None
Fluorene	Ok	Ok	43	None
Phenanthrene	Ok	Ok	42	None
Anthracene	Ok	Ok	47	None
Fluoranthene	Ok	Ok	31	None
Benzo(a)anthracene	Ok	Ok	40	None
Chrysene	Ok	Ok	40	None
Benzo(b)fluoranthene	Ok	Ok	40	None
Benzo(k)fluoranthene	Ok	45.4	45	None
Benzo(a)pyrene	Ok	47.1	40	None
Indeno(1,2,3-cd)pyrene	Ok	Ok	54	None
Dibenzo(a,h)anthracene	Ok	53.2	46	None
Benzo(g,h,i)perylene	48.3	32.8	38	J

The Florida-PRO LCS/LCSD associated with batch WG133426 had a percent recovery outside the quality control limit. In addition, the relative percent difference (RPD) was exceeded the quality control limit. The detected results for the affected samples were qualified as listed below.

Analyte	%LCS	%LCSD	RPD	Qualifier for sample result
Florida-PRO	56.4	Ok	34	J

INTERNAL STANDARDS

The PAH internal standard perylene-d12 had recoveries less than the quality control limit for the diluted sample TF2-003-SS1013-000.7. The detected results for compounds quantified using perylene-d12 in sample TF2-003-SS1013-000.7 have been qualified as estimated (J).

FIELD DUPLICATE PRECISION

The field duplicate precision exceeded the 50% relative percent difference (RPD) quality control criteria for phenanthrene in the field duplicate pair TF2-004/5-SS1061-000.6 / TF2-004/5-SS-DUP04-1013. The

positive results for phenanthrene in the duplicate pair TF2-004/5-SS1061-000.6 / TF2-004/5-SS-DUP04-1013 were qualified as estimated (J).

ADDITIONAL COMMENTS

The PAH continuing calibration verification analyzed on 11/14/13 @10:51 on instrument GCMS-N had a %D greater than the 20% quality control limit for indeno(1,2,3-cd)pyrene. No action was taken on this basis because the diluted sample associated with this calibration did not have indeno(1,2,3-cd)pyrene reported from the dilution.

Samples TF2-003-SS1011-000.8, TF2-003-SS1012-000.7, TF2-003-SS1013-000.7, TF2-003-SS1014-0001, TF2-003-SS1019-000.5, and TF2-004/5-SS1067-000.7 required dilutions for the PAH fraction due to concentrations greater than the linear calibration range of the instrument.

Positive results reported below the quantitation limit but above the method detection limit (MDL) were qualified as estimated, (J).

Gasoline range organic results were reported as TPH C5-C12 and petroleum range organic results were reported as EPH C8 – C44.

Sample results were reported to the Limit of Detection (LOD).

EXECUTIVE SUMMARY

Laboratory Performance: Extraction hold time noncompliance resulted in the qualification of data in the Florida-PRO fraction. Continuing calibration noncompliances resulted in the qualification of data in the PAH fraction. LCS/LCSD recovery noncompliances resulted in the qualification of data for the PAH and Florida-PRO fractions. MS/MSD recovery noncompliances resulted in the qualification of data in the fraction. Internal standard recovery noncompliance resulted in the qualification of data for the PAH fraction.

Other Factors Affecting Data Quality: Positive results reported below the limit of quantitation (LOQ) but above the MDL were qualified. Field duplicate precision noncompliances resulted in the qualification of data for the PAH fractions.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (June 2008), and the (DOD) QSM document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
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Chemist/Data Validator

Tetra Tech
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Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1011-000.8			TF2-003-SS1011-000.8DL			TF2-003-SS1012-000.7			TF2-003-SS1012-000.7DL		
SDG: SG8254	LAB_ID	SG8254-22			SG8254-22DL			SG8254-24			SG8254-24DL		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.9			86.9			88.7			88.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		18	J	P				23					
ACENAPHTHENE		71						100					
ACENAPHTHYLENE		3	J	P				5	J	P			
ANTHRACENE		110						220					
BENZO(A)ANTHRACENE		310	J	C							670	J	C
BENZO(A)PYRENE		190	J	E							440	J	E
BENZO(B)FLUORANTHENE		280	J	CE							640	J	CE
BENZO(G,H,I)PERYLENE		77	J	E				160	J	E			
BENZO(K)FLUORANTHENE		130						170					
CHRYSENE		240									630		
DIBENZO(A,H)ANTHRACENE		52						95					
FLUORANTHENE					620						1800		
FLUORENE		62						120					
INDENO(1,2,3-CD)PYRENE		260	J	C							630	J	C
NAPHTHALENE		60						70					
PHENANTHRENE					510						1200		
PYRENE					480						1300		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1013-000.7			TF2-003-SS1013-000.7DL			TF2-003-SS1014-0001			TF2-003-SS1014-0001DL		
SDG: SG8254	LAB_ID	SG8254-25			SG8254-25DL			SG8254-26			SG8254-26DL		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.0			93.0			93.2			93.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		12	J	P				10	U				
ACENAPHTHENE		160						15	J	P			
ACENAPHTHYLENE		10	U					1.8	J	P			
ANTHRACENE		310						26					
BENZO(A)ANTHRACENE					740			180	J	C			
BENZO(A)PYRENE					580	J	EN	99	J	E			
BENZO(B)FLUORANTHENE					840	J	EN	160	J	CE			
BENZO(G,H,I)PERYLENE		200	J	E				44	J	E			
BENZO(K)FLUORANTHENE		300						52					
CHRYSENE					750			170					
DIBENZO(A,H)ANTHRACENE		110						27					
FLUORANTHENE					1900			330					
FLUORENE		140						10	J	P			
INDENO(1,2,3-CD)PYRENE					420	J	CN	130	J	C			
NAPHTHALENE		43						2.9	J	P			
PHENANTHRENE					1700			220					
PYRENE					2000						410		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1015-000.8			TF2-003-SS1016-000.9			TF2-003-SS1017-000.8			TF2-003-SS1018-000.8		
SDG: SG8254	LAB_ID	SG8254-27			SG8254-28			SG8254-29			SG8254-30		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.0			90.9			91.6			94.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.5	U		4.3	J	P	10	U		9.5	U	
ACENAPHTHENE		5.4	J	P	14	J	P	9.5	J	P	5	J	P
ACENAPHTHYLENE		2.3	J	P	4.3	J	P	1.4	J	P	9.5	U	
ANTHRACENE		16	J	P	30			20	J	P	9	J	P
BENZO(A)ANTHRACENE		120	J	C	200	J	C	140	J	C	63	J	C
BENZO(A)PYRENE		79	J	E	150	J	E	92	J	E	38	J	E
BENZO(B)FLUORANTHENE		140	J	CE	240	J	CE	140	J	CE	58	J	CE
BENZO(G,H,I)PERYLENE		39	J	E	66	J	DE	45	J	E	18	J	EP
BENZO(K)FLUORANTHENE		42			80	J	D	46			18	J	P
CHRYSENE		110			180			120			56		
DIBENZO(A,H)ANTHRACENE		24			42	J	D	28			11	J	P
FLUORANTHENE		230			340			230			100		
FLUORENE		4.7	J	P	14	J	P	5.7	J	P	9.5	U	
INDENO(1,2,3-CD)PYRENE		130	J	C	230	J	C	130	J	C	53	J	C
NAPHTHALENE		9.5	U		9.2	J	P	10	U		9.5	U	
PHENANTHRENE		120			220			160			78		
PYRENE		200			320			260			130		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1019-000.5			TF2-003-SS1019-000.5DL			TF2-003-SS-DUP06-1013			TF2-004/5-SS1050-000.6		
SDG: SG8254	LAB_ID	SG8254-31			SG8254-31DL			SG8254-32			SG8254-9		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.8			91.8			93.1			94.9		
	DUP_OF							TF2-003-SS1015-000.8					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.9	U					10	U		10	U	
ACENAPHTHENE		15	J	P				4.7	J	P	10	U	
ACENAPHTHYLENE		2.1	J	P				1.8	J	P	10	U	
ANTHRACENE		51						14	J	P	2.2	J	P
BENZO(A)ANTHRACENE					400			120			26		
BENZO(A)PYRENE		220	J	E				100	J	E	21		
BENZO(B)FLUORANTHENE		300	J	CE				170	J	E	39		
BENZO(G,H,I)PERYLENE		86	J	E				47	J	E	12	J	EP
BENZO(K)FLUORANTHENE		120						56			10	J	P
CHRYSENE					410			130			24		
DIBENZO(A,H)ANTHRACENE		59						17	J	P	7.9	J	CP
FLUORANTHENE					740			200			54		
FLUORENE		8.3	J	P				4.1	J	P	10	U	
INDENO(1,2,3-CD)PYRENE		260	J	C				84	J	C	37	J	C
NAPHTHALENE		9.9	U					10	U		10	U	
PHENANTHRENE					450			110			19	J	P
PYRENE					840			240			39		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1051-000.8			TF2-004/5-SS1052-000.6			TF2-004/5-SS1053-000.6			TF2-004/5-SS1054-000.6		
SDG: SG8254	LAB_ID	SG8254-8			SG8254-7			SG8254-6			SG8254-5		
FRACTION: PAH	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	96.5			93.8			93.9			96.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.6	U		9.9	U		10	U		9.8	U	
ACENAPHTHENE		9.6	U		2.8	J	P	1.6	J	P	9.8	U	
ACENAPHTHYLENE		9.6	U		3.6	J	P	10	U		9.8	U	
ANTHRACENE		1.6	J	P	6.7	J	P	3	J	P	1.9	J	P
BENZO(A)ANTHRACENE		18	J	P	64			33			23		
BENZO(A)PYRENE		15	J	P	59			30			19	J	DP
BENZO(B)FLUORANTHENE		26			110			50			35		
BENZO(G,H,I)PERYLENE		8.6	J	EP	31	J	E	17	J	EP	11	J	DEP
BENZO(K)FLUORANTHENE		6.5	J	P	31			20	J	P	11	J	P
CHRYSENE		15	J	P	66			34			21		
DIBENZO(A,H)ANTHRACENE		6.5	J	CP	21	J	C	9.7	J	CP	7.7	J	CP
FLUORANTHENE		33			120			76			44		
FLUORENE		9.6	U		9.9	U		10	U		9.8	U	
INDENO(1,2,3-CD)PYRENE		24	J	C	100	J	C	56	J	C	33	J	C
NAPHTHALENE		9.6	U		9.9	U		10	U		9.8	U	
PHENANTHRENE		12	J	P	46			27			15	J	P
PYRENE		24			98			58			32		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1055-000.8			TF2-004/5-SS1056-000.6			TF2-004/5-SS1057-0001			TF2-004/5-SS1058-000.5		
SDG: SG8254	LAB_ID	SG8254-4			SG8254-3			SG8254-2			SG8254-17		
FRACTION: PAH	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.4			96.0			96.4			94.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.3	U		9.8	U		10	U		10	U	
ACENAPHTHENE		9.3	U		1.6	J	P	4.2	J	P	10	U	
ACENAPHTHYLENE		9.3	U		9.8	U		10	U		10	U	
ANTHRACENE		2.8	J	P	3.2	J	P	7.4	J	P	2	J	P
BENZO(A)ANTHRACENE		22			23			37			20	J	P
BENZO(A)PYRENE		16	J	P	22			33			17	J	P
BENZO(B)FLUORANTHENE		27			40			64			30		
BENZO(G,H,I)PERYLENE		8.1	J	EP	9.8	J	EP	20	J	EP	9.1	J	EP
BENZO(K)FLUORANTHENE		7.8	J	P	13	J	P	19	J	P	8.2	J	P
CHRYSENE		18	J	P	28			47			17	J	
DIBENZO(A,H)ANTHRACENE		6.3	J	CP	3.9	J	P	10	U		7.2	J	CP
FLUORANTHENE		40			46			78			41		
FLUORENE		9.3	U		9.8	U		3.7	J	P	10	U	
INDENO(1,2,3-CD)PYRENE		22	J	C	22			35			26	J	C
NAPHTHALENE		9.3	U		9.8	U		10	U		10	U	
PHENANTHRENE		13	J	P	22			50			17	J	P
PYRENE		25			43			74			30		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1059-000.6			TF2-004/5-SS1060-000.5			TF2-004/5-SS1061-000.6			TF2-004/5-SS1062-000.8		
SDG: SG8254	LAB_ID	SG8254-16			SG8254-15			SG8254-12			SG8254-10		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	95.6			94.1			95.6			93.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	U		9.8	U		9.4	U		9.8	U	
ACENAPHTHENE		10	U		3.6	J	P	2.8	J	P	13	J	P
ACENAPHTHYLENE		10	U		6.4	J	P	1.9	J	P	3	J	P
ANTHRACENE		10	U		8	J	P	8.3	J	P	22		
BENZO(A)ANTHRACENE		13	J	P	91			71			140		
BENZO(A)PYRENE		12	J	P	88			61			110		
BENZO(B)FLUORANTHENE		20	J	P	170			120			200		
BENZO(G,H,I)PERYLENE		7.4	J	EP	43	J	E	32	J	E	39	J	E
BENZO(K)FLUORANTHENE		4.5	J	P	46			39			57		
CHRYSENE		9	J	P	92			82			140		
DIBENZO(A,H)ANTHRACENE		6.2	J	CP	31	J	C	14	J	P	16	J	P
FLUORANTHENE		21			170			110			260		
FLUORENE		10	U		3.5	J	P	9.4	U		12	J	P
INDENO(1,2,3-CD)PYRENE		20	J	CP	150	J	C	63			89		
NAPHTHALENE		10	U		9.8	U		9.4	U		4	J	P
PHENANTHRENE		8.2	J	P	62			49	J	G	180		
PYRENE		15	J	P	130			120			240		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1063-000.6			TF2-004/5-SS1064-000.6			TF2-004/5-SS1065-000.5			TF2-004/5-SS1066-000.9		
SDG: SG8254	LAB_ID	SG8254-20			SG8254-19			SG8254-18			SG8254-14		
FRACTION: PAH	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	96.8			97.2			96.6			92.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		9.7	U		9.3	U		9.2	U		10	U	
ACENAPHTHENE		9.7	U		9.3	U		1.6	J	P	2.3	J	P
ACENAPHTHYLENE		9.7	U		9.3	U		2.4	J	P	10	U	
ANTHRACENE		2.8	J	P	1.4	J	P	3.4	J	P	6.6	J	P
BENZO(A)ANTHRACENE		25			14	J	P	39			50		
BENZO(A)PYRENE		21			13	J	DP	38			40		
BENZO(B)FLUORANTHENE		38			21			75			87		
BENZO(G,H,I)PERYLENE		10	J	EP	5.2	J	DEP	18	J	EP	21	J	EP
BENZO(K)FLUORANTHENE		10	J	P	11	J	P	21			22		
CHRYSENE		21			19			44			54		
DIBENZO(A,H)ANTHRACENE		7.7	J	CP	1.8	J	DP	12	J	CP	9.2	J	P
FLUORANTHENE		52			34			90			91		
FLUORENE		9.7	U		9.3	U		9.2	U		10	U	
INDENO(1,2,3-CD)PYRENE		33	J	C	11	J	DP	62	J	C	41		
NAPHTHALENE		9.7	U		9.3	U		9.2	U		10	U	
PHENANTHRENE		19	J	P	15	J	P	33			43		
PYRENE		35			29			66			98		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1067-000.7			TF2-004/5-SS1067-000.7DL			TF2-004/5-SS1068-000.5			TF2-004/5-SS-DUP04-1013		
SDG: SG8254	LAB_ID	SG8254-13			SG8254-13DL			SG8254-21			SG8254-11		
FRACTION: PAH	SAMP_DATE	10/21/2013			10/21/2013			10/22/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	94.3			94.3			94.4			95.7		
	DUP_OF										TF2-004/5-SS1061-000.6		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE		10	U					10	U		9.7	U	
ACENAPHTHENE		38						10	U		12	J	P
ACENAPHTHYLENE		10	U					1.4	J	P	9.7	U	
ANTHRACENE		94						1.9	J	P	36		
BENZO(A)ANTHRACENE					350			26	U	A	80		
BENZO(A)PYRENE		190						26	J	E	64		
BENZO(B)FLUORANTHENE					380			43	J	E	100		
BENZO(G,H,I)PERYLENE		65	J	E				14	J	EP	27	J	E
BENZO(K)FLUORANTHENE		120						14	J	P	32		
CHRYSENE					370			24			86		
DIBENZO(A,H)ANTHRACENE		37						8.9	J	P	13	J	P
FLUORANTHENE					750			46			140		
FLUORENE		43						10	U		11	J	P
INDENO(1,2,3-CD)PYRENE		140						40			53		
NAPHTHALENE		13	J	P				10	U		3	J	P
PHENANTHRENE					620			18	J	P	120	J	G
PYRENE					830			38			140		

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS-DUP05-1013
SDG: SG8254	LAB_ID	SG8254-23
FRACTION: PAH	SAMP_DATE	10/22/2013
MEDIA: SOIL	QC_TYPE	NM
	UNITS	UG/KG
	PCT_SOLIDS	96.4
	DUP_OF	TF2-004/5-SS1065-000.5

PARAMETER	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE	9.4	U	
ACENAPHTHENE	9.4	U	
ACENAPHTHYLENE	2	J	P
ANTHRACENE	2.5	J	P
BENZO(A)ANTHRACENE	33	U	A
BENZO(A)PYRENE	30	J	E
BENZO(B)FLUORANTHENE	55	J	E
BENZO(G,H,I)PERYLENE	16	J	EP
BENZO(K)FLUORANTHENE	19	J	P
CHRYSENE	32		
DIBENZO(A,H)ANTHRACENE	11	J	P
FLUORANTHENE	63		
FLUORENE	9.4	U	
INDENO(1,2,3-CD)PYRENE	52		
NAPHTHALENE	9.4	U	
PHENANTHRENE	24		
PYRENE	50		

PROJ_NO: 03019	NSAMPLE	TF2-SS-RB03-1013
SDG: SG8254	LAB_ID	SG8254-33RE
FRACTION: PAH	SAMP_DATE	10/22/2013
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
2-METHYLNAPHTHALENE	0.1	U	
ACENAPHTHENE	0.1	U	
ACENAPHTHYLENE	0.1	U	
ANTHRACENE	0.1	U	
BENZO(A)ANTHRACENE	0.29	J	C
BENZO(A)PYRENE	0.1	U	
BENZO(B)FLUORANTHENE	0.1	UJ	C
BENZO(G,H,I)PERYLENE	0.1	U	
BENZO(K)FLUORANTHENE	0.1	U	
CHRYSENE	0.1	U	
DIBENZO(A,H)ANTHRACENE	0.1	U	
FLUORANTHENE	0.1	U	
FLUORENE	0.1	U	
INDENO(1,2,3-CD)PYRENE	0.1	UJ	C
NAPHTHALENE	0.1	U	
PHENANTHRENE	0.1	U	
PYRENE	0.1	U	

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1015-000.8			TF2-004/5-SS1051-000.8			TF2-004/5-SS1056-000.6			TF2-004/5-SS1056-000.6RE		
SDG: SG8254	LAB_ID	SG8254-27			SG8254-8			SG8254-3			SG8254-3RE		
FRACTION: PET	SAMP_DATE	10/22/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	93.0			96.5			96.0			96.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
EPH (C08-C44)		48	J	E	27	J	E				100	J	H
TPH (C05-C12)		2.3	U		2.6	J	P	2.1	U				

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1065-000.5		
SDG: SG8254	LAB_ID	SG8254-18		
FRACTION: PET	SAMP_DATE	10/22/2013		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	MG/KG		
	PCT_SOLIDS	96.6		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
EPH (C08-C44)		38	J	E
TPH (C05-C12)		3	U	

PROJ_NO: 03019	NSAMPLE	TF2-W-TB03-1013		
SDG: SG8254	LAB_ID	SG8254-1		
FRACTION: PET	SAMP_DATE	10/21/2013		
MEDIA: WATER	QC_TYPE	NM		
	UNITS	MG/KG		
	PCT_SOLIDS	100.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
TPH (C05-C12)		2	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

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Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-32
Client ID: 003-SS-DUP06-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0727.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	1.8	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	4.7	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	4.1	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		110	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	14.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		200	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		240	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		120	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		130	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	LL	170	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		56.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	LL	100	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	L	84.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	J	17.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	LL	47.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		48.1	%					
Fluorene-D10		61.6	%					
Pyrene-D10		72.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-22
Client ID: 003-SS1011-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0554.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 87.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		60.	ug/Kgdrywt	1	20	22.	2.9	11.
2-Methylnaphthalene	J	18.	ug/Kgdrywt	1	20	22.	2.4	11.
Acenaphthylene	J	3.0	ug/Kgdrywt	1	20	22.	1.3	11.
Acenaphthene		71.	ug/Kgdrywt	1	20	22.	1.6	11.
Fluorene		62.	ug/Kgdrywt	1	20	22.	3.5	11.
Phenanthrene	E	480	ug/Kgdrywt	1	20	22.	2.0	11.
Anthracene		110	ug/Kgdrywt	1	20	22.	1.3	11.
Fluoranthene	E	560	ug/Kgdrywt	1	20	22.	2.0	11.
Pyrene	E	460	ug/Kgdrywt	1	20	22.	2.3	11.
Benzo(a)anthracene		310	ug/Kgdrywt	1	20	22.	2.1	11.
Chrysene		240	ug/Kgdrywt	1	20	22.	1.9	11.
Benzo(b)Fluoranthene	LL	280	ug/Kgdrywt	1	20	22.	2.6	11.
Benzo(k)fluoranthene		130	ug/Kgdrywt	1	20	22.	3.4	11.
Benzo(a)pyrene	LL	190	ug/Kgdrywt	1	20	22.	3.6	11.
Indeno(1,2,3-cd)pyrene	L	260	ug/Kgdrywt	1	20	22.	2.1	11.
Dibenzo(a,h)anthracene		52.	ug/Kgdrywt	1	20	22.	2.0	11.
Benzo(g,h,i)perylene	LL	77.	ug/Kgdrywt	1	20	22.	2.2	11.
2-Methylnaphthalene-D10		44.6	%					
Fluorene-D10		59.2	%					
Pyrene-D10		65.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-22DL
Client ID: 003-SS1011-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0562.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 87.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		58.	ug/Kgdrywt	2	20	44.	5.8	22.
2-Methylnaphthalene	J	16.	ug/Kgdrywt	2	20	44.	4.9	22.
Acenaphthylene	U	22.	ug/Kgdrywt	2	20	44.	2.6	22.
Acenaphthene		68.	ug/Kgdrywt	2	20	44.	3.3	22.
Fluorene		58.	ug/Kgdrywt	2	20	44.	7.1	22.
Phenanthrene		510	ug/Kgdrywt	2	20	44.	4.0	22.
Anthracene		110	ug/Kgdrywt	2	20	44.	2.6	22.
Fluoranthene		620	ug/Kgdrywt	2	20	44.	4.0	22.
Pyrene		480	ug/Kgdrywt	2	20	44.	4.6	22.
Benzo(a)anthracene		280	ug/Kgdrywt	2	20	44.	4.2	22.
Chrysene		260	ug/Kgdrywt	2	20	44.	3.8	22.
Benzo(b)Fluoranthene	LL	290	ug/Kgdrywt	2	20	44.	5.3	22.
Benzo(k)fluoranthene		120	ug/Kgdrywt	2	20	44.	6.8	22.
Benzo(a)pyrene	LL	200	ug/Kgdrywt	2	20	44.	7.3	22.
Indeno(1,2,3-cd)pyrene	L	280	ug/Kgdrywt	2	20	44.	4.2	22.
Dibenzo(a,h)anthracene	J	35.	ug/Kgdrywt	2	20	44.	4.0	22.
Benzo(g,h,i)perylene	LL	80.	ug/Kgdrywt	2	20	44.	4.4	22.
2-Methylnaphthalene-D10		42.6	%					
Fluorene-D10		57.7	%					
Pyrene-D10		61.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-24
Client ID: 003-SS1012-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0556.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		70.	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene		23.	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	5.0	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene		100	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene		120	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene	E	990	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene		220	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene	E	1200	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene	E	1000	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene	E	650	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene	E	500	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene	ELL	430	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene		170	ug/Kgdrywt	1	20	20.	3.1	9.9
Benzo(a)pyrene	ELL	360	ug/Kgdrywt	1	20	20.	3.3	9.9
Indeno(1,2,3-cd)pyrene	EL	410	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene		95.	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene	LL	160	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		47.7	%					
Fluorene-D10		71.8	%					
Pyrene-D10		67.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-24DL
Client ID: 003-SS1012-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0563.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 89.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	77.	ug/Kgdrywt	7	20	140	18.	70.
2-Methylnaphthalene	J	22.	ug/Kgdrywt	7	20	140	15.	70.
Acenaphthylene	U	70.	ug/Kgdrywt	7	20	140	8.4	70.
Acenaphthene	J	99.	ug/Kgdrywt	7	20	140	10.	70.
Fluorene	J	110	ug/Kgdrywt	7	20	140	22.	70.
Phenanthrene		1200	ug/Kgdrywt	7	20	140	12.	70.
Anthracene		260	ug/Kgdrywt	7	20	140	8.4	70.
Fluoranthene		1800	ug/Kgdrywt	7	20	140	12.	70.
Pyrene		1300	ug/Kgdrywt	7	20	140	15.	70.
Benzo(a)anthracene		670	ug/Kgdrywt	7	20	140	13.	70.
Chrysene		630	ug/Kgdrywt	7	20	140	12.	70.
Benzo(b)Fluoranthene	LL	640	ug/Kgdrywt	7	20	140	17.	70.
Benzo(k)fluoranthene		240	ug/Kgdrywt	7	20	140	22.	70.
Benzo(a)pyrene	LL	440	ug/Kgdrywt	7	20	140	23.	70.
Indeno(1,2,3-cd)pyrene	L	630	ug/Kgdrywt	7	20	140	13.	70.
Dibenzo(a,h)anthracene	J	80.	ug/Kgdrywt	7	20	140	12.	70.
Benzo(g,h,i)perylene	LL	200	ug/Kgdrywt	7	20	140	14.	70.
2-Methylnaphthalene-D10		63.0	%					
Fluorene-D10		64.8	%					
Pyrene-D10		68.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-25
Client ID: 003-SS1013-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0564.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene		43.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	J	12.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene		160	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene		140	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	E	1400	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		310	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	E	1800	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	E	1500	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	E	860	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	E	640	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	ELL	450	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		300	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	ELL	480	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	EL	440	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		110	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	LL	200	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		54.5	%					
Fluorene-D10		73.7	%					
Pyrene-D10		69.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-25DL
Client ID: 003-SS1013-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0729.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	45.	ug/Kgdrywt	10	20	200	26.	100
2-Methylnaphthalene	U	100	ug/Kgdrywt	10	20	200	22.	100
Acenaphthylene	U	100	ug/Kgdrywt	10	20	200	12.	100
Acenaphthene	J	150	ug/Kgdrywt	10	20	200	15.	100
Fluorene	J	110	ug/Kgdrywt	10	20	200	32.	100
Phenanthrene		1700	ug/Kgdrywt	10	20	200	18.	100
Anthracene		320	ug/Kgdrywt	10	20	200	12.	100
Fluoranthene		1900	ug/Kgdrywt	10	20	200	18.	100
Pyrene		2000	ug/Kgdrywt	10	20	200	21.	100
Benzo(a)anthracene		740	ug/Kgdrywt	10	20	200	19.	100
Chrysene		750	ug/Kgdrywt	10	20	200	17.	100
Benzo(b)Fluoranthene	LL	840	ug/Kgdrywt	10	20	200	24.	100
Benzo(k)fluoranthene		330	ug/Kgdrywt	10	20	200	31.	100
Benzo(a)pyrene	LL	580	ug/Kgdrywt	10	20	200	33.	100
Indeno(1,2,3-cd)pyrene	L	420	ug/Kgdrywt	10	20	200	19.	100
Dibenzo(a,h)anthracene	J	89.	ug/Kgdrywt	10	20	200	18.	100
Benzo(g,h,i)perylene	LL	210	ug/Kgdrywt	10	20	200	20.	100
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-26
Client ID: 003-SS1014-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0565.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	2.9	ug/Kgdrywt	1	20	20.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	1.8	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	15.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Phenanthrene		220	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene		26.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		330	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	E	360	ug/Kgdrywt	1	20	20.	2.2	10.
Benzo(a)anthracene		180	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		170	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	LL	160	ug/Kgdrywt	1	20	20.	2.5	10.
Benzo(k)fluoranthene		52.	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene	LL	99.	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene	L	130	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		27.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	LL	44.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		48.8	%					
Fluorene-D10		68.5	%					
Pyrene-D10		63.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-26DL
Client ID: 003-SS1014-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0730.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	20.	ug/Kgdrywt	2	20	41.	5.3	20.
2-Methylnaphthalene	U	20.	ug/Kgdrywt	2	20	41.	4.5	20.
Acenaphthylene	U	20.	ug/Kgdrywt	2	20	41.	2.5	20.
Acenaphthene	J	12.	ug/Kgdrywt	2	20	41.	3.1	20.
Fluorene	J	8.1	ug/Kgdrywt	2	20	41.	6.6	20.
Phenanthrene		200	ug/Kgdrywt	2	20	41.	3.7	20.
Anthracene	J	22.	ug/Kgdrywt	2	20	41.	2.5	20.
Fluoranthene		270	ug/Kgdrywt	2	20	41.	3.7	20.
Pyrene		410	ug/Kgdrywt	2	20	41.	4.3	20.
Benzo(a)anthracene		150	ug/Kgdrywt	2	20	41.	3.9	20.
Chrysene		170	ug/Kgdrywt	2	20	41.	3.5	20.
Benzo(b)Fluoranthene	LL	150	ug/Kgdrywt	2	20	41.	4.9	20.
Benzo(k)fluoranthene		61.	ug/Kgdrywt	2	20	41.	6.4	20.
Benzo(a)pyrene	LL	110	ug/Kgdrywt	2	20	41.	6.8	20.
Indeno(1,2,3-cd)pyrene	L	76.	ug/Kgdrywt	2	20	41.	3.9	20.
Dibenzo(a,h)anthracene	J	18.	ug/Kgdrywt	2	20	41.	3.7	20.
Benzo(g,h,i)perylene	LL	44.	ug/Kgdrywt	2	20	41.	4.1	20.
2-Methylnaphthalene-D10		44.9	%					
Fluorene-D10		55.0	%					
Pyrene-D10		69.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-27
Client ID: 003-SS1015-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0566.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.5	ug/Kgdrywt	1	20	19.	2.5	9.5
2-Methylnaphthalene	U	9.5	ug/Kgdrywt	1	20	19.	2.1	9.5
Acenaphthylene	J	2.3	ug/Kgdrywt	1	20	19.	1.1	9.5
Acenaphthene	J	5.4	ug/Kgdrywt	1	20	19.	1.4	9.5
Fluorene	J	4.7	ug/Kgdrywt	1	20	19.	3.0	9.5
Phenanthrene		120	ug/Kgdrywt	1	20	19.	1.7	9.5
Anthracene	J	16.	ug/Kgdrywt	1	20	19.	1.1	9.5
Fluoranthene		230	ug/Kgdrywt	1	20	19.	1.7	9.5
Pyrene		200	ug/Kgdrywt	1	20	19.	2.0	9.5
Benzo(a)anthracene		120	ug/Kgdrywt	1	20	19.	1.8	9.5
Chrysene		110	ug/Kgdrywt	1	20	19.	1.6	9.5
Benzo(b)Fluoranthene	LL	140	ug/Kgdrywt	1	20	19.	2.3	9.5
Benzo(k)fluoranthene		42.	ug/Kgdrywt	1	20	19.	2.9	9.5
Benzo(a)pyrene	LL	79.	ug/Kgdrywt	1	20	19.	3.1	9.5
Indeno(1,2,3-cd)pyrene	L	130	ug/Kgdrywt	1	20	19.	1.8	9.5
Dibenzo(a,h)anthracene		24.	ug/Kgdrywt	1	20	19.	1.7	9.5
Benzo(g,h,i)perylene	LL	39.	ug/Kgdrywt	1	20	19.	1.9	9.5
2-Methylnaphthalene-D10		46.7	%					
Fluorene-D10		66.2	%					
Pyrene-D10		57.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-28
Client ID: 003-SS1016-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0567.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	9.2	ug/Kgdrywt	1	20	21.	2.8	11.
2-Methylnaphthalene	J	4.3	ug/Kgdrywt	1	20	21.	2.4	11.
Acenaphthylene	J	4.3	ug/Kgdrywt	1	20	21.	1.3	11.
Acenaphthene	J	14.	ug/Kgdrywt	1	20	21.	1.6	11.
Fluorene	J	14.	ug/Kgdrywt	1	20	21.	3.4	11.
Phenanthrene	M	220	ug/Kgdrywt	1	20	21.	1.9	11.
Anthracene		30.	ug/Kgdrywt	1	20	21.	1.3	11.
Fluoranthene	M	340	ug/Kgdrywt	1	20	21.	1.9	11.
Pyrene	MM	320	ug/Kgdrywt	1	20	21.	2.2	11.
Benzo(a)anthracene	MM	200	ug/Kgdrywt	1	20	21.	2.0	11.
Chrysene	MM	180	ug/Kgdrywt	1	20	21.	1.8	11.
Benzo(b)Fluoranthene	LLMM	240	ug/Kgdrywt	1	20	21.	2.6	11.
Benzo(k)fluoranthene	MM	80.	ug/Kgdrywt	1	20	21.	3.3	11.
Benzo(a)pyrene	LLMM	150	ug/Kgdrywt	1	20	21.	3.5	11.
Indeno(1,2,3-cd)pyrene	LMM	230	ug/Kgdrywt	1	20	21.	2.0	11.
Dibenzo(a,h)anthracene	MM	42.	ug/Kgdrywt	1	20	21.	1.9	11.
Benzo(g,h,i)perylene	LLMM	66.	ug/Kgdrywt	1	20	21.	2.1	11.
2-Methylnaphthalene-D10		44.9	%					
Fluorene-D10		69.1	%					
Pyrene-D10		70.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-29
Client ID: 003-SS1017-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0570.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	J	1.4	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	9.5	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	5.7	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		160	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	20.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		230	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		260	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		140	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		120	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	LL	140	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene		46.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	LL	92.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	L	130	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene		28.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	LL	45.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		48.3	%					
Fluorene-D10		67.1	%					
Pyrene-D10		61.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-30
Client ID: 003-SS1018-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0571.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.5	ug/Kgdrywt	1	20	19.	2.5	9.5
2-Methylnaphthalene	U	9.5	ug/Kgdrywt	1	20	19.	2.1	9.5
Acenaphthylene	U	9.5	ug/Kgdrywt	1	20	19.	1.1	9.5
Acenaphthene	J	5.0	ug/Kgdrywt	1	20	19.	1.4	9.5
Fluorene	U	9.5	ug/Kgdrywt	1	20	19.	3.0	9.5
Phenanthrene		78.	ug/Kgdrywt	1	20	19.	1.7	9.5
Anthracene	J	9.0	ug/Kgdrywt	1	20	19.	1.1	9.5
Fluoranthene		100	ug/Kgdrywt	1	20	19.	1.7	9.5
Pyrene		130	ug/Kgdrywt	1	20	19.	2.0	9.5
Benzo(a)anthracene		63.	ug/Kgdrywt	1	20	19.	1.8	9.5
Chrysene		56.	ug/Kgdrywt	1	20	19.	1.6	9.5
Benzo(b)Fluoranthene	LL	58.	ug/Kgdrywt	1	20	19.	2.3	9.5
Benzo(k)fluoranthene	J	18.	ug/Kgdrywt	1	20	19.	2.9	9.5
Benzo(a)pyrene	LL	38.	ug/Kgdrywt	1	20	19.	3.1	9.5
Indeno(1,2,3-cd)pyrene	L	53.	ug/Kgdrywt	1	20	19.	1.8	9.5
Dibenzo(a,h)anthracene	J	11.	ug/Kgdrywt	1	20	19.	1.7	9.5
Benzo(g,h,i)perylene	JLL	18.	ug/Kgdrywt	1	20	19.	1.9	9.5
2-Methylnaphthalene-D10		33.4	%					
Fluorene-D10		62.3	%					
Pyrene-D10		58.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-31
Client ID: 003-SS1019-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0572.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 02-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	2.1	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene	J	15.	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene	J	8.3	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene	E	410	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene		51.	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene	E	620	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene	E	740	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene	E	430	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene	E	360	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene	LL	300	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene		120	ug/Kgdrywt	1	20	20.	3.0	9.9
Benzo(a)pyrene	LL	220	ug/Kgdrywt	1	20	20.	3.2	9.9
Indeno(1,2,3-cd)pyrene	L	260	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene		59.	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene	LL	86.	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		42.6	%					
Fluorene-D10		65.5	%					
Pyrene-D10		54.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-31DL
Client ID: 003-SS1019-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0745.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 14-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	49.	ug/Kgdrywt	5	20	99.	13.	49.
2-Methylnaphthalene	U	49.	ug/Kgdrywt	5	20	99.	11.	49.
Acenaphthylene	U	49.	ug/Kgdrywt	5	20	99.	5.9	49.
Acenaphthene	J	14.	ug/Kgdrywt	5	20	99.	7.4	49.
Fluorene	U	49.	ug/Kgdrywt	5	20	99.	16.	49.
Phenanthrene		450	ug/Kgdrywt	5	20	99.	8.9	49.
Anthracene	J	51.	ug/Kgdrywt	5	20	99.	5.9	49.
Fluoranthene		740	ug/Kgdrywt	5	20	99.	8.9	49.
Pyrene		840	ug/Kgdrywt	5	20	99.	10.	49.
Benzo(a)anthracene		400	ug/Kgdrywt	5	20	99.	9.4	49.
Chrysene		410	ug/Kgdrywt	5	20	99.	8.4	49.
Benzo(b)Fluoranthene	LL	390	ug/Kgdrywt	5	20	99.	12.	49.
Benzo(k)fluoranthene		120	ug/Kgdrywt	5	20	99.	15.	49.
Benzo(a)pyrene	LL	260	ug/Kgdrywt	5	20	99.	16.	49.
Indeno(1,2,3-cd)pyrene	L	200	ug/Kgdrywt	5	20	99.	9.4	49.
Dibenzo(a,h)anthracene	J	48.	ug/Kgdrywt	5	20	99.	8.9	49.
Benzo(g,h,i)perylene	LL	110	ug/Kgdrywt	5	20	99.	9.9	49.
2-Methylnaphthalene-D10		51.8	%					
Fluorene-D10		60.5	%					
Pyrene-D10		57.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-11
Client ID: 004/5-SS-DUP04-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0709.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	3.0	ug/Kgdrywt	1	20	19.	2.5	9.7
2-Methylnaphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.1	9.7
Acenaphthylene	U	9.7	ug/Kgdrywt	1	20	19.	1.2	9.7
Acenaphthene	J	12.	ug/Kgdrywt	1	20	19.	1.5	9.7
Fluorene	J	11.	ug/Kgdrywt	1	20	19.	3.1	9.7
Phenanthrene		120	ug/Kgdrywt	1	20	19.	1.8	9.7
Anthracene		36.	ug/Kgdrywt	1	20	19.	1.2	9.7
Fluoranthene		140	ug/Kgdrywt	1	20	19.	1.8	9.7
Pyrene		140	ug/Kgdrywt	1	20	19.	2.0	9.7
Benzo(a)anthracene		80.	ug/Kgdrywt	1	20	19.	1.8	9.7
Chrysene		86.	ug/Kgdrywt	1	20	19.	1.6	9.7
Benzo(b)Fluoranthene		100	ug/Kgdrywt	1	20	19.	2.3	9.7
Benzo(k)fluoranthene	L	32.	ug/Kgdrywt	1	20	19.	3.0	9.7
Benzo(a)pyrene	L	64.	ug/Kgdrywt	1	20	19.	3.2	9.7
Indeno(1,2,3-cd)pyrene		53.	ug/Kgdrywt	1	20	19.	1.8	9.7
Dibenzo(a,h)anthracene	JL	13.	ug/Kgdrywt	1	20	19.	1.8	9.7
Benzo(g,h,i)perylene	LL	27.	ug/Kgdrywt	1	20	19.	1.9	9.7
2-Methylnaphthalene-D10		45.4	%					
Fluorene-D10		58.1	%					
Pyrene-D10		62.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-23
Client ID: 004/5-SS-DUP05-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0555.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.4	9.4
2-Methylnaphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.1	9.4
Acenaphthylene	J	2.0	ug/Kgdrywt	1	20	19.	1.1	9.4
Acenaphthene	U	9.4	ug/Kgdrywt	1	20	19.	1.4	9.4
Fluorene	U	9.4	ug/Kgdrywt	1	20	19.	3.0	9.4
Phenanthrene		24.	ug/Kgdrywt	1	20	19.	1.7	9.4
Anthracene	J	2.5	ug/Kgdrywt	1	20	19.	1.1	9.4
Fluoranthene		63.	ug/Kgdrywt	1	20	19.	1.7	9.4
Pyrene		50.	ug/Kgdrywt	1	20	19.	2.0	9.4
Benzo(a)anthracene		33.	ug/Kgdrywt	1	20	19.	1.8	9.4
Chrysene		32.	ug/Kgdrywt	1	20	19.	1.6	9.4
Benzo(b)Fluoranthene	LL	55.	ug/Kgdrywt	1	20	19.	2.3	9.4
Benzo(k)fluoranthene	J	19.	ug/Kgdrywt	1	20	19.	2.9	9.4
Benzo(a)pyrene	LL	30.	ug/Kgdrywt	1	20	19.	3.1	9.4
Indeno(1,2,3-cd)pyrene	L	52.	ug/Kgdrywt	1	20	19.	1.8	9.4
Dibenzo(a,h)anthracene	J	11.	ug/Kgdrywt	1	20	19.	1.7	9.4
Benzo(g,h,i)perylene	JLL	16.	ug/Kgdrywt	1	20	19.	1.9	9.4
2-Methylnaphthalene-D10		42.8	%					
Fluorene-D10		66.0	%					
Pyrene-D10		63.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-9
Client ID: 004/5-SS1050-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0585.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Phenanthrene	J	19.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	2.2	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		54.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		39.	ug/Kgdrywt	1	20	20.	2.2	10.
Benzo(a)anthracene		26.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		24.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		39.	ug/Kgdrywt	1	20	20.	2.5	10.
Benzo(k)fluoranthene	JL	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene	L	21.	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene		37.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	JL	7.9	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	12.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		44.7	%					
Fluorene-D10		68.7	%					
Pyrene-D10		73.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-8
Client ID: 004/5-SS1051-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0584.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.6	ug/Kgdrywt	1	20	19.	2.5	9.6
2-Methylnaphthalene	U	9.6	ug/Kgdrywt	1	20	19.	2.1	9.6
Acenaphthylene	U	9.6	ug/Kgdrywt	1	20	19.	1.2	9.6
Acenaphthene	U	9.6	ug/Kgdrywt	1	20	19.	1.4	9.6
Fluorene	U	9.6	ug/Kgdrywt	1	20	19.	3.1	9.6
Phenanthrene	J	12.	ug/Kgdrywt	1	20	19.	1.7	9.6
Anthracene	J	1.6	ug/Kgdrywt	1	20	19.	1.2	9.6
Fluoranthene		33.	ug/Kgdrywt	1	20	19.	1.7	9.6
Pyrene		24.	ug/Kgdrywt	1	20	19.	2.0	9.6
Benzo(a)anthracene	J	18.	ug/Kgdrywt	1	20	19.	1.8	9.6
Chrysene	J	15.	ug/Kgdrywt	1	20	19.	1.6	9.6
Benzo(b)Fluoranthene		26.	ug/Kgdrywt	1	20	19.	2.3	9.6
Benzo(k)fluoranthene	JL	6.5	ug/Kgdrywt	1	20	19.	3.0	9.6
Benzo(a)pyrene	JL	15.	ug/Kgdrywt	1	20	19.	3.2	9.6
Indeno(1,2,3-cd)pyrene		24.	ug/Kgdrywt	1	20	19.	1.8	9.6
Dibenzo(a,h)anthracene	JL	6.5	ug/Kgdrywt	1	20	19.	1.7	9.6
Benzo(g,h,i)perylene	JLL	8.6	ug/Kgdrywt	1	20	19.	1.9	9.6
2-Methylnaphthalene-D10		43.8	%					
Fluorene-D10		66.2	%					
Pyrene-D10		72.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-7
Client ID: 004/5-SS1052-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0583.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.6	9.9
2-Methylnaphthalene	U	9.9	ug/Kgdrywt	1	20	20.	2.2	9.9
Acenaphthylene	J	3.6	ug/Kgdrywt	1	20	20.	1.2	9.9
Acenaphthene	J	2.8	ug/Kgdrywt	1	20	20.	1.5	9.9
Fluorene	U	9.9	ug/Kgdrywt	1	20	20.	3.2	9.9
Phenanthrene		46.	ug/Kgdrywt	1	20	20.	1.8	9.9
Anthracene	J	6.7	ug/Kgdrywt	1	20	20.	1.2	9.9
Fluoranthene		120	ug/Kgdrywt	1	20	20.	1.8	9.9
Pyrene		98.	ug/Kgdrywt	1	20	20.	2.1	9.9
Benzo(a)anthracene		64.	ug/Kgdrywt	1	20	20.	1.9	9.9
Chrysene		66.	ug/Kgdrywt	1	20	20.	1.7	9.9
Benzo(b)Fluoranthene		110	ug/Kgdrywt	1	20	20.	2.4	9.9
Benzo(k)fluoranthene	L	31.	ug/Kgdrywt	1	20	20.	3.1	9.9
Benzo(a)pyrene	L	59.	ug/Kgdrywt	1	20	20.	3.3	9.9
Indeno(1,2,3-cd)pyrene		100	ug/Kgdrywt	1	20	20.	1.9	9.9
Dibenzo(a,h)anthracene	L	21.	ug/Kgdrywt	1	20	20.	1.8	9.9
Benzo(g,h,i)perylene	LL	31.	ug/Kgdrywt	1	20	20.	2.0	9.9
2-Methylnaphthalene-D10		43.4	%					
Fluorene-D10		71.4	%					
Pyrene-D10		70.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-6
Client ID: 004/5-SS1053-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0582.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	1.6	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		27.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	3.0	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		76.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		58.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		33.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		34.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		50.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	JL	20.	ug/Kgdrywt	1	20	20.	3.2	10.
Benzo(a)pyrene	L	30.	ug/Kgdrywt	1	20	20.	3.4	10.
Indeno(1,2,3-cd)pyrene		56.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	JL	9.7	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	17.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		38.0	%					
Fluorene-D10		57.7	%					
Pyrene-D10		62.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-5
Client ID: 004/5-SS1054-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0579.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.5	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	U	9.8	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	U	9.8	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	U	9.8	ug/Kgdrywt	1	20	20.	3.1	9.8
Phenanthrene	J	15.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	1.9	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		44.	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		32.	ug/Kgdrywt	1	20	20.	2.0	9.8
Benzo(a)anthracene		23.	ug/Kgdrywt	1	20	20.	1.9	9.8
Chrysene		21.	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		35.	ug/Kgdrywt	1	20	20.	2.4	9.8
Benzo(k)fluoranthene	JL	11.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	JL	19.	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		33.	ug/Kgdrywt	1	20	20.	1.9	9.8
Dibenzo(a,h)anthracene	JL	7.7	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	JLL	11.	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		40.1	%					
Fluorene-D10		61.6	%					
Pyrene-D10		64.6	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-4
Client ID: 004/5-SS1055-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0578.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.3	ug/Kgdrywt	1	20	19.	2.4	9.3
2-Methylnaphthalene	U	9.3	ug/Kgdrywt	1	20	19.	2.0	9.3
Acenaphthylene	U	9.3	ug/Kgdrywt	1	20	19.	1.1	9.3
Acenaphthene	U	9.3	ug/Kgdrywt	1	20	19.	1.4	9.3
Fluorene	U	9.3	ug/Kgdrywt	1	20	19.	3.0	9.3
Phenanthrene	J	13.	ug/Kgdrywt	1	20	19.	1.7	9.3
Anthracene	J	2.8	ug/Kgdrywt	1	20	19.	1.1	9.3
Fluoranthene		40.	ug/Kgdrywt	1	20	19.	1.7	9.3
Pyrene		25.	ug/Kgdrywt	1	20	19.	2.0	9.3
Benzo(a)anthracene		22.	ug/Kgdrywt	1	20	19.	1.8	9.3
Chrysene	J	18.	ug/Kgdrywt	1	20	19.	1.6	9.3
Benzo(b)Fluoranthene		27.	ug/Kgdrywt	1	20	19.	2.2	9.3
Benzo(k)fluoranthene	JL	7.8	ug/Kgdrywt	1	20	19.	2.9	9.3
Benzo(a)pyrene	JL	16.	ug/Kgdrywt	1	20	19.	3.1	9.3
Indeno(1,2,3-cd)pyrene		22.	ug/Kgdrywt	1	20	19.	1.8	9.3
Dibenzo(a,h)anthracene	JL	6.3	ug/Kgdrywt	1	20	19.	1.7	9.3
Benzo(g,h,i)perylene	JLL	8.1	ug/Kgdrywt	1	20	19.	1.9	9.3
2-Methylnaphthalene-D10		50.2	%					
Fluorene-D10		70.5	%					
Pyrene-D10		62.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0708.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.5	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.1	9.8
Acenaphthylene	U	9.8	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	J	1.6	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	U	9.8	ug/Kgdrywt	1	20	20.	3.1	9.8
Phenanthrene		22.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	3.2	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		46.	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		43.	ug/Kgdrywt	1	20	20.	2.0	9.8
Benzo(a)anthracene		23.	ug/Kgdrywt	1	20	20.	1.8	9.8
Chrysene		28.	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		40.	ug/Kgdrywt	1	20	20.	2.3	9.8
Benzo(k)fluoranthene	JL	13.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	L	22.	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		22.	ug/Kgdrywt	1	20	20.	1.8	9.8
Dibenzo(a,h)anthracene	JL	3.9	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	JLL	9.8	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		49.2	%					
Fluorene-D10		63.7	%					
Pyrene-D10		68.0	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-2
Client ID: 004/5-SS1057-0001
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0714.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	1.2	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	J	4.2	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	J	3.7	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene		50.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	7.4	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		78.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		74.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene		37.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene		47.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		64.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	JL	19.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	L	33.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		35.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	UL	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	20.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		71.0	%					
Fluorene-D10		74.0	%					
Pyrene-D10		86.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-17
Client ID: 004/5-SS1058-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0588.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 95.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	J	17.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	J	2.0	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		41.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene		30.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	20.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	J	17.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene		30.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	JL	8.2	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	JL	17.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene		26.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	JL	7.2	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	9.1	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		42.5	%					
Fluorene-D10		66.3	%					
Pyrene-D10		61.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-16
Client ID: 004/5-SS1059-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0587.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	J	8.2	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene		21.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	J	15.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	13.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	J	9.0	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	J	20.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	JL	4.5	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	JL	12.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	J	20.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	JL	6.2	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	JLL	7.4	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		39.0	%					
Fluorene-D10		63.2	%					
Pyrene-D10		64.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-15
Client ID: 004/5-SS1060-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0586.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.5	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	J	6.4	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	J	3.6	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	J	3.5	ug/Kgdrywt	1	20	20.	3.1	9.8
Phenanthrene		62.	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene	J	8.0	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		170	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		130	ug/Kgdrywt	1	20	20.	2.0	9.8
Benzo(a)anthracene		91.	ug/Kgdrywt	1	20	20.	1.8	9.8
Chrysene		92.	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		170	ug/Kgdrywt	1	20	20.	2.3	9.8
Benzo(k)fluoranthene	L	46.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	L	88.	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		150	ug/Kgdrywt	1	20	20.	1.8	9.8
Dibenzo(a,h)anthracene	L	31.	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	LL	43.	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		42.3	%					
Fluorene-D10		63.2	%					
Pyrene-D10		56.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-12
Client ID: 004/5-SS1061-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0710.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.4	9.4
2-Methylnaphthalene	U	9.4	ug/Kgdrywt	1	20	19.	2.1	9.4
Acenaphthylene	J	1.9	ug/Kgdrywt	1	20	19.	1.1	9.4
Acenaphthene	J	2.8	ug/Kgdrywt	1	20	19.	1.4	9.4
Fluorene	U	9.4	ug/Kgdrywt	1	20	19.	3.0	9.4
Phenanthrene		49.	ug/Kgdrywt	1	20	19.	1.7	9.4
Anthracene	J	8.3	ug/Kgdrywt	1	20	19.	1.1	9.4
Fluoranthene		110	ug/Kgdrywt	1	20	19.	1.7	9.4
Pyrene		120	ug/Kgdrywt	1	20	19.	2.0	9.4
Benzo(a)anthracene		71.	ug/Kgdrywt	1	20	19.	1.8	9.4
Chrysene		82.	ug/Kgdrywt	1	20	19.	1.6	9.4
Benzo(b)Fluoranthene		120	ug/Kgdrywt	1	20	19.	2.3	9.4
Benzo(k)fluoranthene	L	39.	ug/Kgdrywt	1	20	19.	2.9	9.4
Benzo(a)pyrene	L	61.	ug/Kgdrywt	1	20	19.	3.1	9.4
Indeno(1,2,3-cd)pyrene		63.	ug/Kgdrywt	1	20	19.	1.8	9.4
Dibenzo(a,h)anthracene	JL	14.	ug/Kgdrywt	1	20	19.	1.7	9.4
Benzo(g,h,i)perylene	LL	32.	ug/Kgdrywt	1	20	19.	1.9	9.4
2-Methylnaphthalene-D10		56.7	%					
Fluorene-D10		65.6	%					
Pyrene-D10		69.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-10
Client ID: 004/5-SS1062-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0711.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	4.0	ug/Kgdrywt	1	20	20.	2.6	9.8
2-Methylnaphthalene	U	9.8	ug/Kgdrywt	1	20	20.	2.2	9.8
Acenaphthylene	J	3.0	ug/Kgdrywt	1	20	20.	1.2	9.8
Acenaphthene	J	13.	ug/Kgdrywt	1	20	20.	1.5	9.8
Fluorene	J	12.	ug/Kgdrywt	1	20	20.	3.2	9.8
Phenanthrene		180	ug/Kgdrywt	1	20	20.	1.8	9.8
Anthracene		22.	ug/Kgdrywt	1	20	20.	1.2	9.8
Fluoranthene		260	ug/Kgdrywt	1	20	20.	1.8	9.8
Pyrene		240	ug/Kgdrywt	1	20	20.	2.1	9.8
Benzo(a)anthracene		140	ug/Kgdrywt	1	20	20.	1.9	9.8
Chrysene		140	ug/Kgdrywt	1	20	20.	1.7	9.8
Benzo(b)Fluoranthene		200	ug/Kgdrywt	1	20	20.	2.4	9.8
Benzo(k)fluoranthene	L	57.	ug/Kgdrywt	1	20	20.	3.0	9.8
Benzo(a)pyrene	L	110	ug/Kgdrywt	1	20	20.	3.2	9.8
Indeno(1,2,3-cd)pyrene		89.	ug/Kgdrywt	1	20	20.	1.9	9.8
Dibenzo(a,h)anthracene	JL	16.	ug/Kgdrywt	1	20	20.	1.8	9.8
Benzo(g,h,i)perylene	LL	39.	ug/Kgdrywt	1	20	20.	2.0	9.8
2-Methylnaphthalene-D10		67.1	%					
Fluorene-D10		74.4	%					
Pyrene-D10		83.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-20
Client ID: 004/5-SS1063-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0590.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.5	9.7
2-Methylnaphthalene	U	9.7	ug/Kgdrywt	1	20	19.	2.1	9.7
Acenaphthylene	U	9.7	ug/Kgdrywt	1	20	19.	1.2	9.7
Acenaphthene	U	9.7	ug/Kgdrywt	1	20	19.	1.5	9.7
Fluorene	U	9.7	ug/Kgdrywt	1	20	19.	3.1	9.7
Phenanthrene	J	19.	ug/Kgdrywt	1	20	19.	1.8	9.7
Anthracene	J	2.8	ug/Kgdrywt	1	20	19.	1.2	9.7
Fluoranthene		52.	ug/Kgdrywt	1	20	19.	1.8	9.7
Pyrene		35.	ug/Kgdrywt	1	20	19.	2.0	9.7
Benzo(a)anthracene		25.	ug/Kgdrywt	1	20	19.	1.8	9.7
Chrysene		21.	ug/Kgdrywt	1	20	19.	1.6	9.7
Benzo(b)Fluoranthene		38.	ug/Kgdrywt	1	20	19.	2.3	9.7
Benzo(k)fluoranthene	JL	10.	ug/Kgdrywt	1	20	19.	3.0	9.7
Benzo(a)pyrene	L	21.	ug/Kgdrywt	1	20	19.	3.2	9.7
Indeno(1,2,3-cd)pyrene		33.	ug/Kgdrywt	1	20	19.	1.8	9.7
Dibenzo(a,h)anthracene	JL	7.7	ug/Kgdrywt	1	20	19.	1.8	9.7
Benzo(g,h,i)perylene	JLL	10.	ug/Kgdrywt	1	20	19.	1.9	9.7
2-Methylnaphthalene-D10		38.8	%					
Fluorene-D10		68.6	%					
Pyrene-D10		68.9	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-19
Client ID: 004/5-SS1064-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0705.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.3	ug/Kgdrywt	1	20	18.	2.4	9.3
2-Methylnaphthalene	U	9.3	ug/Kgdrywt	1	20	18.	2.0	9.3
Acenaphthylene	U	9.3	ug/Kgdrywt	1	20	18.	1.1	9.3
Acenaphthene	U	9.3	ug/Kgdrywt	1	20	18.	1.4	9.3
Fluorene	U	9.3	ug/Kgdrywt	1	20	18.	3.0	9.3
Phenanthrene	JM	15.	ug/Kgdrywt	1	20	18.	1.7	9.3
Anthracene	J	1.4	ug/Kgdrywt	1	20	18.	1.1	9.3
Fluoranthene	M	34.	ug/Kgdrywt	1	20	18.	1.7	9.3
Pyrene	M	29.	ug/Kgdrywt	1	20	18.	1.9	9.3
Benzo(a)anthracene	J	14.	ug/Kgdrywt	1	20	18.	1.8	9.3
Chrysene		19.	ug/Kgdrywt	1	20	18.	1.6	9.3
Benzo(b)Fluoranthene		21.	ug/Kgdrywt	1	20	18.	2.2	9.3
Benzo(k)fluoranthene	JL	11.	ug/Kgdrywt	1	20	18.	2.9	9.3
Benzo(a)pyrene	JLMM	13.	ug/Kgdrywt	1	20	18.	3.0	9.3
Indeno(1,2,3-cd)pyrene	JMM	11.	ug/Kgdrywt	1	20	18.	1.8	9.3
Dibenzo(a,h)anthracene	JLMM	1.8	ug/Kgdrywt	1	20	18.	1.7	9.3
Benzo(g,h,i)perylene	JLLMM	5.2	ug/Kgdrywt	1	20	18.	1.8	9.3
2-Methylnaphthalene-D10		35.1	%					
Fluorene-D10		50.8	%					
Pyrene-D10		60.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-18
Client ID: 004/5-SS1065-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0589.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 96.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	9.2	ug/Kgdrywt	1	20	18.	2.4	9.2
2-Methylnaphthalene	U	9.2	ug/Kgdrywt	1	20	18.	2.0	9.2
Acenaphthylene	J	2.4	ug/Kgdrywt	1	20	18.	1.1	9.2
Acenaphthene	J	1.6	ug/Kgdrywt	1	20	18.	1.4	9.2
Fluorene	U	9.2	ug/Kgdrywt	1	20	18.	3.0	9.2
Phenanthrene		33.	ug/Kgdrywt	1	20	18.	1.7	9.2
Anthracene	J	3.4	ug/Kgdrywt	1	20	18.	1.1	9.2
Fluoranthene		90.	ug/Kgdrywt	1	20	18.	1.7	9.2
Pyrene		66.	ug/Kgdrywt	1	20	18.	1.9	9.2
Benzo(a)anthracene		39.	ug/Kgdrywt	1	20	18.	1.8	9.2
Chrysene		44.	ug/Kgdrywt	1	20	18.	1.6	9.2
Benzo(b)Fluoranthene		75.	ug/Kgdrywt	1	20	18.	2.2	9.2
Benzo(k)fluoranthene	L	21.	ug/Kgdrywt	1	20	18.	2.9	9.2
Benzo(a)pyrene	L	38.	ug/Kgdrywt	1	20	18.	3.0	9.2
Indeno(1,2,3-cd)pyrene		62.	ug/Kgdrywt	1	20	18.	1.8	9.2
Dibenzo(a,h)anthracene	JL	12.	ug/Kgdrywt	1	20	18.	1.7	9.2
Benzo(g,h,i)perylene	JLL	18.	ug/Kgdrywt	1	20	18.	1.8	9.2
2-Methylnaphthalene-D10		42.4	%					
Fluorene-D10		66.7	%					
Pyrene-D10		62.3	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-14
Client ID: 004/5-SS1066-000.9
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0713.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 92.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene	J	2.3	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene		43.	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	J	6.6	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene		91.	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene		98.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene		50.	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene		54.	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene		87.	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	L	22.	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	L	40.	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene		41.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	JL	9.2	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	JLL	21.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		58.1	%					
Fluorene-D10		62.6	%					
Pyrene-D10		75.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-13
Client ID: 004/5-SS1067-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0712.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	13.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	21.	1.2	10.
Acenaphthene		38.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene		43.	ug/Kgdrywt	1	20	21.	3.3	10.
Phenanthrene	E	620	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene		94.	ug/Kgdrywt	1	20	21.	1.2	10.
Fluoranthene	E	760	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene	E	700	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene	E	370	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene	E	350	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	E	380	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	L	120	ug/Kgdrywt	1	20	21.	3.2	10.
Benzo(a)pyrene	L	190	ug/Kgdrywt	1	20	21.	3.4	10.
Indeno(1,2,3-cd)pyrene		140	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	L	37.	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	LL	65.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		56.7	%					
Fluorene-D10		66.4	%					
Pyrene-D10		76.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-13DL
Client ID: 004/5-SS1067-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0728.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	13.	ug/Kgdrywt	4	20	83.	11.	42.
2-Methylnaphthalene	U	42.	ug/Kgdrywt	4	20	83.	9.1	42.
Acenaphthylene	U	42.	ug/Kgdrywt	4	20	83.	5.0	42.
Acenaphthene	J	36.	ug/Kgdrywt	4	20	83.	6.2	42.
Fluorene	J	41.	ug/Kgdrywt	4	20	83.	13.	42.
Phenanthrene		620	ug/Kgdrywt	4	20	83.	7.5	42.
Anthracene		97.	ug/Kgdrywt	4	20	83.	5.0	42.
Fluoranthene		750	ug/Kgdrywt	4	20	83.	7.5	42.
Pyrene		830	ug/Kgdrywt	4	20	83.	8.7	42.
Benzo(a)anthracene		350	ug/Kgdrywt	4	20	83.	7.9	42.
Chrysene		370	ug/Kgdrywt	4	20	83.	7.1	42.
Benzo(b)Fluoranthene		380	ug/Kgdrywt	4	20	83.	10.	42.
Benzo(k)fluoranthene	L	130	ug/Kgdrywt	4	20	83.	13.	42.
Benzo(a)pyrene	L	220	ug/Kgdrywt	4	20	83.	14.	42.
Indeno(1,2,3-cd)pyrene		170	ug/Kgdrywt	4	20	83.	7.9	42.
Dibenzo(a,h)anthracene	JL	33.	ug/Kgdrywt	4	20	83.	7.5	42.
Benzo(g,h,i)perylene	JLL	77.	ug/Kgdrywt	4	20	83.	8.3	42.
2-Methylnaphthalene-D10		57.6	%					
Fluorene-D10		65.6	%					
Pyrene-D10		86.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-21
Client ID: 004/5-SS1068-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0553.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 94.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.7	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	21.	2.3	10.
Acenaphthylene	J	1.4	ug/Kgdrywt	1	20	21.	1.3	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	21.	1.6	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	21.	3.4	10.
Phenanthrene	J	18.	ug/Kgdrywt	1	20	21.	1.9	10.
Anthracene	J	1.9	ug/Kgdrywt	1	20	21.	1.3	10.
Fluoranthene		46.	ug/Kgdrywt	1	20	21.	1.9	10.
Pyrene		38.	ug/Kgdrywt	1	20	21.	2.2	10.
Benzo(a)anthracene		26.	ug/Kgdrywt	1	20	21.	2.0	10.
Chrysene		24.	ug/Kgdrywt	1	20	21.	1.8	10.
Benzo(b)Fluoranthene	LL	43.	ug/Kgdrywt	1	20	21.	2.5	10.
Benzo(k)fluoranthene	J	14.	ug/Kgdrywt	1	20	21.	3.3	10.
Benzo(a)pyrene	LL	26.	ug/Kgdrywt	1	20	21.	3.5	10.
Indeno(1,2,3-cd)pyrene	L	40.	ug/Kgdrywt	1	20	21.	2.0	10.
Dibenzo(a,h)anthracene	J	8.9	ug/Kgdrywt	1	20	21.	1.9	10.
Benzo(g,h,i)perylene	JLL	14.	ug/Kgdrywt	1	20	21.	2.1	10.
2-Methylnaphthalene-D10		52.8	%					
Fluorene-D10		71.7	%					
Pyrene-D10		71.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-33RE
Client ID: TF2-SS-RB03-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0561.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 28-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133367

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.21	0.066	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.21	0.079	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.21	0.056	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.21	0.066	0.10
Fluorene	U	0.10	ug/L	1	.2	0.21	0.063	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.21	0.052	0.10
Anthracene	U	0.10	ug/L	1	.2	0.21	0.045	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.21	0.075	0.10
Pyrene	U	0.10	ug/L	1	.2	0.21	0.061	0.10
Benzo(a)anthracene	B	0.29	ug/L	1	.2	0.21	0.047	0.10
Chrysene	U	0.10	ug/L	1	.2	0.21	0.037	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.21	0.092	0.10
Benzo(k)fluoranthene	UL	0.10	ug/L	1	.2	0.21	0.050	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.21	0.068	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.21	0.054	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.21	0.072	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.21	0.067	0.10
2-Methylnaphthalene-D10		45.0	%					
Fluorene-D10		63.3	%					
pyrene-d10		71.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-27
Client ID: 003-SS1015-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20059.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 06-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 93.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	48.	mg/Kgdrywt	1	20	20.	5.6	9.8
o-Terphenyl		98.8	%					
n-Triacontane-D62		101.	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-8
Client ID: 004/5-SS1051-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20057.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 06-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	27.	mg/Kgdrywt	1	20	19.	5.4	9.4
o-Terphenyl		87.1	%					
n-Triacontane-D62		95.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20056.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	66.	mg/Kgdrywt	1	20	19.	5.4	9.5
o-Terphenyl	*	60.9	%					
n-Triacontane-D62		70.7	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3RE
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20121.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		100	mg/Kgdrywt	1	20	19.	5.5	9.6
o-Terphenyl		85.4	%					
n-Triacontane-D62		93.8	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-18
Client ID: 004/5-SS1065-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20058.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 06-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	L	38.	mg/Kgdrywt	1	20	20.	5.6	9.9
o-Terphenyl		73.8	%					
n-Triacontane-D62		83.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-27
Client ID: 003-SS1015-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4080.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 93.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.3	mg/Kgdrywt	1	2.5	2.8	2.1	2.3
p-Bromofluorobenzene		95.5	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-8
Client ID: 004/5-SS1051-000.8
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4078.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 96.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	J	2.6	mg/Kgdrywt	1	2.5	3.3	2.4	2.6
p-Bromofluorobenzene		91.4	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4077.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 96.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.1	mg/Kgdrywt	1	2.5	2.6	1.9	2.1
p-Bromofluorobenzene		95.1	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-18
Client ID: 004/5-SS1065-000.5
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4079.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 96.
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	3.0	mg/Kgdrywt	1	2.5	3.7	2.7	3.0
p-Bromofluorobenzene		92.2	%					

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Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-1
Client ID: TF2-W-TB03-1013
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: 9GJ4076.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 26-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: 100
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		85.6	%					

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APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: Vavsta Newport SDG: SG 82544

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: _____

Missing Information	Date Lab Contacted	Date Received

Validator: Edward Kelly Date: 12/6/13

EPA-NE - Data Validation
VOA/SV/Pest/PCB-I

See DV Report

Case: Navsta Newport SDG: SG8254

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

I. PRESERVATION AND HOLDING TIMES - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: Edward Ludlum Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator: Edward Hathaway Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport. SDG: SG8254

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: Edward Sedlazo

Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator: Edward Modlyn Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG 8254

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: Edward Sedlmyer Date: 12/6/13

See DV Report

EPA NE - Data Validation Worksheet

Case: Navsta Newport SDG: SDG 58254

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: Edward Sudlow Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nevista Newport SDG: SG 8254

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator: Edward Ludlow Date: 12/6/13

EPA-NE - Data Validation Worksheet

See DV Report

Case: Navistar Newport SDG: SG8254

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? Y / N

Did the laboratory analyze the initial calibration at the appropriate concentration levels? Y N

Validator: Edward Sedlyar Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)

Comments:

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator: Edward Sudlow Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG 8254

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator: Edward Sudlow Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG 8254

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator: Edward Sedlmyer Date: 12/6/13

EPA-NE - Data Validation Worksheet See DV Report

Case: Navsta Newport SDG: SG8254

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. Y N

Validator: Edward Sedlazo Date: 12/6/13

See DU Report

EPA-NE - Data Validation Worksheet

Case: Navstar Newport SDG: SG8254

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level: ____

Sampler: _____ Company: _____ Contacted: Yes No Date: _____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: Edward Lindley Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Naustra Newport SDG: S6825Y

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: Edward Swallow Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methylphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: Edward Sadlyn Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: NavstaNewport SDG: SG 8254

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Ludlum Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nausta Newport SDG: SG8254

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery			% Recovery		
			Fluoranthene			Naphthalene	
			Pyrene			2-Methylnaphthalene	
			Benzo(a)anthracene			Acenaphthylene	
			Chrysene			Acenaphthene	
			Benzo(b)fluoranthene			Fluorene	
			Benzo(k)fluoranthene			Pentachlorophenol	
			Benzo(a)pyrene			Phenanthrene	
			Indeno(1.2.2-cd)pyrene			Anthracene	
			Dibenzo(a.h)anthracene				
			Benzo(g.h.i)perylene				

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Hedlund Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1,2-Dichloroethane-d_4

Validator: Edward Sedlmyer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Naustu Newport SDG: 568254

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1,2-Dichloropropane –d_6 TDP= trans-1,3-Dichloropropene-d_4

TCA= 1,1,2,2-Tetracholoroethane-d_2 DCZ= 1,2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: Edward Wedlmyer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nyvsta Newport SDG: SG8254

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator: Edward Sedlazo Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: 568254

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: Edward Kelly Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sullivan Date: 12/6/13

See OU Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG8254

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator: Edward Sedlmayer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nauset Newport SDG: SC8254

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: Edward Sedlazeck Date: 12/6/18

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nauset to Newport SDG: SG82554

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: Edward Hedbrym Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nauste Newport SDG: SG8254

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: Edward Sedlmyer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nars to Newport SDG: SG8254

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria.

Are more than one-half of the PES analytes within criteria for each parameter? **Y N**

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: Edward Sedlmyer Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Naustc Newport SDG: SG 8254

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: Edward Leathers Date: 12/6/13

EPA-NE - Data Validation Worksheet See DV Report

Case: Navsta Newport SDG: SG 8254

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: Edward Wellyn Date: 12/6/13

See DV Report

EPA NE - Data Validation Worksheet

Case: Navsta Newport SDG: JG8254

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: Edward Sedlmayer Date: 12/6/13

EPA-NE - Data Validation Worksheet See DV Report

Case: Navsta Newport SDG: SG825-4

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: Edward Sedlmyer Date: 12/6/13

See DU Report

EPA-NE - Data Validation Worksheet

Case: Navsta Newport SDG: SG825-4

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Kadlubowski Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Navy Newport SDG: SG 8254

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: Edward Sedlmayr Date: 12/6/13

See DV Report

EPA-NE - Data Validation Worksheet

Case: Nouste Newport SDG: 568254

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: Edward Hedbye Date: 12/6/13

APPENDIX D

SUPPORT DOCUMENTATION

HOLDTIME

SDG SG8254

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-004/5-SS1062-000.8	SG8254-010	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS-DUP05-101	SG8254-023	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS-DUP04-101	SG8254-011	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS1068-000.5	SG8254-021	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1067-000.7	SG8254-013	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS1066-000.9	SG8254-014	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS1065-000.5	SG8254-018	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1063-000.6	SG8254-020	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1061-000.6	SG8254-012	NM	10/21/2013	11/8/2013	11/8/2013	18	0	18
HG	MG/KG	TF2-004/5-SS1060-000.5	SG8254-015	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1059-000.6	SG8254-016	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1058-000.5	SG8254-017	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1057-0001	SG8254-002	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1056-000.6	SG8254-003	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1055-000.8	SG8254-004	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	TF2-003-SS1012-000.7	SG8254-024	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1064-000.6	SG8254-019	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1011-000.8	SG8254-022	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1054-000.6	SG8254-005	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-003-SS1013-000.7	SG8254-025	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1014-0001	SG8254-026	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1015-000.8	SG8254-027	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1016-000.9	SG8254-028	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-003-SS1017-000.8	SG8254-029	NM	10/22/2013	11/8/2013	11/8/2013	17	0	17
HG	MG/KG	TF2-004/5-SS1052-000.6	SG8254-007	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1053-000.6	SG8254-006	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1051-000.8	SG8254-008	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-004/5-SS1050-000.6	SG8254-009	NM	10/21/2013	11/7/2013	11/8/2013	17	1	18
HG	MG/KG	TF2-003-SS-DUP06-1013	SG8254-032	NM	10/22/2013	11/12/2013	11/13/2013	21	1	22
HG	MG/KG	TF2-003-SS1019-000.5	SG8254-031	NM	10/22/2013	11/12/2013	11/13/2013	21	1	22
HG	MG/KG	TF2-003-SS1018-000.8	SG8254-030	NM	10/22/2013	11/12/2013	11/13/2013	21	1	22
HG	UG/L	TF2-SS-RB03-1013	SG8254-033	NM	10/22/2013	11/9/2013	11/11/2013	18	2	20
M	MG/KG	TF2-004/5-SS1055-000.8	SG8254-004	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SS1060-000.5	SG8254-015	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1057-0001	SG8254-002	NM	10/21/2013	11/6/2013	11/18/2013	16	12	28
M	MG/KG	TF2-004/5-SS1059-000.6	SG8254-016	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1059-000.6	SG8254-016	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1058-000.5	SG8254-017	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1058-000.5	SG8254-017	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1060-000.5	SG8254-015	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1057-0001	SG8254-002	NM	10/21/2013	11/6/2013	11/13/2013	16	7	23
M	MG/KG	TF2-004/5-SS1056-000.6	SG8254-003	NM	10/21/2013	11/6/2013	11/18/2013	16	12	28
M	MG/KG	TF2-004/5-SS1053-000.6	SG8254-006	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1055-000.8	SG8254-004	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1054-000.6	SG8254-005	NM	10/21/2013	11/6/2013	11/18/2013	16	12	28
M	MG/KG	TF2-004/5-SS1054-000.6	SG8254-005	NM	10/21/2013	11/6/2013	11/13/2013	16	7	23
M	MG/KG	TF2-004/5-SS1061-000.6	SG8254-012	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1056-000.6	SG8254-003	NM	10/21/2013	11/6/2013	11/13/2013	16	7	23
M	MG/KG	TF2-004/5-SS1065-000.5	SG8254-018	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1017-000.8	SG8254-029	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS-DUP05-101	SG8254-023	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SS1053-000.6	SG8254-006	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS-DUP04-101	SG8254-011	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1068-000.5	SG8254-021	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1067-000.7	SG8254-013	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS-DUP04-101	SG8254-011	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1066-000.9	SG8254-014	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1061-000.6	SG8254-012	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1065-000.5	SG8254-018	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1064-000.6	SG8254-019	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1064-000.6	SG8254-019	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1063-000.6	SG8254-020	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1063-000.6	SG8254-020	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1062-000.8	SG8254-010	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1062-000.8	SG8254-010	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1066-000.9	SG8254-014	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-003-SS1013-000.7	SG8254-025	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1016-000.9	SG8254-028	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1015-000.8	SG8254-027	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-003-SS1015-000.8	SG8254-027	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1015-000.8	SG8254-027	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1014-0001	SG8254-026	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1014-0001	SG8254-026	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1017-000.8	SG8254-029	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1013-000.7	SG8254-025	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1017-000.8	SG8254-029	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1013-000.7	SG8254-025	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1012-000.7	SG8254-024	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1012-000.7	SG8254-024	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1012-000.7	SG8254-024	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1011-000.8	SG8254-022	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1011-000.8	SG8254-022	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1014-0001	SG8254-026	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1019-000.5	SG8254-031	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-004/5-SS1052-000.6	SG8254-007	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-004/5-SS1051-000.8	SG8254-008	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1051-000.8	SG8254-008	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	TF2-004/5-SS1050-000.6	SG8254-009	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-004/5-SS1050-000.6	SG8254-009	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	MG/KG	TF2-003-SS-DUP06-1013	SG8254-032	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1016-000.9	SG8254-028	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS-DUP06-1013	SG8254-032	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS1068-000.5	SG8254-021	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1019-000.5	SG8254-031	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1019-000.5	SG8254-031	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-003-SS1018-000.8	SG8254-030	NM	10/22/2013	11/8/2013	11/19/2013	17	11	28
M	MG/KG	TF2-003-SS1018-000.8	SG8254-030	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-003-SS1018-000.8	SG8254-030	NM	10/22/2013	11/8/2013	11/13/2013	17	5	22
M	MG/KG	TF2-004/5-SS-DUP05-101	SG8254-023	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1052-000.6	SG8254-007	NM	10/21/2013	11/8/2013	11/18/2013	18	10	28
M	MG/KG	TF2-003-SS-DUP06-1013	SG8254-032	NM	10/22/2013	11/8/2013	11/18/2013	17	10	27
M	MG/KG	TF2-004/5-SS1067-000.7	SG8254-013	NM	10/21/2013	11/8/2013	11/13/2013	18	5	23
M	UG/L	TF2-SS-RB03-1013	SG8254-033	NM	10/22/2013	11/6/2013	11/18/2013	15	12	27
M	UG/L	TF2-SS-RB03-1013	SG8254-033	NM	10/22/2013	11/6/2013	11/13/2013	15	7	22
TS	%	TF2-004/5-SS1055-000.8	SG8254-4	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
TS	%	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-004/5-SS1057-0001	SG8254-2	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-004/5-SS1058-000.5	SG8254-17	NM	10/22/2013	10/28/2013	10/29/2013	6	1	7
TS	%	TF2-004/5-SS1059-000.6	SG8254-16	NM	10/22/2013	10/28/2013	10/29/2013	6	1	7
TS	%	TF2-004/5-SS1060-000.5	SG8254-15	NM	10/22/2013	10/28/2013	10/29/2013	6	1	7
TS	%	TF2-004/5-SS1061-000.6	SG8254-12	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1054-000.6	SG8254-5	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-004/5-SS1063-000.6	SG8254-20	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1064-000.6	SG8254-19	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1066-000.9	SG8254-14	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1067-000.7	SG8254-13	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1068-000.5	SG8254-21	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS-DUP04-101	SG8254-11	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1062-000.8	SG8254-10	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-003-SS1018-000.8	SG8254-30	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1011-000.8	SG8254-22	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
TS	%	TF2-003-SS1012-000.7	SG8254-24	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1013-000.7	SG8254-25	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1014-0001	SG8254-26	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1016-000.9	SG8254-28	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1053-000.6	SG8254-6	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-003-SS1017-000.8	SG8254-29	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-003-SS1019-000.5	SG8254-31	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-W-TB03-1013	SG8254-1	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
TS	%	TF2-003-SS-DUP06-1013	SG8254-32	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS-DUP05-101	SG8254-23	NM	10/22/2013	10/29/2013	10/30/2013	7	1	8
TS	%	TF2-004/5-SS1050-000.6	SG8254-9	NM	10/21/2013	10/28/2013	10/29/2013	7	1	8
TS	%	TF2-004/5-SS1052-000.6	SG8254-7	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
SIM	%	TF2-004/5-SS-DUP05-101	SG8254-23	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1067-000.7	SG8254-13DL	NM	10/21/2013	10/28/2013	11/13/2013	7	16	23
SIM	%	TF2-SS-RB03-1013	SG8254-33RE	NM	10/22/2013	10/28/2013	11/1/2013	6	4	10
SIM	%	TF2-003-SS1014-0001	SG8254-26	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	%	TF2-004/5-SS-DUP04-101	SG8254-11	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1050-000.6	SG8254-9	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-003-SS-DUP06-1013	SG8254-32	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	%	TF2-003-SS1019-000.5	SG8254-31DL	NM	10/22/2013	10/25/2013	11/14/2013	3	20	23
SIM	%	TF2-003-SS1019-000.5	SG8254-31	NM	10/22/2013	10/25/2013	11/2/2013	3	8	11
SIM	%	TF2-003-SS1018-000.8	SG8254-30	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1052-000.6	SG8254-7	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-003-SS1016-000.9	SG8254-28	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1053-000.6	SG8254-6	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-003-SS1014-0001	SG8254-26DL	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	%	TF2-003-SS1011-000.8	SG8254-22	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1011-000.8	SG8254-22DL	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1012-000.7	SG8254-24	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1012-000.7	SG8254-24DL	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1013-000.7	SG8254-25	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-003-SS1013-000.7	SG8254-25DL	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	%	TF2-003-SS1017-000.8	SG8254-29	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1061-000.6	SG8254-12	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	%	TF2-004/5-SS1068-000.5	SG8254-21	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	%	TF2-004/5-SS1067-000.7	SG8254-13	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1066-000.9	SG8254-14	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	%	TF2-004/5-SS1064-000.6	SG8254-19	NM	10/22/2013	10/28/2013	11/12/2013	6	15	21
SIM	%	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-004/5-SS1062-000.8	SG8254-10	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1060-000.5	SG8254-15	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	%	TF2-004/5-SS1059-000.6	SG8254-16	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	%	TF2-004/5-SS1058-000.5	SG8254-17	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	%	TF2-004/5-SS1057-0001	SG8254-2	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	%	TF2-004/5-SS1055-000.8	SG8254-4	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-004/5-SS1054-000.6	SG8254-5	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	%	TF2-004/5-SS1063-000.6	SG8254-20	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-004/5-SS-DUP04-101	SG8254-11	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1057-0001	SG8254-2	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS-DUP05-101	SG8254-23	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/KG	TF2-003-SS1014-0001	SG8254-26	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS-DUP06-1013	SG8254-32	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	UG/KG	TF2-003-SS1019-000.5	SG8254-31DL	NM	10/22/2013	10/25/2013	11/14/2013	3	20	23
SIM	UG/KG	TF2-003-SS1019-000.5	SG8254-31	NM	10/22/2013	10/25/2013	11/2/2013	3	8	11
SIM	UG/KG	TF2-003-SS1018-000.8	SG8254-30	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1017-000.8	SG8254-29	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1016-000.9	SG8254-28	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-004/5-SS1050-000.6	SG8254-9	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1068-000.5	SG8254-21	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1014-0001	SG8254-26DL	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	UG/KG	TF2-004/5-SS1059-000.6	SG8254-16	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-003-SS1013-000.7	SG8254-25	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1012-000.7	SG8254-24DL	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1012-000.7	SG8254-24	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1011-000.8	SG8254-22DL	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1011-000.8	SG8254-22	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/25/2013	11/1/2013	3	7	10
SIM	UG/KG	TF2-004/5-SS1066-000.9	SG8254-14	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
SIM	UG/KG	TF2-003-SS1013-000.7	SG8254-25DL	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
SIM	UG/KG	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1067-000.7	SG8254-13DL	NM	10/21/2013	10/28/2013	11/13/2013	7	16	23
SIM	UG/KG	TF2-004/5-SS1067-000.7	SG8254-13	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-004/5-SS1064-000.6	SG8254-19	NM	10/22/2013	10/28/2013	11/12/2013	6	15	21
SIM	UG/KG	TF2-004/5-SS1063-000.6	SG8254-20	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-004/5-SS1062-000.8	SG8254-10	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1053-000.6	SG8254-6	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1052-000.6	SG8254-7	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1061-000.6	SG8254-12	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1054-000.6	SG8254-5	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1055-000.8	SG8254-4	NM	10/21/2013	10/28/2013	11/4/2013	7	7	14
SIM	UG/KG	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/28/2013	11/12/2013	7	15	22
SIM	UG/KG	TF2-004/5-SS1058-000.5	SG8254-17	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/KG	TF2-004/5-SS1060-000.5	SG8254-15	NM	10/22/2013	10/28/2013	11/4/2013	6	7	13
SIM	UG/L	TF2-SS-RB03-1013	SG8254-33RE	NM	10/22/2013	10/28/2013	11/1/2013	6	4	10
GRO	%	TF2-W-TB03-1013	SG8254-1	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
GRO	%	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/25/2013	10/26/2013	3	1	4
GRO	%	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	%	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/30/2013	11/6/2013	9	7	16
GRO	%	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	%	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/30/2013	11/5/2013	9	6	15
GRO	%	TF2-004/5-SS1056-000.6	SG8254-3RE	NM	10/21/2013	11/11/2013	11/11/2013	21	0	21
GRO	%	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/25/2013	10/26/2013	3	1	4
GRO	%	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/30/2013	11/6/2013	8	7	15
GRO	%	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/30/2013	11/6/2013	8	7	15
GRO	MG/KG	TF2-W-TB03-1013	SG8254-1	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	MG/KG	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/25/2013	10/26/2013	3	1	4
GRO	MG/KG	TF2-003-SS1015-000.8	SG8254-27	NM	10/22/2013	10/30/2013	11/6/2013	8	7	15
GRO	MG/KG	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	MG/KG	TF2-004/5-SS1051-000.8	SG8254-8	NM	10/21/2013	10/30/2013	11/6/2013	9	7	16
GRO	MG/KG	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/25/2013	10/26/2013	4	1	5
GRO	MG/KG	TF2-004/5-SS1056-000.6	SG8254-3	NM	10/21/2013	10/30/2013	11/5/2013	9	6	15
GRO	MG/KG	TF2-004/5-SS1056-000.6	SG8254-3RE	NM	10/21/2013	11/11/2013	11/11/2013	21	0	21
GRO	MG/KG	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/30/2013	11/6/2013	8	7	15

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
GRO	MG/KG	TF2-004/5-SS1065-000.5	SG8254-18	NM	10/22/2013	10/25/2013	10/26/2013	3	1	4

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-004/5-SS1061-000.6	UNITS	F2-004/5-SS-DUP04-101	RPD	D	
PAH	ACENAPHTHENE	2.8 J	UG/KG	12 J	124.32	9.20	O.K. <2xRL
PAH	ACENAPHTHYLENE	1.9 J	UG/KG	ND	200.00	1.90	
PAH	ANTHRACENE	8.3 J	UG/KG	36	125.06	27.70	J
PAH	BENZO(A)ANTHRACENE	71	UG/KG	80	11.92	9.00	
PAH	BENZO(A)PYRENE	61	UG/KG	64	4.80	3.00	
PAH	BENZO(B)FLUORANTHENE	120	UG/KG	100	18.18	20.00	
PAH	BENZO(G,H,I)PERYLENE	32 J	UG/KG	27 J	16.95	5.00	
PAH	BENZO(K)FLUORANTHENE	39	UG/KG	32	19.72	7.00	
PAH	CHRYSENE	82	UG/KG	86	4.76	4.00	
PAH	DIBENZO(A,H)ANTHRACENE	14 J	UG/KG	13 J	7.41	1.00	
PAH	FLUORANTHENE	110	UG/KG	140	24.00	30.00	
PAH	FLUORENE	ND	UG/KG	11 J	200.00	11.00	O.K. <2xRL
PAH	INDENO(1,2,3-CD)PYRENE	63	UG/KG	53	17.24	10.00	
PAH	NAPHTHALENE	ND	UG/KG	3 J	200.00	3.00	O.K. <2xRL
PAH	PHENANTHRENE	49	UG/KG	120	84.02	71.00	J
PAH	PYRENE	120	UG/KG	140	15.38	20.00	

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-004/5-SS1065-000.5	UNITS	F2-004/5-SS-DUP05-101	RPD	D	
PAH	ACENAPHTHENE	1.6 J	UG/KG	ND	200.00	1.60	O.K. <2RPL
PAH	ACENAPHTHYLENE	2.4 J	UG/KG	2 J	18.18	0.40	
PAH	ANTHRACENE	3.4 J	UG/KG	2.5 J	30.51	0.90	
PAH	BENZO(A)ANTHRACENE	39	UG/KG	ND	200.00	39.00	O.K <2RPL
PAH	BENZO(A)PYRENE	38	UG/KG	30 J	23.53	8.00	
PAH	BENZO(B)FLUORANTHENE	75	UG/KG	55 J	30.77	20.00	
PAH	BENZO(G,H,I)PERYLENE	18 J	UG/KG	16 J	11.76	2.00	
PAH	BENZO(K)FLUORANTHENE	21	UG/KG	19 J	10.00	2.00	
PAH	CHRYSENE	44	UG/KG	32	31.58	12.00	
PAH	DIBENZO(A,H)ANTHRACENE	12 J	UG/KG	11 J	8.70	1.00	
PAH	FLUORANTHENE	90	UG/KG	63	35.29	27.00	
PAH	INDENO(1,2,3-CD)PYRENE	62 J	UG/KG	52	17.54	10.00	
PAH	PHENANTHRENE	33	UG/KG	24	31.58	9.00	
PAH	PYRENE	66	UG/KG	50	27.59	16.00	

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-003-SS1015-000.8	UNITS	TF2-003-SS-DUP06-1013	RPD	D
PAH	ACENAPHTHENE	5.4 J	UG/KG	4.7 J	13.86	0.70
PAH	ACENAPHTHYLENE	2.3 J	UG/KG	1.8 J	24.39	0.50
PAH	ANTHRACENE	16 J	UG/KG	14 J	13.33	2.00
PAH	BENZO(A)ANTHRACENE	120 J	UG/KG	120	0.00	0.00
PAH	BENZO(A)PYRENE	79 J	UG/KG	100 J	23.46	21.00
PAH	BENZO(B)FLUORANTHENE	140 J	UG/KG	170 J	19.35	30.00
PAH	BENZO(G,H,I)PERYLENE	39 J	UG/KG	47 J	18.60	8.00
PAH	BENZO(K)FLUORANTHENE	42	UG/KG	56	28.57	14.00
PAH	CHRYSENE	110	UG/KG	130	16.67	20.00
PAH	DIBENZO(A,H)ANTHRACENE	24	UG/KG	17 J	34.15	7.00
PAH	FLUORANTHENE	230	UG/KG	200	13.95	30.00
PAH	FLUORENE	4.7 J	UG/KG	4.1 J	13.64	0.60
PAH	INDENO(1,2,3-CD)PYRENE	130 J	UG/KG	84 J	42.99	46.00
PAH	PHENANTHRENE	120	UG/KG	110	8.70	10.00
PAH	PYRENE	200	UG/KG	240	18.18	40.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

TETRA TECH NUS, INC.
NVASTA NEWPORT
TANK FARM 2 CTO WE30
SG8254

KATAHDIN ANALYTICAL SERVICES, INC.
600 TECHNOLOGY WAY
SCARBOROUGH, ME 04074

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT TANK FARM 2 CTO WE30
SG8254

Sample Receipt

The following sample was received on October 23, 2013 and was logged in under Katahdin Analytical Services work order number SG8254 for a hardcopy due date of November 11, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG8254-1	TF2-W-TB03-1013
SG8254-2	TF2-004/5-SS1057-0001
SG8254-3	TF2-004/5-SS1056-000.6
SG8254-4	TF2-004/5-SS1055-000.8
SG8254-5	TF2-004/5-SS1054-000.6
SG8254-6	TF2-004/5-SS1053-000.6
SG8254-7	TF2-004/5-SS1052-000.6
SG8254-8	TF2-004/5-SS1051-000.8
SG8254-9	TF2-004/5-SS1050-000.6
SG8254-10	TF2-004/5-SS1062-000.8
SG8254-11	TF2-004/5-SS-DUP04-1013
SG8254-12	TF2-004/5-SS1061-000.6
SG8254-13	TF2-004/5-SS1067-000.7
SG8254-14	TF2-004/5-SS1066-000.9
SG8254-15	TF2-004/5-SS1060-000.5
SG8254-16	TF2-004/5-SS1059-000.6
SG8254-17	TF2-004/5-SS1058-000.5
SG8254-18	TF2-004/5-SS1065-000.5
SG8254-19	TF2-004/5-SS1064-000.6
SG8254-20	TF2-004/5-SS1063-000.6
SG8254-21	TF2-004/5-SS1068-000.5
SG8254-22	TF2-004/5-SS1011-000.8
SG8254-23	TF2-004/5-SS-DUP05-1013
SG8254-24	TF2-003-SS1012-000.7
SG8254-25	TF2-003-SS1013-000.7
SG8254-26	TF2-003-SS1014-0001
SG8254-27	TF2-003-SS1015-000.8
SG8254-28	TF2-003-SS1016-000.9
SG8254-29	TF2-003-SS1017-000.8
SG8254-30	TF2-003-SS1018-000.8
SG8254-31	TF2-003-SS1019-000.5
SG8254-32	TF2-003-SS-DUP06-1013
SG8254-33	TF2-SS-RB03-1013

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Some of the client IDs on the Chain of Custody exceeds the 19-character limit of the Katahdin Analytical Information Management System. Therefore, the first characters "TF2-" in the client ID all samples with the exception of samples SG8254-1 and 33 were omitted on all forms.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG8254 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8270D SIM Analysis

Sample SG8254-25DL had a low response for the internal standard perylene-d12 that resulted in a %D which was outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the ICAL midpoint standard. Since the undiluted analysis had acceptable IS responses, the sample was not reanalyzed diluted.

All soil samples were manually integrated for the analytes 2-methylnaphthalene, acenaphthylene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene, and/or indeno(1,2,3-cd)pyrene. The specific reason for the manual integration is indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The target analytes benzo(a)anthracene, chrysene, and/or benzo(k)fluoranthene were detected below ½ the reporting limit in the method blanks WG133188-1RA and WG133367-1RA. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since the method blanks were acceptable, no further action was taken.

The independent check standard (file N0529) associated with the initial calibration on the N instrument on 10/30/2013 had low concentrations for the target analytes pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The independent check standard (file N0546) associated with the initial calibration on the N instrument on 10/31/2013 had a low concentration for the target analytes benzo(a)pyrene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The independent check standard (file N0704) associated with the initial calibration on the N instrument on 11/12/2013 had a high concentration for the target analyte 2-methylnaphthalene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The CV (file N0557) had high responses for the target analyte benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene. The CV (file N0574) had high responses for the target analytes indeno(1,2,3-cd)pyrene and dibenzo(1,h)anthracene. The CV (file N0723) had a low response for the target analyte indeno(1,2,3-cd)pyrene. The CV (file N0740) had a high response for the target analyte indeno(1,2,3-cd)pyrene. These responses resulted in %D's that were greater than the acceptance limit of 20% from DoD QSM.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are statistically derived limits for the full list of spiked compounds and are statistically derived limits for the surrogates. Although DoD QSM acceptance limits were requested for this project, laboratory established acceptance limits were used because the DoD QSM does not list acceptance limits for 8270SIM. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these statistical acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

The LCS WG133188-2 had recoveries for three analytes that were low and outside of the laboratory established acceptance limits. The LCSD WG133188-3 had low recoveries for four analytes. The DoD QSM number of allowable exceedances for 17 analytes is one. If the DoD QSM acceptance limits are applied, the LCS had acceptable recoveries for the spiked analytes, after factoring in the allowable number of exceedances. Therefore, no further action was taken.

The LCSD WG133361-3 had low recoveries for four analytes that were outside of the laboratory established acceptance limits. The DoD QSM number of allowable exceedances for 17 analytes is one. Since the LCS was acceptable, after factoring in the allowable number of exceedances, no further action was taken.

The MS WG133188-4 and MSD WG133188--5 had one and seven spiked target analytes, respectively, with recoveries that were non-calculable and reported as 0% recovery due to the concentration in the native sample being higher than in the MS and MSD. This is likely due to a non-homogeneous sample.

8015M-FLPRO Analysis

All the samples in the work order were manually integrated for the extraction surrogates o-terphenyl and N-Triacontane-d62, and Petroleum Range Organics. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Sample SG8254-3 had a low recovery for the extraction surrogate o-terphenyl that was outside the method acceptance limits. The sample was reextracted seven days outside of hold time. The results of both analyses are reported.

The LCS WG133426-2 had a low recovery for Petroleum Range Organics that was outside of method acceptance limits. Since the associated LCSD had acceptable recoveries, no further action was taken.

Note: The Form VII has a column for %D that is set to 25%. The DoD QSM criterion for a CV is 20%D. All of the compounds in the CV's were evaluated to 20% criteria.

8015B GRO Analysis

Sample SG8254-8 was manually integrated for Gasoline Range Organics. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The calibration verification standard (CV) (file 9GJ4060) had a low response for naphthalene, which resulted in a %D that was greater than 20%. Since the method requirement applies to only the GRO range response, which was acceptable, the associated samples were not reanalyzed.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG8254 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Soil-matrix Katahdin Sample Nos. SG8254 -(2, 3, and 5) were digested for ICP-MS analysis on 11/06/13 (QC Batch GK06IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8254 -5 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentrations of manganese (0.133 mg/Kg), and calcium (7.59 mg/kg) in the preparation blank from this batch are more than one half the laboratory's LOQ. However, because the measured concentrations of calcium and manganese in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

Aqueous-matrix Katahdin Sample No. SG8254 -33 was digested for ICP-MS analysis on 11/06/13 (QC Batch GK06IMW2) in accordance with USEPA Method 3010A.

Soil-matrix Katahdin Sample Nos. SG8254 -(4, 6-23, and 28) were digested for ICP-MS analysis on 11/08/13 (QC Batch GK08IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8254 -28 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentration of calcium (7.04 mg/kg) in the preparation blank from this batch is more than one half the laboratory's LOQ. However, because the measured concentrations of

calcium in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

Soil-matrix Katahdin Sample Nos. SG8254 -(24-27 and 29-32) were digested for ICP-MS analysis on 11/08/13 (QC Batch GK08IMS2) in accordance with USEPA Method 3050B. The measured concentration of iron (6.65 mg/kg) in the preparation blank from this batch is more than one half the laboratory's LOQ. However, because the measured concentrations of calcium in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

ICP-MS analyses of Work Order SG8254 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	**Associated Analytes**
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Solid-matrix Katahdin Sample Numbers SG8254 -(2-9) were digested for mercury analysis on 11/07/13 (QC Batch GK07HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Number SG8254 -5 was prepared in duplicate and with a matrix spike in this digestion batch.

Solid-matrix Katahdin Sample Numbers SG8254 -(10-29) were digested for mercury analysis on 11/08/13 (QC Batch GK08HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Number SG8254 -28 was prepared in duplicate and with a matrix spike in this digestion batch.

Aqueous-matrix Katahdin Sample Number SG8254 -33 was digested for mercury analysis on 11/09/13 (QC Batch GK09HGW1) in accordance with USEPA Method 7471B.

Solid-matrix Katahdin Sample Numbers SG8254 -(30-32) were digested for mercury analysis on 11/12/13 (QC Batch GK12HGS1) in accordance with USEPA Method 7471B. Duplicate laboratory control samples were prepared in this batch.

Mercury analysis of the Katahdin Work Order SG8254 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG8254 -5 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for arsenic, copper, and lead.

The laboratory duplicate analysis of Katahdin Sample No. SG8254 -28 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for antimony, manganese, and mercury.

The measured recoveries of antimony and calcium in the matrix-spiked aliquot of Katahdin Sample No. SG8254 -5 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The measured recoveries of antimony, calcium, and mercury in the matrix-spiked aliquot of Katahdin Sample No. SG8254 -28 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The serial dilution analysis of Katahdin Sample Number SG8254 -5 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for aluminum, iron, magnesium, manganese, and zinc.

The serial dilution analysis of Katahdin Sample Number SG8254 -28 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for aluminum, iron, lead, magnesium, vanadium, and zinc.

The measured recoveries of aluminum, barium, iron, magnesium, and manganese in the post-digestion spiked aliquot of Katahdin Sample Number SG8254 -5 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

The measured recoveries of barium, cobalt, copper, iron, manganese, nickel, and zinc in the post-digestion spiked aliquot of Katahdin Sample Number SG8254 -35 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the laboratory's limits of quantitation (LOQ) are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQ's, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG8254 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
11.22.13

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

000040

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SG8254	KIMS Review By: QP	Received By: GN
SDG #:	Cooler: 1 of 3	Date/Time Rec.: 10-23-13/15:00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.7
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?				✓	
Soil/Sediment: Received in airtight container?	✓				
Received in methanol?	✓				
Methanol covering soil?	✓				
D.I. Water - Received within 48 hour HT?	✓				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

DUP05 & DUP06 - EXTPH and GRO not needed per client. QP 10/24/13

QA-048 – Revision 3 – 10/01/2013

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GW	Delivered By: KAS
KAS Work Order#: SG8254	KIMS Review By:	Received By: GW
SDG #:	Cooler: 2 of 3	Date/Time Rec.: 10-23-13/15:00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.6
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved?					
Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

0000012

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SG8254/SG8262	KIMS Review By: JO	Received By: GN
SDG #:	Cooler: 3 of 3	Date/Time Rec.: 10-23-13/15:00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 5.4
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

Jennifer Obrin

From: Seiken, Dabra [Dabra.Seiken@tetratech.com]
Sent: Friday, November 08, 2013 10:02 AM
To: Jennifer Obrin; Jalkut, Kayleen
Cc: Carper, Kelly; Samchuck, Joseph
Subject: RE: Newport non-conformance

Please re-prepare and re-analyze the samples.

Dabra I. Seiken, CG, PG

From: Jennifer Obrin [mailto:jobrin@katahdinlab.com]
Sent: Thursday, November 07, 2013 4:04 PM
To: Seiken, Dabra; Jalkut, Kayleen
Subject: Newport non-conformance

The GC lab has come to me with a non-conformance regarding the FI-PRO analysis for 4 samples from the Newport project.

SG8254-3 (TF2-004/5-SS1056-000.6) had low surrogate OTP recovery at 60%, the window is 62-109
SG8184-17 (TF2-004/5-SS1039-000.9) had low surrogate OTP recovery at 49%, the window is 62-109
SG8184-18 (TF2-SS-RB01-1013) had low surrogate OTP recovery at 80%, the window is 82-142
SG8184-27 (TF2-004/5-SS1049-000.9) had low surrogate OTP recovery at 15%, the window is 62-109

Please let me know how you would like to have the lab proceed. Hold times were 11/1 and 11/4.

Thank you,

Jennifer Obrin
Federal Programs Project Manager
Katahdin Analytical Services
A Woman-Owned Small Business Enterprise
DoD ELAP Accredited
600 Technology Way
Scarborough, Maine 04074
Direct - 207.874.2400 x17
Cell - 207.333.7469
Fax - 207.775.4029

00004

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26581 | PAGE 1 OF 3

PROJECT NO: 112G03019 CTO WE30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445
SAMPLERS (SIGNATURE): KJalkut, Peter Seward		FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781 801 0457
		CARRIER/WAYBILL NUMBER: Courier p/u - hand delivery	

LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J. Obrin
ADDRESS: 600 Technology Way
CITY, STATE: Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

SG-8254

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
									G	G	G	G					
									PRESERVATIVE USED		MeOH ≤6°C	≤6°C	MeOH ≤6°C	≤6°C			
									TYPE OF ANALYSIS		40ml vials w/MeOH only - GRO	8oz jar - PAHs, metals, total solids	40ml vials w/soil+MeOH (10ml) GRO	4oz jar - Ext TPH + total solids			
10/21	0900	TF2-W-TB03-1013	—	—	—	QC	G	2	2	—	—	—					
10/21	1345	TF2-004/5-SS1057-0001	SS1057	0	1	SO	G	1	—	1	—	—					
10/21	1355	TF2-004/5-SS1056-000.6	SS1056	0	0.6	SO	G	4	—	1	2	1					
10/21	1400	TF2-004/5-SS1055-000.8	SS1055	0	0.8	SO	G	1	—	1	—	—					
10/21	1405	TF2-004/5-SS1054-000.6	SS1054	0	0.6	SO	G	2	—	2	—	—					Lab QC volume #2
10/21	1415	TF2-004/5-SS1053-000.6	SS1053	0	0.6	SO	G	1	—	1	—	—					
10/21	1425	TF2-004/5-SS1052-000.6	SS1052	0	0.6	SO	G	1	—	1	—	—					
10/21	1430	TF2-004/5-SS1051-000.8	SS1051	0	0.8	SO	G	4	—	1	2	1					
10/21	1440	TF2-004/5-SS1050-000.6	SS1050	0	0.6	SO	G	1	—	1	—	—					
10/21	1450	TF2-004/5-SS1062-000.8	SS1062	0	0.8	SO	G	1	—	1	—	—					
10/21	0000	TF2-004/5-SS-DUP04-1013	—	—	—	SO	G	1	—	1	—	—					
10/21	1455	TF2-004/5-SS1061-000.6	SS1061	0	0.6	SO	G	1	—	1	—	—					
10/21	1505	TF2-004/5-SS1067-000.7	SS1067	0	0.7	SO	G	1	—	1	—	—					

9 KJ 10/23/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: KJalkut	10/23/13	1335	1. RECEIVED BY: Andrew Hale	10/23/13	1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

S10000

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26582 | PAGE 2 OF 3

PROJECT NO: 112G03019 CTO WE30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445
SAMPLERS (SIGNATURE): KJalkut, Peter Senecal		FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781 801 0457
		CARRIER/WAYBILL NUMBER: Courier p/u - hand delivery	

LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J Obrin
ADDRESS: 600 Technology Way
CITY, STATE: Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

SG8254

DATE (YEAR 2013)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	G	G	G							COMMENTS
									PRESERVATIVE USED	≤6°C	≤6°C	MeOH ≤6°C							
									TYPE OF ANALYSIS	8021 Jan - PAHs, total solids, Metals	4021 Jan - Ex TPH, total solids	40 ml vials w/ MeOH soil - GRO							
10/21	1515	TF2-004/5-SS1066-000.9	SS1066	0	0.9	SO	G	1		1	—	—							
10/22	0815	TF2-004/5-SS1060-000.5	SS1060	0	0.5	SO	G	1		1	—	—							
10/22	0825	TF2-004/5-SS1059-000.6	SS1059	0	0.6	SO	G	1		1	—	—							
10/22	0835	TF2-004/5-SS1058-000.5	SS1058	0	0.5	SO	G	1		1	—	—							
10/22	0845	TF2-004/5-SS1065-000.5	SS1065	0	0.5	SO	G	4		1	1	2							
10/22	0855	TF2-004/5-SS1064-000.6	SS1064	0	0.6	SO	G	2		2	—	—							Lab QC volume #3
10/22	0905	TF2-004/5-SS1063-000.6	SS1063	0	0.6	SO	G	1		1	—	—							
10/22	0915	TF2-004/5-SS1068-000.5	SS1068	0	0.5	SO	G	1		1	—	—							
10/22	0940	TF2-003-SS1011-000.8	SS1011	0	0.8	SO	G	1		1	—	—							
10/22	0000	TF2-004/5-SS-DUP05-1013	—	—	—	SO	G	4		1	1	2							
10/22	0950	TF2-003-SS1012-000.7	SS1012	0	0.7	SO	G	1		1	—	—							
10/22	0955	TF2-003-SS1013-000.7	SS1013	0	0.7	SO	G	1		1	—	—							
10/22	1005	TF2-003-SS1014-0001	SS1014	0	1	SO	G	1		1	—	—							

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: KJalkut	10/23/13	1355	1. RECEIVED BY:	10/23/13	1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

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FORM NO. TINUS-001

000009

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER No. 027646 | PAGE 3 OF 3

PROJECT NO: 112603019 CO WE 30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445
LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J Obrin			
SAMPLERS (SIGNATURE): KJalkut, Peter Seward	FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781-801-0457	ADDRESS: 600 Technology Way
CARRIER/WAYBILL NUMBER: Caner plus - hand delivery			CITY, STATE: Scarborough, ME

STANDARD TAT [X]
RUSH TAT [ ] 24 hr. [ ] 48 hr. [ ] 72 hr. [ ] 7 day [ ] 14 day

SG8254

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)										
									G	G	G	G	P						
									PRESERVATIVE USED			≤6°C	≤6°C	MeOH ≤6°C	≤6°C	ANO3 ≤6°C			
									TYPE OF ANALYSIS	8oz jar - PAHs, total solids, metals	4oz jar - EXTPH, total solids	40 ml vials w/ soil MeOH (Encore) GRO	1L amber - PAHs	250 ml HDPE w/ HNO3 - metals					COMMENTS
10/22	1015	TF2-003-SS1015-000.8	SS1015	0	0.8	SO	G	4	1	1	2	—	—						
* 10/22	1025	TF2-003-SS1016-000.9	SS1016	0	0.9	SO	G	1	1	—	—	—	—						Lab QC vol. #4?
10/22	1055	TF2-003-SS1017-000.8	SS1017	0	0.8	SO	G	1	1	—	—	—	—						
10/22	1105	TF2-003-SS1018-000.8	SS1018	0	0.8	SO	G	1	1	—	—	—	—						
10/22	1115	TF2-003-SS1019-000.5	SS1019	0	0.5	SO	G	1	1	—	—	—	—						
10/22	0000	TF2-003-SS-DUP06-1013	—	—	—	SO	G	4	1	1	2	—	—						
10/22	1200	TF2-SS-RB03-1013	—	—	—	QC	G	3	—	—	—	2	1						

KJ 10/23/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: KJalkut	10/23/13	1335	1. RECEIVED BY:	10/23/13	1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: * Please try to perform lab QC analysis on TF2-003-SS1016-000.9 (forgot to collect 2x8oz jars) for PAH, metals analyses

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

000187

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

METALS SAMPLE FLAGGING

FLAG	SPECIFIED MEANING
E	The reported value is estimated because of the presence of interference (as indicated by serial dilution).
N	Spiked sample recovery not within control limits.
*	Duplicate sample analysis not within control limits.
•	Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits.
U	The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client. Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.
J	The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS
(Refer to BOD Qualifiers Page for BOD footnotes)

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1	pH
H2	DO
H3	sulfite
H4	residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
004/5-SS1062-000.8	SG8254-10		67.1		74.4		83.7	
004/5-SS-DUP04-1013	SG8254-11		45.4		58.1		62.7	
004/5-SS1061-000.6	SG8254-12		56.7		65.6		69.7	
004/5-SS1067-000.7	SG8254-13		56.7		66.4		76.5	
004/5-SS1067-000.7	SG8254-13DL		57.6		65.6		86.1	
004/5-SS1066-000.9	SG8254-14		58.1		62.6		75.1	
004/5-SS1060-000.5	SG8254-15		42.3		63.2		56.4	
004/5-SS1059-000.6	SG8254-16		39.0		63.2		64.9	
004/5-SS1058-000.5	SG8254-17		42.5		66.3		61.8	
004/5-SS1065-000.5	SG8254-18		42.4		66.7		62.3	
004/5-SS1064-000.6	SG8254-19		35.1		50.8		60.2	
004/5-SS1057-0001	SG8254-2		71.0		74.0		86.2	
004/5-SS1063-000.6	SG8254-20		38.8		68.6		68.9	
004/5-SS1068-000.5	SG8254-21		52.8		71.7		71.2	
003-SS1011-000.8	SG8254-22		44.6		59.2		65.1	
003-SS1011-000.8	SG8254-22DL		42.6		57.7		61.9	
004/5-SS-DUP05-1013	SG8254-23		42.8		66.0		63.4	
003-SS1012-000.7	SG8254-24		47.7		71.8		67.6	
003-SS1012-000.7	SG8254-24DL		63.0		64.8		68.0	
003-SS1013-000.7	SG8254-25		54.5		73.7		69.6	
003-SS1013-000.7	SG8254-25DL		0.00	D	0.00	D	0.00	D
003-SS1014-0001	SG8254-26		48.8		68.5		63.5	
003-SS1014-0001	SG8254-26DL		44.9		55.0		69.4	
003-SS1015-000.8	SG8254-27		46.7		66.2		57.1	
003-SS1016-000.9	SG8254-28		44.9		69.1		70.9	
003-SS1017-000.8	SG8254-29		48.3		67.1		61.0	
004/5-SS1056-000.6	SG8254-3		49.2		63.7		68.0	
003-SS1018-000.8	SG8254-30		33.4		62.3		58.4	
003-SS1019-000.5	SG8254-31		42.6		65.5		54.9	
003-SS1019-000.5	SG8254-31DL		51.8		60.5		57.6	
003-SS-DUP06-1013	SG8254-32		48.1		61.6		72.1	
004/5-SS1055-000.8	SG8254-4		50.2		70.5		62.2	
004/5-SS1054-000.6	SG8254-5		40.1		61.6		64.6	
004/5-SS1053-000.6	SG8254-6		38.0		57.7		62.2	
004/5-SS1052-000.6	SG8254-7		43.4		71.4		70.8	
004/5-SS1051-000.8	SG8254-8		43.8		66.2		72.3	

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
004/5-SS1050-000.6	SG8254-9		44.7		68.7		73.1	
Method Blank Sample	WG133188-1RA		41.8		57.7		83.3	
Laboratory Control S	WG133188-2		42.6		61.9		75.0	
Laboratory Control S	WG133188-3		36.8		47.7		86.1	
Matrix Spike	WG133188-4		48.4		72.1		70.5	
Matrix Spike Duplica	WG133188-5		46.6		72.1		69.7	
Method Blank Sample	WG133361-1		50.3		66.8		79.3	
Laboratory Control S	WG133361-2		46.8		66.2		71.5	
Laboratory Control S	WG133361-3		28.1		41.9		45.3	
Matrix Spike	WG133361-4		54.2		75.0		77.5	
Matrix Spike Duplica	WG133361-5		54.5		76.0		79.4	
Matrix Spike	WG133361-6		52.1		68.6		75.3	
Matrix Spike Duplica	WG133361-7		53.3		69.2		68.6	

		QC Limits
PYR	PYRENE-D10	31-128
FLO	FLUORENE-D10	20-96
2MN	2-METHYLNAPHTHALENE-D10	19-94

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** AQ
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	2MN	#	FLO	#	PYR	#
TF2-SS-RB03-1013	SG8254-33RE		45.0		63.3		71.7	
Method Blank Sample	WG133367-1RA		60.2		72.3		90.1	
Laboratory Control S	WG133367-2RA		51.7		69.4		79.2	
Laboratory Control S	WG133367-3RA		56.6		70.5		79.5	

		QC Limits
2MN	2-METHYLNAPHTHALENE-D10	43-92
FLO	FLUORENE-D10	29-101
PYR	PYRENE-D10	53-166

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND625.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 30-OCT-13
Time Analyzed : 11:28

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	42.2		
68	Less than 2.0% of mass 69	0.8	1.66	1
69	Less than 100.0% of mass 198	45.6		
70	Less than 2.0% of mass 69	0.4	0.97	1
127	40.0 - 60.0% of mass 198	59.3		
197	Less than 1.0% of mass 198	0.7		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.1		
275	10.0 - 30.0% of mass 198	20.1		
365	1.0 - 100.0% of mass 198	2.6		
441	0.0 - 100.0% of mass 443	8.1	81.34	2
442	40.0 - 100.0% of mass 198	51.8		
443	17.0 - 23.0% of mass 442	9.9	19.20	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG133485-4	N0523.D	10/30/13	11:51
Initial Calibration	WG133485-2	N0524.D	10/30/13	12:41
Initial Calibration	WG133485-3	N0525.D	10/30/13	13:24
Initial Calibration	WG133485-5	N0526.D	10/30/13	14:08
Initial Calibration	WG133485-6	N0527.D	10/30/13	14:52
Initial Calibration	WG133485-7	N0528.D	10/30/13	15:35
Independent Source	WG133485-8	N0529.D	10/30/13	16:19
Laboratory Control S	WG133188-2	N0531.D	10/30/13	17:45
Laboratory Control S	WG133188-3	N0532.D	10/30/13	18:28

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254

Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GCMS-N

Lab File IDs : N0524.D N0525.D N0523.D **Column ID:**
N0526.D N0527.D N0528.D **Calibration Date(s):** 30-OCT-13 11:51
30-OCT-13 15:35

	0.200000(Level 1	0.500000(Level 2	1.0000 Level 3	3.0000 Level 4	7.0000 Level 5	10.0000 Level 6	New Crv	b	m1	m2	%RSD	Max %RSD	
Naphthalene	1.02819	0.85204	1.07267	0.96791	0.90772	0.79332	AVG		0.93697		11.3350(	15.00000	O
2-Methylnaphthalene	0.50976	0.47163	0.57816	0.60795	0.54259	0.63861	AVG		0.55812		11.1678(	15.00000	O
Acenaphthylene	18138	36668	101279	280206	411531	621590	QUA	0.17762	0.21160	0.00856	0.99671	0.99000	O
Acenaphthene	1.49807	1.41373	1.77550	1.58447	1.45902	1.38795	AVG		1.51979		9.41480	15.00000	O
Fluorene	1.31064	1.34725	1.73096	1.59662	1.48189	1.42508	AVG		1.48207		10.7059(	15.00000	O
Phenanthrene	1.30591	1.21464	1.32342	1.17208	1.24553	1.13455	AVG		1.23269		6.00394	15.00000	O
Anthracene	1.16407	1.35522	1.27676	1.19898	1.26994	1.16337	AVG		1.23806		6.13246	15.00000	O
Fluoranthene	1.22990	1.06270	1.22636	1.08385	1.17645	1.38600	AVG		1.19421		9.82849	15.00000	O
Pyrene	13320	28109	77015	159079	396165	605669	QUA	-0.00009	0.30442	0.00442	0.99912	0.99000	O
Benzo(a)anthracene	1.20167	1.13965	1.36935	1.23509	1.33367	1.22804	AVG		1.25124		6.82409	15.00000	O
Chrysene	8322	15543	43369	92983	239977	347697	QUA	0.07680	0.46230	0.01644	0.99575	0.99000	O
Benzo(b)fluoranthene	2606	3971	20721	40323	143600	207882	LNR	0.19599	1.35765		0.99703	0.99000	O
Benzo(k)fluoranthene	2.52508	2.15935	2.27383	2.29768	2.04327	1.90435	AVG		2.20059		9.83679	15.00000	O
Benzo(a)pyrene	2800	3891	31611	48351	149765	205973	QUA	0.17455	0.56704	0.01093	0.99740	0.99000	O
Indeno(1,2,3-cd)pyrene	1876	2367	7095	11106	46483	70784	QUA	0.02777	2.65959	-0.08324	0.99432	0.99000	O
Dibenzo(a,h)anthracene	1254	1135	9864	13236	61503	89372	QUA	0.24939	1.91516	-0.03170	0.99074	0.99000	O
Benzo(g,h,i)perylene	2886	3505	15341	33697	95448	136116	LNR	-0.02061	0.88523		0.99663	0.99000	O
2-Methylnaphthalene-D10	1.14203	1.23055	1.21208	1.44835	1.23528	1.22614	AVG		1.24907		8.28903	15.00000	
Fluorene-D10	0.93553	0.93986	0.93010	1.24079	1.12736	0.90390	AVG		1.01292		13.6148[	15.00000	
Pyrene-D10	6852	15201	37852	81456	199965	320300	LNR	-0.25497	1.21728		0.99780	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND626.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 31-OCT-13
Time Analyzed : 16:02

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	40.3		
68	Less than 2.0% of mass 69	0.9	1.96	1
69	Less than 100.0% of mass 198	44.5		
70	Less than 2.0% of mass 69	0.3	0.68	1
127	40.0 - 60.0% of mass 198	57.2		
197	Less than 1.0% of mass 198	0.5		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.4		
275	10.0 - 30.0% of mass 198	19.3		
365	1.0 - 100.0% of mass 198	2.3		
441	0.0 - 100.0% of mass 443	7.4	79.42	2
442	40.0 - 100.0% of mass 198	47.8		
443	17.0 - 23.0% of mass 442	9.4	19.60	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG133553-4	N0540.D	10/31/13	16:21
Initial Calibration	WG133553-2	N0541.D	10/31/13	17:06
Initial Calibration	WG133553-3	N0542.D	10/31/13	17:49
Initial Calibration	WG133553-5	N0543.D	10/31/13	18:32
Initial Calibration	WG133553-6	N0544.D	10/31/13	19:15
Initial Calibration	WG133553-7	N0545.D	10/31/13	19:59
Independent Source	WG133553-8	N0546.D	10/31/13	20:42
Method Blank Sample	WG133188-1RA	N0547.D	10/31/13	21:25
004/5-SS1068-000.5	SG8254-21	N0553.D	11/01/13	01:44
003-SS1011-000.8	SG8254-22	N0554.D	11/01/13	02:27
004/5-SS-DUP05-1013	SG8254-23	N0555.D	11/01/13	03:10
003-SS1012-000.7	SG8254-24	N0556.D	11/01/13	03:53

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254

Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GCMS-N

Lab File IDs : N0541.D N0542.D N0540.D N0543.D N0544.D N0545.D **Column ID:**

Calibration Date(s): 31-OCT-13 16:21
31-OCT-13 19:59

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.200000(	0.500000(	1.0000	3.0000	7.0000	10.0000	New	b	m1	m2	%RSD	%RSD	
Naphthalene	0.96309	0.93491	1.04185	1.00619	0.87963	0.82958	AVG		0.94254		8.36882	15.00000	O
2-Methylnaphthalene	0.60656	0.63972	0.67181	0.61985	0.59038	0.56427	AVG		0.61543		6.12837	15.00000	O
Acenaphthylene	2.00512	2.16458	2.36783	2.43372	2.29282	2.25419	AVG		2.25304		6.78065	15.00000	O
Acenaphthene	1.31578	1.38547	1.46097	1.47851	1.42802	1.37832	AVG		1.40784		4.27034	15.00000	O
Fluorene	1.28456	1.31398	1.43297	1.50232	1.45499	1.45219	AVG		1.40683		6.17628	15.00000	O
Phenanthrene	1.07564	1.17825	1.25127	1.26339	1.24235	1.23855	AVG		1.20824		5.90565	15.00000	O
Anthracene	0.94468	1.04942	1.19695	1.20190	1.19427	1.19831	AVG		1.13092		9.62801	15.00000	O
Fluoranthene	0.86167	0.94040	1.08064	1.18362	1.19368	1.27333	AVG		1.08889		14.6775(	15.00000	O
Pyrene	3.20118	3.39511	3.01779	2.80147	2.68099	2.38352	AVG		2.91335		12.5937(	15.00000	O
Benzo(a)anthracene	2244	5287	22875	58365	187111	294145	LNR	0.20520	1.31812		0.99856	0.99000	O
Chrysene	1.99809	1.90882	1.89062	1.73379	1.61128	1.58952	AVG		1.78869		9.44887	15.00000	O
Benzo(b)fluoranthene	899	2138	10247	26800	109773	181895	QUA	0.27299	0.75767	-0.00871	0.99635	0.99000	O
Benzo(k)fluoranthene	2.06130	2.41510	2.63525	3.14119	2.69446	2.68942	AVG		2.60612		13.6766(	15.00000	O
Benzo(a)pyrene	955	2284	17831	39310	116101	190332	LNR	0.20314	1.76485		0.99895	0.99000	O
Indeno(1,2,3-cd)pyrene	418	892	4302	10331	37768	64349	QUA	0.16945	2.18844	-0.07281	0.99877	0.99000	O
Dibenzo(a,h)anthracene	459	1065	5845	13465	48415	82161	QUA	0.16903	1.68946	-0.04199	0.99897	0.99000	O
Benzo(g,h,i)perylene	1061	2345	11947	29035	87925	139093	LNR	0.17172	1.29934		0.99955	0.99000	O
2-Methylnaphthalene-D10	1.40030	1.26532	1.34974	1.25948	1.21359	1.18726	AVG		1.27928		6.34869	15.00000	
Fluorene-D10	1.03386	0.86099	0.92215	0.98946	0.97488	0.95254	AVG		0.95565		6.22996	15.00000	
Pyrene-D10	1.68558	1.67106	1.52052	1.42426	1.39811	1.24017	AVG		1.48995		11.5138(	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND627.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 01-NOV-13
Time Analyzed : 12:39

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	39.9		
68	Less than 2.0% of mass 69	0.5	1.20	1
69	Less than 100.0% of mass 198	45.4		
70	Less than 2.0% of mass 69	0.2	0.34	1
127	40.0 - 60.0% of mass 198	59.2		
197	Less than 1.0% of mass 198	0.7		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	7.0		
275	10.0 - 30.0% of mass 198	21.0		
365	1.0 - 100.0% of mass 198	2.1		
441	0.0 - 100.0% of mass 443	7.6	70.12	2
442	40.0 - 100.0% of mass 198	51.3		
443	17.0 - 23.0% of mass 442	10.8	21.14	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG133605-2	N0557.D	11/01/13	13:12
Method Blank Sample	WG133367-1RA	N0558.D	11/01/13	14:03
Laboratory Control S	WG133367-2RA	N0559.D	11/01/13	14:46
Laboratory Control S	WG133367-3RA	N0560.D	11/01/13	15:29
TF2-SS-RB03-1013	SG8254-33RE	N0561.D	11/01/13	16:12
003-SS1011-000.8	SG8254-22DL	N0562.D	11/01/13	16:56
003-SS1012-000.7	SG8254-24DL	N0563.D	11/01/13	17:39
003-SS1013-000.7	SG8254-25	N0564.D	11/01/13	18:22
003-SS1014-0001	SG8254-26	N0565.D	11/01/13	19:05
003-SS1015-000.8	SG8254-27	N0566.D	11/01/13	19:48
003-SS1016-000.9	SG8254-28	N0567.D	11/01/13	20:32
Matrix Spike	WG133188-4	N0568.D	11/01/13	21:14
Matrix Spike Duplica	WG133188-5	N0569.D	11/01/13	21:58
003-SS1017-000.8	SG8254-29	N0570.D	11/01/13	22:40
003-SS1018-000.8	SG8254-30	N0571.D	11/01/13	23:23
003-SS1019-000.5	SG8254-31	N0572.D	11/02/13	00:06

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133605-2 **Analytical Date:** 11/01/13 13:12
Lab File ID : N0557.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 10/31/13 16:21 10/31/13 19:59 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.94254	1.09291	1.09291	0.010	15.95351	20.00000	Averaged	
31 2-Methylnaphthalene	0.61543	0.68207	0.68207	0.010	10.82772	20.00000	Averaged	
42 Acenaphthylene	2.25304	2.50754	2.50754	0.010	11.29583	20.00000	Averaged	
45 Acenaphthene	1.40784	1.51999	1.51999	0.010	7.96567	20.01000	Averaged	
54 Fluorene	1.40683	1.45901	1.45901	0.010	3.70837	20.00000	Averaged	
64 Phenanthrene	1.20824	1.25711	1.25711	0.010	4.04466	20.00000	Averaged	
65 Anthracene	1.13092	1.23039	1.23039	0.010	8.79544	20.00000	Averaged	
68 Fluoranthene	1.08889	1.18396	1.18396	0.010	8.73100	20.01000	Averaged	
70 Pyrene	2.91335	2.76134	2.76134	0.010	-5.21746	20.00000	Averaged	
72 Benzo(a)anthracene	1.00000	1.21234	1.38163	0.010	21.23447	20.00000	Linear	*
74 Chrysene	1.78869	1.67672	1.67672	0.010	-6.25970	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.00000	1.21854	1.34607	0.010	21.85429	20.00000	Quadratic	*
79 Benzo(k)fluoranthene	2.60612	2.12770	2.12770	0.010	-18.35762	20.00000	Averaged	
80 Benzo(a)pyrene	1.00000	0.96871	1.42281	0.010	-3.12946	20.01000	Linear	
82 Indeno(1,2,3-cd)pyrene	1.00000	1.23299	0.51239	0.010	23.29906	20.00000	Quadratic	*
83 Dibenzo(a,h)anthracene	1.00000	1.18145	0.63167	0.010	18.14539	20.00000	Quadratic	
84 Benzo(g,h,i)perylene	1.00000	0.91428	1.00947	0.010	-8.57177	20.00000	Linear	
30 2-Methylnaphthalene-D10	1.27928	1.32553	1.32553	0.010	3.61522	20.00000	Averaged	
52 Fluorene-D10	0.95565	0.89932	0.89932	0.010	-5.89411	20.00000	Averaged	
69 Pyrene-D10	1.48995	1.39912	1.39912	0.010	-6.09650	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND628.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 04-NOV-13
Time Analyzed : 10:32

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	40.7		
68	Less than 2.0% of mass 69	0.4	0.84	1
69	Less than 100.0% of mass 198	43.2		
70	Less than 2.0% of mass 69	0.1	0.29	1
127	40.0 - 60.0% of mass 198	59.0		
197	Less than 1.0% of mass 198	0.8		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.9		
275	10.0 - 30.0% of mass 198	19.4		
365	1.0 - 100.0% of mass 198	2.0		
441	0.0 - 100.0% of mass 443	7.1	70.40	2
442	40.0 - 100.0% of mass 198	50.2		
443	17.0 - 23.0% of mass 442	10.1	20.17	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG133661-2	N0574.D	11/04/13	10:51
Method Blank Sample	WG133361-1	N0575.D	11/04/13	11:35
Laboratory Control S	WG133361-2	N0576.D	11/04/13	12:18
Laboratory Control S	WG133361-3	N0577.D	11/04/13	13:02
004/5-SS1055-000.8	SG8254-4	N0578.D	11/04/13	13:45
004/5-SS1054-000.6	SG8254-5	N0579.D	11/04/13	14:28
Matrix Spike	WG133361-4	N0580.D	11/04/13	15:12
Matrix Spike Duplica	WG133361-5	N0581.D	11/04/13	15:55
004/5-SS1053-000.6	SG8254-6	N0582.D	11/04/13	16:38
004/5-SS1052-000.6	SG8254-7	N0583.D	11/04/13	17:22
004/5-SS1051-000.8	SG8254-8	N0584.D	11/04/13	18:05
004/5-SS1050-000.6	SG8254-9	N0585.D	11/04/13	18:47
004/5-SS1060-000.5	SG8254-15	N0586.D	11/04/13	19:30
004/5-SS1059-000.6	SG8254-16	N0587.D	11/04/13	20:13
004/5-SS1058-000.5	SG8254-17	N0588.D	11/04/13	20:56
004/5-SS1065-000.5	SG8254-18	N0589.D	11/04/13	21:38
004/5-SS1063-000.6	SG8254-20	N0590.D	11/04/13	22:21

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133661-2 **Analytical Date:** 11/04/13 10:51
Lab File ID : N0574.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 10/31/13 16:21 10/31/13 19:59 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.94254	1.00564	1.00564	0.010	6.69459	20.00000	Averaged	
31 2-Methylnaphthalene	0.61543	0.66126	0.66126	0.010	7.44610	20.00000	Averaged	
42 Acenaphthylene	2.25304	2.43409	2.43409	0.010	8.03584	20.00000	Averaged	
45 Acenaphthene	1.40784	1.48440	1.48440	0.010	5.43771	20.01000	Averaged	
54 Fluorene	1.40683	1.47231	1.47231	0.010	4.65390	20.00000	Averaged	
64 Phenanthrene	1.20824	1.21308	1.21308	0.010	0.40032	20.00000	Averaged	
65 Anthracene	1.13092	1.19044	1.19044	0.010	5.26247	20.00000	Averaged	
68 Fluoranthene	1.08889	1.20471	1.20471	0.010	10.63628	20.01000	Averaged	
70 Pyrene	2.91335	2.55543	2.55543	0.010	-12.28522	20.00000	Averaged	
72 Benzo(a)anthracene	1.00000	1.17941	1.33821	0.010	17.94069	20.00000	Linear	
74 Chrysene	1.78869	1.59927	1.59927	0.010	-10.58985	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.00000	1.04077	1.10288	0.010	4.07697	20.00000	Quadratic	
79 Benzo(k)fluoranthene	2.60612	2.34603	2.34603	0.010	-9.98007	20.00000	Averaged	
80 Benzo(a)pyrene	1.00000	0.95807	1.40405	0.010	-4.19291	20.01000	Linear	
82 Indeno(1,2,3-cd)pyrene	1.00000	1.27373	0.53185	0.010	27.37298	20.00000	Quadratic	*
83 Dibenzo(a,h)anthracene	1.00000	1.31681	0.71528	0.010	31.68110	20.00000	Quadratic	*
84 Benzo(g,h,i)perylene	1.00000	1.02482	1.15310	0.010	2.48226	20.00000	Linear	
30 2-Methylnaphthalene-D10	1.27928	1.21258	1.21258	0.010	-5.21397	20.00000	Averaged	
52 Fluorene-D10	0.95565	0.94984	0.94984	0.010	-0.60708	20.00000	Averaged	
69 Pyrene-D10	1.48995	1.29298	1.29298	0.010	-13.21987	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND635.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 12-NOV-13
Time Analyzed : 11:09

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	38.3		
68	Less than 2.0% of mass 69	0.8	1.84	1
69	Less than 100.0% of mass 198	43.0		
70	Less than 2.0% of mass 69	0.0	0.08	1
127	40.0 - 60.0% of mass 198	58.8		
197	Less than 1.0% of mass 198	0.6		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.6		
275	10.0 - 30.0% of mass 198	21.5		
365	1.0 - 100.0% of mass 198	2.8		
441	0.0 - 100.0% of mass 443	9.9	75.17	2
442	40.0 - 100.0% of mass 198	69.1		
443	17.0 - 23.0% of mass 442	13.2	19.07	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Initial Calibration	WG134292-4	N0698.D	11/12/13	11:30
Initial Calibration	WG134292-2	N0699.D	11/12/13	12:13
Initial Calibration	WG134292-3	N0700.D	11/12/13	12:57
Initial Calibration	WG134292-5	N0701.D	11/12/13	13:41
Initial Calibration	WG134292-6	N0702.D	11/12/13	14:25
Initial Calibration	WG134292-7	N0703.D	11/12/13	15:09
Independent Source	WG134292-8	N0704.D	11/12/13	15:53
004/5-SS1064-000.6	SG8254-19	N0705.D	11/12/13	16:37
Matrix Spike	WG133361-6	N0706.D	11/12/13	17:20
Matrix Spike Duplica	WG133361-7	N0707.D	11/12/13	18:04
004/5-SS1056-000.6	SG8254-3	N0708.D	11/12/13	18:47
004/5-SS-DUP04-1013	SG8254-11	N0709.D	11/12/13	19:29
004/5-SS1061-000.6	SG8254-12	N0710.D	11/12/13	20:12
004/5-SS1062-000.8	SG8254-10	N0711.D	11/12/13	20:55
004/5-SS1067-000.7	SG8254-13	N0712.D	11/12/13	21:38
004/5-SS1066-000.9	SG8254-14	N0713.D	11/12/13	22:21
004/5-SS1057-0001	SG8254-2	N0714.D	11/12/13	23:04

Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GCMS-N
Lab File IDs : N0699.D N0700.D N0698.D **Column ID:**
N0701.D N0702.D N0703.D **Calibration Date(s):** 12-NOV-13 11:30
12-NOV-13 15:09

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Crv					Max	
	0.200000(	0.500000(	1.0000	3.0000	7.0000	10.0000	New	b	m1	m2	%RSD	%RSD	
Naphthalene	0.92957	1.02110	1.02538	1.04436	0.95461	0.91696	AVG		0.98200		5.58304	15.00000	O
2-Methylnaphthalene	18174	44145	87690	190432	418848	741810	LNR	-0.24748	0.58097		0.99843	0.99000	O
Acenaphthylene	1.96175	2.28624	2.38057	2.34588	2.36292	2.45840	AVG		2.29929		7.58920	15.00000	O
Acenaphthene	1.34970	1.47878	1.50122	1.43192	1.46463	1.48315	AVG		1.45157		3.79043	15.00000	O
Fluorene	1.45615	1.39396	1.49150	1.46957	1.46212	1.52542	AVG		1.46645		2.97150	15.00000	O
Phenanthrene	1.03379	1.12307	1.15319	1.11834	1.15790	1.19751	AVG		1.13063		4.89447	15.00000	O
Anthracene	1.15900	1.25181	1.24992	1.19976	1.19404	1.21745	AVG		1.21200		2.93645	15.00000	O
Fluoranthene	1.00524	1.10712	1.16790	1.12474	1.14603	1.23316	AVG		1.13070		6.67121	15.00000	O
Pyrene	2.55703	2.73519	2.41517	2.28175	2.26639	2.15180	AVG		2.40122		8.94494	15.00000	O
Benzo(a)anthracene	1.23865	1.25096	1.27862	1.18715	1.25857	1.33114	AVG		1.25751		3.76649	15.00000	O
Chrysene	1.78980	1.66992	1.57559	1.46259	1.40420	1.37232	AVG		1.54574		10.5473(	15.00000	O
Benzo(b)fluoranthene	1.33107	1.22619	1.46248	1.10893	1.25257	1.37661	AVG		1.29298		9.60676	15.00000	O
Benzo(k)fluoranthene	2.27393	2.06907	1.81963	2.05781	2.06183	2.01122	AVG		2.04891		7.08191	15.00000	O
Benzo(a)pyrene	1.43281	1.35542	1.31400	1.28464	1.35904	1.40922	AVG		1.35919		4.10109	15.00000	O
Indeno(1,2,3-cd)pyrene	0.87488	0.69735	0.78202	0.68546	0.73364	0.77484	AVG		0.75803		9.15010	15.00000	O
Dibenzo(a,h)anthracene	0.71125	0.74833	0.72292	0.70892	0.82473	0.82806	AVG		0.75737		7.29861	15.00000	O
Benzo(g,h,i)perylene	0.94169	1.16182	1.05695	1.01939	1.08085	1.05296	AVG		1.05228		6.87263	15.00000	O
2-Methylnaphthalene-D10	1.22688	1.29882	1.27198	1.22994	1.24102	1.24589	AVG		1.25242		2.22003	15.00000	
Fluorene-D10	1.04698	0.94788	0.97745	0.96115	0.96039	0.98435	AVG		0.97970		3.61814	15.00000	
Pyrene-D10	1.41466	1.44377	1.29031	1.19822	1.18809	1.13269	AVG		1.27796		10.0129(	15.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND636.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 13-NOV-13
Time Analyzed : 12:03

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	37.7		
68	Less than 2.0% of mass 69	0.8	1.76	1
69	Less than 100.0% of mass 198	45.2		
70	Less than 2.0% of mass 69	0.4	0.81	1
127	40.0 - 60.0% of mass 198	58.3		
197	Less than 1.0% of mass 198	0.8		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.6		
275	10.0 - 30.0% of mass 198	22.7		
365	1.0 - 100.0% of mass 198	3.1		
441	0.0 - 100.0% of mass 443	10.6	69.48	2
442	40.0 - 100.0% of mass 198	78.0		
443	17.0 - 23.0% of mass 442	15.3	19.59	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG134331-2	N0723.D	11/13/13	12:29
003-SS-DUP06-1013	SG8254-32	N0727.D	11/13/13	15:25
004/5-SS1067-000.7	SG8254-13DL	N0728.D	11/13/13	16:09
003-SS1013-000.7	SG8254-25DL	N0729.D	11/13/13	16:53
003-SS1014-0001	SG8254-26DL	N0730.D	11/13/13	17:36

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134331-2 **Analytical Date:** 11/13/13 12:29
Lab File ID : N0723.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 11/12/13 11:30 11/12/13 15:09 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.98200	1.08487	1.08487	0.010	10.47573	20.00000	Averaged	
31 2-Methylnaphthalene	1.00000	1.03847	0.71835	0.010	3.84734	20.00000	Linear	
42 Acenaphthylene	2.29929	2.24165	2.24165	0.010	-2.50709	20.00000	Averaged	
45 Acenaphthene	1.45157	1.41952	1.41952	0.010	-2.20752	20.01000	Averaged	
54 Fluorene	1.46645	1.36430	1.36430	0.010	-6.96597	20.00000	Averaged	
64 Phenanthrene	1.13063	1.17198	1.17198	0.010	3.65714	20.00000	Averaged	
65 Anthracene	1.21200	1.14113	1.14113	0.010	-5.84685	20.00000	Averaged	
68 Fluoranthene	1.13070	1.00646	1.00646	0.010	-10.98766	20.01000	Averaged	
70 Pyrene	2.40122	2.62468	2.62468	0.010	9.30607	20.00000	Averaged	
72 Benzo(a)anthracene	1.25751	1.24538	1.24538	0.010	-0.96452	20.00000	Averaged	
74 Chrysene	1.54574	1.41471	1.41471	0.010	-8.47697	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.29298	1.16781	1.16781	0.010	-9.68033	20.00000	Averaged	
79 Benzo(k)fluoranthene	2.04891	2.12729	2.12729	0.010	3.82548	20.00000	Averaged	
80 Benzo(a)pyrene	1.35919	1.28487	1.28487	0.010	-5.46767	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	0.75803	0.53515	0.53515	0.010	-29.40270	20.00000	Averaged	*
83 Dibenzo(a,h)anthracene	0.75737	0.63364	0.63364	0.010	-16.33712	20.00000	Averaged	
84 Benzo(g,h,i)perylene	1.05228	1.03017	1.03017	0.010	-2.10087	20.00000	Averaged	
30 2-Methylnaphthalene-D10	1.25242	1.31035	1.31035	0.010	4.62487	20.00000	Averaged	
52 Fluorene-D10	0.97970	0.93623	0.93623	0.010	-4.43722	20.00000	Averaged	
69 Pyrene-D10	1.27796	1.40929	1.40929	0.010	10.27641	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 5
Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : ND637.D
Instrument ID : GCMS-N

SDG : SG8254
Date Analyzed : 14-NOV-13
Time Analyzed : 10:30

m/e	Ion Abundance Criteria	% Relative Abundance		
51	30.0 - 60.0% of mass 198	35.7		
68	Less than 2.0% of mass 69	0.5	1.14	1
69	Less than 100.0% of mass 198	40.1		
70	Less than 2.0% of mass 69	0.3	0.76	1
127	40.0 - 60.0% of mass 198	58.1		
197	Less than 1.0% of mass 198	0.3		
198	Base Peak, 100% relative abundance	100		
199	5.0 - 9.0% of mass 198	6.6		
275	10.0 - 30.0% of mass 198	22.0		
365	1.0 - 100.0% of mass 198	2.9		
441	0.0 - 100.0% of mass 443	11.1	71.93	2
442	40.0 - 100.0% of mass 198	81.1		
443	17.0 - 23.0% of mass 442	15.4	19.00	3

1-Value is % mass 69
2-Value is % mass 443
3-Value is % mass 442

This check applies to the following samples, LCS, MS, MSD and standards:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Continuing Calibrati	WG134395-2	N0740.D	11/14/13	10:51
003-SS1019-000.5	SG8254-31DL	N0745.D	11/14/13	14:29

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134395-2 **Analytical Date:** 11/14/13 10:51
Lab File ID : N0740.D **Instrument ID:** GCMS-N
Initial Calibration Date(s): 11/12/13 11:30 11/12/13 15:09 **Column ID:**

Compound	RRF/Amount	RF1	CCAL RRF1	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
25 Naphthalene	0.98200	0.99178	0.99178	0.010	0.99680	20.00000	Averaged	
31 2-Methylnaphthalene	1.00000	1.17360	0.79685	0.010	17.35989	20.00000	Linear	
42 Acenaphthylene	2.29929	2.25011	2.25011	0.010	-2.13898	20.00000	Averaged	
45 Acenaphthene	1.45157	1.35908	1.35908	0.010	-6.37169	20.01000	Averaged	
54 Fluorene	1.46645	1.37534	1.37534	0.010	-6.21336	20.00000	Averaged	
64 Phenanthrene	1.13063	1.10722	1.10722	0.010	-2.07063	20.00000	Averaged	
65 Anthracene	1.21200	1.18327	1.18327	0.010	-2.36995	20.00000	Averaged	
68 Fluoranthene	1.13070	1.12327	1.12327	0.010	-0.65697	20.01000	Averaged	
70 Pyrene	2.40122	2.19454	2.19454	0.010	-8.60730	20.00000	Averaged	
72 Benzo(a)anthracene	1.25751	1.23252	1.23252	0.010	-1.98735	20.00000	Averaged	
74 Chrysene	1.54574	1.40350	1.40350	0.010	-9.20164	20.00000	Averaged	
78 Benzo(b)fluoranthene	1.29298	1.18198	1.18198	0.010	-8.58435	20.00000	Averaged	
79 Benzo(k)fluoranthene	2.04891	1.86578	1.86578	0.010	-8.93804	20.00000	Averaged	
80 Benzo(a)pyrene	1.35919	1.21841	1.21841	0.010	-10.35768	20.01000	Averaged	
82 Indeno(1,2,3-cd)pyrene	0.75803	0.91990	0.91990	0.010	21.35453	20.00000	Averaged	*
83 Dibenzo(a,h)anthracene	0.75737	0.63573	0.63573	0.010	-16.06122	20.00000	Averaged	
84 Benzo(g,h,i)perylene	1.05228	0.88165	0.88165	0.010	-16.21494	20.00000	Averaged	
30 2-Methylnaphthalene-D10	1.25242	1.20030	1.20030	0.010	-4.16178	20.00000	Averaged	
52 Fluorene-D10	0.97970	0.92905	0.92905	0.010	-5.16946	20.00000	Averaged	
69 Pyrene-D10	1.27796	1.26978	1.26978	0.010	-0.63961	20.00000	Averaged	

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : N0547.D
Instrument ID : GCMS-N
Matrix : SL

SDG : SG8254
Lab Sample ID : WG133188-1RA
Date Extracted : 25-OCT-13
Date Analyzed : 31-OCT-13
Time Analyzed : 21:25

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133188-2	N0531.D	10/30/13	17:45
Laboratory Control S	WG133188-3	N0532.D	10/30/13	18:28
004/5-SS1068-000.5	SG8254-21	N0553.D	11/01/13	01:44
003-SS1011-000.8	SG8254-22	N0554.D	11/01/13	02:27
004/5-SS-DUP05-1013	SG8254-23	N0555.D	11/01/13	03:10
003-SS1012-000.7	SG8254-24	N0556.D	11/01/13	03:53
003-SS1011-000.8	SG8254-22DL	N0562.D	11/01/13	16:56
003-SS1012-000.7	SG8254-24DL	N0563.D	11/01/13	17:39
003-SS1013-000.7	SG8254-25	N0564.D	11/01/13	18:22
003-SS1014-0001	SG8254-26	N0565.D	11/01/13	19:05
003-SS1015-000.8	SG8254-27	N0566.D	11/01/13	19:48
003-SS1016-000.9	SG8254-28	N0567.D	11/01/13	20:32
Matrix Spike	WG133188-4	N0568.D	11/01/13	21:14
Matrix Spike Duplica	WG133188-5	N0569.D	11/01/13	21:58
003-SS1017-000.8	SG8254-29	N0570.D	11/01/13	22:40
003-SS1018-000.8	SG8254-30	N0571.D	11/01/13	23:23
003-SS1019-000.5	SG8254-31	N0572.D	11/02/13	00:06
003-SS-DUP06-1013	SG8254-32	N0727.D	11/13/13	15:25
003-SS1013-000.7	SG8254-25DL	N0729.D	11/13/13	16:53
003-SS1014-0001	SG8254-26DL	N0730.D	11/13/13	17:36
003-SS1019-000.5	SG8254-31DL	N0745.D	11/14/13	14:29

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Report of Analytical Results

Client:
Lab ID: WG133188-1RA
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: N0547.D

Sample Date:
Received Date:
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 31-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	J	6.6	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	J	2.5	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		41.8	%					
Fluorene-D10		57.7	%					
Pyrene-D10		83.3	%					

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LCS/LCSD Recovery Report

LCS ID: WG133188-2
LCSD ID: WG133188-3
Project:
SDG: SG8254
Report Date: 15-NOV-13
LCS File ID: N0531.D

Received Date:
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188
LCSD File ID: N0532.D

Analysis Date: 30-OCT-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	36.5	54.7	34.5	51.7	ug/Kgdrywt	6	30	10-129
2-Methylnaphthalene	66.7	34.8	52.2	31.2	46.8	ug/Kgdrywt	11	30	10-152
Acenaphthylene	66.7	23.1	34.6	22.1	33.1	ug/Kgdrywt	4	30	25-94
Acenaphthene	66.7	34.9	52.3	30.0	45.0	ug/Kgdrywt	15	30	33-98
Fluorene	66.7	40.0	60.0	32.0	48.0	ug/Kgdrywt	22	30	40-92
Phenanthrene	66.7	46.9	70.3	45.2	67.8	ug/Kgdrywt	4	30	46-96
Anthracene	66.7	44.4	66.6	44.6	66.9	ug/Kgdrywt	0	30	34-96
Fluoranthene	66.7	57.8	86.6	47.8	71.7	ug/Kgdrywt	19	30	38-116
Pyrene	66.7	42.6	63.9	44.0	66.0	ug/Kgdrywt	3	30	35-111
Benzo(a)anthracene	66.7	45.6	68.4	46.6	69.9	ug/Kgdrywt	2	30	48-100
Chrysene	66.7	49.9	74.8	40.9	61.3	ug/Kgdrywt	20	30	46-101
Benzo(b)Fluoranthene	66.7	34.4	51.6*	28.5	42.7*	ug/Kgdrywt	19	30	53-100
Benzo(k)fluoranthene	66.7	54.0	81.0	48.4	72.6	ug/Kgdrywt	11	30	49-96
Benzo(a)pyrene	66.7	28.3	42.4*	35.3	52.9*	ug/Kgdrywt	22	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	35.7	53.5	29.3	43.9*	ug/Kgdrywt	20	30	50-105
Dibenzo(a,h)anthracene	66.7	45.5	68.2	38.9	58.3	ug/Kgdrywt	16	30	55-105
Benzo(g,h,i)perylene	66.7	32.8	49.2*	21.5	32.2*	ug/Kgdrywt	42*	30	53-103
2-Methylnaphthalene-D10			42.6		36.8				19-94
Fluorene-D10			61.9		47.7				20-96
Pyrene-D10			75.0		86.1				31-128

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MS/MSD Recovery Report

MS ID: WG133188-4
MSD ID: WG133188-5
Sample ID: SG8254-28
Client ID: 003-SS1016-000.9
Project:
SDG: SG8254
MS File ID: N0568.D

Received Date:
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188
Report Date: 15-NOV-13
MSD File ID: N0569.D

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 91.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits	
Naphthalene	69.2	71.0	ug/Kgdrywt	J9.2	52.	44.	61.4	49.5	15	30	10-129	
2-Methylnaphthalene	69.2	71.0	ug/Kgdrywt	J4.3	47.	46.	62.0	58.4	3	30	10-152	
Acenaphthylene	69.2	71.0	ug/Kgdrywt	J4.3	46.	49.	59.7	62.8	7	30	25-94	
Acenaphthene	69.2	71.0	ug/Kgdrywt	J14.	64.	50.	71.8	50.6	24	30	33-98	
Fluorene	69.2	71.0	ug/Kgdrywt	J14.	69.	59.	79.6	64.5	14	30	40-92	
Phenanthrene	69.2	71.0	ug/Kgdrywt	M220	260	200	63.6	0*	28	30	46-96	C, K
Anthracene	69.2	71.0	ug/Kgdrywt	30.	85.	75.	79.5	62.8	13	30	34-96	
Fluoranthene	69.2	71.0	ug/Kgdrywt	M340	380	300	49.1	0*	23	30	38-116	C, K
Pyrene	69.2	71.0	ug/Kgdrywt	MM320	320	280	0*	0*	14	30	35-111	C, K
Benzo(a)anthracene	69.2	71.0	ug/Kgdrywt	MM200	230	200	39.0*	5.63*	11	30	48-100	C, K
Chrysene	69.2	71.0	ug/Kgdrywt	MM180	200	180	26.0*	0*	12	30	46-101	C, K
Benzo(b)Fluoranthene	69.2	71.0	ug/KgdrywtLL	MM240	260	230	31.8*	0*	12	30	53-100	C, K
Benzo(k)fluoranthene	69.2	71.0	ug/Kgdrywt	MM80.	100	90.	32.8*	13.2*	14	30	49-96	J
Benzo(a)pyrene	69.2	71.0	ug/KgdrywtLL	MM150	160	140	13.0*	0*	9	30	61-101	C, K
Indeno(1,2,3-cd)pyrene	69.2	71.0	ug/KgdrywtLL	MM230	230	220	11.6*	0*	5	30	50-105	C, K
Dibenzo(a,h)anthracene	69.2	71.0	ug/Kgdrywt	MM42.	74.	74.	46.1*	44.8*	0	30	55-105	J
Benzo(g,h,i)perylene	69.2	71.0	ug/KgdrywtLL	MM66	82.	76.	23.3*	14.8*	7	30	53-103	J
2-Methylnaphthalene-D10							48.4	46.6			19-94	
Fluorene-D10							72.1	72.1			20-96	
Pyrene-D10							70.5	69.7			31-128	

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Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133361-1
Lab File ID : N0575.D
Date Extracted : 28-OCT-13
Instrument ID : GCMS-N
Date Analyzed : 04-NOV-13
Matrix : SL
Time Analyzed : 11:35

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133361-2	N0576.D	11/04/13	12:18
Laboratory Control S	WG133361-3	N0577.D	11/04/13	13:02
004/5-SS1055-000.8	SG8254-4	N0578.D	11/04/13	13:45
004/5-SS1054-000.6	SG8254-5	N0579.D	11/04/13	14:28
Matrix Spike	WG133361-4	N0580.D	11/04/13	15:12
Matrix Spike Duplica	WG133361-5	N0581.D	11/04/13	15:55
004/5-SS1053-000.6	SG8254-6	N0582.D	11/04/13	16:38
004/5-SS1052-000.6	SG8254-7	N0583.D	11/04/13	17:22
004/5-SS1051-000.8	SG8254-8	N0584.D	11/04/13	18:05
004/5-SS1050-000.6	SG8254-9	N0585.D	11/04/13	18:47
004/5-SS1060-000.5	SG8254-15	N0586.D	11/04/13	19:30
004/5-SS1059-000.6	SG8254-16	N0587.D	11/04/13	20:13
004/5-SS1058-000.5	SG8254-17	N0588.D	11/04/13	20:56
004/5-SS1065-000.5	SG8254-18	N0589.D	11/04/13	21:38
004/5-SS1063-000.6	SG8254-20	N0590.D	11/04/13	22:21
004/5-SS1064-000.6	SG8254-19	N0705.D	11/12/13	16:37
Matrix Spike	WG133361-6	N0706.D	11/12/13	17:20
Matrix Spike Duplica	WG133361-7	N0707.D	11/12/13	18:04
004/5-SS1056-000.6	SG8254-3	N0708.D	11/12/13	18:47
004/5-SS-DUP04-1013	SG8254-11	N0709.D	11/12/13	19:29
004/5-SS1061-000.6	SG8254-12	N0710.D	11/12/13	20:12
004/5-SS1062-000.8	SG8254-10	N0711.D	11/12/13	20:55
004/5-SS1067-000.7	SG8254-13	N0712.D	11/12/13	21:38
004/5-SS1066-000.9	SG8254-14	N0713.D	11/12/13	22:21
004/5-SS1057-0001	SG8254-2	N0714.D	11/12/13	23:04
004/5-SS1067-000.7	SG8254-13DL	N0728.D	11/13/13	16:09

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Report of Analytical Results

Client:
Lab ID: WG133361-1
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: N0575.D

Sample Date:
Received Date:
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.6	10.
2-Methylnaphthalene	U	10.	ug/Kgdrywt	1	20	20.	2.2	10.
Acenaphthylene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Acenaphthene	U	10.	ug/Kgdrywt	1	20	20.	1.5	10.
Fluorene	U	10.	ug/Kgdrywt	1	20	20.	3.2	10.
Phenanthrene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.2	10.
Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Pyrene	U	10.	ug/Kgdrywt	1	20	20.	2.1	10.
Benzo(a)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Chrysene	U	10.	ug/Kgdrywt	1	20	20.	1.7	10.
Benzo(b)Fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	2.4	10.
Benzo(k)fluoranthene	U	10.	ug/Kgdrywt	1	20	20.	3.1	10.
Benzo(a)pyrene	U	10.	ug/Kgdrywt	1	20	20.	3.3	10.
Indeno(1,2,3-cd)pyrene	U	10.	ug/Kgdrywt	1	20	20.	1.9	10.
Dibenzo(a,h)anthracene	U	10.	ug/Kgdrywt	1	20	20.	1.8	10.
Benzo(g,h,i)perylene	U	10.	ug/Kgdrywt	1	20	20.	2.0	10.
2-Methylnaphthalene-D10		50.3	%					
Fluorene-D10		66.8	%					
Pyrene-D10		79.3	%					

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LCS/LCSD Recovery Report

LCS ID: WG133361-2
LCSD ID: WG133361-3
Project:
SDG: SG8254
Report Date: 15-NOV-13
LCS File ID: N0576.D

Received Date:
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361
LCSD File ID: N0577.D

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	66.7	38.5	57.7	24.7	37.0	ug/Kgdrywt	44*	30	10-129
2-Methylnaphthalene	66.7	37.7	56.5	22.6	33.9	ug/Kgdrywt	50*	30	10-152
Acenaphthylene	66.7	36.8	55.2	23.2	34.8	ug/Kgdrywt	45*	30	25-94
Acenaphthene	66.7	39.7	59.5	25.6	38.4	ug/Kgdrywt	43*	30	33-98
Fluorene	66.7	45.0	67.5	29.1	43.6	ug/Kgdrywt	43*	30	40-92
Phenanthrene	66.7	51.2	76.8	33.6	50.4	ug/Kgdrywt	42*	30	46-96
Anthracene	66.7	52.8	79.2	32.6	48.9	ug/Kgdrywt	47*	30	34-96
Fluoranthene	66.7	62.3	93.4	45.6	68.4	ug/Kgdrywt	31*	30	38-116
Pyrene	66.7	45.4	68.1	34.1	51.1	ug/Kgdrywt	28	30	35-111
Benzo(a)anthracene	66.7	58.5	87.7	39.2	58.8	ug/Kgdrywt	40*	30	48-100
Chrysene	66.7	49.6	74.4	33.2	49.8	ug/Kgdrywt	40*	30	46-101
Benzo(b)Fluoranthene	66.7	54.6	81.8	36.2	54.3	ug/Kgdrywt	40*	30	53-100
Benzo(k)fluoranthene	66.7	47.7	71.5	30.3	45.4*	ug/Kgdrywt	45*	30	49-96
Benzo(a)pyrene	66.7	47.1	70.6	31.4	47.1*	ug/Kgdrywt	40*	30	61-101
Indeno(1,2,3-cd)pyrene	66.7	60.9	91.3	35.0	52.5	ug/Kgdrywt	54*	30	50-105
Dibenzo(a,h)anthracene	66.7	56.6	84.8	35.5	53.2*	ug/Kgdrywt	46*	30	55-105
Benzo(g,h,i)perylene	66.7	32.2	48.3*	21.9	32.8*	ug/Kgdrywt	38*	30	53-103
2-Methylnaphthalene-D10			46.8		28.1				19-94
Fluorene-D10			66.2		41.9				20-96
Pyrene-D10			71.5		45.3				31-128

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MS/MSD Recovery Report

MS ID: WG133361-4
MSD ID: WG133361-5
Sample ID: SG8254-5
Client ID: 004/5-SS1054-000.6
Project:
SDG: SG8254
MS File ID: N0580.D

Received Date:
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361
Report Date: 15-NOV-13
MSD File ID: N0581.D

Analysis Date: 04-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	65.3	66.6	ug/Kgdrywt	U9.8	43.	45.	66.3	68.0	4	30	10-129
2-Methylnaphthalene	65.3	66.6	ug/Kgdrywt	U9.8	45.	46.	68.3	68.4	2	30	10-152
Acenaphthylene	65.3	66.6	ug/Kgdrywt	U9.8	41.	42.	62.2	63.4	4	30	25-94
Acenaphthene	65.3	66.6	ug/Kgdrywt	U9.8	44.	46.	67.5	68.6	4	30	33-98
Fluorene	65.3	66.6	ug/Kgdrywt	U9.8	48.	51.	73.2	77.2	7	30	40-92
Phenanthrene	65.3	66.6	ug/Kgdrywt	J15.	64.	68.	74.1	79.3	7	30	46-96
Anthracene	65.3	66.6	ug/Kgdrywt	J1.9	50.	52.	73.2	75.6	5	30	34-96
Fluoranthene	65.3	66.6	ug/Kgdrywt	44.	100	100	85.3	89.7	4	30	38-116
Pyrene	65.3	66.6	ug/Kgdrywt	32.	80.	86.	73.8	80.8	7	30	35-111
Benzo(a)anthracene	65.3	66.6	ug/Kgdrywt	23.	72.	76.	73.8	79.0	6	30	48-100
Chrysene	65.3	66.6	ug/Kgdrywt	21.	64.	67.	65.7	68.0	4	30	46-101
Benzo(b)Fluoranthene	65.3	66.6	ug/Kgdrywt	35.	72.	76.	57.4	62.0	5	30	53-100
Benzo(k)fluoranthene	65.3	66.6	ug/Kgdrywt	JL11.	44.	47.	51.4	54.4	6	30	49-96
Benzo(a)pyrene	65.3	66.6	ug/Kgdrywt	JL19.	49.	51.	46.4*	48.4*	4	30	61-101
Indeno(1,2,3-cd)pyrene	65.3	66.6	ug/Kgdrywt	33.	81.	79.	72.9	68.2	3	30	50-105
Dibenzo(a,h)anthracene	65.3	66.6	ug/Kgdrywt	JL7.7	53.	54.	68.7	69.6	3	30	55-105
Benzo(g,h,i)perylene	65.3	66.6	ug/Kgdrywt	JLL11.	31.	31.	30.0*	30.3*	2	30	53-103
2-Methylnaphthalene-D10							54.2	54.5			19-94
Fluorene-D10							75.0	76.0			20-96
Pyrene-D10							77.5	79.4			31-128

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MS/MSD Recovery Report

MS ID: WG133361-6
MSD ID: WG133361-7
Sample ID: SG8254-19
Client ID: 004/5-SS1064-000.6
Project:
SDG: SG8254
MS File ID: N0706.D

Received Date:
Extract Date: 28-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133361
Report Date: 15-NOV-13
MSD File ID: N0707.D

Analysis Date: 12-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 97.

Compound	MS Spike	MSD Spike	Conc Units	Samp Conc	MS Conc	MSD Conc	MS Rec (%)	MSD Rec (%)	RPD (%)	RPD Limit	Limits
Naphthalene	63.1	66.0	ug/Kgdrywt	U9.3	42.	44.	66.7	67.3	5	30	10-129
2-Methylnaphthalene	63.1	66.0	ug/Kgdrywt	U9.3	49.	51.	77.0	77.5	5	30	10-152
Acenaphthylene	63.1	66.0	ug/Kgdrywt	U9.3	34.	38.	54.6	58.4	11	30	25-94
Acenaphthene	63.1	66.0	ug/Kgdrywt	U9.3	38.	46.	60.3	69.7	19	30	33-98
Fluorene	63.1	66.0	ug/Kgdrywt	U9.3	41.	50.	64.6	75.3	20	30	40-92
Phenanthrene	63.1	66.0	ug/Kgdrywt	JM15.	64.	79.	77.1	97.0*	21	30	46-96
Anthracene	63.1	66.0	ug/Kgdrywt	J1.4	35.	39.	53.8	57.0	10	30	34-96
Fluoranthene	63.1	66.0	ug/Kgdrywt	M34.	84.	120	78.9	130.*	35*	30	38-116
Pyrene	63.1	66.0	ug/Kgdrywt	M29.	82.	100	83.9	115.*	24	30	35-111
Benzo(a)anthracene	63.1	66.0	ug/Kgdrywt	J14.	57.	68.	69.1	82.9	18	30	48-100
Chrysene	63.1	66.0	ug/Kgdrywt	19.	61.	68.	66.5	75.2	12	30	46-101
Benzo(b)Fluoranthene	63.1	66.0	ug/Kgdrywt	21.	64.	84.	69.1	96.9	27	30	53-100
Benzo(k)fluoranthene	63.1	66.0	ug/Kgdrywt	JL11.	44.	44.	52.4	50.6	1	30	49-96
Benzo(a)pyrene	63.1	66.0	ug/KgdrywtJLMM13.		43.	49.	47.7*	54.1*	12	30	61-101
Indeno(1,2,3-cd)pyrene	63.1	66.0	ug/KgdrywtJMM11.		32.	40.	33.4*	43.2*	20	30	50-105
Dibenzo(a,h)anthracene	63.1	66.0	ug/KgdrywtJLMM1.8		30.	34.	47.0*	52.1*	15	30	55-105
Benzo(g,h,i)perylene	63.1	66.0	ug/KgdrywtJLLMM5		20.	22.	24.1*	25.8*	8	30	53-103
2-Methylnaphthalene-D10							52.1	53.3			19-94
Fluorene-D10							68.6	69.2			20-96
Pyrene-D10							75.3	68.6			31-128

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Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : N0558.D
Instrument ID : GCMS-N
Matrix : AQ

SDG : SG8254
Lab Sample ID : WG133367-1RA
Date Extracted : 28-OCT-13
Date Analyzed : 01-NOV-13
Time Analyzed : 14:03

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133367-2RA	N0559.D	11/01/13	14:46
Laboratory Control S	WG133367-3RA	N0560.D	11/01/13	15:29
TF2-SS-RB03-1013	SG8254-33RE	N0561.D	11/01/13	16:12

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Report of Analytical Results

Client:
Lab ID: WG133367-1RA
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: N0558.D

Sample Date:
Received Date:
Extract Date: 28-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133367

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
2-Methylnaphthalene	U	0.10	ug/L	1	.2	0.20	0.077	0.10
Acenaphthylene	U	0.10	ug/L	1	.2	0.20	0.054	0.10
Acenaphthene	U	0.10	ug/L	1	.2	0.20	0.064	0.10
Fluorene	U	0.10	ug/L	1	.2	0.20	0.061	0.10
Phenanthrene	U	0.10	ug/L	1	.2	0.20	0.051	0.10
Anthracene	U	0.10	ug/L	1	.2	0.20	0.044	0.10
Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.073	0.10
Pyrene	U	0.10	ug/L	1	.2	0.20	0.059	0.10
Benzo(a)anthracene	U	0.10	ug/L	1	.2	0.20	0.046	0.10
Chrysene	J	0.044	ug/L	1	.2	0.20	0.036	0.10
Benzo(b)Fluoranthene	U	0.10	ug/L	1	.2	0.20	0.089	0.10
Benzo(k)fluoranthene	J	0.059	ug/L	1	.2	0.20	0.049	0.10
Benzo(a)pyrene	U	0.10	ug/L	1	.2	0.20	0.066	0.10
Indeno(1,2,3-cd)pyrene	U	0.10	ug/L	1	.2	0.20	0.052	0.10
Dibenzo(a,h)anthracene	U	0.10	ug/L	1	.2	0.20	0.070	0.10
Benzo(g,h,i)perylene	U	0.10	ug/L	1	.2	0.20	0.065	0.10
2-Methylnaphthalene-D10		60.2	%					
Fluorene-D10		72.3	%					
pyrene-d10		90.1	%					

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LCS/LCSD Recovery Report

LCS ID: WG133367-2RA
LCSD ID: WG133367-3RA
Project:
SDG: SG8254
Report Date: 15-NOV-13
LCS File ID: N0559.D

Received Date:
Extract Date: 28-OCT-13
Extracted By: AM
Extraction Method: SW846 3510
Lab Prep Batch: WG133367
LCSD File ID: N0560.D

Analysis Date: 01-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: AQ
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Naphthalene	2.00	1.27	63.5	1.29	64.5	ug/L	2	20	46-84
2-Methylnaphthalene	2.00	1.21	60.5	1.22	61.0	ug/L	1	20	51-114
Acenaphthylene	2.00	1.19	59.5	1.21	60.5	ug/L	2	20	55-105
Acenaphthene	2.00	1.24	62.0	1.27	63.5	ug/L	2	20	53-90
Fluorene	2.00	1.41	70.5	1.36	68.0	ug/L	4	20	53-95
Phenanthrene	2.00	1.58	79.0	1.53	76.5	ug/L	3	20	73-100
Anthracene	2.00	1.68	84.0	1.63	81.5	ug/L	3	20	70-95
Fluoranthene	2.00	1.67	83.5	1.68	84.0	ug/L	0	20	81-109
Pyrene	2.00	1.53	76.5	1.52	76.0	ug/L	1	20	71-104
Benzo(a)anthracene	2.00	1.67	83.5	1.58	79.0	ug/L	6	20	70-110
Chrysene	2.00	1.50	75.0	1.54	77.0	ug/L	3	20	70-95
Benzo(b)Fluoranthene	2.00	1.76	88.0	1.61	80.5	ug/L	9	20	67-102
Benzo(k)fluoranthene	2.00	1.32	66.0*	1.40	70.0	ug/L	6	20	68-103
Benzo(a)pyrene	2.00	1.42	71.0	1.41	70.5	ug/L	1	20	63-98
Indeno(1,2,3-cd)pyrene	2.00	1.76	88.0	1.79	89.5	ug/L	2	20	61-112
Dibenzo(a,h)anthracene	2.00	1.76	88.0	1.64	82.0	ug/L	7	20	66-108
Benzo(g,h,i)perylene	2.00	1.40	70.0	1.47	73.5	ug/L	5	20	62-106
2-Methylnaphthalene-D10			51.7		56.6				43-92
Fluorene-D10			69.4		70.5				29-101
Pyrene-d10			79.2		79.5				53-166

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133485-4
Lab File ID : N0523.D

SDG: SG8254
Analytical Date: 10/30/13 11:51
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	28940		9.13		80684		11.90		30691		16.00	
	Upper Limit	57880		9.63		161368		12.40		61382		16.50	
	Lower Limit	14470		8.63		40342		11.40		15345.5		15.50	
Client Sample ID	Lab Sample ID												
Laboratory Control S	WG133188-2	23271		9.13		43506		11.90		17113		16.00	
Laboratory Control S	WG133188-3	25610		9.13		71565		11.90		30436		16.00	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133485-4
Lab File ID : N0523.D

SDG: SG8254
Analytical Date: 10/30/13 11:51
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	45047	19.48	20519	25.77	16650	28.90
	Upper Limit	90094	19.98	41038	26.27	33300	29.40
	Lower Limit	22523.5	18.98	10259.5	25.27	8325	28.40
Client Sample ID	Lab Sample ID						
Laboratory Control S	WG133188-2	28286	19.48	15517	25.77	10172	28.90
Laboratory Control S	WG133188-3	36159	19.48	16544	25.77	11411	28.90

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133553-4
Lab File ID : N0540.D

SDG: SG8254
Analytical Date: 10/31/13 16:21
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	20009		9.11		66912		11.90		27626		15.99	
	Upper Limit	40018		9.61		133824		12.40		55252		16.49	
	Lower Limit	10004.5		8.61		33456		11.40		13813		15.49	
Client Sample ID	Lab Sample ID												
Method Blank Sample	WG133188-1RA	16588		9.11		54760		11.90		22707		15.99	
004/5-SS1068-000.5	SG8254-21	23202		9.11		81870		11.90		36578		16.00	
003-SS1011-000.8	SG8254-22	23228		9.11		84446		11.90		37968		15.99	
004/5-SS-DUP05-1013	SG8254-23	22475		9.11		79460		11.90		36046		16.00	
003-SS1012-000.7	SG8254-24	23232		9.11		84183		11.90		39206		15.99	
Continuing Calibrati	WG133605-2	21038		9.11		69979		11.88		28506		15.99	
Method Blank Sample	WG133367-1RA	21763		9.11		78380		11.90		32898		15.99	
Laboratory Control S	WG133367-2RA	20129		9.11		67404		11.88		29457		15.99	
Laboratory Control S	WG133367-3RA	16606		9.11		54693		11.90		22415		15.99	
TF2-SS-RB03-1013	SG8254-33RE	14692		9.13		49649		11.90		21920		16.00	
003-SS1011-000.8	SG8254-22DL	16870		9.11		58162		11.90		25559		15.99	
003-SS1012-000.7	SG8254-24DL	15738		9.13		49449		11.90		21490		15.99	
003-SS1013-000.7	SG8254-25	15615		9.11		52766		11.90		23737		15.99	
003-SS1014-0001	SG8254-26	18751		9.11		64751		11.90		29123		15.99	
003-SS1015-000.8	SG8254-27	20324		9.11		71393		11.90		32772		15.99	
003-SS1016-000.9	SG8254-28	19205		9.11		65783		11.90		30856		15.99	
Matrix Spike	WG133188-4	19335		9.11		66554		11.88		31539		15.99	
Matrix Spike Duplica	WG133188-5	19398		9.11		68232		11.88		33274		15.99	
003-SS1017-000.8	SG8254-29	22347		9.11		79172		11.90		35634		15.99	
003-SS1018-000.8	SG8254-30	16315		9.11		58308		11.90		27019		15.99	
003-SS1019-000.5	SG8254-31	19497		9.11		70634		11.90		33500		15.99	

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133553-4
Lab File ID : N0540.D

SDG: SG8254
Analytical Date: 10/31/13 16:21
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	40884	19.48	16478	25.76	9311	28.89
	Upper Limit	81768	19.98	32956	26.26	18622	29.39
	Lower Limit	20442	18.98	8239	25.26	4655.5	28.39
Client Sample ID	Lab Sample ID						
Method Blank Sample	WG133188-1RA	38585	19.48	15519	25.76	7888	28.89
004/5-SS1068-000.5	SG8254-21	61774	19.48	25673	25.76	17138	28.89
003-SS1011-000.8	SG8254-22	64844	19.47	23704	25.76	15883	28.89
004/5-SS-DUP05-1013	SG8254-23	61075	19.48	25665	25.76	18307	28.89
003-SS1012-000.7	SG8254-24	67354	19.47	25930	25.76	17348	28.89
Continuing Calibrati	WG133605-2	40300	19.48	18801	25.76	12019	28.89
Method Blank Sample	WG133367-1RA	49091	19.48	20699	25.76	12173	28.89
Laboratory Control S	WG133367-2RA	46023	19.47	20591	25.74	12076	28.89
Laboratory Control S	WG133367-3RA	34718	19.47	15837	25.76	8880	28.89
TF2-SS-RB03-1013	SG8254-33RE	33292	19.48	16665	25.76	9114	28.89
003-SS1011-000.8	SG8254-22DL	41089	19.47	16334	25.74	10707	28.89
003-SS1012-000.7	SG8254-24DL	34251	19.47	16235	25.74	11437	28.89
003-SS1013-000.7	SG8254-25	41327	19.47	16229	25.76	9827	28.89
003-SS1014-0001	SG8254-26	50775	19.47	20866	25.74	13456	28.89
003-SS1015-000.8	SG8254-27	57420	19.47	25904	25.74	17890	28.89
003-SS1016-000.9	SG8254-28	56491	19.47	21387	25.74	12516	28.89
Matrix Spike	WG133188-4	56864	19.47	22247	25.74	13049	28.89
Matrix Spike Duplica	WG133188-5	61093	19.47	23177	25.74	14199	28.89
003-SS1017-000.8	SG8254-29	58619	19.47	23401	25.74	12886	28.89
003-SS1018-000.8	SG8254-30	47850	19.47	19653	25.76	13093	28.89
003-SS1019-000.5	SG8254-31	59799	19.47	23936	25.76	15640	28.89

Area Upper Limit = +100% of internal standard area
Area Lower Limit = - 50% of internal standard area
RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133553-4
Lab File ID : N0540.D

SDG: SG8254
Analytical Date: 10/31/13 16:21
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	20009		9.11		66912		11.90		27626		15.99	
	Upper Limit	40018		9.61		133824		12.40		55252		16.49	
	Lower Limit	10004.5		8.61		33456		11.40		13813		15.49	
Client Sample ID	Lab Sample ID												
Continuing Calibrati	WG133661-2	22149		9.10		75973		11.88		31889		15.97	
Method Blank Sample	WG133361-1	16226		9.11		54075		11.90		23489		15.99	
Laboratory Control S	WG133361-2	16247		9.10		53425		11.88		23370		15.97	
Laboratory Control S	WG133361-3	15743		9.10		53634		11.88		23776		15.97	
004/5-SS1055-000.8	SG8254-4	16263		9.10		53930		11.90		23621		15.99	
004/5-SS1054-000.6	SG8254-5	17629		9.10		58230		11.90		26311		15.99	
Matrix Spike	WG133361-4	16480		9.10		55788		11.88		25441		15.97	
Matrix Spike Duplica	WG133361-5	16232		9.10		55232		11.88		25739		15.97	
004/5-SS1053-000.6	SG8254-6	15397		9.10		50735		11.90		23042		15.99	
004/5-SS1052-000.6	SG8254-7	15665		9.10		52803		11.90		24736		15.99	
004/5-SS1051-000.8	SG8254-8	17734		9.10		60111		11.90		27671		15.99	
004/5-SS1050-000.6	SG8254-9	17114		9.10		57038		11.90		27208		15.99	
004/5-SS1060-000.5	SG8254-15	16214		9.10		54224		11.90		26105		15.99	
004/5-SS1059-000.6	SG8254-16	16821		9.10		56127		11.90		25693		15.99	
004/5-SS1058-000.5	SG8254-17	16731		9.10		56605		11.90		26259		15.99	
004/5-SS1065-000.5	SG8254-18	17615		9.10		58274		11.90		27068		15.99	
004/5-SS1063-000.6	SG8254-20	16105		9.10		53861		11.90		24669		15.99	

Area Upper Limit = +100% of internal standard area
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RT Upper Limit = + 0.50 minutes of internal standard RT
RT Lower Limit = - 0.50 minutes of internal standard RT

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG133553-4
Lab File ID : N0540.D

SDG: SG8254
Analytical Date: 10/31/13 16:21
Instrument ID: GCMS-N

		PHENANTHRENE-D10		CHRYSENE-D12		PERYLENE-D12	
		Area #	RT #	Area #	RT #	Area #	RT #
	Std .	40884	19.48	16478	25.76	9311	28.89
	Upper Limit	81768	19.98	32956	26.26	18622	29.39
	Lower Limit	20442	18.98	8239	25.26	4655.5	28.39
Client Sample ID	Lab Sample ID						
Continuing Calibrati	WG133661-2	50737	19.47	26177	25.74	17253	28.89
Method Blank Sample	WG133361-1	37632	19.47	19180	25.74	10762	28.89
Laboratory Control S	WG133361-2	39370	19.47	21493	25.74	12973	28.89
Laboratory Control S	WG133361-3	40684	19.47	20402	25.74	13014	28.89
004/5-SS1055-000.8	SG8254-4	40843	19.47	20985	25.74	13497	28.87
004/5-SS1054-000.6	SG8254-5	44628	19.47	20305	25.74	13152	28.87
Matrix Spike	WG133361-4	44461	19.47	20230	25.74	13483	28.87
Matrix Spike Duplica	WG133361-5	44814	19.47	19569	25.74	12478	28.87
004/5-SS1053-000.6	SG8254-6	40192	19.47	16504	25.74	11112	28.87
004/5-SS1052-000.6	SG8254-7	44569	19.47	18760	25.74	13098	28.87
004/5-SS1051-000.8	SG8254-8	47856	19.47	20549	25.74	13489	28.87
004/5-SS1050-000.6	SG8254-9	47831	19.47	20817	25.74	14916	28.87
004/5-SS1060-000.5	SG8254-15	47280	19.47	21110	25.74	13960	28.87
004/5-SS1059-000.6	SG8254-16	46660	19.47	21292	25.74	14141	28.89
004/5-SS1058-000.5	SG8254-17	47771	19.47	20267	25.74	12447	28.87
004/5-SS1065-000.5	SG8254-18	50385	19.47	22855	25.74	14799	28.87
004/5-SS1063-000.6	SG8254-20	46523	19.47	22494	25.74	13910	28.89

Area Upper Limit = +100% of internal standard area
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RT Lower Limit = - 0.50 minutes of internal standard RT

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG134292-4
Lab File ID : N0698.D

SDG: SG8254
Analytical Date: 11/12/13 11:30
Instrument ID: GCMS-N

		1,4-DICHLOROBENZENE-D4			NAPHTHALENE-D8			ACENAPHTHENE-D10		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	27788		9.08		90382		11.86		35164		15.95	
	Upper Limit	55576		9.58		180764		12.36		70328		16.45	
	Lower Limit	13894		8.58		45191		11.36		17582		15.45	
Client Sample ID	Lab Sample ID												
004/5-SS1064-000.6	SG8254-19	26015		9.07		73941		11.86		31898		15.95	
Matrix Spike	WG133361-6	29565		9.07		83706		11.84		36730		15.94	
Matrix Spike Duplica	WG133361-7	29791		9.07		85367		11.84		36260		15.94	
004/5-SS1056-000.6	SG8254-3	30909		9.07		93372		11.86		39837		15.95	
004/5-SS-DUP04-1013	SG8254-11	26856		9.07		79420		11.86		34675		15.95	
004/5-SS1061-000.6	SG8254-12	33397		9.07		101526		11.86		42046		15.95	
004/5-SS1062-000.8	SG8254-10	34533		9.07		108216		11.86		45874		15.95	
004/5-SS1067-000.7	SG8254-13	38201		9.07		121264		11.86		50694		15.95	
004/5-SS1066-000.9	SG8254-14	40272		9.07		130499		11.86		52272		15.95	
004/5-SS1057-0001	SG8254-2	36442		9.08		115295		11.86		44102		15.95	
Continuing Calibrati	WG134331-2	29463		9.05		88611		11.84		36521		15.93	
003-SS-DUP06-1013	SG8254-32	25090		9.05		75096		11.84		32182		15.93	
004/5-SS1067-000.7	SG8254-13DL	23867		9.05		76145		11.84		32278		15.94	
003-SS1013-000.7	SG8254-25DL	25022		9.07		73020		11.86		29605		15.94	
003-SS1014-0001	SG8254-26DL	25202		9.07		71581		11.86		30751		15.94	
Continuing Calibrati	WG134395-2	33173		9.05		117953		11.84		51761		15.94	
003-SS1019-000.5	SG8254-31DL	28974		9.07		99275		11.86		44725		15.94	

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Form 8
Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2
Lab ID : WG134292-4
Lab File ID : N0698.D

SDG: SG8254
Analytical Date: 11/12/13 11:30
Instrument ID: GCMS-N

		PHENANTHRENE-D10			CHRYSENE-D12			PERYLENE-D12		
		Area	#	RT	#	Area	#	RT	#	Area	#	RT	#
	Std .	56213		19.44		29007		25.72		22554		28.86	
	Upper Limit	112426		19.94		58014		26.22		45108		29.36	
	Lower Limit	28106.5		18.94		14503.5		25.22		11277		28.36	
Client Sample ID	Lab Sample ID												
004/5-SS1064-000.6	SG8254-19	54132		19.43		25669		25.71		18710		28.84	
Matrix Spike	WG133361-6	60504		19.43		26129		25.71		18427		28.84	
Matrix Spike Duplica	WG133361-7	61705		19.43		29664		25.71		23264		28.86	
004/5-SS1056-000.6	SG8254-3	62594		19.43		27626		25.71		18906		28.84	
004/5-SS-DUP04-1013	SG8254-11	56313		19.43		23566		25.71		17123		28.84	
004/5-SS1061-000.6	SG8254-12	63348		19.43		23955		25.71		17177		28.86	
004/5-SS1062-000.8	SG8254-10	66403		19.43		28427		25.72		17509		28.88	
004/5-SS1067-000.7	SG8254-13	72327		19.44		29617		25.74		19652		28.88	
004/5-SS1066-000.9	SG8254-14	72948		19.44		27713		25.74		14609		28.89	
004/5-SS1057-0001	SG8254-2	64466		19.44		26864		25.74		15306		28.89	
Continuing Calibrati	WG134331-2	53891		19.43		22140		25.70		13955		28.84	
003-SS-DUP06-1013	SG8254-32	53349		19.41		21722		25.70		13201		28.83	
004/5-SS1067-000.7	SG8254-13DL	49395		19.41		16434		25.70		11352		28.83	
003-SS1013-000.7	SG8254-25DL	44003		19.41		15942		25.70		10580	*	28.83	
003-SS1014-0001	SG8254-26DL	49771		19.41		18289		25.70		11685		28.84	
Continuing Calibrati	WG134395-2	79703		19.43		43368		25.71		32833		28.86	
003-SS1019-000.5	SG8254-31DL	72368		19.43		40339		25.70		33604		28.84	

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Data File: \\target_server\GG\chem\gcms-n.i\N103013.b\N0525.D
Report Date: 06-Nov-2013 12:15

I.S. Associations

Katahdin Analytical Services

Data file : \\target_server\GG\chem\gcms-n.i\N103013.b\N0525.D
Lab Smp Id: WG133485-3
Inj Date : 30-OCT-2013 13:24
Operator : JCG Inst ID: gcms-n.i
Smp Info : WG133485-3
Misc Info :
Comment :
Method : \\target_server\GG\chem\gcms-n.i\N103013.b\NSPSIM76.m
Meth Date : 31-Oct-2013 10:29 gcms-n.i Quant Type: ISTD
Cal Date : 30-OCT-2013 13:24 Cal File: N0525.D
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.12

Concentration Formula: Amt * DF * Uf*(Vt/Vo*Vi)*1000 * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction Factor
Vt	0.00100	Final Volume (L)
Vo	1.000	Sample Volume (L)
Vi	1.000	Volume injected (uL)
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
$	1 1,4-Dioxane-d8	96	3.522	3.489	(0.386)	6462	0.50000	0.454(a)	
	2 1,4-Dioxane	88	3.557	3.523	(0.390)	6351	0.50000	0.402(a)	
	3 Benzaldehyde	77	8.232	8.193	(0.902)	15253	0.50000	0.513	
	4 Phenol	94	8.545	8.532	(0.936)	75273	2.00000	1.64	
	5 Bis(2-Chloroethyl)ether	93	8.662	8.636	(0.949)	23331	0.50000	0.412	
	6 2-Chlorophenol	128	8.702	8.689	(0.954)	58720	2.00000	1.57	
	7 1,3-Dichlorobenzene	146	9.002	8.989	(0.986)	18623	0.50000	0.453	
*	8 1,4-Dichlorobenzene-D4	152	9.126	9.112	(1.000)	25337	0.80000	(a)	
	9 1,4-Dichlorobenzene	146	9.153	9.153	(1.003)	18615	0.50000	0.428	
	10 1,2-Dichlorobenzene	146	9.482	9.468	(1.039)	21610	0.50000	0.426	
	11 2,2'-Oxybis(1-chloropropane)	45	9.824	9.797	(1.077)	21299	0.50000	0.356(Q)	
	12 2-Methylphenol	108	9.810	9.797	(1.075)	55811	2.00000	1.70	
	13 Acetophenone	105	10.043	10.016	(0.843)	27001	0.50000	0.453(Q)	
	14 N-Nitroso-di-n-propylamine	70	10.139	10.084	(1.111)	10630	0.50000	0.334(Q)	
	15 Hexachloroethane	117	10.194	10.180	(1.117)	9222	0.50000	0.408	
	16 3&4-Methylphenol	108	10.153	10.153	(1.113)	52246	2.00000	1.67	
	17 Nitrobenzene	77	10.386	10.345	(0.872)	19771	0.50000	0.341(Q)	
	18 Isophorone	82	10.977	10.926	(0.921)	31451	0.50000	0.376	
	19 2-Nitrophenol	139	11.096	11.079	(0.931)	24641	2.00000	1.40	
	20 2,4-Dimethylphenol	107	11.318	11.301	(0.950)	55711	2.00000	1.61	
	21 bis(2-Chloroethoxy)methane	93	11.523	11.489	(0.967)	17553	0.50000	0.386	

Data File: \\target_server\GG\chem\gcms-n.i\N103013.b\N0525.D
Report Date: 06-Nov-2013 12:15

			QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
	22	2,4-Dichlorophenol	162	11.676	11.659	(0.980)	55951	2.00000	1.82	
	23	1,2,4-Trichlorobenzene	180	11.813	11.796	(0.991)	17984	0.50000	0.530	
*	24	Naphthalene-D8	136	11.915	11.898	(1.000)	84490	0.80000	(a)	
	25	Naphthalene	128	11.949	11.933	(1.003)	44993	0.50000	0.455	
	26	4-Chloroaniline	127	12.188	12.154	(1.023)	12412	0.50000	0.365(a)	
	27	Hexachlorobutadiene	225	12.342	12.325	(1.036)	10650	0.50000	0.508	
	28	Caprolactam	113	13.027	12.952	(1.093)	2040	0.50000	0.236(Q)	
	29	4-Chloro-3-Methylphenol	107	13.404	13.404	(1.125)	47720	2.00000	1.69	
$	30	2-Methylnaphthalene-D10	152	13.517	13.498	(0.845)	19528	0.50000	0.492(a)	
	31	2-Methylnaphthalene	142	13.592	13.573	(1.141)	24905	0.50000	0.422	
	32	1-Methylnaphthalene	142	13.799	13.781	(1.158)	22519	0.50000	0.388	
	33	Hexachlorocyclopentadiene	237	14.007	14.007	(0.875)	5804	0.50000	0.371	
	34	1,2,4,5-Tetrachlorobenzene	216	14.007	13.988	(0.875)	10749	0.50000	0.440	
$	35	2,4-Dibromophenol	252	14.251	14.233	(0.891)	5665	0.50000	0.418(a)	
	36	2,4,6-Trichlorophenol	196	14.327	14.308	(0.895)	26395	2.00000	1.73	
	37	2,4,5-Trichlorophenol	196	14.402	14.402	(0.900)	34933	2.00000	2.03	
	38	2-Chloronaphthalene	164	14.704	14.685	(0.919)	7442	0.50000	0.475	
	39	1,1'-Biphenyl	154	14.722	14.704	(0.920)	28502	0.50000	0.478	
	40	2-Nitroaniline	65	15.024	15.005	(0.939)	3319	0.50000	0.455	
	41	Dimethyl Phthalate	163	15.551	15.538	(0.972)	90395	2.00000	1.66	
	42	Acenaphthylene	152	15.657	15.644	(0.979)	36668	0.50000	0.401	
	43	2,6-Dinitrotoluene	165	15.630	15.617	(0.977)	4486	0.50000	0.447(Q)	
*	44	Acenaphthene-D10	164	15.999	15.986	(1.000)	25391	0.80000	(a)	
	45	Acenaphthene	153	16.079	16.065	(1.005)	22435	0.50000	0.465	
	46	3-Nitroaniline	138	16.013	15.986	(1.001)	1925	0.50000	0.493	
	47	2,4-Dinitrophenol	184	16.263	16.250	(1.016)	3349	2.00000	1.07	
	48	Dibenzofuran	168	16.500	16.487	(1.031)	30932	0.50000	0.369	
	49	2,4-Dinitrotoluene	165	16.580	16.567	(1.036)	3944	0.50000	0.407	
	50	4-Nitrophenol	109	16.566	16.553	(1.035)	6309	2.00000	1.58(Q)	
	51	2,3,4,6-Tetrachlorophenol	232	16.856	16.857	(1.054)	21922	2.00000	1.61	
$	52	Fluorene-D10	174	17.231	17.231	(1.077)	14915	0.50000	0.464(a)	
	53	Diethylphthalate	149	17.247	17.231	(1.078)	112042	2.00000	1.83	
	54	Fluorene	166	17.295	17.295	(1.081)	21380	0.50000	0.454	
	55	4-Chlorophenyl-phenylether	204	17.390	17.390	(1.087)	11104	0.50000	0.459	
	56	4-Nitroaniline	138	17.453	17.438	(1.091)	954	0.50000	0.414	
	57	4,6-Dinitro-2-Methylphenol	198	17.532	17.517	(0.899)	5358	2.00000	1.62	
	58	N-Nitrosodiphenylamine	169	17.682	17.682	(0.907)	13751	0.50000	0.442	
	59	4-Bromophenyl-phenylether	248	18.536	18.521	(0.951)	5115	0.50000	0.480	
	60	Hexachlorobenzene	284	18.611	18.611	(0.955)	6823	0.50000	0.533	
	61	Atrazine	200	19.075	19.076	(0.978)	2457	0.50000	0.427	
	62	Pentachlorophenol	266	19.135	19.121	(0.982)	14332	2.00000	1.75	
*	63	Phenanthrene-D10	188	19.495	19.480	(1.000)	34918	0.80000	(a)	
	64	Phenanthrene	178	19.540	19.540	(1.002)	26508	0.50000	0.493	
	65	Anthracene	178	19.660	19.660	(1.008)	29576	0.50000	0.547	
	66	Carbazole	167	20.124	20.110	(1.032)	20050	0.50000	0.449	
	67	Di-n-butylphthalate	149	21.173	21.174	(1.086)	183175	2.00000	1.75	
	68	Fluoranthene	202	22.363	22.350	(1.147)	23192	0.50000	0.445	
$	69	Pyrene-D10	212	22.831	22.818	(0.886)	15201	0.50000	0.602(a)	
	70	Pyrene	202	22.869	22.857	(0.887)	28109	0.50000	0.571	
	71	Butylbenzylphthalate	149	24.701	24.702	(0.959)	40523	2.00000	1.82	
	72	Benzo(a)anthracene	228	25.756	25.743	(0.999)	8823	0.50000	0.455	
*	73	Chrysene-D12	240	25.770	25.770	(1.000)	12387	0.80000	(a)	
	74	Chrysene	228	25.824	25.824	(1.002)	15543	0.50000	0.546(M)	M9
	75	3,3'-Dichlorobenzidine	252	25.824	25.810	(1.002)	441	0.50000	0.528(Q)	

WAS

1:07 pm, Nov 15, 2013

Data File: \\target_server\GG\chem\gcms-n.i\N103013.b\N0525.D
Report Date: 06-Nov-2013 12:15

		Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/ml)	AMOUNTS ON-COL (ug/ml)	REVIEW CODE
	76	bis(2-Ethylhexyl)phthalate	149	26.202	26.202	(1.017)	57297	2.00000	1.90	
	77	Di-n-octylphthalate	149	27.651	27.651	(0.957)	65089	2.00000	1.78	
	78	Benzo(b)flucranthene	252	28.131	28.131	(0.973)	3971	0.50000	0.452	
	79	Benzo(k)fluoranthene	252	28.183	28.183	(0.975)	10705	0.50000	0.491(M)	M6
	80	Benzo(a)pyrene	252	28.783	28.783	(0.996)	3891	0.50000	0.364	
*	81	Perylene-D12	264	28.903	28.903	(1.000)	7932	0.80000	(a)	
	82	Indeno(1,2,3-cd)pyrene	276	31.053	31.039	(1.074)	2367	0.50000	0.651(H)	
	83	Dibenzo(a,h)anthracene	278	31.135	31.135	(1.077)	1135	0.50000	0.418(Q)	
	84	Benzo(g,h,i)perylene	276	31.642	31.642	(1.095)	3505	0.50000	0.383(M)	M9
M	85	Total PAHs	100				330225	8.50000	(a)	

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

WAS
1:07 pm, Nov 15, 2013

SAMPLE ID TF2-003-SS1013-000.7

SAMPLE CALC IS AREA	DILUTION	COMPOUND OF INTEREST / IS AMOUNT (NG)	Final Extract Volume (UL)	AVE RRF	CONCENTRATION PPB
15942	10	286590 / 0.8	1000	2.4012	2006.26
		% Solids	**Sample Volume (Grams)**		
		0.93	32.1		

Pyrene = 2,000 ug/kg

Katahdin
ANALYTICAL SERVICES

Cert No E87604

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-25DL
Client ID: 003-SS1013-000.7
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: N0729.D

Sample Date: 22-OCT-13
Received Date: 23-OCT-13
Extract Date: 25-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133188

Analysis Date: 13-NOV-13
Analyst: JCG
Analysis Method: SW846 M8270D
Matrix: SL
% Solids: 93.
Report Date: 15-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Naphthalene	J	45.	ug/Kgdrywt	10	20	200	26.	100
2-Methylnaphthalene	U	100	ug/Kgdrywt	10	20	200	22.	100
Acenaphthylene	U	100	ug/Kgdrywt	10	20	200	12.	100
Acenaphthene	J	150	ug/Kgdrywt	10	20	200	15.	100
Fluorene	J	110	ug/Kgdrywt	10	20	200	32.	100
Phenanthrene		1700	ug/Kgdrywt	10	20	200	18.	100
Anthracene		320	ug/Kgdrywt	10	20	200	12.	100
Fluoranthene		1900	ug/Kgdrywt	10	20	200	18.	100
Pyrene		2000	ug/Kgdrywt	10	20	200	21.	100
Benzo(a)anthracene		740	ug/Kgdrywt	10	20	200	19.	100
Chrysene		750	ug/Kgdrywt	10	20	200	17.	100
Benzo(b)Fluoranthene	LL	840	ug/Kgdrywt	10	20	200	24.	100
Benzo(k)fluoranthene		330	ug/Kgdrywt	10	20	200	31.	100
Benzo(a)pyrene	LL	580	ug/Kgdrywt	10	20	200	33.	100
Indeno(1,2,3-cd)pyrene	L	420	ug/Kgdrywt	10	20	200	19.	100
Dibenzo(a,h)anthracene	J	89.	ug/Kgdrywt	10	20	200	18.	100
Benzo(g,h,i)perylene	LL	210	ug/Kgdrywt	10	20	200	20.	100
2-Methylnaphthalene-D10	D	0.00	%					
Fluorene-D10	D	0.00	%					
Pyrene-D10	D	0.00	%					

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Data File: \\target_server\gg\chem\gcms-n.i\N111313.b\N0729.D
Report Date: 15-Nov-2013 12:28

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gcms-n.i\N111313.b\N0729.D
Lab Smp Id: SG8254-25DL Client Smp ID: 003-SS1013-000.7
Inj Date : 13-NOV-2013 16:53
Operator : JCG Inst ID: gcms-n.i
Smp Info : SG8254-25DL
Misc Info : WG134331,WG133188,WG134292-4
Comment :
Method : \\target_server\GG\chem\gcms-n.i\N111313.b\NSPSIM79.m
Meth Date : 15-Nov-2013 12:27 gcms-n.i Quant Type: ISTD
Cal Date : 12-NOV-2013 15:09 Cal File: N0703.D
Als bottle: 8
Dil Factor: 10.00000
Integrator: HP RTE Compound Sublist: sw8270sim.sub
Target Version: 4.12

Concentration Formula: Amt * DF * (Vt/Ws*Vi)*(100/(100-M))*1000 * CpndVariable

Name	Value	Description
DF	10.000	Dilution Factor
Vt	0.00100	Final Volume (L)
Ws	0.03210	Weight of Sample (Kg)
Vi	1.000	Volume injected (uL)
M	7.027	% Moisture
Cpnd Variable		Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (ug/Kgdrywt)	REVIEW C
*	8 1,4-Dichlorobenzene-D4	152	9.065	9.051	(1.000)	25022	0.80000	(Q)	
*	24 Naphthalene-D8	136	11.858	11.841	(1.000)	73020	0.80000		
	25 Naphthalene	128	11.909	11.875	(1.004)	12043	0.13436	45.0(a)	
*	44 Acenaphthene-D10	164	15.941	15.928	(1.000)	29605	0.80000		
	45 Acenaphthene	153	16.007	16.007	(1.004)	23349	0.43467	146(a)	
	54 Fluorene	166	17.241	17.225	(1.082)	18359	0.33830	113(a)	
*	63 Phenanthrene-D10	188	19.414	19.429	(1.000)	44003	0.80000		
	64 Phenanthrene	178	19.474	19.474	(1.003)	309955	4.98408	1670	
	65 Anthracene	178	19.594	19.594	(1.009)	63874	0.95814	321	
	68 Fluoranthene	202	22.292	22.292	(1.148)	353698	5.68713	1900	
	70 Pyrene	202	22.799	22.799	(0.887)	286590	5.98930	2010	
	72 Benzo(a)anthracene	228	25.683	25.683	(0.999)	55434	2.21213	741	
*	73 Chrysene-D12	240	25.696	25.696	(1.000)	15942	0.80000		
	74 Chrysene	228	25.750	25.764	(1.002)	68544	2.22526	746	
	78 Benzo(b)fluoranthene	252	28.070	28.070	(0.974)	42798	2.50287	839(M)	M3
	79 Benzo(k)fluoranthene	252	28.122	28.122	(0.976)	26517	0.97860	328(MH)	M6
	80 Benzo(a)pyrene	252	28.705	28.705	(0.996)	30966	1.72270	577	
*	81 Perylene-D12	264	28.825	28.842	(1.000)	10580	0.80000		
	82 Indeno(1,2,3-cd)pyrene	276	30.951	30.965	(1.074)	12581	1.25497	420(H)	
	83 Dibenzo(a,h)anthracene	278	31.033	31.047	(1.077)	2657	0.26527	88.9(aQ)	
	84 Benzo(g,h,i)perylene	276	31.540	31.554	(1.094)	8539	0.61360	206	

WAS
12:55 pm, Nov 15, 2013

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	NTD	#	OTP	#
004/5-SS1065-000.5	SG8254-18	A	83.2		73.8	
003-SS1015-000.8	SG8254-27	A	101.		98.8	
004/5-SS1056-000.6	SG8254-3	A	70.7		60.9	*
004/5-SS1056-000.6	SG8254-3RE	A	93.8		85.4	
004/5-SS1051-000.8	SG8254-8	A	95.8		87.1	
Method Blank Sample	WG133426-1	A	100.		93.9	
Laboratory Control S	WG133426-2	A	79.0		63.6	
Laboratory Control S	WG133426-3	A	100.		90.9	
Method Blank Sample	WG134245-1	A	100.		87.9	
Laboratory Control S	WG134245-2	A	94.0		81.8	
Laboratory Control S	WG134245-3	A	94.0		84.8	

		QC Limits
OTP	O-TERPHENYL	62-109
NTD	N-TRIACONTANE-D62	70-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GC10
Lab File IDs : AGG20231.EAGG20230.EAGG20232.E AGG20229.EAGG20228.E **Column ID:** A
Calibration Date(s): 26-JUL-13 10:34 26-JUL-13 13:49

	5.0000 Level 1	20.0000 Level 2	50.0000 Level 3	100.0000 Level 4	200.0000 Level 5		New Crv	b	m1	m2	%RSD	Max %RSD	
Petroleum Range Organic	3089102	12636617	29064611	60208084	122271060		LNR	7.40184	35900		0.99976	0.99000	M (
C-8	181933	731463	1715023	3597538	7399389		LNR	1.05675	36959		0.99955	0.99000	O
C-10	179016	749462	1739250	3724105	7629535		LNR	1.27141	38167		0.99946	0.99000	O
C-12	175693	743553	1750024	3747522	7665333		LNR	1.33539	38372		0.99950	0.99000	O
C-14	180367	756314	1748066	3765084	7677765		LNR	1.22555	38427		0.99947	0.99000	O
C-16	182823	754185	1751923	3777081	7684649		LNR	1.19425	38470		0.99949	0.99000	O
C-18	188749	776459	1784336	3853299	7821892		LNR	1.09221	39150		0.99949	0.99000	O
C-20	190254	769795	1772595	2897952	5891299		LNR	-3.67435	29019		0.99674	0.99000	O
C-22	189757	766624	1814396	3037617	6260195		LNR	-2.63046	30883		0.99764	0.99000	O
C-24	188458	749611	1697810	3194570	6695340		LNR	-0.48887	33143		0.99917	0.99000	O
C-26	194578	747032	1690170	3581426	6950490		LNR	-0.53461	34805		0.99962	0.99000	O
C-28	218772	778314	1732495	3663153	7147609		LNR	-0.68229	35718		0.99964	0.99000	O
C-30	192475	795453	1747341	3679252	7257458		LNR	-0.32754	36269		0.99971	0.99000	O
C-32	182906	746924	1714008	3693105	7412365		LNR	0.75824	37115		0.99961	0.99000	O
C-34	172985	732428	1684206	3667824	7401790		LNR	1.12303	37091		0.99949	0.99000	O
C-36	169313	721822	1658556	3607947	7516848		LNR	1.89380	37605		0.99896	0.99000	O
C-38	156767	682840	1580679	3457880	7142775		LNR	1.84020	35776		0.99912	0.99000	O
C-40	144249	634331	1483724	3262729	6716319		LNR	1.90824	33672		0.99915	0.99000	O
O-Terphenyl	10302658	10032499	9941055	10236461	10225858		LNR	0.22789	40635		0.99891	0.99000	
n-Triacontane-D62	9023242	8760852	8483761	8952633	8598295		LNR	0.81290	29308		0.99675	0.99000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134295-1 **Analytical Date:** 11/05/13 13:20
Lab File ID : AGK20040.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	811	33781	0.010	-4.61735	25.00000	Linear
2 C-8	50.00000	46.40302	33519	0.010	-7.19397	25.00000	Linear
3 C-10	50.00000	45.17185	33511	0.010	-9.65630	25.00000	Linear
4 C-12	50.00000	45.75424	34089	0.010	-8.49153	25.00000	Linear
5 C-14	50.00000	45.17248	33775	0.010	-9.65504	25.00000	Linear
6 C-16	50.00000	45.21239	33868	0.010	-9.57522	25.00000	Linear
8 C-18	50.00000	44.93013	34325	0.010	-10.13974	25.00000	Linear
10 C-20	50.00000	55.20021	34170	0.010	10.40042	25.00000	Linear
11 C-22	50.00000	51.87405	33665	0.010	3.74810	25.00000	Linear
12 C-24	50.00000	50.26329	33641	0.010	0.52659	25.00000	Linear
13 C-26	50.00000	47.68628	33567	0.010	-4.62743	25.00000	Linear
14 C-28	50.00000	46.82572	33938	0.010	-6.34857	25.00000	Linear
16 C-30	50.00000	46.45576	33935	0.010	-7.08848	25.00000	Linear
17 C-32	50.00000	46.93059	34274	0.010	-6.13883	25.00000	Linear
18 C-34	50.00000	47.02578	34052	0.010	-5.94845	25.00000	Linear
19 C-36	50.00000	47.35013	34187	0.010	-5.29973	25.00000	Linear
20 C-38	50.00000	48.46532	33361	0.010	-3.06936	25.00000	Linear
21 C-40	50.00000	50.03132	32408	0.010	0.06263	25.00000	Linear
9 O-Terphenyl	250	230	37411	0.010	-7.84302	25.00000	Linear
15 n-Triacontane-D62	300	276	26915	0.010	-7.89385	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134295-2 **Analytical Date:** 11/05/13 21:07
Lab File ID : AGK20052.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	359	37058	0.010	5.62592	25.00000	Linear
2 C-8	20.00000	19.20595	33539	0.010	-3.97027	25.00000	Linear
3 C-10	20.00000	21.32254	38264	0.010	6.61272	25.00000	Linear
4 C-12	20.00000	21.75634	39180	0.010	8.78172	25.00000	Linear
5 C-14	20.00000	20.49575	37025	0.010	2.47876	25.00000	Linear
6 C-16	20.00000	20.50801	37150	0.010	2.54005	25.00000	Linear
8 C-18	20.00000	19.81225	36645	0.010	-0.93875	25.00000	Linear
10 C-20	20.00000	21.84610	37029	0.010	9.23052	25.00000	Linear
11 C-22	20.00000	21.17258	36756	0.010	5.86289	25.00000	Linear
12 C-24	20.00000	21.69020	36754	0.010	8.45102	25.00000	Linear
13 C-26	20.00000	20.71165	36974	0.010	3.55823	25.00000	Linear
14 C-28	20.00000	20.21538	37321	0.010	1.07690	25.00000	Linear
16 C-30	20.00000	21.46283	39515	0.010	7.31416	25.00000	Linear
17 C-32	20.00000	22.95457	41191	0.010	14.77287	25.00000	Linear
18 C-34	20.00000	20.87009	36622	0.010	4.35046	25.00000	Linear
19 C-36	20.00000	21.37132	36622	0.010	6.85658	25.00000	Linear
20 C-38	20.00000	21.69560	35517	0.010	8.47799	25.00000	Linear
21 C-40	20.00000	22.03694	33888	0.010	10.18472	25.00000	Linear
9 O-Terphenyl	250	242	39238	0.010	-3.34627	25.00000	Linear
15 n-Triacontane-D62	300	298	28992	0.010	-0.80590	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134295-3 **Analytical Date:** 11/06/13 03:34
Lab File ID : AGK20062.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	870	36284	0.010	2.35364	25.00000	Linear
2 C-8	50.00000	49.19740	35585	0.010	-1.60520	25.00000	Linear
3 C-10	50.00000	47.82550	35536	0.010	-4.34900	25.00000	Linear
4 C-12	50.00000	48.29941	36042	0.010	-3.40118	25.00000	Linear
5 C-14	50.00000	47.99127	35941	0.010	-4.01746	25.00000	Linear
6 C-16	50.00000	47.71446	35793	0.010	-4.57108	25.00000	Linear
8 C-18	50.00000	47.90248	36653	0.010	-4.19503	25.00000	Linear
10 C-20	50.00000	58.85995	36294	0.010	17.71989	25.00000	Linear
11 C-22	50.00000	55.32289	35796	0.010	10.64578	25.00000	Linear
12 C-24	50.00000	53.84832	36018	0.010	7.69664	25.00000	Linear
13 C-26	50.00000	51.01045	35881	0.010	2.02089	25.00000	Linear
14 C-28	50.00000	50.28974	36412	0.010	0.57949	25.00000	Linear
16 C-30	50.00000	50.18042	36637	0.010	0.36084	25.00000	Linear
17 C-32	50.00000	51.44497	37625	0.010	2.88995	25.00000	Linear
18 C-34	50.00000	53.88330	39139	0.010	7.76660	25.00000	Linear
19 C-36	50.00000	52.02630	37704	0.010	4.05259	25.00000	Linear
20 C-38	50.00000	52.08390	35950	0.010	4.16781	25.00000	Linear
21 C-40	50.00000	52.12518	33818	0.010	4.25037	25.00000	Linear
9 O-Terphenyl	250	247	40109	0.010	-1.20304	25.00000	Linear
15 n-Triacontane-D62	300	297	28921	0.010	-1.04734	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134299-1 **Analytical Date:** 11/11/13 12:25
Lab File ID : AGK20109.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF50	CCAL RRF50	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	850	819	34117	0.010	-3.69844	25.00000	Linear
2 C-8	50.00000	47.72770	34498	0.010	-4.54461	25.00000	Linear
3 C-10	50.00000	46.77047	34731	0.010	-6.45906	25.00000	Linear
4 C-12	50.00000	47.36809	35328	0.010	-5.26383	25.00000	Linear
5 C-14	50.00000	46.71933	34964	0.010	-6.56134	25.00000	Linear
6 C-16	50.00000	46.58439	34923	0.010	-6.83122	25.00000	Linear
8 C-18	50.00000	46.16504	35292	0.010	-7.66991	25.00000	Linear
10 C-20	50.00000	56.80471	35101	0.010	13.60942	25.00000	Linear
11 C-22	50.00000	53.48571	34661	0.010	6.97141	25.00000	Linear
12 C-24	50.00000	51.41356	34404	0.010	2.82711	25.00000	Linear
13 C-26	50.00000	48.54583	34165	0.010	-2.90833	25.00000	Linear
14 C-28	50.00000	47.41775	34360	0.010	-5.16451	25.00000	Linear
16 C-30	50.00000	48.05723	35097	0.010	-3.88554	25.00000	Linear
17 C-32	50.00000	46.92264	34268	0.010	-6.15473	25.00000	Linear
18 C-34	50.00000	46.56758	33712	0.010	-6.86484	25.00000	Linear
19 C-36	50.00000	46.06843	33224	0.010	-7.86313	25.00000	Linear
20 C-38	50.00000	46.08371	31657	0.010	-7.83257	25.00000	Linear
21 C-40	50.00000	45.86113	29599	0.010	-8.27774	25.00000	Linear
9 O-Terphenyl	250	238	38674	0.010	-4.73576	25.00000	Linear
15 n-Triacontane-D62	300	277	27012	0.010	-7.56233	25.00000	Linear

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG134299-2 **Analytical Date:** 11/11/13 21:46
Lab File ID : AGK20122.D **Instrument ID:** GC10
Initial Calibration Date(s): 07/26/13 10:34 07/26/13 13:49 **Column ID:** A

Compound	RRF/Amount	RF20	CCAL RRF20	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Petroleum Range Organic	340	349	36006	0.010	2.66964	25.00000	Linear
2 C-8	20.00000	20.41452	35772	0.010	2.07261	25.00000	Linear
3 C-10	20.00000	19.21791	34248	0.010	-3.91045	25.00000	Linear
4 C-12	20.00000	20.07995	35964	0.010	0.39974	25.00000	Linear
5 C-14	20.00000	19.18020	34497	0.010	-4.09902	25.00000	Linear
6 C-16	20.00000	19.01714	34283	0.010	-4.91430	25.00000	Linear
8 C-18	20.00000	18.79501	34653	0.010	-6.02494	25.00000	Linear
10 C-20	20.00000	20.21676	34665	0.010	1.08380	25.00000	Linear
11 C-22	20.00000	19.93740	34848	0.010	-0.31298	25.00000	Linear
12 C-24	20.00000	20.53892	34846	0.010	2.69458	25.00000	Linear
13 C-26	20.00000	19.70255	35218	0.010	-1.48724	25.00000	Linear
14 C-28	20.00000	19.47972	36007	0.010	-2.60139	25.00000	Linear
16 C-30	20.00000	22.12313	40713	0.010	10.61565	25.00000	Linear
17 C-32	20.00000	22.36468	40096	0.010	11.82340	25.00000	Linear
18 C-34	20.00000	21.45624	37709	0.010	7.28121	25.00000	Linear
19 C-36	20.00000	21.98097	37769	0.010	9.90486	25.00000	Linear
20 C-38	20.00000	21.66644	35465	0.010	8.33222	25.00000	Linear
21 C-40	20.00000	22.90521	35350	0.010	14.52605	25.00000	Linear
9 O-Terphenyl	250	235	38105	0.010	-6.13602	25.00000	Linear
15 n-Triacontane-D62	300	286	27857	0.010	-4.67829	25.00000	Linear

*** = Compound out of QC criteria**

Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG133426-1
Lab File ID : AGK20044.D
Date Extracted : 30-OCT-13
Instrument ID : GC10
Date Analyzed : 05-NOV-13
Matrix : SL
Time Analyzed : 15:57

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133426-2	AGK20045	11/05/13	16:36
Laboratory Control S	WG133426-3	AGK20046	11/05/13	17:15
004/5-SS1056-000.6	SG8254-3	AGK20056	11/05/13	23:42
004/5-SS1051-000.8	SG8254-8	AGK20057	11/06/13	00:21
004/5-SS1065-000.5	SG8254-18	AGK20058	11/06/13	00:59
003-SS1015-000.8	SG8254-27	AGK20059	11/06/13	01:38

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Cert No E87604

Report of Analytical Results

Client:
Lab ID: WG133426-1
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: AGK20044.D

Sample Date:
Received Date:
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		93.9	%					
n-Triacontane-D62		100.	%					

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LCS/LCSD Recovery Report

LCS ID: WG133426-2
LCSD ID: WG133426-3
Project:
SDG: SG8254
Report Date: 12-NOV-13
LCS File ID: AGK20045.D

Received Date:
Extract Date: 30-OCT-13
Extracted By: JMS
Extraction Method: SW846 3550
Lab Prep Batch: WG133426
LCSD File ID: AGK20046.D

Analysis Date: 05-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	60.3	34.0	56.4*	48.0	79.6	mg/Kgdrywt	34*	30	63-153
o-Terphenyl			63.6		90.9				62-109
n-Triacontane-D62			79.0		100.				70-130

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Method Blank Summary

Lab Name : Katahdin Analytical Services
SDG : SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Lab Sample ID :** WG134245-1
Lab File ID : AGK20116.D
Date Extracted : 11-NOV-13
Instrument ID : GC10
Date Analyzed : 11-NOV-13
Matrix : SL
Time Analyzed : 17:53

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG134245-2	AGK20117	11/11/13	18:32
Laboratory Control S	WG134245-3	AGK20118	11/11/13	19:11
004/5-SS1056-000.6	SG8254-3RE	AGK20121	11/11/13	21:07

Report of Analytical Results

Client:
Lab ID: WG134245-1
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: AGK20116.D

Sample Date:
Received Date:
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics	U	10.	mg/Kgdrywt	1	20	20.	5.7	10.
o-Terphenyl		87.9	%					
n-Triacontane-D62		100.	%					

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Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG134245-2
LCSD ID: WG134245-3
Project:
SDG: SG8254
Report Date: 12-NOV-13
LCS File ID: AGK20117.D

Received Date:
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245
LCSD File ID: AGK20118.D

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Petroleum Range Organics	60.3	43.0	71.3	48.0	79.6	mg/Kgdrywt	11	30	63-153
o-Terphenyl			81.8		84.8				62-109
n-Triacontane-D62			94.0		94.0				70-130

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Column ID :** A
Instrument ID : GC10

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	OTP	NTD	
Initial Calibration	WG128015-5	07/26/13	11:13	10.44	15.29	
Initial Calibration	WG128015-4	07/26/13	11:52	10.44	15.29	
Initial Calibration	WG128015-2	07/26/13	12:31	10.44	15.29	
Initial Calibration	WG128015-1	07/26/13	13:10	10.44	15.29	
Initial Calibration	WG128015-3	07/26/13	13:49	10.44	15.29	
Independent Source	WG128015-6	07/26/13	14:39	10.44	15.29	
Continuing Calibrati	WG134295-1	11/05/13	13:20	10.28	15.12	
Method Blank Sample	WG133426-1	11/05/13	15:57	10.27	15.11	
Laboratory Control S	WG133426-2	11/05/13	16:36	10.26	15.11	
Laboratory Control S	WG133426-3	11/05/13	17:15	10.27	15.11	
Continuing Calibrati	WG134295-2	11/05/13	21:07	10.28	15.12	
004/5-SS1056-000.6	SG8254-3	11/05/13	23:42	10.26	15.11	
004/5-SS1051-000.8	SG8254-8	11/06/13	00:21	10.26	15.11	
004/5-SS1065-000.5	SG8254-18	11/06/13	00:59	10.26	15.11	
003-SS1015-000.8	SG8254-27	11/06/13	01:38	10.26	15.12	
Continuing Calibrati	WG134295-3	11/06/13	03:34	10.28	15.12	
Continuing Calibrati	WG134299-1	11/11/13	12:25	10.28	15.12	
Method Blank Sample	WG134245-1	11/11/13	17:53	10.26	15.11	
Laboratory Control S	WG134245-2	11/11/13	18:32	10.26	15.11	
Laboratory Control S	WG134245-3	11/11/13	19:11	10.26	15.11	
004/5-SS1056-000.6	SG8254-3RE	11/11/13	21:07	10.26	15.12	
Continuing Calibrati	WG134299-2	11/11/13	21:46	10.28	15.12	

SDG SG8254
SAMPLE ID TF2-004/5-SS1056-000.6

SAMPLE CALC

INITIAL CF	DILUTION	COMPOUND OF INTEREST /	Final Extract Volume (UL)	CONCENTRATION PPB
35900	1	57091254	2000	101.62868
		% Solids	**Sample Volume (KG)**	
		0.96	32.6	

TRPH = 100 mg/kg

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SG8254-3RE
Client ID: 004/5-SS1056-000.6
Project: NAVSTA Newport Tank Farr
SDG: SG8254
Lab File ID: AGK20121.D

Sample Date: 21-OCT-13
Received Date: 23-OCT-13
Extract Date: 11-NOV-13
Extracted By: KF
Extraction Method: SW846 3550
Lab Prep Batch: WG134245

Analysis Date: 11-NOV-13
Analyst: AC
Analysis Method: SW846 8015M
Matrix: SL
% Solids: 96.
Report Date: 12-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Petroleum Range Organics		100	mg/Kgdrywt	1	20	19.	5.5	9.6
o-Terphenyl		85.4	%					
n-Triacontane-D62		93.8	%					

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Data File: \\target_server\gg\chem\gc10.i\GC10GK11.b\AGK20121.D
Report Date: 12-Nov-2013 13:41

Katahdin Analytical Services

Data file : \\target_server\gg\chem\gc10.i\GC10GK11.b\AGK20121.D
Lab Smp Id: SG8254-3RE Client Smp ID: 004/5-SS1056-000.6
Inj Date : 11-NOV-2013 21:07
Operator : AC Inst ID: gc10.i
Smp Info : SG8254-3RE
Misc Info : WG134299,WG134245,WG128015-3
Comment   :
Method   : \\target_server\gg\chem\gc10.i\GC10GK11.b\flp01b.m
Meth Date : 12-Nov-2013 13:06 gc10.i Quant Type: ESTD
Cal Date : 26-JUL-2013 11:13 Cal File: AGG20228.D
Als bottle: 51
Dil Factor: 1.00000
Integrator: HP Genie Compound Sublist: SW8015M-FLPRO.sub
Subtraction File: \\target_server\gg\chem\gc10.i\GC10GK11.b\AGK20111.D
Target Version: 4.12

Concentration Formula: Amt * DF * (Vt/Ws)*(100/(100-M)) * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vt	0.00200	Final Volume (L)
Ws	0.03260	Weight of Sample (Kg)
M	4.011	Moisture (%)
Cpnd Variable		Local Compound Variable

Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/ml)	CONCENTRATIONS FINAL (mg/Kgdrywt)	
$ 9 O-Terphenyl	10.258	10.288	-0.030	1719131	42.5343	2.7(M)	M2
$ 15 n-Triacontane-D62	15.116	15.128	-0.012	4120188	141.396	9.0(RM)	
S 7 Petroleum Range Organics	1.780-24.281			57091254	1590.72	100(M)	

AC
2:08 pm, Nov 12, 2013

QC Flag Legend

R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services **Project:** NAVSTA Newport Tank Farm 2 CTO WE30 **Matrix:** SL
Lab Code: KAS **SDG:** SG8254

Client Sample ID	Lab Sample ID	Col. ID	BFB	#
TF2-W-TB03-1013	SG8254-1	A	85.6	
004/5-SS1065-000.5	SG8254-18	A	92.2	
003-SS1015-000.8	SG8254-27	A	95.5	
004/5-SS1056-000.6	SG8254-3	A	95.1	
004/5-SS1051-000.8	SG8254-8	A	91.4	
Method Blank Sample	WG133171-1	A	85.8	
Laboratory Control S	WG133171-2	A	91.4	
Laboratory Control S	WG133171-3	A	98.6	

		QC Limits
BFB	P-BROMOFLUOROBENZENE	81-119

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

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Form 6
Initial Calibration Summary

Lab Name : Katahdin Analytical Services **SDG:** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **Instrument ID:** GC09
Lab File IDs : 9GG2130.d 9GG2123.d 9GG2124.d **Column ID:** A
9GG2125.d 9GG2126.d 9GG2127.d **Calibration Date(s):** 26-JUL-13 09:58
26-JUL-13 17:56

	Level 1 10.0000	Level 2 100.0000	Level 3 250.0000	Level 4 500.0000	Level 5 1000.0000	Level 6 2000.0000	Crv New	b	m1	m2	%RSD	Max %RSD	
Gasoline Range Organic	12176	12675	12913	12768	12910	13282	AVG		12787		2.84495	20.00000	M
Methyl tert-butyl ether	6010	8181	8380	7569	7477	8149	AVG		7628		11.40841	20.00000	O
Benzene	15826	15860	16448	16739	17015	17326	AVG		16536		3.69285	20.00000	O
Toluene	15470	16041	16286	16166	16555	16718	AVG		16206		2.70556	20.00000	O
Ethylbenzene	14185	14823	15058	15019	15114	15298	AVG		14916		2.61143	20.00000	O
m+p-Xylenes	14785	15435	15552	15559	15638	15874	AVG		15474		2.37846	20.00000	O
o-Xylene	16358	14889	14896	15443	15410	15788	AVG		15464		3.61301	20.00000	O
1,2,4-trimethylbenzene	11095	12102	12347	12071	12262	12757	AVG		12106		4.56871	20.00000	O
1,3,5-trimethylbenzene	9784	10620	10743	10552	10765	11352	AVG		10636		4.74665	20.00000	O
Naphthalene	3461	3359	3870	3000	3223	3680	AVG		3432		9.12376	20.00000	O
p-Bromofluorobenzene	6432	6935	7300	7023	6937	7145	AVG		6962		4.23260	20.00000	

Legend: O = Kept Original Curve
Y = Failed Minimum RF
W = Failed %RSD Value

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133171-4 **Analytical Date:** 10/25/13 07:42
Lab File ID : 9GJ4060.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

	Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type	
1	Gasoline Range Organic	12787	11612	11612	0.100	-9.19398	20.00000	Averaged	
3	Methyl tert-butyl ether	7628	7033	7033	0.100	-7.79828	20.00000	Averaged	
4	Benzene	16536	14595	14595	0.100	-11.73412	20.00000	Averaged	
5	Toluene	16206	14035	14035	0.100	-13.39782	20.00000	Averaged	
7	Ethylbenzene	14916	13366	13366	0.100	-10.39327	20.00000	Averaged	
8	m+p-Xylenes	15474	14444	14444	0.100	-6.65231	20.00000	Averaged	
9	o-Xylene	15464	14992	14992	0.100	-3.05469	20.00000	Averaged	
11	1,2,4-trimethylbenzene	12106	11076	11076	0.100	-8.50857	20.00000	Averaged	
12	1,3,5-trimethylbenzene	10636	9444	9444	0.100	-11.21048	20.00000	Averaged	
13	Naphthalene	3432	2686	2686	0.100	-21.73520	20.00000	Averaged	*
10	p-Bromofluorobenzene	6962	6057	6057	0.100	-13.00090	20.00000	Averaged	

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133171-5 **Analytical Date:** 10/25/13 23:46
Lab File ID : 9GJ4074.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF250	CCAL RRF250	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	12038	12038	0.100	-5.85670	20.00000	Averaged
3 Methyl tert-butyl ether	7628	8213	8213	0.100	7.67967	20.00000	Averaged
4 Benzene	16536	15374	15374	0.100	-7.02383	20.00000	Averaged
5 Toluene	16206	14867	14867	0.100	-8.26352	20.00000	Averaged
7 Ethylbenzene	14916	14020	14020	0.100	-6.00568	20.00000	Averaged
8 m+p-Xylenes	15474	14495	14495	0.100	-6.32427	20.00000	Averaged
9 o-Xylene	15464	13902	13902	0.100	-10.10367	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	11245	11245	0.100	-7.10888	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10458	10458	0.100	-1.67104	20.00000	Averaged
13 Naphthalene	3432	3312	3312	0.100	-3.48672	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6158	6158	0.100	-11.54441	20.00000	Averaged

*** = Compound out of QC criteria**

Form 7
Calibration Verification Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE30 **SDG:** SG8254
Lab ID : WG133171-6 **Analytical Date:** 10/26/13 06:09
Lab File ID : 9GJ4081.d **Instrument ID:** GC09
Initial Calibration Date(s): 07/26/13 09:58 07/26/13 17:56 **Column ID:** A

Compound	RRF/Amount	RF100	CCAL RRF100	Min	%D/ %Drift	Max %D/ %Drift	Curve Type
1 Gasoline Range Organic	12787	12749	12749	0.100	-0.29624	20.00000	Averaged
3 Methyl tert-butyl ether	7628	8686	8686	0.100	13.87689	20.00000	Averaged
4 Benzene	16536	16112	16112	0.100	-2.56064	20.00000	Averaged
5 Toluene	16206	15786	15786	0.100	-2.59152	20.00000	Averaged
7 Ethylbenzene	14916	14932	14932	0.100	0.10875	20.00000	Averaged
8 m+p-Xylenes	15474	15497	15497	0.100	0.15179	20.00000	Averaged
9 o-Xylene	15464	15173	15173	0.100	-1.88165	20.00000	Averaged
11 1,2,4-trimethylbenzene	12106	12209	12209	0.100	0.85486	20.00000	Averaged
12 1,3,5-trimethylbenzene	10636	10553	10553	0.100	-0.78180	20.00000	Averaged
13 Naphthalene	3432	3046	3046	0.100	-11.24590	20.00000	Averaged
10 p-Bromofluorobenzene	6962	6749	6749	0.100	-3.05248	20.00000	Averaged

*** = Compound out of QC criteria**

Form 4
Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NAVSTA Newport Tank Farm 2 CTO WE3(
Lab File ID : 9GJ4065.D
Instrument ID : GC09
Heated Purge : No

SDG : SG8254
Lab Sample ID : WG133171-1
Date Analyzed : 25-OCT-13
Time Analyzed : 15:36

This Method Blank applies to the following samples, LCS, MS and MSD:

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed
Laboratory Control S	WG133171-2	9GJ4066.D	10/25/13	16:30
Laboratory Control S	WG133171-3	9GJ4067.D	10/25/13	17:24
TF2-W-TB03-1013	SG8254-1	9GJ4076.D	10/26/13	01:35
004/5-SS1056-000.6	SG8254-3	9GJ4077.D	10/26/13	02:30
004/5-SS1051-000.8	SG8254-8	9GJ4078.D	10/26/13	03:25
004/5-SS1065-000.5	SG8254-18	9GJ4079.D	10/26/13	04:19
003-SS1015-000.8	SG8254-27	9GJ4080.D	10/26/13	05:14

Report of Analytical Results

Client:
Lab ID: WG133171-1
Client ID: Method Blank Sample
Project:
SDG: SG8254
Lab File ID: 9GJ4065.D

Sample Date:
Received Date:
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171

Analysis Date: 25-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA
Report Date: 14-NOV-13

Compound	Qualifier	Result	Units	Dilution	LOQ	ADJ LOQ	ADJ MDL	ADJ LOD
Gasoline Range Organics	U	2.0	mg/Kgdrywt	1	2.5	2.5	1.8	2.0
p-Bromofluorobenzene		85.8	%					

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Katahdin
ANALYTICAL SERVICES

ACCREDITED IN ACCORDANCE WITH nelac
Cert No E87604

LCS/LCSD Recovery Report

LCS ID: WG133171-2
LCSD ID: WG133171-3
Project:
SDG: SG8254
Report Date: 14-NOV-13
LCS File ID: 9GJ4066.D

Received Date:
Extract Date: 25-OCT-13
Extracted By: JLP
Extraction Method: SW846 5030B
Lab Prep Batch: WG133171
LCSD File ID: 9GJ4067.d

Analysis Date: 25-OCT-13
Analyst: JLP
Analysis Method: SW846 M8015B
Matrix: SL
% Solids: NA

Compound	Spike Amt	LCS Conc	LCS Rec (%)	LCSD Conc	LCSD Rec (%)	Conc Units	RPD (%)	RPD Limit	Limits
Gasoline Range Organics	25.0	23.9	95.6	22.8	91.2	mg/Kgdrywt	5	30	67-137
-Bromofluorobenzene			91.4		98.6				81-119

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Form 8
GC Analytical Sequence

Lab Name : Katahdin Analytical Services **SDG :** SG8254
Project : NAVSTA Newport Tank Farm 2 CTO WE3(**Column ID :** A
Instrument ID : GC09

Client Sample ID	Lab Sample ID	Date Analyzed	Time Analyzed	BFB	
Initial Calibration	WG127983-2	07/26/13	10:52	31.92	
Initial Calibration	WG127983-3	07/26/13	11:46	31.84	
Initial Calibration	WG127983-4	07/26/13	12:39	31.82	
Initial Calibration	WG127983-5	07/26/13	13:32	31.84	
Initial Calibration	WG127983-6	07/26/13	14:25	31.85	
Initial Calibration	WG127983-1	07/26/13	17:56	31.89	
INDEPENDENT SOURCE	WG127983-7	07/26/13	18:50	31.91	
Continuing Calibrati	WG133171-4	10/25/13	07:42	31.70	
Method Blank Sample	WG133171-1	10/25/13	15:36	31.70	
Laboratory Control S	WG133171-2	10/25/13	16:30	31.70	
Laboratory Control S	WG133171-3	10/25/13	17:24	31.70	
Continuing Calibrati	WG133171-5	10/25/13	23:46	31.70	
TF2-W-TB03-1013	SG8254-1	10/26/13	01:35	31.70	
004/5-SS1056-000.6	SG8254-3	10/26/13	02:30	31.70	
004/5-SS1051-000.8	SG8254-8	10/26/13	03:25	31.70	
004/5-SS1065-000.5	SG8254-18	10/26/13	04:19	31.70	
003-SS1015-000.8	SG8254-27	10/26/13	05:14	31.70	
Continuing Calibrati	WG133171-6	10/26/13	06:09	31.70	

Tetra Tech, Inc. **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 29, 2014**

FROM: **MICHELLE L. ALLEN** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – METALS**
CTO WE30, NAVSTA NEWPORT
SDG SG8254

SAMPLES: 31/Soil/Metals

TF2-003-SS-DUP06-1013	TF2-003-SS1011-000.8
TF2-003-SS1012-000.7	TF2-003-SS1013-000.7
TF2-003-SS1014-0001	TF2-003-SS1015-000.8
TF2-003-SS1016-000.9	TF2-003-SS1017-000.8
TF2-003-SS1018-000.8	TF2-003-SS1019-000.5
TF2-004/5-SS-DUP04-1013	TF2-004/5-SS-DUP05-1013
TF2-004/5-SS1050-000.6	TF2-004/5-SS1051-000.8
TF2-004/5-SS1052-000.6	TF2-004/5-SS1053-000.6
TF2-004/5-SS1054-000.6	TF2-004/5-SS1055-000.8
TF2-004/5-SS1056-000.6	TF2-004/5-SS1057-0001
TF2-004/5-SS1058-000.5	TF2-004/5-SS1059-000.6
TF2-004/5-SS1060-000.5	TF2-004/5-SS1061-000.6
TF2-004/5-SS1062-000.8	TF2-004/5-SS1063-000.6
TF2-004/5-SS1064-000.6	TF2-004/5-SS1065-000.5
TF2-004/5-SS1066-000.9	TF2-004/5-SS1067-000.7
TF2-004/5-SS1068-000.5	

1/Aqueous/Metals

TF2-SS-RB03-1013

Overview

The sample set for NAVSTA Newport, CTO WE30, SDG SG8254 consisted of thirty-one (31) soil environmental samples and one (1) rinsate blank. All thirty-two (32) samples were analyzed for total metals. Three field duplicate pairs were included in this sample delivery group (SDG): TF2-003-SS-DUP06-1013/TF2-003-SS1015-000.8, TF2-004/5-SS-DUP04-1013/TF2-004/5-SS1061-000.6, and TF2-004/5-SS-DUP05-1013/TF2-004/5-SS1065-000.5.

The samples were collected by Tetra Tech, Inc. on October 21 - 22, 2013 and analyzed by Katahdin Analytical Services. All analyses were conducted in accordance with SW846 Method 6020A, 7471B, and 7470A analytical and reporting protocols. The data was evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Initial and Continuing Calibration Verification Results
• Laboratory Method/Preparation Blank Analyses
* • ICP Interference Results
• Laboratory Duplicate Results

- Laboratory Control Sample Results
- Matrix Spike Recoveries
- * Internal Standard Recoveries
- Field Duplicate Precision
- ICP Serial Dilution
- * Detection Limits
- * Analyte Quantitation

The asterisk (*) indicates that all quality control criteria were met for this parameter. Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains Region I worksheets, and Appendix D contains the documentation to support the findings as discussed in this data validation report. An EPA Region 1 tier II validation was performed on the data in this SDG. The text of this report has been formulated to address only those areas affecting data quality.

LABORATORY METHOD/PREPARATION BLANK ANALYSES

The following analytes were detected in the laboratory method and preparation blanks the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum [1]	1.615 mg/Kg	8.075 mg/Kg
Barium [1]	0.085 mg/Kg	0.425 mg/Kg
Calcium [1]	7.59 mg/Kg	37.95 mg/Kg
Chromium [1]	0.094 mg/Kg	0.47 mg/Kg
Magnesium [1]	1.971 mg/Kg	9.855 mg/Kg
Manganese [1]	0.133 mg/Kg	0.665 mg/Kg
Nickel [1]	0.032 mg/Kg	0.16 mg/Kg
Potassium [1]	8.9 mg/Kg	44.5 mg/Kg
Sodium [1]	8.195 mg/Kg	40.975 mg/Kg
Vanadium [1]	0.191 mg/Kg	0.955 mg/Kg
Zinc [1]	0.143 mg/Kg	0.715 mg/Kg
Aluminum [2]	1.347 mg/Kg	6.735 mg/Kg
Barium [2]	0.092 mg/Kg	0.46 mg/Kg
Calcium [2]	7.04 mg/Kg	35.2 mg/Kg
Chromium [2]	0.103 mg/Kg	0.515 mg/Kg
Iron [2]	2.832mg/Kg	14.16 mg/Kg
Lead [2]	0.007 mg/Kg	0.035 mg/Kg
Manganese [2]	0.045 mg/Kg	0.225 mg/Kg
Nickel [2]	0.040 mg/Kg	0.2 mg/Kg
Potassium [2]	5.815 mg/Kg	29.075 mg/Kg
Selenium [2]	0.099 mg/Kg	0.495 mg/Kg
Zinc [2]	0.272 mg/Kg	1.36 mg/Kg
Aluminum [3]	1.723 mg/Kg	8.615 mg/Kg
Barium [3]	0.077 mg/Kg	0.385 mg/Kg
Calcium [3]	4.199 mg/Kg	20.995 mg/Kg
Chromium [3]	0.098 mg/Kg	0.49 mg/Kg
Cobalt [3]	0.006 mg/Kg	0.03 mg/Kg
Iron [3]	6.65 mg/Kg	33.25 mg/Kg
Lead [3]	0.012 mg/Kg	0.06 mg/Kg
Magnesium [3]	1.523 mg/Kg	7.615 mg/Kg
Manganese [3]	0.099 mg/Kg	0.495 mg/Kg
Cadmium [4]	0.010 µg/L	0.5 µg/L, 0.005 mg/Kg

Analyte	Maximum Concentration	Action Level
Iron [4]	7.166 µg/L	35.83 µg/L, 3.583 mg/Kg
Lead [4]	0.009 µg/L	0.045 µg/L, 0.0045 mg/Kg
Magnesium [4]	0.747 µg/L	3.735 µg/L, 0.3735 mg/Kg
Sodium [4]	9.532 µg/L	47.66 µg/L, 4.766 mg/Kg
Potassium [4]	9.463 µg/L	47.315 µg/L, 4.7315 mg/Kg
Antimony [5]	0.021 µg/L	0.105 µg/L, 0.0105 mg/Kg
Nickel [5]	0.059 µg/L	0.295 µg/L, 0.0295 mg/Kg
Thallium [5]	0.004 µg/L	0.02 µg/L, 0.002 mg/Kg
Zinc [5]	0.403 µg/L	2.015 µg/L, 0.2015 mg/Kg
Nickel [6]	0.102 µg/L	0.51 µg/L, 0.051 mg/Kg
Mercury [7]	0.005 mg/Kg	0.025 mg/Kg
Mercury [8]	0.005 mg/Kg	0.025 mg/Kg

(1) Maximum concentration detected in the soil preparation blank associated with preparation batch #GK06IMS1 affecting the soil samples associated with this preparation batch.
(2) Maximum concentration detected in the soil preparation blank associated with preparation batch #GK08IMS1 affecting the soil samples associated with this preparation batch.
(3) Maximum concentration detected in the soil preparation blank associated with preparation batch #GK08IMS2 affecting the soil samples associated with this preparation batch.
(4) Maximum concentration found initial and/or continuing calibration blanks affecting all samples analyzed for these analytes on 11/13/13.
(5) Maximum concentration found initial and/or continuing calibration blanks affecting all samples analyzed for these analytes on 11/18/13.
(6) Maximum concentration found initial and/or continuing calibration blanks affecting all samples analyzed for this analyte on 11/19/13.
(7) Maximum concentration detected in the soil preparation blank associated with preparation batch #GK07HGS1 affecting the soil samples associated with this preparation batch.
(8) Maximum concentration detected in the soil preparation blank associated with preparation batch #GK08HGS1 affecting the soil samples associated with this preparation batch.

An action level of 5X the maximum contaminant concentration was established to evaluate blank contamination. Percent moisture, dilution factor, and sample aliquot were taken into consideration during the application of the action level. Detected results reported for selenium, sodium, thallium, and mercury below the established action levels were qualified as non-detected, (U). Results reported greater than the Method Detection Limit (MDL) but less than the Limit of Detection (LOD) were raised to the LOD.

LABORATORY DUPLICATE RESULTS

The Relative Percent Differences (RPD) between the sample and duplicate result exceeded 35% for arsenic in the sample associated with preparation batch #GK06IMS1. All samples associated with preparation batch #GK06IMS1 were affected. The detected results reported for arsenic in the affected samples were qualified as estimated, (J), due to laboratory duplicate imprecision.

The RPDs for manganese and mercury exceeded 35% for the laboratory duplicate analyses associated with preparation batches #GK08IMS1 and #GK08HGS1. All samples associated with these preparation batches were affected. The detected results reported for these analytes in the affected samples were qualified as estimated, (J).

LABORATORY CONTROL SAMPLE RESULTS

The mercury Laboratory Control Sample (LCS) associated with preparation batch #GK08HGS1 had a Percent Recovery (%R) above the 120% quality control limit. The detected mercury results reported in the samples associated with this preparation batch were qualified as estimated, (J).

MATRIX SPIKE RECOVERY

The Matrix Spike (MS) sample associated with preparation batch #GK06IMS1 had a %R for antimony below the 80% quality control limit and a %R for calcium above 120% quality control limit. The post digestion spike yielded acceptable %Rs for these analytes. Samples associated with preparation batch #GK06IMS1 were affected. Only detected results were reported for these analytes in the affected samples and these analytes were qualified as estimated, (J).

The MS sample associated with preparation batch #GK08IMS1 had %R for antimony below the 80% quality control limit. In addition, the %Rs for calcium and mercury (preparation batch #GK08HGS1) were above 120% quality control limit. The post digestion spike yielded acceptable %Rs for these analytes. Samples associated with preparation batches #GK08IMS1 and #GK08HGS1 were affected. The detected results were reported for these analytes in the affected samples were qualified as estimated, (J).

ICP SERIAL DILUTION

The ICP serial dilution associated with preparation batch #GK06IMS1 had Percent Differences (%Ds) for aluminum, iron, magnesium, manganese, and zinc above the 10% quality control limit. These results were reported 50X greater than the Limit of Quantitation (LOQ) in the initial analysis. Samples associated with preparation batch #GK06IMS1 were affected. The detected results reported for these compounds in the affected samples were qualified as estimated, (J).

The ICP serial dilution associated with preparation batch #GK08IMS1 had %Ds for aluminum, iron, lead, magnesium, vanadium, and zinc above the 10% quality control limit. These results were reported 50X greater than the LOQ in the initial analysis. Samples associated with preparation batch #GK08IMS1 were affected. The detected results reported for these compounds in the affected samples were qualified as estimated, (J).

FIELD DUPLICATE PRECISION

The difference between the detected results for antimony exceeded 4X the LOQ in the field duplicate pair, TF2-004/5-SS-DUP04-1013/TF2-004/5-SS1061-000.6. The differences for antimony in the other two field duplicate sample pairs for this site in this SDG were acceptable. The detected results reported for antimony in the field duplicate pair were qualified as estimated, (J).

The difference between the detected results for beryllium exceeded 4X the LOQ in the field duplicate pair, TF2-004/5-SS-DUP05-1013/TF2-004/5-SS1065-000.5. The differences for beryllium in the other two field duplicate sample pairs for this site in this SDG were acceptable. The detected results reported for beryllium in the field duplicate pair were qualified as estimated, (J).

NOTES

Several contaminants were detected in the laboratory preparation blank associated with rinsate blank. No action was taken because field quality control blanks are not qualified for laboratory blank contamination.

All samples and laboratory preparation blanks were analyzed at a 5X dilution.

Detected results reported above the MDL but below the LOQ were qualified as estimated, (J). Non-detected results are reported to the LOD.

EXECUTIVE SUMMARY

Laboratory Performance: Blank contamination was noted in the laboratory method and preparation blanks. Laboratory duplicate imprecision was noted. ICP serial dilutions had %Ds above 10% for some analytes.

Other Factors Affecting Data Quality: The MS samples had noncompliant %Rs. Field duplicate imprecision was noted for two field duplicate pairs.

The data for these analyses were accomplished with reference to the criteria for the "USEPA National Functional Guidelines for Inorganic Data Validation" (January 2010), and the Department of Defense (DOD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech, Inc.
Michelle L. Allen
Environmental Chemist

Tetra Tech, Inc.
Joseph A. Samchuck
Data Validation Manager

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Regional Worksheets
4. Appendix D - Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 standard deviations is greater than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed
Z3 = Tentatively Identified Compound aldol condensate

PROJ_NO: 03019	NSAMPLE	TF2-SS-RB03-1013
SDG: SG8254	LAB_ID	SG8254-033
FRACTION: M	SAMP_DATE	10/22/2013
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
ALUMINUM	11.5	J	P
ANTIMONY	0.11	J	P
ARSENIC	4	U	
BARIUM	0.85	J	P
BERYLLIUM	0.2	U	
CADMIUM	0.06	J	P
CALCIUM	42.7	J	P
CHROMIUM	0.53	J	P
COBALT	0.05	J	P
COPPER	0.51	J	P
IRON	17.2	J	P
LEAD	0.07	J	P
MAGNESIUM	11.2	J	P
MANGANESE	0.36	J	P
MERCURY	0.1	U	
NICKEL	0.2	J	P
POTASSIUM	400	U	
SELENIUM	3	U	
SILVER	0.4	U	
SODIUM	400	U	
THALLIUM	0.4	U	
VANADIUM	0.93	J	P
ZINC	8	U	

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1011-000.8			TF2-003-SS1012-000.7			TF2-003-SS1013-000.7			TF2-003-SS1014-0001		
SDG: SG8254	LAB_ID	SG8254-022			SG8254-024			SG8254-025			SG8254-026		
FRACTION: M	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	86.9			88.7			93.0			93.2		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		11000	J	I	9360			9530			10900		
ANTIMONY		0.2	J	D	0.2			0.27			0.51		
ARSENIC		8.9			5.6			6			6		
BARIUM		27.4			23.5			25.6			22.7		
BERYLLIUM		0.38			0.4			0.36			0.38		
CADMIUM		0.2			0.14			0.17			0.16		
CALCIUM		520	J	D	857			914			904		
CHROMIUM		14.7			11.6			12.4			14.8		
COBALT		11.4			7.7			8.6			8.6		
COPPER		16.3			21.7			18.6			17.8		
IRON		25100	J	I	18300			17700			20800		
LEAD		79.3	J	I	33.6			57.6			36.7		
MAGNESIUM		2620	J	I	2430			2730			3260		
MANGANESE		512	J	F	263			268			311		
MERCURY		0.14	J	DEF	0.07	J	DEF	0.07	J	DEF	0.07	J	DEF
NICKEL		18.5			17.2			16			18.7		
POTASSIUM		335			429			328			443		
SELENIUM		0.26	U	A	0.2	J	P	0.26	J	P	0.19	J	P
SILVER		0.04	J	P	0.05	J	P	0.06	J	P	0.05	J	P
SODIUM		16.8	U	A	37.5	J	P	29.2	J	P	25.1	U	A
THALLIUM		0.06	J	P	0.05	J	P	0.06	J	P	0.05	J	P
VANADIUM		24.9	J	I	17.3			20			21.6		
ZINC		71.8	J	I	46.3			50			61.4		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1015-000.8			TF2-003-SS1016-000.9			TF2-003-SS1017-000.8			TF2-003-SS1018-000.8		
SDG: SG8254	LAB_ID	SG8254-027			SG8254-028			SG8254-029			SG8254-030		
FRACTION: M	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	93.0			90.9			91.6			94.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		9570			9360	J	I	8920			9630		
ANTIMONY		0.28			0.53	J	D	0.41			0.18		
ARSENIC		5.2			6			5.5			5.2		
BARIUM		31			41.5			23			26.6		
BERYLLIUM		0.42			0.51			0.38			0.38		
CADMIUM		0.16			0.28			0.23			0.1		
CALCIUM		754			719	J	D	549			576		
CHROMIUM		12.1			12.3			44.5			13.2		
COBALT		7.2			7.7			7.6			9.2		
COPPER		15.2			16.7			14.6			11.6		
IRON		15700			15800	J	I	18700			18400		
LEAD		50.8			101	J	I	62.5			16.6		
MAGNESIUM		2140			1500	J	I	2470			2720		
MANGANESE		371			658	J	F	332			649		
MERCURY		0.09	J	DEF	0.13	J	DEF	0.06	J	DEF	0.04		
NICKEL		14.3			13.4			24			16.2		
POTASSIUM		414			354			391			474		
SELENIUM		0.28	J	P	0.41	U	A	0.14	J	P	0.22	J	P
SILVER		0.07	J	P	0.08			0.06	J	P	0.04	J	P
SODIUM		27.6	J	P	28	J	P	24.5	U	A	22.2	U	A
THALLIUM		0.08			0.1			0.06	J	P	0.07	J	P
VANADIUM		19.2			21.8	J	I	19.8			17.2		
ZINC		53.6			99.1	J	I	86.7			39.6		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1019-000.5			TF2-003-SS-DUP06-1013			TF2-004/5-SS1050-000.6			TF2-004/5-SS1051-000.8		
SDG: SG8254	LAB_ID	SG8254-031			SG8254-032			SG8254-009			SG8254-008		
FRACTION: M	SAMP_DATE	10/22/2013			10/22/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	91.8			93.1			94.9			96.6		
	DUP_OF				TF2-003-SS1015-000.8								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		9340			8700			8650	J	I	11600	J	I
ANTIMONY		0.29			0.24			0.15	J	D	0.14	J	D
ARSENIC		6.2			4.9			4.8			8.1		
BARIUM		24.5			26			12.8			17.2		
BERYLLIUM		0.35			0.36			0.32			0.42		
CADMIUM		0.29			0.14			0.05	J	P	0.07	J	P
CALCIUM		1080			832			363	J	D	419	J	D
CHROMIUM		12.7			10.6			12.3			14.4		
COBALT		8.7			6.5			7.4			13.9		
COPPER		18.3			15.6			17.3			29.8		
IRON		17500			15000			17500	J	I	24100	J	I
LEAD		32.1			49.2			13.2	J	I	12.4	J	I
MAGNESIUM		2790			1980			2630	J	I	3790	J	I
MANGANESE		311			343			211	J	F	400	J	F
MERCURY		0.04			0.08			0.02	U	A	0.02	U	A
NICKEL		16.1			13			14.2			24		
POTASSIUM		501			311			341			383		
SELENIUM		0.23	J	P	0.28	J	P	0.34	U	A	0.26	U	A
SILVER		0.06	J	P	0.05	J	P	0.04	J	P	0.03	J	P
SODIUM		29.2	J	P	22.2	U	A	17	U	A	21.8	U	A
THALLIUM		0.06	J	P	0.06	J	P	0.04	J	P	0.05	J	P
VANADIUM		21.6			17.6			17.4	J	I	19.2	J	I
ZINC		55.4			46.2			34.5	J	I	51.5	J	I

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1052-000.6			TF2-004/5-SS1053-000.6			TF2-004/5-SS1054-000.6			TF2-004/5-SS1055-000.8		
SDG: SG8254	LAB_ID	SG8254-007			SG8254-006			SG8254-005			SG8254-004		
FRACTION: M	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	93.8			93.9			96.9			95.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		15700	J	I	13000	J	I	12500	J	I	16200	J	I
ANTIMONY		0.23	J	D	0.19	J	D	0.11	J	D	0.07	J	DP
ARSENIC		8.7			8			6.9	J	F	6.7		
BARIUM		17.2			12.3			15.8			13.1		
BERYLLIUM		0.56			0.39			0.39			0.39		
CADMIUM		0.07	J	P	0.06	J	P	0.08	J	P	0.08		
CALCIUM		578	J	D	573	J	D	718	J	D	1190	J	D
CHROMIUM		22.3			18.8			17.1			23.6		
COBALT		11.8			10.8			11.9			16.2		
COPPER		25.3			27.2			19.8			24.9		
IRON		31100	J	I	24800	J	I	23100	J	I	31800	J	I
LEAD		31.1	J	I	22.1	J	I	18			27.4	J	I
MAGNESIUM		4760	J	I	3970	J	I	3640	J	I	5440	J	I
MANGANESE		238	J	F	231	J	F	298	J	I	297	J	F
MERCURY		0.03			0.04			0.04			0.014	U	A
NICKEL		26.5			23.3			20.3			30.5		
POTASSIUM		332			306			363			258		
SELENIUM		0.43	U	A	0.39	U	A	0.39	J	P	0.38	U	A
SILVER		0.06	J	P	0.05	J	P	0.03	J	P	0.02	J	P
SODIUM		28.2	J	P	23.4	J	A	38	U	A	20.7	U	A
THALLIUM		0.06	J	P	0.05	J	P	0.05	J	P	0.03	J	P
VANADIUM		30.7	J	I	24.2	J	I	19.8			19	J	I
ZINC		58.8	J	I	52.1	J	I	49.3	J	I	63.4	J	I

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1056-000.6			TF2-004/5-SS1057-0001			TF2-004/5-SS1058-000.5			TF2-004/5-SS1059-000.6		
SDG: SG8254	LAB_ID	SG8254-003			SG8254-002			SG8254-017			SG8254-016		
FRACTION: M	SAMP_DATE	10/21/2013			10/21/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	96.0			96.4			94.7			95.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		12400	J	I	6960	J	I	15100	J	I	10100	J	I
ANTIMONY		6.6	J	D	0.43	J	D	0.18	J	D	0.09	J	DP
ARSENIC		7.8	J	F	3.2	J	F	8.3			5.1		
BARIUM		17.2			15.8			11.8			17.9		
BERYLLIUM		0.39			0.33			0.84			0.37		
CADMIUM		0.08			0.08	J	P	0.07	J	P	0.07	J	P
CALCIUM		739	J	D	588	J	D	653	J	D	467	J	D
CHROMIUM		18.3			9.4			21.7			12.8		
COBALT		11.7			5			16.4			9.3		
COPPER		18.1			11.5			32.6			16.1		
IRON		22900	J	I	11700	J	I	32000	J	I	19000	J	I
LEAD		30.3			47			20.2	J	I	10.3	J	I
MAGNESIUM		3750	J	I	1810	J	I	4850	J	I	3170	J	I
MANGANESE		266	J	I	195	J	I	353	J	F	297	J	F
MERCURY		0.03			0.02	U	A	0.02	U	A	0.013	U	A
NICKEL		20.8			10.7			29.6			17.5		
POTASSIUM		343			318			291			461		
SELENIUM		0.39	J	P	0.33	J	P	0.34	U	A	0.28	U	A
SILVER		0.03	J	P	0.04	J	P	0.05	J	P	0.02	J	P
SODIUM		34.4	U	A	40	U	A	25	U	A	21.6	U	A
THALLIUM		0.04	J	P	0.05	J	P	0.04	J	P	0.05	J	P
VANADIUM		18.7			18			23.1	J	I	16.8	J	I
ZINC		50.2	J	I	35.4	J	I	64.6	J	I	40.8	J	I

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1060-000.5			TF2-004/5-SS1061-000.6			TF2-004/5-SS1062-000.8			TF2-004/5-SS1063-000.6		
SDG: SG8254	LAB_ID	SG8254-015			SG8254-012			SG8254-010			SG8254-020		
FRACTION: M	SAMP_DATE	10/22/2013			10/21/2013			10/21/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	94.1			95.6			93.4			96.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		16200	J	I	9090	J	I	11400	J	I	14600	J	I
ANTIMONY		0.22	J	D	0.2	J	DG	0.36	J	D	0.23	J	D
ARSENIC		7.8			3.8			5.3			10.6		
BARIUM		15.9			12.8			17.8			14		
BERYLLIUM		0.42			0.3			0.35			0.62		
CADMIUM		0.07	J	P	0.07	J	P	0.08	J	P	0.06	J	P
CALCIUM		731	J	D	890	J	D	710	J	D	550	J	D
CHROMIUM		22.7			12.2			15			20.4		
COBALT		13.2			7.3			7.4			11.7		
COPPER		27.1			13.9			16.4			39.9		
IRON		31600	J	I	17100	J	I	18500	J	I	30600	J	I
LEAD		34.5	J	I	20.7	J	I	51.2	J	I	17.2	J	I
MAGNESIUM		5260	J	I	2740	J	I	3060	J	I	4400	J	I
MANGANESE		265	J	F	179	J	F	188	J	F	266	J	F
MERCURY		0.08	J	DEF	0.04	J	DEF	0.04	J	DEF	0.02	U	A
NICKEL		28.6			13.2			17			25		
POTASSIUM		301			260			310			296		
SELENIUM		0.29	U	A	0.26	U	A	0.28	U	A	0.48	U	A
SILVER		0.08			0.03	J	P	0.05	J	P	0.04	J	P
SODIUM		25.9	J	P	19.1	J	A	30.6	J	P	22.6	U	A
THALLIUM		0.05	J	P	0.04	J	P	0.06	J	P	0.04	J	P
VANADIUM		33.4	J	I	14.1	J	I	23.6	J	I	22	J	I
ZINC		62	J	I	36.7	J	I	45.6	J	I	60.6	J	I

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1064-000.6			TF2-004/5-SS1065-000.5			TF2-004/5-SS1066-000.9			TF2-004/5-SS1067-000.7		
SDG: SG8254	LAB_ID	SG8254-019			SG8254-018			SG8254-014			SG8254-013		
FRACTION: M	SAMP_DATE	10/22/2013			10/22/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	97.2			96.6			92.4			94.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		14000	J	I	13600	J	I	9960	J	I	9460	J	I
ANTIMONY		0.15	J	D	0.19	J	D	2	J	D	0.45	J	D
ARSENIC		6.4			6.6			6			5		
BARIUM		15.2			18.1			18.7			20.2		
BERYLLIUM		0.46			0.41	J	G	0.37			0.36		
CADMIUM		0.08	J	P	0.07	J	P	0.1			0.08	J	P
CALCIUM		428	J	D	561	J	D	656	J	D	651	J	D
CHROMIUM		19.3			18.6			13.5			13.2		
COBALT		13.3			12.7			8.5			7.6		
COPPER		35.5			25.9			14.5			14.9		
IRON		27200	J	I	26300	J	I	17000	J	I	17000	J	I
LEAD		20.9	J	I	22	J	I	60	J	I	34	J	I
MAGNESIUM		4150	J	I	4300	J	I	2390	J	I	2590	J	I
MANGANESE		262	J	F	256	J	F	189	J	F	202	J	F
MERCURY		0.03	J	DEFP	0.03	J	DEFP	0.05	J	DEF	0.03	J	DEF
NICKEL		23			22.2			14.4			14.1		
POTASSIUM		267			371			328			384		
SELENIUM		0.28	U	A	0.33	U	A	0.28	U	A	0.29	U	A
SILVER		0.05	J	P	0.06	J	P	0.04	J	P	0.03	J	P
SODIUM		23.5	U	A	27.1	J	P	27.4	J	P	28.2	J	P
THALLIUM		0.05	J	P	0.04	J	P	0.06	J	P	0.06	J	P
VANADIUM		22.8	J	I	26.4	J	I	22.7	J	I	18.7	J	I
ZINC		50.4	J	I	52.1	J	I	43.5	J	I	41.9	J	I

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1068-000.5			TF2-004/5-SS-DUP04-1013			TF2-004/5-SS-DUP05-1013		
SDG: SG8254	LAB_ID	SG8254-021			SG8254-011			SG8254-023		
FRACTION: M	SAMP_DATE	10/22/2013			10/21/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	94.4			95.7			96.4		
	DUP_OF				TF2-004/5-SS1061-000.6			TF2-004/5-SS1065-000.5		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		15600	J	I	12300	J	I	13500	J	I
ANTIMONY		0.13	J	D	0.55	J	DG	0.15	J	D
ARSENIC		8.1			5.6			10.5		
BARIUM		12.8			16.3			14.6		
BERYLLIUM		0.47			0.32			1.3	J	G
CADMIUM		0.06			0.1			0.07	J	P
CALCIUM		696	J	D	680	J	D	472	J	D
CHROMIUM		19.3			14.8			18.8		
COBALT		11.1			9			12.2		
COPPER		31.1			17.3			33.7		
IRON		29900	J	I	22300	J	I	32400	J	I
LEAD		24.7	J	I	30	J	I	24.3	J	I
MAGNESIUM		4870	J	I	3720	J	I	4210	J	I
MANGANESE		265	J	F	253	J	F	267	J	F
MERCURY		0.04	J	DEF	0.04	J	DEF	0.04	J	DEF
NICKEL		22.5			18.2			27.7		
POTASSIUM		312			310			268		
SELENIUM		0.23	U	A	0.28	U	A	0.28	U	A
SILVER		0.08			0.04	J	P	0.05	J	P
SODIUM		24.5	U	A	23.4	U	A	23.8	U	A
THALLIUM		0.04	J	P	0.04	J	P	0.04	J	P
VANADIUM		25.5	J	I	19.7	J	I	23.6	J	I
ZINC		50.4	J	I	49.3	J	I	64.9	J	I

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** TF2-SS-RB03-1013

Matrix: WATER **SDG Name:** SG8254

Percent Solids: 0.00 **Lab Sample ID:** SG8254-033

Concentration Units : ug/L

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11.5	J		MS	5	300	4.40	40
7440-36-0	ANTIMONY, TOTAL	0.11	J		MS	5	1.0	0.05	0.50
7440-38-2	ARSENIC, TOTAL	4.0	U		MS	5	5.0	2.25	4.0
7440-39-3	BARIUM, TOTAL	0.85	J		MS	5	2.0	0.25	1.0
7440-41-7	BERYLLIUM, TOTAL	0.20	U		MS	5	1.0	0.04	0.20
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	1.0	0.03	0.20
7440-70-2	CALCIUM, TOTAL	42.7	J		MS	5	100	20.45	80
7440-47-3	CHROMIUM, TOTAL	0.53	J		MS	5	5.0	0.20	4.0
7440-48-4	COBALT, TOTAL	0.05	J		MS	5	1.0	0.05	0.30
7440-50-8	COPPER, TOTAL	0.51	J		MS	5	3.0	0.20	2.0
7439-89-6	IRON, TOTAL	17.2	J		MS	5	100	12.75	60
7439-92-1	LEAD, TOTAL	0.07	J		MS	5	1.0	0.05	0.50
7439-95-4	MAGNESIUM, TOTAL	11.2	J		MS	5	100	7.80	80
7439-96-5	MANGANESE, TOTAL	0.36	J		MS	5	2.0	0.35	1.0
7439-97-6	MERCURY, TOTAL	0.10	U		CV	1	0.20	0.01	0.10
7440-02-0	NICKEL, TOTAL	0.20	J		MS	5	2.0	0.15	1.2
7440-09-7	POTASSIUM, TOTAL	400	U		MS	5	1000	30.70	400
7782-49-2	SELENIUM, TOTAL	3.0	U		MS	5	5.0	0.20	3.0
7440-22-4	SILVER, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-23-5	SODIUM, TOTAL	400	U		MS	5	1000	18.50	400
7440-28-0	THALLIUM, TOTAL	0.40	U		MS	5	1.0	0.05	0.40
7440-62-2	VANADIUM, TOTAL	0.93	J		MS	5	5.0	0.50	4.0
7440-66-6	ZINC, TOTAL	8.0	U		MS	5	10	3.90	8.0

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS-DUP06-1013

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.0 **Lab Sample ID:** SG8254-032

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	8700		E	MS	5	21	0.36	2.8
7440-36-0	ANTIMONY, TOTAL	0.24		N*	MS	5	0.071	0.01	0.036
7440-38-2	ARSENIC, TOTAL	4.9		*	MS	5	0.36	0.11	0.28
7440-39-3	BARIUM, TOTAL	26.0			MS	5	0.14	0.02	0.071
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.071	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.14			MS	5	0.071	0.007	0.014
7440-70-2	CALCIUM, TOTAL	832		N	MS	5	7.1	2.72	5.7
7440-47-3	CHROMIUM, TOTAL	10.6			MS	5	0.36	0.04	0.28
7440-48-4	COBALT, TOTAL	6.5			MS	5	0.071	0.004	0.021
7440-50-8	COPPER, TOTAL	15.6		*	MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	15000		E	MS	5	7.1	1.71	4.3
7439-92-1	LEAD, TOTAL	49.2		*E	MS	5	0.071	0.004	0.036
7439-95-4	MAGNESIUM, TOTAL	1980		E	MS	5	7.1	0.97	5.7
7439-96-5	MANGANESE, TOTAL	343		*E	MS	5	0.14	0.03	0.071
7439-97-6	MERCURY, TOTAL	0.08		N*	CV	1	0.032	0.005	0.017
7440-02-0	NICKEL, TOTAL	13.0			MS	5	0.14	0.02	0.085
7440-09-7	POTASSIUM, TOTAL	311			MS	5	71	3.25	28
7782-49-2	SELENIUM, TOTAL	0.25	J		MS	5	0.36	0.03	0.21
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.071	0.004	0.028
7440-23-5	SODIUM, TOTAL	22.2	J		MS	5	71	1.83	28
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.071	0.007	0.028
7440-62-2	VANADIUM, TOTAL	17.6		E	MS	5	0.36	0.08	0.28
7440-66-6	ZINC, TOTAL	46.2		E	MS	5	0.71	0.09	0.57

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1011-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 86.9 **Lab Sample ID:** SG8254-022

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11000		E	MS	5	28	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.20		N*	MS	5	0.094	0.02	0.047
7440-38-2	ARSENIC, TOTAL	8.9		*	MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	27.4			MS	5	0.19	0.03	0.094
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.094	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.20			MS	5	0.094	0.009	0.019
7440-70-2	CALCIUM, TOTAL	520		N	MS	5	9.4	3.61	7.5
7440-47-3	CHROMIUM, TOTAL	14.7			MS	5	0.47	0.05	0.38
7440-48-4	COBALT, TOTAL	11.4			MS	5	0.094	0.005	0.028
7440-50-8	COPPER, TOTAL	16.3		*	MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	25100		E	MS	5	9.4	2.26	5.6
7439-92-1	LEAD, TOTAL	79.3		*E	MS	5	0.094	0.005	0.047
7439-95-4	MAGNESIUM, TOTAL	2620		E	MS	5	9.4	1.29	7.5
7439-96-5	MANGANESE, TOTAL	512		*E	MS	10	0.38	0.08	0.19
7439-97-6	MERCURY, TOTAL	0.14		N*	CV	1	0.030	0.004	0.015
7440-02-0	NICKEL, TOTAL	18.5			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	335			MS	5	94	4.30	38
7782-49-2	SELENIUM, TOTAL	0.26	J		MS	5	0.47	0.04	0.28
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.094	0.005	0.038
7440-23-5	SODIUM, TOTAL	16.8	J		MS	5	94	2.42	38
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.094	0.009	0.038
7440-62-2	VANADIUM, TOTAL	24.9		E	MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	71.8		E	MS	5	0.94	0.12	0.75

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1012-000.7

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 88.7 **Lab Sample ID:** SG8254-024

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9360		E	MS	5	22	0.38	2.9
7440-36-0	ANTIMONY, TOTAL	0.20		N*	MS	5	0.074	0.01	0.037
7440-38-2	ARSENIC, TOTAL	5.6		*	MS	5	0.37	0.11	0.29
7440-39-3	BARIUM, TOTAL	23.5			MS	5	0.15	0.03	0.074
7440-41-7	BERYLLIUM, TOTAL	0.40			MS	5	0.074	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.14			MS	5	0.074	0.007	0.015
7440-70-2	CALCIUM, TOTAL	857		N	MS	5	7.4	2.82	5.9
7440-47-3	CHROMIUM, TOTAL	11.6			MS	5	0.37	0.04	0.29
7440-48-4	COBALT, TOTAL	7.7			MS	5	0.074	0.004	0.022
7440-50-8	COPPER, TOTAL	21.7		*	MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	18300		E	MS	5	7.4	1.77	4.4
7439-92-1	LEAD, TOTAL	33.6		*E	MS	5	0.074	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	2430		E	MS	5	7.4	1.01	5.9
7439-96-5	MANGANESE, TOTAL	263		*E	MS	5	0.15	0.03	0.074
7439-97-6	MERCURY, TOTAL	0.07		N*	CV	1	0.035	0.005	0.018
7440-02-0	NICKEL, TOTAL	17.2			MS	5	0.15	0.02	0.088
7440-09-7	POTASSIUM, TOTAL	429			MS	5	74	3.36	29
7782-49-2	SELENIUM, TOTAL	0.20	J		MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.074	0.004	0.029
7440-23-5	SODIUM, TOTAL	37.5	J		MS	5	74	1.89	29
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.074	0.007	0.029
7440-62-2	VANADIUM, TOTAL	17.3		E	MS	5	0.37	0.08	0.29
7440-66-6	ZINC, TOTAL	46.3		E	MS	5	0.74	0.10	0.59

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1013-000.7

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.0 **Lab Sample ID:** SG8254-025

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9530		E	MS	5	22	0.37	2.9
7440-36-0	ANTIMONY, TOTAL	0.27		N*	MS	5	0.072	0.01	0.036
7440-38-2	ARSENIC, TOTAL	6.0		*	MS	5	0.36	0.11	0.29
7440-39-3	BARIUM, TOTAL	25.6			MS	5	0.14	0.03	0.072
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.072	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.17			MS	5	0.072	0.007	0.014
7440-70-2	CALCIUM, TOTAL	914		N	MS	5	7.2	2.74	5.7
7440-47-3	CHROMIUM, TOTAL	12.4			MS	5	0.36	0.04	0.29
7440-48-4	COBALT, TOTAL	8.6			MS	5	0.072	0.004	0.022
7440-50-8	COPPER, TOTAL	18.6		*	MS	5	0.22	0.05	0.14
7439-89-6	IRON, TOTAL	17700		E	MS	5	7.2	1.72	4.3
7439-92-1	LEAD, TOTAL	57.6		*E	MS	5	0.072	0.004	0.036
7439-95-4	MAGNESIUM, TOTAL	2730		E	MS	5	7.2	0.98	5.7
7439-96-5	MANGANESE, TOTAL	268		*E	MS	5	0.14	0.03	0.072
7439-97-6	MERCURY, TOTAL	0.07		N*	CV	1	0.034	0.005	0.017
7440-02-0	NICKEL, TOTAL	16.0			MS	5	0.14	0.02	0.086
7440-09-7	POTASSIUM, TOTAL	328			MS	5	72	3.27	29
7782-49-2	SELENIUM, TOTAL	0.26	J		MS	5	0.36	0.03	0.22
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.072	0.004	0.029
7440-23-5	SODIUM, TOTAL	29.2	J		MS	5	72	1.84	29
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.072	0.007	0.029
7440-62-2	VANADIUM, TOTAL	20.0		E	MS	5	0.36	0.08	0.29
7440-66-6	ZINC, TOTAL	50.0		E	MS	5	0.72	0.09	0.57

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1014-0001

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.2 **Lab Sample ID:** SG8254-026

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	10900		E	MS	5	21	0.35	2.8
7440-36-0	ANTIMONY, TOTAL	0.51		N*	MS	5	0.069	0.01	0.034
7440-38-2	ARSENIC, TOTAL	6.0		*	MS	5	0.34	0.10	0.28
7440-39-3	BARIUM, TOTAL	22.7			MS	5	0.14	0.02	0.069
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.069	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.16			MS	5	0.069	0.007	0.014
7440-70-2	CALCIUM, TOTAL	904		N	MS	5	6.9	2.63	5.5
7440-47-3	CHROMIUM, TOTAL	14.8			MS	5	0.34	0.03	0.28
7440-48-4	COBALT, TOTAL	8.6			MS	5	0.069	0.003	0.021
7440-50-8	COPPER, TOTAL	17.8		*	MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	20800		E	MS	5	6.9	1.65	4.1
7439-92-1	LEAD, TOTAL	36.7		*E	MS	5	0.069	0.003	0.034
7439-95-4	MAGNESIUM, TOTAL	3260		E	MS	5	6.9	0.94	5.5
7439-96-5	MANGANESE, TOTAL	311		*E	MS	5	0.14	0.03	0.069
7439-97-6	MERCURY, TOTAL	0.07		N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	18.7			MS	5	0.14	0.02	0.082
7440-09-7	POTASSIUM, TOTAL	443			MS	5	69	3.14	28
7782-49-2	SELENIUM, TOTAL	0.19	J		MS	5	0.34	0.03	0.21
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.069	0.003	0.028
7440-23-5	SODIUM, TOTAL	25.1	J		MS	5	69	1.76	28
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.069	0.007	0.028
7440-62-2	VANADIUM, TOTAL	21.6		E	MS	5	0.34	0.08	0.28
7440-66-6	ZINC, TOTAL	61.4		E	MS	5	0.69	0.09	0.55

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1015-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.0 **Lab Sample ID:** SG8254-027

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9570		E	MS	5	23	0.39	3.1
7440-36-0	ANTIMONY, TOTAL	0.28		N*	MS	5	0.077	0.02	0.039
7440-38-2	ARSENIC, TOTAL	5.2		*	MS	5	0.39	0.12	0.31
7440-39-3	BARIUM, TOTAL	31.0			MS	5	0.15	0.03	0.077
7440-41-7	BERYLLIUM, TOTAL	0.42			MS	5	0.077	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.16			MS	5	0.077	0.008	0.015
7440-70-2	CALCIUM, TOTAL	754		N	MS	5	7.7	2.96	6.2
7440-47-3	CHROMIUM, TOTAL	12.1			MS	5	0.39	0.04	0.31
7440-48-4	COBALT, TOTAL	7.2			MS	5	0.077	0.004	0.023
7440-50-8	COPPER, TOTAL	15.2		*	MS	5	0.23	0.05	0.15
7439-89-6	IRON, TOTAL	15700		E	MS	5	7.7	1.86	4.6
7439-92-1	LEAD, TOTAL	50.8		*E	MS	5	0.077	0.004	0.039
7439-95-4	MAGNESIUM, TOTAL	2140		E	MS	5	7.7	1.06	6.2
7439-96-5	MANGANESE, TOTAL	371		*E	MS	5	0.15	0.03	0.077
7439-97-6	MERCURY, TOTAL	0.09		N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	14.3			MS	5	0.15	0.02	0.093
7440-09-7	POTASSIUM, TOTAL	414			MS	5	77	3.53	31
7782-49-2	SELENIUM, TOTAL	0.28	J		MS	5	0.39	0.03	0.23
7440-22-4	SILVER, TOTAL	0.07	J		MS	5	0.077	0.004	0.031
7440-23-5	SODIUM, TOTAL	27.6	J		MS	5	77	1.98	31
7440-28-0	THALLIUM, TOTAL	0.08			MS	5	0.077	0.008	0.031
7440-62-2	VANADIUM, TOTAL	19.2		E	MS	5	0.39	0.09	0.31
7440-66-6	ZINC, TOTAL	53.6		E	MS	5	0.77	0.10	0.62

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1016-000.9

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 90.9 **Lab Sample ID:** SG8254-028

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9360		E	MS	5	23	0.39	3.0
7440-36-0	ANTIMONY, TOTAL	0.53		N*	MS	5	0.076	0.02	0.038
7440-38-2	ARSENIC, TOTAL	6.0		*	MS	5	0.38	0.11	0.30
7440-39-3	BARIUM, TOTAL	41.5			MS	5	0.15	0.03	0.076
7440-41-7	BERYLLIUM, TOTAL	0.51			MS	5	0.076	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.28			MS	5	0.076	0.008	0.015
7440-70-2	CALCIUM, TOTAL	719		N	MS	5	7.6	2.92	6.1
7440-47-3	CHROMIUM, TOTAL	12.3			MS	5	0.38	0.04	0.30
7440-48-4	COBALT, TOTAL	7.7			MS	5	0.076	0.004	0.023
7440-50-8	COPPER, TOTAL	16.7		*	MS	5	0.23	0.05	0.15
7439-89-6	IRON, TOTAL	15800		E	MS	5	7.6	1.83	4.6
7439-92-1	LEAD, TOTAL	101		*E	MS	5	0.076	0.004	0.038
7439-95-4	MAGNESIUM, TOTAL	1500		E	MS	5	7.6	1.04	6.1
7439-96-5	MANGANESE, TOTAL	658		*E	MS	10	0.30	0.06	0.15
7439-97-6	MERCURY, TOTAL	0.13		N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	13.4			MS	5	0.15	0.02	0.092
7440-09-7	POTASSIUM, TOTAL	354			MS	5	76	3.48	30
7782-49-2	SELENIUM, TOTAL	0.41			MS	5	0.38	0.03	0.23
7440-22-4	SILVER, TOTAL	0.08			MS	5	0.076	0.004	0.030
7440-23-5	SODIUM, TOTAL	28.0	J		MS	5	76	1.96	30
7440-28-0	THALLIUM, TOTAL	0.1			MS	5	0.076	0.008	0.030
7440-62-2	VANADIUM, TOTAL	21.8		E	MS	5	0.38	0.08	0.30
7440-66-6	ZINC, TOTAL	99.1		E	MS	5	0.76	0.10	0.61

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1017-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 91.6 **Lab Sample ID:** SG8254-029

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	8920		E	MS	5	29	0.49	3.9
7440-36-0	ANTIMONY, TOTAL	0.41		N*	MS	5	0.096	0.02	0.048
7440-38-2	ARSENIC, TOTAL	5.5		*	MS	5	0.48	0.14	0.39
7440-39-3	BARIUM, TOTAL	23.0			MS	5	0.19	0.03	0.096
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.096	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.23			MS	5	0.096	0.010	0.019
7440-70-2	CALCIUM, TOTAL	549		N	MS	5	9.6	3.69	7.7
7440-47-3	CHROMIUM, TOTAL	44.5			MS	5	0.48	0.05	0.39
7440-48-4	COBALT, TOTAL	7.6			MS	5	0.096	0.005	0.029
7440-50-8	COPPER, TOTAL	14.6		*	MS	5	0.29	0.07	0.19
7439-89-6	IRON, TOTAL	18700		E	MS	5	9.6	2.32	5.8
7439-92-1	LEAD, TOTAL	62.5		*E	MS	5	0.096	0.005	0.048
7439-95-4	MAGNESIUM, TOTAL	2470		E	MS	5	9.6	1.32	7.7
7439-96-5	MANGANESE, TOTAL	332		*E	MS	5	0.19	0.04	0.096
7439-97-6	MERCURY, TOTAL	0.06		N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	24.0			MS	5	0.19	0.02	0.12
7440-09-7	POTASSIUM, TOTAL	391			MS	5	96	4.40	39
7782-49-2	SELENIUM, TOTAL	0.14	J		MS	5	0.48	0.04	0.29
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.096	0.005	0.039
7440-23-5	SODIUM, TOTAL	24.5	J		MS	5	96	2.48	39
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.096	0.010	0.039
7440-62-2	VANADIUM, TOTAL	19.8		E	MS	5	0.48	0.11	0.39
7440-66-6	ZINC, TOTAL	86.7		E	MS	5	0.96	0.13	0.77

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1018-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 94.8 **Lab Sample ID:** SG8254-030

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9630		E	MS	5	25	0.42	3.3
7440-36-0	ANTIMONY, TOTAL	0.18		N*	MS	5	0.082	0.02	0.041
7440-38-2	ARSENIC, TOTAL	5.2		*	MS	5	0.41	0.12	0.33
7440-39-3	BARIUM, TOTAL	26.6			MS	5	0.16	0.03	0.082
7440-41-7	BERYLLIUM, TOTAL	0.38			MS	5	0.082	0.003	0.016
7440-43-9	CADMIUM, TOTAL	0.10			MS	5	0.082	0.008	0.016
7440-70-2	CALCIUM, TOTAL	576		N	MS	5	8.2	3.15	6.6
7440-47-3	CHROMIUM, TOTAL	13.2			MS	5	0.41	0.04	0.33
7440-48-4	COBALT, TOTAL	9.2			MS	5	0.082	0.004	0.025
7440-50-8	COPPER, TOTAL	11.6		*	MS	5	0.25	0.06	0.16
7439-89-6	IRON, TOTAL	18400		E	MS	5	8.2	1.98	4.9
7439-92-1	LEAD, TOTAL	16.6		*E	MS	5	0.082	0.004	0.041
7439-95-4	MAGNESIUM, TOTAL	2720		E	MS	5	8.2	1.12	6.6
7439-96-5	MANGANESE, TOTAL	649		*E	MS	10	0.33	0.07	0.16
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	16.2			MS	5	0.16	0.02	0.099
7440-09-7	POTASSIUM, TOTAL	474			MS	5	82	3.76	33
7782-49-2	SELENIUM, TOTAL	0.22	J		MS	5	0.41	0.03	0.25
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.082	0.004	0.033
7440-23-5	SODIUM, TOTAL	22.2	J		MS	5	82	2.11	33
7440-28-0	THALLIUM, TOTAL	0.07	J		MS	5	0.082	0.008	0.033
7440-62-2	VANADIUM, TOTAL	17.2		E	MS	5	0.41	0.09	0.33
7440-66-6	ZINC, TOTAL	39.6		E	MS	5	0.82	0.11	0.66

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1019-000.5

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 91.8 **Lab Sample ID:** SG8254-031

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9340		E	MS	5	29	0.49	3.8
7440-36-0	ANTIMONY, TOTAL	0.29		N*	MS	5	0.096	0.02	0.048
7440-38-2	ARSENIC, TOTAL	6.2		*	MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	24.5			MS	5	0.19	0.03	0.096
7440-41-7	BERYLLIUM, TOTAL	0.35			MS	5	0.096	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.29			MS	5	0.096	0.010	0.019
7440-70-2	CALCIUM, TOTAL	1080		N	MS	5	9.6	3.69	7.7
7440-47-3	CHROMIUM, TOTAL	12.7			MS	5	0.48	0.05	0.38
7440-48-4	COBALT, TOTAL	8.7			MS	5	0.096	0.005	0.029
7440-50-8	COPPER, TOTAL	18.3		*	MS	5	0.29	0.07	0.19
7439-89-6	IRON, TOTAL	17500		E	MS	5	9.6	2.31	5.8
7439-92-1	LEAD, TOTAL	32.1		*E	MS	5	0.096	0.005	0.048
7439-95-4	MAGNESIUM, TOTAL	2790		E	MS	5	9.6	1.32	7.7
7439-96-5	MANGANESE, TOTAL	311		*E	MS	5	0.19	0.04	0.096
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	16.1			MS	5	0.19	0.02	0.12
7440-09-7	POTASSIUM, TOTAL	501			MS	5	96	4.39	38
7782-49-2	SELENIUM, TOTAL	0.23	J		MS	5	0.48	0.04	0.29
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.096	0.005	0.038
7440-23-5	SODIUM, TOTAL	29.2	J		MS	5	96	2.47	38
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.096	0.010	0.038
7440-62-2	VANADIUM, TOTAL	21.6		E	MS	5	0.48	0.11	0.38
7440-66-6	ZINC, TOTAL	55.4		E	MS	5	0.96	0.13	0.77

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS-DUP04-1013

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 95.7 **Lab Sample ID:** SG8254-011

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12300		E	MS	5	25	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	0.55		N*	MS	5	0.084	0.02	0.042
7440-38-2	ARSENIC, TOTAL	5.6		*	MS	5	0.42	0.13	0.34
7440-39-3	BARIUM, TOTAL	16.3			MS	5	0.17	0.03	0.084
7440-41-7	BERYLLIUM, TOTAL	0.32			MS	5	0.084	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.1			MS	5	0.084	0.008	0.017
7440-70-2	CALCIUM, TOTAL	680		N	MS	5	8.4	3.22	6.7
7440-47-3	CHROMIUM, TOTAL	14.8			MS	5	0.42	0.04	0.34
7440-48-4	COBALT, TOTAL	9.0			MS	5	0.084	0.004	0.025
7440-50-8	COPPER, TOTAL	17.3		*	MS	5	0.25	0.06	0.17
7439-89-6	IRON, TOTAL	22300		E	MS	5	8.4	2.02	5.0
7439-92-1	LEAD, TOTAL	30.0		*E	MS	5	0.084	0.004	0.042
7439-95-4	MAGNESIUM, TOTAL	3720		E	MS	5	8.4	1.15	6.7
7439-96-5	MANGANESE, TOTAL	253		*E	MS	5	0.17	0.03	0.084
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	18.2			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	310			MS	5	84	3.84	34
7782-49-2	SELENIUM, TOTAL	0.28	J		MS	5	0.42	0.03	0.25
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.084	0.004	0.034
7440-23-5	SODIUM, TOTAL	23.4	J		MS	5	84	2.16	34
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.084	0.008	0.034
7440-62-2	VANADIUM, TOTAL	19.7		E	MS	5	0.42	0.09	0.34
7440-66-6	ZINC, TOTAL	49.3		E	MS	5	0.84	0.11	0.67

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS-DUP05-1013

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.4 **Lab Sample ID:** SG8254-023

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13500		E	MS	5	28	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.15		N*	MS	5	0.094	0.02	0.047
7440-38-2	ARSENIC, TOTAL	10.5		*	MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	14.6			MS	5	0.19	0.03	0.094
7440-41-7	BERYLLIUM, TOTAL	1.3			MS	5	0.094	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.094	0.009	0.019
7440-70-2	CALCIUM, TOTAL	472		N	MS	5	9.4	3.61	7.5
7440-47-3	CHROMIUM, TOTAL	18.8			MS	5	0.47	0.05	0.38
7440-48-4	COBALT, TOTAL	12.2			MS	5	0.094	0.005	0.028
7440-50-8	COPPER, TOTAL	33.7		*	MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	32400		E	MS	5	9.4	2.26	5.6
7439-92-1	LEAD, TOTAL	24.3		*E	MS	5	0.094	0.005	0.047
7439-95-4	MAGNESIUM, TOTAL	4210		E	MS	5	9.4	1.29	7.5
7439-96-5	MANGANESE, TOTAL	267		*E	MS	5	0.19	0.04	0.094
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	27.7			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	268			MS	5	94	4.30	38
7782-49-2	SELENIUM, TOTAL	0.17	J		MS	5	0.47	0.04	0.28
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.094	0.005	0.038
7440-23-5	SODIUM, TOTAL	23.8	J		MS	5	94	2.42	38
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.094	0.009	0.038
7440-62-2	VANADIUM, TOTAL	23.6		E	MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	64.9		E	MS	5	0.94	0.12	0.75

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1050-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 94.9 **Lab Sample ID:** SG8254-009

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	8650		E	MS	5	26	0.44	3.5
7440-36-0	ANTIMONY, TOTAL	0.15		N*	MS	5	0.087	0.02	0.044
7440-38-2	ARSENIC, TOTAL	4.8		*	MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	12.8			MS	5	0.17	0.03	0.087
7440-41-7	BERYLLIUM, TOTAL	0.32			MS	5	0.087	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.05	J		MS	5	0.087	0.009	0.017
7440-70-2	CALCIUM, TOTAL	363		N	MS	5	8.7	3.33	7.0
7440-47-3	CHROMIUM, TOTAL	12.3			MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	7.4			MS	5	0.087	0.004	0.026
7440-50-8	COPPER, TOTAL	17.3		*	MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	17500		E	MS	5	8.7	2.09	5.2
7439-92-1	LEAD, TOTAL	13.2		*E	MS	5	0.087	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	2630		E	MS	5	8.7	1.19	7.0
7439-96-5	MANGANESE, TOTAL	211		*E	MS	5	0.17	0.03	0.087
7439-97-6	MERCURY, TOTAL	0.02	J	N*	CV	1	0.027	0.004	0.014
7440-02-0	NICKEL, TOTAL	14.2			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	341			MS	5	87	3.97	35
7782-49-2	SELENIUM, TOTAL	0.34	J		MS	5	0.44	0.03	0.26
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.087	0.004	0.035
7440-23-5	SODIUM, TOTAL	17.0	J		MS	5	87	2.23	35
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.087	0.009	0.035
7440-62-2	VANADIUM, TOTAL	17.4		E	MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	34.5		E	MS	5	0.87	0.11	0.70

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1051-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.6 **Lab Sample ID:** SG8254-008

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11600		E	MS	5	22	0.37	2.9
7440-36-0	ANTIMONY, TOTAL	0.14		N*	MS	5	0.073	0.01	0.037
7440-38-2	ARSENIC, TOTAL	8.1		*	MS	5	0.37	0.11	0.29
7440-39-3	BARIUM, TOTAL	17.2			MS	5	0.15	0.03	0.073
7440-41-7	BERYLLIUM, TOTAL	0.42			MS	5	0.073	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.073	0.007	0.015
7440-70-2	CALCIUM, TOTAL	419		N	MS	5	7.3	2.81	5.9
7440-47-3	CHROMIUM, TOTAL	14.4			MS	5	0.37	0.04	0.29
7440-48-4	COBALT, TOTAL	13.9			MS	5	0.073	0.004	0.022
7440-50-8	COPPER, TOTAL	29.8		*	MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	24100		E	MS	5	7.3	1.76	4.4
7439-92-1	LEAD, TOTAL	12.4		*E	MS	5	0.073	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	3790		E	MS	5	7.3	1.00	5.9
7439-96-5	MANGANESE, TOTAL	400		*E	MS	10	0.29	0.06	0.15
7439-97-6	MERCURY, TOTAL	0.02	J	N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	24.0			MS	5	0.15	0.02	0.088
7440-09-7	POTASSIUM, TOTAL	383			MS	5	73	3.35	29
7782-49-2	SELENIUM, TOTAL	0.26	J		MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.073	0.004	0.029
7440-23-5	SODIUM, TOTAL	21.8	J		MS	5	73	1.88	29
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.073	0.007	0.029
7440-62-2	VANADIUM, TOTAL	19.2		E	MS	5	0.37	0.08	0.29
7440-66-6	ZINC, TOTAL	51.5		E	MS	5	0.73	0.10	0.59

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1052-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.8 **Lab Sample ID:** SG8254-007

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15700		E	MS	5	28	0.49	3.8
7440-36-0	ANTIMONY, TOTAL	0.23		N*	MS	5	0.095	0.02	0.048
7440-38-2	ARSENIC, TOTAL	8.7		*	MS	5	0.48	0.14	0.38
7440-39-3	BARIUM, TOTAL	17.2			MS	5	0.19	0.03	0.095
7440-41-7	BERYLLIUM, TOTAL	0.56			MS	5	0.095	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.095	0.010	0.019
7440-70-2	CALCIUM, TOTAL	578		N	MS	5	9.5	3.64	7.6
7440-47-3	CHROMIUM, TOTAL	22.3			MS	5	0.48	0.05	0.38
7440-48-4	COBALT, TOTAL	11.8			MS	5	0.095	0.005	0.028
7440-50-8	COPPER, TOTAL	25.3		*	MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	31100		E	MS	5	9.5	2.28	5.7
7439-92-1	LEAD, TOTAL	31.1		*E	MS	5	0.095	0.005	0.048
7439-95-4	MAGNESIUM, TOTAL	4760		E	MS	5	9.5	1.30	7.6
7439-96-5	MANGANESE, TOTAL	238		*E	MS	5	0.19	0.04	0.095
7439-97-6	MERCURY, TOTAL	0.03		N*	CV	1	0.030	0.005	0.016
7440-02-0	NICKEL, TOTAL	26.5			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	332			MS	5	95	4.34	38
7782-49-2	SELENIUM, TOTAL	0.43	J		MS	5	0.48	0.04	0.28
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.095	0.005	0.038
7440-23-5	SODIUM, TOTAL	28.2	J		MS	5	95	2.44	38
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.095	0.010	0.038
7440-62-2	VANADIUM, TOTAL	30.7		E	MS	5	0.48	0.10	0.38
7440-66-6	ZINC, TOTAL	58.8		E	MS	5	0.95	0.12	0.76

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1053-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.9 **Lab Sample ID:** SG8254-006

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13000		E	MS	5	26	0.45	3.5
7440-36-0	ANTIMONY, TOTAL	0.19		N*	MS	5	0.088	0.02	0.044
7440-38-2	ARSENIC, TOTAL	8.0		*	MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	12.3			MS	5	0.18	0.03	0.088
7440-41-7	BERYLLIUM, TOTAL	0.39			MS	5	0.088	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.088	0.009	0.018
7440-70-2	CALCIUM, TOTAL	573		N	MS	5	8.8	3.37	7.0
7440-47-3	CHROMIUM, TOTAL	18.8			MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	10.8			MS	5	0.088	0.004	0.026
7440-50-8	COPPER, TOTAL	27.2		*	MS	5	0.26	0.06	0.18
7439-89-6	IRON, TOTAL	24800		E	MS	5	8.8	2.11	5.3
7439-92-1	LEAD, TOTAL	22.1		*E	MS	5	0.088	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	3970		E	MS	5	8.8	1.20	7.0
7439-96-5	MANGANESE, TOTAL	231		*E	MS	5	0.18	0.04	0.088
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.034	0.005	0.017
7440-02-0	NICKEL, TOTAL	23.3			MS	5	0.18	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	306			MS	5	88	4.01	35
7782-49-2	SELENIUM, TOTAL	0.39	J		MS	5	0.44	0.04	0.26
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.088	0.004	0.035
7440-23-5	SODIUM, TOTAL	23.4	J		MS	5	88	2.26	35
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.088	0.009	0.035
7440-62-2	VANADIUM, TOTAL	24.2		E	MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	52.1		E	MS	5	0.88	0.11	0.70

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1054-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.9 **Lab Sample ID:** SG8254-005

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12500		E	MS	5	28	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.11		N*	MS	5	0.095	0.02	0.047
7440-38-2	ARSENIC, TOTAL	6.9		*	MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	15.8			MS	5	0.19	0.03	0.095
7440-41-7	BERYLLIUM, TOTAL	0.39			MS	5	0.095	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.095	0.009	0.019
7440-70-2	CALCIUM, TOTAL	718		N	MS	5	9.5	3.62	7.6
7440-47-3	CHROMIUM, TOTAL	17.1			MS	5	0.47	0.05	0.38
7440-48-4	COBALT, TOTAL	11.9			MS	5	0.095	0.005	0.028
7440-50-8	COPPER, TOTAL	19.8		*	MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	23100		E	MS	5	9.5	2.27	5.7
7439-92-1	LEAD, TOTAL	18.0		*E	MS	5	0.095	0.005	0.047
7439-95-4	MAGNESIUM, TOTAL	3640		E	MS	5	9.5	1.29	7.6
7439-96-5	MANGANESE, TOTAL	298		*E	MS	5	0.19	0.04	0.095
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	20.3			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	363			MS	5	95	4.32	38
7782-49-2	SELENIUM, TOTAL	0.39	J		MS	5	0.47	0.04	0.28
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.095	0.005	0.038
7440-23-5	SODIUM, TOTAL	31.3	J		MS	5	95	2.43	38
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.095	0.009	0.038
7440-62-2	VANADIUM, TOTAL	19.8		E	MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	49.3		E	MS	5	0.95	0.12	0.76

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1055-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 95.4 **Lab Sample ID:** SG8254-004

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16200		E	MS	5	22	0.38	3.0
7440-36-0	ANTIMONY, TOTAL	0.07	J	N*	MS	5	0.075	0.01	0.037
7440-38-2	ARSENIC, TOTAL	6.7		*	MS	5	0.37	0.11	0.30
7440-39-3	BARIUM, TOTAL	13.1			MS	5	0.15	0.03	0.075
7440-41-7	BERYLLIUM, TOTAL	0.39			MS	5	0.075	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.08			MS	5	0.075	0.007	0.015
7440-70-2	CALCIUM, TOTAL	1190		N	MS	5	7.5	2.86	6.0
7440-47-3	CHROMIUM, TOTAL	23.6			MS	5	0.37	0.04	0.30
7440-48-4	COBALT, TOTAL	16.2			MS	5	0.075	0.004	0.022
7440-50-8	COPPER, TOTAL	24.9		*	MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	31800		E	MS	5	7.5	1.80	4.5
7439-92-1	LEAD, TOTAL	27.4		*E	MS	5	0.075	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	5440		E	MS	5	7.5	1.02	6.0
7439-96-5	MANGANESE, TOTAL	297		*E	MS	5	0.15	0.03	0.075
7439-97-6	MERCURY, TOTAL	0.01	J	N*	CV	1	0.027	0.004	0.014
7440-02-0	NICKEL, TOTAL	30.5			MS	5	0.15	0.02	0.090
7440-09-7	POTASSIUM, TOTAL	258			MS	5	75	3.42	30
7782-49-2	SELENIUM, TOTAL	0.38			MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.075	0.004	0.030
7440-23-5	SODIUM, TOTAL	20.7	J		MS	5	75	1.92	30
7440-28-0	THALLIUM, TOTAL	0.03	J		MS	5	0.075	0.007	0.030
7440-62-2	VANADIUM, TOTAL	19.0		E	MS	5	0.37	0.08	0.30
7440-66-6	ZINC, TOTAL	63.4		E	MS	5	0.75	0.10	0.60

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1056-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.0 **Lab Sample ID:** SG8254-003

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	12400		E	MS	5	25	0.43	3.4
7440-36-0	ANTIMONY, TOTAL	6.6		N*	MS	5	0.084	0.02	0.042
7440-38-2	ARSENIC, TOTAL	7.8		*	MS	5	0.42	0.13	0.34
7440-39-3	BARIUM, TOTAL	17.2			MS	5	0.17	0.03	0.084
7440-41-7	BERYLLIUM, TOTAL	0.39			MS	5	0.084	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.08			MS	5	0.084	0.008	0.017
7440-70-2	CALCIUM, TOTAL	739		N	MS	5	8.4	3.21	6.7
7440-47-3	CHROMIUM, TOTAL	18.3			MS	5	0.42	0.04	0.34
7440-48-4	COBALT, TOTAL	11.7			MS	5	0.084	0.004	0.025
7440-50-8	COPPER, TOTAL	18.1		*	MS	5	0.25	0.06	0.17
7439-89-6	IRON, TOTAL	22900		E	MS	5	8.4	2.02	5.0
7439-92-1	LEAD, TOTAL	30.3		*E	MS	5	0.084	0.004	0.042
7439-95-4	MAGNESIUM, TOTAL	3750		E	MS	5	8.4	1.15	6.7
7439-96-5	MANGANESE, TOTAL	266		*E	MS	5	0.17	0.03	0.084
7439-97-6	MERCURY, TOTAL	0.03		N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	20.8			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	343			MS	5	84	3.83	34
7782-49-2	SELENIUM, TOTAL	0.39	J		MS	5	0.42	0.03	0.25
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.084	0.004	0.034
7440-23-5	SODIUM, TOTAL	34.4	J		MS	5	84	2.15	34
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.084	0.008	0.034
7440-62-2	VANADIUM, TOTAL	18.7		E	MS	5	0.42	0.09	0.34
7440-66-6	ZINC, TOTAL	50.2		E	MS	5	0.84	0.11	0.67

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1057-0001

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.4 **Lab Sample ID:** SG8254-002

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	6960		E	MS	5	30	0.51	4.0
7440-36-0	ANTIMONY, TOTAL	0.43		N*	MS	5	0.10	0.02	0.050
7440-38-2	ARSENIC, TOTAL	3.2		*	MS	5	0.50	0.15	0.40
7440-39-3	BARIUM, TOTAL	15.8			MS	5	0.20	0.03	0.10
7440-41-7	BERYLLIUM, TOTAL	0.33			MS	5	0.10	0.004	0.020
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.10	0.010	0.020
7440-70-2	CALCIUM, TOTAL	588		N	MS	5	10	3.81	8.0
7440-47-3	CHROMIUM, TOTAL	9.4			MS	5	0.50	0.05	0.40
7440-48-4	COBALT, TOTAL	5.0			MS	5	0.10	0.005	0.030
7440-50-8	COPPER, TOTAL	11.5		*	MS	5	0.30	0.07	0.20
7439-89-6	IRON, TOTAL	11700		E	MS	5	10	2.39	6.0
7439-92-1	LEAD, TOTAL	47.0		*E	MS	5	0.10	0.005	0.050
7439-95-4	MAGNESIUM, TOTAL	1810		E	MS	5	10	1.36	8.0
7439-96-5	MANGANESE, TOTAL	195		*E	MS	5	0.20	0.04	0.10
7439-97-6	MERCURY, TOTAL	0.02	J	N*	CV	1	0.030	0.005	0.016
7440-02-0	NICKEL, TOTAL	10.7			MS	5	0.20	0.02	0.12
7440-09-7	POTASSIUM, TOTAL	318			MS	5	100	4.55	40
7782-49-2	SELENIUM, TOTAL	0.33	J		MS	5	0.50	0.04	0.30
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.10	0.005	0.040
7440-23-5	SODIUM, TOTAL	28.9	J		MS	5	100	2.56	40
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.10	0.010	0.040
7440-62-2	VANADIUM, TOTAL	18.0		E	MS	5	0.50	0.11	0.40
7440-66-6	ZINC, TOTAL	35.4		E	MS	5	1.0	0.13	0.80

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1058-000.5

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 94.7 **Lab Sample ID:** SG8254-017

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	ADJUSTED MDL	ADJUSTED LOD
7429-90-5	ALUMINUM, TOTAL	15100		E	MS	5	27	0.45	3.5
7440-36-0	ANTIMONY, TOTAL	0.18		N*	MS	5	0.089	0.02	0.044
7440-38-2	ARSENIC, TOTAL	8.3		*	MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	11.8			MS	5	0.18	0.03	0.089
7440-41-7	BERYLLIUM, TOTAL	0.84			MS	5	0.089	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.089	0.009	0.018
7440-70-2	CALCIUM, TOTAL	653		N	MS	5	8.9	3.39	7.1
7440-47-3	CHROMIUM, TOTAL	21.7			MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	16.4			MS	5	0.089	0.004	0.027
7440-50-8	COPPER, TOTAL	32.6		*	MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	32000		E	MS	5	8.9	2.13	5.3
7439-92-1	LEAD, TOTAL	20.2		*E	MS	5	0.089	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	4850		E	MS	5	8.9	1.21	7.1
7439-96-5	MANGANESE, TOTAL	353		*E	MS	5	0.18	0.04	0.089
7439-97-6	MERCURY, TOTAL	0.02	J	N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	29.6			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	291			MS	5	89	4.05	35
7782-49-2	SELENIUM, TOTAL	0.34	J		MS	5	0.44	0.04	0.27
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.089	0.004	0.035
7440-23-5	SODIUM, TOTAL	25.0	J		MS	5	89	2.28	35
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.089	0.009	0.035
7440-62-2	VANADIUM, TOTAL	23.1		E	MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	64.6		E	MS	5	0.89	0.12	0.71

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1059-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 95.6 **Lab Sample ID:** SG8254-016

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	10100		E	MS	5	28	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.09	J	N*	MS	5	0.094	0.02	0.047
7440-38-2	ARSENIC, TOTAL	5.1		*	MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	17.9			MS	5	0.19	0.03	0.094
7440-41-7	BERYLLIUM, TOTAL	0.37			MS	5	0.094	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.094	0.009	0.019
7440-70-2	CALCIUM, TOTAL	467		N	MS	5	9.4	3.60	7.5
7440-47-3	CHROMIUM, TOTAL	12.8			MS	5	0.47	0.05	0.38
7440-48-4	COBALT, TOTAL	9.3			MS	5	0.094	0.005	0.028
7440-50-8	COPPER, TOTAL	16.1		*	MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	19000		E	MS	5	9.4	2.26	5.6
7439-92-1	LEAD, TOTAL	10.3		*E	MS	5	0.094	0.005	0.047
7439-95-4	MAGNESIUM, TOTAL	3170		E	MS	5	9.4	1.29	7.5
7439-96-5	MANGANESE, TOTAL	297		*E	MS	5	0.19	0.04	0.094
7439-97-6	MERCURY, TOTAL	0.01	J	N*	CV	1	0.026	0.004	0.013
7440-02-0	NICKEL, TOTAL	17.5			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	461			MS	5	94	4.30	38
7782-49-2	SELENIUM, TOTAL	0.18	J		MS	5	0.47	0.04	0.28
7440-22-4	SILVER, TOTAL	0.02	J		MS	5	0.094	0.005	0.038
7440-23-5	SODIUM, TOTAL	21.6	J		MS	5	94	2.42	38
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.094	0.009	0.038
7440-62-2	VANADIUM, TOTAL	16.8		E	MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	40.8		E	MS	5	0.94	0.12	0.75

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1060-000.5

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 94.1 **Lab Sample ID:** SG8254-015

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	16200		E	MS	5	22	0.38	3.0
7440-36-0	ANTIMONY, TOTAL	0.22		N*	MS	5	0.074	0.01	0.037
7440-38-2	ARSENIC, TOTAL	7.8		*	MS	5	0.37	0.11	0.30
7440-39-3	BARIUM, TOTAL	15.9			MS	5	0.15	0.03	0.074
7440-41-7	BERYLLIUM, TOTAL	0.42			MS	5	0.074	0.003	0.015
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.074	0.007	0.015
7440-70-2	CALCIUM, TOTAL	731		N	MS	5	7.4	2.84	5.9
7440-47-3	CHROMIUM, TOTAL	22.7			MS	5	0.37	0.04	0.30
7440-48-4	COBALT, TOTAL	13.2			MS	5	0.074	0.004	0.022
7440-50-8	COPPER, TOTAL	27.1		*	MS	5	0.22	0.05	0.15
7439-89-6	IRON, TOTAL	31600		E	MS	5	7.4	1.78	4.4
7439-92-1	LEAD, TOTAL	34.5		*E	MS	5	0.074	0.004	0.037
7439-95-4	MAGNESIUM, TOTAL	5260		E	MS	5	7.4	1.01	5.9
7439-96-5	MANGANESE, TOTAL	265		*E	MS	5	0.15	0.03	0.074
7439-97-6	MERCURY, TOTAL	0.08		N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	28.6			MS	5	0.15	0.02	0.089
7440-09-7	POTASSIUM, TOTAL	301			MS	5	74	3.39	30
7782-49-2	SELENIUM, TOTAL	0.29	J		MS	5	0.37	0.03	0.22
7440-22-4	SILVER, TOTAL	0.08			MS	5	0.074	0.004	0.030
7440-23-5	SODIUM, TOTAL	25.9	J		MS	5	74	1.91	30
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.074	0.007	0.030
7440-62-2	VANADIUM, TOTAL	33.4		E	MS	5	0.37	0.08	0.30
7440-66-6	ZINC, TOTAL	62.0		E	MS	5	0.74	0.10	0.59

Comments:

Katahdin Analytical Services A0000127

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1061-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 95.6 **Lab Sample ID:** SG8254-012

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9090		E	MS	5	26	0.45	3.5
7440-36-0	ANTIMONY, TOTAL	0.20		N*	MS	5	0.088	0.02	0.044
7440-38-2	ARSENIC, TOTAL	3.8		*	MS	5	0.44	0.13	0.35
7440-39-3	BARIUM, TOTAL	12.8			MS	5	0.18	0.03	0.088
7440-41-7	BERYLLIUM, TOTAL	0.30			MS	5	0.088	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.088	0.009	0.018
7440-70-2	CALCIUM, TOTAL	890		N	MS	5	8.8	3.36	7.0
7440-47-3	CHROMIUM, TOTAL	12.2			MS	5	0.44	0.04	0.35
7440-48-4	COBALT, TOTAL	7.3			MS	5	0.088	0.004	0.026
7440-50-8	COPPER, TOTAL	13.9		*	MS	5	0.26	0.06	0.18
7439-89-6	IRON, TOTAL	17100		E	MS	5	8.8	2.11	5.3
7439-92-1	LEAD, TOTAL	20.7		*E	MS	5	0.088	0.004	0.044
7439-95-4	MAGNESIUM, TOTAL	2740		E	MS	5	8.8	1.20	7.0
7439-96-5	MANGANESE, TOTAL	179		*E	MS	5	0.18	0.04	0.088
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.029	0.004	0.015
7440-02-0	NICKEL, TOTAL	13.2			MS	5	0.18	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	260			MS	5	88	4.01	35
7782-49-2	SELENIUM, TOTAL	0.20	J		MS	5	0.44	0.04	0.26
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.088	0.004	0.035
7440-23-5	SODIUM, TOTAL	19.1	J		MS	5	88	2.25	35
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.088	0.009	0.035
7440-62-2	VANADIUM, TOTAL	14.1		E	MS	5	0.44	0.10	0.35
7440-66-6	ZINC, TOTAL	36.7		E	MS	5	0.88	0.11	0.70

Comments:

Katahdin Analytical Services A0000124

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1062-000.8

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 93.4 **Lab Sample ID:** SG8254-010

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	11400		E	MS	5	27	0.46	3.6
7440-36-0	ANTIMONY, TOTAL	0.36		N*	MS	5	0.091	0.02	0.045
7440-38-2	ARSENIC, TOTAL	5.3		*	MS	5	0.45	0.14	0.36
7440-39-3	BARIUM, TOTAL	17.8			MS	5	0.18	0.03	0.091
7440-41-7	BERYLLIUM, TOTAL	0.35			MS	5	0.091	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.091	0.009	0.018
7440-70-2	CALCIUM, TOTAL	710		N	MS	5	9.1	3.47	7.2
7440-47-3	CHROMIUM, TOTAL	15.0			MS	5	0.45	0.05	0.36
7440-48-4	COBALT, TOTAL	7.4			MS	5	0.091	0.005	0.027
7440-50-8	COPPER, TOTAL	16.4		*	MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	18500		E	MS	5	9.1	2.18	5.4
7439-92-1	LEAD, TOTAL	51.2		*E	MS	5	0.091	0.005	0.045
7439-95-4	MAGNESIUM, TOTAL	3060		E	MS	5	9.1	1.24	7.2
7439-96-5	MANGANESE, TOTAL	188		*E	MS	5	0.18	0.04	0.091
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.027	0.004	0.014
7440-02-0	NICKEL, TOTAL	17.0			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	310			MS	5	91	4.14	36
7782-49-2	SELENIUM, TOTAL	0.28	J		MS	5	0.45	0.04	0.27
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.091	0.005	0.036
7440-23-5	SODIUM, TOTAL	30.6	J		MS	5	91	2.33	36
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.091	0.009	0.036
7440-62-2	VANADIUM, TOTAL	23.6		E	MS	5	0.45	0.10	0.36
7440-66-6	ZINC, TOTAL	45.6		E	MS	5	0.91	0.12	0.72

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1063-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.8 **Lab Sample ID:** SG8254-020

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14600		E	MS	5	26	0.44	3.4
7440-36-0	ANTIMONY, TOTAL	0.23		N*	MS	5	0.086	0.02	0.043
7440-38-2	ARSENIC, TOTAL	10.6		*	MS	5	0.43	0.13	0.34
7440-39-3	BARIUM, TOTAL	14.0			MS	5	0.17	0.03	0.086
7440-41-7	BERYLLIUM, TOTAL	0.62			MS	5	0.086	0.003	0.017
7440-43-9	CADMIUM, TOTAL	0.06	J		MS	5	0.086	0.009	0.017
7440-70-2	CALCIUM, TOTAL	550		N	MS	5	8.6	3.29	6.9
7440-47-3	CHROMIUM, TOTAL	20.4			MS	5	0.43	0.04	0.34
7440-48-4	COBALT, TOTAL	11.7			MS	5	0.086	0.004	0.026
7440-50-8	COPPER, TOTAL	39.9		*	MS	5	0.26	0.06	0.17
7439-89-6	IRON, TOTAL	30600		E	MS	5	8.6	2.07	5.2
7439-92-1	LEAD, TOTAL	17.2		*E	MS	5	0.086	0.004	0.043
7439-95-4	MAGNESIUM, TOTAL	4400		E	MS	5	8.6	1.17	6.9
7439-96-5	MANGANESE, TOTAL	266		*E	MS	5	0.17	0.03	0.086
7439-97-6	MERCURY, TOTAL	0.02	J	N*	CV	1	0.028	0.004	0.014
7440-02-0	NICKEL, TOTAL	25.0			MS	5	0.17	0.02	0.10
7440-09-7	POTASSIUM, TOTAL	296			MS	5	86	3.93	34
7782-49-2	SELENIUM, TOTAL	0.48			MS	5	0.43	0.03	0.26
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.086	0.004	0.034
7440-23-5	SODIUM, TOTAL	22.6	J		MS	5	86	2.21	34
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.086	0.009	0.034
7440-62-2	VANADIUM, TOTAL	22.0		E	MS	5	0.43	0.09	0.34
7440-66-6	ZINC, TOTAL	60.6		E	MS	5	0.86	0.11	0.69

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1064-000.6

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 97.2 **Lab Sample ID:** SG8254-019

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	14000		E	MS	5	28	0.47	3.7
7440-36-0	ANTIMONY, TOTAL	0.15		N*	MS	5	0.092	0.02	0.046
7440-38-2	ARSENIC, TOTAL	6.4		*	MS	5	0.46	0.14	0.37
7440-39-3	BARIUM, TOTAL	15.2			MS	5	0.18	0.03	0.092
7440-41-7	BERYLLIUM, TOTAL	0.46			MS	5	0.092	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.092	0.009	0.018
7440-70-2	CALCIUM, TOTAL	428		N	MS	5	9.2	3.51	7.4
7440-47-3	CHROMIUM, TOTAL	19.3			MS	5	0.46	0.05	0.37
7440-48-4	COBALT, TOTAL	13.3			MS	5	0.092	0.005	0.028
7440-50-8	COPPER, TOTAL	35.5		*	MS	5	0.28	0.06	0.18
7439-89-6	IRON, TOTAL	27200		E	MS	5	9.2	2.21	5.5
7439-92-1	LEAD, TOTAL	20.9		*E	MS	5	0.092	0.005	0.046
7439-95-4	MAGNESIUM, TOTAL	4150		E	MS	5	9.2	1.25	7.4
7439-96-5	MANGANESE, TOTAL	262		*E	MS	5	0.18	0.04	0.092
7439-97-6	MERCURY, TOTAL	0.03	J	N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	23.0			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	267			MS	5	92	4.19	37
7782-49-2	SELENIUM, TOTAL	0.26	J		MS	5	0.46	0.04	0.28
7440-22-4	SILVER, TOTAL	0.05	J		MS	5	0.092	0.005	0.037
7440-23-5	SODIUM, TOTAL	23.5	J		MS	5	92	2.36	37
7440-28-0	THALLIUM, TOTAL	0.05	J		MS	5	0.092	0.009	0.037
7440-62-2	VANADIUM, TOTAL	22.8		E	MS	5	0.46	0.10	0.37
7440-66-6	ZINC, TOTAL	50.4		E	MS	5	0.92	0.12	0.74

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1065-000.5

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.6 **Lab Sample ID:** SG8254-018

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	13600		E	MS	5	27	0.46	3.6
7440-36-0	ANTIMONY, TOTAL	0.19		N*	MS	5	0.090	0.02	0.045
7440-38-2	ARSENIC, TOTAL	6.6		*	MS	5	0.45	0.14	0.36
7440-39-3	BARIUM, TOTAL	18.1			MS	5	0.18	0.03	0.090
7440-41-7	BERYLLIUM, TOTAL	0.41			MS	5	0.090	0.004	0.018
7440-43-9	CADMIUM, TOTAL	0.07	J		MS	5	0.090	0.009	0.018
7440-70-2	CALCIUM, TOTAL	561		N	MS	5	9.0	3.44	7.2
7440-47-3	CHROMIUM, TOTAL	18.6			MS	5	0.45	0.05	0.36
7440-48-4	COBALT, TOTAL	12.7			MS	5	0.090	0.005	0.027
7440-50-8	COPPER, TOTAL	25.9		*	MS	5	0.27	0.06	0.18
7439-89-6	IRON, TOTAL	26300		E	MS	5	9.0	2.16	5.4
7439-92-1	LEAD, TOTAL	22.0		*E	MS	5	0.090	0.005	0.045
7439-95-4	MAGNESIUM, TOTAL	4300		E	MS	5	9.0	1.23	7.2
7439-96-5	MANGANESE, TOTAL	256		*E	MS	5	0.18	0.04	0.090
7439-97-6	MERCURY, TOTAL	0.03	J	N*	CV	1	0.032	0.005	0.016
7440-02-0	NICKEL, TOTAL	22.2			MS	5	0.18	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	371			MS	5	90	4.11	36
7782-49-2	SELENIUM, TOTAL	0.33	J		MS	5	0.45	0.04	0.27
7440-22-4	SILVER, TOTAL	0.06	J		MS	5	0.090	0.005	0.036
7440-23-5	SODIUM, TOTAL	27.1	J		MS	5	90	2.31	36
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.090	0.009	0.036
7440-62-2	VANADIUM, TOTAL	26.4		E	MS	5	0.45	0.10	0.36
7440-66-6	ZINC, TOTAL	52.1		E	MS	5	0.90	0.12	0.72

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1066-000.9

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 92.4 **Lab Sample ID:** SG8254-014

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9960		E	MS	5	21	0.36	2.8
7440-36-0	ANTIMONY, TOTAL	2.0		N*	MS	5	0.071	0.01	0.036
7440-38-2	ARSENIC, TOTAL	6.0		*	MS	5	0.36	0.11	0.28
7440-39-3	BARIUM, TOTAL	18.7			MS	5	0.14	0.02	0.071
7440-41-7	BERYLLIUM, TOTAL	0.37			MS	5	0.071	0.003	0.014
7440-43-9	CADMIUM, TOTAL	0.1			MS	5	0.071	0.007	0.014
7440-70-2	CALCIUM, TOTAL	656		N	MS	5	7.1	2.72	5.7
7440-47-3	CHROMIUM, TOTAL	13.5			MS	5	0.36	0.04	0.28
7440-48-4	COBALT, TOTAL	8.5			MS	5	0.071	0.004	0.021
7440-50-8	COPPER, TOTAL	14.5		*	MS	5	0.21	0.05	0.14
7439-89-6	IRON, TOTAL	17000		E	MS	5	7.1	1.71	4.3
7439-92-1	LEAD, TOTAL	60.0		*E	MS	5	0.071	0.004	0.036
7439-95-4	MAGNESIUM, TOTAL	2390		E	MS	5	7.1	0.97	5.7
7439-96-5	MANGANESE, TOTAL	189		*E	MS	5	0.14	0.03	0.071
7439-97-6	MERCURY, TOTAL	0.05		N*	CV	1	0.033	0.005	0.017
7440-02-0	NICKEL, TOTAL	14.4			MS	5	0.14	0.02	0.085
7440-09-7	POTASSIUM, TOTAL	328			MS	5	71	3.25	28
7782-49-2	SELENIUM, TOTAL	0.28	J		MS	5	0.36	0.03	0.21
7440-22-4	SILVER, TOTAL	0.04	J		MS	5	0.071	0.004	0.028
7440-23-5	SODIUM, TOTAL	27.4	J		MS	5	71	1.83	28
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.071	0.007	0.028
7440-62-2	VANADIUM, TOTAL	22.7		E	MS	5	0.36	0.08	0.28
7440-66-6	ZINC, TOTAL	43.5		E	MS	5	0.71	0.09	0.57

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1067-000.7

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 94.3 **Lab Sample ID:** SG8254-013

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	9460		E	MS	5	28	0.48	3.8
7440-36-0	ANTIMONY, TOTAL	0.45		N*	MS	5	0.094	0.02	0.047
7440-38-2	ARSENIC, TOTAL	5.0		*	MS	5	0.47	0.14	0.38
7440-39-3	BARIUM, TOTAL	20.2			MS	5	0.19	0.03	0.094
7440-41-7	BERYLLIUM, TOTAL	0.36			MS	5	0.094	0.004	0.019
7440-43-9	CADMIUM, TOTAL	0.08	J		MS	5	0.094	0.009	0.019
7440-70-2	CALCIUM, TOTAL	651		N	MS	5	9.4	3.59	7.5
7440-47-3	CHROMIUM, TOTAL	13.2			MS	5	0.47	0.05	0.38
7440-48-4	COBALT, TOTAL	7.6			MS	5	0.094	0.005	0.028
7440-50-8	COPPER, TOTAL	14.9		*	MS	5	0.28	0.07	0.19
7439-89-6	IRON, TOTAL	17000		E	MS	5	9.4	2.25	5.6
7439-92-1	LEAD, TOTAL	34.0		*E	MS	5	0.094	0.005	0.047
7439-95-4	MAGNESIUM, TOTAL	2590		E	MS	5	9.4	1.28	7.5
7439-96-5	MANGANESE, TOTAL	202		*E	MS	5	0.19	0.04	0.094
7439-97-6	MERCURY, TOTAL	0.03		N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	14.1			MS	5	0.19	0.02	0.11
7440-09-7	POTASSIUM, TOTAL	384			MS	5	94	4.28	38
7782-49-2	SELENIUM, TOTAL	0.29	J		MS	5	0.47	0.04	0.28
7440-22-4	SILVER, TOTAL	0.03	J		MS	5	0.094	0.005	0.038
7440-23-5	SODIUM, TOTAL	28.2	J		MS	5	94	2.41	38
7440-28-0	THALLIUM, TOTAL	0.06	J		MS	5	0.094	0.009	0.038
7440-62-2	VANADIUM, TOTAL	18.7		E	MS	5	0.47	0.10	0.38
7440-66-6	ZINC, TOTAL	41.9		E	MS	5	0.94	0.12	0.75

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1068-000.5

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 94.4 **Lab Sample ID:** SG8254-021

Concentration Units : mg/Kgdrywt

CAS No.	Analyte	Concentration	C	Q	M	DF	ADJUSTED LOQ	MDL	LOD
7429-90-5	ALUMINUM, TOTAL	15600		E	MS	5	17	0.28	2.2
7440-36-0	ANTIMONY, TOTAL	0.13		N*	MS	5	0.056	0.01	0.028
7440-38-2	ARSENIC, TOTAL	8.1		*	MS	5	0.28	0.08	0.22
7440-39-3	BARIUM, TOTAL	12.8			MS	5	0.11	0.02	0.056
7440-41-7	BERYLLIUM, TOTAL	0.47			MS	5	0.056	0.002	0.011
7440-43-9	CADMIUM, TOTAL	0.06			MS	5	0.056	0.006	0.011
7440-70-2	CALCIUM, TOTAL	696		N	MS	5	5.6	2.13	4.4
7440-47-3	CHROMIUM, TOTAL	19.3			MS	5	0.28	0.03	0.22
7440-48-4	COBALT, TOTAL	11.1			MS	5	0.056	0.003	0.017
7440-50-8	COPPER, TOTAL	31.1		*	MS	5	0.17	0.04	0.11
7439-89-6	IRON, TOTAL	29900		E	MS	10	11	2.68	6.7
7439-92-1	LEAD, TOTAL	24.7		*E	MS	5	0.056	0.003	0.028
7439-95-4	MAGNESIUM, TOTAL	4870		E	MS	5	5.6	0.76	4.4
7439-96-5	MANGANESE, TOTAL	265		*E	MS	5	0.11	0.02	0.056
7439-97-6	MERCURY, TOTAL	0.04		N*	CV	1	0.031	0.005	0.016
7440-02-0	NICKEL, TOTAL	22.5			MS	5	0.11	0.01	0.067
7440-09-7	POTASSIUM, TOTAL	312			MS	5	56	2.54	22
7782-49-2	SELENIUM, TOTAL	0.23	J		MS	5	0.28	0.02	0.17
7440-22-4	SILVER, TOTAL	0.08			MS	5	0.056	0.003	0.022
7440-23-5	SODIUM, TOTAL	24.5	J		MS	5	56	1.43	22
7440-28-0	THALLIUM, TOTAL	0.04	J		MS	5	0.056	0.006	0.022
7440-62-2	VANADIUM, TOTAL	25.5		E	MS	5	0.28	0.06	0.22
7440-66-6	ZINC, TOTAL	50.4		E	MS	5	0.56	0.07	0.44

Comments:

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet
INORG
Case: # 03019 GTO WE 38 SDG: SG9254

COMPLETE SDG FILE (CSF) AUDIT

Inorganic Parameters:_____

Missing Information	Date Lab Contacted	Date Received
	N/A	

Validator: Michelle Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-I
Case: _____ SDG: _____

I. PRESERVATION AND HOLDING TIMES

Circle sample numbers with exceeded technical holding times or omitted preservation.
Circle all exceeded technical holding times.

see DV Letter

Sample No.	Matrix	Pres. Code		Date Sampled	Metals		Hg		CN		Action
		Metals	CN		Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	Date Analyzed	# of Days from Samp. to Analysis	

Preservation Code:
1. Cool (≤ 6°C)
2. pH < 2 with HNO_3
3. pH > 12 with NaOH
4. Room Temperature
5. Freeze
6. Reducing agent (for oxidants)
7. Treated for sulfides
8. Other - _____

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Sampler: _____ Company: _____ Contacted: Y N Date: _____

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-II
Case: _____ SDG: _____

II. ICP-MS TUNE

List all Tunes that are outside method QC acceptance criteria. Use a separate sheet if more than one instrument was used for sample analysis.

Method:_____Instrument ID: _____

Method QC acceptance criteria for mass calibration:_____

Method QC acceptance criteria for resolution check/peak width:_____ at_____% peak height.

Method QC acceptance criteria for % RSD:_____

see DV letter

Analysis Date and Time	Analyte	Mass Calibration			Mass Resolution		% RSD of Absolute Signals	Analyte/Samples Affected	Action
		True Mass (amu)	Measured Mass (amu)	Absolute Difference of Masses (amu)	Peak Width (amu)	% Peak Height			

Comments:

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-III-C/D
Case: _____ SDG: _____

III. CALIBRATIONS

C. Initial and Continuing Calibration Verifications - List all ICV and CCV analyte recoveries that are outside the method QC acceptance criteria.

ICV method QC acceptance criteria: _____ CCV method QC acceptance criteria: _____

Per DV Letter

Date/Time	Instrument ID	Analyte	ICV/CCV #	% R	Samples Affected	Action

D. Quantitation Limit Check Standard - List all QL Check Standard analytes that are outside method QC acceptance criteria (for non-CLP methods).

QL Check Standard method QC acceptance criteria: _____

Date	Instr.	Analyte	QL Check Std. #	% R	Affected Range	Samples Affected	Action

Comments: _____

EPA-NE - Data Validation Worksheet

INORG-III-A/B

Case: _____ SDG: _____

III. CALIBRATIONS

A. Initial Calibration - List all calibration correlation coefficients that are outside the method QC acceptance criteria and/or the y-intercept of the calibration curve that is >CRQL.

Calibration correlation QC acceptance criteria: _____ Calibration Type: _____

see DV letter

Date/Time	Instrument ID	Analyte	Correlation Coefficient.	y-Intercept	CRQL	Samples Affected	Action

B. Initial Calibration Standard Concentration Verifications – Review CLP Form 16-IN and list all calculated %Ds that are >30 of the true value of any non-zero standard.

Date/time	Instrument ID	Analyte	True Conc.	Found Conc.	%D	Samples Affected	Action

Comments: _____

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-IV-C.2
Case: _____ SDG: _____

IV. BLANKS

C.2 Blank Actions - List the maximum concentrations of each analyte among all blanks associated with each sample. See DV letter

Analyte	Type of Blank	Date Blank Originated	Max. Conc. (units)	MDL or (-MDL) (units)	CRQL or (-CRQL) (units)	10xCRQL	Samples Affected	Action

Comments:

Refer to EPA New England Data Review Program Supplemental guidance for blank contamination actions (Section 2.6).

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet

INORG-IV-A/B

Case: _____ SDG: _____

IV. BLANKS - List the blank contamination and negative blank results below.

Sampler: _____ Company: _____ Contacted: Y N Date: _____

A. Laboratory: Preparation (Method) and Calibration (Instrument) Blanks see DV Letter

Date Prepared	Date Analyzed	Blank Type (ICB/CCB#/Prep Blank)	Matrix	Instrument	Analyte	Concentration	Units

B. Field: Equipment (Rinsate) and Bottle Blanks

Date Sampled	Date Analyzed	Sample No. (Blank Type)	Matrix	Instrument	Analyte	Concentration	Units

Were the proper number of blanks analyzed at the proper frequency? Y N

For ICP MS - Are internal standard responses in all blanks within method QC acceptance criteria? Y N

Comments: _____

_____

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-IV-C.1
Case: _____ SDG: _____
IV. BLANKS **C.1 Blank Contamination Worksheet**

Circle or list the highest concentration of each contaminant. see DV Letter

Analyte	Date Analyzed	ICB	CCB							PBW	PBS	EB	BB	Max. Conc.	CRQL
			1	2	3	4	5	6	7						
Aluminum															
Antimony															
Arsenic															
Barium															
Beryllium															
Cadmium															
Calcium															
Chromium															
Cobalt															
Copper															
Iron															
Lead															
Magnesium															
Manganese															
Mercury															
Nickel															
Potassium															
Selenium															
Silver															
Sodium															
Thallium															
Vanadium															
Zinc															
Cyanide															

Validator: M. Allen Date: 12/9/13

EPA NE - Data Validation Worksheet
INORG-V-A
Case: _____ SDG: _____

V. A. ICP-AES INTERFERENCE CHECK SAMPLE - ICSAB

N/A

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen

Date: 12/9/13

EPA NE - Data Validation Worksheet
INORG-V-B
Case: _____ SDG: _____

V. B. ICP-AES INTERFERENCE CHECK SAMPLE - ICSA

N/A

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± CRQL, whichever is greater.

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± CRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen Date: 12/9/13

EPA NE - Data Validation Worksheet
INORG-VI-A
Case: _____ SDG: _____

VI. A. ICP-MS INTERFERENCE CHECK SAMPLE - ICSAB

List all analytes in the ICSAB that are outside ICSAB recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

all DV letters

Date	Analyte	%R	ICSAB Found Conc.	ICSAB True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSAB (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen Date: 12/9/13

EPA NE - Data Validation Worksheet
INORG-VI-B
Case: _____ SDG: _____

VI. B. ICP-MS INTERFERENCE CHECK SAMPLE - ICSA

List all analytes in the ICSA that are outside ICSA recovery of 80-120% or outside true value (TV) ± 2xCRQL, whichever is greater.

all DV letter

Date	Analyte	%R	ICSA Found Conc.	ICSA True Value	Analyte CRQL	TV ± 2xCRQL	Conc. of Interferents Observed in ICSA (ug/L)				Associated Samples	Action
							Al	Ca	Fe	Mg		
Comments:												

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-VII
Case: _____ SDG: _____

VII. ICP-MS INTERNAL STANDARDS

List all internal standards that are outside method QC acceptance criteria. see DV letter

Method: _____ Method QC acceptance criteria: _____

Sample Number	Date and Time Analyzed	IS, amu	% RI	Analytes Affected (amu)	Action
Comments:					

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-VIII
Case: _____ SDG: _____

VIII. MATRIX SPIKES - List all matrix spike analytes that are outside method QC acceptance criteria.

Use a separate worksheet for each matrix spike sample.

Sample No.: _____ Matrix: _____ see QV letter

Method	Analyte	Spiked Sample Result	Sample Result	Amount of Spike Added	MS % Recovery	Method QC Limits % Recovery	Post-Digest Spike % Recovery	Action

Comments:

Refer to EPA New England Data Review Program Supplemental guidance for additional matrix spike actions (Section 2.12).

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-IX
Case: _____ SDG: _____

IX. LABORATORY DUPLICATE SAMPLES - List all analytes that are outside method QC acceptance criteria for the specific matrix.

Use a separate worksheet for each laboratory duplicate sample.

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Laboratory duplicate sample method QC acceptance criteria:_____ see DV Ltr

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the field duplicate sample data indicate acceptable field precision? Y N

Comments:_____

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-X
Case: _____ SDG: _____

X. FIELD DUPLICATES - List all field duplicate analytes that are outside criteria.

Use a separate worksheet for each field duplicate pair. See DV letter

Sample No.:_____ Duplicate Sample No.:_____ Matrix:_____

Method	Analyte	Sample Conc.	Sample		Duplicate Conc.	Duplicate		RPD or Abs. Diff.	QC Acceptance Criteria (RPD or Abs. Diff.)	Action
			SQL	5xSQL		SQL	5xSQL			

Do the laboratory duplicate sample data indicate acceptable laboratory precision? Y N
Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.9).

Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for contact and resolution obtained: _____

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-XI
Case: _____ SDG: _____

XI. ICP SERIAL DILUTIONS

Use a separate worksheet for each serial dilution sample.

Sample No.:_____ Matrix:_____ Method:_____

List all serial dilution analytes that are outside method QC acceptance criteria.

% Difference method QC acceptance criteria: _____
Minimum concentration required to apply the % D criteria (e.g., 50x MDL): _____ all DV Utter

Analyte	MDL	Min. Conc. Required	Sample Result	Serial Dilution Sample Result (corrected for dilution)	% D	Action

Comments:

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet

INORG-XII

Case: _____ SDG: _____

XII. LABORATORY CONTROL SAMPLES

List all analytes that are outside criteria.

SDG No.:_____ Case:_____

Are more than one-half of the LCS analytes within criteria for each parameter and method? **Y** **N**

see DV letter

Date Prepared	Date Analyzed	Parameter/ Method	Matrix	Analyte	% Recovery (or Observed Conc.)	Method QC Acceptance Criteria	Samples Affected	Action

Comments:

Validator: M. Allen

Date: 12/9/13

EPA-NE - Data Validation Worksheet
INORG-XIII
Case: _____ SDG: _____

XIII. PERFORMANCE EVALUATION SAMPLES

List all analytes that are outside criteria.

Indicate the source of the PES: Region 1 EPA PES Non-EPA PES

Are more than one-half of the PES analytes within criteria for each parameter and method? **Y** **N**

see DV letter

PE Sample Number	Ampule Number	Parameter/ Method	Type of PES	Matrix	Analyte	Conc.	PES Score*	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High, Action Low, Analyte Missed, Contaminant.
For Non-EPA PESs indicate the Non-EPA PES Score: PES Analyte Missed; PES Analyte Contaminant; PES Analyte Hit (% Recovery Limits).
Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Comments: _____

Validator: M. Allen Date: 12/9/13

EPA-NE - Data Validation Worksheet

INORG-XIV

Case: _____ SDG: _____

XIV. ANALYTE QUANTITATION, REPORTED QUANTITATION LIMITS AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per analytical method

Do all soil/sediment samples have % solids greater than 30%? **Y** **N**

- If no, were any steps employed to address the high moisture content? Ref DV letter
- Indicate the action and list the affected sample nos.: _____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Method		Calculation
ICP-AES		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
ICP-MS		
Sample No.:		
Reported Analyte:		
Reported Value:		
Non-Detected Analyte:		
Reported Quantitation Limit:		
Mercury		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		
Cyanide		
Sample No.:		
Reported Value:		
Sample No.:		
Reported Quantitation Limit:		

Validator: M. Allen Date: 12/9/13

APPENDIX D

SUPPORT DOCUMENTATION

Sample QC Report

Data File: C:\ICPCHEM\1\DATA\JGK13B.B\056SMPL.D\056SMPL.D#
Date Acquired: Nov 13 2013 09:50 pm
Acq. Method: K2008ESW.M
Operator: HHM
Sample Name: SG8254-023
Misc Info: DILUTION 1.6/8
Vial Number: 2309
Current Method: C:\ICPCHEM\1\METHODS\K2008ESW.M
Calibration File: C:\ICPCHEM\1\CALIB\K2008ESW.C
Last Cal. Update: Nov 13 2013 07:15 pm
Sample Type: Sample
Dilution Factor: 5.00
Autodil Factor: Undiluted
Final Dil Factor: 5.00

TF2-004 / S-55 - DUP @S -103
1.1 g / 1L
96.4% solid

QC Elements

Element	Corr Conc	Raw Conc	Units	RSD(%)	High Limit	Flag
9 Be	13.825	2.765	ppb	0.73	100.	
11 B	5.17	1.034	ppb	4.35	1000.	
23 Na	252.45	50.49	ppb	2.87	200000.	
25 Mg	44,615.	8,923.	ppb	0.78	200000.	
27 Al	142,950.	28,590.	ppb	0.52	200000.	
28 Si	2,237.	447.4	ppb	18.42	#VALUE!	
29 Si	2,439.	487.8	ppb	43.40	10000.	
39 K	2,841.5	568.3	ppb	0.68	200000.	
43 Ca	5,155.	1,031.	ppb	1.04	200000.	
44 Ca	4,474.	894.8	ppb	0.42	200000.	
51 V	249.85	49.97	ppb	0.78	1000.	
52 Cr	207.55	41.51	ppb	0.34	1000.	
53 Cr	230.6	46.12	ppb	1.42	1000.	
55 Mn	2,829.5	565.9	ppb	0.49	1000.	
56 Fe	356,150.	71,230.	ppb	1.10	200000.	
→ 57 Fe	343,900.	68,780.	ppb	0.51	100000.	
59 Co	133.6	26.72	ppb	0.51	1000.	
60 Ni	305.9	61.18	ppb	0.13	500.	
63 Cu	367.15	73.43	ppb	0.48	1000.	
65 Cu	368.85	73.77	ppb	0.22	500.	
66 Zn	701.5	140.3	ppb	0.26	500.	
68 Zn	692.5	138.5	ppb	0.06	1000.	
75 As	111.4	22.28	ppb	0.44	1000.	
82 Se	2.887	0.5774	ppb	28.59	500.	
88 Sr	53.75	10.75	ppb	1.40	1000.	
89 Y	----	--------	--- ---		#VALUE!	
98 Mo	11.395	2.279	ppb	0.68	1000.	
107 Ag	0.564	0.1128	ppb	5.68	250.	
109 Ag	0.559	0.1118	ppb	4.60	100.	
111 Cd	1.299	0.2598	ppb	19.60	500.	
114 Cd	0.7305	0.1461	ppb	7.60	500.	
115 In	----	--------	--- ---		#VALUE!	
118 Sn	29.535	5.907	ppb	0.72	500.	
120 Sn	29.535	5.907	ppb	1.69	1000.	
121 Sb	1.684	0.3368	ppb	4.06	1000.	
123 Sb	1.5625	0.3125	ppb	5.95	1000.	
135 Ba	147.85	29.57	ppb	2.93	1000.	
137 Ba	149.7	29.94	ppb	0.68	#VALUE!	
182 W	2.866	0.5732	ppb ---		#VALUE!	
203 Tl	0.3637	0.0727	ppb	12.39	1000.	
205 Tl	0.3915	0.0783	ppb	7.64	#VALUE!	
208 Pb	257.7	51.54	ppb	0.47	1000.	
232 Th	38.535	7.707	ppb	2.33	1000.	
238 U	8.665	1.733	ppb	1.60	1000.	

$$\frac{343{,}900\ mg}{1L} \times \frac{0.1L}{1.1g} \times \frac{1}{.964}$$

$$\times \frac{1000\ g}{1Kg} \times \frac{1mg}{1000\ ug}$$

$$= 32{,}431\ mg/Kg$$

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	4228297.50	1.10	4226691.00	100.0	69.5 - 130	
45 Sc	2547463.00	1.42	2469310.50	103.2	69.5 - 130	
72 Ge	521543.81	0.74	499739.97	104.4	69.5 - 130	
159 Tb	4546729.50	0.52	4352686.00	104.5	69.5 - 130	
209 Bi	2874521.50	0.74	2807461.50	102.4	69.5 - 130	

ISTD Ref File : C:\ICPCHEM\1\DATA\JGK13B.B\006CALB.D\006CALB.D#

0 :Element Failures 0 :Max. Number of Failures Allowed
0 :ISTD Failures 0 :Max. Number of ISTD Failures Allowed

Data Results:
Analytes: Pass
ISTD: Pass

Katahdin Analytical Services 4000223

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-003-SS1015-000.8	UNITS	TF2-003-SS-DUP06-101	RPD	D
M	ALUMINUM	9570	MG/KG	8700	9.52	870.00
M	ANTIMONY	0.28	MG/KG	0.24	15.38	0.04
M	ARSENIC	5.2	MG/KG	4.9	5.94	0.30
M	BARIUM	31	MG/KG	26	17.54	5.00
M	BERYLLIUM	0.42	MG/KG	0.36	15.38	0.06
M	CADMIUM	0.16	MG/KG	0.14	13.33	0.02
M	CALCIUM	754	MG/KG	832	9.84	78.00
M	CHROMIUM	12.1	MG/KG	10.6	13.22	1.50
M	COBALT	7.2	MG/KG	6.5	10.22	0.70
M	COPPER	15.2	MG/KG	15.6	2.60	0.40
M	IRON	15700	MG/KG	15000	4.56	700.00
M	LEAD	50.8	MG/KG	49.2	3.20	1.60
M	MAGNESIUM	2140	MG/KG	1980	7.77	160.00
M	MANGANESE	371	MG/KG	343	7.84	28.00
M	MERCURY	0.09 J	MG/KG	0.08	11.76	0.01
M	NICKEL	14.3	MG/KG	13	9.52	1.30
M	POTASSIUM	414	MG/KG	311	28.41	103.00
M	SELENIUM	0.28 J	MG/KG	0.28 J	0.00	0.00
M	SILVER	0.07 J	MG/KG	0.05 J	33.33	0.02
M	SODIUM	27.6 J	MG/KG	ND	200.00	27.60
M	THALLIUM	0.08	MG/KG	0.06 J	28.57	0.02
M	VANADIUM	19.2	MG/KG	17.6	8.70	1.60
M	ZINC	53.6	MG/KG	46.2	14.83	7.40

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-004/5-SS1061-000.6	UNITS	F2-004/5-SS-DUP04-101	RPD	D
M	ALUMINUM	9090 J	MG/KG	12300 J	30.01	3210.00
M	ANTIMONY LOG = 0.081	0.2 J	MG/KG	0.55 J	93.33	0.35
M	ARSENIC	3.8	MG/KG	5.6	38.30	1.80
M	BARIUM	12.8	MG/KG	16.3	24.05	3.50
M	BERYLLIUM	0.3	MG/KG	0.32	6.45	0.02
M	CADMIUM	0.07 J	MG/KG	0.1	35.29	0.03
M	CALCIUM	890 J	MG/KG	680 J	26.75	210.00
M	CHROMIUM	12.2	MG/KG	14.8	19.26	2.60
M	COBALT	7.3	MG/KG	9	20.86	1.70
M	COPPER	13.9	MG/KG	17.3	21.79	3.40
M	IRON	17100 J	MG/KG	22300 J	26.40	5200.00
M	LEAD	20.7 J	MG/KG	30 J	36.69	9.30
M	MAGNESIUM	2740 J	MG/KG	3720 J	30.34	980.00
M	MANGANESE	179 J	MG/KG	253 J	34.26	74.00
M	MERCURY	0.04 J	MG/KG	0.04 J	0.00	0.00
M	NICKEL	13.2	MG/KG	18.2	31.85	5.00
M	POTASSIUM	260	MG/KG	310	17.54	50.00
M	SILVER	0.03 J	MG/KG	0.04 J	28.57	0.01
M	SODIUM	19.1 J	MG/KG	ND	200.00	19.10
M	THALLIUM	0.04 J	MG/KG	0.04 J	0.00	0.00
M	VANADIUM	14.1 J	MG/KG	19.7 J	33.14	5.60
M	ZINC	36.7 J	MG/KG	49.3 J	29.30	12.60

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
SG8254

FRACTION	CHEMICAL	TF2-004/5-SS1065-000.5	UNITS	F2-004/5-SS-DUP05-101	RPD	D
M	ALUMINUM	13600 J	MG/KG	13500 J	0.74	100.00
M	ANTIMONY	0.19 J	MG/KG	0.15 J	23.53	0.04
M	ARSENIC	6.6	MG/KG	10.5	45.61	3.90
M	BARIUM	18.1	MG/KG	14.6	21.41	3.50
M	BERYLLIUM LOQ = 0.094	0.41	MG/KG	1.3	104.09	0.89
M	CADMIUM	0.07 J	MG/KG	0.07 J	0.00	0.00
M	CALCIUM	561 J	MG/KG	472 J	17.23	89.00
M	CHROMIUM	18.6	MG/KG	18.8	1.07	0.20
M	COBALT	12.7	MG/KG	12.2	4.02	0.50
M	COPPER	25.9	MG/KG	33.7	26.17	7.80
M	IRON	26300 J	MG/KG	32400 J	20.78	6100.00
M	LEAD	22 J	MG/KG	24.3 J	9.94	2.30
M	MAGNESIUM	4300 J	MG/KG	4210 J	2.12	90.00
M	MANGANESE	256 J	MG/KG	267 J	4.21	11.00
M	MERCURY	0.03 J	MG/KG	0.04 J	28.57	0.01
M	NICKEL	22.2	MG/KG	27.7	22.04	5.50
M	POTASSIUM	371	MG/KG	268	32.24	103.00
M	SILVER	0.06 J	MG/KG	0.05 J	18.18	0.01
M	SODIUM	27.1 J	MG/KG	ND	200.00	27.10
M	THALLIUM	0.04 J	MG/KG	0.04 J	0.00	0.00
M	VANADIUM	26.4 J	MG/KG	23.6 J	11.20	2.80
M	ZINC	52.1 J	MG/KG	64.9 J	21.88	12.80

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS
NAVSTA NEWPORT TANK FARM 2 CTO WE30
SG8254

Sample Receipt

The following sample was received on October 23, 2013 and was logged in under Katahdin Analytical Services work order number SG8254 for a hardcopy due date of November 11, 2013.

KATAHDIN Sample No.	TTNUS Sample Identification
SG8254-1	TF2-W-TB03-1013
SG8254-2	TF2-004/5-SS1057-0001
SG8254-3	TF2-004/5-SS1056-000.6
SG8254-4	TF2-004/5-SS1055-000.8
SG8254-5	TF2-004/5-SS1054-000.6
SG8254-6	TF2-004/5-SS1053-000.6
SG8254-7	TF2-004/5-SS1052-000.6
SG8254-8	TF2-004/5-SS1051-000.8
SG8254-9	TF2-004/5-SS1050-000.6
SG8254-10	TF2-004/5-SS1062-000.8
SG8254-11	TF2-004/5-SS-DUP04-1013
SG8254-12	TF2-004/5-SS1061-000.6
SG8254-13	TF2-004/5-SS1067-000.7
SG8254-14	TF2-004/5-SS1066-000.9
SG8254-15	TF2-004/5-SS1060-000.5
SG8254-16	TF2-004/5-SS1059-000.6
SG8254-17	TF2-004/5-SS1058-000.5
SG8254-18	TF2-004/5-SS1065-000.5
SG8254-19	TF2-004/5-SS1064-000.6
SG8254-20	TF2-004/5-SS1063-000.6
SG8254-21	TF2-004/5-SS1068-000.5
SG8254-22	TF2-004/5-SS1011-000.8
SG8254-23	TF2-004/5-SS-DUP05-1013
SG8254-24	TF2-003-SS1012-000.7
SG8254-25	TF2-003-SS1013-000.7
SG8254-26	TF2-003-SS1014-0001
SG8254-27	TF2-003-SS1015-000.8
SG8254-28	TF2-003-SS1016-000.9
SG8254-29	TF2-003-SS1017-000.8
SG8254-30	TF2-003-SS1018-000.8
SG8254-31	TF2-003-SS1019-000.5
SG8254-32	TF2-003-SS-DUP06-1013
SG8254-33	TF2-SS-RB03-1013

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Some of the client IDs on the Chain of Custody exceeds the 19-character limit of the Katahdin Analytical Information Management System. Therefore, the first characters "TF2-" in the client ID all samples with the exception of samples SG8254-1 and 33 were omitted on all forms.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Jennifer Obrin.** This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SG8254 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

8270D SIM Analysis

Sample SG8254-25DL had a low response for the internal standard perylene-d12 that resulted in a %D which was outside the DoD QSM acceptance limit of -50% to +100% of the response of the internal standard of the ICAL midpoint standard. Since the undiluted analysis had acceptable IS responses, the sample was not reanalyzed diluted.

All soil samples were manually integrated for the analytes 2-methylnaphthalene, acenaphthylene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene, and/or indeno(1,2,3-cd)pyrene. The specific reason for the manual integration is indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The target analytes benzo(a)anthracene, chrysene, and/or benzo(k)fluoranthene were detected below ½ the reporting limit in the method blanks WG133188-1RA and WG133367-1RA. According to the DoD QSM section D.1.1.1, a method blank is considered to be contaminated if the concentration of any target analyte in the blank exceeds ½ the reporting limit. Since the method blanks were acceptable, no further action was taken.

The independent check standard (file N0529) associated with the initial calibration on the N instrument on 10/30/2013 had low concentrations for the target analytes pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The independent check standard (file N0546) associated with the initial calibration on the N instrument on 10/31/2013 had a low concentration for the target analytes benzo(a)pyrene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The independent check standard (file N0704) associated with the initial calibration on the N instrument on 11/12/2013 had a high concentration for the target analyte 2-methylnaphthalene, which exceeded the DoD QSM acceptance limit of ±20% of the expected value from the ICAL.

The CV (file N0557) had high responses for the target analyte benzo(a)anthracene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene. The CV (file N0574) had high responses for the target analytes indeno(1,2,3-cd)pyrene and dibenzo(1,h)anthracene. The CV (file N0723) had a low response for the target analyte indeno(1,2,3-cd)pyrene. The CV (file N0740) had a high response for the target analyte indeno(1,2,3-cd)pyrene. These responses resulted in %D's that were greater than the acceptance limit of 20% from DoD QSM.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are statistically derived limits for the full list of spiked compounds and are statistically derived limits for the surrogates. Although DoD QSM acceptance limits were requested for this project, laboratory established acceptance limits were used because the DoD QSM does not list acceptance limits for 8270SIM. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these statistical acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

The LCS WG133188-2 had recoveries for three analytes that were low and outside of the laboratory established acceptance limits. The LCSD WG133188-3 had low recoveries for four analytes. The DoD QSM number of allowable exceedances for 17 analytes is one. If the DoD QSM acceptance limits are applied, the LCS had acceptable recoveries for the spiked analytes, after factoring in the allowable number of exceedances. Therefore, no further action was taken.

The LCSD WG133361-3 had low recoveries for four analytes that were outside of the laboratory established acceptance limits. The DoD QSM number of allowable exceedances for 17 analytes is one. Since the LCS was acceptable, after factoring in the allowable number of exceedances, no further action was taken.

The MS WG133188-4 and MSD WG133188--5 had one and seven spiked target analytes, respectively, with recoveries that were non-calculable and reported as 0% recovery due to the concentration in the native sample being higher than in the MS and MSD. This is likely due to a non-homogeneous sample.

8015M-FLPRO Analysis

All the samples in the work order were manually integrated for the extraction surrogates o-terphenyl and N-Triacontane-d62, and Petroleum Range Organics. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

Sample SG8254-3 had a low recovery for the extraction surrogate o-terphenyl that was outside the method acceptance limits. The sample was reextracted seven days outside of hold time. The results of both analyses are reported.

The LCS WG133426-2 had a low recovery for Petroleum Range Organics that was outside of method acceptance limits. Since the associated LCSD had acceptable recoveries, no further action was taken.

Note: The Form VII has a column for %D that is set to 25%. The DoD QSM criterion for a CV is 20%D. All of the compounds in the CV's were evaluated to 20% criteria.

8015B GRO Analysis

Sample SG8254-8 was manually integrated for Gasoline Range Organics. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The calibration verification standard (CV) (file 9GJ4060) had a low response for naphthalene, which resulted in a %D that was greater than 20%. Since the method requirement applies to only the GRO range response, which was acceptable, the associated samples were not reanalyzed.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SG8254 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Soil-matrix Katahdin Sample Nos. SG8254 -(2, 3, and 5) were digested for ICP-MS analysis on 11/06/13 (QC Batch GK06IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8254 -5 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentrations of manganese (0.133 mg/Kg), and calcium (7.59 mg/kg) in the preparation blank from this batch are more than one half the laboratory's LOQ. However, because the measured concentrations of calcium and manganese in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

Aqueous-matrix Katahdin Sample No. SG8254 -33 was digested for ICP-MS analysis on 11/06/13 (QC Batch GK06IMW2) in accordance with USEPA Method 3010A.

Soil-matrix Katahdin Sample Nos. SG8254 -(4, 6-23, and 28) were digested for ICP-MS analysis on 11/08/13 (QC Batch GK08IMS1) in accordance with USEPA Method 3050B. Katahdin Sample No. SG8254 -28 was prepared in duplicate and with a matrix spike in this digestion batch. The measured concentration of calcium (7.04 mg/kg) in the preparation blank from this batch is more than one half the laboratory's LOQ. However, because the measured concentrations of

calcium in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

Soil-matrix Katahdin Sample Nos. SG8254 -(24-27 and 29-32) were digested for ICP-MS analysis on 11/08/13 (QC Batch GK08IMS2) in accordance with USEPA Method 3050B. The measured concentration of iron (6.65 mg/kg) in the preparation blank from this batch is more than one half the laboratory's LOQ. However, because the measured concentrations of calcium in all associated samples are more than ten times those of the preparation blank, no corrective action was required.

ICP-MS analyses of Work Order SG8254 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

Internal Standard Element	**Associated Analytes**
Lithium	Beryllium
Scandium	Sodium, Magnesium, Aluminum, Potassium, Calcium
Germanium	Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Silver, Cadmium
Terbium	Antimony, Barium
Bismuth	Lead, Thallium

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Solid-matrix Katahdin Sample Numbers SG8254 -(2-9) were digested for mercury analysis on 11/07/13 (QC Batch GK07HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Number SG8254 -5 was prepared in duplicate and with a matrix spike in this digestion batch.

Solid-matrix Katahdin Sample Numbers SG8254 -(10-29) were digested for mercury analysis on 11/08/13 (QC Batch GK08HGS1) in accordance with USEPA Method 7471B. Katahdin Sample Number SG8254 -28 was prepared in duplicate and with a matrix spike in this digestion batch.

Aqueous-matrix Katahdin Sample Number SG8254 -33 was digested for mercury analysis on 11/09/13 (QC Batch GK09HGW1) in accordance with USEPA Method 7471B.

Solid-matrix Katahdin Sample Numbers SG8254 -(30-32) were digested for mercury analysis on 11/12/13 (QC Batch GK12HGS1) in accordance with USEPA Method 7471B. Duplicate laboratory control samples were prepared in this batch.

Mercury analysis of the Katahdin Work Order SG8254 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Methods 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Matrix QC Summary

The laboratory duplicate analysis of Katahdin Sample No. SG8254 -5 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for arsenic, copper, and lead.

The laboratory duplicate analysis of Katahdin Sample No. SG8254 -28 is outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots, if the native concentration is more than 3 times the laboratory's reporting limit) for antimony, manganese, and mercury.

The measured recoveries of antimony and calcium in the matrix-spiked aliquot of Katahdin Sample No. SG8254 -5 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The measured recoveries of antimony, calcium, and mercury in the matrix-spiked aliquot of Katahdin Sample No. SG8254 -28 are outside the laboratory's acceptance criteria (80% - 120% recovery of the added element, if the native concentration is less than four times the amount added).

The serial dilution analysis of Katahdin Sample Number SG8254 -5 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for aluminum, iron, magnesium, manganese, and zinc.

The serial dilution analysis of Katahdin Sample Number SG8254 -28 is outside the laboratory's acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOQ) for aluminum, iron, lead, magnesium, vanadium, and zinc.

The measured recoveries of aluminum, barium, iron, magnesium, and manganese in the post-digestion spiked aliquot of Katahdin Sample Number SG8254 -5 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

The measured recoveries of barium, cobalt, copper, iron, manganese, nickel, and zinc in the post-digestion spiked aliquot of Katahdin Sample Number SG8254 -35 are outside the laboratory's acceptance limit of 75% - 125%. However, in each case the native sample concentration of the element is more than four times the amount of spiked added, so these matrix spike failures are not deemed to indicate the presence of a matrix interference.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the laboratory's limits of quantitation (LOQ) are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQ's, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SG8254 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times. All quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.

Leslie Dimond
11.22.13

Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

M1	Peak splitting.
M2	Well defined peaks on the shoulders of the other peaks.
M3	There is additional area due to a coeluting interferant.
M4	There are negative spikes in the baseline.
M5	There are rising or falling baselines.
M6	The software has failed to detect a peak or misidentified a peak.
M7	Excessive peak tailing.
M8	Analysis such as GRO, DRO and TPH require a baseline hold.
M9	Peak was not completely integrated as in GC/MS.
M10	Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS.
M11	For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated.
M12	Manual integration saved in method due to TurboChrom floating point error.

000040

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GW	Delivered By: KAS
KAS Work Order#: SG8254	KIMS Review By: JO	Received By: GW
SDG #:	Cooler: 1 of 3	Date/Time Rec.: 10-23-13/15:00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.7
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?				✓	
Soil/Sediment: Received in airtight container?	✓				
Received in methanol?	✓				
Methanol covering soil?	✓				
D.I. Water - Received within 48 hour HT?	✓				
7. Trip Blank present in cooler?	✓				
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2	✓				
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

DUP05 & DUP06 - EXTPH and GRO not needed per client. JO 10/24/13

0000011

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SG8254	KIMS Review By:	Received By: GN
SDG #:	Cooler: 2 of 3	Date/Time Rec.: 10-23-13/15:00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 3.6
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles: **Aqueous:** No bubble larger than a pea?				✓	
Soil/Sediment: Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

0000012

Katahdin Analytical Services, Inc. — Sample Receipt Condition Report

Client: Tetra Tech	KAS PM: JO	Sampled By: Client
Project:	KIMS Entry By: GN	Delivered By: KAS
KAS Work Order#: SG8254/SG8262	KIMS Review By: JO	Received By: GN
SDG #:	Cooler: 3 of 3	Date/Time Rec.: 10-23-13/15:00

Receipt Criteria	Y	N	EX*	NA	Comments and/or Resolution
1. Custody seals present / intact?	✓				
2. Chain of Custody present in cooler?	✓				
3. Chain of Custody signed by client?	✓				
4. Chain of Custody matches samples?	✓				
5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun.	✓				Temp (°C): 5.4
Samples received at <6 °C w/o freezing?	✓				Note: Not required for metals analysis.
Ice packs or ice present?	✓				The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data.
If yes, was there sufficient ice to meet temperature requirements?	✓				
If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool?				✓	Note: No cooling process required for metals analysis.
6. Volatiles:					
Aqueous: No bubble larger than a pea?				✓	
Soil/Sediment:					
Received in airtight container?				✓	
Received in methanol?				✓	
Methanol covering soil?				✓	
D.I. Water - Received within 48 hour HT?				✓	
7. Trip Blank present in cooler?				✓	
8. Proper sample containers and volume?	✓				
9. Samples within hold time upon receipt?	✓				
10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2				✓	
Sulfide - >9				✓	
Cyanide – pH >12				✓	

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments

0000013

Jennifer Obrin

From: Seiken, Dabra [Dabra.Seiken@tetratech.com]
Sent: Friday, November 08, 2013 10:02 AM
To: Jennifer Obrin; Jalkut, Kayleen
Cc: Carper, Kelly; Samchuck, Joseph
Subject: RE: Newport non-conformance

Please re-prepare and re-analyze the samples.

Dabra I. Seiken, CG, PG

From: Jennifer Obrin [mailto:jobrin@katahdinlab.com]
Sent: Thursday, November 07, 2013 4:04 PM
To: Seiken, Dabra; Jalkut, Kayleen
Subject: Newport non-conformance

The GC lab has come to me with a non-conformance regarding the FI-PRO analysis for 4 samples from the Newport project.

SG8254-3 (TF2-004/5-SS1056-000.6) had low surrogate OTP recovery at 60%, the window is 62-109
SG8184-17 (TF2-004/5-SS1039-000.9) had low surrogate OTP recovery at 49%, the window is 62-109
SG8184-18 (TF2-SS-RB01-1013) had low surrogate OTP recovery at 80%, the window is 82-142
SG8184-27 (TF2-004/5-SS1049-000.9) had low surrogate OTP recovery at 15%, the window is 62-109

Please let me know how you would like to have the lab proceed. Hold times were 11/1 and 11/4.

Thank you,

Jennifer Obrin
Federal Programs Project Manager
Katahdin Analytical Services
A Woman-Owned Small Business Enterprise
DoD ELAP Accredited
600 Technology Way
Scarborough, Maine 04074
Direct - 207.874.2400 x17
Cell - 207.333.7469
Fax - 207.775.4029

00004

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26581 | PAGE 1 OF 3

PROJECT NO: 112G03019 CTO WE30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445
LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J. Obrin			
SAMPLERS (SIGNATURE): K Jalkut, Peter Seward	FIELD OPERATIONS LEADER: Kayleen Jalkut	PHONE NUMBER: 781 801 0457	ADDRESS: 600 Technology Way
CARRIER/WAYBILL NUMBER: Courier p/u - hand delivery			CITY, STATE: Scarborough, ME

STANDARD TAT [X]
RUSH TAT [ ] 24 hr. [ ] 48 hr. [ ] 72 hr. [ ] 7 day [ ] 14 day

SG-8254

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)								COMMENTS
									G	G	G	G					
									PRESERVATIVE USED		MeOH ≤6°C	MeOH ≤6°C					
									TYPE OF ANALYSIS: 40ml vials w/MeOH only - GRO	8oz jar - PAHs, metals, total solids	40ml vials w/soil+MeOH (lab) GRO	4oz jar - Ex TPH + Total solids					
10/21	0900	TF2-W-TB03-1013	—	—	—	QC	G	2	2	—	—	—					
10/21	1345	TF2-004/5-SS1057-0001	SS1057	0	1	SO	G	1	—	1	—	—					
10/21	1355	TF2-004/5-SS1056-000.6	SS1056	0	0.6	SO	G	4	—	1	2	1					
10/21	1400	TF2-004/5-SS1055-000.8	SS1055	0	0.8	SO	G	1	—	1	—	—					
10/21	1405	TF2-004/5-SS1054-000.6	SS1054	0	0.6	SO	G	2	—	2	—	—					Lab QC volume #2
10/21	1415	TF2-004/5-SS1053-000.6	SS1053	0	0.6	SO	G	1	—	1	—	—					
10/21	1425	TF2-004/5-SS1052-000.6	SS1052	0	0.6	SO	G	1	—	1	—	—					
10/21	1430	TF2-004/5-SS1051-000.8	SS1051	0	0.8	SO	G	4	—	1	2	1					
10/21	1440	TF2-004/5-SS1050-000.6	SS1050	0	0.6	SO	G	1	—	1	—	—					
10/21	1450	TF2-004/5-SS1062-000.8	SS1062	0	0.8	SO	G	1	—	1	—	—					
10/21	0000	TF2-004/5-SS-DUP04-1013	—	—	—	SO	G	1	—	1	—	—					
10/21	1455	TF2-004/5-SS1061-000.6	SS1061	0	0.6	SO	G	1	—	1	—	—					
10/21	1505	TF2-004/5-SS1067-000.7	SS1067	0	0.7	SO	G	1	—	1	—	—					

FF 10/23/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: K Jalkut	10/23/13	1335	1. RECEIVED BY: Andrew Hale	10/23/13	1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS

S100000

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4/02R
FORM NO. TINUS-001

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 26582 | PAGE 2 OF 3

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G03019 CTO WE30	Wilmington, MA	Debra Seiken	978 474 8445	Katahdin Analytical Services / J Obrin
SAMPLERS (SIGNATURE)		**FIELD OPERATIONS LEADER**	**PHONE NUMBER**	**ADDRESS**
KJalkut Peter Seward		Kayleen Jalkut	781 801 0457	600 Technology Way
		CARRIER/WAYBILL NUMBER		**CITY, STATE**
		Courier plu - hand delivery		Scarborough, ME

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

SG8254

DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)									COMMENTS
									G	G	G							
									PRESERVATIVE USED			≤6°C	≤6°C	MeOH ≤6°C				
									TYPE OF ANALYSIS	8oz jar - PAHs, total solids, Metals	4oz jar - ExTPH, total solids	40 ml vials w/ MeOH, soil - ERO						
10/21	1515	TF2-004/5-SS1066-000.9	SS1066	0	0.9	SO	G	1	1	—	—							
10/22	0815	TF2-004/5-SS1060-000.5	SS1060	0	0.5	SO	G	1	1	—	—							
10/22	0825	TF2-004/5-SS1059-000.6	SS1059	0	0.6	SO	G	1	1	—	—							
10/22	0835	TF2-004/5-SS1058-000.5	SS1058	0	0.5	SO	G	1	1	—	—							
10/22	0845	TF2-004/5-SS1065-000.5	SS1065	0	0.5	SO	G	4	1	1	2							
10/22	0855	TF2-004/5-SS1064-000.6	SS1064	0	0.6	SO	G	2	2	—	—							Lab QC volume #3
10/22	0905	TF2-004/5-SS1063-000.6	SS1063	0	0.6	SO	G	1	1	—	—							
10/22	0915	TF2-004/5-SS1068-000.5	SS1068	0	0.5	SO	G	1	1	—	—							
10/22	0940	TF2-003-SS1011-000.8	SS1011	0	0.8	SO	G	1	1	—	—							
10/22	0000	TF2-004/5-SS-DUP05-1013	—	—	—	SO	G	4	1	1	2							
10/22	0950	TF2-003-SS1012-000.7	SS1012	0	0.7	SO	G	1	1	—	—							
10/22	0955	TF2-003-SS1013-000.7	SS1013	0	0.7	SO	G	1	1	—	—							
10/22	1005	TF2-003-SS1014-0001	SS1014	0	1	SO	G	1	1	—	—							

KJ 10/23/13

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY: KJalkut	10/23/13	1335	1. RECEIVED BY	10/23/13	1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME
COMMENTS					

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4/02R
FORM NO. TtNUS-001

0000016

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER No. 027646 | PAGE 3 OF 3

PROJECT NO: 112603019 CO WE 30	FACILITY: Wilmington, MA	PROJECT MANAGER: Debra Seiken	PHONE NUMBER: 978 474 8445
SAMPLERS (SIGNATURE): K Falkut, Peter Seward		FIELD OPERATIONS LEADER: Kayleen Falkut	PHONE NUMBER: 781-801-0457
		CARRIER/WAYBILL NUMBER: Carner plus - hand delivery	
LABORATORY NAME AND CONTACT: Katahdin Analytical Services / J Obrin			
ADDRESS: 600 Technology Way			
CITY, STATE: Scarborough, ME			

STANDARD TAT [X]
RUSH TAT [ ] 24 hr. [ ] 48 hr. [ ] 72 hr. [ ] 7 day [ ] 14 day

SG82254

	DATE YEAR 2013	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)										COMMENTS
										PRESERVATIVE USED			≤6°C	≤6°C	MeOH ≤6°C	≤6°C	HNO3 ≤6°C			
										TYPE OF ANALYSIS	8021 jar - PAHs, total solids, metals	4oz jar - EXTPH, total solids	40 ml VOA w/ soil + MeOH (lead) GRO	1 L amber - PAHs	250 ml HDPE w/ HNO3 - metals					
	10/22	1015	TF2-003-SS1015-000.8	SS1015	0	0.8	SO	G	4		1	1	2	—	—					
*	10/22	1025	TF2-003-SS1016-000.9	SS1016	0	0.9	SO	G	1		1	—	—	—	—					Lab QC vol. #4?
	10/22	1055	TF2-003-SS1017-000.8	SS1017	0	0.8	SO	G	1		1	—	—	—	—					
	10/22	1105	TF2-003-SS1018-000.8	SS1018	0	0.8	SO	G	1		1	—	—	—	—					
	10/22	1115	TF2-003-SS1019-000.5	SS1019	0	0.5	SO	G	1		1	—	—	—	—					
	10/22	0000	TF2-003-SS-DUP06-1013	—	—	—	SO	G	4		1	1	2	—	—					
	10/22	1200	TF2-SS-RB03-1013	—	—	—	QC	G	3		—	—	—	2	1					

KF 10/23/13

1. RELINQUISHED BY: K Falkut	DATE: 10/23/13	TIME: 1335	1. RECEIVED BY:	DATE: 10/23/13	TIME: 1335
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: * Please try to perform lab QC analysis on TF2-003-SS1016-000.9 (forgot to collect 2x8oz jars) for PAH, metals analyses

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4/02R
FORM NO. TtNUS-001

000067

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS
(Refer to BOD Qualifiers Page for BOD footnotes)

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1	pH
H2	DO
H3	sulfite
H4	residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/30/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
MERCURY	0.20	0.03	CV

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 6/11/2013

Concentration Units: ug/L

Analyte	CRDL	IDL	M
ALUMINUM	60	0.34	MS
ANTIMONY	0.20	0.006	MS
ARSENIC	1.0	0.41	MS
BARIUM	0.40	0.02	MS
BERYLLIUM	0.20	0.003	MS
CADMIUM	0.20	0.004	MS
CALCIUM	20	4.10	MS
CHROMIUM	1.0	0.03	MS
COBALT	0.20	0.006	MS
COPPER	0.60	0.03	MS
IRON	20	4.70	MS
LEAD	0.20	0.009	MS
MAGNESIUM	20	0.69	MS
MANGANESE	0.40	0.02	MS
MOLYBDENUM	1.0	0.12	MS
NICKEL	0.40	0.02	MS
POTASSIUM	200	8.20	MS
SELENIUM	1.0	0.64	MS
SILVER	0.20	0.004	MS
SODIUM	200	3.90	MS
THALLIUM	0.20	0.003	MS
VANADIUM	1.0	0.15	MS
ZINC	2.0	0.13	MS

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/7/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.02	mg/Kg	CV	SW846 7471B / SW846 7471B

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
MERCURY	0.10	ug/L	CV	SW846 7470A / SW846 7470A

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	8.00	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.80	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.20	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	16.00	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.06	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.40	ug/L	MS	SW846 3010A / SW846 6020A
IRON	12.00	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.10	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	16.00	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.20	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.24	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	80.00	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.60	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.08	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	80.00	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.08	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.80	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	1.60	ug/L	MS	SW846 3010A / SW846 6020A

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	LOD	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.80	mg/Kg	MS	SW846 3050B / SW846 6020A
ANTIMONY	0.01	mg/Kg	MS	SW846 3050B / SW846 6020A
ARSENIC	0.08	mg/Kg	MS	SW846 3050B / SW846 6020A
BARIUM	0.02	mg/Kg	MS	SW846 3050B / SW846 6020A
BERYLLIUM	0.004	mg/Kg	MS	SW846 3050B / SW846 6020A
CADMIUM	0.004	mg/Kg	MS	SW846 3050B / SW846 6020A
CALCIUM	1.60	mg/Kg	MS	SW846 3050B / SW846 6020A
CHROMIUM	0.08	mg/Kg	MS	SW846 3050B / SW846 6020A
COBALT	0.006	mg/Kg	MS	SW846 3050B / SW846 6020A
COPPER	0.04	mg/Kg	MS	SW846 3050B / SW846 6020A
IRON	1.20	mg/Kg	MS	SW846 3050B / SW846 6020A
LEAD	0.01	mg/Kg	MS	SW846 3050B / SW846 6020A
MAGNESIUM	1.60	mg/Kg	MS	SW846 3050B / SW846 6020A
MANGANESE	0.02	mg/Kg	MS	SW846 3050B / SW846 6020A
NICKEL	0.02	mg/Kg	MS	SW846 3050B / SW846 6020A
POTASSIUM	8.00	mg/Kg	MS	SW846 3050B / SW846 6020A
SELENIUM	0.06	mg/Kg	MS	SW846 3050B / SW846 6020A
SILVER	0.008	mg/Kg	MS	SW846 3050B / SW846 6020A
SODIUM	8.00	mg/Kg	MS	SW846 3050B / SW846 6020A
THALLIUM	0.008	mg/Kg	MS	SW846 3050B / SW846 6020A
VANADIUM	0.08	mg/Kg	MS	SW846 3050B / SW846 6020A
ZINC	0.16	mg/Kg	MS	SW846 3050B / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 1/7/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.005	mg/Kg	CV	SW846 7471B / SW846 7471B

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** H

Instrument Name: CETAC M6100 **Date:** 2/9/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
MERCURY	0.01	ug/L	CV	SW846 7470A / SW846 7470A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/25/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.88	ug/L	MS	SW846 3010A / SW846 6020A
ANTIMONY	0.01	ug/L	MS	SW846 3010A / SW846 6020A
ARSENIC	0.45	ug/L	MS	SW846 3010A / SW846 6020A
BARIUM	0.05	ug/L	MS	SW846 3010A / SW846 6020A
BERYLLIUM	0.007	ug/L	MS	SW846 3010A / SW846 6020A
CADMIUM	0.006	ug/L	MS	SW846 3010A / SW846 6020A
CALCIUM	4.09	ug/L	MS	SW846 3010A / SW846 6020A
CHROMIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020A
COBALT	0.01	ug/L	MS	SW846 3010A / SW846 6020A
COPPER	0.04	ug/L	MS	SW846 3010A / SW846 6020A
IRON	2.55	ug/L	MS	SW846 3010A / SW846 6020A
LEAD	0.01	ug/L	MS	SW846 3010A / SW846 6020A
MAGNESIUM	1.56	ug/L	MS	SW846 3010A / SW846 6020A
MANGANESE	0.07	ug/L	MS	SW846 3010A / SW846 6020A
NICKEL	0.03	ug/L	MS	SW846 3010A / SW846 6020A
POTASSIUM	6.14	ug/L	MS	SW846 3010A / SW846 6020A
SELENIUM	0.04	ug/L	MS	SW846 3010A / SW846 6020A
SILVER	0.01	ug/L	MS	SW846 3010A / SW846 6020A
SODIUM	3.70	ug/L	MS	SW846 3010A / SW846 6020A
THALLIUM	0.01	ug/L	MS	SW846 3010A / SW846 6020A
VANADIUM	0.10	ug/L	MS	SW846 3010A / SW846 6020A
ZINC	0.78	ug/L	MS	SW846 3010A / SW846 6020A

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 1/26/2011

Analyte	MDL	Units	M	EPA Prep./Anal. Method
ALUMINUM	0.10	mg/Kg	MS	SW846 3050B / SW846 6020A
ANTIMONY	0.004	mg/Kg	MS	SW846 3050B / SW846 6020A
ARSENIC	0.03	mg/Kg	MS	SW846 3050B / SW846 6020A
BARIUM	0.007	mg/Kg	MS	SW846 3050B / SW846 6020A
BERYLLIUM	0.0008	mg/Kg	MS	SW846 3050B / SW846 6020A
CADMIUM	0.002	mg/Kg	MS	SW846 3050B / SW846 6020A
CALCIUM	0.77	mg/Kg	MS	SW846 3050B / SW846 6020A
CHROMIUM	0.010	mg/Kg	MS	SW846 3050B / SW846 6020A
COBALT	0.001	mg/Kg	MS	SW846 3050B / SW846 6020A
COPPER	0.01	mg/Kg	MS	SW846 3050B / SW846 6020A
IRON	0.48	mg/Kg	MS	SW846 3050B / SW846 6020A
LEAD	0.001	mg/Kg	MS	SW846 3050B / SW846 6020A
MAGNESIUM	0.27	mg/Kg	MS	SW846 3050B / SW846 6020A
MANGANESE	0.008	mg/Kg	MS	SW846 3050B / SW846 6020A
NICKEL	0.005	mg/Kg	MS	SW846 3050B / SW846 6020A
POTASSIUM	0.91	mg/Kg	MS	SW846 3050B / SW846 6020A
SELENIUM	0.008	mg/Kg	MS	SW846 3050B / SW846 6020A
SILVER	0.001	mg/Kg	MS	SW846 3050B / SW846 6020A
SODIUM	0.51	mg/Kg	MS	SW846 3050B / SW846 6020A
THALLIUM	0.002	mg/Kg	MS	SW846 3050B / SW846 6020A
VANADIUM	0.02	mg/Kg	MS	SW846 3050B / SW846 6020A
ZINC	0.03	mg/Kg	MS	SW846 3050B / SW846 6020A

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services **Instrument Code:** J

Instrument Name: AGILENT 7500 ICP-MS **Date:** 6/7/2013

Concentration Units: ug/L

Analyte	Integration Time (sec)	Linear Range	M
ALUMINUM	0.01	200000	MS
ANTIMONY	0.10	1000	MS
ARSENIC	0.30	1000	MS
BARIUM	0.10	1000	MS
BERYLLIUM	0.30	100	MS
CADMIUM	0.10	500	MS
CALCIUM	0.03	200000	MS
CHROMIUM	0.10	1000	MS
COBALT	0.10	1000	MS
COPPER	0.10	500	MS
IRON	0.03	100000	MS
LEAD	0.10	1000	MS
MAGNESIUM	0.05	200000	MS
MANGANESE	0.10	1000	MS
MOLYBDENUM	0.10	1000	MS
NICKEL	0.10	500	MS
POTASSIUM	0.01	200000	MS
SELENIUM	0.30	500	MS
SILVER	0.10	250	MS
SODIUM	0.01	200000	MS
THALLIUM	0.10	1000	MS
VANADIUM	0.10	1000	MS
ZINC	0.10	500	MS

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK06IMS1

Matrix: SOIL **SDG Name:** SG8254

Method: MS **Prep Date:** 11/06/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK06IMS1	LCSOGK06IMS1	1	0.1	
PBSGK06IMS1	PBSGK06IMS1	1	0.1	
004/5-SS1057-0001	SG8254-002	1.04	0.1	A
004/5-SS1056-000.6	SG8254-003	1.24	0.1	B
004/5-SS1054-000.6	SG8254-005	1.09	0.1	B
004/5-SS1054-000.6D	SG8254-005D	1.03	0.1	B
004/5-SS1054-000.6S	SG8254-005S	1.02	0.1	B

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK06IMS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK06IMS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C	
ALUMINUM	1.615	J	NA
ANTIMONY	0.050	U	
ARSENIC	0.40	U	
BARIUM	0.085	J	NA
BERYLLIUM	0.020	U	
CADMIUM	0.020	U	
CALCIUM	7.590	J	NA
CHROMIUM	0.094	J	NA
COBALT	0.030	U	
COPPER	0.20	U	
IRON	6.0	U	
LEAD	0.011	J	
MAGNESIUM	1.971	J	NA
MANGANESE	0.133	J	NA
NICKEL	0.032	J	NA
POTASSIUM	8.900	J	
SELENIUM	0.30	U	
SILVER	0.040	U	
SODIUM	8.195 ✓	J	
THALLIUM	0.040	U	
VANADIUM	0.191	J	NA
ZINC	0.143	J	NA

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK06IMS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK06IMS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	210.85	105.4	80	120
ANTIMONY	10.00	10.01	100.1	80	120
ARSENIC	10.00	11.32	113.2	80	120
BARIUM	200.00	202.40	101.2	80	120
BERYLLIUM	5.00	5.03	100.6	80	120
CADMIUM	25.00	26.65	106.6	80	120
CALCIUM	250.00	228.90	91.6	80	120
CHROMIUM	20.00	20.25	101.3	80	120
COBALT	50.00	52.75	105.5	80	120
COPPER	25.00	25.65	102.6	80	120
IRON	100.00	105.45	105.5	80	120
LEAD	10.00	11.19	111.9	80	120
MAGNESIUM	500.00	527.00	105.4	80	120
MANGANESE	50.00	53.05	106.1	80	120
NICKEL	50.00	51.45	102.9	80	120
POTASSIUM	1000.00	1011.50	101.2	80	120
SELENIUM	10.00	9.57	95.7	80	120
SILVER	5.00	5.08	101.6	80	120
SODIUM	750.00	746.00	99.5	80	120
THALLIUM	10.00	10.20	102.0	80	120
VANADIUM	50.00	56.45	112.9	80	120
ZINC	50.00	50.10	100.2	80	120

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1054-000.6S

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.9 **Lab Sample ID:** SG8254-005S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	14101.5592		12528.5831		202.32	777.5		80	120	MS
ANTIMONY, TOTAL	4.3129		0.1105		10.12	41.5	N	80	120	MS
ARSENIC, TOTAL	16.4737		6.9009		10.12	94.6		80	120	MS
BARIUM, TOTAL	219.2620		15.7566		202.32	100.6		80	120	MS
BERYLLIUM, TOTAL	5.5030		0.3907		5.06	101.0		80	120	MS
CADMIUM, TOTAL	23.0339		0.0793	J	25.29	90.8		80	120	MS
CALCIUM, TOTAL	1113.2544		717.5418		252.9	156.5	N	80	120	MS
CHROMIUM, TOTAL	37.8436		17.1481		20.23	102.3		80	120	MS
COBALT, TOTAL	61.5552		11.9417		50.58	98.1		80	120	MS
COPPER, TOTAL	42.5222		19.7608		25.29	90.0		80	120	MS
IRON, TOTAL	23524.5164		23126.0510		101.16	393.9		80	120	MS
LEAD, TOTAL	26.5441		18.0237		10.12	84.2		80	120	MS
MAGNESIUM, TOTAL	4159.1507		3639.7735		505.79	102.7		80	120	MS
MANGANESE, TOTAL	302.2630		297.5243		50.58	9.4		80	120	MS
MERCURY, TOTAL	0.1918		0.0384		0.16	95.9		80	120	CV
NICKEL, TOTAL	68.8893		20.2672		50.58	96.1		80	120	MS
POTASSIUM, TOTAL	1378.7966		363.0780		1011.59	100.4		80	120	MS
SELENIUM, TOTAL	9.2712		0.3919	J	10.12	87.7		80	120	MS
SILVER, TOTAL	4.7732		0.0328	J	5.06	93.7		80	120	MS
SODIUM, TOTAL	689.3983		31.3286	J	758.69	86.7		80	120	MS
THALLIUM, TOTAL	10.3486		0.0512	J	10.12	101.8		80	120	MS
VANADIUM, TOTAL	70.5584		19.8413		50.58	100.3		80	120	MS
ZINC, TOTAL	98.1242		49.3192		50.58	96.5		80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1054-000.6S

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.9 **Lab Sample ID:** SG8254-005A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	26840.0000		26470.0000		600	61.7		75	125	MS
ANTIMONY, TOTAL	2.3160		0.2334		2	104.1		75	125	MS
ARSENIC, TOTAL	25.4900		14.5800		10	109.1		75	125	MS
BARIUM, TOTAL	38.4600		33.2900		4	129.3		75	125	MS
BERYLLIUM, TOTAL	2.9620		0.8255		2	106.8		75	125	MS
CADMIUM, TOTAL	2.4130		0.1675	J	2	112.3		75	125	MS
CALCIUM, TOTAL	1706.0000		1516.0000		200	95.0		75	125	MS
CHROMIUM, TOTAL	45.8700		36.2300		10	96.4		75	125	MS
COBALT, TOTAL	27.0800		25.2300		2	92.5		75	125	MS
COPPER, TOTAL	47.6000		41.7500		6	97.5		75	125	MS
IRON, TOTAL	48990.0000		48860.0000		200	65.0		75	125	MS
LEAD, TOTAL	40.1400		38.0800		2	103.0		75	125	MS
MAGNESIUM, TOTAL	7785.0000		7690.0000		200	47.5		75	125	MS
MANGANESE, TOTAL	630.6000		628.6000		4	50.0		75	125	MS
MERCURY, TOTAL	1.3370		0.2420		1	109.5		75	125	CV
NICKEL, TOTAL	46.6100		42.8200		4	94.7		75	125	MS
POTASSIUM, TOTAL	2845.0000		767.1000		2000	103.9		75	125	MS
SELENIUM, TOTAL	9.9730		0.8280	J	10	91.5		75	125	MS
SILVER, TOTAL	2.0800		0.0693	J	2	100.5		75	125	MS
SODIUM, TOTAL	2116.0000		66.1900	J	2000	102.5		75	125	MS
THALLIUM, TOTAL	2.2490		0.1081	J	2	107.0		75	125	MS
VANADIUM, TOTAL	52.8400		41.9200		10	109.2		75	125	MS
ZINC, TOTAL	121.1000		104.2000		20	84.5		75	125	MS

Comments:

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1054-000.6D

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 96.9 **Lab Sample ID:** SG8254-005D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M	
ALUMINUM, TOTAL		12528.5831		14109.9074		11.9		MS	
ANTIMONY, TOTAL	0.1	0.1105		0.1234		11.0		MS	
ARSENIC, TOTAL		6.9009		11.2999		48.3	*	MS	
BARIUM, TOTAL		15.7566		15.6777		0.5		MS	
BERYLLIUM, TOTAL	0.1	0.3907		0.4661		17.6		MS	
CADMIUM, TOTAL		0.0793	J	0.0795	J	0.3		MS	
CALCIUM, TOTAL		717.5418		733.2944		2.2		MS	
CHROMIUM, TOTAL		17.1481		20.2758		16.7		MS	
COBALT, TOTAL		11.9417		11.9511		0.1		MS	
COPPER, TOTAL		19.7608		26.7172		29.9	* OK	MS	
IRON, TOTAL		23126.0510		26642.0295		14.1		MS	
LEAD, TOTAL		18.0237		25.6553		34.9	* OK	MS	
MAGNESIUM, TOTAL		3639.7735		4241.9881		15.3		MS	
MANGANESE, TOTAL		297.5243		308.5947		3.7		MS	
MERCURY, TOTAL	0.033	0.0384		0.0341		11.9		CV	
NICKEL, TOTAL		20.2672		23.5816		15.1		MS	
POTASSIUM, TOTAL	100	363.0780		346.4115		4.7		MS	
SELENIUM, TOTAL	0.5	0.3919	J	0.5415		32.1	-	MS	Diff ✓
SILVER, TOTAL		0.0328	J	0.0347	J	5.6		MS	
SODIUM, TOTAL		31.3286	J	31.3854	J	0.2		MS	
THALLIUM, TOTAL		0.0512	J	0.0448	J	13.3		MS	
VANADIUM, TOTAL		19.8413		20.7817		4.6		MS	
ZINC, TOTAL		49.3192		55.4479		11.7		MS	

Comments:

RPD > 35%

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** 004/5-SS1054-000.6L

Matrix: SOIL **SDG Name:** SG8254

Lab Sample ID: SG8254-005L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	26470.00		29735.00		12.3	E	MS
ANTIMONY, TOTAL	0.23		0.27	J	17.4		MS
ARSENIC, TOTAL	14.58		17.29		18.6		MS
BARIUM, TOTAL	33.29		35.07		5.3		MS
BERYLLIUM, TOTAL	0.83		0.91	J	9.6		MS
CADMIUM, TOTAL	0.17	J	0.20	J	17.6		MS
CALCIUM, TOTAL	1516.00		1581.00		4.3		MS
CHROMIUM, TOTAL	36.23		37.37		3.1		MS
COBALT, TOTAL	25.23		25.82		2.3		MS
COPPER, TOTAL	41.75		43.79		4.9		MS
IRON, TOTAL	48860.00		57600.00		17.9	E	MS
LEAD, TOTAL	38.08		41.87		10.0		MS
MAGNESIUM, TOTAL	7690.00		9020.00		17.3	E	MS
MANGANESE, TOTAL	628.60		743.50		18.3	E	MS
MERCURY, TOTAL	0.24		-0.01	U	100.0		CV
NICKEL, TOTAL	42.82		44.81		4.6		MS
POTASSIUM, TOTAL	767.10		940.00	J	22.5		MS
SELENIUM, TOTAL	0.83	J	1.59	J	91.6		MS
SILVER, TOTAL	0.07	J	0.08	J	14.3		MS
SODIUM, TOTAL	66.19	J	66.05	J	0.2		MS
THALLIUM, TOTAL	0.11	J	0.11	J	0.0		MS
VANADIUM, TOTAL	41.92		45.11		7.6		MS
ZINC, TOTAL	104.20		115.50		10.8	E	MS

use
LOQ - 50X

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK06IMW2

Matrix: WATER **SDG Name:** SG8254

Method: MS **Prep Date:** 11/06/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWGK06IMW2	LCSWGK06IMW2	0.05	0.05	
PBWGK06IMW2	PBWGK06IMW2	0.05	0.05	
TF2-SS-RB03-1013	SG8254-033	0.05	0.05	C

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGK06IMW2

Matrix: WATER **SDG Name:** SG8254

QC Batch ID: GK06IMW2

Concentration Units : ug/L

Analyte	RESULT	C
ALUMINUM	11.850	J
ANTIMONY	0.060	J
ARSENIC	4.0	U
BARIUM	0.500	J
BERYLLIUM	0.20	U
CADMIUM	0.074	J
CALCIUM	80	U
CHROMIUM	0.316	J
COBALT	0.30	U
COPPER	0.355	J
IRON	60	U
LEAD	0.102	J
MAGNESIUM	8.635	J
MANGANESE	1.0	U
NICKEL	1.2	U
POTASSIUM	36.035	J
SELENIUM	0.439	J
SILVER	0.40	U
SODIUM	400	U
THALLIUM	0.40	U
VANADIUM	4.0	U
ZINC	8.0	U

NA - RB

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGK06IMW2

Matrix: WATER **SDG Name:** SG8254

QC Batch ID: GK06IMW2

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	2000.00	1898.00	94.9	80	120
ANTIMONY	100.00	102.75	102.8	80	120
ARSENIC	100.00	99.85	99.8	80	120
BARIUM	2000.00	2059.50	103.0	80	120
BERYLLIUM	50.00	52.55	105.1	80	120
CADMIUM	250.00	240.30	96.1	80	120
CALCIUM	2500.00	2293.00	91.7	80	120
CHROMIUM	200.00	204.30	102.2	80	120
COBALT	500.00	539.00	107.8	80	120
COPPER	250.00	262.15	104.9	80	120
IRON	1000.00	936.50	93.7	80	120
LEAD	100.00	100.75	100.8	80	120
MAGNESIUM	5000.00	4718.50	94.4	80	120
MANGANESE	500.00	475.95	95.2	80	120
NICKEL	500.00	522.00	104.4	80	120
POTASSIUM	10000.00	9185.00	91.8	80	120
SELENIUM	100.00	97.55	97.5	80	120
SILVER	50.00	52.05	104.1	80	120
SODIUM	7500.00	6735.00	89.8	80	120
THALLIUM	100.00	103.60	103.6	80	120
VANADIUM	500.00	494.85	99.0	80	120
ZINC	500.00	516.00	103.2	80	120

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK08IMS1

Matrix: SOIL **SDG Name:** SG8254

Method: MS **Prep Date:** 11/08/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK08IMS1	LCSOGK08IMS1	1	0.1	
PBSGK08IMS1	PBSGK08IMS1	1	0.1	
004/5-SS1055-000.8	SG8254-004	1.4	0.1	A
004/5-SS1053-000.6	SG8254-006	1.21	0.1	A
004/5-SS1052-000.6	SG8254-007	1.12	0.1	A
004/5-SS1051-000.8	SG8254-008	1.41	0.1	A
004/5-SS1050-000.6	SG8254-009	1.21	0.1	A
004/5-SS1062-000.8	SG8254-010	1.18	0.1	A
004/5-SS-DUP04-1013	SG8254-011	1.24	0.1	A
004/5-SS1061-000.6	SG8254-012	1.19	0.1	A
004/5-SS1067-000.7	SG8254-013	1.13	0.1	A
004/5-SS1066-000.9	SG8254-014	1.52	0.1	A
004/5-SS1060-000.5	SG8254-015	1.43	0.1	A
004/5-SS1059-000.6	SG8254-016	1.11	0.1	A
004/5-SS1058-000.5	SG8254-017	1.19	0.1	A
004/5-SS1065-000.5	SG8254-018	1.15	0.1	A
004/5-SS1064-000.6	SG8254-019	1.12	0.1	A
004/5-SS1063-000.6	SG8254-020	1.2	0.1	A
004/5-SS1068-000.5	SG8254-021	1.9	0.1	A
003-SS1011-000.8	SG8254-022	1.22	0.1	A
004/5-SS-DUP05-1013	SG8254-023	1.1	0.1	A
003-SS1016-000.9	SG8254-028	1.44	0.1	A
003-SS1016-000.9D	SG8254-028D	1.41	0.1	A
003-SS1016-000.9S	SG8254-028S	1.45	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK08IMS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK08IMS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	1.347	J
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.092	J
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	7.040	J
CHROMIUM	0.103	J
COBALT	0.030	U
COPPER	0.20	U
IRON	2.832	J
LEAD	0.007	J
MAGNESIUM	8.0	U
MANGANESE	0.045	J
NICKEL	0.040	J
POTASSIUM	5.815	J
SELENIUM	0.099	J
SILVER	0.040	U
SODIUM	40	U
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.272	J

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK08IMS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK08IMS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	188.65	94.3	80	120
ANTIMONY	10.00	9.93	99.3	80	120
ARSENIC	10.00	9.98	99.8	80	120
BARIUM	200.00	201.30	100.6	80	120
BERYLLIUM	5.00	5.17	103.4	80	120
CADMIUM	25.00	23.85	95.4	80	120
CALCIUM	250.00	224.55	89.8	80	120
CHROMIUM	20.00	20.19	101.0	80	120
COBALT	50.00	52.80	105.6	80	120
COPPER	25.00	25.56	102.2	80	120
IRON	100.00	93.80	93.8	80	120
LEAD	10.00	10.01	100.1	80	120
MAGNESIUM	500.00	466.90	93.4	80	120
MANGANESE	50.00	46.85	93.7	80	120
NICKEL	50.00	51.00	102.0	80	120
POTASSIUM	1000.00	912.50	91.3	80	120
SELENIUM	10.00	9.22	92.2	80	120
SILVER	5.00	5.07	101.4	80	120
SODIUM	750.00	669.50	89.3	80	120
THALLIUM	10.00	10.26	102.6	80	120
VANADIUM	50.00	49.83	99.7	80	120
ZINC	50.00	49.71	99.4	80	120

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services | **Client Field ID:** 003-SS1016-000.9S

Matrix: SOIL | **SDG Name:** SG8254

Percent Solids: 90.9 | **Lab Sample ID:** SG8254-028S

Concentration Units : mg/Kgdrywt

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	11064.7171		9361.0461		151.78	1122.5		80	120	MS
ANTIMONY, TOTAL	3.7087		0.5261		7.59	41.9	N	80	120	MS
ARSENIC, TOTAL	12.8178		5.9796		7.59	90.1		80	120	MS
BARIUM, TOTAL	203.7259		41.5325		151.78	106.9		80	120	MS
BERYLLIUM, TOTAL	4.1398		0.5070		3.79	95.9		80	120	MS
CADMIUM, TOTAL	17.6026		0.2795		18.97	91.3		80	120	MS
CALCIUM, TOTAL	1019.1986		718.6991		189.72	158.4	N	80	120	MS
CHROMIUM, TOTAL	29.0316		12.3184		15.18	110.1		80	120	MS
COBALT, TOTAL	42.6121		7.7181		37.94	92.0		80	120	MS
COPPER, TOTAL	36.6775		16.7123		18.97	105.2		80	120	MS
IRON, TOTAL	15432.1688		15806.7950		75.89	-493.6		80	120	MS
LEAD, TOTAL	101.8819		101.1375		7.59	9.8		80	120	MS
MAGNESIUM, TOTAL	1852.0879		1502.3524		379.45	92.2		80	120	MS
MANGANESE, TOTAL	699.0959		658.4827		37.94	107.0		80	120	MS
MERCURY, TOTAL	0.3504		0.1294		0.17	130.0	N	80	120	CV
NICKEL, TOTAL	51.5670		13.4455		37.94	100.5		80	120	MS
POTASSIUM, TOTAL	1197.1599		353.9622		758.9	111.1		80	120	MS
SELENIUM, TOTAL	6.6214		0.4065		7.59	81.9		80	120	MS
SILVER, TOTAL	3.4560		0.0776		3.79	89.1		80	120	MS
SODIUM, TOTAL	519.8444		28.0564	J	569.17	86.4		80	120	MS
THALLIUM, TOTAL	7.5586		0.0995		7.59	98.3		80	120	MS
VANADIUM, TOTAL	60.5979		21.8284		37.94	102.2		80	120	MS
ZINC, TOTAL	131.0615		99.1125		37.94	84.2		80	120	MS

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1016-000.9S

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 90.9 **Lab Sample ID:** SG8254-028A

Concentration Units : ug/L

Analyte	Spiked Sample Result	C	Sample Result	C	Spike Added	%R	Q	Control Limits (%R) Low	High	M
ALUMINUM, TOTAL	25010.0000		24500.0000		600	85.0		75	125	MS
ANTIMONY, TOTAL	3.3570		1.3770		2	99.0		75	125	MS
ARSENIC, TOTAL	26.0100		15.6500		10	103.6		75	125	MS
BARIUM, TOTAL	110.5000		108.7000		4	45.0		75	125	MS
BERYLLIUM, TOTAL	3.3340		1.3270		2	100.4		75	125	MS
CADMIUM, TOTAL	2.9960		0.7316		2	113.2		75	125	MS
CALCIUM, TOTAL	2059.0000		1881.0000		200	89.0		75	125	MS
CHROMIUM, TOTAL	43.9800		32.2400		10	117.4		75	125	MS
COBALT, TOTAL	21.5800		20.2000		2	69.0		75	125	MS
COPPER, TOTAL	48.0700		43.7400		6	72.2		75	125	MS
IRON, TOTAL	40880.0000		41370.0000		200	-245.0		75	125	MS
LEAD, TOTAL	267.2000		264.7000		2	125.0		75	125	MS
MAGNESIUM, TOTAL	4142.0000		3932.0000		200	105.0		75	125	MS
MANGANESE, TOTAL	845.2000		861.7000		4	-412.5		75	125	MS
MERCURY, TOTAL	1.9600		0.7880		1	117.2		75	125	CV
NICKEL, TOTAL	40.8800		35.1900		4	142.3		75	125	MS
POTASSIUM, TOTAL	2999.0000		926.4000		2000	103.6		75	125	MS
SELENIUM, TOTAL	9.9780		1.0640		10	89.1		75	125	MS
SILVER, TOTAL	2.0740		0.2030		2	93.5		75	125	MS
SODIUM, TOTAL	2116.0000		73.4300	J	2000	102.1		75	125	MS
THALLIUM, TOTAL	2.2750		0.2605		2	100.7		75	125	MS
VANADIUM, TOTAL	67.7400		57.1300		10	106.1		75	125	MS
ZINC, TOTAL	270.3000		259.4000		20	54.5		75	125	MS

Comments:

DUPLICATES

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1016-000.9D

Matrix: SOIL **SDG Name:** SG8254

Percent Solids: 90.9 **Lab Sample ID:** SG8254-028D

Concentration Units : mg/Kgdrywt

Analyte	Control Limits	Sample Result	C	Duplicate Result	C	RPD	Q	M
ALUMINUM, TOTAL		9361.0461		9029.5283		3.6		MS
ANTIMONY, TOTAL		0.5261		0.4222		21.9	* OK	MS
ARSENIC, TOTAL		5.9796		5.0416		17.0		MS
BARIUM, TOTAL		41.5325		38.8886		6.6		MS
BERYLLIUM, TOTAL		0.5070		0.4234		18.0		MS
CADMIUM, TOTAL	0.078	0.2795		0.2525		10.2		MS
CALCIUM, TOTAL		718.6991		682.0923		5.2		MS
CHROMIUM, TOTAL		12.3184		11.7532		4.7		MS
COBALT, TOTAL		7.7181		6.3839		18.9		MS
COPPER, TOTAL		16.7123		18.4532		9.9		MS
IRON, TOTAL		15806.7950		13899.3862		12.8		MS
LEAD, TOTAL		101.1375		89.2417		12.5		MS
MAGNESIUM, TOTAL		1502.3524		1517.9285		1.0		MS
MANGANESE, TOTAL		658.4827		407.6165		47.1	*	MS
MERCURY, TOTAL	0.034	0.1294		0.2182		51.1	*	CV
NICKEL, TOTAL		13.4455		13.0058		3.3		MS
POTASSIUM, TOTAL	78	353.9622		352.4794		0.4		MS
SELENIUM, TOTAL	0.39	0.4065		0.4179		2.8		MS
SILVER, TOTAL		0.0776		0.0711	J	8.7		MS
SODIUM, TOTAL		28.0564	J	26.9364	J	4.1		MS
THALLIUM, TOTAL	0.078	0.0995		0.0908		9.1		MS
VANADIUM, TOTAL		21.8284		19.4833		11.4		MS
ZINC, TOTAL		99.1125		94.7827		4.5		MS

Comments:

RPD > 35%

Katahdin Analytical Services A0000200

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services **Client Field ID:** 003-SS1016-000.9L

Matrix: SOIL **SDG Name:** SG8254

Lab Sample ID: SG8254-028L

Concentration Units: ug/L

Analyte	Sample Result	C	Dilution Result	C	% Difference	Q	M
ALUMINUM, TOTAL	24500.00		27885.00		13.8	E	MS
ANTIMONY, TOTAL	1.38		1.46		5.8		MS
ARSENIC, TOTAL	15.65		16.81		7.4		MS
BARIUM, TOTAL	108.70		115.00		5.8		MS
BERYLLIUM, TOTAL	1.33		1.35		1.5		MS
CADMIUM, TOTAL	0.73		0.87	J	19.2		MS
CALCIUM, TOTAL	1881.00		1957.00		4.0		MS
CHROMIUM, TOTAL	32.24		33.31		3.3		MS
COBALT, TOTAL	20.20		20.60		2.0		MS
COPPER, TOTAL	43.74		45.89		4.9		MS
IRON, TOTAL	41370.00		48695.00		17.7	E	MS
LEAD, TOTAL	264.70		293.30		10.8	E	MS
MAGNESIUM, TOTAL	3932.00		4662.50		18.6	E	MS
MANGANESE, TOTAL	861.70		931.50		8.1		MS
MERCURY, TOTAL	0.79		0.59	J	25.3		CV
NICKEL, TOTAL	35.19		36.17		2.8		MS
POTASSIUM, TOTAL	926.40		1126.50		21.6		MS
SELENIUM, TOTAL	1.06		0.21	U	100.0		MS
SILVER, TOTAL	0.20		0.22	J	10.0		MS
SODIUM, TOTAL	73.43	J	51.20	J	30.3		MS
THALLIUM, TOTAL	0.26		0.23	J	11.5		MS
VANADIUM, TOTAL	57.13		64.05		12.1	E	MS
ZINC, TOTAL	259.40		288.15		11.1	E	MS

use
LOQ >50x

FORM IX - IN

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK08IMS2

Matrix: SOIL **SDG Name:** SG8254

Method: MS **Prep Date:** 11/08/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK08IMS2	LCSOGK08IMS2	1	0.1	
PBSGK08IMS2	PBSGK08IMS2	1	0.1	
003-SS1012-000.7	SG8254-024	1.53	0.1	A
003-SS1013-000.7	SG8254-025	1.5	0.1	A
003-SS1014-0001	SG8254-026	1.56	0.1	A
003-SS1015-000.8	SG8254-027	1.39	0.1	B
003-SS1017-000.8	SG8254-029	1.13	0.1	A
003-SS1018-000.8	SG8254-030	1.28	0.1	A
003-SS1019-000.5	SG8254-031	1.13	0.1	A
003-SS-DUP06-1013	SG8254-032	1.51	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK08IMS2

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK08IMS2

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
ALUMINUM	1.723	J NA
ANTIMONY	0.050	U
ARSENIC	0.40	U
BARIUM	0.077	J NA
BERYLLIUM	0.020	U
CADMIUM	0.020	U
CALCIUM	4.199	J NA
CHROMIUM	0.098	J NA
COBALT	0.006	J NA
COPPER	0.20	U
IRON	6.650	J NA
LEAD	0.012	J NA
MAGNESIUM	1.523	J NA
MANGANESE	0.099	J NA
NICKEL	0.12	U
POTASSIUM	40	U
SELENIUM	0.30	U
SILVER	0.040	U
SODIUM	40	U
THALLIUM	0.040	U
VANADIUM	0.40	U
ZINC	0.80	U

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK08IMS2

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK08IMS2

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
ALUMINUM	200.00	191.10	95.5	80	120
ANTIMONY	10.00	9.88	98.8	80	120
ARSENIC	10.00	10.00	100.0	80	120
BARIUM	200.00	206.40	103.2	80	120
BERYLLIUM	5.00	5.09	101.8	80	120
CADMIUM	25.00	24.22	96.9	80	120
CALCIUM	250.00	222.60	89.0	80	120
CHROMIUM	20.00	20.58	102.9	80	120
COBALT	50.00	49.51	99.0	80	120
COPPER	25.00	23.76	95.0	80	120
IRON	100.00	95.50	95.5	80	120
LEAD	10.00	10.01	100.1	80	120
MAGNESIUM	500.00	455.65	91.1	80	120
MANGANESE	50.00	47.97	95.9	80	120
NICKEL	50.00	52.40	104.8	80	120
POTASSIUM	1000.00	904.50	90.5	80	120
SELENIUM	10.00	8.61	86.1	80	120
SILVER	5.00	4.84	96.8	80	120
SODIUM	750.00	661.50	88.2	80	120
THALLIUM	10.00	10.09	100.9	80	120
VANADIUM	50.00	50.70	101.4	80	120
ZINC	50.00	46.72	93.4	80	120

ANALYSIS RUN LOG all samples

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254 Al, As, Cd, Fe, Pb Mg, Mn, K, Na, V

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK13B

Date: 11/13/2013 **Method:** MS no mn - 151, 11, 16, 18

Lab Sample ID	Client ID	D.F.	Time	Elements								
ZZZZZZ		1	17:13									
ZZZZZZ		1	17:15									
Cal Blank		1	19:00	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
Cal Std 1		1	19:04	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
Cal Std 2		1	19:07	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
Cal Std 3		1	19:10	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
Cal Std 4		1	19:13	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
ICV		1	19:16	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
ICB		1	19:20	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
PQL		1	19:23	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
ICSA		1	19:26	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
ICSAB		1	19:30	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
CCV		1	19:33	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
CCB		1	19:36	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
PBSGK06IMS1		5	19:40	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
LCSOGK06IMS1		5	19:43	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-002	004/5-SS1057-0001	5	19:46	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-003	004/5-SS1056-000.6	5	19:50	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-005	004/5-SS1054-000.6	5	19:53	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-005L	004/5-SS1054-000.6L	25	19:56	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-005D	004/5-SS1054-000.6D	5	20:00	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-005A	004/5-SS1054-000.6A	5	20:03	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-005S	004/5-SS1054-000.6S	5	20:07	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
LCSWGK06IMW2		5	20:10	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
CCV		1	20:13	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
CCB		1	20:17	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
PBWGK06IMW2		5	20:20	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-033	TF2-SS-RB03-1013	5	20:23	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
PBSGK08IMS1		5	20:27	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
LCSOGK08IMS1		5	20:30	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-004	004/5-SS1055-000.8	5	20:33	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-006	004/5-SS1053-000.6	5	20:37	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-007	004/5-SS1052-000.6	5	20:41	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-008	004/5-SS1051-000.8	5	20:44	Al	As	Cd	Fe Pb Mg		K	Na	V	
SG8254-009	004/5-SS1050-000.6	5	20:48	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-010	004/5-SS1062-000.8	5	20:51	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
CCV		1	20:54	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
CCB		1	20:58	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
SG8254-011	004/5-SS-DUP04-1013	5	21:01	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-012	004/5-SS1061-000.6	5	21:05	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-013	004/5-SS1067-000.7	5	21:08	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-014	004/5-SS1066-000.9	5	21:12	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-015	004/5-SS1060-000.5	5	21:16	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-016	004/5-SS1059-000.6	5	21:19	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-017	004/5-SS1058-000.5	5	21:23	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-018	004/5-SS1065-000.5	5	21:26	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-019	004/5-SS1064-000.6	5	21:30	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
SG8254-020	004/5-SS1063-000.6	5	21:33	Al	As	Cd	Fe Pb Mg Mn		K	Na	V	
CCV		1	21:37	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	
CCB		1	21:40	Al	As	Cd Ca	Fe Pb Mg Mn	Mo	K	Na	V	

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK13B

Date: 11/13/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements									
SG8254-021	004/5-SS1068-000.5	5	21:43	Al	As	Cd		Pb	Mg		K	Na	V
SG8254-022	003-SS1011-000.8	5	21:47	Al	As	Cd	Fe	Pb	Mg		K	Na	V
SG8254-023	004/5-SS-DUP05-1013	5	21:50	Al	As	Cd	Fe	Pb	Mg	Mn	K	Na	V
SG8254-028	003-SS1016-000.9	5	21:54	Al	As	Cd	Fe	Pb	Mg		K	Na	V
SG8254-028L	003-SS1016-000.9L	25	21:57	Al	As	Cd	Fe	Pb	Mg		K	Na	V
SG8254-028D	003-SS1016-000.9D	5	22:01	Al	As	Cd	Fe	Pb	Mg		K	Na	V
SG8254-028A	003-SS1016-000.9A	5	22:04	Al	As	Cd	Fe	Pb	Mg		K	Na	V
SG8254-028S	003-SS1016-000.9S	5	22:08	Al	As	Cd	Fe	Pb	Mg		K	Na	V
LCSOGK08IMS2		5	22:11	Al	As	Cd	Fe	Pb	Mg	Mn	K	Na	V
SG8254-024	003-SS1012-000.7	5	22:15	Al	As	Cd	Fe	Pb	Mg	Mn	K	Na	V
CCV		1	22:18	Al	As	Cd	Ca	Fe	Pb	Mg Mn Mo	K	Na	V
CCB		1	22:22	Al	As	Cd	Ca	Fe	Pb	Mg Mn Mo	K	Na	V
PBSGK08IMS2		5	22:25	Al	As	Cd		Fe	Pb	Mg Mn	K	Na	V
SG8254-025	003-SS1013-000.7	5	22:29	Al	As	Cd		Fe	Pb	Mg Mn	K	Na	V
SG8254-026	003-SS1014-0001	5	22:32	Al	As	Cd		Fe	Pb	Mg Mn	K	Na	V
SG8254-027	003-SS1015-000.8	5	22:36	Al	As	Cd		Fe	Pb	Mg Mn	K	Na	V
SG8254-029	003-SS1017-000.8	5	22:39	Al	As	Cd		Fe	Pb	Mg Mn	K	Na	V
SG8254-030	003-SS1018-000.8	5	22:43	Al	As	Cd		Fe	Pb	Mg	K	Na	V
SG8254-031	003-SS1019-000.5	5	22:46	Al	As	Cd		Fe	Pb	Mg Mn	K	Na	V
SG8254-032	003-SS-DUP06-1013	5	22:50	Al	As	Cd		Fe	Pb	Mg Mn	K	Na	V
ZZZZZZ		5	22:53										
ZZZZZZ		5	22:57										
CCV		1	23:00	Al	As	Cd	Ca	Fe	Pb	Mg Mn Mo	K	Na	V
CCB		1	23:03	Al	As	Cd	Ca	Fe	Pb	Mg Mn Mo	K	Na	V

FORM XIV - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICV

File: JGK13B Nov 13, 2013 19:16

Analyte	True	Found	%R (1)
ALUMINUM	400.0	414.70	103.7
ARSENIC	20.0	21.75	108.7
CADMIUM	20.0	21.94	109.7
CALCIUM	4000.0	3543.00	88.6•
IRON	4000.0	3616.00	90.4
LEAD	20.0	21.56	107.8
MAGNESIUM	4000.0	3680.00	92.0
MANGANESE	20.0	20.65	103.3
MOLYBDENUM	40.0	44.53	111.3•
POTASSIUM	4000.0	3618.00	90.5
SODIUM	4000.0	3632.00	90.8
VANADIUM	20.0	21.97	109.9

SAMPLE: CCV

File: JGK13B Nov 13, 2013 19:33

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.20	101.2
ARSENIC	25.0	27.12	108.5
CADMIUM	10.0	10.89	108.9
CALCIUM	5000.0	5094.00	101.9
IRON	5000.0	5045.00	100.9
LEAD	25.0	26.76	107.0
MAGNESIUM	5000.0	4955.00	99.1
MANGANESE	25.0	26.93	107.7
MOLYBDENUM	25.0	28.67	114.7•
POTASSIUM	5000.0	5014.00	100.3
SODIUM	5000.0	4950.00	99.0
VANADIUM	25.0	26.72	106.9

no samples

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK13B Nov 13, 2013 20:13

Analyte	True	Found	%R (1)
ALUMINUM	500.0	503.60	100.7
ARSENIC	25.0	27.51	110.0
CADMIUM	10.0	10.86	108.6
CALCIUM	5000.0	5055.00	101.1
IRON	5000.0	5093.00	101.9
LEAD	25.0	26.80	107.2
MAGNESIUM	5000.0	4964.00	99.3
MANGANESE	25.0	26.93	107.7
MOLYBDENUM	25.0	27.28	109.1
POTASSIUM	5000.0	5009.00	100.2
SODIUM	5000.0	4938.00	98.8
VANADIUM	25.0	27.20	108.8

SAMPLE: CCV

File: JGK13B Nov 13, 2013 20:54

Analyte	True	Found	%R (1)
ALUMINUM	500.0	505.40	101.1
ARSENIC	25.0	26.96	107.8
CADMIUM	10.0	11.02	110.2
CALCIUM	5000.0	5049.00	101.0
IRON	5000.0	5120.00	102.4
LEAD	25.0	26.68	106.7
MAGNESIUM	5000.0	4958.00	99.2
MANGANESE	25.0	27.06	108.2
MOLYBDENUM	25.0	27.52	110.1
POTASSIUM	5000.0	5043.00	100.9
SODIUM	5000.0	4921.00	98.4
VANADIUM	25.0	26.94	107.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK13B Nov 13, 2013 21:37

Analyte	True	Found	%R (1)
ALUMINUM	500.0	513.20	102.6
ARSENIC	25.0	27.19	108.8
CADMIUM	10.0	10.97	109.7
CALCIUM	5000.0	5101.00	102.0
IRON	5000.0	5044.00	100.9
LEAD	25.0	27.05	108.2
MAGNESIUM	5000.0	5051.00	101.0
MANGANESE	25.0	27.05	108.2
MOLYBDENUM	25.0	27.44	109.8
POTASSIUM	5000.0	5040.00	100.8
SODIUM	5000.0	5027.00	100.5
VANADIUM	25.0	27.01	108.0

SAMPLE: CCV

File: JGK13B Nov 13, 2013 22:18

Analyte	True	Found	%R (1)
ALUMINUM	500.0	509.70	101.9
ARSENIC	25.0	26.97	107.9
CADMIUM	10.0	11.04	110.4
CALCIUM	5000.0	5049.00	101.0
IRON	5000.0	5049.00	101.0
LEAD	25.0	26.45	105.8
MAGNESIUM	5000.0	4967.00	99.3
MANGANESE	25.0	27.16	108.6
MOLYBDENUM	25.0	27.49	110.0
POTASSIUM	5000.0	4959.00	99.2
SODIUM	5000.0	4906.00	98.1
VANADIUM	25.0	26.99	108.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK13B Nov 13, 2013 23:00

Analyte	True	Found	%R (1)
ALUMINUM	500.0	506.50	101.3
ARSENIC	25.0	27.00	108.0
CADMIUM	10.0	11.00	110.0
CALCIUM	5000.0	5038.00	100.8
IRON	5000.0	5110.00	102.2
LEAD	25.0	26.71	106.8
MAGNESIUM	5000.0	4946.00	98.9
MANGANESE	25.0	27.27	109.1
MOLYBDENUM	25.0	27.58	110.3
POTASSIUM	5000.0	4947.00	98.9
SODIUM	5000.0	4877.00	97.5
VANADIUM	25.0	27.17	108.7

(1) Control Limits: Mercury 80-120; Other Metals 90-110

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: PQL

File: JGK13B Nov 13, 2013 19:23

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	60.88	101.5
ARSENIC	1.0	1.09	109.0
CADMIUM	0.2	0.22	110.0
CALCIUM	20.0	17.47	87.3
IRON	20.0	19.96	99.8
LEAD	0.2	0.22	110.0
MAGNESIUM	20.0	20.31	101.5
MANGANESE	0.4	0.44	110.0
MOLYBDENUM	1.0	1.11	111.0
POTASSIUM	200.0	213.50	106.7
SODIUM	200.0	207.30	103.6
VANADIUM	1.0	0.98	98.0

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICB
File: JGK13B Nov 13, 2013 19:20

Analyte	Result	C
ALUMINUM	0.340	U
ARSENIC	0.410	U
CADMIUM	0.004	U
CALCIUM	-7.697	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.139	J
POTASSIUM	8.200	U
SODIUM	3.900	U
VANADIUM	0.150	U

SAMPLE: CCB
File: JGK13B Nov 13, 2013 19:36

Analyte	Result	C
ALUMINUM	0.520	J
ARSENIC	0.410	U
CADMIUM	0.010	J
CALCIUM	4.100	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.747	J
MANGANESE	0.020	U
MOLYBDENUM	0.521	B
POTASSIUM	8.200	U
SODIUM	9.532	J
VANADIUM	0.150	U

SAMPLE: CCB
File: JGK13B Nov 13, 2013 20:17

Analyte	Result	C
ALUMINUM	0.340	U
ARSENIC	0.410	U
CADMIUM	0.007	J
CALCIUM	4.100	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
POTASSIUM	9.463	J
SODIUM	3.900	U
VANADIUM	0.150	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB
File: JGK13B Nov 13, 2013 20:58

Analyte	Result	C
ALUMINUM	0.340	U
ARSENIC	0.410	U
CADMIUM	0.006	J
CALCIUM	-5.616	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	3.900	U
VANADIUM	0.150	U

SAMPLE: CCB
File: JGK13B Nov 13, 2013 21:40

Analyte	Result	C
ALUMINUM	0.763	J
ARSENIC	0.410	U
CADMIUM	0.004	U
CALCIUM	-8.009	U
IRON	6.860	J
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.035	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	-4.091	U
VANADIUM	0.150	U

SAMPLE: CCB
File: JGK13B Nov 13, 2013 22:22

Analyte	Result	C
ALUMINUM	0.385	J
ARSENIC	0.410	U
CADMIUM	0.008	J
CALCIUM	-10.860	U
IRON	7.166	J
LEAD	0.009	J
MAGNESIUM	0.690	U
MANGANESE	0.078	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	-5.308	U
VANADIUM	0.150	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB

File: JGK13B Nov 13, 2013 23:03

Analyte	Result	C
ALUMINUM	0.340	U
ARSENIC	0.410	U
CADMIUM	0.004	U
CALCIUM	-12.650	U
IRON	4.700	U
LEAD	0.009	U
MAGNESIUM	0.690	U
MANGANESE	0.082	J
MOLYBDENUM	0.120	U
POTASSIUM	8.200	U
SODIUM	-5.044	U
VANADIUM	0.150	U

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICSA

File: JGK13B Nov 13, 2013 19:26

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	91370	91.4
ARSENIC	0	0	
CADMIUM	0	0	
CALCIUM	100000	89950	90.0
IRON	100000	85210	85.2
LEAD	0	0	
MAGNESIUM	100000	89760	89.8
MANGANESE	0	0	
MOLYBDENUM	2000	1969	98.5
POTASSIUM	100000	92210	92.2
SODIUM	100000	92250	92.3
VANADIUM	0	0	

SAMPLE: ICSAB

File: JGK13B Nov 13, 2013 19:30

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	89330	89.3
ARSENIC	20	20	100.0
CADMIUM	20	19	95.0
CALCIUM	100000	87950	87.9
IRON	100000	84110	84.1
LEAD	20	22	110.0
MAGNESIUM	100000	87780	87.8
MANGANESE	20	20	100.0
MOLYBDENUM	2000	1975	98.8
POTASSIUM	100000	89950	90.0
SODIUM	100000	89750	89.8
VANADIUM	20	21	105.0

ANALYSIS RUN LOG

all samples Sb, Ba, Be, Ca, *Cr, Co, Cu, *Ni, Se, Ag, Tl, Zn

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK18A

Date: 11/18/2013 **Method:** MS Mn-(10x) 1st, 11, 16, 18

Elements *no Cr, Ni - 12, 13, 14, 15, 17, 18, 19 DUP b

Lab Sample ID	Client ID	D.F.	Time															
ZZZZZZ		1	15:25															
ZZZZZZ		1	15:28															
Cal Blank		1	15:53	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
Cal Std 1		1	15:56	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
Cal Std 2		1	16:00	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
Cal Std 3		1	16:03	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
Cal Std 4		1	16:06	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
ICV		1	16:09	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
ICB		1	16:12	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
PQL		1	16:15	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
ICSA		1	16:19	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
ICSAB		1	16:22	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
CCV		1	16:25	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
CCB		1	16:29	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
ZZZZZZ		1	16:32															
ZZZZZZ		1	16:35															
ZZZZZZ		1	16:38															
ZZZZZZ		1	16:42															
ZZZZZZ		1	16:45															
CCV		1	16:48	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
CCB		1	16:51	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
ZZZZZZ		5	16:55															
ZZZZZZ		5	16:58															
ZZZZZZ		5	17:01															
ZZZZZZ		5	17:05															
PBSGK06IMS1		5	17:08		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
LCSOGK06IMS1		5	17:11		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-002	004/5-SS1057-0001	5	17:15		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-003	004/5-SS1056-000.6	5	17:18		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
CCV		1	17:21	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
CCB		1	17:25	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
SG8254-005	004/5-SS1054-000.6	5	17:28		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-005L	004/5-SS1054-000.6L	25	17:31		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-005D	004/5-SS1054-000.6D	5	17:35		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-005A	004/5-SS1054-000.6A	5	17:38		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-005S	004/5-SS1054-000.6S	5	17:42		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
PBSGK08IMS1		5	17:45		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
LCSOGK08IMS1		5	17:49		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-004	004/5-SS1055-000.8	5	17:52		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-006	004/5-SS1053-000.6	5	17:55		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-007	004/5-SS1052-000.6	5	17:59		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
CCV		1	18:02	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
CCB		1	18:06	Al	Sb	Ba	Be	Ca	Cr	Co	Cu	Fe	Mg	Mn	Mo	Ni	K	Se	Ag	Na	Tl	Zn
PBWGK06IMW2		5	18:09		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
LCSWGK06IMW2		5	18:12		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-033	TF2-SS-RB03-1013	5	18:16		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-008	004/5-SS1051-000.8	10	18:19											Mn								
SG8254-008	004/5-SS1051-000.8	5	18:23		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-009	004/5-SS1050-000.6	5	18:26		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn
SG8254-010	004/5-SS1062-000.8	5	18:30		Sb	Ba	Be	Ca	Cr	Co	Cu					Ni		Se	Ag		Tl	Zn

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK18A

Date: 11/18/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
SG8254-011	004/5-SS-DUP04-1013	5	18:34	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-012	004/5-SS1061-000.6	5	18:37	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-013	004/5-SS1067-000.7	5	18:41	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
CCV		1	18:44	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
CCB		1	18:48	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
SG8254-014	004/5-SS1066-000.9	5	18:51	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-015	004/5-SS1060-000.5	5	18:55	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-016	004/5-SS1059-000.6	5	18:58	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-017	004/5-SS1058-000.5	5	19:02	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-018	004/5-SS1065-000.5	5	19:06	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-019	004/5-SS1064-000.6	5	19:09	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-020	004/5-SS1063-000.6	5	19:13	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-021	004/5-SS1068-000.5	10	19:16	Fe
SG8254-021	004/5-SS1068-000.5	5	19:20	Sb Ba Be Ca Cr Co Cu Mn Ni Se Ag Tl Zn
SG8254-022	003-SS1011-000.8	10	19:24	Mn
CCV		1	19:27	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
CCB		1	19:31	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
SG8254-022	003-SS1011-000.8	5	19:34	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-023	004/5-SS-DUP05-1013	5	19:38	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-028	003-SS1016-000.9	10	19:41	Mn
SG8254-028L	003-SS1016-000.9L	50	19:45	Mn
SG8254-028D	003-SS1016-000.9D	10	19:48	Mn
SG8254-028A	003-SS1016-000.9A	10	19:52	Mn
SG8254-028S	003-SS1016-000.9S	10	19:55	Mn
SG8254-028	003-SS1016-000.9	5	19:59	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-028L	003-SS1016-000.9L	25	20:02	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
SG8254-028D	003-SS1016-000.9D	5	20:06	Sb Ba Be Ca Cr Co Cu Ni Se Ag Tl Zn
CCV		1	20:09	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
CCB		1	20:13	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
SG8254-028A	003-SS1016-000.9A	5	20:16	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-028S	003-SS1016-000.9S	5	20:20	Sb Ba Be Ca Co Cu Se Ag Tl Zn
PBSGK08IMS2		5	20:24	Sb Ba Be Ca Co Cu Se Ag Tl Zn
LCSOGK08IMS2		5	20:27	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-024	003-SS1012-000.7	5	20:31	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-025	003-SS1013-000.7	5	20:34	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-026	003-SS1014-0001	5	20:38	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-027	003-SS1015-000.8	5	20:42	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-029	003-SS1017-000.8	5	20:45	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-030	003-SS1018-000.8	10	20:49	Mn
CCV		1	20:53	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
CCB		1	20:56	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
SG8254-030	003-SS1018-000.8	5	20:59	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-031	003-SS1019-000.5	5	21:03	Sb Ba Be Ca Co Cu Se Ag Tl Zn
SG8254-032	003-SS-DUP06-1013	5	21:07	Sb Ba Be Ca Co Cu Se Ag Tl Zn
ZZZZZZ		5	21:10	
ZZZZZZ		5	21:14	
ZZZZZZ		5	21:17	
ZZZZZZ		5	21:20	
ZZZZZZ		5	21:24	
ZZZZZZ		25	21:28	
ZZZZZZ		5	21:31	

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK18A

Date: 11/18/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
CCV		1	21:35	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn
CCB		1	21:38	Al Sb Ba Be Ca Cr Co Cu Fe Mg Mn Mo Ni K Se Ag Na Tl Zn

FORM XIV - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICV

File: JGK18A Nov 18, 2013 16:09

Analyte	True	Found	%R (1)
ALUMINUM	400.0	405.40	101.3
ANTIMONY	20.0	20.62	103.1
BARIUM	20.0	21.03	105.2
BERYLLIUM	20.0	20.62	103.1
CALCIUM	4000.0	4190.00	104.8
CHROMIUM	20.0	20.58	102.9
COBALT	20.0	20.88	104.4
COPPER	20.0	20.78	103.9
IRON	4000.0	4142.00	103.6
MAGNESIUM	4000.0	4101.00	102.5
MANGANESE	20.0	19.22	96.1
MOLYBDENUM	40.0	41.55	103.9
NICKEL	20.0	21.18	105.9
POTASSIUM	4000.0	4089.00	102.2
SELENIUM	20.0	20.81	104.1
SILVER	20.0	20.43	102.2
SODIUM	4000.0	4100.00	102.5
THALLIUM	20.0	21.72	108.6
ZINC	20.0	21.27	106.3

SAMPLE: CCV

File: JGK18A Nov 18, 2013 16:25

Analyte	True	Found	%R (1)
ALUMINUM	500.0	489.40	97.9
ANTIMONY	25.0	24.62	98.5
BARIUM	25.0	24.88	99.5
BERYLLIUM	10.0	10.03	100.3
CALCIUM	5000.0	4991.00	99.8
CHROMIUM	25.0	24.20	96.8
COBALT	10.0	9.74	97.4
COPPER	25.0	24.79	99.2
IRON	5000.0	4879.00	97.6
MAGNESIUM	5000.0	4822.00	96.4
MANGANESE	25.0	24.69	98.8
MOLYBDENUM	25.0	26.18	104.7
NICKEL	25.0	24.57	98.3
POTASSIUM	5000.0	4951.00	99.0
SELENIUM	25.0	25.52	102.1
SILVER	10.0	10.02	100.2
SODIUM	5000.0	4870.00	97.4
THALLIUM	10.0	9.92	99.2
ZINC	25.0	25.28	101.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK18A Nov 18, 2013 16:48

Analyte	True	Found	%R (1)
ALUMINUM	500.0	472.30	94.5
ANTIMONY	25.0	24.99	100.0
BARIUM	25.0	25.22	100.9
BERYLLIUM	10.0	10.21	102.1
CALCIUM	5000.0	4999.00	100.0
CHROMIUM	25.0	24.09	96.4
COBALT	10.0	9.79	97.9
COPPER	25.0	24.57	98.3
IRON	5000.0	4894.00	97.9
MAGNESIUM	5000.0	4710.00	94.2
MANGANESE	25.0	24.66	98.6
MOLYBDENUM	25.0	24.87	99.5
NICKEL	25.0	24.66	98.6
POTASSIUM	5000.0	4925.00	98.5
SELENIUM	25.0	24.61	98.4
SILVER	10.0	10.03	100.3
SODIUM	5000.0	4800.00	96.0
THALLIUM	10.0	9.78	97.8
ZINC	25.0	25.09	100.4

SAMPLE: CCV

File: JGK18A Nov 18, 2013 17:21

Analyte	True	Found	%R (1)
ALUMINUM	500.0	484.70	96.9
ANTIMONY	25.0	25.47	101.9
BARIUM	25.0	25.58	102.3
BERYLLIUM	10.0	10.33	103.3
CALCIUM	5000.0	5002.00	100.0
CHROMIUM	25.0	24.20	96.8
COBALT	10.0	9.92	99.2
COPPER	25.0	24.95	99.8
IRON	5000.0	4983.00	99.7
MAGNESIUM	5000.0	4803.00	96.1
MANGANESE	25.0	24.92	99.7
MOLYBDENUM	25.0	24.98	99.9
NICKEL	25.0	24.86	99.4
POTASSIUM	5000.0	4943.00	98.9
SELENIUM	25.0	24.11	96.4
SILVER	10.0	10.06	100.6
SODIUM	5000.0	4861.00	97.2
THALLIUM	10.0	9.93	99.3
ZINC	25.0	25.58	102.3

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK18A Nov 18, 2013 18:02

Analyte	True	Found	%R (1)
ALUMINUM	500.0	477.30	95.5
ANTIMONY	25.0	25.31	101.2
BARIUM	25.0	25.11	100.4
BERYLLIUM	10.0	10.54	105.4
CALCIUM	5000.0	4988.00	99.8
CHROMIUM	25.0	24.31	97.2
COBALT	10.0	9.90	99.0
COPPER	25.0	24.98	99.9
IRON	5000.0	4974.00	99.5
MAGNESIUM	5000.0	4755.00	95.1
MANGANESE	25.0	24.77	99.1
MOLYBDENUM	25.0	25.37	101.5
NICKEL	25.0	24.80	99.2
POTASSIUM	5000.0	4939.00	98.8
SELENIUM	25.0	24.30	97.2
SILVER	10.0	10.13	101.3
SODIUM	5000.0	4832.00	96.6
THALLIUM	10.0	10.05	100.5
ZINC	25.0	25.54	102.2

SAMPLE: CCV

File: JGK18A Nov 18, 2013 18:44

Analyte	True	Found	%R (1)
ALUMINUM	500.0	479.80	96.0
ANTIMONY	25.0	25.14	100.6
BARIUM	25.0	25.01	100.0
BERYLLIUM	10.0	10.29	102.9
CALCIUM	5000.0	5010.00	100.2
CHROMIUM	25.0	23.95	95.8
COBALT	10.0	9.73	97.3
COPPER	25.0	24.61	98.4
IRON	5000.0	4911.00	98.2
MAGNESIUM	5000.0	4697.00	93.9
MANGANESE	25.0	24.56	98.2
MOLYBDENUM	25.0	25.00	100.0
NICKEL	25.0	24.48	97.9
POTASSIUM	5000.0	4924.00	98.5
SELENIUM	25.0	24.31	97.2
SILVER	10.0	10.03	100.3
SODIUM	5000.0	4796.00	95.9
THALLIUM	10.0	9.78	97.8
ZINC	25.0	24.98	99.9

(1) Control Limits: Mercury 80-120; Other Metals 90-110

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK18A Nov 18, 2013 19:27

Analyte	True	Found	%R (1)
ALUMINUM	500.0	474.70	94.9
ANTIMONY	25.0	24.95	99.8
BARIUM	25.0	25.30	101.2
BERYLLIUM	10.0	10.32	103.2
CALCIUM	5000.0	4953.00	99.1
CHROMIUM	25.0	22.91	91.6
COBALT	10.0	9.24	92.4
COPPER	25.0	23.44	93.8
IRON	5000.0	4727.00	94.5
MAGNESIUM	5000.0	4664.00	93.3
MANGANESE	25.0	23.61	94.4
MOLYBDENUM	25.0	24.02	96.1
NICKEL	25.0	23.15	92.6
POTASSIUM	5000.0	4965.00	99.3
SELENIUM	25.0	23.12	92.5
SILVER	10.0	9.70	97.0
SODIUM	5000.0	4724.00	94.5
THALLIUM	10.0	9.71	97.1
ZINC	25.0	24.12	96.5

SAMPLE: CCV

File: JGK18A Nov 18, 2013 20:09

Analyte	True	Found	%R (1)
ALUMINUM	500.0	471.00	94.2
ANTIMONY	25.0	24.74	99.0
BARIUM	25.0	25.67	102.7
BERYLLIUM	10.0	10.06	100.6
CALCIUM	5000.0	5029.00	100.6
CHROMIUM	25.0	22.67	90.7
COBALT	10.0	9.19	91.9
COPPER	25.0	23.32	93.3
IRON	5000.0	4735.00	94.7
MAGNESIUM	5000.0	4677.00	93.5
MANGANESE	25.0	23.62	94.5
MOLYBDENUM	25.0	24.17	96.7
NICKEL	25.0	22.79	91.2
POTASSIUM	5000.0	5041.00	100.8
SELENIUM	25.0	23.62	94.5
SILVER	10.0	9.59	95.9
SODIUM	5000.0	4761.00	95.2
THALLIUM	10.0	9.59	95.9
ZINC	25.0	23.75	95.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK18A Nov 18, 2013 20:53

Analyte	True	Found	%R (1)
ALUMINUM	500.0	469.60	93.9
ANTIMONY	25.0	24.74	99.0
BARIUM	25.0	25.43	101.7
BERYLLIUM	10.0	10.17	101.7
CALCIUM	5000.0	5006.00	100.1
CHROMIUM	25.0	22.06	88.2•
COBALT	10.0	8.98	89.8
COPPER	25.0	22.58	90.3
IRON	5000.0	4552.00	91.0
MAGNESIUM	5000.0	4634.00	92.7
MANGANESE	25.0	23.07	92.3
MOLYBDENUM	25.0	23.53	94.1
NICKEL	25.0	22.15	88.6•
POTASSIUM	5000.0	5009.00	100.2
SELENIUM	25.0	22.86	91.4
SILVER	10.0	9.36	93.6
SODIUM	5000.0	4707.00	94.1
THALLIUM	10.0	9.70	97.0
ZINC	25.0	23.20	92.8

SAMPLE: CCV

File: JGK18A Nov 18, 2013 21:35

Analyte	True	Found	%R (1)
ALUMINUM	500.0	482.80	96.6
ANTIMONY	25.0	24.28	97.1
BARIUM	25.0	25.35	101.4
BERYLLIUM	10.0	9.66	96.6
CALCIUM	5000.0	5003.00	100.1
CHROMIUM	25.0	23.33	93.3
COBALT	10.0	9.43	94.3
COPPER	25.0	23.79	95.2
IRON	5000.0	4802.00	96.0
MAGNESIUM	5000.0	4736.00	94.7
MANGANESE	25.0	24.24	97.0
MOLYBDENUM	25.0	24.22	96.9
NICKEL	25.0	23.57	94.3
POTASSIUM	5000.0	5012.00	100.2
SELENIUM	25.0	25.66	102.6
SILVER	10.0	9.83	98.3
SODIUM	5000.0	4902.00	98.0
THALLIUM	10.0	9.65	96.5
ZINC	25.0	24.95	99.8

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: PQL

File: JGK18A Nov 18, 2013 16:15

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	62.34	103.9
ANTIMONY	0.2	0.19	95.0
BARIUM	0.4	0.43	107.5
BERYLLIUM	0.2	0.20	100.0
CALCIUM	20.0	18.12	90.6
CHROMIUM	1.0	1.00	100.0
COBALT	0.2	0.19	95.0
COPPER	0.6	0.62	103.3
IRON	20.0	17.09	85.5
MAGNESIUM	20.0	20.01	100.1
MANGANESE	0.4	0.33	82.5
MOLYBDENUM	1.0	1.03	103.0
NICKEL	0.4	0.39	97.5
POTASSIUM	200.0	209.00	104.5
SELENIUM	1.0	1.15	115.0
SILVER	0.2	0.18	90.0
SODIUM	200.0	207.60	103.8
THALLIUM	0.2	0.20	100.0
ZINC	2.0	2.12	106.0

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICB

File: JGK18A Nov 18, 2013 16:12

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.021	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.159	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
ZINC	0.130	U

SAMPLE: CCB

File: JGK18A Nov 18, 2013 16:29

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.018	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	-0.011	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	-0.048	U
MOLYBDENUM	0.570	B
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	4.196	J
THALLIUM	0.003	U
ZINC	0.130	U

SAMPLE: CCB

File: JGK18A Nov 18, 2013 16:51

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.014	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	-0.009	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	-0.038	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.004	J
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB
File: JGK18A Nov 18, 2013 17:25

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.018	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	-0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	-0.025	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK18A Nov 18, 2013 18:06

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.012	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.020	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK18A Nov 18, 2013 18:48

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.011	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.029	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
ZINC	0.130	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB
File: JGK18A Nov 18, 2013 19:31

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.008	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.040	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK18A Nov 18, 2013 20:13

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.009	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	-4.622	U
CHROMIUM	-0.045	U
COBALT	-0.008	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.148	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
ZINC	0.130	U

SAMPLE: CCB
File: JGK18A Nov 18, 2013 20:56

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.014	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	-4.940	U
CHROMIUM	-0.047	U
COBALT	-0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MANGANESE	0.205	J
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	3.900	U
THALLIUM	0.003	U
ZINC	0.336	J

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB

File: JGK18A Nov 18, 2013 21:38

Analyte	Result	C
ALUMINUM	0.340	U
ANTIMONY	0.019	J
BARIUM	0.020	U
BERYLLIUM	0.003	U
CALCIUM	4.100	U
CHROMIUM	-0.033	U
COBALT	0.006	U
COPPER	0.030	U
IRON	4.700	U
MAGNESIUM	2.043	J
MANGANESE	0.070	J
MOLYBDENUM	0.120	U
NICKEL	0.059	J
POTASSIUM	8.200	U
SELENIUM	0.640	U
SILVER	0.004	U
SODIUM	105.700	B
THALLIUM	0.003	U
ZINC	0.403	J

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICSA

File: JGK18A Nov 18, 2013 16:19

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	93870	93.9
ANTIMONY	0	0	
BARIUM	0	0	
BERYLLIUM	0	0	
CALCIUM	100000	94330	94.3
CHROMIUM	0	(1)	
COBALT	0	0	
COPPER	0	0	
IRON	100000	90960	91.0
MAGNESIUM	100000	92890	92.9
MANGANESE	0	0	
MOLYBDENUM	2000	1997	99.9
NICKEL	0	0	
POTASSIUM	100000	96820	96.8
SELENIUM	0	0	
SILVER	0	0	
SODIUM	100000	94930	94.9
THALLIUM	0	0	
ZINC	0	(2)	

SAMPLE: ICSAB

File: JGK18A Nov 18, 2013 16:22

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	93600	93.6
ANTIMONY	20	20	100.0
BARIUM	21	21	100.0
BERYLLIUM	20	20	100.0
CALCIUM	100000	94880	94.9
CHROMIUM	20	20	100.0
COBALT	20	19	95.0
COPPER	20	19	95.0
IRON	100000	90720	90.7
MAGNESIUM	100000	91790	91.8
MANGANESE	20	19	95.0
MOLYBDENUM	2000	2017	100.8
NICKEL	20	19	95.0
POTASSIUM	100000	96210	96.2
SELENIUM	20	18	90.0
SILVER	20	18	90.0
SODIUM	100000	95340	95.3
THALLIUM	20	21	105.0
ZINC	20	19	95.0

ICSA / ICSAB — 1X

Samples — 5X

N/A

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: AGILENT 7500 ICP-MS **File Name:** JGK19A

Date: 11/19/2013 **Method:** MS

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	16:46	
ZZZZZZ		1	16:49	
Cal Blank		1	17:14	Al Ca Cr Fe Mg Mo Ni K Na
Cal Std 1		1	17:18	Al Ca Cr Fe Mg Mo Ni K Na
Cal Std 2		1	17:21	Al Ca Cr Fe Mg Mo Ni K Na
Cal Std 3		1	17:24	Al Ca Cr Fe Mg Mo Ni K Na
Cal Std 4		1	17:27	Al Ca Cr Fe Mg Mo Ni K Na
ICV		1	17:30	Al Ca Cr Fe Mg Mo Ni K Na
ICB		1	17:33	Al Ca Cr Fe Mg Mo Ni K Na
PQL		1	17:36	Al Ca Cr Fe Mg Mo Ni K Na
ICSA		1	17:39	Al Ca Cr Fe Mg Mo Ni K Na
ICSAB		1	17:43	Al Ca Cr Fe Mg Mo Ni K Na
CCV		1	17:46	Al Ca Cr Fe Mg Mo Ni K Na
CCB		1	17:49	Al Ca Cr Fe Mg Mo Ni K Na
PBSGK08IMS2		5	17:53	Cr Ni
LCSOGK08IMS2		5	17:56	Cr Ni
SG8254-028A	003-SS1016-000.9A	5	17:59	Cr Ni
SG8254-028S	003-SS1016-000.9S	5	18:02	Cr Ni
SG8254-024	003-SS1012-000.7	5	18:06	Cr Ni
SG8254-025	003-SS1013-000.7	5	18:09	Cr Ni
SG8254-026	003-SS1014-0001	5	18:12	Cr Ni
SG8254-027	003-SS1015-000.8	5	18:16	Cr Ni
SG8254-029	003-SS1017-000.8	5	18:19	Cr Ni
SG8254-030	003-SS1018-000.8	5	18:22	Cr Ni
CCV		1	18:26	Al Ca Cr Fe Mg Mo Ni K Na
CCB		1	18:29	Al Ca Cr Fe Mg Mo Ni K Na
SG8254-031	003-SS1019-000.5	5	18:32	Cr Ni
SG8254-032	003-SS-DUP06-1013	5	18:36	Cr Ni
ZZZZZZ		5	18:39	
ZZZZZZ		5	18:43	
ZZZZZZ		5	18:46	
ZZZZZZ		5	18:49	
ZZZZZZ		5	18:52	
ZZZZZZ		25	18:56	
ZZZZZZ		5	18:59	
ZZZZZZ		5	19:03	
CCV		1	19:06	Al Ca Cr Fe Mg Mo Ni K Na
CCB		1	19:09	Al Ca Cr Fe Mg Mo Ni K Na

FORM XIV - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICV

File: JGK19A Nov 19, 2013 17:30

Analyte	True	Found	%R (1)
ALUMINUM	400.0	398.00	99.5
CALCIUM	4000.0	4094.00	102.4
CHROMIUM	20.0	20.42	102.1
IRON	4000.0	4099.00	102.5
MAGNESIUM	4000.0	4079.00	102.0
MOLYBDENUM	40.0	40.96	102.4
NICKEL	20.0	20.71	103.6
POTASSIUM	4000.0	4068.00	101.7
SODIUM	4000.0	4077.00	101.9

SAMPLE: CCV

File: JGK19A Nov 19, 2013 17:46

Analyte	True	Found	%R (1)
ALUMINUM	500.0	489.10	97.8
CALCIUM	5000.0	4948.00	99.0
CHROMIUM	25.0	24.49	98.0
IRON	5000.0	4919.00	98.4
MAGNESIUM	5000.0	4821.00	96.4
MOLYBDENUM	25.0	26.13	104.5
NICKEL	25.0	24.70	98.8
POTASSIUM	5000.0	4918.00	98.4
SODIUM	5000.0	4848.00	97.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: JGK19A Nov 19, 2013 18:26

Analyte	True	Found	%R (1)
ALUMINUM	500.0	488.20	97.6
CALCIUM	5000.0	4984.00	99.7
CHROMIUM	25.0	24.54	98.2
IRON	5000.0	5001.00	100.0
MAGNESIUM	5000.0	4887.00	97.7
MOLYBDENUM	25.0	25.05	100.2
NICKEL	25.0	25.01	100.0
POTASSIUM	5000.0	4971.00	99.4
SODIUM	5000.0	4902.00	98.0

SAMPLE: CCV

File: JGK19A Nov 19, 2013 19:06

Analyte	True	Found	%R (1)
ALUMINUM	500.0	494.30	98.9
CALCIUM	5000.0	4973.00	99.5
CHROMIUM	25.0	24.81	99.2
IRON	5000.0	4941.00	98.8
MAGNESIUM	5000.0	4928.00	98.6
MOLYBDENUM	25.0	24.72	98.9
NICKEL	25.0	25.17	100.7
POTASSIUM	5000.0	4916.00	98.3
SODIUM	5000.0	5055.00	101.1

(1) Control Limits: Mercury 80-120; Other Metals 90-110

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: PQL

File: JGK19A Nov 19, 2013 17:36

Analyte	TRUE	FOUND	% R
ALUMINUM	60.0	62.60	104.3
CALCIUM	20.0	21.07	105.4
CHROMIUM	1.0	1.01	101.0
IRON	20.0	21.55	107.8
MAGNESIUM	20.0	20.06	100.3
MOLYBDENUM	1.0	1.05	105.0
NICKEL	0.4	0.41	102.5
POTASSIUM	200.0	211.50	105.8
SODIUM	200.0	211.60	105.8

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICB

File: JGK19A Nov 19, 2013 17:33

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.171	J
NICKEL	0.020	U
POTASSIUM	8.200	U
SODIUM	3.900	U

SAMPLE: CCB

File: JGK19A Nov 19, 2013 17:49

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
IRON	4.700	U
MAGNESIUM	0.690	U
MOLYBDENUM	0.481	B
NICKEL	0.020	U
POTASSIUM	8.200	U
SODIUM	4.131	J

SAMPLE: CCB

File: JGK19A Nov 19, 2013 18:29

Analyte	Result	C
ALUMINUM	2.055	J
CALCIUM	4.100	U
CHROMIUM	0.030	U
IRON	4.871	J
MAGNESIUM	0.690	U
MOLYBDENUM	0.120	U
NICKEL	0.020	U
POTASSIUM	8.200	U
SODIUM	3.900	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB

File: JGK19A Nov 19, 2013 19:09

Analyte	Result	C
ALUMINUM	0.340	U
CALCIUM	4.100	U
CHROMIUM	0.030	U
IRON	4.700	U
MAGNESIUM	0.944	J
MOLYBDENUM	0.120	U
NICKEL	0.102	J
POTASSIUM	8.200	U
SODIUM	116.700	B

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICSA

File: JGK19A Nov 19, 2013 17:39

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	91030	91.0
CALCIUM	100000	91300	91.3
CHROMIUM	0	1	
IRON	100000	86610	86.6
MAGNESIUM	100000	89450	89.5
MOLYBDENUM	2000	1890	94.5
NICKEL	0	0	
POTASSIUM	100000	94280	94.3
SODIUM	100000	93790	93.8

SAMPLE: ICSAB

File: JGK19A Nov 19, 2013 17:43

Analyte	TRUE	FOUND	% R
ALUMINUM	100000	91620	91.6
CALCIUM	100000	91610	91.6
CHROMIUM	20	20	100.0
IRON	100000	87060	87.1
MAGNESIUM	100000	90470	90.5
MOLYBDENUM	2000	1927	96.4
NICKEL	20	18	90.0
POTASSIUM	100000	94520	94.5
SODIUM	100000	94110	94.1

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK07HGS1

Matrix: SOIL **SDG Name:** SG8254

Method: CV **Prep Date:** 11/07/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK07HGS1	LCSOGK07HGS1	0.6	0.1	
PBSGK07HGS1	PBSGK07HGS1	0.6	0.1	
004/5-SS1057-0001	SG8254-002	0.68	0.1	A
004/5-SS1056-000.6	SG8254-003	0.68	0.1	B
004/5-SS1055-000.8	SG8254-004	0.77	0.1	A
004/5-SS1054-000.6	SG8254-005	0.65	0.1	A
004/5-SS1054-000.6D	SG8254-005D	0.62	0.1	A
004/5-SS1054-000.6S	SG8254-005S	0.63	0.1	A
004/5-SS1053-000.6	SG8254-006	0.63	0.1	A
004/5-SS1052-000.6	SG8254-007	0.7	0.1	A
004/5-SS1051-000.8	SG8254-008	0.64	0.1	B
004/5-SS1050-000.6	SG8254-009	0.77	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK07HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK07HGS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.005	J

FORM III (Part 2) - IN

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK07HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK07HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.81	97.6	80	120

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK08HGS1

Matrix: SOIL **SDG Name:** SG8254

Method: CV **Prep Date:** 11/08/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LCSOGK08HGS1	LCSOGK08HGS1	0.6	0.1	
PBSGK08HGS1	PBSGK08HGS1	0.6	0.1	
004/5-SS1062-000.8	SG8254-010	0.8	0.1	A
004/5-SS-DUP04-1013	SG8254-011	0.63	0.1	A
004/5-SS1061-000.6	SG8254-012	0.72	0.1	A
004/5-SS1067-000.7	SG8254-013	0.69	0.1	A
004/5-SS1066-000.9	SG8254-014	0.66	0.1	A
004/5-SS1060-000.5	SG8254-015	0.68	0.1	A
004/5-SS1059-000.6	SG8254-016	0.82	0.1	A
004/5-SS1058-000.5	SG8254-017	0.64	0.1	A
004/5-SS1065-000.5	SG8254-018	0.65	0.1	A
004/5-SS1064-000.6	SG8254-019	0.63	0.1	A
004/5-SS1063-000.6	SG8254-020	0.74	0.1	A
004/5-SS1068-000.5	SG8254-021	0.69	0.1	A
003-SS1011-000.8	SG8254-022	0.77	0.1	A
004/5-SS-DUP05-1013	SG8254-023	0.64	0.1	A
003-SS1012-000.7	SG8254-024	0.64	0.1	A
003-SS1013-000.7	SG8254-025	0.64	0.1	A
003-SS1014-0001	SG8254-026	0.66	0.1	A
003-SS1015-000.8	SG8254-027	0.65	0.1	B
003-SS1016-000.9	SG8254-028	0.67	0.1	A
003-SS1016-000.9D	SG8254-028D	0.64	0.1	A
003-SS1016-000.9S	SG8254-028S	0.64	0.1	A
003-SS1017-000.8	SG8254-029	0.66	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK08HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK08HGS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.005	J

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK08HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK08HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	1.00	120.5	80	120

Katahdin Analytical Services A0000204

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK09HGW1

Matrix: WATER **SDG Name:** SG8254

Method: CV **Prep Date:** 11/09/2013

Client ID	Lab Sample ID	Initial (L)	Final (L)	Bottle ID
LCSWGK09HGW1	LCSWGK09HGW1	0.025	0.025	
PBWGK09HGW1	PBWGK09HGW1	0.025	0.025	
TF2-SS-RB03-1013	SG8254-033	0.025	0.025	C

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBWGK09HGW1

Matrix: WATER **SDG Name:** SG8254

QC Batch ID: GK09HGW1

Concentration Units : ug/L

Analyte	RESULT	C
MERCURY	0.10	U

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSWGK09HGW1

Matrix: WATER **SDG Name:** SG8254

QC Batch ID: GK09HGW1

Concentration Units : ug/L

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	5.00	5.43	108.6	80	120

PREPARATION LOG

Lab Name: Katahdin Analytical Services **QC Batch ID:** GK12HGS1

Matrix: SOIL **SDG Name:** SG8254

Method: CV **Prep Date:** 11/12/2013

Client ID	Lab Sample ID	Initial (g)	Final (L)	Bottle ID
LC2OGK12HGS1	LC2OGK12HGS1	0.6	0.1	
LCSOGK12HGS1	LCSOGK12HGS1	0.6	0.1	
PBSGK12HGS1	PBSGK12HGS1	0.6	0.1	
003-SS1018-000.8	SG8254-030	0.64	0.1	A
003-SS1019-000.5	SG8254-031	0.71	0.1	A
003-SS-DUP06-1013	SG8254-032	0.66	0.1	A

3P

PREPARATION BLANKS

Lab Name: Katahdin Analytical Services **Sample ID:** PBSGK12HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK12HGS1

Concentration Units : mg/Kgdrywt

Analyte	RESULT	C
MERCURY	0.017	U

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LC2OGK12HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK12HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.88	106.0	80	120

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services **Sample ID:** LCSOGK12HGS1

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK12HGS1

Concentration Units : mg/Kgdrywt

Analyte	TRUE	FOUND	% R	LIMITS (%)	
MERCURY	0.83	0.79	95.2	80	120

7D

LABORATORY CONTROL SAMPLE DUPLICATES

Lab Name: Katahdin Analytical Services

Matrix: SOIL **SDG Name:** SG8254

QC Batch ID: GK12HGS1 **Lab Sample ID:** LCSOGK12HGS1

Concentration Units: mg/Kgdrywt

Analyte	Control Limit (%)	LCS Result	LCS Dup. Result	RPD(%)	Q
MERCURY	20.0	0.79	0.88	10.3	

FORM VIID - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: CETAC M6100 **File Name:** HGK08A

Date: 11/8/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	14:12	Hg
Standard #1 (0.2 p		1	14:14	Hg
Standard #2 (0.5 p		1	14:16	Hg
Standard #3 (1.0 p		1	14:18	Hg
Standard #4 (5.0 p		1	14:20	Hg
Standard #5 (10.0		1	14:23	Hg
ICV		1	14:25	HG
ICB		1	14:27	HG
PQL		1	14:29	HG
ZZZZZZ		1	14:33	
ZZZZZZ		1	14:35	
ZZZZZZ		1	14:37	
ZZZZZZ		1	14:39	
ZZZZZZ		1	14:42	
ZZZZZZ		1	14:44	
ZZZZZZ		1	14:46	
ZZZZZZ		1	14:48	
ZZZZZZ		1	14:50	
CCV		1	14:52	HG
CCB		1	14:54	HG
ZZZZZZ		1	14:56	
ZZZZZZ		1	14:58	
ZZZZZZ		1	15:01	
ZZZZZZ		1	15:03	
ZZZZZZ		1	15:05	
ZZZZZZ		1	15:07	
ZZZZZZ		1	15:09	
ZZZZZZ		5	15:11	
ZZZZZZ		1	15:13	
ZZZZZZ		1	15:16	
CCV		1	15:18	HG
CCB		1	15:20	HG
ZZZZZZ		1	15:22	
ZZZZZZ		1	15:24	
ZZZZZZ		1	15:26	
ZZZZZZ		1	15:28	
ZZZZZZ		1	15:30	
ZZZZZZ		1	15:33	
ZZZZZZ		1	15:35	
ZZZZZZ		1	15:37	
PBSGK07HGS1		1	15:39	HG
ZZZZZZ		1	15:41	
CCV		1	15:43	HG
CCB		1	15:45	HG
ZZZZZZ		1	15:48	
ZZZZZZ		1	15:50	
ZZZZZZ		1	15:52	
ZZZZZZ		1	15:54	
ZZZZZZ		1	15:57	
ZZZZZZ		1	15:59	

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: CETAC M6100 **File Name:** HGK08A

Date: 11/8/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
ZZZZZZ		1	16:01	
ZZZZZZ		1	16:03	
ZZZZZZ		1	16:05	
ZZZZZZ		1	16:07	
CCV		1	16:09	HG
CCB		1	16:12	HG
ZZZZZZ		1	16:14	
SG8254-002	004/5-SS1057-0001	1	16:16	HG
SG8254-003	004/5-SS1056-000.6	1	16:18	HG
SG8254-004	004/5-SS1055-000.8	1	16:20	HG
SG8254-005	004/5-SS1054-000.6	1	16:22	HG
SG8254-005L	004/5-SS1054-000.6L	5	16:25	HG
SG8254-005A	004/5-SS1054-000.6A	1	16:27	HG
SG8254-005D	004/5-SS1054-000.6D	1	16:29	HG
SG8254-005S	004/5-SS1054-000.6S	1	16:31	HG
SG8254-006	004/5-SS1053-000.6	1	16:33	HG
CCV		1	16:35	HG
CCB		1	16:37	HG
SG8254-007	004/5-SS1052-000.6	1	16:40	HG
SG8254-008	004/5-SS1051-000.8	1	16:42	HG
SG8254-009	004/5-SS1050-000.6	1	16:44	HG
LCSOGK07HGS1		1	16:50	HG
LCSOGK08HGS1		1	17:26	HG
PBSGK08HGS1		1	17:28	HG
SG8254-010	004/5-SS1062-000.8	1	17:30	HG
SG8254-011	004/5-SS-DUP04-1013	1	17:33	HG
SG8254-012	004/5-SS1061-000.6	1	17:35	HG
SG8254-013	004/5-SS1067-000.7	1	17:37	HG
CCV		1	17:39	HG
CCB		1	17:41	HG
SG8254-014	004/5-SS1066-000.9	1	17:43	HG
SG8254-015	004/5-SS1060-000.5	1	17:46	HG
SG8254-016	004/5-SS1059-000.6	1	17:48	HG
SG8254-017	004/5-SS1058-000.5	1	17:50	HG
SG8254-018	004/5-SS1065-000.5	1	17:52	HG
SG8254-019	004/5-SS1064-000.6	1	17:54	HG
SG8254-020	004/5-SS1063-000.6	1	17:56	HG
SG8254-021	004/5-SS1068-000.5	1	17:58	HG
SG8254-022	003-SS1011-000.8	1	18:00	HG
SG8254-023	004/5-SS-DUP05-1013	1	18:02	HG
CCV		1	18:05	HG
CCB		1	18:07	HG
SG8254-024	003-SS1012-000.7	1	18:09	HG
SG8254-025	003-SS1013-000.7	1	18:11	HG
SG8254-026	003-SS1014-0001	1	18:13	HG
SG8254-027	003-SS1015-000.8	1	18:15	HG
SG8254-028	003-SS1016-000.9	1	18:17	HG
SG8254-028L	003-SS1016-000.9L	5	18:19	HG
SG8254-028A	003-SS1016-000.9A	1	18:22	HG
SG8254-028D	003-SS1016-000.9D	1	18:24	HG
SG8254-028S	003-SS1016-000.9S	1	18:26	HG

FORM XIV - IN

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: CETAC M6100 **File Name:** HGK08A

Date: 11/8/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
SG8254-029	003-SS1017-000.8	1	18:37	HG
CCV		1	18:39	HG
CCB		1	18:41	HG

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICV

File: HGK08A Nov 08, 2013 14:25

Analyte	True	Found	%R (1)
MERCURY	6.0	6.04	100.7

SAMPLE: CCV

File: HGK08A Nov 08, 2013 14:52

Analyte	True	Found	%R (1)
MERCURY	5.0	5.81	116.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: HGK08A Nov 08, 2013 15:18

Analyte	True	Found	%R (1)
MERCURY	5.0	4.97	99.4

SAMPLE: CCV

File: HGK08A Nov 08, 2013 15:43

Analyte	True	Found	%R (1)
MERCURY	5.0	5.00	100.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: HGK08A Nov 08, 2013 16:09

Analyte	True	Found	%R (1)
MERCURY	5.0	5.91	118.2

SAMPLE: CCV

File: HGK08A Nov 08, 2013 16:35

Analyte	True	Found	%R (1)
MERCURY	5.0	5.07	101.4

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: HGK08A Nov 08, 2013 17:39

Analyte	True	Found	%R (1)
MERCURY	5.0	5.94	118.8

SAMPLE: CCV

File: HGK08A Nov 08, 2013 18:05

Analyte	True	Found	%R (1)
MERCURY	5.0	5.33	106.6

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCV

File: HGK08A Nov 08, 2013 18:39

Analyte	True	Found	%R (1)
MERCURY	5.0	5.20	104.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: PQL

File: HGK08A Nov 08, 2013 14:29

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.16	80.0

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICB

File: HGK08A Nov 08, 2013 14:27

Analyte	Result	C
MERCURY	-0.071	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 14:54

Analyte	Result	C
MERCURY	-0.064	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 15:20

Analyte	Result	C
MERCURY	-0.044	U

3A

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB

File: HGK08A Nov 08, 2013 15:45

Analyte	Result	C
MERCURY	-0.068	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 16:12

Analyte	Result	C
MERCURY	-0.045	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 16:37

Analyte	Result	C
MERCURY	-0.062	U

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: CCB

File: HGK08A Nov 08, 2013 17:41

Analyte	Result	C
MERCURY	-0.046	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 18:07

Analyte	Result	C
MERCURY	-0.075	U

SAMPLE: CCB

File: HGK08A Nov 08, 2013 18:41

Analyte	Result	C
MERCURY	-0.061	U

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: CETAC M6100 **File Name:** HGK11A

Date: 11/11/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	15:27	Hg
Standard #1 (0.2 p		1	15:29	Hg
Standard #2 (0.5 p		1	15:31	Hg
Standard #3 (1.0 p		1	15:33	Hg
Standard #4 (5.0 p		1	15:35	Hg
Standard #5 (10.0		1	15:37	Hg
ICV		1	15:42	HG
ICB		1	15:44	HG
PQL		1	15:46	HG
LCSWGK09HGW1		1	15:48	HG
PBWGK09HGW1		1	15:50	HG
ZZZZZZ		1	15:52	
ZZZZZZ		1	15:54	
SG8254-033	TF2-SS-RB03-1013	1	15:56	HG
ZZZZZZ		1	15:59	
ZZZZZZ		5	16:01	
ZZZZZZ		1	16:03	
ZZZZZZ		1	16:05	
CCV		1	16:07	HG
CCB		1	16:09	HG

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICV

File: HGK11A Nov 11, 2013 15:42

Analyte	True	Found	%R (1)
MERCURY	6.0	5.75	95.8

SAMPLE: CCV

File: HGK11A Nov 11, 2013 16:07

Analyte	True	Found	%R (1)
MERCURY	5.0	4.51	90.2

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: PQL

File: HGK11A Nov 11, 2013 15:46

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.19	95.0

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICB

File: HGK11A Nov 11, 2013 15:44

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGK11A Nov 11, 2013 16:09

Analyte	Result	C
MERCURY	0.030	U

ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Instrument ID: CETAC M6100 **File Name:** HGK13A

Date: 11/13/2013 **Method:** CV

Lab Sample ID	Client ID	D.F.	Time	Elements
Calibration Blank		1	15:08	Hg
Standard #1 (0.2 p		1	15:11	Hg
Standard #2 (0.5 p		1	15:13	Hg
Standard #3 (1.0 p		1	15:15	Hg
Standard #3 (1.0 p		1	15:20	Hg
Standard #4 (5.0 p		1	15:23	Hg
Standard #5 (10.0		1	15:25	Hg
ICV		1	15:30	HG
ICB		1	15:32	HG
PQL		1	15:34	HG
LCSOGK12HGS1		1	15:36	HG
PBSGK12HGS1		1	15:39	HG
LC2OGK12HGS1		1	15:41	HG
SG8254-030	003-SS1018-000.8	1	15:43	HG
SG8254-031	003-SS1019-000.5	1	15:45	HG
SG8254-032	003-SS-DUP06-1013	1	15:47	HG
ZZZZZZ		1	15:49	
ZZZZZZ		1	15:51	
ZZZZZZ		1	15:53	
CCV		1	15:56	HG
CCB		1	15:58	HG

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICV

File: HGK13A Nov 13, 2013 15:30

Analyte	True	Found	%R (1)
MERCURY	6.0	6.06	101.0

SAMPLE: CCV

File: HGK13A Nov 13, 2013 15:56

Analyte	True	Found	%R (1)
MERCURY	5.0	5.50	110.0

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2C

PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: PQL

File: HGK13A Nov 13, 2013 15:34

Analyte	TRUE	FOUND	% R
MERCURY	0.2	0.23	115.0

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services **SDG Name:** SG8254

Concentration Units: ug/L

SAMPLE: ICB

File: HGK13A Nov 13, 2013 15:32

Analyte	Result	C
MERCURY	0.030	U

SAMPLE: CCB

File: HGK13A Nov 13, 2013 15:58

Analyte	Result	C
MERCURY	0.030	U

Tetra Tech INC **INTERNAL CORRESPONDENCE**

TO: **D. SEIKEN** **DATE:** **JANUARY 29, 2014**

FROM: **JOSEPH KALINYAK** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PCDD/PCDF**
NAVSTA NEWPORT, CTO WE30
SAMPLE DELIVERY GROUP (SDG) 320-4670-1

SAMPLES: 3 / Aqueous / PCDD/PCDF

TF2-003-SS-RB03-1013	TF2-SS-RB01-1013	TF2-SS-RB02-1013

63 / Soil / PCDD/PCDF

TF2-003-SS-DUP06-1013	TF2-003-SS1011-000.8	TF2-003-SS1012-000.7
TF2-003-SS1013-000.7	TF2-003-SS1014-0001	TF2-003-SS1015-000.8
TF2-003-SS1016-000.9	TF2-003-SS1017-000.8	TF2-003-SS1018-000.8
TF2-003-SS1019-000.5	TF2-004/5-SS-DUP01-1013	TF2-004/5-SS-DUP02-1013
TF2-004/5-SS-DUP03-1013	TF2-004/5-SS-DUP04-1013	TF2-004/5-SS-DUP05-1013
TF2-004/5-SS1020-0001	TF2-004/5-SS1021-000.7	TF2-004/5-SS1022-000.9
TF2-004/5-SS1023-000.8	TF2-004/5-SS1024-000.6	TF2-004/5-SS1025-000.8
TF2-004/5-SS1026-000.8	TF2-004/5-SS1027-0001	TF2-004/5-SS1028-000.8
TF2-004/5-SS1029-000.6	TF2-004/5-SS1030-000.6	TF2-004/5-SS1031-000.8
TF2-004/5-SS1032-000.9	TF2-004/5-SS1033-000.8	TF2-004/5-SS1034-000.6
TF2-004/5-SS1035-0001	TF2-004/5-SS1036-000.6	TF2-004/5-SS1037-000.7
TF2-004/5-SS1038-000.7	TF2-004/5-SS1039-000.9	TF2-004/5-SS1040-000.9
TF2-004/5-SS1041-000.7	TF2-004/5-SS1042-000.5	TF2-004/5-SS1044-000.5
TF2-004/5-SS1045-000.5	TF2-004/5-SS1046-000.5	TF2-004/5-SS1047-000.8
TF2-004/5-SS1048-000.8	TF2-004/5-SS1049-000.9	TF2-004/5-SS1050-000.6
TF2-004/5-SS1051-000.8	TF2-004/5-SS1052-000.6	TF2-004/5-SS1053-000.6
TF2-004/5-SS1054-000.6	TF2-004/5-SS1055-000.8	TF2-004/5-SS1056-000.6
TF2-004/5-SS1057-0001	TF2-004/5-SS1058-000.5	TF2-004/5-SS1059-000.6
TF2-004/5-SS1060.000.5	TF2-004/5-SS1061-000.6	TF2-004/5-SS1062-000.8
TF2-004/5-SS1063-000.6	TF2-004/5-SS1064-000.6	TF2-004/5-SS1065-000.5
TF2-004/5-SS1066-000.9	TF2-004/5-SS1067-000.7	TF2-004/5-SS1068-000.5

OVERVIEW

The sample set for NAVSTA Newport, CTO WE30, SDG 320-4670-7 consisted of sixty-three (63) soil samples and three (3) aqueous rinse blank samples. All samples were analyzed for polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDF), as indicated above. Six (6) field duplicate sample pair were included in this sample delivery group (SDG):

TF2-004/5-SS-DUP01-1013 / TF2-004/5-SS1020-0001
TF2-004/5-SS-DUP02-1013 / TF2-004/5-SS1035-0001
TF2-004/5-SS-DUP03-1013 / TF2-004/5-SS1041-000.7
TF2-004/5-SS-DUP04-1013 / TF2-004/5-SS1061-000.6
TF2-004/5-SS-DUP05-1013 / TF2-004/5-SS1065-000.5
TF2-003-SS-DUP06-1013 / TF2-003-SS1015-000.8

The samples were collected by Tetra Tech on October 18, 21, and 22, 2013 and analyzed by TestAmerica Laboratories Inc. All analyses were conducted in accordance with EPA SW-846 Method 8290A for PCDDs and PCDFs, analytical and reporting protocols.

The data contained in this SDG were fully validated Tier II with regard to the following parameters:

- Data completeness
- * Hold times
- * Mass Calibration
- HRGC/HRMS Tuning and System Performance
- Chromatographic Resolution /Window Defining Mixtures
- Initial and continuing calibration
- Method Blank results
- Blank Spike/Blank Spike Duplicate Results
- Matrix Spike/Matrix Spike Duplicate Results
- * Clean-up Standard Recoveries
- Internal Standard Recoveries
- Field Duplicate Precision
- * Estimated Detection Limits
- * Compound Quantitation
- * Compound Identification

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

HOLD TIME

Many of the sample extraction analyses were completed after the 45 day sample extraction to analysis hold time listed in the recommendations for the analytical method. However, no validation action was taken as PCDDs/PCSFs are considered very stable. Per the SW846 8290A method, "The holding times listed in this method are recommendations. PCDDs and PCDFs are very stable in a variety of matrices, and holding times under the conditions listed in this section may be as long as a year for certain matrices."

HRGC/HRMS INSTRUMENT TUNING AND SYSTEM PERFORMANCE

The laboratory narrative indicated a problem with an instrumentation auto end resolution check not being completed within 12 hours of the beginning of the initial resolution check due to an instrument malfunction. The instrumentation affected was rebooted and an end resolution check was performed with compliant results (without changing the instrument tune parameters). No validation action was taken for this issue.

CHROMATOGRAPHIC RESOLUTION /WINDOW DEFINING MIXTURES

The resolution check exceeded the 25% quality control limit for the 2,3,7,8-TCDD mixture for column DB-5 on instrument 3D5 on 12/18/13 @ 22:06.

Affected Samples: 10 samples

Actions: No validation action was necessary as the samples were analyzed at 10X dilutions for OCDD only.

The resolution check exceeded the 25% (25.6%) quality control limit for the 2,3,7,8-TCDF mixture for column DB-225 on instrument 11D-5 on 12/16/13 @ 23:17.

Affected Samples:

TF2-004/5-SS1020-0001	TF2-004/5-SS1021-000.7	TF2-004/5-SS1022-000.9
TF2-004/5-SS1026-000.8	TF2-004/5-SS1027-0001	TF2-004/5-SS-DUP01-1013
TF2-004/5-SS1030-000.6	TF2-004/5-SS1031-000.8	

Actions: The samples were analyzed for 2,3,7,8-TCDF only. The sample detected 2,3,7,8-TCDF results were qualified estimated, (J). The non-detected results were not qualified.

BLANKS

Method blank 320-28374 had detected results for OCDD and Total HpCDD affecting samples TF2-003-SS-RB03-1013, TF2-SS-RB01-1013, and TF2-SS-RB02-1013. No action was taken as rinse blanks are not qualified for method blank contamination.

The following compounds were detected in the method blanks at the maximum concentrations indicated below.

Compound	Maximum Conc. pg/g	Action Level pg/g
1,2,3,4,7,8-HxCDF [1]	0.147	0.735
1,2,3,4,6,7,8-HpCDF [1]	0.174	0.870
Total HxCDF [1]	0.147	0.735
Total HpCDF [1]	0.174	0.870
OCDD [2]	0.196	1.96
OCDF [2]	0.141	1.41
OCDD [3]	0.305	3.05
1,2,3,4,6,7,8-HpCDF [3]	0.113	0.565
Total HpCDF [3]	0.113	0.565
OCDD [4]	0.221	2.21
OCDF [4]	0.307	3.07
1,2,3,4,6,7,8-HpCDF [4]	0.375	1.875
Total HpCDD [4]	0.0606	0.3030
Total HpCDF [4]	0.375	1.875
OCDD [5]	0.63	6.3
OCDF [5]	0.527	5.27
1,2,3,4,6,7,8-HpCDD [5]	0.0775	0.3875
1,2,3,4,6,7,8-HpCDF [5]	0.381	1.905
1,2,3,4,7,8-HxCDF [5]	0.302	1.510
Total HpCDD [5]	0.225	1.125
Total HpCDF [5]	0.381	1.905
Total HxCDF [5]	0.302	1.510

[1] Method blank 320-28361 results affecting sample TF2-004/5-SS1025-000.8

[2] Method blank 320-28431 results affecting samples:

TF2-003-SS-DUP06-1013 (1X & 10X dil)	TF2-004/5-SS-DUP05-1013
TF2-003-SS1011-000.8 (1X & 10X dil)	TF2-003-SS1012-000.7
TF2-003-SS1013-000.7	TF2-003-SS1014-0001
TF2-003-SS1015-000.8 (1X & 10X dil)	TF2-003-SS1016-000.9 (1X & 10X dil)
TF2-003-SS1017-000.8	TF2-003-SS1018-000.8
TF2-003-SS1019-000.5	TF2-004/5-SS1058-000.5
TF2-004/5-SS1059-000.6 (1X & 10X dil)	TF2-004/5-SS1060.000.5 (1X & 10X dil)

TF2-004/5-SS1063-000.6	TF2-004/5-SS1064-000.6
TF2-004/5-SS1065-000.5	TF2-004/5-SS1068-000.5

(3) Method blank 320-28458 results affecting samples;

TF2-004/5-SS1028-000.8	TF2-004/5-SS1027-0001 (1X & 10X dil)
TF2-004/5-SS1040-000.9 (1X & 10X dil)	TF2-004/5-SS1039-000.9 (1X & 10X dil)
TF2-004/5-SS1038-000.7	TF2-004/5-SS1037-000.7
TF2-004/5-SS1036-000.6 (1X & 10X dil)	TF2-004/5-SS1035-0001
TF2-004/5-SS-DUP02-1013	TF2-004/5-SS1026-000.8
TF2-004/5-SS1024-000.6	TF2-004/5-SS1023-000.8
TF2-004/5-SS1022-000.9 (1X & 10X dil)	TF2-004/5-SS1021-000.7
TF2-004/5-SS1020-0001 (1X & 10X dil)	TF2-004/5-SS1032-000.9
TF2-004/5-SS1031-000.8	TF2-004/5-SS-DUP01-1013 (1X & 10X dil)
TF2-004/5-SS1030-000.6	TF2-004/5-SS1029-000.6 (1X & 10X dil)

(4) Method blank 320-28540 results affecting samples;

TF2-004/5-SS-DUP03-1013 (1X & 10X dil)	TF2-004/5-SS1033-000.8
TF2-004/5-SS1034-000.6	TF2-004/5-SS1041-000.7 (1X & 10X dil)
TF2-004/5-SS1042-000.5	TF2-004/5-SS1044-000.5
TF2-004/5-SS1045-000.5 (1X & 10X dil)	TF2-004/5-SS1046-000.5
TF2-004/5-SS1047-000.8 (1X & 10X dil)	TF2-004/5-SS1048-000.8
TF2-004/5-SS1049-000.9	TF2-004/5-SS1050-000.6
TF2-004/5-SS1051-000.8 (1X & 10X dil)	TF2-004/5-SS1052-000.6
TF2-004/5-SS1053-000.6 (1X & 10X dil)	TF2-004/5-SS1054-000.6
TF2-004/5-SS1055-000.8	TF2-004/5-SS1056-000.6
TF2-004/5-SS1057-0001 (1X & 10X dil)	TF2-004/5-SS1062-000.8 (1X & 10X dil)

(5) Method blank 320-28546 results affecting samples TF2-004/5-SS1061-000.6, TF2-004/5-SS-DUP04-1013, TF2-004/5-SS1067-000.7, and TF2-004/5-SS1066-000.9 (1X & 10X dil).

An action level of 10X for the maximum level for OCDD and OCDF, 5X for the other PCDD/PCDFs has been used to evaluate sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination for each individual sample. No sample analyte results were qualified for method blank contamination.

CALIBRATIONS

The continuing calibration verification (CCV) percent difference (%D) was greater than the 20% quality control limit for 1,2,3,4,7,8-HxCDD on 11/05/13 @ 17:32 on instrument 3D5.

Affected Sample:

TF2-004/5-SS1038-000.5	TF2-004/5-SS1037-000.7	TF2-004/5-SS1036-000.6
TF2-004/5-SS1035-0001	TF2-004/5-SS-DUP02-1013	TF2-004/5-SS1026-000.8
TF2-004/5-SS1024-000.6	TF2-004/5-SS1023-000.8	

Actions: The sample detected 1,2,3,4,7,8-HxCDD results were qualified estimated, (J).

LABORATORY CONTROL SPIKE (LCS) /LABORATORY CONTROL SPIKE DUPLICATE (LCSD)

The LCS percent recovery (%R) was greater than the quality control limit for 2,3,4,7,8-PeCDF for batch 320-28540.

Affected Samples:

TF2-004/5-SS-DUP03-1013	TF2-004/5-SS1033-000.8	TF2-004/5-SS1034-000.6
TF2-004/5-SS1041-000.7	TF2-004/5-SS1042-000.5	TF2-004/5-SS1044-000.5
TF2-004/5-SS1045-000.5	TF2-004/5-SS1046-000.5	TF2-004/5-SS1047-000.8
TF2-004/5-SS1048-000.8	TF2-004/5-SS1049-000.9	TF2-004/5-SS1050-000.6
TF2-004/5-SS1051-000.8	TF2-004/5-SS1052-000.6	TF2-004/5-SS1053-000.6
TF2-004/5-SS1054-000.6	TF2-004/5-SS1055-000.8	TF2-004/5-SS1056-000.6
TF2-004/5-SS1057-0001	TF2-004/5-SS1062-000.8	

Actions: The detected 2,3,4,7,8-PeCDF sample results were qualified estimated, (J). The non-detected 2,3,4,7,8-PeCDF result was not qualified.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD)

The spiked sample TF2-004/5-SS1054-000.6 had an MSD %R for 1,2,3,4,6,7,8-HpCDD greater than the quality control limit.

Affected Sample: TF2-004/5-SS1054-000.6

Actions: The detected 1,2,3,4,6,7,8-HpCDD result was qualified estimated, (J).

INTERNAL STANDARD RECOVERY

The internal standard recovery for 13C-2,3,7,8-TCDF in sample TF2-004/5-SS1067-000.7 was below the 40% lower quality control limit in the alternate column sample re-analysis for 2,3,7,8-TCDF.

Affected Sample: TF2-004/5-SS1067-000.7

Actions: The detected 2,3,7,8-TCDF result was qualified estimated, (J).

FIELD DUPLICATE PRECISION

The field duplicate sample result relative percent difference (RPD) was greater than the 50% quality control limit for the analyte Total TCDF for field duplicate samples TF2-004/5-SS-DUP01-1013 / TF2-004/5-SS1020-0001.

Affected Samples: TF2-004/5-SS-DUP01-1013 / TF2-004/5-SS1020-0001

Actions: The aforementioned sample detected Total TCDF results were qualified estimated, (J).

The field duplicate sample result RPDs were greater than the 50% quality control limit for the analytes OCDF and 1,2,3,4,6,7,8-HpCDF for field duplicate samples TF2-004/5-SS-DUP02-1013 / TF2-004/5-SS1035-0001.

Affected Samples: TF2-004/5-SS-DUP02-1013 / TF2-004/5-SS1035-0001

Actions: The aforementioned sample detected and non-detected OCDF and 1,2,3,4,6,7,8-HpCDF results were qualified estimated, (J).

COMPOUND QUANTIFICATION

Positive sample analyte results with ion ratios outside of the limits were reported as EMPC (estimated maximum possible concentration) results and were qualified estimated, (J).

ADDITIONAL COMMENTS

Positive sample analyte results below the reporting limit (RL) but above the estimated detection limit (EDL) were qualified estimated, (J).

Samples were analyzed both undiluted and at a 10X dilution for OCDD as listed below due to the undiluted OCDD analysis results exceeding the highest calibration standard. Only the 10X diluted OCDD results were reported for the samples.

Affected Samples:

TF2-003-SS-DUP06-1013	TF2-003-SS1011-000.8	TF2-003-SS1015-000.8
TF2-003-SS1016-000.9	TF2-004/5-SS-DUP01-1013	TF2-004/5-SS-DUP03-1013
TF2-004/5-SS1020-0001	TF2-004/5-SS1022-000.9	TF2-004/5-SS1027-0001
TF2-004/5-SS1029-000.6	TF2-004/5-SS1033-000.8	TF2-004/5-SS1036-000.6
TF2-004/5-SS1039-000.9	TF2-004/5-SS1040-000.9	TF2-004/5-SS1041-000.7
TF2-004/5-SS1045-000.5	TF2-004/5-SS1047-000.8	TF2-004/5-SS1048-000.8
TF2-004/5-SS1051-000.8	TF2-004/5-SS1049-000.9	TF2-004/5-SS1053-000.6
TF2-004/5-SS1057-0001	TF2-004/5-SS1059-000.6	TF2-004/5-SS1060.000.5
TF2-004/5-SS1062-000.8	TF2-004/5-SS1066-000.9	

The 2,3,7,8-TCDF result quantitation limits for samples TF2-003-SS1015-000.8, TF2-004/5-SS-DUP02-1013, TF2-004/5-SS1024-000.6, and TF2-004/5-SS1036-000.6 were raised due to a matrix interference per the laboratory narrative. The detected and non-detected 2,3,7,8-TCDF sample results were qualified estimated, (J) and (UJ), respectively.

During the initial review of the laboratory provided materials/CD it was determined that data was missing from the pdf. The laboratory was contacted and it was determined that a revised data package had been completed but not received by the data validation chemist. The laboratory made the edited data package available on their website and the validation was completed.

The OCDD result for sample TF2-003-SS1011-000.8 exceeded the Sample Analysis Plan (SAP) Project Screening Level (PSL) of 14,000 pg/g (ng/kg). The 1,2,3,4,6,7,8-HpCDD results for samples TF2-004/5-SS1047-000.8 and TF2-004/5-SS1053-000.6 exceeded the SAP PSL limit of 420 pg/g. The 1,2,3,6,7,8-HxCDD result for sample TF2-004/5-SS1047-000.8 exceeded the SAP PSL limit of 42 pg/g. The 1,2,3,7,8-PeCDD result for sample TF2-004/5-SS1047-000.8 exceeded the SAP PSL limit of 4.2 pg/g

Non-detected sample analyte results were reported at the EDL.

EXECUTIVE SUMMARY

Laboratory Performance: Detected results for 1,2,3,4,7,8-HxCDD were qualified for a CCV %D non-compliance. A sample 2,3,7,8-TCDF result was qualified for an internal standard recovery non-compliance. Sample 2,3,7,8-TCDF detected results were qualified for a resolution check non-compliance.

Other Factors Affecting Data Quality: Positive results reported below the RL but above the EDL were qualified as estimated, (J). Positive sample analyte results reported as EMPC (estimated maximum possible concentration) results were qualified estimated, (J). Sample 2,3,7,8-TCDF results were qualified for matrix interference. Field duplicate sample PCDD/PCDF results were qualified for field duplicate imprecision. SAP PSLs were exceeded as listed in the Additional Comments section of this document.

The data for these analyses were reviewed with reference to the EPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans (Sept. 2011), to the EPA New England Environmental Data Review Supplement for Regional Data Review Elements and Superfund Guidance/Procedures Attachment 2-3b: Example Organic Data Review Worksheets (1/13) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (July 2013).

Tetra Tech
Joseph Kalinyak
Chemist/Data Validator

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Joseph A. Samchuck
Data Validation Manager

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Regional Worksheets
Appendix D – Support Documentation

APPENDIX A

QUALIFIED LABORATORY RESULTS

Value Qualifier Key (Val Qual)

J – The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The result is an estimated non-detected quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U - Value is a non-detect as reported by the laboratory.

UR – Non-detected result is considered rejected, (UR), as a result of technical non-compliances.

DATA QUALIFICATION CODE (QUAL CODE)

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = ICP PDS Recovery Noncompliance; MSA's r < 0.995
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution / PCDF Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = RPD between columns/detectors >40% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient r < 0.995
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity
Z1 = Tentatively Identified Compound considered presumptively present
Z2 = Tentatively Identified Compound column bleed

1-29-14
JAS

PROJ_NO: 03019	NSAMPLE	TF2-003-SS-RB03-1013			TF2-SS-RB01-1013			TF2-SS-RB02-1013		
SDG: 320-4670-1	LAB_ID	320-4670-66			320-4670-17			320-4670-34		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/18/2013			10/21/2013		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	PG/L			PG/L			PG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		0.83	J	PW	0.76	U		1.5	U	
1,2,3,4,6,7,8,9-OCDF		0.46	U		1.2	U		1.7	U	
1,2,3,4,6,7,8-HPCDD		0.38	U		0.71	U		0.96	U	
1,2,3,4,6,7,8-HPCDF		0.29	U		0.62	U		0.82	U	
1,2,3,4,7,8,9-HPCDF		0.35	U		0.74	U		0.97	U	
1,2,3,4,7,8-HXCDD		0.41	U		0.76	U		0.98	U	
1,2,3,4,7,8-HXCDF		0.21	U		0.49	U		0.5	U	
1,2,3,6,7,8-HXCDD		0.41	U		0.76	U		0.98	U	
1,2,3,6,7,8-HXCDF		0.2	U		0.47	U		0.47	U	
1,2,3,7,8,9-HXCDD		0.37	U		0.69	U		0.88	U	
1,2,3,7,8,9-HXCDF		0.23	U		0.52	U		0.53	U	
1,2,3,7,8-PECDD		0.7	U		1.3	U		1.8	U	
1,2,3,7,8-PECDF		0.83	U		1.5	U		1.8	U	
2,3,4,6,7,8-HXCDF		0.21	U		0.49	U		0.5	U	
2,3,4,7,8-PECDF		0.88	U		1.6	U		1.9	U	
2,3,7,8-TCDD		0.51	U		0.94	U		1.1	U	
2,3,7,8-TCDF		0.54	U		0.99	U		1.2	U	
TOTAL HPCDD		0.72	J	P	0.71	U		0.96	U	
TOTAL HPCDF		0.35	U		0.74	U		0.97	U	
TOTAL HXCDD		0.41	U		0.76	U		0.98	U	
TOTAL HXCDF		0.23	U		0.52	U		0.53	U	
TOTAL PECDD		0.7	U		1.3	U		1.8	U	
TOTAL PECDF		0.88	U		1.6	U		1.9	U	
TOTAL TCDD		0.51	U		0.94	U		1.1	U	
TOTAL TCDF		0.54	U		0.99	U		1.2	U	

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1011-000.8			TF2-003-SS1011-000.8DL			TF2-003-SS1012-000.7			TF2-003-SS1013-000.7		
SDG: 320-4670-1	LAB_ID	320-4670-56			320-4670-56			320-4670-57			320-4670-58		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	87.3			87.3			89.9			93.4		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD					18000			4000			3300		
1,2,3,4,6,7,8,9-OCDF		17						12			13		
1,2,3,4,6,7,8-HPCDD		130						81			67		
1,2,3,4,6,7,8-HPCDF		13						12			12		
1,2,3,4,7,8,9-HPCDF		0.37	J	P				0.74	J	P	0.74	J	P
1,2,3,4,7,8-HXCDD		0.97	J	PW				1.8	J	P	1.1	J	PW
1,2,3,4,7,8-HXCDF		1.3	J	P				3	J	P	2.6	J	P
1,2,3,6,7,8-HXCDD		2.5	J	P				4	J	P	3.9	J	P
1,2,3,6,7,8-HXCDF		1.3	J	P				1.3	J	PW	1.1	J	PW
1,2,3,7,8,9-HXCDD		5.6						4.4	J	P	4.2	J	P
1,2,3,7,8,9-HXCDF		0.1	U					0.085	U		0.094	U	
1,2,3,7,8-PECDD		0.72	J	P				1.4	J	P	1.1	J	P
1,2,3,7,8-PECDF		0.4	J	P				0.74	J	PW	1.2	J	P
2,3,4,6,7,8-HXCDF		0.96	J	P				1.1	J	P	1.4	J	P
2,3,4,7,8-PECDF		0.68	J	P				1.2	J	P	1.2	J	P
2,3,7,8-TCDD		0.23	J	PW				0.26	J	PW	0.22	J	PW
2,3,7,8-TCDF		0.76	J	P				1	J	P	1.4		
TOTAL HPCDD		240						160			130		
TOTAL HPCDF		25						22			25		
TOTAL HXCDD		31	J	W				42			37	J	W
TOTAL HXCDF		20	J	W				17	J	W	17	J	W
TOTAL PECDD		9	J	W				31	J	W	26	J	W
TOTAL PECDF		15						15	J	W	16	J	W
TOTAL TCDD		5.5	J	W				64	J	W	19	J	W
TOTAL TCDF		9.6	J	W				13			14		

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1014-0001			TF2-003-SS1015-000.8			TF2-003-SS1016-000.9			TF2-003-SS1017-000.8		
SDG: 320-4670-1	LAB_ID	320-4670-59			320-4670-60			320-4670-61			320-4670-62		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.1			93.4			90.9			93.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		3300			5400			6900			3300		
1,2,3,4,6,7,8,9-OCDF		12			8.9	J	P	11			8	J	P
1,2,3,4,6,7,8-HPCDD		70			84			110			58		
1,2,3,4,6,7,8-HPCDF		12			7.4			7			5.9		
1,2,3,4,7,8,9-HPCDF		0.61	J	P	0.54	J	P	0.11	U		0.093	U	
1,2,3,4,7,8-HXCDD		1.9	J	P	1.1	J	PW	1.6	J	P	1.1	J	P
1,2,3,4,7,8-HXCDF		2.6	J	P	1.7	J	P	1.7	J	P	1.3	J	P
1,2,3,6,7,8-HXCDD		4.4	J	P	2.8	J	P	2.6	J	P	1.6	J	PW
1,2,3,6,7,8-HXCDF		1.2	J	PW	0.82	J	P	0.88	J	P	0.78	J	P
1,2,3,7,8,9-HXCDD		4.8	J	P	2.9	J	PW	3.5	J	P	2.1	J	PW
1,2,3,7,8,9-HXCDF		0.083	U		0.074	U		0.086	U		0.068	U	
1,2,3,7,8-PECDD		1.1	J	PW	0.73	J	P	0.67	J	P	0.11	U	
1,2,3,7,8-PECDF		0.83	J	P	0.9	J	P	0.67	J	P	0.38	J	PW
2,3,4,6,7,8-HXCDF		1.3	J	P	0.85	J	P	0.78	J	P	0.83	J	P
2,3,4,7,8-PECDF		1.1	J	P	0.85	J	P	0.8	J	P	0.6	J	P
2,3,7,8-TCDD		0.43	J	P	0.15	J	PW	0.23	J	PW	0.27	J	P
2,3,7,8-TCDF		1.3			1.5	UJ	Q	1.1			0.69	J	P
TOTAL HPCDD		150			190			260			120		
TOTAL HPCDF		23			15			14			12		
TOTAL HXCDD		45	J	W	31	J	W	33			20	J	W
TOTAL HXCDF		15	J	W	13	J	W	15			9.2	J	W
TOTAL PECDD		26	J	W	12	J	W	6.7	J	W	7.1	J	W
TOTAL PECDF		14	J	W	12	J	W	15	J	W	7.1	J	W
TOTAL TCDD		20	J	W	7.6	J	W	3.8	J	W	4.8	J	W
TOTAL TCDF		25	J	W	8.9	J	W	12	J	W	5.8	J	W

PROJ_NO: 03019	NSAMPLE	TF2-003-SS1018-000.8			TF2-003-SS1018-000.8A			TF2-003-SS1019-000.5			TF2-003-SS-DUP06-1013		
SDG: 320-4670-1	LAB_ID	320-4670-63			320-4670-63			320-4670-64			320-4670-65		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	95.4			95.4			91.8			92.7		
	DUP_OF										TF2-003-SS1015-000.8		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		3300						3000			6100		
1,2,3,4,6,7,8,9-OCDF		4.5	J	P				15			11		
1,2,3,4,6,7,8-HPCDD		41						72			88		
1,2,3,4,6,7,8-HPCDF		3.6	J	P				16			9.1		
1,2,3,4,7,8,9-HPCDF		0.18	J	PW				0.79	J	P	0.6	J	P
1,2,3,4,7,8-HXCDD		0.91	J	P				2.4	J	P	1.4	J	P
1,2,3,4,7,8-HXCDF		1	J	P				6			2.3	J	P
1,2,3,6,7,8-HXCDD		1.4	J	P				5.7			3.1	J	P
1,2,3,6,7,8-HXCDF		0.68	J	P				2.4	J	P	1.2	J	P
1,2,3,7,8,9-HXCDD		1.6	J	P				5.4			3.1	J	P
1,2,3,7,8,9-HXCDF		0.047	U					0.098	U		0.089	U	
1,2,3,7,8-PECDD		0.4	J	PW				1.7	J	P	0.94	J	PW
1,2,3,7,8-PECDF		0.3	J	PW				1.4	J	PW	0.96	J	P
2,3,4,6,7,8-HXCDF		0.39	J	P				1.9	J	P	0.89	J	PW
2,3,4,7,8-PECDF		0.43	J	P				1.1	J	PW	0.96	J	P
2,3,7,8-TCDD		0.11	J	PW				0.4	J	PW	0.25	J	PW
2,3,7,8-TCDF					0.46	J	P	1.5			0.84	J	P
TOTAL HPCDD		88						140			200		
TOTAL HPCDF		6.8	J	W				29	J	W	18		
TOTAL HXCDD		18						85	J	W	33		
TOTAL HXCDF		5.2	J	W				23	J	W	16	J	W
TOTAL PECDD		7.5	J	W				45	J	W	15	J	W
TOTAL PECDF		4.5	J	PW				19	J	W	14	J	W
TOTAL TCDD		5.9	J	W				37	J	W	7.8	J	W
TOTAL TCDF		4.7	J	W				17	J	W	10	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1020-0001	TF2-004/5-SS1020-0001A	TF2-004/5-SS1021-000.7	TF2-004/5-SS1021-000.7A
SDG: 320-4670-1	LAB_ID	320-4670-7	320-4670-7	320-4670-6	320-4670-6
FRACTION: DIOX	SAMP_DATE	10/18/2013	10/18/2013	10/18/2013	10/18/2013
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM
	UNITS	NG/KG	NG/KG	NG/KG	NG/KG
	PCT_SOLIDS	97.3	97.3	96.0	96.0
	DUP_OF				

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD	6000						3000					
1,2,3,4,6,7,8,9-OCDF	4.9	J	P				79					
1,2,3,4,6,7,8-HPCDD	44						140					
1,2,3,4,6,7,8-HPCDF	3.6	J	P				47					
1,2,3,4,7,8,9-HPCDF	0.39	J	P				3.2	J	P			
1,2,3,4,7,8-HXCDD	0.62	J	P				3.2	J	P			
1,2,3,4,7,8-HXCDF	0.41	J	PW				3.6	J	P			
1,2,3,6,7,8-HXCDD	0.9	J	P				7.1					
1,2,3,6,7,8-HXCDF	0.81	J	P				3.7	J	P			
1,2,3,7,8,9-HXCDD	1.2	J	PW				6					
1,2,3,7,8,9-HXCDF	0.058	U					0.12	U				
1,2,3,7,8-PECDD	0.27	J	P				1.6	J	P			
1,2,3,7,8-PECDF	0.054	U					0.64	J	P			
2,3,4,6,7,8-HXCDF	0.44	J	P				3.5	J	P			
2,3,4,7,8-PECDF	0.14	J	P				1.1	J	P			
2,3,7,8-TCDD	0.12	J	PW				0.18	J	PW			
2,3,7,8-TCDF				0.19	J	PS				0.69	J	PS
TOTAL HPCDD	75						260					
TOTAL HPCDF	8.1						140					
TOTAL HXCDD	8.8	J	W				50	J	W			
TOTAL HXCDF	9.9	J	W				91	J	W			
TOTAL PECDD	2	J	PW				7.8	J	W			
TOTAL PECDF	4.8	J	PW				30	J	W			
TOTAL TCDD	1.3	J	W				1.1	J	W			
TOTAL TCDF	4.8	J	GW				6	J	W			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1022-000.9			TF2-004/5-SS1022-000.9A			TF2-004/5-SS1023-000.8			TF2-004/5-SS1024-000.6		
SDG: 320-4670-1	LAB_ID	320-4670-5			320-4670-5			320-4670-4			320-4670-3		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.7			93.7			94.8			94.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		6400						2200			4100		
1,2,3,4,6,7,8,9-OCDF		5.3	J	P				22			29		
1,2,3,4,6,7,8-HPCDD		46						65			120		
1,2,3,4,6,7,8-HPCDF		2.9	J	P				13			20		
1,2,3,4,7,8,9-HPCDF		0.059	U					1	J	P	1.5	J	P
1,2,3,4,7,8-HXCDD		0.51	J	P				1.2	J	CP	2.1	J	CPW
1,2,3,4,7,8-HXCDF		0.27	J	PW				2.2	J	P	2.8	J	P
1,2,3,6,7,8-HXCDD		0.98	J	P				2.8	J	P	5.1	J	P
1,2,3,6,7,8-HXCDF		0.52	J	P				1.6	J	P	3.1	J	P
1,2,3,7,8,9-HXCDD		1.2	J	P				2.5	J	P	5.2	J	P
1,2,3,7,8,9-HXCDF		0.059	U					0.072	U		0.11	U	
1,2,3,7,8-PECDD		0.058	U					0.65	J	P	1.1	J	PW
1,2,3,7,8-PECDF		0.052	U					0.55	J	PW	0.6	J	P
2,3,4,6,7,8-HXCDF		0.28	J	P				1.4	J	P	2.8	J	P
2,3,4,7,8-PECDF		0.054	U					0.93	J	P	1.4	J	P
2,3,7,8-TCDD		0.071	U					0.19	J	PW	0.22	J	PW
2,3,7,8-TCDF					0.071	U		1	J	W	1.2	UJ	Q
TOTAL HPCDD		81						130			230		
TOTAL HPCDF		6.7						33			50		
TOTAL HXCDD		8.2	J	W				22			44	J	W
TOTAL HXCDF		3.6	J	PW				30			55		
TOTAL PECDD		1.7	J	PW				3.9	J	PW	7	J	W
TOTAL PECDF		0.79	J	PW				13	J	W	160	J	W
TOTAL TCDD		0.71	J	PW				2.4	J	W	2.7	J	W
TOTAL TCDF		0.72	J	PW				7.9			11	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1025-000.8			TF2-004/5-SS1026-000.8			TF2-004/5-SS1026-000.8A			TF2-004/5-SS1027-0001		
SDG: 320-4670-1	LAB_ID	320-4670-1			320-4670-2			320-4670-2			320-4670-14		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	91.8			95.2			95.2			92.7		
	DUP_OF												

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD	3400			1400						6100		
1,2,3,4,6,7,8,9-OCDF	34			12						4.5	J	P
1,2,3,4,6,7,8-HPCDD	99			40						39		
1,2,3,4,6,7,8-HPCDF	27			11						2.1	J	P
1,2,3,4,7,8,9-HPCDF	1.7	J	P	0.87	J	P				0.08	U	
1,2,3,4,7,8-HXCDD	2.2	J	P	0.84	J	CP				0.28	J	P
1,2,3,4,7,8-HXCDF	4.4	J	P	1.1	J	P				0.3	J	P
1,2,3,6,7,8-HXCDD	4.5	J	P	1.6	J	P				0.47	J	PW
1,2,3,6,7,8-HXCDF	2.8	J	P	1.7	J	P				0.92	J	P
1,2,3,7,8,9-HXCDD	4.3	J	P	1.5	J	PW				0.57	J	P
1,2,3,7,8,9-HXCDF	0.1	U		0.12	U					0.056	U	
1,2,3,7,8-PECDD	0.91	J	P	0.28	J	PW				0.095	U	
1,2,3,7,8-PECDF	0.81	J	PW	0.31	J	PW				0.049	U	
2,3,4,6,7,8-HXCDF	3.1	J	P	2.1	J	P				0.05	U	
2,3,4,7,8-PECDF	1.6	J	P	0.44	J	P				0.051	U	
2,3,7,8-TCDD	0.16	J	PW	0.076	U					0.041	U	
2,3,7,8-TCDF	1	J	PW				0.21	J	PS			
TOTAL HPCDD	190			78						66		
TOTAL HPCDF	60			26						4.6	J	P
TOTAL HXCDD	38	J	W	12	J	W				4.6	J	PW
TOTAL HXCDF	64	J	W	34						2.6	J	PW
TOTAL PECDD	7.9	J	W	1.3	J	PW				1.2	J	PW
TOTAL PECDF	30	J	W	15	J	W				0.38	J	PW
TOTAL TCDD	3.4	J	W	0.076	U					0.43	J	PW
TOTAL TCDF	12	J	W	3.1	J	W				0.64	J	PW

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1027-0001A			TF2-004/5-SS1028-000.8			TF2-004/5-SS1029-000.6			TF2-004/5-SS1030-000.6		
SDG: 320-4670-1	LAB_ID	320-4670-14			320-4670-13			320-4670-12			320-4670-11		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	92.7			91.8			95.4			94.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD					2200			6300			3100		
1,2,3,4,6,7,8,9-OCDF					49			49			15		
1,2,3,4,6,7,8-HPCDD					78			170			70		
1,2,3,4,6,7,8-HPCDF					26			30			9.1		
1,2,3,4,7,8,9-HPCDF					1.5	J	P	1.8	J	P	0.67	J	P
1,2,3,4,7,8-HXCDD					1.3	J	P	3.1	J	P	1.4	J	P
1,2,3,4,7,8-HXCDF					2.9	J	P	3.5	J	P	1.2	J	P
1,2,3,6,7,8-HXCDD					3.3	J	P	7.3			2.7	J	P
1,2,3,6,7,8-HXCDF					2.1	J	P	2.2	J	P	0.95	J	P
1,2,3,7,8,9-HXCDD					2.8	J	P	4.6	J	P	2.7	J	P
1,2,3,7,8,9-HXCDF					0.084	U		0.069	U		0.08	U	
1,2,3,7,8-PECDD					0.55	J	PW	1.3	J	P	0.48	J	PW
1,2,3,7,8-PECDF					0.58	J	P	1.1	J	PW	0.48	J	P
2,3,4,6,7,8-HXCDF					1.9	J	P	1.8	J	P	0.81	J	P
2,3,4,7,8-PECDF					0.6	J	P	1.5	J	P	0.43	J	P
2,3,7,8-TCDD					0.036	U		0.29	J	PW	0.16	J	PW
2,3,7,8-TCDF		0.051	U		0.54	J	P	1.7					
TOTAL HPCDD					140			290			150		
TOTAL HPCDF					66			74			22		
TOTAL HXCDD					23	J	W	50	J	W	23	J	W
TOTAL HXCDF					37			40	J	W	17		
TOTAL PECDD					4	J	PW	9.1	J	W	3.1	J	PW
TOTAL PECDF					12	J	W	22	J	W	6.6	J	W
TOTAL TCDD					0.94	J	PW	4	J	W	0.78	J	PW
TOTAL TCDF					5.6	J	W	14	J	W	3.4	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1030-000.6A			TF2-004/5-SS1031-000.8			TF2-004/5-SS1031-000.8A			TF2-004/5-SS1032-000.9		
SDG: 320-4670-1	LAB_ID	320-4670-11			320-4670-9			320-4670-9			320-4670-8		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	94.9			91.1			91.1			91.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD					3800						3900		
1,2,3,4,6,7,8,9-OCDF					15						18		
1,2,3,4,6,7,8-HPCDD					71						96		
1,2,3,4,6,7,8-HPCDF					9						14		
1,2,3,4,7,8,9-HPCDF					0.52	J	P				1.1	J	P
1,2,3,4,7,8-HXCDD					1.2	J	P				1.9	J	P
1,2,3,4,7,8-HXCDF					1.4	J	P				2.2	J	P
1,2,3,6,7,8-HXCDD					2.5	J	P				3.6	J	P
1,2,3,6,7,8-HXCDF					1.1	J	P				2.2	J	P
1,2,3,7,8,9-HXCDD					2.4	J	P				3.8	J	P
1,2,3,7,8,9-HXCDF					0.07	U					0.11	U	
1,2,3,7,8-PECDD					0.44	J	PW				0.71	J	P
1,2,3,7,8-PECDF					0.4	J	PW				0.86	J	P
2,3,4,6,7,8-HXCDF					0.67	J	P				1.7	J	P
2,3,4,7,8-PECDF					0.49	J	P				0.49	J	P
2,3,7,8-TCDD					0.14	J	PW				0.053	U	
2,3,7,8-TCDF		0.71	J	P				0.66	J	P	0.97	U	
TOTAL HPCDD					130						190		
TOTAL HPCDF					21						34		
TOTAL HXCDD					20	J	W				31	J	W
TOTAL HXCDF					14	J	W				36		
TOTAL PECDD					2.5	J	PW				4.5	J	PW
TOTAL PECDF					6.6	J	W				27	J	W
TOTAL TCDD					1.5	J	W				0.76	J	PW
TOTAL TCDF					4.2	J	W				3.2	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1033-000.8	TF2-004/5-SS1033-000.8A	TF2-004/5-SS1034-000.6	TF2-004/5-SS1035-0001
SDG: 320-4670-1	LAB_ID	320-4670-24	320-4670-24	320-4670-23	320-4670-21
FRACTION: DIOX	SAMP_DATE	10/18/2013	10/18/2013	10/18/2013	10/18/2013
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM
	UNITS	NG/KG	NG/KG	NG/KG	NG/KG
	PCT_SOLIDS	94.5	94.5	93.1	94.9
	DUP_OF				

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD	4500						2400			4000		
1,2,3,4,6,7,8,9-OCDF	19						22			280	J	G
1,2,3,4,6,7,8-HPCDD	88						59			330		
1,2,3,4,6,7,8-HPCDF	9.3						17			110	J	G
1,2,3,4,7,8,9-HPCDF	0.16	U					1.3	J	P	5.7		
1,2,3,4,7,8-HXCDD	0.81	J	P				1.2	J	PW	4.5	J	CP
1,2,3,4,7,8-HXCDF	0.9	J	P				2.7	J	P	11		
1,2,3,6,7,8-HXCDD	2.3	J	P				2.7	J	P	14		
1,2,3,6,7,8-HXCDF	0.83	J	P				2.4	J	P	4.6	J	P
1,2,3,7,8,9-HXCDD	1.7	J	P				2.7	J	P	11		
1,2,3,7,8,9-HXCDF	0.095	U					0.12	U		0.13	U	
1,2,3,7,8-PECDD	0.23	J	P				0.56	J	P	2.1	J	P
1,2,3,7,8-PECDF	0.084	U					0.77	J	PW	1.1	J	PW
2,3,4,6,7,8-HXCDF	0.59	J	P				2.4	J	P	3.3	J	P
2,3,4,7,8-PECDF	0.17	J	EP				1.1	J	EP	2	J	P
2,3,7,8-TCDD	0.039	U					0.24	J	PW	0.41	J	P
2,3,7,8-TCDF				0.088	U		0.94	J	P	1.3		
TOTAL HPCDD	160						110			580		
TOTAL HPCDF	23						38			210		
TOTAL HXCDD	15	J	W				23	J	W	94		
TOTAL HXCDF	9.8	J	W				48	J	W	81		
TOTAL PECDD	1.8	J	PW				4.7	J	PW	13	J	W
TOTAL PECDF	2.2	J	PW				33	J	W	25	J	W
TOTAL TCDD	0.44	J	PW				2.2	J	W	4.4	J	W
TOTAL TCDF	2.2	J	W				12	J	W	12	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1036-000.6			TF2-004/5-SS1037-000.7			TF2-004/5-SS1038-000.7			TF2-004/5-SS1039-000.9		
SDG: 320-4670-1	LAB_ID	320-4670-20			320-4670-19			320-4670-18			320-4670-16		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/18/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	96.8			96.6			91.3			90.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		6800			3400			3500			5700		
1,2,3,4,6,7,8,9-OCDF		63			26			27			18		
1,2,3,4,6,7,8-HPCDD		270			57			100			81		
1,2,3,4,6,7,8-HPCDF		40			16			17			11		
1,2,3,4,7,8,9-HPCDF		2.1	J	P	1.5	J	P	0.89	J	P	0.1	U	
1,2,3,4,7,8-HXCDD		3.3	J	CP	0.97	J	CP	1.5	J	CP	1.4	J	P
1,2,3,4,7,8-HXCDF		3.5	J	P	3.9	J	P	2	J	P	1.7	J	P
1,2,3,6,7,8-HXCDD		12			2.1	J	P	4.2	J	P	2.9	J	PW
1,2,3,6,7,8-HXCDF		2.4	J	P	2.2	J	P	1.5	J	P	1.2	J	P
1,2,3,7,8,9-HXCDD		8.2			2.5	J	P	3.8	J	P	2.7	J	P
1,2,3,7,8,9-HXCDF		0.096	U		0.11	U		0.12	U		0.094	U	
1,2,3,7,8-PECDD		1.5	J	P	0.58	J	P	0.73	J	P	0.63	J	P
1,2,3,7,8-PECDF		0.97	J	PW	1	J	P	0.54	J	PW	0.59	J	P
2,3,4,6,7,8-HXCDF		2	J	P	0.66	J	PW	2.1	J	P	0.78	J	P
2,3,4,7,8-PECDF		1.4	J	P	1	J	P	0.73	J	P	0.68	J	P
2,3,7,8-TCDD		0.27	J	PW	0.13	J	PW	0.11	J	PW	0.3	U	
2,3,7,8-TCDF		1.4	J	Q	0.8	J	P	0.88	J	P	0.64	J	P
TOTAL HPCDD		460			110			190			150		
TOTAL HPCDF		100			28			41			24		
TOTAL HXCDD		67	J	W	18			29			24	J	W
TOTAL HXCDF		53	J	W	23	J	W	26	J	W	17		
TOTAL PECDD		10	J	W	4.3	J	PW	4.4	J	PW	5.2	J	PW
TOTAL PECDF		20	J	W	38	J	W	11	J	W	10	J	W
TOTAL TCDD		4.5	J	W	1.9	J	W	1.9	J	W	1.4		
TOTAL TCDF		14	J	W	7.4	J	W	5.7	J	W	6.3	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1040-000.9			TF2-004/5-SS1041-000.7			TF2-004/5-SS1041-000.7A			TF2-004/5-SS1042-000.5		
SDG: 320-4670-1	LAB_ID	320-4670-15			320-4670-32			320-4670-32			320-4670-31		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	89.1			94.5			94.5			93.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		6400			5600						3000		
1,2,3,4,6,7,8,9-OCDF		37			15						140		
1,2,3,4,6,7,8-HPCDD		140			46						170		
1,2,3,4,6,7,8-HPCDF		19			6.4						75		
1,2,3,4,7,8,9-HPCDF		1.2	J	P	0.098	U					2.9	J	PW
1,2,3,4,7,8-HXCDD		1.7	J	PW	0.43	J	PW				3.3	J	P
1,2,3,4,7,8-HXCDF		2.4	J	P	0.54	J	PW				5.4		
1,2,3,6,7,8-HXCDD		4.7	J	P	0.86	J	P				7.1		
1,2,3,6,7,8-HXCDF		1.8	J	P	0.74	J	P				3.7	J	P
1,2,3,7,8,9-HXCDD		4	J	P	0.76	J	PW				6.7		
1,2,3,7,8,9-HXCDF		0.099	U		0.089	U					0.13	U	
1,2,3,7,8-PECDD		0.86	J	P	0.14	J	PW				1.1	J	P
1,2,3,7,8-PECDF		0.91	J	P	0.067	JCU					0.85	J	PW
2,3,4,6,7,8-HXCDF		1.6	J	P	0.2	J	PW				3	J	P
2,3,4,7,8-PECDF		0.74	J	P	0.18	J	EP				1.5	J	EP
2,3,7,8-TCDD		0.044	U		0.035	U					0.045	U	
2,3,7,8-TCDF		0.95	J	P				0.12	U		1.2		
TOTAL HPCDD		270			82						300		
TOTAL HPCDF		51			15						180	J	W
TOTAL HXCDD		32	J	W	6.2	J	W				52		
TOTAL HXCDF		34			5.3	J	W				63		
TOTAL PECDD		3.8	J	PW	1.9	J	PW				6.9	J	W
TOTAL PECDF		14	J	W	1.1	J	PW				20	J	W
TOTAL TCDD		0.77	J	PW	0.63	J	PW				2	J	W
TOTAL TCDF		5.5	J	W	1	J	W				11	J	W

1-30-14
JAS

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1044-000.5			TF2-004/5-SS1045-000.5			TF2-004/5-SS1046-000.5			TF2-004/5-SS1046-000.5A		
SDG: 320-4670-1	LAB_ID	320-4670-30			320-4670-29			320-4670-28			320-4670-28		
FRACTION: DIOX	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	95.0			95.2			96.7			96.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		3500			6400			3600					
1,2,3,4,6,7,8,9-OCDF		55			420			18					
1,2,3,4,6,7,8-HPCDD		140			360			100					
1,2,3,4,6,7,8-HPCDF		28			130			13					
1,2,3,4,7,8,9-HPCDF		1.1	J	PW	8.9			0.75	J	P			
1,2,3,4,7,8-HXCDD		2.4	J	P	5.2			2.6	J	P			
1,2,3,4,7,8-HXCDF		2.4	J	P	5.5			1.7	J	P			
1,2,3,6,7,8-HXCDD		6.3			17			5.6					
1,2,3,6,7,8-HXCDF		1.6	J	P	3.6	J	P	1.1	J	P			
1,2,3,7,8,9-HXCDD		4.8	J	P	11			5.2					
1,2,3,7,8,9-HXCDF		0.12	U		0.18	U		0.085	U				
1,2,3,7,8-PECDD		0.82	J	PW	1.3	J	P	1.1	J	P			
1,2,3,7,8-PECDF		0.64	J	P	1.2	J	P	0.25	U				
2,3,4,6,7,8-HXCDF		1.2	J	P	3.2	J	P	0.94	J	P			
2,3,4,7,8-PECDF		0.67	J	EP	1.5	J	EP	0.59	J	EP			
2,3,7,8-TCDD		0.15	J	PW	0.26	J	PW	0.037	U				
2,3,7,8-TCDF		0.64	J	P	1.2						0.48	J	P
TOTAL HPCDD		240			580			200					
TOTAL HPCDF		70	J	W	460			31					
TOTAL HXCDD		40			81	J	W	43	J	W			
TOTAL HXCDF		28			110	J	W	21	J	W			
TOTAL PECDD		4.4	J	PW	8.4	J	W	5.6	J	W			
TOTAL PECDF		10	J	W	20	J	W	8.3	J	W			
TOTAL TCDD		1.5	J	W	2.2	J	W	0.91	J	PW			
TOTAL TCDF		6	J	W	13	J	W	5.2	J	W			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1047-000.8	TF2-004/5-SS1048-000.8	TF2-004/5-SS1049-000.9	TF2-004/5-SS1049-000.9A
SDG: 320-4670-1	LAB_ID	320-4670-27	320-4670-26	320-4670-25	320-4670-25
FRACTION: DIOX	SAMP_DATE	10/21/2013	10/21/2013	10/21/2013	10/21/2013
MEDIA: SOIL	QC_TYPE	NM	NM	NM	NM
	UNITS	NG/KG	NG/KG	NG/KG	NG/KG
	PCT_SOLIDS	92.8	92.6	93.7	93.7
	DUP_OF				

PARAMETER	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD	10000			5400						4400		
1,2,3,4,6,7,8,9-OCDF	110			36			38					
1,2,3,4,6,7,8-HPCDD	850			110			160					
1,2,3,4,6,7,8-HPCDF	99			22			24					
1,2,3,4,7,8,9-HPCDF	4.2	J	P	1.3	J	P	1.2	J	PW			
1,2,3,4,7,8-HXCDD	16			2.1	J	P	2.9	J	P			
1,2,3,4,7,8-HXCDF	7.5			3.3	J	P	2.6	J	P			
1,2,3,6,7,8-HXCDD	52			4.8	J	P	8.1					
1,2,3,6,7,8-HXCDF	6			2	J	P	1.6	J	PW			
1,2,3,7,8,9-HXCDD	34			4.1	J	P	5.8					
1,2,3,7,8,9-HXCDF	0.17	U		0.12	U		0.13	U				
1,2,3,7,8-PECDD	5.4			0.75	J	P	1	J	P			
1,2,3,7,8-PECDF	1.1	J	PW	0.87	J	P	0.1	U				
2,3,4,6,7,8-HXCDF	5.5			1.7	J	P	1.3	J	P			
2,3,4,7,8-PECDF	1.4	J	EP	1.3	J	EPW	0.76	J	EP			
2,3,7,8-TCDD	0.54	J	P	0.23	J	PW	0.13	U				
2,3,7,8-TCDF	1.2			1.8			0.66	J	P			
TOTAL HPCDD	1500			210			280					
TOTAL HPCDF	240			51			61	J	W			
TOTAL HXCDD	320	J	W	35			53					
TOTAL HXCDF	150	J	W	32			30	J	W			
TOTAL PECDD	36			7.7	J	W	5.1	J	PW			
TOTAL PECDF	34	J	W	22	J	W	10	J	W			
TOTAL TCDD	4.7	J	W	3.2	J	W	1.2					
TOTAL TCDF	11	J	W	15	J	W	7.9	J	W			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1050-000.6			TF2-004/5-SS1051-000.8			TF2-004/5-SS1051-000.8A			TF2-004/5-SS1052-000.6		
SDG: 320-4670-1	LAB_ID	320-4670-42			320-4670-41			320-4670-41			320-4670-40		
FRACTION: DIOX	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.4			96.7			96.7			92.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		2800			5700						4000		
1,2,3,4,6,7,8,9-OCDF		96			35						200		
1,2,3,4,6,7,8-HPCDD		62			67						270		
1,2,3,4,6,7,8-HPCDF		34			15						92		
1,2,3,4,7,8,9-HPCDF		1.6	J	P	0.73	J	P				4.6	J	P
1,2,3,4,7,8-HXCDD		1	J	PW	0.95	J	P				4.5	J	P
1,2,3,4,7,8-HXCDF		4.1	J	P	1.1	J	PW				4.9	J	P
1,2,3,6,7,8-HXCDD		2.3	J	P	2	J	P				12		
1,2,3,6,7,8-HXCDF		1.7	J	P	1.2	J	P				4.2	J	P
1,2,3,7,8,9-HXCDD		2.3	J	P	1.8	J	P				9.7		
1,2,3,7,8,9-HXCDF		0.093	U		0.087	U					0.15	U	
1,2,3,7,8-PECDD		0.5	J	P	0.41	J	P				1.8	J	P
1,2,3,7,8-PECDF		0.43	J	PW	0.3	J	PW				1.1	J	PW
2,3,4,6,7,8-HXCDF		0.75	J	PW	0.58	J	PW				4.1	J	P
2,3,4,7,8-PECDF		0.65	J	EP	0.35	J	EP				1.6	J	EP
2,3,7,8-TCDD		0.16	J	PW	0.035	U					0.14	J	PW
2,3,7,8-TCDF		0.43	J	P				0.33	J	PW	1.2		
TOTAL HPCDD		110			120						470		
TOTAL HPCDF		62			39						240		
TOTAL HXCDD		18	J	W	14						79		
TOTAL HXCDF		20	J	W	13	J	W				95		
TOTAL PECDD		3.4	J	PW	2.9	J	PW				10	J	W
TOTAL PECDF		8.8	J	W	3.4	J	PW				29	J	W
TOTAL TCDD		1.8	J	W	1.2	J	W				2.2	J	W
TOTAL TCDF		6.6	J	W	2.7	J	W				11	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1053-000.6			TF2-004/5-SS1054-000.6			TF2-004/5-SS1054-000.6A			TF2-004/5-SS1055-000.8		
SDG: 320-4670-1	LAB_ID	320-4670-39			320-4670-38			320-4670-38			320-4670-37		
FRACTION: DIOX	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.3			95.8			95.8			93.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		7000			3100						1900		
1,2,3,4,6,7,8,9-OCDF		250			53						22		
1,2,3,4,6,7,8-HPCDD		510			98	J	D				55		
1,2,3,4,6,7,8-HPCDF		120			26						13		
1,2,3,4,7,8,9-HPCDF		5.2			1.2	J	P				0.76	J	P
1,2,3,4,7,8-HXCDD		6.5	J	W	1.7	J	P				0.87	J	P
1,2,3,4,7,8-HXCDF		7.1			1.9	J	P				1.4	J	P
1,2,3,6,7,8-HXCDD		23			4.3	J	P				2.4	J	P
1,2,3,6,7,8-HXCDF		5.1	J	P	1.2	J	PW				0.84	J	P
1,2,3,7,8,9-HXCDD		14			3.2	J	P				1.7	J	P
1,2,3,7,8,9-HXCDF		0.14	U		0.12	U					0.12	U	
1,2,3,7,8-PECDD		2.7	J	P	0.58	J	P				0.31	J	P
1,2,3,7,8-PECDF		0.81	J	P	0.23	J	P				0.14	J	PW
2,3,4,6,7,8-HXCDF		4.4	J	P	0.78	J	PW				0.59	J	PW
2,3,4,7,8-PECDF		0.98	J	EP	0.36	J	EP				0.16	J	EPW
2,3,7,8-TCDD		0.63	J	P	0.094	J	PW				0.043	U	
2,3,7,8-TCDF		0.77	J	P				0.17	J	PW			
TOTAL HPCDD		860			170						93		
TOTAL HPCDF		330			67						31		
TOTAL HXCDD		130	J	W	27						15		
TOTAL HXCDF		120			24	J	W				13	J	W
TOTAL PECDD		12	J	W	3.2	J	PW				2.4	J	PW
TOTAL PECDF		24	J	W	5.8	J	W				6.5	J	W
TOTAL TCDD		2.7	J	W	0.92	J	PW				0.46	J	PW
TOTAL TCDF		9.4	J	W	1.7	J	W				2.4	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1055-000.8A			TF2-004/5-SS1056-000.6			TF2-004/5-SS1056-000.6A			TF2-004/5-SS1057-0001		
SDG: 320-4670-1	LAB_ID	320-4670-37			320-4670-36			320-4670-36			320-4670-35		
FRACTION: DIOX	SAMP_DATE	10/21/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.6			95.9			95.9			95.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD					3700						6400		
1,2,3,4,6,7,8,9-OCDF					21						43		
1,2,3,4,6,7,8-HPCDD					130						420		
1,2,3,4,6,7,8-HPCDF					16						44		
1,2,3,4,7,8,9-HPCDF					0.73	J	P				1.6	J	P
1,2,3,4,7,8-HXCDD					3	J	P				7.2		
1,2,3,4,7,8-HXCDF					1.9	J	P				3.2	J	P
1,2,3,6,7,8-HXCDD					6.7						23		
1,2,3,6,7,8-HXCDF					1.7	J	P				2.8	J	P
1,2,3,7,8,9-HXCDD					6.4						14		
1,2,3,7,8,9-HXCDF					0.11	U					0.11	U	
1,2,3,7,8-PECDD					1.2	J	PW				2.5	J	P
1,2,3,7,8-PECDF					0.45	J	P				0.5	J	PW
2,3,4,6,7,8-HXCDF					0.98	J	P				2.2	J	P
2,3,4,7,8-PECDF					0.25	J	EP				1	J	EP
2,3,7,8-TCDD					0.31	J	P				0.19	J	PW
2,3,7,8-TCDF		0.18	J	P				0.19	J	PW	0.56	J	P
TOTAL HPCDD					250						730		
TOTAL HPCDF					37						110		
TOTAL HXCDD					49						140		
TOTAL HXCDF					23						77		
TOTAL PECDD					8.4	J	W				14	J	W
TOTAL PECDF					8	J	W				16	J	W
TOTAL TCDD					1.3	J	W				1.7	J	W
TOTAL TCDF					3.4	J	W				6.2	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1058-000.5			TF2-004/5-SS1058-000.5A			TF2-004/5-SS1059-000.6			TF2-004/5-SS1059-000.6A		
SDG: 320-4670-1	LAB_ID	320-4670-50			320-4670-50			320-4670-49			320-4670-49		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	95.0			95.0			96.8			96.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		1400						6400					
1,2,3,4,6,7,8,9-OCDF		42						20					
1,2,3,4,6,7,8-HPCDD		48						59					
1,2,3,4,6,7,8-HPCDF		14						6.9	J	W			
1,2,3,4,7,8,9-HPCDF		0.91	J	P				0.11	U				
1,2,3,4,7,8-HXCDD		0.64	J	PW				0.53	J	P			
1,2,3,4,7,8-HXCDF		1.5	J	P				0.51	J	PW			
1,2,3,6,7,8-HXCDD		1.6	J	P				1	J	P			
1,2,3,6,7,8-HXCDF		1	J	P				0.64	J	P			
1,2,3,7,8,9-HXCDD		1.5	J	P				1.1	J	P			
1,2,3,7,8,9-HXCDF		0.081	U					0.059	U				
1,2,3,7,8-PECDD		0.3	J	P				0.18	J	P			
1,2,3,7,8-PECDF		0.066	U					0.048	U				
2,3,4,6,7,8-HXCDF		0.94	J	P				0.41	J	P			
2,3,4,7,8-PECDF		0.34	J	PW				0.05	U				
2,3,7,8-TCDD		0.036	U					0.042	U				
2,3,7,8-TCDF					0.42	J	P				0.065	U	
TOTAL HPCDD		82						100					
TOTAL HPCDF		42						17	J	W			
TOTAL HXCDD		10	J	W				7.5	J	W			
TOTAL HXCDF		14						6.6	J	W			
TOTAL PECDD		1.5	J	PW				1.6	J	PW			
TOTAL PECDF		3.7	J	PW				1.4	J	PW			
TOTAL TCDD		0.48	J	PW				1.3					
TOTAL TCDF		2.8	J	W				1.2	J	W			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1060.000.5			TF2-004/5-SS1061-000.6			TF2-004/5-SS1061-000.6A			TF2-004/5-SS1062-000.8		
SDG: 320-4670-1	LAB_ID	320-4670-48			320-4670-44			320-4670-44			320-4670-43		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	95.6			99.3			99.3			93.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		5500			3400						4900		
1,2,3,4,6,7,8,9-OCDF		210			40						29		
1,2,3,4,6,7,8-HPCDD		300			110						120		
1,2,3,4,6,7,8-HPCDF		95			22						17		
1,2,3,4,7,8,9-HPCDF		4.9	J	P	1.4	J	P				1.2	J	P
1,2,3,4,7,8-HXCDD		4.9	J	P	2.3	J	P				2.2	J	P
1,2,3,4,7,8-HXCDF		8.1			1.9	J	P				2	J	P
1,2,3,6,7,8-HXCDD		13			5.7						5.7		
1,2,3,6,7,8-HXCDF		5.6			1.3	J	P				1.3	J	P
1,2,3,7,8,9-HXCDD		10			4.7	J	P				4.9	J	P
1,2,3,7,8,9-HXCDF		0.098	U		0.088	U					0.099	U	
1,2,3,7,8-PECDD		1.9	J	P	0.98	J	P				1.2	J	P
1,2,3,7,8-PECDF		2	J	P	0.3	J	P				0.58	J	P
2,3,4,6,7,8-HXCDF		5.7			1.2	J	P				1.1	J	P
2,3,4,7,8-PECDF		2.4	J	P	0.51	J	P				0.84	J	EP
2,3,7,8-TCDD		0.28	J	PW	0.056	U					0.17	J	PW
2,3,7,8-TCDF		2						0.43	J	P	0.76	J	P
TOTAL HPCDD		510			200						210		
TOTAL HPCDF		240			56						39		
TOTAL HXCDD		87			34	J	W				41	J	W
TOTAL HXCDF		120	J	W	28						24		
TOTAL PECDD		14	J	W	4.7	J	PW				6.9	J	W
TOTAL PECDF		45	J	W	9.5	J	W				13	J	W
TOTAL TCDD		5.1	J	W	1.3	J	W				2.2	J	W
TOTAL TCDF		23			5	J	W				8.5	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1063-000.6			TF2-004/5-SS1063-000.6A			TF2-004/5-SS1064-000.6			TF2-004/5-SS1064-000.6A		
SDG: 320-4670-1	LAB_ID	320-4670-53			320-4670-53			320-4670-52			320-4670-52		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/22/2013			10/22/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	96.5			96.5			97.3			97.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		1700						1900					
1,2,3,4,6,7,8,9-OCDF		34						44					
1,2,3,4,6,7,8-HPCDD		50						87					
1,2,3,4,6,7,8-HPCDF		15						22					
1,2,3,4,7,8,9-HPCDF		1	J	P				1.3	J	P			
1,2,3,4,7,8-HXCDD		0.66	J	PW				1.2	J	P			
1,2,3,4,7,8-HXCDF		1.8	J	P				1.8	J	PW			
1,2,3,6,7,8-HXCDD		2	J	P				3.8	J	P			
1,2,3,6,7,8-HXCDF		1.4	J	P				1.3	J	PW			
1,2,3,7,8,9-HXCDD		1.7	J	P				2.6	J	P			
1,2,3,7,8,9-HXCDF		0.087	U					0.1	U				
1,2,3,7,8-PECDD		0.27	J	PW				0.59	J	P			
1,2,3,7,8-PECDF		0.4	J	PW				0.53	J	P			
2,3,4,6,7,8-HXCDF		1.1	J	P				2.3	J	P			
2,3,4,7,8-PECDF		0.48	J	P				0.64	J	P			
2,3,7,8-TCDD		0.05	U					0.16	J	PW			
2,3,7,8-TCDF					0.49	J	P				0.44	J	PW
TOTAL HPCDD		90						150					
TOTAL HPCDF		40						56					
TOTAL HXCDD		14	J	W				27	J	W			
TOTAL HXCDF		38	J	W				28	J	W			
TOTAL PECDD		2.8	J	PW				4.6	J	PW			
TOTAL PECDF		9.9	J	W				12	J	W			
TOTAL TCDD		0.76	J	PW				2.1	J	W			
TOTAL TCDF		4.6	J	W				5.8	J	W			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1065-000.5			TF2-004/5-SS1066-000.9			TF2-004/5-SS1067-000.7			TF2-004/5-SS1067-000.7A		
SDG: 320-4670-1	LAB_ID	320-4670-51			320-4670-47			320-4670-46			320-4670-46		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	96.6			97.8			88.5			88.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		3000			5800			3700					
1,2,3,4,6,7,8,9-OCDF		100			69			40					
1,2,3,4,6,7,8-HPCDD		170			150			130					
1,2,3,4,6,7,8-HPCDF		51			33			24					
1,2,3,4,7,8,9-HPCDF		2.9	J	P	1.8	J	P	1.4	J	P			
1,2,3,4,7,8-HXCDD		2.7	J	P	3.1	J	P	2.9	J	P			
1,2,3,4,7,8-HXCDF		4.1	J	P	2.4	J	P	2.1	J	P			
1,2,3,6,7,8-HXCDD		6.8			7.2			6.8					
1,2,3,6,7,8-HXCDF		3.1	J	P	1.8	J	P	2.1	J	P			
1,2,3,7,8,9-HXCDD		5.4			6.2			6.3					
1,2,3,7,8,9-HXCDF		0.099	U		0.088	U		0.13	U				
1,2,3,7,8-PECDD		1.1	J	P	1.4	J	P	1.3	J	P			
1,2,3,7,8-PECDF		0.94	J	P	0.35	J	PW	0.1	U				
2,3,4,6,7,8-HXCDF		3.3	J	P	1.5	J	P	1.9	J	P			
2,3,4,7,8-PECDF		1.4	J	P	0.64	J	P	0.56	J	P			
2,3,7,8-TCDD		0.18	J	PW	0.26	J	PW	0.14	U				
2,3,7,8-TCDF		1			0.51	J	P				0.71	J	PRW
TOTAL HPCDD		290			270			240					
TOTAL HPCDF		130			88			57					
TOTAL HXCDD		45			44			47					
TOTAL HXCDF		68	J	W	36			38					
TOTAL PECDD		7.4	J	W	5.5	J	W	7.4	J	W			
TOTAL PECDF		26	J	W	9.8	J	W	11	J	W			
TOTAL TCDD		1.8	J	W	1.1	J	W	0.82	J	PW			
TOTAL TCDF		11	J	W	4.8	J	W	4.3	J	W			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS1068-000.5			TF2-004/5-SS1068-000.5A			TF2-004/5-SS-DUP01-1013			TF2-004/5-SS-DUP01-1013A		
SDG: 320-4670-1	LAB_ID	320-4670-54			320-4670-54			320-4670-10			320-4670-10		
FRACTION: DIOX	SAMP_DATE	10/22/2013			10/22/2013			10/18/2013			10/18/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	94.0			94.0			96.8			96.8		
	DUP_OF							TF2-004/5-SS1020-0001			TF2-004/5-SS1020-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		2400						6600					
1,2,3,4,6,7,8,9-OCDF		65						7.3	J	P			
1,2,3,4,6,7,8-HPCDD		160						49					
1,2,3,4,6,7,8-HPCDF		41						4.1	J	P			
1,2,3,4,7,8,9-HPCDF		1.7	J	P				0.31	J	P			
1,2,3,4,7,8-HXCDD		2.3	J	P				0.55	J	PW			
1,2,3,4,7,8-HXCDF		2.5	J	P				0.46	J	P			
1,2,3,6,7,8-HXCDD		7.2						1.2	J	P			
1,2,3,6,7,8-HXCDF		1.9	J	P				1.4	J	P			
1,2,3,7,8,9-HXCDD		5.2	J	P				1.4	J	P			
1,2,3,7,8,9-HXCDF		0.11	U					0.069	U				
1,2,3,7,8-PECDD		0.75	J	PW				0.24	J	PW			
1,2,3,7,8-PECDF		0.48	J	PW				0.072	U				
2,3,4,6,7,8-HXCDF		1.8	J	P				0.55	J	P			
2,3,4,7,8-PECDF		0.72	J	P				0.15	J	P			
2,3,7,8-TCDD		0.098	U					0.045	U				
2,3,7,8-TCDF					0.33	U					0.17	J	PS
TOTAL HPCDD		270						86					
TOTAL HPCDF		100						10					
TOTAL HXCDD		44						10	J	W			
TOTAL HXCDF		43						10	J	W			
TOTAL PECDD		6.1	J	W				1.8	J	PW			
TOTAL PECDF		14	J	W				4.2	J	PW			
TOTAL TCDD		2.3	J	W				0.58	J	PW			
TOTAL TCDF		5.9	J	W				1.3	J	GW			

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS-DUP02-1013			TF2-004/5-SS-DUP03-1013			TF2-004/5-SS-DUP03-1013A			TF2-004/5-SS-DUP04-1013		
SDG: 320-4670-1	LAB_ID	320-4670-22			320-4670-33			320-4670-33			320-4670-45		
FRACTION: DIOX	SAMP_DATE	10/18/2013			10/21/2013			10/21/2013			10/21/2013		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	93.8			94.9			94.9			95.6		
	DUP_OF	TF2-004/5-SS1035-0001			TF2-004/5-SS1041-000.7			TF2-004/5-SS1041-000.7			TF2-004/5-SS1061-000.6		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		3600			6000						3600		
1,2,3,4,6,7,8,9-OCDF		110	J	G	18						49		
1,2,3,4,6,7,8-HPCDD		330			63						120		
1,2,3,4,6,7,8-HPCDF		60	J	G	7.3						23		
1,2,3,4,7,8,9-HPCDF		3.3	J	P	0.15	U					1	J	P
1,2,3,4,7,8-HXCDD		4.5	J	CP	0.49	J	P				2.2	J	P
1,2,3,4,7,8-HXCDF		5.3	J	P	0.9	J	P				2.1	J	P
1,2,3,6,7,8-HXCDD		16			0.95	J	P				5.6		
1,2,3,6,7,8-HXCDF		3.3	J	P	0.76	J	PW				1.3	J	P
1,2,3,7,8,9-HXCDD		8.8			1.1	J	P				4.9	J	P
1,2,3,7,8,9-HXCDF		0.16	U		0.094	U					0.096	U	
1,2,3,7,8-PECDD		1.8	J	PW	0.11	J	PW				0.91	J	PW
1,2,3,7,8-PECDF		1	J	PW	0.073	U					0.34	J	P
2,3,4,6,7,8-HXCDF		2.5	J	PW	0.34	J	PW				1.2	J	P
2,3,4,7,8-PECDF		1.2	J	PW	0.076	U					0.51	J	PW
2,3,7,8-TCDD		0.3	J	PW	0.04	U					0.2	J	PW
2,3,7,8-TCDF		1.5	UJ	Q				0.15	J	P			
TOTAL HPCDD		590			120						220		
TOTAL HPCDF		150			18						62		
TOTAL HXCDD		96			7.7	J	W				36		
TOTAL HXCDF		69	J	W	6.8	J	W				30		
TOTAL PECDD		13	J	W	1.8	J	PW				4.8	J	PW
TOTAL PECDF		21	J	W	1.3	J	PW				9.2	J	W
TOTAL TCDD		4	J	W	0.59	J	P				1.2	J	W
TOTAL TCDF		11			1	J	W				4.1	J	W

PROJ_NO: 03019	NSAMPLE	TF2-004/5-SS-DUP04-1013A			TF2-004/5-SS-DUP05-1013		
SDG: 320-4670-1	LAB_ID	320-4670-45			320-4670-55		
FRACTION: DIOX	SAMP_DATE	10/21/2013			10/22/2013		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	NG/KG			NG/KG		
	PCT_SOLIDS	95.6			96.5		
	DUP_OF	TF2-004/5-SS1061-000.6			TF2-004/5-SS1065-000.5		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD					3100		
1,2,3,4,6,7,8,9-OCDF					89		
1,2,3,4,6,7,8-HPCDD					170		
1,2,3,4,6,7,8-HPCDF					46		
1,2,3,4,7,8,9-HPCDF					2.4	J	P
1,2,3,4,7,8-HXCDD					2.6	J	P
1,2,3,4,7,8-HXCDF					4	J	P
1,2,3,6,7,8-HXCDD					6.5		
1,2,3,6,7,8-HXCDF					3.1	J	P
1,2,3,7,8,9-HXCDD					5.9		
1,2,3,7,8,9-HXCDF					0.15	U	
1,2,3,7,8-PECDD					1.1	J	P
1,2,3,7,8-PECDF					0.87	J	P
2,3,4,6,7,8-HXCDF					3	J	P
2,3,4,7,8-PECDF					1.4	J	P
2,3,7,8-TCDD					0.056	U	
2,3,7,8-TCDF		0.42	J	PW	1.2		
TOTAL HPCDD					290		
TOTAL HPCDF					120	J	W
TOTAL HXCDD					47	J	W
TOTAL HXCDF					68		
TOTAL PECDD					8.3	J	W
TOTAL PECDF					29		
TOTAL TCDD					2.8	J	W
TOTAL TCDF					9.6	J	W

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS-RB03-1013 | Lab Sample ID: 320-4670-66

Matrix: Water | Lab File ID: 28OC13C4D5_013.d

Analysis Method: 8290 | Date Collected: 10/22/2013 12:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1020.4(mL) | Date Analyzed: 10/29/2013 05:30

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		9.8	0.51
51207-31-9	2,3,7,8-TCDF	ND		9.8	0.54
40321-76-4	1,2,3,7,8-PeCDD	ND		49	0.70
57117-41-6	1,2,3,7,8-PeCDF	ND		49	0.83
57117-31-4	2,3,4,7,8-PeCDF	ND		49	0.88
39227-28-6	1,2,3,4,7,8-HxCDD	ND		49	0.41
57653-85-7	1,2,3,6,7,8-HxCDD	ND		49	0.41
19408-74-3	1,2,3,7,8,9-HxCDD	ND		49	0.37
70648-26-9	1,2,3,4,7,8-HxCDF	ND		49	0.21
57117-44-9	1,2,3,6,7,8-HxCDF	ND		49	0.20
60851-34-5	2,3,4,6,7,8-HxCDF	ND		49	0.21
72918-21-9	1,2,3,7,8,9-HxCDF	ND		49	0.23
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		49	0.38
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		49	0.29
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		49	0.35
3268-87-9	OCDD	0.83	J q B	98	0.52
39001-02-0	OCDF	ND		98	0.46
41903-57-5	Total TCDD	ND		9.8	0.51
30402-14-3	Total TCDF	ND		9.8	0.54
36088-22-9	Total PeCDD	ND		49	0.70
30402-15-4	Total PeCDF	ND		49	0.88
34465-46-8	Total HxCDD	ND		49	0.41
55684-94-1	Total HxCDF	ND		49	0.23
37871-00-4	Total HpCDD	0.72	J B	49	0.38
38998-75-3	Total HpCDF	ND		49	0.35

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS-RB03-1013 | Lab Sample ID: 320-4670-66

Matrix: Water | Lab File ID: 28OC13C4D5_013.d

Analysis Method: 8290 | Date Collected: 10/22/2013 12:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1020.4(mL) | Date Analyzed: 10/29/2013 05:30

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	93		40-135
89059-46-1	13C-2,3,7,8-TCDF	93		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	93		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	85		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	102		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	95		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	94		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	99		40-135
114423-97-1	13C-OCDD	96		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-SS-RB01-1013 | Lab Sample ID: 320-4670-17

Matrix: Water | Lab File ID: 28OC13C4D5_011.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1007.7(mL) | Date Analyzed: 10/29/2013 04:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		9.9	0.94
51207-31-9	2,3,7,8-TCDF	ND		9.9	0.99
40321-76-4	1,2,3,7,8-PeCDD	ND		50	1.3
57117-41-6	1,2,3,7,8-PeCDF	ND		50	1.5
57117-31-4	2,3,4,7,8-PeCDF	ND		50	1.6
39227-28-6	1,2,3,4,7,8-HxCDD	ND		50	0.76
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.76
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.69
70648-26-9	1,2,3,4,7,8-HxCDF	ND		50	0.49
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	0.47
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.49
72918-21-9	1,2,3,7,8,9-HxCDF	ND		50	0.52
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		50	0.71
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		50	0.62
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.74
3268-87-9	OCDD	ND		99	0.76
39001-02-0	OCDF	ND		99	1.2
41903-57-5	Total TCDD	ND		9.9	0.94
30402-14-3	Total TCDF	ND		9.9	0.99
36088-22-9	Total PeCDD	ND		50	1.3
30402-15-4	Total PeCDF	ND		50	1.6
34465-46-8	Total HxCDD	ND		50	0.76
55684-94-1	Total HxCDF	ND		50	0.52
37871-00-4	Total HpCDD	ND		50	0.71
38998-75-3	Total HpCDF	ND		50	0.74

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-SS-RB01-1013 | Lab Sample ID: 320-4670-17

Matrix: Water | Lab File ID: 28OC13C4D5_011.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1007.7(mL) | Date Analyzed: 10/29/2013 04:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	91		40-135
89059-46-1	13C-2,3,7,8-TCDF	91		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	80		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	75		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	105		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	100		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	86		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	92		40-135
114423-97-1	13C-OCDD	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-SS-RB02-1013 | Lab Sample ID: 320-4670-34

Matrix: Water | Lab File ID: 28OC13C4D5_012.d

Analysis Method: 8290 | Date Collected: 10/21/2013 11:50

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1001.7(mL) | Date Analyzed: 10/29/2013 04:47

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	1.1
51207-31-9	2,3,7,8-TCDF	ND		10	1.2
40321-76-4	1,2,3,7,8-PeCDD	ND		50	1.8
57117-41-6	1,2,3,7,8-PeCDF	ND		50	1.8
57117-31-4	2,3,4,7,8-PeCDF	ND		50	1.9
39227-28-6	1,2,3,4,7,8-HxCDD	ND		50	0.98
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.98
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.88
70648-26-9	1,2,3,4,7,8-HxCDF	ND		50	0.50
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	0.47
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.50
72918-21-9	1,2,3,7,8,9-HxCDF	ND		50	0.53
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		50	0.96
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		50	0.82
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.97
3268-87-9	OCDD	ND		100	1.5
39001-02-0	OCDF	ND		100	1.7
41903-57-5	Total TCDD	ND		10	1.1
30402-14-3	Total TCDF	ND		10	1.2
36088-22-9	Total PeCDD	ND		50	1.8
30402-15-4	Total PeCDF	ND		50	1.9
34465-46-8	Total HxCDD	ND		50	0.98
55684-94-1	Total HxCDF	ND		50	0.53
37871-00-4	Total HpCDD	ND		50	0.96
38998-75-3	Total HpCDF	ND		50	0.97

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-SS-RB02-1013 | Lab Sample ID: 320-4670-34

Matrix: Water | Lab File ID: 28OC13C4D5_012.d

Analysis Method: 8290 | Date Collected: 10/21/2013 11:50

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1001.7(mL) | Date Analyzed: 10/29/2013 04:47

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	87		40-135
89059-46-1	13C-2,3,7,8-TCDF	89		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	75		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	71		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	100		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	100		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	81		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	89		40-135
114423-97-1	13C-OCDD	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS-DUP06-1013 Lab Sample ID: 320-4670-65

Matrix: Solid Lab File ID: 31OC13C3D5_78.d

Analysis Method: 8290 Date Collected: 10/22/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 15:44

Sample wt/vol: 10.22(g) Date Analyzed: 11/03/2013 03:40

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.25	J q	1.1	0.047
40321-76-4	1,2,3,7,8-PeCDD	0.94	J q	5.3	0.23
57117-41-6	1,2,3,7,8-PeCDF	0.96	J	5.3	0.075
57117-31-4	2,3,4,7,8-PeCDF	0.96	J	5.3	0.078
39227-28-6	1,2,3,4,7,8-HxCDD	1.4	J	5.3	0.079
57653-85-7	1,2,3,6,7,8-HxCDD	3.1	J	5.3	0.058
19408-74-3	1,2,3,7,8,9-HxCDD	3.1	J	5.3	0.056
70648-26-9	1,2,3,4,7,8-HxCDF	2.3	J	5.3	0.092
57117-44-9	1,2,3,6,7,8-HxCDF	1.2	J	5.3	0.070
60851-34-5	2,3,4,6,7,8-HxCDF	0.89	J q	5.3	0.079
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.089
35822-46-9	1,2,3,4,6,7,8-HpCDD	88		5.3	0.30
67562-39-4	1,2,3,4,6,7,8-HpCDF	9.1		5.3	0.095
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.60	J	5.3	0.11
3268-87-9	OCDD	4900	E B	11	0.94
39001-02-0	OCDF	11	B	11	0.061
41903-57-5	Total TCDD	7.8	q	1.1	0.047
30402-14-3	Total TCDF	10	q	1.1	0.045
36088-22-9	Total PeCDD	15	q	5.3	0.23
30402-15-4	Total PeCDF	14	q	5.3	0.077
34465-46-8	Total HxCDD	33		5.3	0.064
55684-94-1	Total HxCDF	16	q	5.3	0.083
37871-00-4	Total HpCDD	200		5.3	0.30
38998-75-3	Total HpCDF	18		5.3	0.10

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS-DUP06-1013 | Lab Sample ID: 320-4670-65

Matrix: Solid | Lab File ID: 31OC13C3D5_78.d

Analysis Method: 8290 | Date Collected: 10/22/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:44

Sample wt/vol: 10.22(g) | Date Analyzed: 11/03/2013 03:40

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		40-135
89059-46-1	13C-2,3,7,8-TCDF	74		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	70		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	75		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	78		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	83		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	63		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	74		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1011-000.8 | Lab Sample ID: 320-4670-56

Matrix: Solid | Lab File ID: 04NO13B3D5_7.d

Analysis Method: 8290 | Date Collected: 10/22/2013 09:40

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.35(g) | Date Analyzed: 11/05/2013 01:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 12.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.23	J q	1.1	0.066
40321-76-4	1,2,3,7,8-PeCDD	0.72	J	5.5	0.087
57117-41-6	1,2,3,7,8-PeCDF	0.40	J	5.5	0.099
57117-31-4	2,3,4,7,8-PeCDF	0.68	J	5.5	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	0.97	J q	5.5	0.15
57653-85-7	1,2,3,6,7,8-HxCDD	2.5	J	5.5	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	5.6		5.5	0.11
70648-26-9	1,2,3,4,7,8-HxCDF	1.3	J	5.5	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	1.3	J	5.5	0.078
60851-34-5	2,3,4,6,7,8-HxCDF	0.96	J	5.5	0.089
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.5	0.10
35822-46-9	1,2,3,4,6,7,8-HpCDD	130		5.5	0.51
67562-39-4	1,2,3,4,6,7,8-HpCDF	13		5.5	0.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.37	J	5.5	0.12
3268-87-9	OCDD	13000	E B	11	2.2
39001-02-0	OCDF	17	B	11	0.070
41903-57-5	Total TCDD	5.5	q	1.1	0.066
30402-14-3	Total TCDF	9.6	q	1.1	0.050
36088-22-9	Total PeCDD	9.0	q	5.5	0.087
30402-15-4	Total PeCDF	15		5.5	0.10
34465-46-8	Total HxCDD	31	q	5.5	0.12
55684-94-1	Total HxCDF	20	q	5.5	0.093
37871-00-4	Total HpCDD	240		5.5	0.51
38998-75-3	Total HpCDF	25		5.5	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1011-000.8 | Lab Sample ID: 320-4670-56

Matrix: Solid | Lab File ID: 04NO13B3D5_7.d

Analysis Method: 8290 | Date Collected: 10/22/2013 09:40

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.35(g) | Date Analyzed: 11/05/2013 01:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 12.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	66		40-135
89059-46-1	13C-2,3,7,8-TCDF	75		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	72		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	73		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	71		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	78		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	88		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1012-000.7 | Lab Sample ID: 320-4670-57

Matrix: Solid | Lab File ID: 04NO13B3D5_8.d

Analysis Method: 8290 | Date Collected: 10/22/2013 09:50

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.27(g) | Date Analyzed: 11/05/2013 02:27

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 10.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.26	J q	1.1	0.12
40321-76-4	1,2,3,7,8-PeCDD	1.4	J	5.4	0.092
57117-41-6	1,2,3,7,8-PeCDF	0.74	J q	5.4	0.083
57117-31-4	2,3,4,7,8-PeCDF	1.2	J	5.4	0.087
39227-28-6	1,2,3,4,7,8-HxCDD	1.8	J	5.4	0.16
57653-85-7	1,2,3,6,7,8-HxCDD	4.0	J	5.4	0.12
19408-74-3	1,2,3,7,8,9-HxCDD	4.4	J	5.4	0.12
70648-26-9	1,2,3,4,7,8-HxCDF	3.0	J	5.4	0.087
57117-44-9	1,2,3,6,7,8-HxCDF	1.3	J q	5.4	0.066
60851-34-5	2,3,4,6,7,8-HxCDF	1.1	J	5.4	0.075
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.085
35822-46-9	1,2,3,4,6,7,8-HpCDD	81		5.4	0.31
67562-39-4	1,2,3,4,6,7,8-HpCDF	12		5.4	0.11
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.74	J	5.4	0.13
3268-87-9	OCDD	4000	B	11	1.1
39001-02-0	OCDF	12	B	11	0.068
41903-57-5	Total TCDD	64	q	1.1	0.12
30402-14-3	Total TCDF	13		1.1	0.045
36088-22-9	Total PeCDD	31	q	5.4	0.092
30402-15-4	Total PeCDF	15	q	5.4	0.085
34465-46-8	Total HxCDD	42		5.4	0.13
55684-94-1	Total HxCDF	17	q	5.4	0.078
37871-00-4	Total HpCDD	160		5.4	0.31
38998-75-3	Total HpCDF	22		5.4	0.12

FORM I

DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1012-000.7 Lab Sample ID: 320-4670-57

Matrix: Solid Lab File ID: 04NO13B3D5_8.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:50

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.27(g) Date Analyzed: 11/05/2013 02:27

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	74		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	70		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	71		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	75		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	56		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	63		40-135
114423-97-1	13C-OCDD	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1013-000.7 Lab Sample ID: 320-4670-58

Matrix: Solid Lab File ID: 04NO13B3D5_9.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:55

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) Date Analyzed: 11/05/2013 03:08

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.22	J q	1.0	0.093
40321-76-4	1,2,3,7,8-PeCDD	1.1	J	5.1	0.098
57117-41-6	1,2,3,7,8-PeCDF	1.2	J	5.1	0.076
57117-31-4	2,3,4,7,8-PeCDF	1.2	J	5.1	0.079
39227-28-6	1,2,3,4,7,8-HxCDD	1.1	J q	5.1	0.15
57653-85-7	1,2,3,6,7,8-HxCDD	3.9	J	5.1	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	4.2	J	5.1	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	2.6	J	5.1	0.096
57117-44-9	1,2,3,6,7,8-HxCDF	1.1	J q	5.1	0.073
60851-34-5	2,3,4,6,7,8-HxCDF	1.4	J	5.1	0.083
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.094
35822-46-9	1,2,3,4,6,7,8-HpCDD	67		5.1	0.28
67562-39-4	1,2,3,4,6,7,8-HpCDF	12		5.1	0.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.74	J	5.1	0.12
3268-87-9	OCDD	3300	B	10	0.84
39001-02-0	OCDF	13	B	10	0.054
41903-57-5	Total TCDD	19	q	1.0	0.093
30402-14-3	Total TCDF	14		1.0	0.042
36088-22-9	Total PeCDD	26	q	5.1	0.098
30402-15-4	Total PeCDF	16	q	5.1	0.077
34465-46-8	Total HxCDD	37	q	5.1	0.12
55684-94-1	Total HxCDF	17	q	5.1	0.086
37871-00-4	Total HpCDD	130		5.1	0.28
38998-75-3	Total HpCDF	25		5.1	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1013-000.7 Lab Sample ID: 320-4670-58

Matrix: Solid Lab File ID: 04NO13B3D5_9.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:55

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) Date Analyzed: 11/05/2013 03:08

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		40-135
89059-46-1	13C-2,3,7,8-TCDF	81		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	76		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	80		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	75		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	83		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	65		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	74		40-135
114423-97-1	13C-OCDD	88		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1014-0001 | Lab Sample ID: 320-4670-59

Matrix: Solid | Lab File ID: 04NO13B3D5_10.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.15(g) | Date Analyzed: 11/05/2013 03:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.43	J	1.1	0.080
40321-76-4	1,2,3,7,8-PeCDD	1.1	J q	5.3	0.079
57117-41-6	1,2,3,7,8-PeCDF	0.83	J	5.3	0.070
57117-31-4	2,3,4,7,8-PeCDF	1.1	J	5.3	0.072
39227-28-6	1,2,3,4,7,8-HxCDD	1.9	J	5.3	0.15
57653-85-7	1,2,3,6,7,8-HxCDD	4.4	J	5.3	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	4.8	J	5.3	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	2.6	J	5.3	0.085
57117-44-9	1,2,3,6,7,8-HxCDF	1.2	J q	5.3	0.065
60851-34-5	2,3,4,6,7,8-HxCDF	1.3	J	5.3	0.074
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.083
35822-46-9	1,2,3,4,6,7,8-HpCDD	70		5.3	0.29
67562-39-4	1,2,3,4,6,7,8-HpCDF	12		5.3	0.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.61	J	5.3	0.12
3268-87-9	OCDD	3300	B	11	0.84
39001-02-0	OCDF	12	B	11	0.072
41903-57-5	Total TCDD	20	q	1.1	0.080
30402-14-3	Total TCDF	25	q	1.1	0.045
36088-22-9	Total PeCDD	26	q	5.3	0.079
30402-15-4	Total PeCDF	14	q	5.3	0.071
34465-46-8	Total HxCDD	45	q	5.3	0.12
55684-94-1	Total HxCDF	15	q	5.3	0.076
37871-00-4	Total HpCDD	150		5.3	0.29
38998-75-3	Total HpCDF	23		5.3	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1014-0001 | Lab Sample ID: 320-4670-59

Matrix: Solid | Lab File ID: 04NO13B3D5_10.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.15(g) | Date Analyzed: 11/05/2013 03:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		40-135
89059-46-1	13C-2,3,7,8-TCDF	73		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	70		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	71		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	76		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		40-135
114423-97-1	13C-OCDD	78		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1015-000.8 Lab Sample ID: 320-4670-60

Matrix: Solid Lab File ID: 04NO13B3D5_11.d

Analysis Method: 8290 Date Collected: 10/22/2013 10:15

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.03(g) Date Analyzed: 11/05/2013 04:32

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.15	J q	1.1	0.067
40321-76-4	1,2,3,7,8-PeCDD	0.73	J	5.3	0.082
57117-41-6	1,2,3,7,8-PeCDF	0.90	J	5.3	0.066
57117-31-4	2,3,4,7,8-PeCDF	0.85	J	5.3	0.068
39227-28-6	1,2,3,4,7,8-HxCDD	1.1	J q	5.3	0.13
57653-85-7	1,2,3,6,7,8-HxCDD	2.8	J	5.3	0.099
19408-74-3	1,2,3,7,8,9-HxCDD	2.9	J q	5.3	0.095
70648-26-9	1,2,3,4,7,8-HxCDF	1.7	J	5.3	0.076
57117-44-9	1,2,3,6,7,8-HxCDF	0.82	J	5.3	0.058
60851-34-5	2,3,4,6,7,8-HxCDF	0.85	J	5.3	0.066
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.074
35822-46-9	1,2,3,4,6,7,8-HpCDD	84		5.3	0.30
67562-39-4	1,2,3,4,6,7,8-HpCDF	7.4		5.3	0.089
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.54	J	5.3	0.10
3268-87-9	OCDD	4400	E B	11	0.98
39001-02-0	OCDF	8.9	J B	11	0.055
41903-57-5	Total TCDD	7.6	q	1.1	0.067
30402-14-3	Total TCDF	8.9	q	1.1	0.046
36088-22-9	Total PeCDD	12	q	5.3	0.082
30402-15-4	Total PeCDF	12	q	5.3	0.067
34465-46-8	Total HxCDD	31	q	5.3	0.11
55684-94-1	Total HxCDF	13	q	5.3	0.068
37871-00-4	Total HpCDD	190		5.3	0.30
38998-75-3	Total HpCDF	15		5.3	0.097

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1015-000.8 | Lab Sample ID: 320-4670-60

Matrix: Solid | Lab File ID: 04NO13B3D5_11.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.03(g) | Date Analyzed: 11/05/2013 04:32

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		40-135
89059-46-1	13C-2,3,7,8-TCDF	76		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	74		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	74		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	74		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	80		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	64		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	74		40-135
114423-97-1	13C-OCDD	86		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1016-000.9 | Lab Sample ID: 320-4670-61

Matrix: Solid | Lab File ID: 04NO13B3D5_12.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:25

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.28(g) | Date Analyzed: 11/05/2013 05:14

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.23	J q	1.1	0.074
40321-76-4	1,2,3,7,8-PeCDD	0.67	J	5.3	0.073
57117-41-6	1,2,3,7,8-PeCDF	0.67	J	5.3	0.085
57117-31-4	2,3,4,7,8-PeCDF	0.80	J	5.3	0.088
39227-28-6	1,2,3,4,7,8-HxCDD	1.6	J	5.3	0.17
57653-85-7	1,2,3,6,7,8-HxCDD	2.6	J	5.3	0.12
19408-74-3	1,2,3,7,8,9-HxCDD	3.5	J	5.3	0.12
70648-26-9	1,2,3,4,7,8-HxCDF	1.7	J	5.3	0.088
57117-44-9	1,2,3,6,7,8-HxCDF	0.88	J	5.3	0.067
60851-34-5	2,3,4,6,7,8-HxCDF	0.78	J	5.3	0.076
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.086
35822-46-9	1,2,3,4,6,7,8-HpCDD	110		5.3	0.42
67562-39-4	1,2,3,4,6,7,8-HpCDF	7.0		5.3	0.093
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.3	0.11
3268-87-9	OCDD	5500	E B	11	1.3
39001-02-0	OCDF	11	B	11	0.057
41903-57-5	Total TCDD	3.8	q	1.1	0.074
30402-14-3	Total TCDF	12	q	1.1	0.048
36088-22-9	Total PeCDD	6.7	q	5.3	0.073
30402-15-4	Total PeCDF	15	q	5.3	0.086
34465-46-8	Total HxCDD	33		5.3	0.14
55684-94-1	Total HxCDF	15		5.3	0.079
37871-00-4	Total HpCDD	260		5.3	0.42
38998-75-3	Total HpCDF	14		5.3	0.10

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1016-000.9 Lab Sample ID: 320-4670-61

Matrix: Solid Lab File ID: 04NO13B3D5_12.d

Analysis Method: 8290 Date Collected: 10/22/2013 10:25

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.28(g) Date Analyzed: 11/05/2013 05:14

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	73		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	70		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	72		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	74		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	59		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		40-135
114423-97-1	13C-OCDD	84		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1017-000.8 | Lab Sample ID: 320-4670-62

Matrix: Solid | Lab File ID: 04NO13B3D5_13.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.57(g) | Date Analyzed: 11/05/2013 05:55

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.27	J	1.0	0.071
40321-76-4	1,2,3,7,8-PeCDD	ND		5.1	0.11
57117-41-6	1,2,3,7,8-PeCDF	0.38	J q	5.1	0.063
57117-31-4	2,3,4,7,8-PeCDF	0.60	J	5.1	0.065
39227-28-6	1,2,3,4,7,8-HxCDD	1.1	J	5.1	0.17
57653-85-7	1,2,3,6,7,8-HxCDD	1.6	J q	5.1	0.13
19408-74-3	1,2,3,7,8,9-HxCDD	2.1	J q	5.1	0.12
70648-26-9	1,2,3,4,7,8-HxCDF	1.3	J	5.1	0.070
57117-44-9	1,2,3,6,7,8-HxCDF	0.78	J	5.1	0.053
60851-34-5	2,3,4,6,7,8-HxCDF	0.83	J	5.1	0.061
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.068
35822-46-9	1,2,3,4,6,7,8-HpCDD	58		5.1	0.29
67562-39-4	1,2,3,4,6,7,8-HpCDF	5.9		5.1	0.078
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.1	0.093
3268-87-9	OCDD	3300	B	10	0.80
39001-02-0	OCDF	8.0	J B	10	0.054
41903-57-5	Total TCDD	4.8	q	1.0	0.071
30402-14-3	Total TCDF	5.8	q	1.0	0.040
36088-22-9	Total PeCDD	7.1	q	5.1	0.11
30402-15-4	Total PeCDF	7.1	q	5.1	0.064
34465-46-8	Total HxCDD	20	q	5.1	0.14
55684-94-1	Total HxCDF	9.2	q	5.1	0.063
37871-00-4	Total HpCDD	120		5.1	0.29
38998-75-3	Total HpCDF	12		5.1	0.085

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1017-000.8 | Lab Sample ID: 320-4670-62

Matrix: Solid | Lab File ID: 04NO13B3D5_13.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.57(g) | Date Analyzed: 11/05/2013 05:55

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		40-135
89059-46-1	13C-2,3,7,8-TCDF	73		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	71		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	69		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	76		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	63		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	71		40-135
114423-97-1	13C-OCDD	83		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1018-000.8 | Lab Sample ID: 320-4670-63

Matrix: Solid | Lab File ID: 05NO13A3D5_13.d

Analysis Method: 8290 | Date Collected: 10/22/2013 11:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.15(g) | Date Analyzed: 11/06/2013 06:00

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.11	J q	1.0	0.038
51207-31-9	2,3,7,8-TCDF	0.90	J	1.0	0.024
40321-76-4	1,2,3,7,8-PeCDD	0.40	J q	5.2	0.067
57117-41-6	1,2,3,7,8-PeCDF	0.30	J q	5.2	0.042
57117-31-4	2,3,4,7,8-PeCDF	0.43	J	5.2	0.043
39227-28-6	1,2,3,4,7,8-HxCDD	0.91	J	5.2	0.057
57653-85-7	1,2,3,6,7,8-HxCDD	1.4	J	5.2	0.042
19408-74-3	1,2,3,7,8,9-HxCDD	1.6	J	5.2	0.040
70648-26-9	1,2,3,4,7,8-HxCDF	1.0	J	5.2	0.048
57117-44-9	1,2,3,6,7,8-HxCDF	0.68	J	5.2	0.037
60851-34-5	2,3,4,6,7,8-HxCDF	0.39	J	5.2	0.042
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.047
35822-46-9	1,2,3,4,6,7,8-HpCDD	41		5.2	0.13
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.6	J	5.2	0.042
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.18	J q	5.2	0.050
3268-87-9	OCDD	3300	B	10	0.51
39001-02-0	OCDF	4.5	J B	10	0.034
41903-57-5	Total TCDD	5.9	q	1.0	0.038
30402-14-3	Total TCDF	4.7	q	1.0	0.024
36088-22-9	Total PeCDD	7.5	q	5.2	0.067
30402-15-4	Total PeCDF	4.5	J q	5.2	0.043
34465-46-8	Total HxCDD	18		5.2	0.046
55684-94-1	Total HxCDF	5.2	q	5.2	0.043
37871-00-4	Total HpCDD	88		5.2	0.13
38998-75-3	Total HpCDF	6.8	q	5.2	0.046

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1018-000.8 | Lab Sample ID: 320-4670-63

Matrix: Solid | Lab File ID: 05NO13A3D5_13.d

Analysis Method: 8290 | Date Collected: 10/22/2013 11:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.15(g) | Date Analyzed: 11/06/2013 06:00

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	80		40-135
89059-46-1	13C-2,3,7,8-TCDF	88		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	88		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	88		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	80		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	103		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	95		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	102		40-135
114423-97-1	13C-OCDD	122		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1019-000.5 | Lab Sample ID: 320-4670-64

Matrix: Solid | Lab File ID: 310C13C3D5_75.d

Analysis Method: 8290 | Date Collected: 10/22/2013 11:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.38(g) | Date Analyzed: 11/03/2013 01:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.40	J q	1.0	0.072
40321-76-4	1,2,3,7,8-PeCDD	1.7	J	5.2	0.19
57117-41-6	1,2,3,7,8-PeCDF	1.4	J q	5.2	0.089
57117-31-4	2,3,4,7,8-PeCDF	1.1	J q	5.2	0.093
39227-28-6	1,2,3,4,7,8-HxCDD	2.4	J	5.2	0.078
57653-85-7	1,2,3,6,7,8-HxCDD	5.7		5.2	0.057
19408-74-3	1,2,3,7,8,9-HxCDD	5.4		5.2	0.055
70648-26-9	1,2,3,4,7,8-HxCDF	6.0		5.2	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	2.4	J	5.2	0.077
60851-34-5	2,3,4,6,7,8-HxCDF	1.9	J	5.2	0.087
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.098
35822-46-9	1,2,3,4,6,7,8-HpCDD	72		5.2	0.23
67562-39-4	1,2,3,4,6,7,8-HpCDF	16		5.2	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.79	J	5.2	0.15
3268-87-9	OCDD	3000	B	10	0.72
39001-02-0	OCDF	15	B	10	0.080
41903-57-5	Total TCDD	37	q	1.0	0.072
30402-14-3	Total TCDF	17	q	1.0	0.054
36088-22-9	Total PeCDD	45	q	5.2	0.19
30402-15-4	Total PeCDF	19	q	5.2	0.091
34465-46-8	Total HxCDD	85	I	5.2	0.063
55684-94-1	Total HxCDF	23	q	5.2	0.091
37871-00-4	Total HpCDD	140		5.2	0.23
38998-75-3	Total HpCDF	29	q	5.2	0.14

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1019-000.5 | Lab Sample ID: 320-4670-64

Matrix: Solid | Lab File ID: 310C13C3D5_75.d

Analysis Method: 8290 | Date Collected: 10/22/2013 11:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.38(g) | Date Analyzed: 11/03/2013 01:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	65		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	67		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	60		40-135
114423-97-1	13C-OCDD	65		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP01-1013 | Lab Sample ID: 320-4670-10

Matrix: Solid | Lab File ID: 05NO13A3D5_10.d

Analysis Method: 8290 | Date Collected: 10/18/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.15(g) | Date Analyzed: 11/06/2013 03:55

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.045
51207-31-9	2,3,7,8-TCDF	0.24	J	1.0	0.036
40321-76-4	1,2,3,7,8-PeCDD	0.24	J q	5.1	0.063
57117-41-6	1,2,3,7,8-PeCDF	ND		5.1	0.072
57117-31-4	2,3,4,7,8-PeCDF	0.15	J	5.1	0.075
39227-28-6	1,2,3,4,7,8-HxCDD	0.55	J q	5.1	0.063
57653-85-7	1,2,3,6,7,8-HxCDD	1.2	J	5.1	0.046
19408-74-3	1,2,3,7,8,9-HxCDD	1.4	J	5.1	0.044
70648-26-9	1,2,3,4,7,8-HxCDF	0.46	J	5.1	0.071
57117-44-9	1,2,3,6,7,8-HxCDF	1.4	J	5.1	0.054
60851-34-5	2,3,4,6,7,8-HxCDF	0.55	J	5.1	0.062
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.069
35822-46-9	1,2,3,4,6,7,8-HpCDD	49		5.1	0.25
67562-39-4	1,2,3,4,6,7,8-HpCDF	4.1	J B	5.1	0.061
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.31	J	5.1	0.072
3268-87-9	OCDD	5400	E B	10	0.79
39001-02-0	OCDF	7.3	J	10	0.044
41903-57-5	Total TCDD	0.58	J q	1.0	0.045
30402-14-3	Total TCDF	1.3	q	1.0	0.036
36088-22-9	Total PeCDD	1.8	J q	5.1	0.063
30402-15-4	Total PeCDF	4.2	J q	5.1	0.074
34465-46-8	Total HxCDD	10	q	5.1	0.051
55684-94-1	Total HxCDF	10	q	5.1	0.064
37871-00-4	Total HpCDD	86		5.1	0.25
38998-75-3	Total HpCDF	10	B	5.1	0.066

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP01-1013 | Lab Sample ID: 320-4670-10

Matrix: Solid | Lab File ID: 05NO13A3D5_10.d

Analysis Method: 8290 | Date Collected: 10/18/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.15(g) | Date Analyzed: 11/06/2013 03:55

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	68		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	70		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	68		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	76		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	89		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP02-1013 | Lab Sample ID: 320-4670-22

Matrix: Solid | Lab File ID: 04NO13B3D5_24.d

Analysis Method: 8290 | Date Collected: 10/18/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 9.90(g) | Date Analyzed: 11/05/2013 13:53

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.30	J q	1.1	0.066
40321-76-4	1,2,3,7,8-PeCDD	1.8	J q	5.4	0.16
57117-41-6	1,2,3,7,8-PeCDF	1.0	J q	5.4	0.12
57117-31-4	2,3,4,7,8-PeCDF	1.2	J q	5.4	0.12
39227-28-6	1,2,3,4,7,8-HxCDD	4.5	J	5.4	0.23
57653-85-7	1,2,3,6,7,8-HxCDD	16		5.4	0.17
19408-74-3	1,2,3,7,8,9-HxCDD	8.8		5.4	0.16
70648-26-9	1,2,3,4,7,8-HxCDF	5.3	J	5.4	0.16
57117-44-9	1,2,3,6,7,8-HxCDF	3.3	J	5.4	0.12
60851-34-5	2,3,4,6,7,8-HxCDF	2.5	J q	5.4	0.14
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.16
35822-46-9	1,2,3,4,6,7,8-HpCDD	330		5.4	0.60
67562-39-4	1,2,3,4,6,7,8-HpCDF	60	B	5.4	0.28
55673-89-7	1,2,3,4,7,8,9-HpCDF	3.3	J	5.4	0.34
3268-87-9	OCDD	3600	B	11	0.94
39001-02-0	OCDF	110		11	0.14
41903-57-5	Total TCDD	4.0	q	1.1	0.066
30402-14-3	Total TCDF	11		1.1	0.061
36088-22-9	Total PeCDD	13	q	5.4	0.16
30402-15-4	Total PeCDF	21	q	5.4	0.12
34465-46-8	Total HxCDD	96		5.4	0.19
55684-94-1	Total HxCDF	69	q	5.4	0.14
37871-00-4	Total HpCDD	590		5.4	0.60
38998-75-3	Total HpCDF	150	B	5.4	0.31

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP02-1013 | Lab Sample ID: 320-4670-22

Matrix: Solid | Lab File ID: 04NO13B3D5_24.d

Analysis Method: 8290 | Date Collected: 10/18/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 9.90(g) | Date Analyzed: 11/05/2013 13:53

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	66		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	68		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	76		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	72		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	68		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	79		40-135
114423-97-1	13C-OCDD	80		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP03-1013 Lab Sample ID: 320-4670-33

Matrix: Solid Lab File ID: 310C13C3D5_21.d

Analysis Method: 8290 Date Collected: 10/21/2013 00:00

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) Date Analyzed: 11/01/2013 11:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.040
51207-31-9	2,3,7,8-TCDF	0.27	J	1.0	0.037
40321-76-4	1,2,3,7,8-PeCDD	0.11	J q	5.2	0.082
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.073
57117-31-4	2,3,4,7,8-PeCDF	ND	*	5.2	0.076
39227-28-6	1,2,3,4,7,8-HxCDD	0.49	J	5.2	0.088
57653-85-7	1,2,3,6,7,8-HxCDD	0.95	J	5.2	0.064
19408-74-3	1,2,3,7,8,9-HxCDD	1.1	J	5.2	0.062
70648-26-9	1,2,3,4,7,8-HxCDF	0.90	J	5.2	0.096
57117-44-9	1,2,3,6,7,8-HxCDF	0.76	J q	5.2	0.074
60851-34-5	2,3,4,6,7,8-HxCDF	0.34	J q	5.2	0.084
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.094
35822-46-9	1,2,3,4,6,7,8-HpCDD	63		5.2	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	7.3	B	5.2	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.2	0.15
3268-87-9	OCDD	5000	E B	10	0.91
39001-02-0	OCDF	18	B	10	0.070
41903-57-5	Total TCDD	0.59	J	1.0	0.040
30402-14-3	Total TCDF	1.0	q	1.0	0.037
36088-22-9	Total PeCDD	1.8	J q	5.2	0.082
30402-15-4	Total PeCDF	1.3	J q	5.2	0.074
34465-46-8	Total HxCDD	7.7	q	5.2	0.071
55684-94-1	Total HxCDF	6.8	q	5.2	0.087
37871-00-4	Total HpCDD	120	B	5.2	0.21
38998-75-3	Total HpCDF	18	B	5.2	0.14

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP03-1013 | Lab Sample ID: 320-4670-33

Matrix: Solid | Lab File ID: 310C13C3D5_21.d

Analysis Method: 8290 | Date Collected: 10/21/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) | Date Analyzed: 11/01/2013 11:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	63		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	62		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	63		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	55		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	55		40-135
114423-97-1	13C-OCDD	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP04-1013 | Lab Sample ID: 320-4670-45

Matrix: Solid | Lab File ID: 310C13C3D5_40.d

Analysis Method: 8290 | Date Collected: 10/21/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.10(g) | Date Analyzed: 11/02/2013 01:17

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.20	J q	1.0	0.049
51207-31-9	2,3,7,8-TCDF	0.70	J q	1.0	0.044
40321-76-4	1,2,3,7,8-PeCDD	0.91	J q	5.2	0.083
57117-41-6	1,2,3,7,8-PeCDF	0.34	J	5.2	0.086
57117-31-4	2,3,4,7,8-PeCDF	0.51	J q	5.2	0.089
39227-28-6	1,2,3,4,7,8-HxCDD	2.2	J	5.2	0.069
57653-85-7	1,2,3,6,7,8-HxCDD	5.6		5.2	0.051
19408-74-3	1,2,3,7,8,9-HxCDD	4.9	J	5.2	0.049
70648-26-9	1,2,3,4,7,8-HxCDF	2.1	J B	5.2	0.099
57117-44-9	1,2,3,6,7,8-HxCDF	1.3	J	5.2	0.075
60851-34-5	2,3,4,6,7,8-HxCDF	1.2	J	5.2	0.085
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.096
35822-46-9	1,2,3,4,6,7,8-HpCDD	120	B	5.2	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	23	B	5.2	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.0	J	5.2	0.16
3268-87-9	OCDD	3600	B	10	0.79
39001-02-0	OCDF	49	B	10	0.083
41903-57-5	Total TCDD	1.2	q	1.0	0.049
30402-14-3	Total TCDF	4.1	q	1.0	0.044
36088-22-9	Total PeCDD	4.8	J q	5.2	0.083
30402-15-4	Total PeCDF	9.2	q	5.2	0.087
34465-46-8	Total HxCDD	36		5.2	0.056
55684-94-1	Total HxCDF	30	B	5.2	0.089
37871-00-4	Total HpCDD	220	B	5.2	0.20
38998-75-3	Total HpCDF	62	B	5.2	0.15

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP04-1013 | Lab Sample ID: 320-4670-45

Matrix: Solid | Lab File ID: 31OC13C3D5_40.d

Analysis Method: 8290 | Date Collected: 10/21/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.10(g) | Date Analyzed: 11/02/2013 01:17

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.4 | GPC Cleanup: (Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	68		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	69		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	76		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	66		40-135
114423-97-1	13C-OCDD	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP05-1013 | Lab Sample ID: 320-4670-55

Matrix: Solid | Lab File ID: 04NO13B3D5_6.d

Analysis Method: 8290 | Date Collected: 10/22/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.26(g) | Date Analyzed: 11/05/2013 01:03

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.056
40321-76-4	1,2,3,7,8-PeCDD	1.1	J	5.0	0.083
57117-41-6	1,2,3,7,8-PeCDF	0.87	J	5.0	0.10
57117-31-4	2,3,4,7,8-PeCDF	1.4	J	5.0	0.11
39227-28-6	1,2,3,4,7,8-HxCDD	2.6	J	5.0	0.15
57653-85-7	1,2,3,6,7,8-HxCDD	6.5		5.0	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	5.9		5.0	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	4.0	J	5.0	0.16
57117-44-9	1,2,3,6,7,8-HxCDF	3.1	J	5.0	0.12
60851-34-5	2,3,4,6,7,8-HxCDF	3.0	J	5.0	0.13
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.15
35822-46-9	1,2,3,4,6,7,8-HpCDD	170		5.0	0.42
67562-39-4	1,2,3,4,6,7,8-HpCDF	46		5.0	0.23
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.4	J	5.0	0.27
3268-87-9	OCDD	3100	B	10	0.88
39001-02-0	OCDF	89	B	10	0.10
41903-57-5	Total TCDD	2.8	q	1.0	0.056
30402-14-3	Total TCDF	9.6	q	1.0	0.054
36088-22-9	Total PeCDD	8.3	q	5.0	0.083
30402-15-4	Total PeCDF	29		5.0	0.11
34465-46-8	Total HxCDD	47	q	5.0	0.12
55684-94-1	Total HxCDF	68		5.0	0.14
37871-00-4	Total HpCDD	290		5.0	0.42
38998-75-3	Total HpCDF	120	q	5.0	0.25

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP05-1013 | Lab Sample ID: 320-4670-55

Matrix: Solid | Lab File ID: 04NO13B3D5_6.d

Analysis Method: 8290 | Date Collected: 10/22/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.26(g) | Date Analyzed: 11/05/2013 01:03

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	71		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	68		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	69		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	72		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	69		40-135
114423-97-1	13C-OCDD	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1020-0001 | Lab Sample ID: 320-4670-7

Matrix: Solid | Lab File ID: 05NO13A3D5_7.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:40

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.14(g) | Date Analyzed: 11/06/2013 01:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.12	J q	1.0	0.037
51207-31-9	2,3,7,8-TCDF	0.31	J	1.0	0.033
40321-76-4	1,2,3,7,8-PeCDD	0.27	J	5.1	0.054
57117-41-6	1,2,3,7,8-PeCDF	ND		5.1	0.054
57117-31-4	2,3,4,7,8-PeCDF	0.14	J	5.1	0.056
39227-28-6	1,2,3,4,7,8-HxCDD	0.62	J	5.1	0.049
57653-85-7	1,2,3,6,7,8-HxCDD	0.90	J	5.1	0.036
19408-74-3	1,2,3,7,8,9-HxCDD	1.2	J q	5.1	0.034
70648-26-9	1,2,3,4,7,8-HxCDF	0.41	J q	5.1	0.060
57117-44-9	1,2,3,6,7,8-HxCDF	0.81	J	5.1	0.046
60851-34-5	2,3,4,6,7,8-HxCDF	0.44	J	5.1	0.052
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.058
35822-46-9	1,2,3,4,6,7,8-HpCDD	44		5.1	0.19
67562-39-4	1,2,3,4,6,7,8-HpCDF	3.6	J B	5.1	0.054
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.39	J	5.1	0.064
3268-87-9	OCDD	5000	E B	10	0.77
39001-02-0	OCDF	4.9	J	10	0.040
41903-57-5	Total TCDD	1.3	q	1.0	0.037
30402-14-3	Total TCDF	4.8	q	1.0	0.033
36088-22-9	Total PeCDD	2.0	J q	5.1	0.054
30402-15-4	Total PeCDF	4.8	J q	5.1	0.055
34465-46-8	Total HxCDD	8.8	q	5.1	0.040
55684-94-1	Total HxCDF	9.9	q	5.1	0.054
37871-00-4	Total HpCDD	75		5.1	0.19
38998-75-3	Total HpCDF	8.1	B	5.1	0.059

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1020-0001 | Lab Sample ID: 320-4670-7

Matrix: Solid | Lab File ID: 05NO13A3D5_7.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:40

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.14(g) | Date Analyzed: 11/06/2013 01:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	68		40-135
89059-46-1	13C-2,3,7,8-TCDF	75		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	76		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	76		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	71		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	82		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	80		40-135
114423-97-1	13C-OCDD	97		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1021-000.7 | Lab Sample ID: 320-4670-6

Matrix: Solid | Lab File ID: 05NO13A3D5_6.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:30

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) | Date Analyzed: 11/06/2013 01:08

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.18	J q	1.0	0.045
51207-31-9	2,3,7,8-TCDF	0.95	J	1.0	0.045
40321-76-4	1,2,3,7,8-PeCDD	1.6	J	5.1	0.067
57117-41-6	1,2,3,7,8-PeCDF	0.64	J	5.1	0.083
57117-31-4	2,3,4,7,8-PeCDF	1.1	J	5.1	0.086
39227-28-6	1,2,3,4,7,8-HxCDD	3.2	J	5.1	0.078
57653-85-7	1,2,3,6,7,8-HxCDD	7.1		5.1	0.057
19408-74-3	1,2,3,7,8,9-HxCDD	6.0		5.1	0.055
70648-26-9	1,2,3,4,7,8-HxCDF	3.6	J	5.1	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	3.7	J	5.1	0.096
60851-34-5	2,3,4,6,7,8-HxCDF	3.5	J	5.1	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	140		5.1	0.27
67562-39-4	1,2,3,4,6,7,8-HpCDF	47	B	5.1	0.18
55673-89-7	1,2,3,4,7,8,9-HpCDF	3.2	J	5.1	0.21
3268-87-9	OCDD	3000	B	10	0.60
39001-02-0	OCDF	79		10	0.078
41903-57-5	Total TCDD	1.1	q	1.0	0.045
30402-14-3	Total TCDF	6.0	q	1.0	0.045
36088-22-9	Total PeCDD	7.8	q	5.1	0.067
30402-15-4	Total PeCDF	30	q	5.1	0.084
34465-46-8	Total HxCDD	50	q	5.1	0.063
55684-94-1	Total HxCDF	91	q	5.1	0.11
37871-00-4	Total HpCDD	260		5.1	0.27
38998-75-3	Total HpCDF	140	B	5.1	0.19

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1021-000.7 Lab Sample ID: 320-4670-6

Matrix: Solid Lab File ID: 05NO13A3D5_6.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:30

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) Date Analyzed: 11/06/2013 01:08

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	68		40-135
89059-46-1	13C-2,3,7,8-TCDF	74		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	76		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	76		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	81		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	69		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	76		40-135
114423-97-1	13C-OCDD	91		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1022-000.9 Lab Sample ID: 320-4670-5

Matrix: Solid Lab File ID: 05NO13A3D5_5.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:18

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.00(g) Date Analyzed: 11/06/2013 00:27

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.071
51207-31-9	2,3,7,8-TCDF	0.12	J q	1.1	0.033
40321-76-4	1,2,3,7,8-PeCDD	ND		5.3	0.058
57117-41-6	1,2,3,7,8-PeCDF	ND		5.3	0.052
57117-31-4	2,3,4,7,8-PeCDF	ND		5.3	0.054
39227-28-6	1,2,3,4,7,8-HxCDD	0.51	J	5.3	0.050
57653-85-7	1,2,3,6,7,8-HxCDD	0.98	J	5.3	0.036
19408-74-3	1,2,3,7,8,9-HxCDD	1.2	J	5.3	0.035
70648-26-9	1,2,3,4,7,8-HxCDF	0.27	J q	5.3	0.060
57117-44-9	1,2,3,6,7,8-HxCDF	0.52	J	5.3	0.046
60851-34-5	2,3,4,6,7,8-HxCDF	0.28	J	5.3	0.052
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.059
35822-46-9	1,2,3,4,6,7,8-HpCDD	46		5.3	0.22
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.9	J B	5.3	0.050
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.3	0.059
3268-87-9	OCDD	5000	E B	11	0.75
39001-02-0	OCDF	5.3	J	11	0.043
41903-57-5	Total TCDD	0.71	J q	1.1	0.071
30402-14-3	Total TCDF	0.72	J q	1.1	0.033
36088-22-9	Total PeCDD	1.7	J q	5.3	0.058
30402-15-4	Total PeCDF	0.79	J q	5.3	0.053
34465-46-8	Total HxCDD	8.2	q	5.3	0.040
55684-94-1	Total HxCDF	3.6	J q	5.3	0.054
37871-00-4	Total HpCDD	81		5.3	0.22
38998-75-3	Total HpCDF	6.7	B	5.3	0.054

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1022-000.9 Lab Sample ID: 320-4670-5

Matrix: Solid Lab File ID: 05NO13A3D5_5.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:18

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.00(g) Date Analyzed: 11/06/2013 00:27

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	68		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	73		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	73		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	75		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	69		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	76		40-135
114423-97-1	13C-OCDD	91		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1023-000.8 | Lab Sample ID: 320-4670-4

Matrix: Solid | Lab File ID: 04NO13B3D5_27.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:10

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.12(g) | Date Analyzed: 11/05/2013 15:59

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.19	J q	1.0	0.035
40321-76-4	1,2,3,7,8-PeCDD	0.65	J	5.2	0.066
57117-41-6	1,2,3,7,8-PeCDF	0.55	J q	5.2	0.059
57117-31-4	2,3,4,7,8-PeCDF	0.93	J	5.2	0.062
39227-28-6	1,2,3,4,7,8-HxCDD	1.2	J	5.2	0.079
57653-85-7	1,2,3,6,7,8-HxCDD	2.8	J	5.2	0.058
19408-74-3	1,2,3,7,8,9-HxCDD	2.5	J	5.2	0.056
70648-26-9	1,2,3,4,7,8-HxCDF	2.2	J	5.2	0.074
57117-44-9	1,2,3,6,7,8-HxCDF	1.6	J	5.2	0.057
60851-34-5	2,3,4,6,7,8-HxCDF	1.4	J	5.2	0.064
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.072
35822-46-9	1,2,3,4,6,7,8-HpCDD	65		5.2	0.13
67562-39-4	1,2,3,4,6,7,8-HpCDF	13	B	5.2	0.082
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.0	J	5.2	0.097
3268-87-9	OCDD	2200	B	10	0.40
39001-02-0	OCDF	22		10	0.044
41903-57-5	Total TCDD	2.4	q	1.0	0.035
30402-14-3	Total TCDF	7.9		1.0	0.031
36088-22-9	Total PeCDD	3.9	J q	5.2	0.066
30402-15-4	Total PeCDF	13	q	5.2	0.060
34465-46-8	Total HxCDD	22		5.2	0.064
55684-94-1	Total HxCDF	30		5.2	0.067
37871-00-4	Total HpCDD	130		5.2	0.13
38998-75-3	Total HpCDF	33	B	5.2	0.089

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1023-000.8 | Lab Sample ID: 320-4670-4

Matrix: Solid | Lab File ID: 04NO13B3D5_27.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:10

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.12(g) | Date Analyzed: 11/05/2013 15:59

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	80		40-135
89059-46-1	13C-2,3,7,8-TCDF	90		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	91		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	91		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	84		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	97		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	77		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	90		40-135
114423-97-1	13C-OCDD	97		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1024-000.6 Lab Sample ID: 320-4670-3

Matrix: Solid Lab File ID: 04NO13B3D5_26.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:05

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 9.91(g) Date Analyzed: 11/05/2013 15:17

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.22	J q	1.1	0.055
40321-76-4	1,2,3,7,8-PeCDD	1.1	J q	5.3	0.083
57117-41-6	1,2,3,7,8-PeCDF	0.60	J	5.3	0.13
57117-31-4	2,3,4,7,8-PeCDF	1.4	J	5.3	0.13
39227-28-6	1,2,3,4,7,8-HxCDD	2.1	J q	5.3	0.12
57653-85-7	1,2,3,6,7,8-HxCDD	5.1	J	5.3	0.088
19408-74-3	1,2,3,7,8,9-HxCDD	5.2	J	5.3	0.085
70648-26-9	1,2,3,4,7,8-HxCDF	2.8	J	5.3	0.11
57117-44-9	1,2,3,6,7,8-HxCDF	3.1	J	5.3	0.086
60851-34-5	2,3,4,6,7,8-HxCDF	2.8	J	5.3	0.097
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.11
35822-46-9	1,2,3,4,6,7,8-HpCDD	120		5.3	0.24
67562-39-4	1,2,3,4,6,7,8-HpCDF	20	B	5.3	0.099
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.5	J	5.3	0.12
3268-87-9	OCDD	4100	B	11	0.80
39001-02-0	OCDF	29		11	0.056
41903-57-5	Total TCDD	2.7	q	1.1	0.055
30402-14-3	Total TCDF	11	q	1.1	0.068
36088-22-9	Total PeCDD	7.0	q	5.3	0.083
30402-15-4	Total PeCDF	160	q	5.3	0.13
34465-46-8	Total HxCDD	44	q	5.3	0.098
55684-94-1	Total HxCDF	55		5.3	0.10
37871-00-4	Total HpCDD	230		5.3	0.24
38998-75-3	Total HpCDF	50	B	5.3	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1024-000.6 | Lab Sample ID: 320-4670-3

Matrix: Solid | Lab File ID: 04NO13B3D5_26.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 9.91(g) | Date Analyzed: 11/05/2013 15:17

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	75		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	101		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	97		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	59		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	77		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	57		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1025-000.8 Lab Sample ID: 320-4670-1

Matrix: Solid Lab File ID: 05NO13A3D5_4.d

Analysis Method: 8290 Date Collected: 10/18/2013 10:45

Extract. Method: 8290 Date Extracted: 10/24/2013 18:17

Sample wt/vol: 10.30(g) Date Analyzed: 11/05/2013 23:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.16	J q	1.1	0.031
40321-76-4	1,2,3,7,8-PeCDD	0.91	J	5.3	0.058
57117-41-6	1,2,3,7,8-PeCDF	0.81	J q	5.3	0.066
57117-31-4	2,3,4,7,8-PeCDF	1.6	J	5.3	0.068
39227-28-6	1,2,3,4,7,8-HxCDD	2.2	J	5.3	0.053
57653-85-7	1,2,3,6,7,8-HxCDD	4.5	J	5.3	0.039
19408-74-3	1,2,3,7,8,9-HxCDD	4.3	J	5.3	0.037
70648-26-9	1,2,3,4,7,8-HxCDF	4.4	J B	5.3	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	2.8	J	5.3	0.079
60851-34-5	2,3,4,6,7,8-HxCDF	3.1	J	5.3	0.090
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.10
35822-46-9	1,2,3,4,6,7,8-HpCDD	99		5.3	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	27	B	5.3	0.11
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.7	J	5.3	0.14
3268-87-9	OCDD	3400		11	0.55
39001-02-0	OCDF	34		11	0.049
41903-57-5	Total TCDD	3.4	q	1.1	0.031
30402-14-3	Total TCDF	12	q	1.1	0.048
36088-22-9	Total PeCDD	7.9	q	5.3	0.058
30402-15-4	Total PeCDF	30	q	5.3	0.067
34465-46-8	Total HxCDD	38	q	5.3	0.043
55684-94-1	Total HxCDF	64	q B	5.3	0.094
37871-00-4	Total HpCDD	190		5.3	0.21
38998-75-3	Total HpCDF	60	B	5.3	0.12

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1025-000.8 | Lab Sample ID: 320-4670-1

Matrix: Solid | Lab File ID: 05NO13A3D5_4.d

Analysis Method: 8290 | Date Collected: 10/18/2013 10:45

Extract. Method: 8290 | Date Extracted: 10/24/2013 18:17

Sample wt/vol: 10.30(g) | Date Analyzed: 11/05/2013 23:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	76		40-135
89059-46-1	13C-2,3,7,8-TCDF	84		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	87		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	88		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	75		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	88		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	74		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	83		40-135
114423-97-1	13C-OCDD	98		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1026-000.8 | Lab Sample ID: 320-4670-2

Matrix: Solid | Lab File ID: 04NO13B3D5_25.d

Analysis Method: 8290 | Date Collected: 10/18/2013 10:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.36(g) | Date Analyzed: 11/05/2013 14:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.076
51207-31-9	2,3,7,8-TCDF	0.32	J	1.0	0.057
40321-76-4	1,2,3,7,8-PeCDD	0.28	J q	5.1	0.11
57117-41-6	1,2,3,7,8-PeCDF	0.31	J q	5.1	0.095
57117-31-4	2,3,4,7,8-PeCDF	0.44	J	5.1	0.098
39227-28-6	1,2,3,4,7,8-HxCDD	0.84	J	5.1	0.11
57653-85-7	1,2,3,6,7,8-HxCDD	1.6	J	5.1	0.079
19408-74-3	1,2,3,7,8,9-HxCDD	1.5	J q	5.1	0.076
70648-26-9	1,2,3,4,7,8-HxCDF	1.1	J	5.1	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	1.7	J	5.1	0.093
60851-34-5	2,3,4,6,7,8-HxCDF	2.1	J	5.1	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	40		5.1	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	11	B	5.1	0.12
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.87	J	5.1	0.14
3268-87-9	OCDD	1400	B	10	0.60
39001-02-0	OCDF	12		10	0.076
41903-57-5	Total TCDD	ND		1.0	0.076
30402-14-3	Total TCDF	3.1	q	1.0	0.057
36088-22-9	Total PeCDD	1.3	J q	5.1	0.11
30402-15-4	Total PeCDF	15	q	5.1	0.096
34465-46-8	Total HxCDD	12	q	5.1	0.088
55684-94-1	Total HxCDF	34		5.1	0.11
37871-00-4	Total HpCDD	78		5.1	0.21
38998-75-3	Total HpCDF	26	B	5.1	0.13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1026-000.8 | Lab Sample ID: 320-4670-2

Matrix: Solid | Lab File ID: 04NO13B3D5_25.d

Analysis Method: 8290 | Date Collected: 10/18/2013 10:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.36(g) | Date Analyzed: 11/05/2013 14:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	66		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	64		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	65		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	51		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	60		40-135
114423-97-1	13C-OCDD	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1027-0001 Lab Sample ID: 320-4670-14

Matrix: Solid Lab File ID: 310C13C3D5_80.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:45

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.34(g) Date Analyzed: 11/03/2013 05:03

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.041
51207-31-9	2,3,7,8-TCDF	0.094	J q	1.0	0.028
40321-76-4	1,2,3,7,8-PeCDD	ND		5.2	0.095
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.049
57117-31-4	2,3,4,7,8-PeCDF	ND		5.2	0.051
39227-28-6	1,2,3,4,7,8-HxCDD	0.28	J	5.2	0.048
57653-85-7	1,2,3,6,7,8-HxCDD	0.47	J q	5.2	0.035
19408-74-3	1,2,3,7,8,9-HxCDD	0.57	J	5.2	0.034
70648-26-9	1,2,3,4,7,8-HxCDF	0.30	J	5.2	0.057
57117-44-9	1,2,3,6,7,8-HxCDF	0.92	J	5.2	0.044
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.2	0.050
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.056
35822-46-9	1,2,3,4,6,7,8-HpCDD	39		5.2	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	2.1	J B	5.2	0.068
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.2	0.080
3268-87-9	OCDD	4800	E B	10	0.91
39001-02-0	OCDF	4.5	J	10	0.048
41903-57-5	Total TCDD	0.43	J q	1.0	0.041
30402-14-3	Total TCDF	0.64	J q	1.0	0.028
36088-22-9	Total PeCDD	1.2	J q	5.2	0.095
30402-15-4	Total PeCDF	0.38	J q	5.2	0.050
34465-46-8	Total HxCDD	4.6	J q	5.2	0.039
55684-94-1	Total HxCDF	2.6	J q	5.2	0.051
37871-00-4	Total HpCDD	66		5.2	0.20
38998-75-3	Total HpCDF	4.6	J B	5.2	0.074

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1027-0001 | Lab Sample ID: 320-4670-14

Matrix: Solid | Lab File ID: 31OC13C3D5_80.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:45

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.34(g) | Date Analyzed: 11/03/2013 05:03

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.3 | GPC Cleanup: (Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	87		40-135
89059-46-1	13C-2,3,7,8-TCDF	91		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	88		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	92		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	100		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	102		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	79		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	87		40-135
114423-97-1	13C-OCDD	100		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1028-000.8 Lab Sample ID: 320-4670-13

Matrix: Solid Lab File ID: 31OC13C3D5_79.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:35

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.63(g) Date Analyzed: 11/03/2013 04:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.036
40321-76-4	1,2,3,7,8-PeCDD	0.55	J q	5.1	0.081
57117-41-6	1,2,3,7,8-PeCDF	0.58	J	5.1	0.079
57117-31-4	2,3,4,7,8-PeCDF	0.60	J	5.1	0.082
39227-28-6	1,2,3,4,7,8-HxCDD	1.3	J	5.1	0.065
57653-85-7	1,2,3,6,7,8-HxCDD	3.3	J	5.1	0.048
19408-74-3	1,2,3,7,8,9-HxCDD	2.8	J	5.1	0.046
70648-26-9	1,2,3,4,7,8-HxCDF	2.9	J	5.1	0.086
57117-44-9	1,2,3,6,7,8-HxCDF	2.1	J	5.1	0.066
60851-34-5	2,3,4,6,7,8-HxCDF	1.9	J	5.1	0.075
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.084
35822-46-9	1,2,3,4,6,7,8-HpCDD	78		5.1	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	26	B	5.1	0.14
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.5	J	5.1	0.17
3268-87-9	OCDD	2200	B	10	0.62
39001-02-0	OCDF	49		10	0.081
41903-57-5	Total TCDD	0.94	J q	1.0	0.036
30402-14-3	Total TCDF	5.6	q	1.0	0.031
36088-22-9	Total PeCDD	4.0	J q	5.1	0.081
30402-15-4	Total PeCDF	12	q	5.1	0.081
34465-46-8	Total HxCDD	23	q	5.1	0.053
55684-94-1	Total HxCDF	37		5.1	0.078
37871-00-4	Total HpCDD	140		5.1	0.21
38998-75-3	Total HpCDF	66	B	5.1	0.15

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1028-000.8 | Lab Sample ID: 320-4670-13

Matrix: Solid | Lab File ID: 310C13C3D5_79.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:35

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.63(g) | Date Analyzed: 11/03/2013 04:22

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	87		40-135
89059-46-1	13C-2,3,7,8-TCDF	93		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	88		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	93		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	99		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	103		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	81		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	87		40-135
114423-97-1	13C-OCDD	94		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1029-000.6 | Lab Sample ID: 320-4670-12

Matrix: Solid | Lab File ID: 05NO13A3D5_12.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:30

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.37(g) | Date Analyzed: 11/06/2013 05:19

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.29	J q	1.0	0.034
40321-76-4	1,2,3,7,8-PeCDD	1.3	J	5.1	0.055
57117-41-6	1,2,3,7,8-PeCDF	1.1	J q	5.1	0.052
57117-31-4	2,3,4,7,8-PeCDF	1.5	J	5.1	0.054
39227-28-6	1,2,3,4,7,8-HxCDD	3.1	J	5.1	0.063
57653-85-7	1,2,3,6,7,8-HxCDD	7.3		5.1	0.046
19408-74-3	1,2,3,7,8,9-HxCDD	4.6	J	5.1	0.044
70648-26-9	1,2,3,4,7,8-HxCDF	3.5	J	5.1	0.071
57117-44-9	1,2,3,6,7,8-HxCDF	2.2	J	5.1	0.054
60851-34-5	2,3,4,6,7,8-HxCDF	1.8	J	5.1	0.062
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.069
35822-46-9	1,2,3,4,6,7,8-HpCDD	170		5.1	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	30	B	5.1	0.11
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.8	J	5.1	0.13
3268-87-9	OCDD	4600	E B	10	0.69
39001-02-0	OCDF	49		10	0.049
41903-57-5	Total TCDD	4.0	q	1.0	0.034
30402-14-3	Total TCDF	14	q	1.0	0.041
36088-22-9	Total PeCDD	9.1	q	5.1	0.055
30402-15-4	Total PeCDF	22	q	5.1	0.053
34465-46-8	Total HxCDD	50	q	5.1	0.051
55684-94-1	Total HxCDF	40	q	5.1	0.064
37871-00-4	Total HpCDD	290		5.1	0.21
38998-75-3	Total HpCDF	74	B	5.1	0.12

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1029-000.6 | Lab Sample ID: 320-4670-12

Matrix: Solid | Lab File ID: 05NO13A3D5_12.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:30

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.37(g) | Date Analyzed: 11/06/2013 05:19

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	84		40-135
89059-46-1	13C-2,3,7,8-TCDF	93		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	98		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	95		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	91		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	105		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	89		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	94		40-135
114423-97-1	13C-OCDD	118		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1030-000.6 Lab Sample ID: 320-4670-11

Matrix: Solid Lab File ID: 05NO13A3D5_11.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:20

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.04(g) Date Analyzed: 11/06/2013 04:37

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.16	J q	1.0	0.043
51207-31-9	2,3,7,8-TCDF	0.94	J q	1.0	0.039
40321-76-4	1,2,3,7,8-PeCDD	0.48	J q	5.2	0.068
57117-41-6	1,2,3,7,8-PeCDF	0.48	J	5.2	0.062
57117-31-4	2,3,4,7,8-PeCDF	0.43	J	5.2	0.065
39227-28-6	1,2,3,4,7,8-HxCDD	1.4	J	5.2	0.068
57653-85-7	1,2,3,6,7,8-HxCDD	2.7	J	5.2	0.050
19408-74-3	1,2,3,7,8,9-HxCDD	2.7	J	5.2	0.048
70648-26-9	1,2,3,4,7,8-HxCDF	1.2	J	5.2	0.082
57117-44-9	1,2,3,6,7,8-HxCDF	0.95	J	5.2	0.063
60851-34-5	2,3,4,6,7,8-HxCDF	0.81	J	5.2	0.071
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.080
35822-46-9	1,2,3,4,6,7,8-HpCDD	70		5.2	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	9.1	B	5.2	0.078
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.67	J	5.2	0.093
3268-87-9	OCDD	3100	B	10	0.54
39001-02-0	OCDF	15		10	0.059
41903-57-5	Total TCDD	0.78	J q	1.0	0.043
30402-14-3	Total TCDF	3.4	q	1.0	0.039
36088-22-9	Total PeCDD	3.1	J q	5.2	0.068
30402-15-4	Total PeCDF	6.6	q	5.2	0.064
34465-46-8	Total HxCDD	23	q	5.2	0.055
55684-94-1	Total HxCDF	17		5.2	0.074
37871-00-4	Total HpCDD	150		5.2	0.20
38998-75-3	Total HpCDF	22	B	5.2	0.086

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1030-000.6 | Lab Sample ID: 320-4670-11

Matrix: Solid | Lab File ID: 05NO13A3D5_11.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:20

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.04(g) | Date Analyzed: 11/06/2013 04:37

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	73		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	75		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	70		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	82		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	70		40-135
114423-97-1	13C-OCDD	87		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1031-000.8 | Lab Sample ID: 320-4670-9

Matrix: Solid | Lab File ID: 05NO13A3D5_9.d

Analysis Method: 8290 | Date Collected: 10/18/2013 12:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.27(g) | Date Analyzed: 11/06/2013 03:13

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.14	J q	1.1	0.047
51207-31-9	2,3,7,8-TCDF	0.91	J	1.1	0.042
40321-76-4	1,2,3,7,8-PeCDD	0.44	J q	5.3	0.081
57117-41-6	1,2,3,7,8-PeCDF	0.40	J q	5.3	0.067
57117-31-4	2,3,4,7,8-PeCDF	0.49	J	5.3	0.070
39227-28-6	1,2,3,4,7,8-HxCDD	1.2	J	5.3	0.061
57653-85-7	1,2,3,6,7,8-HxCDD	2.5	J	5.3	0.045
19408-74-3	1,2,3,7,8,9-HxCDD	2.4	J	5.3	0.043
70648-26-9	1,2,3,4,7,8-HxCDF	1.4	J	5.3	0.072
57117-44-9	1,2,3,6,7,8-HxCDF	1.1	J	5.3	0.055
60851-34-5	2,3,4,6,7,8-HxCDF	0.67	J	5.3	0.063
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.070
35822-46-9	1,2,3,4,6,7,8-HpCDD	71		5.3	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	9.0	B	5.3	0.074
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.52	J	5.3	0.088
3268-87-9	OCDD	3800	B	11	0.66
39001-02-0	OCDF	15		11	0.052
41903-57-5	Total TCDD	1.5	q	1.1	0.047
30402-14-3	Total TCDF	4.2	q	1.1	0.042
36088-22-9	Total PeCDD	2.5	J q	5.3	0.081
30402-15-4	Total PeCDF	6.6	q	5.3	0.069
34465-46-8	Total HxCDD	20	q	5.3	0.050
55684-94-1	Total HxCDF	14	q	5.3	0.065
37871-00-4	Total HpCDD	130		5.3	0.20
38998-75-3	Total HpCDF	21	B	5.3	0.081

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1031-000.8 | Lab Sample ID: 320-4670-9

Matrix: Solid | Lab File ID: 05NO13A3D5_9.d

Analysis Method: 8290 | Date Collected: 10/18/2013 12:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.27(g) | Date Analyzed: 11/06/2013 03:13

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	67		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	73		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	72		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	67		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	74		40-135
114423-97-1	13C-OCDD	84		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1032-000.9 Lab Sample ID: 320-4670-8

Matrix: Solid Lab File ID: 05NO13A3D5_8.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:55

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.29(g) Date Analyzed: 11/06/2013 02:32

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.053
40321-76-4	1,2,3,7,8-PeCDD	0.71	J	5.3	0.075
57117-41-6	1,2,3,7,8-PeCDF	0.86	J	5.3	0.091
57117-31-4	2,3,4,7,8-PeCDF	0.49	J	5.3	0.095
39227-28-6	1,2,3,4,7,8-HxCDD	1.9	J	5.3	0.072
57653-85-7	1,2,3,6,7,8-HxCDD	3.6	J	5.3	0.052
19408-74-3	1,2,3,7,8,9-HxCDD	3.8	J	5.3	0.050
70648-26-9	1,2,3,4,7,8-HxCDF	2.2	J	5.3	0.11
57117-44-9	1,2,3,6,7,8-HxCDF	2.2	J	5.3	0.085
60851-34-5	2,3,4,6,7,8-HxCDF	1.7	J	5.3	0.097
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.11
35822-46-9	1,2,3,4,6,7,8-HpCDD	96		5.3	0.24
67562-39-4	1,2,3,4,6,7,8-HpCDF	14	B	5.3	0.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.1	J	5.3	0.12
3268-87-9	OCDD	3900	B	11	0.66
39001-02-0	OCDF	18		11	0.055
41903-57-5	Total TCDD	0.76	J q	1.1	0.053
30402-14-3	Total TCDF	3.2	q	1.1	0.059
36088-22-9	Total PeCDD	4.5	J q	5.3	0.075
30402-15-4	Total PeCDF	27	q	5.3	0.093
34465-46-8	Total HxCDD	31	q	5.3	0.058
55684-94-1	Total HxCDF	36		5.3	0.10
37871-00-4	Total HpCDD	190		5.3	0.24
38998-75-3	Total HpCDF	34	B	5.3	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1032-000.9 | Lab Sample ID: 320-4670-8

Matrix: Solid | Lab File ID: 05NO13A3D5_8.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.29(g) | Date Analyzed: 11/06/2013 02:32

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29432 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	74		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	74		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	67		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	70		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	77		40-135
114423-97-1	13C-OCDD	91		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1033-000.8 Lab Sample ID: 320-4670-24

Matrix: Solid Lab File ID: 31OC13C3D5_8.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) Date Analyzed: 11/01/2013 02:16

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.039
51207-31-9	2,3,7,8-TCDF	0.32	J	1.0	0.039
40321-76-4	1,2,3,7,8-PeCDD	0.23	J	5.2	0.060
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.084
57117-31-4	2,3,4,7,8-PeCDF	0.17	J *	5.2	0.088
39227-28-6	1,2,3,4,7,8-HxCDD	0.81	J	5.2	0.065
57653-85-7	1,2,3,6,7,8-HxCDD	2.3	J	5.2	0.048
19408-74-3	1,2,3,7,8,9-HxCDD	1.7	J	5.2	0.046
70648-26-9	1,2,3,4,7,8-HxCDF	0.90	J	5.2	0.097
57117-44-9	1,2,3,6,7,8-HxCDF	0.83	J	5.2	0.074
60851-34-5	2,3,4,6,7,8-HxCDF	0.59	J	5.2	0.085
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.095
35822-46-9	1,2,3,4,6,7,8-HpCDD	88		5.2	0.26
67562-39-4	1,2,3,4,6,7,8-HpCDF	9.3	B	5.2	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.2	0.16
3268-87-9	OCDD	4300	E B	10	0.97
39001-02-0	OCDF	19	B	10	0.070
41903-57-5	Total TCDD	0.44	J q	1.0	0.039
30402-14-3	Total TCDF	2.2	q	1.0	0.039
36088-22-9	Total PeCDD	1.8	J q	5.2	0.060
30402-15-4	Total PeCDF	2.2	J q	5.2	0.086
34465-46-8	Total HxCDD	15	q	5.2	0.053
55684-94-1	Total HxCDF	9.8	q	5.2	0.088
37871-00-4	Total HpCDD	160	B	5.2	0.26
38998-75-3	Total HpCDF	23	B	5.2	0.15

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1033-000.8 | Lab Sample ID: 320-4670-24

Matrix: Solid | Lab File ID: 310C13C3D5_8.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:55

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) | Date Analyzed: 11/01/2013 02:16

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	64		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	62		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	59		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	61		40-135
114423-97-1	13C-OCDD	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1034-000.6 | Lab Sample ID: 320-4670-23

Matrix: Solid | Lab File ID: 31OC13C3D5_7.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:45

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) | Date Analyzed: 11/01/2013 01:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.24	J q	1.0	0.030
40321-76-4	1,2,3,7,8-PeCDD	0.56	J	5.1	0.054
57117-41-6	1,2,3,7,8-PeCDF	0.77	J q	5.1	0.088
57117-31-4	2,3,4,7,8-PeCDF	1.1	J *	5.1	0.092
39227-28-6	1,2,3,4,7,8-HxCDD	1.2	J q	5.1	0.065
57653-85-7	1,2,3,6,7,8-HxCDD	2.7	J	5.1	0.048
19408-74-3	1,2,3,7,8,9-HxCDD	2.7	J	5.1	0.046
70648-26-9	1,2,3,4,7,8-HxCDF	2.7	J	5.1	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	2.4	J	5.1	0.093
60851-34-5	2,3,4,6,7,8-HxCDF	2.4	J	5.1	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	59		5.1	0.18
67562-39-4	1,2,3,4,6,7,8-HpCDF	17	B	5.1	0.15
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.3	J	5.1	0.17
3268-87-9	OCDD	2400	B	10	0.72
39001-02-0	OCDF	22	B	10	0.074
41903-57-5	Total TCDD	2.2	q	1.0	0.030
30402-14-3	Total TCDF	12	q	1.0	0.044
36088-22-9	Total PeCDD	4.7	J q	5.1	0.054
30402-15-4	Total PeCDF	33	q	5.1	0.090
34465-46-8	Total HxCDD	23	q	5.1	0.053
55684-94-1	Total HxCDF	48	q	5.1	0.11
37871-00-4	Total HpCDD	110	B	5.1	0.18
38998-75-3	Total HpCDF	38	B	5.1	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1034-000.6 | Lab Sample ID: 320-4670-23

Matrix: Solid | Lab File ID: 31OC13C3D5_7.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:45

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) | Date Analyzed: 11/01/2013 01:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	69		40-135
89059-46-1	13C-2,3,7,8-TCDF	73		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	70		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	68		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	71		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	80		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	83		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1035-0001 | Lab Sample ID: 320-4670-21

Matrix: Solid | Lab File ID: 04NO13B3D5_23.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:35

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.33(g) | Date Analyzed: 11/05/2013 13:12

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.41	J	1.0	0.055
40321-76-4	1,2,3,7,8-PeCDD	2.1	J	5.1	0.13
57117-41-6	1,2,3,7,8-PeCDF	1.1	J q	5.1	0.10
57117-31-4	2,3,4,7,8-PeCDF	2.0	J	5.1	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	4.5	J	5.1	0.21
57653-85-7	1,2,3,6,7,8-HxCDD	14		5.1	0.15
19408-74-3	1,2,3,7,8,9-HxCDD	11		5.1	0.14
70648-26-9	1,2,3,4,7,8-HxCDF	11		5.1	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	4.6	J	5.1	0.10
60851-34-5	2,3,4,6,7,8-HxCDF	3.3	J	5.1	0.12
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.13
35822-46-9	1,2,3,4,6,7,8-HpCDD	330		5.1	0.47
67562-39-4	1,2,3,4,6,7,8-HpCDF	110	B	5.1	0.33
55673-89-7	1,2,3,4,7,8,9-HpCDF	5.7		5.1	0.39
3268-87-9	OCDD	4000	B	10	0.75
39001-02-0	OCDF	280		10	0.14
41903-57-5	Total TCDD	4.4	q	1.0	0.055
30402-14-3	Total TCDF	12	q	1.0	0.051
36088-22-9	Total PeCDD	13	q	5.1	0.13
30402-15-4	Total PeCDF	25	q	5.1	0.10
34465-46-8	Total HxCDD	94		5.1	0.17
55684-94-1	Total HxCDF	81		5.1	0.12
37871-00-4	Total HpCDD	580		5.1	0.47
38998-75-3	Total HpCDF	210	B	5.1	0.36

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1035-0001 | Lab Sample ID: 320-4670-21

Matrix: Solid | Lab File ID: 04NO13B3D5_23.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:35

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.33(g) | Date Analyzed: 11/05/2013 13:12

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	79		40-135
89059-46-1	13C-2,3,7,8-TCDF	90		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	87		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	86		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	86		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	92		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	76		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	87		40-135
114423-97-1	13C-OCDD	101		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1036-000.6 Lab Sample ID: 320-4670-20

Matrix: Solid Lab File ID: 04NO13B3D5_22.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:25

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.30(g) Date Analyzed: 11/05/2013 12:30

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.27	J q	1.0	0.048
40321-76-4	1,2,3,7,8-PeCDD	1.5	J	5.0	0.095
57117-41-6	1,2,3,7,8-PeCDF	0.97	J q	5.0	0.077
57117-31-4	2,3,4,7,8-PeCDF	1.4	J	5.0	0.080
39227-28-6	1,2,3,4,7,8-HxCDD	3.3	J	5.0	0.15
57653-85-7	1,2,3,6,7,8-HxCDD	12		5.0	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	8.2		5.0	0.11
70648-26-9	1,2,3,4,7,8-HxCDF	3.5	J	5.0	0.099
57117-44-9	1,2,3,6,7,8-HxCDF	2.4	J	5.0	0.075
60851-34-5	2,3,4,6,7,8-HxCDF	2.0	J	5.0	0.086
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.096
35822-46-9	1,2,3,4,6,7,8-HpCDD	270		5.0	0.41
67562-39-4	1,2,3,4,6,7,8-HpCDF	40	B	5.0	0.15
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.1	J	5.0	0.18
3268-87-9	OCDD	5400	E B	10	1.0
39001-02-0	OCDF	63		10	0.064
41903-57-5	Total TCDD	4.5	q	1.0	0.048
30402-14-3	Total TCDF	14	q	1.0	0.051
36088-22-9	Total PeCDD	10	q	5.0	0.095
30402-15-4	Total PeCDF	20	q	5.0	0.079
34465-46-8	Total HxCDD	67	q	5.0	0.13
55684-94-1	Total HxCDF	53	q	5.0	0.089
37871-00-4	Total HpCDD	460		5.0	0.41
38998-75-3	Total HpCDF	100	B	5.0	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1036-000.6 | Lab Sample ID: 320-4670-20

Matrix: Solid | Lab File ID: 04NO13B3D5_22.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:25

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.30(g) | Date Analyzed: 11/05/2013 12:30

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	80		40-135
89059-46-1	13C-2,3,7,8-TCDF	89		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	86		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	89		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	82		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	90		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	75		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	88		40-135
114423-97-1	13C-OCDD	100		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1037-000.7 | Lab Sample ID: 320-4670-19

Matrix: Solid | Lab File ID: 04NO13B3D5_21.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.02(g) | Date Analyzed: 11/05/2013 11:48

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.13	J q	1.0	0.054
40321-76-4	1,2,3,7,8-PeCDD	0.58	J	5.2	0.078
57117-41-6	1,2,3,7,8-PeCDF	1.0	J	5.2	0.071
57117-31-4	2,3,4,7,8-PeCDF	1.0	J	5.2	0.073
39227-28-6	1,2,3,4,7,8-HxCDD	0.97	J	5.2	0.094
57653-85-7	1,2,3,6,7,8-HxCDD	2.1	J	5.2	0.069
19408-74-3	1,2,3,7,8,9-HxCDD	2.5	J	5.2	0.066
70648-26-9	1,2,3,4,7,8-HxCDF	3.9	J	5.2	0.11
57117-44-9	1,2,3,6,7,8-HxCDF	2.2	J	5.2	0.083
60851-34-5	2,3,4,6,7,8-HxCDF	0.66	J q	5.2	0.094
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.11
35822-46-9	1,2,3,4,6,7,8-HpCDD	57		5.2	0.24
67562-39-4	1,2,3,4,6,7,8-HpCDF	16	B	5.2	0.088
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.5	J	5.2	0.10
3268-87-9	OCDD	3400	B	10	0.74
39001-02-0	OCDF	26		10	0.063
41903-57-5	Total TCDD	1.9	q	1.0	0.054
30402-14-3	Total TCDF	7.4	q	1.0	0.047
36088-22-9	Total PeCDD	4.3	J q	5.2	0.078
30402-15-4	Total PeCDF	38	q	5.2	0.072
34465-46-8	Total HxCDD	18		5.2	0.076
55684-94-1	Total HxCDF	23	q	5.2	0.098
37871-00-4	Total HpCDD	110		5.2	0.24
38998-75-3	Total HpCDF	28	B	5.2	0.096

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1037-000.7 Lab Sample ID: 320-4670-19

Matrix: Solid Lab File ID: 04NO13B3D5_21.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:15

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.02(g) Date Analyzed: 11/05/2013 11:48

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	71		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	74		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	77		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	62		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	72		40-135
114423-97-1	13C-OCDD	80		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1038-000.7 Lab Sample ID: 320-4670-18

Matrix: Solid Lab File ID: 04NO13B3D5_20.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:10

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.18(g) Date Analyzed: 11/05/2013 11:07

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.11	J q	1.1	0.064
40321-76-4	1,2,3,7,8-PeCDD	0.73	J	5.4	0.12
57117-41-6	1,2,3,7,8-PeCDF	0.54	J q	5.4	0.082
57117-31-4	2,3,4,7,8-PeCDF	0.73	J	5.4	0.085
39227-28-6	1,2,3,4,7,8-HxCDD	1.5	J	5.4	0.14
57653-85-7	1,2,3,6,7,8-HxCDD	4.2	J	5.4	0.10
19408-74-3	1,2,3,7,8,9-HxCDD	3.8	J	5.4	0.097
70648-26-9	1,2,3,4,7,8-HxCDF	2.0	J	5.4	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	1.5	J	5.4	0.096
60851-34-5	2,3,4,6,7,8-HxCDF	2.1	J	5.4	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	100		5.4	0.36
67562-39-4	1,2,3,4,6,7,8-HpCDF	17	B	5.4	0.12
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.89	J	5.4	0.14
3268-87-9	OCDD	3500	B	11	0.82
39001-02-0	OCDF	27		11	0.076
41903-57-5	Total TCDD	1.9	q	1.1	0.064
30402-14-3	Total TCDF	5.7	q	1.1	0.057
36088-22-9	Total PeCDD	4.4	J q	5.4	0.12
30402-15-4	Total PeCDF	11	q	5.4	0.083
34465-46-8	Total HxCDD	29		5.4	0.11
55684-94-1	Total HxCDF	26	q	5.4	0.11
37871-00-4	Total HpCDD	190		5.4	0.36
38998-75-3	Total HpCDF	41	B	5.4	0.13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1038-000.7 | Lab Sample ID: 320-4670-18

Matrix: Solid | Lab File ID: 04NO13B3D5_20.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:10

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.18(g) | Date Analyzed: 11/05/2013 11:07

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	61		40-135
89059-46-1	13C-2,3,7,8-TCDF	69		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	69		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	70		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	56		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	66		40-135
114423-97-1	13C-OCDD	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1039-000.9 Lab Sample ID: 320-4670-16

Matrix: Solid Lab File ID: 310C13C3D5_84.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:00

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) Date Analyzed: 11/03/2013 07:50

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.30
40321-76-4	1,2,3,7,8-PeCDD	0.63	J	5.4	0.10
57117-41-6	1,2,3,7,8-PeCDF	0.59	J	5.4	0.072
57117-31-4	2,3,4,7,8-PeCDF	0.68	J	5.4	0.075
39227-28-6	1,2,3,4,7,8-HxCDD	1.4	J	5.4	0.075
57653-85-7	1,2,3,6,7,8-HxCDD	2.9	J q	5.4	0.055
19408-74-3	1,2,3,7,8,9-HxCDD	2.7	J	5.4	0.053
70648-26-9	1,2,3,4,7,8-HxCDF	1.7	J	5.4	0.097
57117-44-9	1,2,3,6,7,8-HxCDF	1.2	J	5.4	0.074
60851-34-5	2,3,4,6,7,8-HxCDF	0.78	J	5.4	0.084
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.094
35822-46-9	1,2,3,4,6,7,8-HpCDD	81		5.4	0.25
67562-39-4	1,2,3,4,6,7,8-HpCDF	11	B	5.4	0.088
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.4	0.10
3268-87-9	OCDD	4600	E B	11	0.86
39001-02-0	OCDF	18		11	0.068
41903-57-5	Total TCDD	1.4		1.1	0.30
30402-14-3	Total TCDF	6.3	q	1.1	0.046
36088-22-9	Total PeCDD	5.2	J q	5.4	0.10
30402-15-4	Total PeCDF	10	q	5.4	0.074
34465-46-8	Total HxCDD	24	q	5.4	0.061
55684-94-1	Total HxCDF	17		5.4	0.087
37871-00-4	Total HpCDD	150		5.4	0.25
38998-75-3	Total HpCDF	24	B	5.4	0.096

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1039-000.9 | Lab Sample ID: 320-4670-16

Matrix: Solid | Lab File ID: 31OC13C3D5_84.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) | Date Analyzed: 11/03/2013 07:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		40-135
89059-46-1	13C-2,3,7,8-TCDF	75		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	72		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	75		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	78		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	85		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	68		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	75		40-135
114423-97-1	13C-OCDD	83		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1040-000.9 Lab Sample ID: 320-4670-15

Matrix: Solid Lab File ID: 310C13C3D5_83.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:50

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.07(g) Date Analyzed: 11/03/2013 07:09

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.044
40321-76-4	1,2,3,7,8-PeCDD	0.86	J	5.6	0.11
57117-41-6	1,2,3,7,8-PeCDF	0.91	J	5.6	0.076
57117-31-4	2,3,4,7,8-PeCDF	0.74	J	5.6	0.079
39227-28-6	1,2,3,4,7,8-HxCDD	1.7	J q	5.6	0.088
57653-85-7	1,2,3,6,7,8-HxCDD	4.7	J	5.6	0.065
19408-74-3	1,2,3,7,8,9-HxCDD	4.0	J	5.6	0.062
70648-26-9	1,2,3,4,7,8-HxCDF	2.4	J	5.6	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	1.8	J	5.6	0.077
60851-34-5	2,3,4,6,7,8-HxCDF	1.6	J	5.6	0.088
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.6	0.099
35822-46-9	1,2,3,4,6,7,8-HpCDD	140		5.6	0.33
67562-39-4	1,2,3,4,6,7,8-HpCDF	19	B	5.6	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.2	J	5.6	0.16
3268-87-9	OCDD	5100	E B	11	1.0
39001-02-0	OCDF	37		11	0.074
41903-57-5	Total TCDD	0.77	J q	1.1	0.044
30402-14-3	Total TCDF	5.5	q	1.1	0.041
36088-22-9	Total PeCDD	3.8	J q	5.6	0.11
30402-15-4	Total PeCDF	14	q	5.6	0.077
34465-46-8	Total HxCDD	32	q	5.6	0.072
55684-94-1	Total HxCDF	34		5.6	0.091
37871-00-4	Total HpCDD	270		5.6	0.33
38998-75-3	Total HpCDF	51	B	5.6	0.15

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1040-000.9 | Lab Sample ID: 320-4670-15

Matrix: Solid | Lab File ID: 310C13C3D5_83.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:50

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.07(g) | Date Analyzed: 11/03/2013 07:09

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 10.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29328 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	82		40-135
89059-46-1	13C-2,3,7,8-TCDF	88		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	83		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	87		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	88		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	93		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	78		40-135
114423-97-1	13C-OCDD	88		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1041-000.7 | Lab Sample ID: 320-4670-32

Matrix: Solid | Lab File ID: 31OC13C3D5_20.d

Analysis Method: 8290 | Date Collected: 10/21/2013 10:35

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) | Date Analyzed: 11/01/2013 11:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.035
51207-31-9	2,3,7,8-TCDF	0.28	J	1.0	0.032
40321-76-4	1,2,3,7,8-PeCDD	0.14	J q	5.0	0.061
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.067
57117-31-4	2,3,4,7,8-PeCDF	0.18	J *	5.0	0.070
39227-28-6	1,2,3,4,7,8-HxCDD	0.43	J q	5.0	0.070
57653-85-7	1,2,3,6,7,8-HxCDD	0.86	J	5.0	0.051
19408-74-3	1,2,3,7,8,9-HxCDD	0.76	J q	5.0	0.049
70648-26-9	1,2,3,4,7,8-HxCDF	0.54	J q	5.0	0.091
57117-44-9	1,2,3,6,7,8-HxCDF	0.74	J	5.0	0.070
60851-34-5	2,3,4,6,7,8-HxCDF	0.20	J q	5.0	0.079
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.089
35822-46-9	1,2,3,4,6,7,8-HpCDD	46		5.0	0.18
67562-39-4	1,2,3,4,6,7,8-HpCDF	6.4	B	5.0	0.083
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.098
3268-87-9	OCDD	4100	E B	10	0.78
39001-02-0	OCDF	15	B	10	0.067
41903-57-5	Total TCDD	0.63	J q	1.0	0.035
30402-14-3	Total TCDF	1.0	q	1.0	0.032
36088-22-9	Total PeCDD	1.9	J q	5.0	0.061
30402-15-4	Total PeCDF	1.1	J q	5.0	0.068
34465-46-8	Total HxCDD	6.2	q	5.0	0.057
55684-94-1	Total HxCDF	5.3	q	5.0	0.082
37871-00-4	Total HpCDD	82	B	5.0	0.18
38998-75-3	Total HpCDF	15	B	5.0	0.091

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1041-000.7 | Lab Sample ID: 320-4670-32

Matrix: Solid | Lab File ID: 310C13C3D5_20.d

Analysis Method: 8290 | Date Collected: 10/21/2013 10:35

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) | Date Analyzed: 11/01/2013 11:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	67		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	61		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	66		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	63		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	76		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	59		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1042-000.5 Lab Sample ID: 320-4670-31

Matrix: Solid Lab File ID: 31OC13C3D5_19.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:20

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.13(g) Date Analyzed: 11/01/2013 10:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.045
40321-76-4	1,2,3,7,8-PeCDD	1.1	J	5.3	0.080
57117-41-6	1,2,3,7,8-PeCDF	0.85	J q	5.3	0.12
57117-31-4	2,3,4,7,8-PeCDF	1.5	J *	5.3	0.13
39227-28-6	1,2,3,4,7,8-HxCDD	3.3	J	5.3	0.11
57653-85-7	1,2,3,6,7,8-HxCDD	7.1		5.3	0.078
19408-74-3	1,2,3,7,8,9-HxCDD	6.7		5.3	0.075
70648-26-9	1,2,3,4,7,8-HxCDF	5.4		5.3	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	3.7	J	5.3	0.10
60851-34-5	2,3,4,6,7,8-HxCDF	3.0	J	5.3	0.12
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.13
35822-46-9	1,2,3,4,6,7,8-HpCDD	170		5.3	0.29
67562-39-4	1,2,3,4,6,7,8-HpCDF	75	B	5.3	0.28
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.9	J q	5.3	0.34
3268-87-9	OCDD	3000	B	11	0.61
39001-02-0	OCDF	140	B	11	0.11
41903-57-5	Total TCDD	2.0	q	1.1	0.045
30402-14-3	Total TCDF	11	q	1.1	0.064
36088-22-9	Total PeCDD	6.9	q	5.3	0.080
30402-15-4	Total PeCDF	20	q	5.3	0.12
34465-46-8	Total HxCDD	52		5.3	0.087
55684-94-1	Total HxCDF	63		5.3	0.12
37871-00-4	Total HpCDD	300	B	5.3	0.29
38998-75-3	Total HpCDF	180	B q	5.3	0.31

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1042-000.5 | Lab Sample ID: 320-4670-31

Matrix: Solid | Lab File ID: 310C13C3D5_19.d

Analysis Method: 8290 | Date Collected: 10/21/2013 10:20

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.13(g) | Date Analyzed: 11/01/2013 10:22

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	62		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	74		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	70		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	63		40-135
114423-97-1	13C-OCDD	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1044-000.5 Lab Sample ID: 320-4670-30

Matrix: Solid Lab File ID: 310C13C3D5_18.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:10

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) Date Analyzed: 11/01/2013 09:41

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.15	J q	1.0	0.042
40321-76-4	1,2,3,7,8-PeCDD	0.82	J q	5.2	0.094
57117-41-6	1,2,3,7,8-PeCDF	0.64	J	5.2	0.090
57117-31-4	2,3,4,7,8-PeCDF	0.67	J *	5.2	0.094
39227-28-6	1,2,3,4,7,8-HxCDD	2.4	J	5.2	0.14
57653-85-7	1,2,3,6,7,8-HxCDD	6.3		5.2	0.10
19408-74-3	1,2,3,7,8,9-HxCDD	4.8	J	5.2	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	2.4	J	5.2	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	1.6	J	5.2	0.094
60851-34-5	2,3,4,6,7,8-HxCDF	1.2	J	5.2	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	140		5.2	0.26
67562-39-4	1,2,3,4,6,7,8-HpCDF	28	B	5.2	0.17
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.1	J q	5.2	0.20
3268-87-9	OCDD	3500	B	10	0.74
39001-02-0	OCDF	55	B	10	0.085
41903-57-5	Total TCDD	1.5	q	1.0	0.042
30402-14-3	Total TCDF	6.0	q	1.0	0.040
36088-22-9	Total PeCDD	4.4	J q	5.2	0.094
30402-15-4	Total PeCDF	10	q	5.2	0.092
34465-46-8	Total HxCDD	40		5.2	0.12
55684-94-1	Total HxCDF	28		5.2	0.11
37871-00-4	Total HpCDD	240	B	5.2	0.26
38998-75-3	Total HpCDF	70	B q	5.2	0.18

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1044-000.5 Lab Sample ID: 320-4670-30

Matrix: Solid Lab File ID: 31OC13C3D5_18.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:10

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) Date Analyzed: 11/01/2013 09:41

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	71		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	69		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	62		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	72		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	64		40-135
114423-97-1	13C-OCDD	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1045-000.5 | Lab Sample ID: 320-4670-29

Matrix: Solid | Lab File ID: 31OC13C3D5_13.d

Analysis Method: 8290 | Date Collected: 10/21/2013 10:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.29(g) | Date Analyzed: 11/01/2013 05:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.26	J q	1.0	0.045
40321-76-4	1,2,3,7,8-PeCDD	1.3	J	5.1	0.084
57117-41-6	1,2,3,7,8-PeCDF	1.2	J	5.1	0.10
57117-31-4	2,3,4,7,8-PeCDF	1.5	J *	5.1	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	5.2		5.1	0.10
57653-85-7	1,2,3,6,7,8-HxCDD	17		5.1	0.075
19408-74-3	1,2,3,7,8,9-HxCDD	11		5.1	0.072
70648-26-9	1,2,3,4,7,8-HxCDF	5.5		5.1	0.18
57117-44-9	1,2,3,6,7,8-HxCDF	3.6	J	5.1	0.14
60851-34-5	2,3,4,6,7,8-HxCDF	3.2	J	5.1	0.16
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.18
35822-46-9	1,2,3,4,6,7,8-HpCDD	360		5.1	0.35
67562-39-4	1,2,3,4,6,7,8-HpCDF	130	B	5.1	0.43
55673-89-7	1,2,3,4,7,8,9-HpCDF	8.9		5.1	0.51
3268-87-9	OCDD	5300	E B	10	0.99
39001-02-0	OCDF	420	B	10	0.20
41903-57-5	Total TCDD	2.2	q	1.0	0.045
30402-14-3	Total TCDF	13	q	1.0	0.051
36088-22-9	Total PeCDD	8.4	q	5.1	0.084
30402-15-4	Total PeCDF	20	q	5.1	0.10
34465-46-8	Total HxCDD	81	q	5.1	0.083
55684-94-1	Total HxCDF	110	q	5.1	0.16
37871-00-4	Total HpCDD	580	B	5.1	0.35
38998-75-3	Total HpCDF	460	B	5.1	0.47

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1045-000.5 | Lab Sample ID: 320-4670-29

Matrix: Solid | Lab File ID: 310C13C3D5_13.d

Analysis Method: 8290 | Date Collected: 10/21/2013 10:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.29(g) | Date Analyzed: 11/01/2013 05:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	53		40-135
89059-46-1	13C-2,3,7,8-TCDF	54		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	56		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	51		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	55		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	57		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	57		40-135
114423-97-1	13C-OCDD	66		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1046-000.5 | Lab Sample ID: 320-4670-28

Matrix: Solid | Lab File ID: 31OC13C3D5_12.d

Analysis Method: 8290 | Date Collected: 10/21/2013 09:50

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.07(g) | Date Analyzed: 11/01/2013 05:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.037
51207-31-9	2,3,7,8-TCDF	0.80	J	1.0	0.038
40321-76-4	1,2,3,7,8-PeCDD	1.1	J	5.1	0.063
57117-41-6	1,2,3,7,8-PeCDF	ND		5.1	0.25
57117-31-4	2,3,4,7,8-PeCDF	0.59	J *	5.1	0.084
39227-28-6	1,2,3,4,7,8-HxCDD	2.6	J	5.1	0.062
57653-85-7	1,2,3,6,7,8-HxCDD	5.6		5.1	0.045
19408-74-3	1,2,3,7,8,9-HxCDD	5.2		5.1	0.044
70648-26-9	1,2,3,4,7,8-HxCDF	1.7	J	5.1	0.088
57117-44-9	1,2,3,6,7,8-HxCDF	1.1	J	5.1	0.067
60851-34-5	2,3,4,6,7,8-HxCDF	0.94	J	5.1	0.076
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.085
35822-46-9	1,2,3,4,6,7,8-HpCDD	100		5.1	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	13	B	5.1	0.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.75	J	5.1	0.12
3268-87-9	OCDD	3600	B	10	0.65
39001-02-0	OCDF	18	B	10	0.061
41903-57-5	Total TCDD	0.91	J q	1.0	0.037
30402-14-3	Total TCDF	5.2	q	1.0	0.038
36088-22-9	Total PeCDD	5.6	q	5.1	0.063
30402-15-4	Total PeCDF	8.3	q	5.1	0.17
34465-46-8	Total HxCDD	43	q	5.1	0.050
55684-94-1	Total HxCDF	21	q	5.1	0.079
37871-00-4	Total HpCDD	200	B	5.1	0.20
38998-75-3	Total HpCDF	31	B	5.1	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1046-000.5 | Lab Sample ID: 320-4670-28

Matrix: Solid | Lab File ID: 310C13C3D5_12.d

Analysis Method: 8290 | Date Collected: 10/21/2013 09:50

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.07(g) | Date Analyzed: 11/01/2013 05:04

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	72		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	76		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	64		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	78		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	94		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	76		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	75		40-135
114423-97-1	13C-OCDD	87		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1047-000.8 Lab Sample ID: 320-4670-27

Matrix: Solid Lab File ID: 310C13C3D5_11.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:40

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.25(g) Date Analyzed: 11/01/2013 04:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.54	J	1.1	0.046
40321-76-4	1,2,3,7,8-PeCDD	5.4		5.3	0.16
57117-41-6	1,2,3,7,8-PeCDF	1.1	J q	5.3	0.14
57117-31-4	2,3,4,7,8-PeCDF	1.4	J *	5.3	0.14
39227-28-6	1,2,3,4,7,8-HxCDD	16		5.3	0.15
57653-85-7	1,2,3,6,7,8-HxCDD	52		5.3	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	34		5.3	0.11
70648-26-9	1,2,3,4,7,8-HxCDF	7.5		5.3	0.18
57117-44-9	1,2,3,6,7,8-HxCDF	6.0		5.3	0.13
60851-34-5	2,3,4,6,7,8-HxCDF	5.5		5.3	0.15
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.17
35822-46-9	1,2,3,4,6,7,8-HpCDD	850		5.3	0.66
67562-39-4	1,2,3,4,6,7,8-HpCDF	99	B	5.3	0.27
55673-89-7	1,2,3,4,7,8,9-HpCDF	4.2	J	5.3	0.32
3268-87-9	OCDD	9100	E B	11	1.4
39001-02-0	OCDF	110	B	11	0.11
41903-57-5	Total TCDD	4.7	q	1.1	0.046
30402-14-3	Total TCDF	11	q	1.1	0.058
36088-22-9	Total PeCDD	36		5.3	0.16
30402-15-4	Total PeCDF	34	q	5.3	0.14
34465-46-8	Total HxCDD	320	q	5.3	0.12
55684-94-1	Total HxCDF	150	q	5.3	0.16
37871-00-4	Total HpCDD	1500	B	5.3	0.66
38998-75-3	Total HpCDF	240	B	5.3	0.29

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1047-000.8 | Lab Sample ID: 320-4670-27

Matrix: Solid | Lab File ID: 31OC13C3D5_11.d

Analysis Method: 8290 | Date Collected: 10/21/2013 09:40

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.25(g) | Date Analyzed: 11/01/2013 04:22

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	57		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	55		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	58		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	60		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	70		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	50		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	55		40-135
114423-97-1	13C-OCDD	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1048-000.8 | Lab Sample ID: 320-4670-26

Matrix: Solid | Lab File ID: 310C13C3D5_10.d

Analysis Method: 8290 | Date Collected: 10/21/2013 09:30

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) | Date Analyzed: 11/01/2013 03:40

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.23	J q	1.1	0.039
40321-76-4	1,2,3,7,8-PeCDD	0.75	J	5.4	0.091
57117-41-6	1,2,3,7,8-PeCDF	0.87	J	5.4	0.099
57117-31-4	2,3,4,7,8-PeCDF	1.3	J * q	5.4	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	2.1	J	5.4	0.073
57653-85-7	1,2,3,6,7,8-HxCDD	4.8	J	5.4	0.054
19408-74-3	1,2,3,7,8,9-HxCDD	4.1	J	5.4	0.052
70648-26-9	1,2,3,4,7,8-HxCDF	3.3	J	5.4	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	2.0	J	5.4	0.092
60851-34-5	2,3,4,6,7,8-HxCDF	1.7	J	5.4	0.10
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.4	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	110		5.4	0.23
67562-39-4	1,2,3,4,6,7,8-HpCDF	22	B	5.4	0.15
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.3	J	5.4	0.18
3268-87-9	OCDD	4900	E B	11	1.1
39001-02-0	OCDF	36	B	11	0.078
41903-57-5	Total TCDD	3.2	q	1.1	0.039
30402-14-3	Total TCDF	15	q	1.1	0.054
36088-22-9	Total PeCDD	7.7	q	5.4	0.091
30402-15-4	Total PeCDF	22	q	5.4	0.10
34465-46-8	Total HxCDD	35		5.4	0.060
55684-94-1	Total HxCDF	32		5.4	0.11
37871-00-4	Total HpCDD	210	B	5.4	0.23
38998-75-3	Total HpCDF	51	B	5.4	0.17

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1048-000.8 Lab Sample ID: 320-4670-26

Matrix: Solid Lab File ID: 310C13C3D5_10.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:30

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) Date Analyzed: 11/01/2013 03:40

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	58		40-135
89059-46-1	13C-2,3,7,8-TCDF	58		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	56		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	72		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	60		40-135
114423-97-1	13C-OCDD	66		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1049-000.9 | Lab Sample ID: 320-4670-25

Matrix: Solid | Lab File ID: 310C13C3D5_9.d

Analysis Method: 8290 | Date Collected: 10/21/2013 09:20

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.34(g) | Date Analyzed: 11/01/2013 02:58

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.13
40321-76-4	1,2,3,7,8-PeCDD	1.0	J	5.2	0.095
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.10
57117-31-4	2,3,4,7,8-PeCDF	0.76	J *	5.2	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	2.9	J	5.2	0.098
57653-85-7	1,2,3,6,7,8-HxCDD	8.1		5.2	0.072
19408-74-3	1,2,3,7,8,9-HxCDD	5.8		5.2	0.069
70648-26-9	1,2,3,4,7,8-HxCDF	2.6	J	5.2	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	1.6	J q	5.2	0.098
60851-34-5	2,3,4,6,7,8-HxCDF	1.3	J	5.2	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.13
35822-46-9	1,2,3,4,6,7,8-HpCDD	160		5.2	0.32
67562-39-4	1,2,3,4,6,7,8-HpCDF	24	B	5.2	0.18
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.2	J q	5.2	0.21
3268-87-9	OCDD	4500	E B	10	0.95
39001-02-0	OCDF	38	B	10	0.091
41903-57-5	Total TCDD	1.2		1.0	0.13
30402-14-3	Total TCDF	7.9	q	1.0	0.047
36088-22-9	Total PeCDD	5.1	J q	5.2	0.095
30402-15-4	Total PeCDF	10	q	5.2	0.10
34465-46-8	Total HxCDD	53		5.2	0.080
55684-94-1	Total HxCDF	30	q	5.2	0.12
37871-00-4	Total HpCDD	280	B	5.2	0.32
38998-75-3	Total HpCDF	61	B q	5.2	0.19

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1049-000.9 | Lab Sample ID: 320-4670-25

Matrix: Solid | Lab File ID: 310C13C3D5_9.d

Analysis Method: 8290 | Date Collected: 10/21/2013 09:20

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.34(g) | Date Analyzed: 11/01/2013 02:58

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	61		40-135
89059-46-1	13C-2,3,7,8-TCDF	57		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	64		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	63		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	63		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	81		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	62		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	61		40-135
114423-97-1	13C-OCDD	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1050-000.6 Lab Sample ID: 320-4670-42

Matrix: Solid Lab File ID: 310C13C3D5_37.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:40

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.14(g) Date Analyzed: 11/01/2013 23:12

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.16	J q	1.1	0.031
40321-76-4	1,2,3,7,8-PeCDD	0.50	J	5.3	0.059
57117-41-6	1,2,3,7,8-PeCDF	0.43	J q	5.3	0.057
57117-31-4	2,3,4,7,8-PeCDF	0.65	J *	5.3	0.059
39227-28-6	1,2,3,4,7,8-HxCDD	1.0	J q	5.3	0.055
57653-85-7	1,2,3,6,7,8-HxCDD	2.3	J	5.3	0.040
19408-74-3	1,2,3,7,8,9-HxCDD	2.3	J	5.3	0.038
70648-26-9	1,2,3,4,7,8-HxCDF	4.1	J	5.3	0.095
57117-44-9	1,2,3,6,7,8-HxCDF	1.7	J	5.3	0.072
60851-34-5	2,3,4,6,7,8-HxCDF	0.75	J q	5.3	0.082
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.093
35822-46-9	1,2,3,4,6,7,8-HpCDD	62		5.3	0.18
67562-39-4	1,2,3,4,6,7,8-HpCDF	34	B	5.3	0.17
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.6	J	5.3	0.20
3268-87-9	OCDD	2800	B	11	0.60
39001-02-0	OCDF	96	B	11	0.089
41903-57-5	Total TCDD	1.8	q	1.1	0.031
30402-14-3	Total TCDF	6.6	q	1.1	0.038
36088-22-9	Total PeCDD	3.4	J q	5.3	0.059
30402-15-4	Total PeCDF	8.8	q	5.3	0.058
34465-46-8	Total HxCDD	18	q	5.3	0.044
55684-94-1	Total HxCDF	20	q	5.3	0.086
37871-00-4	Total HpCDD	110	B	5.3	0.18
38998-75-3	Total HpCDF	62	B	5.3	0.18

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1050-000.6 | Lab Sample ID: 320-4670-42

Matrix: Solid | Lab File ID: 310C13C3D5_37.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:40

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.14(g) | Date Analyzed: 11/01/2013 23:12

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	74		40-135
89059-46-1	13C-2,3,7,8-TCDF	79		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	77		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	77		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	77		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	90		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	70		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	78		40-135
114423-97-1	13C-OCDD	85		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1051-000.8 | Lab Sample ID: 320-4670-41

Matrix: Solid | Lab File ID: 310C13C3D5_36.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:30

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.25(g) | Date Analyzed: 11/01/2013 22:30

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.035
51207-31-9	2,3,7,8-TCDF	0.62	J	1.0	0.034
40321-76-4	1,2,3,7,8-PeCDD	0.41	J	5.0	0.066
57117-41-6	1,2,3,7,8-PeCDF	0.30	J q	5.0	0.074
57117-31-4	2,3,4,7,8-PeCDF	0.35	J *	5.0	0.077
39227-28-6	1,2,3,4,7,8-HxCDD	0.95	J	5.0	0.056
57653-85-7	1,2,3,6,7,8-HxCDD	2.0	J	5.0	0.041
19408-74-3	1,2,3,7,8,9-HxCDD	1.8	J	5.0	0.040
70648-26-9	1,2,3,4,7,8-HxCDF	1.1	J q	5.0	0.089
57117-44-9	1,2,3,6,7,8-HxCDF	1.2	J	5.0	0.068
60851-34-5	2,3,4,6,7,8-HxCDF	0.58	J q	5.0	0.078
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.087
35822-46-9	1,2,3,4,6,7,8-HpCDD	67		5.0	0.22
67562-39-4	1,2,3,4,6,7,8-HpCDF	15	B	5.0	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.73	J	5.0	0.15
3268-87-9	OCDD	4500	E B	10	0.80
39001-02-0	OCDF	35	B	10	0.083
41903-57-5	Total TCDD	1.2	q	1.0	0.035
30402-14-3	Total TCDF	2.7	q	1.0	0.034
36088-22-9	Total PeCDD	2.9	J q	5.0	0.066
30402-15-4	Total PeCDF	3.4	J q	5.0	0.075
34465-46-8	Total HxCDD	14		5.0	0.046
55684-94-1	Total HxCDF	13	q	5.0	0.081
37871-00-4	Total HpCDD	120	B	5.0	0.22
38998-75-3	Total HpCDF	39	B	5.0	0.14

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1051-000.8 | Lab Sample ID: 320-4670-41

Matrix: Solid | Lab File ID: 310C13C3D5_36.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:30

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.25(g) | Date Analyzed: 11/01/2013 22:30

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	62		40-135
89059-46-1	13C-2,3,7,8-TCDF	65		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	64		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	65		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	65		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1052-000.6 | Lab Sample ID: 320-4670-40

Matrix: Solid | Lab File ID: 31OC13C3D5_35.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:25

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.46(g) | Date Analyzed: 11/01/2013 21:48

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.14	J q	1.0	0.056
40321-76-4	1,2,3,7,8-PeCDD	1.8	J	5.2	0.080
57117-41-6	1,2,3,7,8-PeCDF	1.1	J q	5.2	0.095
57117-31-4	2,3,4,7,8-PeCDF	1.6	J *	5.2	0.098
39227-28-6	1,2,3,4,7,8-HxCDD	4.5	J	5.2	0.097
57653-85-7	1,2,3,6,7,8-HxCDD	12		5.2	0.071
19408-74-3	1,2,3,7,8,9-HxCDD	9.7		5.2	0.068
70648-26-9	1,2,3,4,7,8-HxCDF	4.9	J	5.2	0.16
57117-44-9	1,2,3,6,7,8-HxCDF	4.2	J	5.2	0.12
60851-34-5	2,3,4,6,7,8-HxCDF	4.1	J	5.2	0.13
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.15
35822-46-9	1,2,3,4,6,7,8-HpCDD	270		5.2	0.37
67562-39-4	1,2,3,4,6,7,8-HpCDF	92	B	5.2	0.32
55673-89-7	1,2,3,4,7,8,9-HpCDF	4.6	J	5.2	0.38
3268-87-9	OCDD	4000	B	10	0.77
39001-02-0	OCDF	200	B	10	0.15
41903-57-5	Total TCDD	2.2	q	1.0	0.056
30402-14-3	Total TCDF	11	q	1.0	0.055
36088-22-9	Total PeCDD	10	q	5.2	0.080
30402-15-4	Total PeCDF	29	q	5.2	0.097
34465-46-8	Total HxCDD	79		5.2	0.079
55684-94-1	Total HxCDF	95		5.2	0.14
37871-00-4	Total HpCDD	470	B	5.2	0.37
38998-75-3	Total HpCDF	240	B	5.2	0.35

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1052-000.6 Lab Sample ID: 320-4670-40

Matrix: Solid Lab File ID: 310C13C3D5_35.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:25

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.46(g) Date Analyzed: 11/01/2013 21:48

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	60		40-135
89059-46-1	13C-2,3,7,8-TCDF	63		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	62		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	64		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	63		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	70		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	57		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1053-000.6 | Lab Sample ID: 320-4670-39

Matrix: Solid | Lab File ID: 31OC13C3D5_28.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:15

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.23(g) | Date Analyzed: 11/01/2013 16:37

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.63	J	1.0	0.040
40321-76-4	1,2,3,7,8-PeCDD	2.7	J	5.2	0.083
57117-41-6	1,2,3,7,8-PeCDF	0.81	J	5.2	0.12
57117-31-4	2,3,4,7,8-PeCDF	0.98	J *	5.2	0.12
39227-28-6	1,2,3,4,7,8-HxCDD	6.5	q	5.2	0.11
57653-85-7	1,2,3,6,7,8-HxCDD	23		5.2	0.078
19408-74-3	1,2,3,7,8,9-HxCDD	14		5.2	0.075
70648-26-9	1,2,3,4,7,8-HxCDF	7.1		5.2	0.14
57117-44-9	1,2,3,6,7,8-HxCDF	5.1	J	5.2	0.11
60851-34-5	2,3,4,6,7,8-HxCDF	4.4	J	5.2	0.13
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.14
35822-46-9	1,2,3,4,6,7,8-HpCDD	510		5.2	0.42
67562-39-4	1,2,3,4,6,7,8-HpCDF	120	B	5.2	0.37
55673-89-7	1,2,3,4,7,8,9-HpCDF	5.2		5.2	0.44
3268-87-9	OCDD	5300	E B	10	0.86
39001-02-0	OCDF	250	B	10	0.12
41903-57-5	Total TCDD	2.7	q	1.0	0.040
30402-14-3	Total TCDF	9.4	q	1.0	0.044
36088-22-9	Total PeCDD	12	q	5.2	0.083
30402-15-4	Total PeCDF	24	q	5.2	0.12
34465-46-8	Total HxCDD	130	q	5.2	0.087
55684-94-1	Total HxCDF	120		5.2	0.13
37871-00-4	Total HpCDD	860	B	5.2	0.42
38998-75-3	Total HpCDF	330	B	5.2	0.41

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1053-000.6 | Lab Sample ID: 320-4670-39

Matrix: Solid | Lab File ID: 31OC13C3D5_28.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:15

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.23(g) | Date Analyzed: 11/01/2013 16:37

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	67		40-135
89059-46-1	13C-2,3,7,8-TCDF	71		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	84		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	70		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	74		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	81		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	70		40-135
114423-97-1	13C-OCDD	81		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1054-000.6 Lab Sample ID: 320-4670-38

Matrix: Solid Lab File ID: 310C13C3D5_25.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:05

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.07(g) Date Analyzed: 11/01/2013 14:32

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.094	J q	1.0	0.037
51207-31-9	2,3,7,8-TCDF	0.43	J q	1.0	0.043
40321-76-4	1,2,3,7,8-PeCDD	0.58	J	5.2	0.074
57117-41-6	1,2,3,7,8-PeCDF	0.23	J	5.2	0.079
57117-31-4	2,3,4,7,8-PeCDF	0.36	J *	5.2	0.081
39227-28-6	1,2,3,4,7,8-HxCDD	1.7	J	5.2	0.090
57653-85-7	1,2,3,6,7,8-HxCDD	4.3	J	5.2	0.066
19408-74-3	1,2,3,7,8,9-HxCDD	3.2	J	5.2	0.063
70648-26-9	1,2,3,4,7,8-HxCDF	1.9	J	5.2	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	1.2	J q	5.2	0.097
60851-34-5	2,3,4,6,7,8-HxCDF	0.78	J q	5.2	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	98		5.2	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	26	B	5.2	0.15
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.2	J	5.2	0.17
3268-87-9	OCDD	3100	B	10	0.58
39001-02-0	OCDF	53	B	10	0.085
41903-57-5	Total TCDD	0.92	J q	1.0	0.037
30402-14-3	Total TCDF	1.7	q	1.0	0.043
36088-22-9	Total PeCDD	3.2	J q	5.2	0.074
30402-15-4	Total PeCDF	5.8	q	5.2	0.080
34465-46-8	Total HxCDD	27		5.2	0.073
55684-94-1	Total HxCDF	24	q	5.2	0.11
37871-00-4	Total HpCDD	170	B	5.2	0.21
38998-75-3	Total HpCDF	67	B	5.2	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1054-000.6 | Lab Sample ID: 320-4670-38

Matrix: Solid | Lab File ID: 310C13C3D5_25.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:05

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.07(g) | Date Analyzed: 11/01/2013 14:32

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		40-135
89059-46-1	13C-2,3,7,8-TCDF	65		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	66		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	62		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	68		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	81		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	63		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	82		40-135

FORM I

DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1055-000.8 Lab Sample ID: 320-4670-37

Matrix: Solid Lab File ID: 310C13C3D5_24.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:00

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.05(g) Date Analyzed: 11/01/2013 13:50

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.043
51207-31-9	2,3,7,8-TCDF	0.36	J	1.1	0.048
40321-76-4	1,2,3,7,8-PeCDD	0.31	J	5.3	0.083
57117-41-6	1,2,3,7,8-PeCDF	0.14	J q	5.3	0.086
57117-31-4	2,3,4,7,8-PeCDF	0.16	J * q	5.3	0.089
39227-28-6	1,2,3,4,7,8-HxCDD	0.87	J	5.3	0.094
57653-85-7	1,2,3,6,7,8-HxCDD	2.4	J	5.3	0.069
19408-74-3	1,2,3,7,8,9-HxCDD	1.7	J	5.3	0.066
70648-26-9	1,2,3,4,7,8-HxCDF	1.4	J	5.3	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	0.84	J	5.3	0.090
60851-34-5	2,3,4,6,7,8-HxCDF	0.59	J q	5.3	0.10
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.12
35822-46-9	1,2,3,4,6,7,8-HpCDD	55		5.3	0.16
67562-39-4	1,2,3,4,6,7,8-HpCDF	13	B	5.3	0.12
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.76	J	5.3	0.14
3268-87-9	OCDD	1900	B	11	0.51
39001-02-0	OCDF	22	B	11	0.088
41903-57-5	Total TCDD	0.46	J q	1.1	0.043
30402-14-3	Total TCDF	2.4	q	1.1	0.048
36088-22-9	Total PeCDD	2.4	J q	5.3	0.083
30402-15-4	Total PeCDF	6.5	q	5.3	0.087
34465-46-8	Total HxCDD	15		5.3	0.076
55684-94-1	Total HxCDF	13	q	5.3	0.11
37871-00-4	Total HpCDD	93	B	5.3	0.16
38998-75-3	Total HpCDF	31	B	5.3	0.13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1055-000.8 | Lab Sample ID: 320-4670-37

Matrix: Solid | Lab File ID: 310C13C3D5_24.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.05(g) | Date Analyzed: 11/01/2013 13:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	61		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	65		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	65		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	67		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	74		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	66		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	68		40-135
114423-97-1	13C-OCDD	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1056-000.6 Lab Sample ID: 320-4670-36

Matrix: Solid Lab File ID: 310C13C3D5_23.d

Analysis Method: 8290 Date Collected: 10/21/2013 13:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 9.99(g) Date Analyzed: 11/01/2013 13:09

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.31	J	1.0	0.033
51207-31-9	2,3,7,8-TCDF	0.50	J	1.0	0.036
40321-76-4	1,2,3,7,8-PeCDD	1.2	J q	5.2	0.11
57117-41-6	1,2,3,7,8-PeCDF	0.45	J	5.2	0.073
57117-31-4	2,3,4,7,8-PeCDF	0.25	J *	5.2	0.075
39227-28-6	1,2,3,4,7,8-HxCDD	3.0	J	5.2	0.14
57653-85-7	1,2,3,6,7,8-HxCDD	6.7		5.2	0.10
19408-74-3	1,2,3,7,8,9-HxCDD	6.4		5.2	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	1.9	J	5.2	0.11
57117-44-9	1,2,3,6,7,8-HxCDF	1.7	J	5.2	0.085
60851-34-5	2,3,4,6,7,8-HxCDF	0.98	J	5.2	0.097
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.11
35822-46-9	1,2,3,4,6,7,8-HpCDD	130		5.2	0.25
67562-39-4	1,2,3,4,6,7,8-HpCDF	16	B	5.2	0.12
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.73	J	5.2	0.14
3268-87-9	OCDD	3700	B	10	0.78
39001-02-0	OCDF	21	B	10	0.079
41903-57-5	Total TCDD	1.3	q	1.0	0.033
30402-14-3	Total TCDF	3.4	q	1.0	0.036
36088-22-9	Total PeCDD	8.4	q	5.2	0.11
30402-15-4	Total PeCDF	8.0	q	5.2	0.074
34465-46-8	Total HxCDD	49		5.2	0.12
55684-94-1	Total HxCDF	23		5.2	0.10
37871-00-4	Total HpCDD	250	B	5.2	0.25
38998-75-3	Total HpCDF	37	B	5.2	0.13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1056-000.6 Lab Sample ID: 320-4670-36

Matrix: Solid Lab File ID: 310C13C3D5_23.d

Analysis Method: 8290 Date Collected: 10/21/2013 13:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 9.99(g) Date Analyzed: 11/01/2013 13:09

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	64		40-135
89059-46-1	13C-2,3,7,8-TCDF	68		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	49		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	66		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	66		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	73		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	60		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	66		40-135
114423-97-1	13C-OCDD	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1057-0001 | Lab Sample ID: 320-4670-35

Matrix: Solid | Lab File ID: 310C13C3D5_22.d

Analysis Method: 8290 | Date Collected: 10/21/2013 13:45

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.37(g) | Date Analyzed: 11/01/2013 12:27

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.19	J q	1.0	0.037
40321-76-4	1,2,3,7,8-PeCDD	2.5	J	5.0	0.097
57117-41-6	1,2,3,7,8-PeCDF	0.50	J q	5.0	0.088
57117-31-4	2,3,4,7,8-PeCDF	1.0	J *	5.0	0.091
39227-28-6	1,2,3,4,7,8-HxCDD	7.2		5.0	0.18
57653-85-7	1,2,3,6,7,8-HxCDD	23		5.0	0.13
19408-74-3	1,2,3,7,8,9-HxCDD	14		5.0	0.13
70648-26-9	1,2,3,4,7,8-HxCDF	3.2	J	5.0	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	2.8	J	5.0	0.088
60851-34-5	2,3,4,6,7,8-HxCDF	2.2	J	5.0	0.10
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.11
35822-46-9	1,2,3,4,6,7,8-HpCDD	420		5.0	0.42
67562-39-4	1,2,3,4,6,7,8-HpCDF	44	B	5.0	0.17
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.6	J	5.0	0.20
3268-87-9	OCDD	5100	E B	10	0.83
39001-02-0	OCDF	43	B	10	0.072
41903-57-5	Total TCDD	1.7	q	1.0	0.037
30402-14-3	Total TCDF	6.2	q	1.0	0.039
36088-22-9	Total PeCDD	14	q	5.0	0.097
30402-15-4	Total PeCDF	16	q	5.0	0.089
34465-46-8	Total HxCDD	140		5.0	0.15
55684-94-1	Total HxCDF	77		5.0	0.10
37871-00-4	Total HpCDD	730	B	5.0	0.42
38998-75-3	Total HpCDF	110	B	5.0	0.18

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1057-0001 | Lab Sample ID: 320-4670-35

Matrix: Solid | Lab File ID: 31OC13C3D5_22.d

Analysis Method: 8290 | Date Collected: 10/21/2013 13:45

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.37(g) | Date Analyzed: 11/01/2013 12:27

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29135 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	70		40-135
89059-46-1	13C-2,3,7,8-TCDF	75		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	73		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	67		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	76		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	94		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	79		40-135
114423-97-1	13C-OCDD	88		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1058-000.5 | Lab Sample ID: 320-4670-50

Matrix: Solid | Lab File ID: 310C13C3D5_51.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:35

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.10(g) | Date Analyzed: 11/02/2013 09:15

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.036
51207-31-9	2,3,7,8-TCDF	0.65	J q	1.0	0.035
40321-76-4	1,2,3,7,8-PeCDD	0.30	J	5.2	0.059
57117-41-6	1,2,3,7,8-PeCDF	ND		5.2	0.066
57117-31-4	2,3,4,7,8-PeCDF	0.34	J q	5.2	0.069
39227-28-6	1,2,3,4,7,8-HxCDD	0.64	J q	5.2	0.068
57653-85-7	1,2,3,6,7,8-HxCDD	1.6	J	5.2	0.050
19408-74-3	1,2,3,7,8,9-HxCDD	1.5	J	5.2	0.048
70648-26-9	1,2,3,4,7,8-HxCDF	1.5	J	5.2	0.083
57117-44-9	1,2,3,6,7,8-HxCDF	1.0	J	5.2	0.063
60851-34-5	2,3,4,6,7,8-HxCDF	0.94	J	5.2	0.072
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.081
35822-46-9	1,2,3,4,6,7,8-HpCDD	48		5.2	0.16
67562-39-4	1,2,3,4,6,7,8-HpCDF	14		5.2	0.12
55673-89-7	1,2,3,4,7,8,9-HpCDF	0.91	J	5.2	0.14
3268-87-9	OCDD	1400	B	10	0.47
39001-02-0	OCDF	42	B	10	0.088
41903-57-5	Total TCDD	0.48	J q	1.0	0.036
30402-14-3	Total TCDF	2.8	q	1.0	0.035
36088-22-9	Total PeCDD	1.5	J q	5.2	0.059
30402-15-4	Total PeCDF	3.7	J q	5.2	0.068
34465-46-8	Total HxCDD	10	q	5.2	0.055
55684-94-1	Total HxCDF	14		5.2	0.075
37871-00-4	Total HpCDD	82		5.2	0.16
38998-75-3	Total HpCDF	42		5.2	0.13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1058-000.5 | Lab Sample ID: 320-4670-50

Matrix: Solid | Lab File ID: 31OC13C3D5_51.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:35

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.10(g) | Date Analyzed: 11/02/2013 09:15

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	80		40-135
89059-46-1	13C-2,3,7,8-TCDF	84		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	84		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	86		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	87		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	91		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	73		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	79		40-135
114423-97-1	13C-OCDD	84		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1059-000.6 | Lab Sample ID: 320-4670-49

Matrix: Solid | Lab File ID: 31OC13C3D5_50.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:25

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) | Date Analyzed: 11/02/2013 08:33

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		0.99	0.042
51207-31-9	2,3,7,8-TCDF	0.22	J q	0.99	0.030
40321-76-4	1,2,3,7,8-PeCDD	0.18	J	4.9	0.049
57117-41-6	1,2,3,7,8-PeCDF	ND		4.9	0.048
57117-31-4	2,3,4,7,8-PeCDF	ND		4.9	0.050
39227-28-6	1,2,3,4,7,8-HxCDD	0.53	J	4.9	0.051
57653-85-7	1,2,3,6,7,8-HxCDD	1.0	J	4.9	0.038
19408-74-3	1,2,3,7,8,9-HxCDD	1.1	J	4.9	0.036
70648-26-9	1,2,3,4,7,8-HxCDF	0.51	J q	4.9	0.060
57117-44-9	1,2,3,6,7,8-HxCDF	0.64	J	4.9	0.046
60851-34-5	2,3,4,6,7,8-HxCDF	0.41	J	4.9	0.052
72918-21-9	1,2,3,7,8,9-HxCDF	ND		4.9	0.059
35822-46-9	1,2,3,4,6,7,8-HpCDD	59		4.9	0.16
67562-39-4	1,2,3,4,6,7,8-HpCDF	6.9	q	4.9	0.092
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		4.9	0.11
3268-87-9	OCDD	5500	E B	9.9	0.80
39001-02-0	OCDF	20	B	9.9	0.048
41903-57-5	Total TCDD	1.3		0.99	0.042
30402-14-3	Total TCDF	1.2	q	0.99	0.030
36088-22-9	Total PeCDD	1.6	J q	4.9	0.049
30402-15-4	Total PeCDF	1.4	J q	4.9	0.049
34465-46-8	Total HxCDD	7.5	q	4.9	0.042
55684-94-1	Total HxCDF	6.6	q	4.9	0.054
37871-00-4	Total HpCDD	100		4.9	0.16
38998-75-3	Total HpCDF	17	q	4.9	0.10

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1059-000.6 | Lab Sample ID: 320-4670-49

Matrix: Solid | Lab File ID: 310C13C3D5_50.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:25

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) | Date Analyzed: 11/02/2013 08:33

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	87		40-135
89059-46-1	13C-2,3,7,8-TCDF	93		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	94		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	94		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	93		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	102		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	79		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	87		40-135
114423-97-1	13C-OCDD	98		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1060.000.5 Lab Sample ID: 320-4670-48

Matrix: Solid Lab File ID: 31OC13C3D5_49.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:15

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.06(g) Date Analyzed: 11/02/2013 07:52

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.28	J q	1.0	0.030
40321-76-4	1,2,3,7,8-PeCDD	1.9	J	5.2	0.068
57117-41-6	1,2,3,7,8-PeCDF	2.0	J	5.2	0.098
57117-31-4	2,3,4,7,8-PeCDF	2.4	J	5.2	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	4.9	J	5.2	0.14
57653-85-7	1,2,3,6,7,8-HxCDD	13		5.2	0.10
19408-74-3	1,2,3,7,8,9-HxCDD	10		5.2	0.10
70648-26-9	1,2,3,4,7,8-HxCDF	8.1		5.2	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	5.6		5.2	0.077
60851-34-5	2,3,4,6,7,8-HxCDF	5.7		5.2	0.087
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.098
35822-46-9	1,2,3,4,6,7,8-HpCDD	300		5.2	0.30
67562-39-4	1,2,3,4,6,7,8-HpCDF	95		5.2	0.30
55673-89-7	1,2,3,4,7,8,9-HpCDF	4.9	J	5.2	0.35
3268-87-9	OCDD	4500	E B	10	0.72
39001-02-0	OCDF	210	B	10	0.096
41903-57-5	Total TCDD	5.1	q	1.0	0.030
30402-14-3	Total TCDF	23		1.0	0.043
36088-22-9	Total PeCDD	14	q	5.2	0.068
30402-15-4	Total PeCDF	45	q	5.2	0.10
34465-46-8	Total HxCDD	87		5.2	0.12
55684-94-1	Total HxCDF	120	q	5.2	0.091
37871-00-4	Total HpCDD	510		5.2	0.30
38998-75-3	Total HpCDF	240		5.2	0.32

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1060.000.5 | Lab Sample ID: 320-4670-48

Matrix: Solid | Lab File ID: 31OC13C3D5_49.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.06(g) | Date Analyzed: 11/02/2013 07:52

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	96		40-135
89059-46-1	13C-2,3,7,8-TCDF	103		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	100		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	104		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	103		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	115		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	90		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	100		40-135
114423-97-1	13C-OCDD	110		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1061-000.6 | Lab Sample ID: 320-4670-44

Matrix: Solid | Lab File ID: 31OC13C3D5_39.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:55

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.35(g) | Date Analyzed: 11/02/2013 00:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 0.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		0.97	0.056
51207-31-9	2,3,7,8-TCDF	0.89	J	0.97	0.047
40321-76-4	1,2,3,7,8-PeCDD	0.98	J	4.9	0.089
57117-41-6	1,2,3,7,8-PeCDF	0.30	J	4.9	0.085
57117-31-4	2,3,4,7,8-PeCDF	0.51	J	4.9	0.088
39227-28-6	1,2,3,4,7,8-HxCDD	2.3	J	4.9	0.070
57653-85-7	1,2,3,6,7,8-HxCDD	5.7		4.9	0.051
19408-74-3	1,2,3,7,8,9-HxCDD	4.7	J	4.9	0.049
70648-26-9	1,2,3,4,7,8-HxCDF	1.9	J B	4.9	0.090
57117-44-9	1,2,3,6,7,8-HxCDF	1.3	J	4.9	0.069
60851-34-5	2,3,4,6,7,8-HxCDF	1.2	J	4.9	0.078
72918-21-9	1,2,3,7,8,9-HxCDF	ND		4.9	0.088
35822-46-9	1,2,3,4,6,7,8-HpCDD	110	B	4.9	0.22
67562-39-4	1,2,3,4,6,7,8-HpCDF	22	B	4.9	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.4	J	4.9	0.15
3268-87-9	OCDD	3400	B	9.7	0.72
39001-02-0	OCDF	40	B	9.7	0.084
41903-57-5	Total TCDD	1.3	q	0.97	0.056
30402-14-3	Total TCDF	5.0	q	0.97	0.047
36088-22-9	Total PeCDD	4.7	J q	4.9	0.089
30402-15-4	Total PeCDF	9.5	q	4.9	0.086
34465-46-8	Total HxCDD	34	q	4.9	0.057
55684-94-1	Total HxCDF	28	B	4.9	0.081
37871-00-4	Total HpCDD	200	B	4.9	0.22
38998-75-3	Total HpCDF	56	B	4.9	0.14

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1061-000.6 | Lab Sample ID: 320-4670-44

Matrix: Solid | Lab File ID: 310C13C3D5_39.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:55

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.35(g) | Date Analyzed: 11/02/2013 00:35

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 0.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	60		40-135
89059-46-1	13C-2,3,7,8-TCDF	63		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	65		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	64		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	63		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	58		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	67		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1062-000.8 Lab Sample ID: 320-4670-43

Matrix: Solid Lab File ID: 310C13C3D5_38.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:50

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.35(g) Date Analyzed: 11/01/2013 23:54

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.17	J q	1.0	0.059
40321-76-4	1,2,3,7,8-PeCDD	1.2	J	5.2	0.092
57117-41-6	1,2,3,7,8-PeCDF	0.58	J	5.2	0.098
57117-31-4	2,3,4,7,8-PeCDF	0.84	J *	5.2	0.10
39227-28-6	1,2,3,4,7,8-HxCDD	2.2	J	5.2	0.077
57653-85-7	1,2,3,6,7,8-HxCDD	5.7		5.2	0.056
19408-74-3	1,2,3,7,8,9-HxCDD	4.9	J	5.2	0.054
70648-26-9	1,2,3,4,7,8-HxCDF	2.0	J	5.2	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	1.3	J	5.2	0.077
60851-34-5	2,3,4,6,7,8-HxCDF	1.1	J	5.2	0.088
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.2	0.099
35822-46-9	1,2,3,4,6,7,8-HpCDD	120		5.2	0.29
67562-39-4	1,2,3,4,6,7,8-HpCDF	17	B	5.2	0.12
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.2	J	5.2	0.14
3268-87-9	OCDD	4200	E B	10	0.88
39001-02-0	OCDF	29	B	10	0.083
41903-57-5	Total TCDD	2.2	q	1.0	0.059
30402-14-3	Total TCDF	8.5	q	1.0	0.054
36088-22-9	Total PeCDD	6.9	q	5.2	0.092
30402-15-4	Total PeCDF	13	q	5.2	0.10
34465-46-8	Total HxCDD	41	q	5.2	0.063
55684-94-1	Total HxCDF	24		5.2	0.092
37871-00-4	Total HpCDD	210	B	5.2	0.29
38998-75-3	Total HpCDF	39	B	5.2	0.13

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1062-000.8 | Lab Sample ID: 320-4670-43

Matrix: Solid | Lab File ID: 310C13C3D5_38.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:50

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.35(g) | Date Analyzed: 11/01/2013 23:54

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	66		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	67		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	68		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	67		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	74		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	59		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	64		40-135
114423-97-1	13C-OCDD	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1063-000.6 Lab Sample ID: 320-4670-53

Matrix: Solid Lab File ID: 31OC13C3D5_56.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:05

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.18(g) Date Analyzed: 11/02/2013 12:44

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.050
51207-31-9	2,3,7,8-TCDF	0.88	J	1.0	0.044
40321-76-4	1,2,3,7,8-PeCDD	0.27	J q	5.1	0.064
57117-41-6	1,2,3,7,8-PeCDF	0.40	J q	5.1	0.077
57117-31-4	2,3,4,7,8-PeCDF	0.48	J	5.1	0.080
39227-28-6	1,2,3,4,7,8-HxCDD	0.66	J q	5.1	0.091
57653-85-7	1,2,3,6,7,8-HxCDD	2.0	J	5.1	0.066
19408-74-3	1,2,3,7,8,9-HxCDD	1.7	J	5.1	0.064
70648-26-9	1,2,3,4,7,8-HxCDF	1.8	J	5.1	0.089
57117-44-9	1,2,3,6,7,8-HxCDF	1.4	J	5.1	0.068
60851-34-5	2,3,4,6,7,8-HxCDF	1.1	J	5.1	0.077
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.087
35822-46-9	1,2,3,4,6,7,8-HpCDD	50		5.1	0.17
67562-39-4	1,2,3,4,6,7,8-HpCDF	15		5.1	0.13
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.0	J	5.1	0.15
3268-87-9	OCDD	1700	B	10	0.52
39001-02-0	OCDF	34	B	10	0.074
41903-57-5	Total TCDD	0.76	J q	1.0	0.050
30402-14-3	Total TCDF	4.6	q	1.0	0.044
36088-22-9	Total PeCDD	2.8	J q	5.1	0.064
30402-15-4	Total PeCDF	9.9	q	5.1	0.079
34465-46-8	Total HxCDD	14	q	5.1	0.074
55684-94-1	Total HxCDF	38	I	5.1	0.080
37871-00-4	Total HpCDD	90		5.1	0.17
38998-75-3	Total HpCDF	40		5.1	0.14

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1063-000.6 | Lab Sample ID: 320-4670-53

Matrix: Solid | Lab File ID: 31OC13C3D5_56.d

Analysis Method: 8290 | Date Collected: 10/22/2013 09:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.18(g) | Date Analyzed: 11/02/2013 12:44

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	84		40-135
89059-46-1	13C-2,3,7,8-TCDF	90		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	87		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	91		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	94		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	96		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	74		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	83		40-135
114423-97-1	13C-OCDD	88		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1064-000.6 | Lab Sample ID: 320-4670-52

Matrix: Solid | Lab File ID: 310C13C3D5_53.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.12(g) | Date Analyzed: 11/02/2013 10:38

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.16	J q	1.0	0.042
51207-31-9	2,3,7,8-TCDF	0.99	J	1.0	0.042
40321-76-4	1,2,3,7,8-PeCDD	0.59	J	5.1	0.069
57117-41-6	1,2,3,7,8-PeCDF	0.53	J	5.1	0.076
57117-31-4	2,3,4,7,8-PeCDF	0.64	J	5.1	0.079
39227-28-6	1,2,3,4,7,8-HxCDD	1.2	J	5.1	0.10
57653-85-7	1,2,3,6,7,8-HxCDD	3.8	J	5.1	0.075
19408-74-3	1,2,3,7,8,9-HxCDD	2.6	J	5.1	0.072
70648-26-9	1,2,3,4,7,8-HxCDF	1.8	J q	5.1	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	1.3	J q	5.1	0.080
60851-34-5	2,3,4,6,7,8-HxCDF	2.3	J	5.1	0.091
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.10
35822-46-9	1,2,3,4,6,7,8-HpCDD	87		5.1	0.21
67562-39-4	1,2,3,4,6,7,8-HpCDF	22		5.1	0.14
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.3	J	5.1	0.17
3268-87-9	OCDD	1900	B	10	0.55
39001-02-0	OCDF	44	B	10	0.092
41903-57-5	Total TCDD	2.1	q	1.0	0.042
30402-14-3	Total TCDF	5.8	q	1.0	0.042
36088-22-9	Total PeCDD	4.6	J q	5.1	0.069
30402-15-4	Total PeCDF	12	q	5.1	0.077
34465-46-8	Total HxCDD	27	q	5.1	0.083
55684-94-1	Total HxCDF	28	q	5.1	0.095
37871-00-4	Total HpCDD	150		5.1	0.21
38998-75-3	Total HpCDF	56		5.1	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1064-000.6 Lab Sample ID: 320-4670-52

Matrix: Solid Lab File ID: 31OC13C3D5_53.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:55

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.12(g) Date Analyzed: 11/02/2013 10:38

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 2.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	71		40-135
89059-46-1	13C-2,3,7,8-TCDF	76		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	76		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	76		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	77		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	82		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	65		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	70		40-135
114423-97-1	13C-OCDD	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1065-000.5 Lab Sample ID: 320-4670-51

Matrix: Solid Lab File ID: 31OC13C3D5_52.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:45

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.13(g) Date Analyzed: 11/02/2013 09:57

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.18	J q	1.0	0.037
40321-76-4	1,2,3,7,8-PeCDD	1.1	J	5.1	0.057
57117-41-6	1,2,3,7,8-PeCDF	0.94	J	5.1	0.074
57117-31-4	2,3,4,7,8-PeCDF	1.4	J	5.1	0.077
39227-28-6	1,2,3,4,7,8-HxCDD	2.7	J	5.1	0.12
57653-85-7	1,2,3,6,7,8-HxCDD	6.8		5.1	0.085
19408-74-3	1,2,3,7,8,9-HxCDD	5.4		5.1	0.082
70648-26-9	1,2,3,4,7,8-HxCDF	4.1	J	5.1	0.10
57117-44-9	1,2,3,6,7,8-HxCDF	3.1	J	5.1	0.078
60851-34-5	2,3,4,6,7,8-HxCDF	3.3	J	5.1	0.088
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.1	0.099
35822-46-9	1,2,3,4,6,7,8-HpCDD	170		5.1	0.28
67562-39-4	1,2,3,4,6,7,8-HpCDF	51		5.1	0.22
55673-89-7	1,2,3,4,7,8,9-HpCDF	2.9	J	5.1	0.25
3268-87-9	OCDD	3000	B	10	0.58
39001-02-0	OCDF	100	B	10	0.079
41903-57-5	Total TCDD	1.8	q	1.0	0.037
30402-14-3	Total TCDF	11	q	1.0	0.036
36088-22-9	Total PeCDD	7.4	q	5.1	0.057
30402-15-4	Total PeCDF	26	q	5.1	0.075
34465-46-8	Total HxCDD	45		5.1	0.095
55684-94-1	Total HxCDF	68	q	5.1	0.092
37871-00-4	Total HpCDD	290		5.1	0.28
38998-75-3	Total HpCDF	130		5.1	0.23

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1065-000.5 | Lab Sample ID: 320-4670-51

Matrix: Solid | Lab File ID: 310C13C3D5_52.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:45

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.13(g) | Date Analyzed: 11/02/2013 09:57

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	92		40-135
89059-46-1	13C-2,3,7,8-TCDF	97		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	95		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	98		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	97		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	105		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	83		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	89		40-135
114423-97-1	13C-OCDD	101		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1066-000.9 Lab Sample ID: 320-4670-47

Matrix: Solid Lab File ID: 31OC13C3D5_42.d

Analysis Method: 8290 Date Collected: 10/21/2013 15:15

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.31(g) Date Analyzed: 11/02/2013 02:41

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 2.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	0.26	J q	0.99	0.038
40321-76-4	1,2,3,7,8-PeCDD	1.4	J	5.0	0.057
57117-41-6	1,2,3,7,8-PeCDF	0.35	J q	5.0	0.060
57117-31-4	2,3,4,7,8-PeCDF	0.64	J	5.0	0.062
39227-28-6	1,2,3,4,7,8-HxCDD	3.1	J	5.0	0.051
57653-85-7	1,2,3,6,7,8-HxCDD	7.2		5.0	0.037
19408-74-3	1,2,3,7,8,9-HxCDD	6.2		5.0	0.036
70648-26-9	1,2,3,4,7,8-HxCDF	2.4	J B	5.0	0.090
57117-44-9	1,2,3,6,7,8-HxCDF	1.8	J	5.0	0.069
60851-34-5	2,3,4,6,7,8-HxCDF	1.5	J	5.0	0.078
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.088
35822-46-9	1,2,3,4,6,7,8-HpCDD	150	B	5.0	0.20
67562-39-4	1,2,3,4,6,7,8-HpCDF	33	B	5.0	0.14
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.8	J	5.0	0.17
3268-87-9	OCDD	4400	E B	9.9	0.68
39001-02-0	OCDF	69	B	9.9	0.066
41903-57-5	Total TCDD	1.1	q	0.99	0.038
30402-14-3	Total TCDF	4.8	q	0.99	0.034
36088-22-9	Total PeCDD	5.5	q	5.0	0.057
30402-15-4	Total PeCDF	9.8	q	5.0	0.061
34465-46-8	Total HxCDD	44		5.0	0.041
55684-94-1	Total HxCDF	36	B	5.0	0.081
37871-00-4	Total HpCDD	270	B	5.0	0.20
38998-75-3	Total HpCDF	88	B	5.0	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1066-000.9 | Lab Sample ID: 320-4670-47

Matrix: Solid | Lab File ID: 310C13C3D5_42.d

Analysis Method: 8290 | Date Collected: 10/21/2013 15:15

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.31(g) | Date Analyzed: 11/02/2013 02:41

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 2.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	90		40-135
89059-46-1	13C-2,3,7,8-TCDF	95		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	97		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	98		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	95		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	100		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	82		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	87		40-135
114423-97-1	13C-OCDD	98		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1067-000.7 Lab Sample ID: 320-4670-46

Matrix: Solid Lab File ID: 31OC13C3D5_41.d

Analysis Method: 8290 Date Collected: 10/21/2013 15:05

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.07(g) Date Analyzed: 11/02/2013 01:59

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.14
51207-31-9	2,3,7,8-TCDF	0.71	J q	1.1	0.051
40321-76-4	1,2,3,7,8-PeCDD	1.3	J	5.6	0.095
57117-41-6	1,2,3,7,8-PeCDF	ND		5.6	0.10
57117-31-4	2,3,4,7,8-PeCDF	0.56	J	5.6	0.11
39227-28-6	1,2,3,4,7,8-HxCDD	2.9	J	5.6	0.083
57653-85-7	1,2,3,6,7,8-HxCDD	6.8		5.6	0.061
19408-74-3	1,2,3,7,8,9-HxCDD	6.3		5.6	0.059
70648-26-9	1,2,3,4,7,8-HxCDF	2.1	J B	5.6	0.13
57117-44-9	1,2,3,6,7,8-HxCDF	2.1	J	5.6	0.099
60851-34-5	2,3,4,6,7,8-HxCDF	1.9	J	5.6	0.11
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.6	0.13
35822-46-9	1,2,3,4,6,7,8-HpCDD	130	B	5.6	0.28
67562-39-4	1,2,3,4,6,7,8-HpCDF	24	B	5.6	0.14
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.4	J	5.6	0.17
3268-87-9	OCDD	3700	B	11	0.85
39001-02-0	OCDF	40	B	11	0.097
41903-57-5	Total TCDD	0.82	J q	1.1	0.14
30402-14-3	Total TCDF	4.3	q	1.1	0.051
36088-22-9	Total PeCDD	7.4	q	5.6	0.095
30402-15-4	Total PeCDF	11	q	5.6	0.10
34465-46-8	Total HxCDD	47		5.6	0.068
55684-94-1	Total HxCDF	38	B	5.6	0.12
37871-00-4	Total HpCDD	240	B	5.6	0.28
38998-75-3	Total HpCDF	57	B	5.6	0.16

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1067-000.7 Lab Sample ID: 320-4670-46

Matrix: Solid Lab File ID: 310C13C3D5_41.d

Analysis Method: 8290 Date Collected: 10/21/2013 15:05

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.07(g) Date Analyzed: 11/02/2013 01:59

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 11.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	63		40-135
89059-46-1	13C-2,3,7,8-TCDF	65		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	69		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	67		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	68		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	75		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	64		40-135
114423-97-1	13C-OCDD	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1068-000.5 | Lab Sample ID: 320-4670-54

Matrix: Solid | Lab File ID: 04NO13B3D5_5.d

Analysis Method: 8290 | Date Collected: 10/22/2013 09:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 9.98(g) | Date Analyzed: 11/05/2013 00:21

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.1	0.098
51207-31-9	2,3,7,8-TCDF	1.0	J q	1.1	0.047
40321-76-4	1,2,3,7,8-PeCDD	0.75	J q	5.3	0.077
57117-41-6	1,2,3,7,8-PeCDF	0.48	J q	5.3	0.095
57117-31-4	2,3,4,7,8-PeCDF	0.72	J	5.3	0.099
39227-28-6	1,2,3,4,7,8-HxCDD	2.3	J	5.3	0.16
57653-85-7	1,2,3,6,7,8-HxCDD	7.2		5.3	0.11
19408-74-3	1,2,3,7,8,9-HxCDD	5.2	J	5.3	0.11
70648-26-9	1,2,3,4,7,8-HxCDF	2.5	J	5.3	0.12
57117-44-9	1,2,3,6,7,8-HxCDF	1.9	J	5.3	0.088
60851-34-5	2,3,4,6,7,8-HxCDF	1.8	J	5.3	0.10
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.3	0.11
35822-46-9	1,2,3,4,6,7,8-HpCDD	160		5.3	0.49
67562-39-4	1,2,3,4,6,7,8-HpCDF	41		5.3	0.22
55673-89-7	1,2,3,4,7,8,9-HpCDF	1.7	J	5.3	0.26
3268-87-9	OCDD	2400	B	11	0.67
39001-02-0	OCDF	65	B	11	0.12
41903-57-5	Total TCDD	2.3	q	1.1	0.098
30402-14-3	Total TCDF	5.9	q	1.1	0.047
36088-22-9	Total PeCDD	6.1	q	5.3	0.077
30402-15-4	Total PeCDF	14	q	5.3	0.097
34465-46-8	Total HxCDD	44		5.3	0.13
55684-94-1	Total HxCDF	43		5.3	0.10
37871-00-4	Total HpCDD	270		5.3	0.49
38998-75-3	Total HpCDF	100		5.3	0.24

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1068-000.5 | Lab Sample ID: 320-4670-54

Matrix: Solid | Lab File ID: 04NO13B3D5_5.d

Analysis Method: 8290 | Date Collected: 10/22/2013 09:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 9.98(g) | Date Analyzed: 11/05/2013 00:21

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.0 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29347 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	68		40-135
89059-46-1	13C-2,3,7,8-TCDF	78		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	75		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	75		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	72		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	75		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	62		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	70		40-135
114423-97-1	13C-OCDD	81		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS-DUP06-1013 Lab Sample ID: 320-4670-65 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_89.d

Analysis Method: 8290 Date Collected: 10/22/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 15:44

Sample wt/vol: 10.22(g) Date Analyzed: 12/19/2013 14:37

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6100*	*H B*	*110*	*10*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	52		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1011-000.8 RADL Lab Sample ID: 320-4670-56 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_86.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:40

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.35(g) Date Analyzed: 12/19/2013 12:31

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 12.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*18000*	*H B*	*110*	*14*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	65		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1015-000.8 RADL Lab Sample ID: 320-4670-60 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_87.d

Analysis Method: 8290 Date Collected: 10/22/2013 10:15

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.03(g) Date Analyzed: 12/19/2013 13:13

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5400*	*H B*	*110*	*9.4*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	58		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1016-000.9 RADL Lab Sample ID: 320-4670-61 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_88.d

Analysis Method: 8290 Date Collected: 10/22/2013 10:25

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.28(g) Date Analyzed: 12/19/2013 13:55

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6900*	*H B*	*110*	*11*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP01-1013 Lab Sample ID: 320-4670-10 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_46.d

Analysis Method: 8290 Date Collected: 10/18/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.15(g) Date Analyzed: 12/18/2013 07:22

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32174 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6600*	*H B*	*100*	*7.9*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP03-1013 | Lab Sample ID: 320-4670-33 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_74.d

Analysis Method: 8290 | Date Collected: 10/21/2013 00:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) | Date Analyzed: 12/19/2013 03:40

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 5.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6000*	*H B*	*100*	*12*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	55		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1020-0001 | Lab Sample ID: 320-4670-7 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_45.d

Analysis Method: 8290 | Date Collected: 10/18/2013 11:40

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.14(g) | Date Analyzed: 12/18/2013 06:40

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 2.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32174 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6000*	*H B*	*100*	*7.0*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1022-000.9 Lab Sample ID: 320-4670-5 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_44.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:18

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.00(g) Date Analyzed: 12/18/2013 05:59

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32174 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6400*	*H B*	*110*	*8.3*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	74		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1027-0001 | Lab Sample ID: 320-4670-14 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_62.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:45

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.34(g) | Date Analyzed: 12/18/2013 18:50

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 7.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32193 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6100*	*H B*	*100*	*9.0*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1029-000.6 | Lab Sample ID: 320-4670-12 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_91.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:30

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.37(g) | Date Analyzed: 12/19/2013 16:00

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.6 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6300*	*H B*	*100*	*7.1*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1033-000.8 Lab Sample ID: 320-4670-24 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_68.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) Date Analyzed: 12/18/2013 23:29

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*4500*	*H B*	*100*	*12*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	62		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1036-000.6 Lab Sample ID: 320-4670-20 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_53.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:25

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.30(g) Date Analyzed: 12/18/2013 12:15

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32174 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6800*	*H B*	*100*	*7.6*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	80		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1039-000.9 | Lab Sample ID: 320-4670-16 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_52.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:00

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) | Date Analyzed: 12/18/2013 11:33

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32174 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5700*	*H B*	*110*	*10*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1040-000.9 Lab Sample ID: 320-4670-15 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_51.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:50

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.07(g) Date Analyzed: 12/18/2013 10:51

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32174 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6400*	*H B*	*110*	*9.0*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	75		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1041-000.7 Lab Sample ID: 320-4670-32 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_73.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:35

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) Date Analyzed: 12/19/2013 02:58

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5600*	*H B*	*100*	*9.8*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	52		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1045-000.5 | Lab Sample ID: 320-4670-29 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_72.d

Analysis Method: 8290 | Date Collected: 10/21/2013 10:00

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.29(g) | Date Analyzed: 12/19/2013 02:16

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6400*	*H B*	*100*	*10*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	46		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1047-000.8 Lab Sample ID: 320-4670-27 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_71.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:40

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.25(g) Date Analyzed: 12/19/2013 01:34

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*10000*	*H B*	*110*	*11*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	54		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1048-000.8 Lab Sample ID: 320-4670-26 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_70.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:30

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) Date Analyzed: 12/19/2013 00:52

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5400*	*H B*	*110*	*12*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	56		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1049-000.9 Lab Sample ID: 320-4670-25 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_69.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:20

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.34(g) Date Analyzed: 12/19/2013 00:11

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*4400*	*H B*	*100*	*12*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	64		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1051-000.8 | Lab Sample ID: 320-4670-41 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_77.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:30

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.25(g) | Date Analyzed: 12/19/2013 05:45

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5700*	*H B*	*100*	*8.5*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	62		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1053-000.6 | Lab Sample ID: 320-4670-39 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_76.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:15

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.23(g) | Date Analyzed: 12/19/2013 05:03

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.7 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*7000*	*H B*	*100*	*9.6*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	59		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1057-0001 Lab Sample ID: 320-4670-35 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_75.d

Analysis Method: 8290 Date Collected: 10/21/2013 13:45

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.37(g) Date Analyzed: 12/19/2013 04:21

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32194 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6400*	*H B*	*100*	*9.7*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1059-000.6 Lab Sample ID: 320-4670-49 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_85.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:25

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) Date Analyzed: 12/19/2013 11:50

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6400*	*H B*	*99*	*7.3*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	86		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1060.000.5 | Lab Sample ID: 320-4670-48 RADL

Matrix: Solid | Lab File ID: 16DE13B3D5_84.d

Analysis Method: 8290 | Date Collected: 10/22/2013 08:15

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.06(g) | Date Analyzed: 12/19/2013 11:08

Con. Extract Vol.: 20(uL) | Dilution Factor: 10

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.4 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5500*	*H B*	*100*	*5.3*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	85		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1062-000.8 Lab Sample ID: 320-4670-43 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_82.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:50

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.35(g) Date Analyzed: 12/19/2013 09:33

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*4900*	*H B*	*100*	*10*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1066-000.9 Lab Sample ID: 320-4670-47 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_83.d

Analysis Method: 8290 Date Collected: 10/21/2013 15:15

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.31(g) Date Analyzed: 12/19/2013 10:14

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 2.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*5800*	*H B*	*99*	*7.4*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS-DUP06-1013 RA Lab Sample ID: 320-4670-65 RA

Matrix: Solid Lab File ID: 08NO13B11D2_012.d

Analysis Method: 8290 Date Collected: 10/22/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 15:44

Sample wt/vol: 10.22(g) Date Analyzed: 11/09/2013 05:41

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.84	J	1.1	0.058

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1011-000.8 RA Lab Sample ID: 320-4670-56 RA

Matrix: Solid Lab File ID: 12NO1311D2_007.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:40

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.35(g) Date Analyzed: 11/13/2013 01:51

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 12.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.76	J	1.1	0.072

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	78		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1012-000.7 RA Lab Sample ID: 320-4670-57 RA

Matrix: Solid Lab File ID: 12NO1311D2_008.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:50

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.27(g) Date Analyzed: 11/13/2013 02:30

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.0	J	1.1	0.067

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1013-000.7 RA Lab Sample ID: 320-4670-58 RA

Matrix: Solid Lab File ID: 12NO1311D2_009.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:55

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) Date Analyzed: 11/13/2013 03:09

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.4		1.0	0.064

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	84		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1014-0001 RA | Lab Sample ID: 320-4670-59 RA

Matrix: Solid | Lab File ID: 12NO1311D2_010.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:05

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.15(g) | Date Analyzed: 11/13/2013 03:48

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.3		1.1	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1015-000.8 RA Lab Sample ID: 320-4670-60 RA

Matrix: Solid Lab File ID: 18NO135D2_004.d

Analysis Method: 8290 Date Collected: 10/22/2013 10:15

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.03(g) Date Analyzed: 11/18/2013 18:35

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30113 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	G	1.5	1.5

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	63		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1016-000.9 RA | Lab Sample ID: 320-4670-61 RA

Matrix: Solid | Lab File ID: 12NO1311D2_012.d

Analysis Method: 8290 | Date Collected: 10/22/2013 10:25

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.28(g) | Date Analyzed: 11/13/2013 05:05

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 9.1 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.1		1.1	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	75		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1017-000.8 RA Lab Sample ID: 320-4670-62 RA

Matrix: Solid Lab File ID: 12NO1311D2_013.d

Analysis Method: 8290 Date Collected: 10/22/2013 10:55

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.57(g) Date Analyzed: 11/13/2013 05:44

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.69	J	1.0	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1018-000.8 RA Lab Sample ID: 320-4670-63 RA

Matrix: Solid Lab File ID: 18DE1311D2_012.d

Analysis Method: 8290 Date Collected: 10/22/2013 11:05

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.15(g) Date Analyzed: 12/19/2013 07:42

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.46*	*J H*	*1.0*	*0.059*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	91		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-003-SS1019-000.5 RA Lab Sample ID: 320-4670-64 RA

Matrix: Solid Lab File ID: 08NO13B11D2_009.d

Analysis Method: 8290 Date Collected: 10/22/2013 11:15

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.38(g) Date Analyzed: 11/09/2013 03:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.5		1.0	0.064

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	64		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP01-1013 Lab Sample ID: 320-4670-10 RA

Matrix: Solid Lab File ID: 16DE13A11D2_010.d

Analysis Method: 8290 Date Collected: 10/18/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.15(g) Date Analyzed: 12/17/2013 03:54

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.17*	*J H*	*1.0*	*0.075*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP02-1013 Lab Sample ID: 320-4670-22 RA

Matrix: Solid Lab File ID: 18NO135D2_007.d

Analysis Method: 8290 Date Collected: 10/18/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 9.90(g) Date Analyzed: 11/18/2013 20:27

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30113 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	G	1.5	1.5

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	61		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP03-1013 Lab Sample ID: 320-4670-33 RA

Matrix: Solid Lab File ID: 17DE1311D2_007.d

Analysis Method: 8290 Date Collected: 10/21/2013 00:00

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) Date Analyzed: 12/18/2013 02:40

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.15*	*J H*	*1.0*	*0.073*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP04-1013 Lab Sample ID: 320-4670-45 RA

Matrix: Solid Lab File ID: 17DE1311D2_015.d

Analysis Method: 8290 Date Collected: 10/21/2013 00:00

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.10(g) Date Analyzed: 12/18/2013 07:51

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.42*	*J H q*	*1.0*	*0.064*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS-DUP05-1013 Lab Sample ID: 320-4670-55 RA

Matrix: Solid Lab File ID: 12NO1311D2_006.d

Analysis Method: 8290 Date Collected: 10/22/2013 00:00

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.26(g) Date Analyzed: 11/13/2013 01:12

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.2		1.0	0.22

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1020-0001 RA Lab Sample ID: 320-4670-7 RA

Matrix: Solid Lab File ID: 16DE13A11D2_008.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:40

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.14(g) Date Analyzed: 12/17/2013 02:36

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 2.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.19*	*J H*	*1.0*	*0.067*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1021-000.7 RA Lab Sample ID: 320-4670-6 RA

Matrix: Solid Lab File ID: 16DE13A11D2_007.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:30

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) Date Analyzed: 12/17/2013 01:58

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.69*	*J H*	*1.0*	*0.11*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1022-000.9 RA Lab Sample ID: 320-4670-5 RA

Matrix: Solid Lab File ID: 16DE13A11D2_006.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:18

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.00(g) Date Analyzed: 12/17/2013 01:19

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*ND*	*H*	*1.1*	*0.071*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1023-000.8 RA Lab Sample ID: 320-4670-4 RA

Matrix: Solid Lab File ID: 18NO135D2_009.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:10

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.12(g) Date Analyzed: 11/18/2013 21:42

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30113 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.0	q	1.0	0.97

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	80		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1024-000.6 RA Lab Sample ID: 320-4670-3 RA

Matrix: Solid Lab File ID: 18NO135D2_008.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:05

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 9.91(g) Date Analyzed: 11/18/2013 21:04

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30113 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND	G	1.2	1.2

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	60		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1025-000.8 RA Lab Sample ID: 320-4670-1 RA

Matrix: Solid Lab File ID: 19no13a5d2_005.d

Analysis Method: 8290 Date Collected: 10/18/2013 10:45

Extract. Method: 8290 Date Extracted: 10/24/2013 18:17

Sample wt/vol: 10.30(g) Date Analyzed: 11/19/2013 20:30

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30201 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.0	J q	1.1	0.73

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	80		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1026-000.8 RA | Lab Sample ID: 320-4670-2 RA

Matrix: Solid | Lab File ID: 16DE13A11D2_005.d

Analysis Method: 8290 | Date Collected: 10/18/2013 10:55

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.36(g) | Date Analyzed: 12/17/2013 00:40

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 4.8 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.21*	*J H*	*1.0*	*0.096*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1027-0001 RA Lab Sample ID: 320-4670-14 RA

Matrix: Solid Lab File ID: 16DE13A11D2_012.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:45

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.34(g) Date Analyzed: 12/17/2013 05:12

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*ND*	*H*	*1.0*	*0.051*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	100		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1028-000.8 RA | Lab Sample ID: 320-4670-13 RA

Matrix: Solid | Lab File ID: 08NO13B11D2_013.d

Analysis Method: 8290 | Date Collected: 10/18/2013 13:35

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.63(g) | Date Analyzed: 11/09/2013 06:20

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 8.2 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.54	J	1.0	0.052

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	91		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1029-000.6 RA Lab Sample ID: 320-4670-12 RA

Matrix: Solid Lab File ID: 19no13a5d2_007.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:30

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.37(g) Date Analyzed: 11/19/2013 21:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30201 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.7		1.0	0.64

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	91		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1029-000.6 Lab Sample ID: 320-4670-12 RADL

Matrix: Solid Lab File ID: 16DE13B3D5_91.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:30

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.37(g) Date Analyzed: 12/19/2013 16:00

Con. Extract Vol.: 20(uL) Dilution Factor: 10

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32323 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
3268-87-9	*OCDD*	*6300*	*H B*	*100*	*7.1*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
114423-97-1	13C-OCDD	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1030-000.6 RA Lab Sample ID: 320-4670-11 RA

Matrix: Solid Lab File ID: 16DE13A11D2_011.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:20

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.04(g) Date Analyzed: 12/17/2013 04:33

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.71*	*J H*	*1.0*	*0.070*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1031-000.8 RA Lab Sample ID: 320-4670-9 RA

Matrix: Solid Lab File ID: 16DE13A11D2_009.d

Analysis Method: 8290 Date Collected: 10/18/2013 12:05

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.27(g) Date Analyzed: 12/17/2013 03:15

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32057 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.66*	*J H*	*1.1*	*0.074*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1032-000.9 RA Lab Sample ID: 320-4670-8 RA

Matrix: Solid Lab File ID: 19no13a5d2_006.d

Analysis Method: 8290 Date Collected: 10/18/2013 11:55

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.29(g) Date Analyzed: 11/19/2013 21:08

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30201 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	ND		1.1	0.97

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1033-000.8 RA Lab Sample ID: 320-4670-24 RA

Matrix: Solid Lab File ID: 17DE1311D2_004.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.10(g) Date Analyzed: 12/18/2013 00:44

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*ND*	*H*	*1.0*	*0.088*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	70		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1034-000.6 RA | Lab Sample ID: 320-4670-23 RA

Matrix: Solid | Lab File ID: 07NO1311D2_005.d

Analysis Method: 8290 | Date Collected: 10/18/2013 14:45

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) | Date Analyzed: 11/07/2013 19:43

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.9 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.94	J	1.0	0.044

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	81		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1035-0001 RA Lab Sample ID: 320-4670-21 RA

Matrix: Solid Lab File ID: 18NO135D2_006.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:35

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.33(g) Date Analyzed: 11/18/2013 19:50

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.1 GPC Cleanup: (Y/N) N

Analysis Batch No.: 30113 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.3		1.0	0.78

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	81		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1036-000.6 RA Lab Sample ID: 320-4670-20 RA

Matrix: Solid Lab File ID: 18NO135D2_005.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:25

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.30(g) Date Analyzed: 11/18/2013 19:12

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 30113 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.4	G	1.1	1.1

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	74		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1037-000.7 RA Lab Sample ID: 320-4670-19 RA

Matrix: Solid Lab File ID: 12NO1311D2_015.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:15

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.02(g) Date Analyzed: 11/13/2013 07:02

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.80	J	1.0	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	75		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1038-000.7 RA Lab Sample ID: 320-4670-18 RA

Matrix: Solid Lab File ID: 12NO1311D2_014.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:10

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.18(g) Date Analyzed: 11/13/2013 06:23

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 8.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29775 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.88	J	1.1	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1039-000.9 RA Lab Sample ID: 320-4670-16 RA

Matrix: Solid Lab File ID: 08NO13B11D2_015.d

Analysis Method: 8290 Date Collected: 10/18/2013 14:00

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.21(g) Date Analyzed: 11/09/2013 07:38

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 9.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.64	J	1.1	0.062

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1040-000.9 RA Lab Sample ID: 320-4670-15 RA

Matrix: Solid Lab File ID: 08NO13B11D2_014.d

Analysis Method: 8290 Date Collected: 10/18/2013 13:50

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10.07(g) Date Analyzed: 11/09/2013 06:59

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 10.9 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.95	J	1.1	0.060

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	83		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1041-000.7 RA Lab Sample ID: 320-4670-32 RA

Matrix: Solid Lab File ID: 17DE1311D2_006.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:35

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.57(g) Date Analyzed: 12/18/2013 02:01

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*ND*	*H*	*1.0*	*0.12*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1042-000.5 RA Lab Sample ID: 320-4670-31 RA

Matrix: Solid Lab File ID: 07NO1311D2_011.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:20

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.13(g) Date Analyzed: 11/07/2013 23:36

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.2		1.1	0.057

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	67		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1044-000.5 RA Lab Sample ID: 320-4670-30 RA

Matrix: Solid Lab File ID: 07NO1311D2_010.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:10

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) Date Analyzed: 11/07/2013 22:57

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.64	J	1.0	0.052

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1045-000.5 RA Lab Sample ID: 320-4670-29 RA

Matrix: Solid Lab File ID: 07NO1311D2_009.d

Analysis Method: 8290 Date Collected: 10/21/2013 10:00

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.29(g) Date Analyzed: 11/07/2013 22:18

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.8 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.2		1.0	0.057

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	62		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1046-000.5 RA Lab Sample ID: 320-4670-28 RA

Matrix: Solid Lab File ID: 17DE1311D2_005.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:50

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.07(g) Date Analyzed: 12/18/2013 01:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.48*	*J H*	*1.0*	*0.077*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	82		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1047-000.8 RA Lab Sample ID: 320-4670-27 RA

Matrix: Solid Lab File ID: 07NO1311D2_008.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:40

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.25(g) Date Analyzed: 11/07/2013 21:40

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.2		1.1	0.061

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1048-000.8 RA Lab Sample ID: 320-4670-26 RA

Matrix: Solid Lab File ID: 07NO1311D2_007.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:30

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.08(g) Date Analyzed: 11/07/2013 21:01

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.8		1.1	0.057

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	69		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1049-000.9 RA Lab Sample ID: 320-4670-25 RA

Matrix: Solid Lab File ID: 07NO1311D2_006.d

Analysis Method: 8290 Date Collected: 10/21/2013 09:20

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.34(g) Date Analyzed: 11/07/2013 20:22

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.66	J	1.0	0.051

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1050-000.6 RA Lab Sample ID: 320-4670-42 RA

Matrix: Solid Lab File ID: 08NO13A11D2_013.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:40

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.14(g) Date Analyzed: 11/08/2013 18:27

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.6 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29533 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.43	J	1.1	0.091

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	76		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1051-000.8 RA | Lab Sample ID: 320-4670-41 RA

Matrix: Solid | Lab File ID: 17DE1311D2_013.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:30

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.25(g) | Date Analyzed: 12/18/2013 06:34

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 3.3 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.33*	*J H q*	*1.0*	*0.097*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1052-000.6 RA Lab Sample ID: 320-4670-40 RA

Matrix: Solid Lab File ID: 07NO1311D2_014.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:25

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.46(g) Date Analyzed: 11/08/2013 01:33

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 7.3 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.2		1.0	0.060

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	67		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1053-000.6 RA Lab Sample ID: 320-4670-39 RA

Matrix: Solid Lab File ID: 07NO1311D2_013.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:15

Extract. Method: 8290 Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.23(g) Date Analyzed: 11/08/2013 00:54

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.77	J	1.0	0.053

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	73		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1054-000.6 RA Lab Sample ID: 320-4670-38 RA

Matrix: Solid Lab File ID: 17DE1311D2_010.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:05

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.07(g) Date Analyzed: 12/18/2013 04:37

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.17*	*J H q*	*1.0*	*0.063*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	71		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1055-000.8 RA Lab Sample ID: 320-4670-37 RA

Matrix: Solid Lab File ID: 17DE1311D2_009.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:00

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.05(g) Date Analyzed: 12/18/2013 03:58

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.18*	*J H*	*1.1*	*0.076*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	72		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1056-000.6 RA Lab Sample ID: 320-4670-36 RA

Matrix: Solid Lab File ID: 17DE1311D2_008.d

Analysis Method: 8290 Date Collected: 10/21/2013 13:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 9.99(g) Date Analyzed: 12/18/2013 03:19

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.1 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.19*	*J H q*	*1.0*	*0.074*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	74		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1057-0001 RA Lab Sample ID: 320-4670-35 RA

Matrix: Solid Lab File ID: 07NO1311D2_012.d

Analysis Method: 8290 Date Collected: 10/21/2013 13:45

Extract. Method: 8290 Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10.37(g) Date Analyzed: 11/08/2013 00:15

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29487 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.56	J	1.0	0.045

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	77		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1058-000.5 RA Lab Sample ID: 320-4670-50 RA

Matrix: Solid Lab File ID: 18DE1311D2_006.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:35

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.10(g) Date Analyzed: 12/19/2013 03:49

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 5.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.42*	*J H*	*1.0*	*0.079*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	87		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1059-000.6 RA Lab Sample ID: 320-4670-49 RA

Matrix: Solid Lab File ID: 18DE1311D2_005.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:25

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.47(g) Date Analyzed: 12/19/2013 03:10

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*ND*	*H*	*0.99*	*0.065*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	100		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1060.000.5 RA Lab Sample ID: 320-4670-48 RA

Matrix: Solid Lab File ID: 08NO13B11D2_004.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:15

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.06(g) Date Analyzed: 11/09/2013 00:30

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 4.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	2.0		1.0	0.067

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	108		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1061-000.6 RA Lab Sample ID: 320-4670-44 RA

Matrix: Solid Lab File ID: 17DE1311D2_014.d

Analysis Method: 8290 Date Collected: 10/21/2013 14:55

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.35(g) Date Analyzed: 12/18/2013 07:12

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 0.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32221 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.43*	*J H*	*0.97*	*0.061*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	68		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1062-000.8 RA | Lab Sample ID: 320-4670-43 RA

Matrix: Solid | Lab File ID: 08NO13A11D2_014.d

Analysis Method: 8290 | Date Collected: 10/21/2013 14:50

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:23

Sample wt/vol: 10.35(g) | Date Analyzed: 11/08/2013 19:06

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 6.7 | GPC Cleanup: (Y/N) N

Analysis Batch No.: 29533 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.76	J	1.0	0.069

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	65		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1063-000.6 RA Lab Sample ID: 320-4670-53 RA

Matrix: Solid Lab File ID: 18DE1311D2_010.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:05

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.18(g) Date Analyzed: 12/19/2013 06:24

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.5 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.49*	*J H*	*1.0*	*0.069*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	95		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1064-000.6 RA Lab Sample ID: 320-4670-52 RA

Matrix: Solid Lab File ID: 18DE1311D2_007.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:55

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.12(g) Date Analyzed: 12/19/2013 04:28

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 2.7 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.44*	*J H q*	*1.0*	*0.080*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	79		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1065-000.5 RA Lab Sample ID: 320-4670-51 RA

Matrix: Solid Lab File ID: 08NO13B11D2_005.d

Analysis Method: 8290 Date Collected: 10/22/2013 08:45

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10.13(g) Date Analyzed: 11/09/2013 01:09

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 3.4 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29560 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	1.0		1.0	0.043

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	96		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1066-000.9 RA Lab Sample ID: 320-4670-47 RA

Matrix: Solid Lab File ID: 08NO13A11D2_015.d

Analysis Method: 8290 Date Collected: 10/21/2013 15:15

Extract. Method: 8290 Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.31(g) Date Analyzed: 11/08/2013 19:45

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 2.2 GPC Cleanup:(Y/N) N

Analysis Batch No.: 29533 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	0.51	J	0.99	0.047

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	97		40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1067-000.7 RA | Lab Sample ID: 320-4670-46 RA

Matrix: Solid | Lab File ID: 18DE1311D2_004.d

Analysis Method: 8290 | Date Collected: 10/21/2013 15:05

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10.07(g) | Date Analyzed: 12/19/2013 02:31

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: 11.5 | GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*0.82*	*J H q*	*1.1*	*0.29*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	32	*	40-135

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: TF2-004/5-SS1068-000.5 RA Lab Sample ID: 320-4670-54 RA

Matrix: Solid Lab File ID: 18DE1311D2_011.d

Analysis Method: 8290 Date Collected: 10/22/2013 09:15

Extract. Method: 8290 Date Extracted: 10/25/2013 15:42

Sample wt/vol: 9.98(g) Date Analyzed: 12/19/2013 07:03

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: 6.0 GPC Cleanup:(Y/N) N

Analysis Batch No.: 32234 Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	*2,3,7,8-TCDF*	*ND*	*H*	*1.1*	*0.33*

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	74		40-135

APPENDIX C

REGIONAL WORKSHEETS

EPA-NE - Data Validation Worksheet

Case: 43019 SDG: 320-46701-1

VOA/SV/Pest/PCB

COMPLETE SDG FILE (CSF) AUDIT

Organic Fractions: Dioxins PCDD/PCDFs

Missing Information	Date Lab Contacted	Date Received
	See DV Report	

Validator: J Kalnyat Date: 1/22/14

EPA-NE - Data Validation
VOA/SV/Pest/PCB-I

Case: _____ SDG: _____

Sampler: _____ Company: _____ Contacted: Yes No See DV Report Date: _____

1. **PRESERVATION AND HOLDING TIMES** - Circle sample numbers with exceeded technical holding times or omitted preservation.
List all required preservation codes and circle omitted preservation codes.
Circle all exceeded technical holding times.
Identify extraction technique after "# of Days"/(*Extraction Code).

Sample No. (TR No.)	Matrix	Pres. Code	Date Sampled	VOA			BNA					PEST/PCB				
				Date Analyzed	# of Days from Sampling to Analysis	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action	Date Extracted	# of Days from Sampling to Extr./(*)	Date Analyzed	# of Days from Sampling to Anal.	Action

Preservation Code:
1. Cool @ 4°C (± 2°)
2. Preserve with HCl to at least pH 2
3. Protect from light
4. Freeze
5. Room Temperature (Avoid excessive heat)

(*Extraction Code:)
L/L - Liquid/Liquid
SON - Sonication
SEP - Separatory Funnel
SOX - Soxhlet
SPE - Solid Phase Extraction

Action Code:
J - Estimate (J) Detected Values
UJ - Estimate (UJ) Non-Detected Values
R - Reject (R) Non-Detected Values

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-II-A

II A. GC/MS INSTRUMENT PERFORMANCE CHECK – (TUNING) **Note: NOT for Selected Ion Monitoring (SIM) Analysis**

List all Instrument Performance Checks that are outside method QC tuning acceptance criteria.

VOA Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

SV Instrument Performance Check (Compound Name)	Analysis Date and Time	Instrument	Ions Affected	Percent Relative Abundance	QC Limits	Samples Affected	Action
Comments:							

If tuning compounds and criteria are different from those specified in CLP SOW SOM01.2, the validator should include a copy of the method-specific tuning criteria with this worksheet.

Validator:_____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV-II-B

II B. GC/MS INSTRUMENT PERFORMANCE CHECK – 12-hour clock

List all Instrument Performance Checks and/or calibration standards that were analyzed beyond the 12-hour requirement.

Fraction (VOA or SV)	Tune Standard or CCV ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-II-A

II A. GC/ECD INSTRUMENT PERFORMANCE CHECK - Resolution - List all analytes that are outside resolution criteria.

RCM (Section II)	Date/Time	Instr.	Column	Compound	% Resolution	Samples Affected	Action
PEM (Section II and IV)							
INDA & B (Section III)							
INDA & B (Section IV)							

Validator:_____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-II-B

II B. GC/ECD INSTRUMENT PERFORMANCE CHECK - Retention Times - List all analytes that exceed retention time criteria.

PEM (Section II and IV)	Date/Time	Instr.	Column	Compound	RT Window	RT	Samples Affected	Action
INDA & B (Section IV)								

Validator: _____ Date: 1/22/14

EPA NE - Data Validation Worksheet

Case:_____ SDG:_____

Pest/PCB-II-C

II C. GC/ECD INSTRUMENT PERFORMANCE CHECK - Accuracy Check of Initial Calibration

See DV Report

List all analytes that are outside the %D criteria.

PEM Sample ID	Date/Time	Instr.	Column	Compound	%D	Samples Affected	Action

Validator: JK

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-II-D

II D. GC/ECD INSTRUMENT PERFORMANCE CHECK - Pesticide Degradation - List all analytes that exceed degradation criteria.

PEM (Section II)	Date/Time	Instr.	Column	DDT, Endrin, or Combined	% Breakdown	DDD, DDE, Endrin ketone, Endrin aldehyde Present	Samples Affected	Action
PEM (Section IV)								

Validator:_____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

INDA/INDB, INDC, or Multicomponent	Date	Instrument	Column	Analytes	Recalculated RT Window	%RSD	Samples Affected	Action
A. % RSD Linearity								
B. Retention Time Windows								

Did the laboratory follow the correct analytical sequence? **Y N**

Did the laboratory analyze the initial calibration at the appropriate concentration levels? **Y N**

Validator: _____

Date: 1/22/14

Case:_____ SDG:_____

VOA/SV-III

III. INITIAL CALIBRATION - List all analytes that are outside calibration criteria.

See DV Report

Date of ICAL	Instrument	Fraction	Matrix	Compound	%RSD	RRF*	Samples Affected	Action (Detect/ND)
Comments:								

* RRF and average RRF

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. **Y N**

Did the laboratory analyze the initial calibration at the appropriate levels? **Y N**

Validator:_____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-IV-A

IV A. CALIBRATION VERIFICATION - Accuracy Check (%D) - List all analytes that are outside calibration criteria.

Standard ID	Date	Time	Instrument	Column	Analyte	%D	Samples Affected	Action (Detect/ND)

Validator:_____ Date: 1/24/14

1/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-IV-B

IV B. CALIBRATION VERIFICATION – Time Elapsed - List all non-compliant standards.

Fraction (PEST or PCB)	Instrument and Column ID	Instrument Blank or Sample ID	Injection Date and Time	Time Elapsed (hours)	Samples Affected	Action (Detect/ND)

Validator:_____

Date: 1/22/14

1/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-IV

IV. CONTINUING CALIBRATION - List all analytes that are outside calibration criteria.

Fraction (VOA/SV)	Instrument	Date of ICAL	Date & Time of CCAL	Matrix	Compound	%D	RRF	Samples Affected	Action (Detect/ND)

Comments:

Did the laboratory follow the correct 12-hour clock analytical sequence? If no, fill out Worksheet VOA/SV-II B. Y N

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV/Pest/PCB-V-A
V. A. BLANK ANALYSIS

List the blank contamination below. Concentration Level:____

Sampler: _____ Company: _____ Contacted: Yes No Date:_____

1. Laboratory: Method, Storage and Instrument Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

2. Field: Equipment (Rinsate), Trip and Bottle Blanks

Fraction/ Matrix	Sample ID (Blank Type)	Date Extracted	Date Analyzed	Instrument/ Column	Compound	Conc. (units)

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV/Pest/PCB-V-B
V. B. BLANK ACTIONS - List the maximum concentrations of blank compounds.

Compound	Type of Blank	Date Blank Sampled, Originated, or Analyzed	Max. Conc. (unit)	Blank CRQL (unit)	Blank 2xCRQL[1] (unit)	Blank 5xCRQL[2] (unit)	Samples Affected	Action

[1] For methylene chloride, 2-butanone, and acetone only.
[2] For bis(2-ethylhexyl)phthalate only.

Comments: _____

Validator: JK

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

SV-VI-A

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria															
SOM01.2		Phenol-d_5		BCE		2CP		4MP		NBZ		2NP		DCP		4CA	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		39-106	17-103	40-105	12-98	41-106	13-101	25-111	8-100	43-108	16-103	40-108	16-104	37-105	23-104	1-145	1-145
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

BCE= Bis(2-chloroethyl)ether-d_8
NBZ= Nitrobenzene-d_5
4CA= 4-Chloroaniline-d_4

2CP= 2-Chlorophenol-d_4
2NP= 2-Nitrophenol-d_4

4MP= 4-Methylphenol-d_8
DCP= 2,4-Dichlorophenol-d_3

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

SV-VI-A (Cont'd)

VI A. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

Method		Semi-Volatile Method QC Acceptance Criteria													
		DMP		ACY		4NP		FLR		NMP		ANC		PYR		BAP	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		47-114	43-111	41-107	20-97	33-116	16-166	42-111	40-108	22-104	1-121	44-110	22-98	52-119	51-120	32-121	43-111
Other:																	
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DMP=Dimethylphthalate-d_6 ACY=Acenaphthylene-d_8 4NP=4-Nitrophenol-d_4

FLR=Fluorene-d_{10} NMP=4,6-Dinitro-2-methylphenol-d_2 ANC=Anthracene-d_{10}

PYR=Pyrene-d_{10} BAP=Benzo(a)pyene-d_{12}

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

SV-VI-B

VI B. DEUTERATED MONITORING COMPOUNDs (DMCs) for SIM – List all DMC recoveries that are outside the control limits.

Method: SOM01.2		Semi-Volatile Organics by Selected Ion Monitoring Analysis Acceptable QC Criteria						
		Fluoranthene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)	2-Methylnaphthalene-d_{10} Water 50-150 Soil 50-150	Affected Analytes	Action (Detection/ND)
Sample ID	Matrix	% Recovery			% Recovery		
			Fluoranthene			Naphthalene	
			Pyrene			2-Methylnaphthalene	
			Benzo(a)anthracene			Acenaphthylene	
			Chrysene			Acenaphthene	
			Benzo(b)fluoranthene			Fluorene	
			Benzo(k)fluoranthene			Pentachlorophenol	
			Benzo(a)pyrene			Phenanthrene	
			Indeno(1,2,3-cd)pyrene			Anthracene	
			Dibenzo(a,h)anthracene				
			Benzo(g,h,i)perylene				

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA-VI

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria											
SOM01.2		Vinyl chloride-d_3		Chloroethane-d_5		DCE		2-Butanone-d_5		Chloroform-d		DCA		Benzene-d_6	
		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		65-131	68-122	71-131	61-130	55-104	45-132	49-155	20-182	78-121	72-123	78-129	79-122	77-124	80-121
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DCE= 1,1-Dichloroethene –d_2 DCA= 1,2-Dichloroethane-d_4

Validator: _____

Date: 1/22/14

1/13

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA-VI (Cont'd)

VI. DEUTERATED MONITORING COMPOUNDs (DMCs) – List all DMC recoveries that are outside the control limits.

NOTE: The same control limits are applied to the selected ion monitoring (SIM) analysis.

Method		Volatile Method QC Acceptance Criteria													
		DPA		Toluene-d_8		TDP		2-Hexanone-d_5		1,4-Dioxane-d_8		TCA		DCZ	
SOM01.2		Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil	Water	Soil
		79-124	74-124	77-121	78-121	73-121	72-130	28-135	17-184	50-150	50-150	73-125	56-161	80-131	70-131
Other:															
Sample ID	Matrix	% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery		% Recovery	

DPA= 1.2-Dichloropropane –d_6 TDP= trans-1.3-Dichloropropene-d_4

TCA= 1.1.2.2-Tetracholoroethane-d_2 DCZ= 1.2-Dichlorobenzene-d_4

Note: Refer to NFG for guidance on actions required for failures in DMC recoveries.

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-VI

VI. SURROGATE COMPOUNDS: Spike Recoveries and Retention Time Shift

List all surrogate analytes that are outside the percent recovery and retention time criteria.

Method		% Recovery QC Limits				Retention Time Windows				
		Column 1		Column 2		Column 1		Column 2		
		TCX	DCB	TCX	DCB	TCX	DCB	TCX	DCB	
SOM01.2		30-150	30-150	30-150	30-150					
Other:										
Sample Number/Matrix	**Date/Time**	**% Recovery**				**Retention Time Shift**				**Action**

Note: Refer to NFG for guidance on actions required for failures in surrogate recoveries.

Validator:_____

Date: 1/22/14

Case:_____ SDG:_____

Pest/PCB-VII-C

VII C. PESTICIDE/PCB CLEANUP - Sulfur Cleanup

See DV Report

Sample chromatograms were reviewed and found to be free from interfering sulfur peaks. **Y N**

If no, list the compounds and samples affected by the unacceptable sulfur cleanup.

Samples Affected	Sulfur Interference (Major/Minor/Limited)	Action

Were all target compounds less than QL for the Sulfur blank? **Y N**

Action: Refer to EPA New England Data Review Program Supplement guidance (Section 2.11) for actions to be taken for deficient sulfur cleanup. Comment on any action taken below.

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

Pest/PCB-VII-A

VII A. PESTICIDE/PCB CLEANUP - GPC Calibration and Verification

The GPC Calibration data and GPC Calibration Verification Solution recovery data were reviewed and found to meet criteria. **Y N NA**

If no, list the compounds and samples affected by the unacceptable GPC performance.

Date/Time of GPC Calibration or Calib. Verification	GC Analysis Date	Analyte	GPC % Resolution or RT Shift	% Rec	QC Limits	Samples Affected	Action

Were all target compounds less than QL for the GPC blank? **Y N**

Were acceptable GPC Calibration Verifications performed at the correct frequency? **Y N**

Were Aroclor patterns similar to those corresponding Aroclor standards of the Initial Calibration sequence? **Y N**

Action: Refer to National Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

VOA/SV-VII

VII. SEMIVOLATILE CLEANUP - GPC Calibration and Verification– List all analytes that are outside method cleanup QC criteria.

Type of Cleanup	Instrument # or Lot #	Date/Time GPC Calibrated or Check Solution Analyzed	Compound	% Rec	QC Limits	Samples Affected	Action

Did the GPC column meet: resolution requirements? Y N

Peak shape requirements? Y N

Retention time shift requirements? Y N

Was the GPC calibration, Silica Gel cleanup checked at the method required frequency with correct compounds and concentrations? Y N

Were all compounds less than QL for the GPC/Silica Gel/Acid-Partition blank? Y N

Did the blank surrogate recoveries and IS area counts and RTs (if added) meet method QC acceptance criteria? Y N

Comments:

Validator:_____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-VII-B

VII B. PESTICIDE/PCB CLEANUP - Florisil Cartridge Performance Check

The Florisil Cartridge Performance Check recovery data were reviewed and found to meet criteria. **Y N**

If no, list the analytes and samples affected by the unacceptable Florisil Cartridge Check.

Florisil Cartridge Lot #	Date of Florisil Cartridge Check	GC Analysis Date	Analyte	% Rec.	QC Limits	Samples Affected	Action

Were acceptable Florisil Cartridge Performance Checks performed at the correct frequency? **Y N**

Action: Refer to Functional Guidelines for the appropriate action to be taken. Comment on any action taken below:

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

VOA/SV/Pest/PCB-VIII

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE - List all MS/MSD analytes that are outside method QC acceptance criteria. Use a separate worksheet for each MS/MSD pair.

Sample # _____ Matrix_____ Concentration Level _____

Fraction	Compound	Column 1			Column 2*			Method QC Limits		Action
		MS % Rec.	MSD % Rec.	RPD	MS % Rec.	MSD % Rec.	RPD	% Recovery	RPD	

* For Pest/PCB only.

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-IX

IX. FIELD DUPLICATE PRECISION - List all field duplicate analytes that are outside criteria. Use a separate worksheet for each field duplicate pair.

See DV Report

Sample Number _____ Duplicate Sample Number _____ Matrix _____

Fraction	Compound	Sample Conc.	Sample QL		Duplicate Conc.	Duplicate QL		RPD	QC Acceptance Criteria RPD or NA*	Action
			SQL	2xSQL		SQL	2xSQL			

*For instances where one duplicate result is ND (or reported less than the sample QL).

Does the MS/MSD data indicate acceptable laboratory precision? Y N

Refer to EPA New England Data Review Program Supplemental guidance for field duplicate actions (Section 2.8).
Comments: _____

_____

Sampler Name: _____ Contractor Name: _____ Date Contacted: _____

Reason for Contact and resolution obtained: _____

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-X-A

X A. ACCURACY CHECK (Performance Evaluation Results) - List all analytes that are outside criteria. See DV Report

Are more than one-half of the PES analytes within criteria for each parameter? Y N

PE Sample Number	Ampule Number	Fraction	Type of PES	Matrix	Analyte	Conc.	Region I EPA PES Scores*	Non-EPA PES Scores**	Samples Affected	Action

* For Region I PESs indicate the Region I PES Score Report Result: Action High; Action Low; TCL MISS; TCL CONTAMINANT; TIC HIT; TIC MISS; TIC CONTAMINANT

** For Non-EPA PESs indicate the non-EPA PES Score: PES COMPOUND MISS; PES COMPOUND CONTAMINANT; PES COMPOUND HIT (% Recovery Limits)

Refer to EPA New England Data Review Program Supplemental guidance for EPA PES and actions (Section 2.7).

Validator: _____ Date: _____

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

VOA/SV/Pest/PCB-X-B

X B. ACCURACY CHECK (Laboratory Control Sample [LCS] Results) - List all analytes that are outside criteria.

See DV Report

LCS ID	Matrix	Method	Fraction	Compound	Acceptable %R Range	Column 1 LCS %R	Column 2 LCS %R	Samples Affected	Action

Validator: _____

Date: 1/22/14

Case:_____ SDG:_____

See DV Report

VOA/SV-XI

XI. INTERNAL STANDARD PERFORMANCE

List the internal standards that are outside the area count and retention time method QC acceptance criteria.

IS Area Count Method QC acceptance criteria: _____

IS Retention Time Method QC acceptance criteria: _____

Sample Number (TRs)	Date and Time Analyzed	Instrument	Fraction	Non-Compliant Internal Standard	Internal Standard Area	RT Shift	Acceptable Range (IS area or RT shift)	Action

Validator: _____ Date: 1/22/14

EPA NE - Data Validation Worksheet

Case:_____ SDG:_____ See DV Report

Pest/PCB-XII

XII. ANALYTE IDENTIFICATION

List samples below that contained false positive and/or negative reported results, and samples that contained detected compounds which have a percent difference greater than ±25% between the two columns.

Sample ID	Analyte	Column 1 ID:			Column 2 ID:			%D	Action
		RT	RT Window	Conc.	RT	RT Window	Conc.		

Was GC/MS Confirmation performed for the appropriate samples? **Y N**

Were corresponding Aroclor standards analyzed within 72 hours of the sample(s) with Aroclors detected? **Y N**

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV-XII

XII. TARGET COMPOUND IDENTIFICATION – List the analytes that are outside the acceptance criteria.

Sample Number	Compound	MS Ions	RRT	Action

Validator: _____

Date: 1/22/14

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

VOA/SV-XIII

XIII. SAMPLE QUANTITATION AND % SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
VOA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
BNA		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: JK

Date: 1/22/14

EPA-NE - Data Validation Worksheet

See DV Report

Case:_____ SDG:_____

Pest/PCB-XIII

XIII. SAMPLE QUANTITATION AND %SOLIDS

Recalculate, from the raw data, the concentrations for one positive detect and one reported sample quantitation limit for a non-detect in a diluted sample or soil sample per fraction. (Note: Although NFG requires that one calculation for each fraction in each sample be performed, the validator is only required to reproduce an example, for each fraction, of one positive detect and one sample quantitation limit calculation on this worksheet.)

Do all soil/sediment samples have % solids greater than 30%? **Y N**

If no, list sample numbers_____

Refer to EPA New England Data Review Supplemental Program guidance for actions related to %solids (Section 2.10).

Fraction		Calculation
Pesticides		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		
PCB		
Sample No.:		
Reported Compound:		
Reported Value:		
Not Detected Compound:		
Reported Quantitation Limit:		

Validator: _____ Date: 1/22/14

EPA-NE - Data Validation Worksheet

Case:_____ SDG:_____

See DV Report

VOA/SV-XIV

XIV. TENTATIVELY IDENTIFIED COMPOUNDS (TICs)

List the 5 TICs having the highest concentration for each sample parameter.

Sample Number	Fraction	Compound	RRT	Est. Conc.	Action

Validator: _____

Date: 1/22/14

APPENDIX D

SUPPORT DOCUMENTATION

Katahdin ANALYTICAL SERVICES

600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Attn: TestAmerica Sacramento
Jill Kellman

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Debra Seiken	(978) 474 8445	(978) 474-8499

Address	City	State	Zip Code
250 Andover St Suite 200	Wilmington	MA	01887

Purchase Order #	Proj. Name / No.	~~Katahdin~~ Quote #

Bill (if different than above) | Address

Sampler (Print / Sign) Kayleen Jalkut Kayleen Jalkut | Peter Seyfarth

Copies To:

LAB USE ONLY | WORK ORDER #:

KATAHDIN ~~PROJECT~~ NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

320-4670 Chain of Custody

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	ANALYSIS AND CONTAINER TYPE PRESERVATIVES: Filt. ☐Y ☒N — TOTAL SOLIDS + DIOXIN - 8oz amb. glass jar
	TF2-004/5-SS1025-000.8	10/18/1045	SO	1	1
	TF2-004/5-SS1026-000.8	10/18/1055	SO	1	1
	TF2-004/5-SS1024-000.6	10/18/1105	SO	1	1
	TF2-004/5-SS1023-000.8	10/18/1110	SO	1	1
	TF2-004/5-SS1022-000.9	10/18/1118	SO	1	1
	TF2-004/5-SS1021-000.7	10/18/1130	SO	1	1
	TF2-004/5-SS1020-0001	10/18/1140	SO	1	1
	TF2-004/5-SS1032-000.9	10/18/1155	SO	1	1
	TF2-004/5-SS1031-000.8	10/18/1205	SO	1	1
	TF2-004/5-SS-DUP01-1013	10/18/0000	SO	1	1
	TF2-004/5-SS1030-000.6	10/18/1320	SO	1	1
	TF2-004/5-SS1029-000.6	10/18/1330	SO	1	1
	TF2-004/5-SS1028-000.8	10/18/1335	SO	1	1
*	TF2-004/5-SS1027-0001	10/18/1345	SO	3	3
	TF2-004/5-SS1040-000.9	10/18/1350	SO	1	1
	TF2-004/5-SS1039-000.9	10/18/1400	SO	1	1

KJ 10/23/13

COMMENTS * = Lab QC volume

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	~~Relinquished By: (Signature)~~	Date / Time	Received By: (Signature)
Kjalkut	10/23/13 1800	FedEx AB# 875937975510		10/23/13 1800	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	~~Relinquished By: (Signature)~~	Date / Time	Received By: (Signature)
		Kim Nelson	10/24/13	700	

0.9, 1, 2.7, 15°C

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Katahdin ANALYTICAL SERVICES

600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Attn: TestAmerica Sacramento
Jill Kellman

CHAIN of CUSTODY

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Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Dabra Seiken	(978) 474 8445	(978) 474-8499

Address 250 Andover St Suite 200 City Wilmington State MA Zip Code 01887

Purchase Order # Proj. Name / No Katahdin ~~Quote~~ #

Bill (if different than above) Address

Sampler (Print / Sign) Kayleen Jaikut Kayleen Jaikut Peter Seiyard Peter Seiyard

Copies To:

LAB USE ONLY WORK ORDER #

KATAHDIN ~~PROJECT~~ NUMBER

REMARKS:

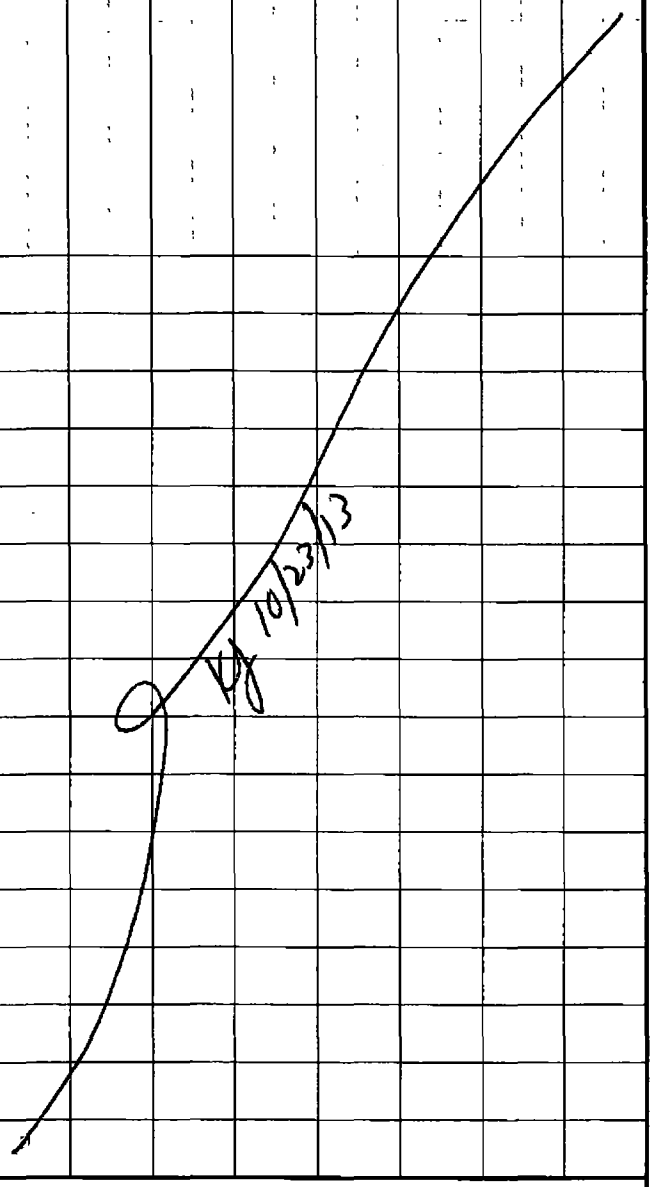
SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	Filt. ☐Y ☒N DI/ZnAc - 1L amber glass jars	Filt. ☐Y ☒N TOTAL SOLIDS, DI/ZnAc - 8oz amber glass jar	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	TF2-SS-RB01-1013	10/18 / 1400	QC	2	2									
	TF2-SS004/5-SS1038-000.7	10/18 1410	SO	1	—	1								
	TF2-004/5-SS1037-000.7	10/18/ 1415	SO	1	—	1								
	TF2-004/5-SS1036-000.6	10/18/ 1425	SO	1	—	1								
	TF2-004/5-SS1035-0001	10/18 / 1435	SO	1	—	1								
	TF2-004/5-SS-DUP02-1013	10/18/ 0000	SO	1	—	1								
	TF2-004/5-SS1034-000.6	10/18/ 1445	SO	1	—	1								
	TF2-004/5-SS1033-000.8	10/18/ 1455	SO	1	—	1								
	TF2-004/5-SS1049-000.9	10/21/ 0920	SO	1	—	1								
	TF2-004/5-SS1048-000.8	10/21/0930	SO	1	—	1								
	TF2-004/5-SS1047-000.8	10/21 / 0940	SO	1	—	1								
	TF2-004/5-SS1046-000.5	10/21/ 0950	SO	1	—	1								
	TF2-004/5-SS1045-000.5	10/21/ 1000	SO	1	—	1								
	TF2-004/5-SS1044-000.5	10/21/ 1010	SO	1	—	1								
	TF2-004/5-SS1042-000.5	10/21/ 1020	SO	1	—	1								
	TF2-004/5-SS1041-000.7	10/21/ 1035	SO	1	—	1								



COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	~~Relinquished By: (Signature)~~	Date / Time	Received By: (Signature)
K Jaikut	10/23/13 1800	FedEx AB# 875937975510	—— 10/	23/13 1800	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	~~Relinquished By: (Signature)~~	Date / Time	Received By: (Signature)
		Lynn Nelson	10/24/13 0700		01/06/2014

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Katahdin ANALYTICAL SERVICES
600 Technology Way
Scarborough, ME 04074
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Fax: (207) 775-4029

Attn: TestAmerica Sacramento
Jill Kellman

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Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Debra Seiken	(978) 474 8445	(978) 474-8499

Address	City	State	Zip Code
250 Andover St. Suite 200	Wilmington	MA	01887

Purchase Order # | Proj. Name / No. | ~~Katahdin Quote~~ #

Bill (if different than above) | Address

Sampler (Print / Sign) Kayleen Jalkut Kjalkut — Peter Seward — Copies To:

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KATAHDIN ~~PROJECT~~ NUMBER

REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	Filt. ☐Y ☒N DIOXINS + TOTAL SOLIDS 8oz amber glass	Filt. ☐Y ☐N DIOXINS - 1L amber glass jars	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	TF2-004/5-SS-DUP07-1013	10/21/0000	SO	1	1	—								
	TF2-SS-RB02-1013	10/21/1150	QC	2	—	2								
	TF2-SS004/5-SS1057-0001	10/21/1345	SO	1	1	—								
	TF2-004/5-SS1056-000.6	10/21/1355	SO	1	1	—								
	TF2-004/5-SS1055-000.8	10/21/1400	SO	1	1	—								
*	TF2-004/5-SS1054-000.6	10/21/1405	SO	2	2	—								
	TF2-004/5-SS1053-000.6	10/21/1415	SO	1	1	—								
	TF2-004/5-SS1052-000.6	10/21/1425	SO	1	1	—								
	TF2-004/5-SS1051-000.8	10/21/1430	SO	1	1	—								
	TF2-004/5-SS1050-000.6	10/21/1440	SO	1	1	—								
	TF2-004/5-SS1062-000.8	10/21/1450	SO	1	1	—								
	TF2-004/5-SS1061-000.6	10/21/1455	SO	1	1	—								
	TF2-004/5-SS-DUP04-1013	10/21/0000	SO	1	1	—								
	TF2-004/5-SS1067-000.7	10/21/1505	SO	1	1	—								
	TF2-004/5-SS1066-000.9	10/21/1515	SO	1	1	—								
	TF2-004/5-SS1060-000.5	10/22/0815	SO	1	1	—								

COMMENTS * Lab QC volume

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	~~Relinquished By: (Signature)~~	Date / Time	Received By: (Signature)
Kjalkut	10/23/13 1800	FedEx AB# 875937975570	10/23/13 1800		
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	~~Relinquished By: (Signature)~~	Date / Time	Received By: (Signature)
		Kim Nelson	10/24/13 0700		

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AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	DIGNT TOTAL SOLIDS 8oz amber glass jar	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	TF2-004/5-SS1059-000.6	10/22/0825	SO	1	1										
	TF2-004/5-SS1058-000.5	10/22/0835	SO	1	1										
	TF2-004/5-SS1065-000.5	10/22/0845	SO	1	1										
*	TF2-004/5-SS1064-000.6	10/22/0855	SO	2	2										
	TF2-004/5-SS1063-000.6	10/22/0905	SO	1	1										
	TF2-004/5-SS1068-000.5	10/22/0915	SO	1	1										
	TF2-004/5-SS-DUP05-1013	10/22/0000	SO	1	1										
	TF2-003-SS1011-000.8	10/22/0940	SO	1	1										
	TF2-003-SS1012-000.7	10/22/0950	SO	1	1										
	TF2-003-SS1013-000.7	10/22/0955	SO	1	1										
	TF2-003-SS1014-0001	10/22/1005	SO	1	1										
	TF2-003-SS1015-000.8	10/22/1015	SO	1	1										
	TF2-003-SS1016-000.9	10/22/1025	SO	1	1										
	TF2-003-SS1017-000.8	10/22/1055	SO	1	1										
	TF2-003-SS1018-000.8	10/22/1105	SO	1	1										
**	TF2-003-SS1019-000.5	10/22/1115	SO	1	1										

10/23/13

COMMENTS * Lab QC volume ** No extra volume but please perform lab QC on this sample, if you can

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
K Jalkut	10/23/13 1800	FedEx AB #879937975570		10/23/13 1800	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature) Received By: Kim Nelan	Date / Time 10/24/3 0700	Received By: (Signature)

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01/06/2014
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KAS-COC1

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600 Technology Way
Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

Test America Sacramento
Attn: Jill Kellman

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Client	Contact	Phone #	Fax #
Tetra Tech, Inc.	Debra Seiken	(978) 474 8445	(978) 474 8499

Address 250 Andover St. Suite 200 City Wilmington State MA Zip Code 01887

Purchase Order # Proj. Name / No. ~~Katahdin Quote #~~

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REMARKS:

SHIPPING INFO: ☐ FED EX ☐ UPS ☐ CLIENT

AIRBILL NO:

TEMP°C ☐ TEMP BLANK ☐ INTACT ☐ NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

*	Sample Description	Date / Time coll'd 2013	Matrix	No. of Cntrs.	Filt. ☐Y ☐N DIOXIN + TOTAL SOLIDS 8oz amber glass jar	Filt. ☐Y ☐N DIOXIN - 1L amber glass jar	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N	Filt. ☐Y ☐N
	TF2-003-SS-DUP06-1013	10/22/ 0000	SO	1	1	1								
	TF2-SS-RB03-1013	10/22/ 1200	QC	2	—	2								
	If HJ 10/23/13	/												
		/												
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10/23/13 HJ

COMMENTS

Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
K Jalkut	10/23/13 1800	FedEx AB#8759 37975570	—	10/23/13 1800	
Relinquished By: (Signature)	Date / Time	Received By: (Signature)	Relinquished By: (Signature)	Date / Time	Received By: (Signature)
		Kim Nelson	10/24/13 0700		

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

01/06/2014
ORIGINAL

KAS-COC1

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 320-4670-1

Login Number: 4670

List Source: TestAmerica Sacramento

List Number: 1

Creator: Nelson, Kym D

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

HOLDTIME

SDG 320-4670-1

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	PG/G	TF2-004/5-SS1059-000.6	320-4670-49	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1044-000.5	320-4670-30	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1045-000.5	320-4670-29	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1046-000.5	320-4670-28	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1047-000.8	320-4670-27	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1048-000.8	320-4670-26	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1049-000.9	320-4670-25	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1050-000.6	320-4670-42	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1051-000.8	320-4670-41	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1052-000.6	320-4670-40	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1053-000.6	320-4670-39	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1054-000.6	320-4670-38	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1055-000.8	320-4670-37	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1056-000.6	320-4670-36	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1042-000.5	320-4670-31	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	PG/G	TF2-003-SS1011-000.8	320-4670-56	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS-DUP05-101	320-4670-55	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS-DUP04-101	320-4670-45	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS-DUP03-101	320-4670-33	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS-DUP02-101	320-4670-22	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS-DUP01-101	320-4670-10	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1057-0001	320-4670-35	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1067-000.7	320-4670-46	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1058-000.5	320-4670-50	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1065-000.5	320-4670-51	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1063-000.6	320-4670-53	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1062-000.8	320-4670-43	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1061-000.6	320-4670-44	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1060.000.5	320-4670-48	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1064-000.6	320-4670-52	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1068-000.5	320-4670-54	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-003-SS1018-000.8	320-4670-63	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1024-000.6	320-4670-3	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	PG/G	TF2-004/5-SS1023-000.8	320-4670-4	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1022-000.9	320-4670-5	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1021-000.7	320-4670-6	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1020-0001	320-4670-7	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1025-000.8	320-4670-1	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-003-SS1019-000.5	320-4670-64	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-003-SS1016-000.9	320-4670-61	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-003-SS1017-000.8	320-4670-62	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-003-SS1015-000.8	320-4670-60	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-003-SS1013-000.7	320-4670-58	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-003-SS1012-000.7	320-4670-57	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1041-000.7	320-4670-32	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-004/5-SS1066-000.9	320-4670-47	NM	10/21/2013	01/02/2014	01/02/2014	73	0	73
	PG/G	TF2-003-SS-DUP06-1013	320-4670-65	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72
	PG/G	TF2-004/5-SS1037-000.7	320-4670-19	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1040-000.9	320-4670-15	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1039-000.9	320-4670-16	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-003-SS1014-0001	320-4670-59	NM	10/22/2013	01/02/2014	01/02/2014	72	0	72

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
	PG/G	TF2-004/5-SS1026-000.8	320-4670-2	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1038-000.7	320-4670-18	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1036-000.6	320-4670-20	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1035-0001	320-4670-21	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1034-000.6	320-4670-23	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1030-000.6	320-4670-11	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1032-000.9	320-4670-8	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1027-0001	320-4670-14	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1028-000.8	320-4670-13	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1029-000.6	320-4670-12	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1031-000.8	320-4670-9	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/G	TF2-004/5-SS1033-000.8	320-4670-24	NM	10/18/2013	01/02/2014	01/02/2014	76	0	76
	PG/L	TF2-SS-RB02-1013	320-4670-34	NM	10/21/2013	12/23/2013	12/23/2013	63	0	63
	PG/L	TF2-SS-RB01-1013	320-4670-17	NM	10/18/2013	12/23/2013	12/23/2013	66	0	66
	PG/L	TF2-003-SS-RB03-1013	320-4670-66	NM	10/22/2013	12/23/2013	12/23/2013	62	0	62
DIOX	PG/G	TF2-004/5-SS1022-000.9	320-4670-5	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61
DIOX	PG/G	TF2-004/5-SS1020-0001	320-4670-7	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1027-0001	320-4670-14	NM	10/18/2013	10/25/2013	11/03/2013	7	9	16

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-003-SS-DUP06-1013	320-4670-65	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1021-000.7	320-4670-6	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1020-0001	320-4670-7	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1021-000.7	320-4670-6	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1022-000.9	320-4670-5	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1022-000.9	320-4670-5	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1020-0001	320-4670-7	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61
DIOX	PG/G	TF2-004/5-SS1023-000.8	320-4670-4	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1023-000.8	320-4670-4	NM	10/18/2013	10/25/2013	11/18/2013	7	24	31
DIOX	PG/G	TF2-004/5-SS1024-000.6	320-4670-3	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1024-000.6	320-4670-3	NM	10/18/2013	10/25/2013	11/18/2013	7	24	31
DIOX	PG/G	TF2-004/5-SS1025-000.8	320-4670-1	NM	10/18/2013	10/24/2013	11/05/2013	6	12	18
DIOX	PG/G	TF2-004/5-SS1025-000.8	320-4670-1	NM	10/18/2013	10/24/2013	11/19/2013	6	26	32
DIOX	PG/G	TF2-004/5-SS1026-000.8	320-4670-2	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-003-SS-DUP06-1013	320-4670-65	NM	10/22/2013	10/25/2013	11/09/2013	3	15	18
DIOX	PG/G	TF2-003-SS1012-000.7	320-4670-57	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-004/5-SS1027-0001	320-4670-14	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1026-000.8	320-4670-2	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-003-SS1015-000.8	320-4670-60	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1028-000.8	320-4670-13	NM	10/18/2013	10/25/2013	11/09/2013	7	15	22
DIOX	PG/G	TF2-003-SS1011-000.8	320-4670-56	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-003-SS1011-000.8	320-4670-56	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-003-SS1011-000.8	320-4670-56	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-003-SS1012-000.7	320-4670-57	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-003-SS1013-000.7	320-4670-58	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-003-SS1014-0001	320-4670-59	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-003-SS1014-0001	320-4670-59	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-003-SS1013-000.7	320-4670-58	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-003-SS1015-000.8	320-4670-60	NM	10/22/2013	10/25/2013	11/18/2013	3	24	27
DIOX	PG/G	TF2-003-SS-DUP06-1013	320-4670-65	NM	10/22/2013	10/25/2013	11/03/2013	3	9	12
DIOX	PG/G	TF2-003-SS1016-000.9	320-4670-61	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-003-SS1016-000.9	320-4670-61	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-003-SS1016-000.9	320-4670-61	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-003-SS1017-000.8	320-4670-62	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-003-SS1017-000.8	320-4670-62	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-003-SS1018-000.8	320-4670-63	NM	10/22/2013	10/25/2013	11/06/2013	3	12	15

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-003-SS1018-000.8	320-4670-63	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-003-SS1019-000.5	320-4670-64	NM	10/22/2013	10/25/2013	11/03/2013	3	9	12
DIOX	PG/G	TF2-003-SS1019-000.5	320-4670-64	NM	10/22/2013	10/25/2013	11/09/2013	3	15	18
DIOX	PG/G	TF2-003-SS1015-000.8	320-4670-60	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-004/5-SS1056-000.6	320-4670-36	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS1028-000.8	320-4670-13	NM	10/18/2013	10/25/2013	11/03/2013	7	9	16
DIOX	PG/G	TF2-004/5-SS1061-000.6	320-4670-44	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS1061-000.6	320-4670-44	NM	10/21/2013	10/28/2013	11/02/2013	7	5	12
DIOX	PG/G	TF2-004/5-SS1060.000.5	320-4670-48	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1060.000.5	320-4670-48	NM	10/22/2013	10/25/2013	11/09/2013	3	15	18
DIOX	PG/G	TF2-004/5-SS1060.000.5	320-4670-48	NM	10/22/2013	10/25/2013	11/02/2013	3	8	11
DIOX	PG/G	TF2-004/5-SS1059-000.6	320-4670-49	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1059-000.6	320-4670-49	NM	10/22/2013	10/25/2013	11/02/2013	3	8	11
DIOX	PG/G	TF2-004/5-SS1058-000.5	320-4670-50	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1058-000.5	320-4670-50	NM	10/22/2013	10/25/2013	11/02/2013	3	8	11
DIOX	PG/G	TF2-004/5-SS1057-0001	320-4670-35	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1062-000.8	320-4670-43	NM	10/21/2013	10/28/2013	11/08/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1057-0001	320-4670-35	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-004/5-SS1062-000.8	320-4670-43	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1056-000.6	320-4670-36	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1055-000.8	320-4670-37	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS1055-000.8	320-4670-37	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1054-000.6	320-4670-38	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS1054-000.6	320-4670-38	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1053-000.6	320-4670-39	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1053-000.6	320-4670-39	NM	10/21/2013	10/28/2013	11/08/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1053-000.6	320-4670-39	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1052-000.6	320-4670-40	NM	10/21/2013	10/28/2013	11/08/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1027-0001	320-4670-14	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61
DIOX	PG/G	TF2-004/5-SS1051-000.8	320-4670-41	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1057-0001	320-4670-35	NM	10/21/2013	10/28/2013	11/08/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1068-000.5	320-4670-54	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-004/5-SS-DUP05-101	320-4670-55	NM	10/22/2013	10/25/2013	11/13/2013	3	19	22
DIOX	PG/G	TF2-004/5-SS-DUP05-101	320-4670-55	NM	10/22/2013	10/25/2013	11/05/2013	3	11	14
DIOX	PG/G	TF2-004/5-SS-DUP04-101	320-4670-45	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS-DUP04-101	320-4670-45	NM	10/21/2013	10/28/2013	11/02/2013	7	5	12

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-004/5-SS-DUP03-101	320-4670-33	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS-DUP03-101	320-4670-33	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS-DUP03-101	320-4670-33	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS-DUP02-101	320-4670-22	NM	10/18/2013	10/25/2013	11/18/2013	7	24	31
DIOX	PG/G	TF2-004/5-SS-DUP02-101	320-4670-22	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS-DUP01-101	320-4670-10	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61
DIOX	PG/G	TF2-004/5-SS-DUP01-101	320-4670-10	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1062-000.8	320-4670-43	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1068-000.5	320-4670-54	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1051-000.8	320-4670-41	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS1067-000.7	320-4670-46	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1067-000.7	320-4670-46	NM	10/21/2013	10/28/2013	11/02/2013	7	5	12
DIOX	PG/G	TF2-004/5-SS1066-000.9	320-4670-47	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1066-000.9	320-4670-47	NM	10/21/2013	10/28/2013	11/08/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1066-000.9	320-4670-47	NM	10/21/2013	10/28/2013	11/02/2013	7	5	12
DIOX	PG/G	TF2-004/5-SS1065-000.5	320-4670-51	NM	10/22/2013	10/25/2013	11/09/2013	3	15	18
DIOX	PG/G	TF2-004/5-SS1065-000.5	320-4670-51	NM	10/22/2013	10/25/2013	11/02/2013	3	8	11
DIOX	PG/G	TF2-004/5-SS1064-000.6	320-4670-52	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-004/5-SS1064-000.6	320-4670-52	NM	10/22/2013	10/25/2013	11/02/2013	3	8	11
DIOX	PG/G	TF2-004/5-SS1063-000.6	320-4670-53	NM	10/22/2013	10/25/2013	12/19/2013	3	55	58
DIOX	PG/G	TF2-004/5-SS1063-000.6	320-4670-53	NM	10/22/2013	10/25/2013	11/02/2013	3	8	11
DIOX	PG/G	TF2-004/5-SS-DUP01-101	320-4670-10	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1034-000.6	320-4670-23	NM	10/18/2013	10/28/2013	11/01/2013	10	4	14
DIOX	PG/G	TF2-004/5-SS1039-000.9	320-4670-16	NM	10/18/2013	10/25/2013	11/09/2013	7	15	22
DIOX	PG/G	TF2-004/5-SS1052-000.6	320-4670-40	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1038-000.7	320-4670-18	NM	10/18/2013	10/25/2013	11/13/2013	7	19	26
DIOX	PG/G	TF2-004/5-SS1038-000.7	320-4670-18	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1037-000.7	320-4670-19	NM	10/18/2013	10/25/2013	11/13/2013	7	19	26
DIOX	PG/G	TF2-004/5-SS1037-000.7	320-4670-19	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1036-000.6	320-4670-20	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61
DIOX	PG/G	TF2-004/5-SS1036-000.6	320-4670-20	NM	10/18/2013	10/25/2013	11/18/2013	7	24	31
DIOX	PG/G	TF2-004/5-SS1036-000.6	320-4670-20	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1035-0001	320-4670-21	NM	10/18/2013	10/25/2013	11/18/2013	7	24	31
DIOX	PG/G	TF2-004/5-SS1051-000.8	320-4670-41	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1034-000.6	320-4670-23	NM	10/18/2013	10/28/2013	11/07/2013	10	10	20
DIOX	PG/G	TF2-004/5-SS1039-000.9	320-4670-16	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-004/5-SS1033-000.8	320-4670-24	NM	10/18/2013	10/28/2013	12/18/2013	10	51	61
DIOX	PG/G	TF2-004/5-SS1033-000.8	320-4670-24	NM	10/18/2013	10/28/2013	11/01/2013	10	4	14
DIOX	PG/G	TF2-004/5-SS1032-000.9	320-4670-8	NM	10/18/2013	10/25/2013	11/19/2013	7	25	32
DIOX	PG/G	TF2-004/5-SS1032-000.9	320-4670-8	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1031-000.8	320-4670-9	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1031-000.8	320-4670-9	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1030-000.6	320-4670-11	NM	10/18/2013	10/25/2013	12/17/2013	7	53	60
DIOX	PG/G	TF2-004/5-SS1030-000.6	320-4670-11	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1029-000.6	320-4670-12	NM	10/18/2013	10/25/2013	12/19/2013	7	55	62
DIOX	PG/G	TF2-004/5-SS1029-000.6	320-4670-12	NM	10/18/2013	10/25/2013	11/19/2013	7	25	32
DIOX	PG/G	TF2-004/5-SS1029-000.6	320-4670-12	NM	10/18/2013	10/25/2013	11/06/2013	7	12	19
DIOX	PG/G	TF2-004/5-SS1035-0001	320-4670-21	NM	10/18/2013	10/25/2013	11/05/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1046-000.5	320-4670-28	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/G	TF2-004/5-SS1050-000.6	320-4670-42	NM	10/21/2013	10/28/2013	11/08/2013	7	11	18
DIOX	PG/G	TF2-004/5-SS1050-000.6	320-4670-42	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1049-000.9	320-4670-25	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1049-000.9	320-4670-25	NM	10/21/2013	10/28/2013	11/07/2013	7	10	17
DIOX	PG/G	TF2-004/5-SS1049-000.9	320-4670-25	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-004/5-SS1048-000.8	320-4670-26	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1048-000.8	320-4670-26	NM	10/21/2013	10/28/2013	11/07/2013	7	10	17
DIOX	PG/G	TF2-004/5-SS1048-000.8	320-4670-26	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1047-000.8	320-4670-27	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1039-000.9	320-4670-16	NM	10/18/2013	10/25/2013	11/03/2013	7	9	16
DIOX	PG/G	TF2-004/5-SS1047-000.8	320-4670-27	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1040-000.9	320-4670-15	NM	10/18/2013	10/25/2013	11/03/2013	7	9	16
DIOX	PG/G	TF2-004/5-SS1042-000.5	320-4670-31	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1040-000.9	320-4670-15	NM	10/18/2013	10/25/2013	11/09/2013	7	15	22
DIOX	PG/G	TF2-004/5-SS1040-000.9	320-4670-15	NM	10/18/2013	10/25/2013	12/18/2013	7	54	61
DIOX	PG/G	TF2-004/5-SS1041-000.7	320-4670-32	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1047-000.8	320-4670-27	NM	10/21/2013	10/28/2013	11/07/2013	7	10	17
DIOX	PG/G	TF2-004/5-SS1041-000.7	320-4670-32	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1046-000.5	320-4670-28	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1042-000.5	320-4670-31	NM	10/21/2013	10/28/2013	11/07/2013	7	10	17
DIOX	PG/G	TF2-004/5-SS1044-000.5	320-4670-30	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11
DIOX	PG/G	TF2-004/5-SS1044-000.5	320-4670-30	NM	10/21/2013	10/28/2013	11/07/2013	7	10	17
DIOX	PG/G	TF2-004/5-SS1045-000.5	320-4670-29	NM	10/21/2013	10/28/2013	11/01/2013	7	4	11

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PG/G	TF2-004/5-SS1045-000.5	320-4670-29	NM	10/21/2013	10/28/2013	11/07/2013	7	10	17
DIOX	PG/G	TF2-004/5-SS1045-000.5	320-4670-29	NM	10/21/2013	10/28/2013	12/19/2013	7	52	59
DIOX	PG/G	TF2-004/5-SS1041-000.7	320-4670-32	NM	10/21/2013	10/28/2013	12/18/2013	7	51	58
DIOX	PG/L	TF2-SS-RB02-1013	320-4670-34	NM	10/21/2013	10/25/2013	10/29/2013	4	4	8
DIOX	PG/L	TF2-003-SS-RB03-1013	320-4670-66	NM	10/22/2013	10/25/2013	10/29/2013	3	4	7
DIOX	PG/L	TF2-SS-RB01-1013	320-4670-17	NM	10/18/2013	10/25/2013	10/29/2013	7	4	11

CASE NARRATIVE

Client: Tetra Tech, Inc.

Project: TF2, Portsmouth, CTO WE 30

Report Number: 320-4670-1

Revised - January 6, 2014
Report revised to include TEQ calculations and re-injections to meet QSM criteria.

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica West Sacramento attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

All parameters for which TestAmerica West Sacramento has certification were evaluated to the QSM specified reporting convention or to the client specified format if different from QSM. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

Receipt
The samples were received on 10/24/2013 7:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.9° C, 1.0° C, 1.5° C and 2.7° C.

Dioxin - Method 8290
The laboratory control sample (LCS) for batch 28540 recovered outside control limits for 2,3,4,7,8-PeCDF. This analyte is high in the LCS but was ND or detected as an estimated "J" value below the reporting limit in the associated samples and within limits in the associated MS/MSD. Therefore, the data have been reported.

The ion abundance ratio for 2,3,7,8-TCDF is outside criteria for the following sample: TF2-004/5-SS1025-000.8 (320-4670-1). Quantitation is based on the theoretical ion abundance ratio; therefore, this analyte has been reported as an estimated maximum possible concentration (EMPC). The affected analyte has been flagged.

The ion abundance ratios are outside criteria for the following sample(s): (MB 320-28431/1-A), (MB 320-28540/1-A), (MB 320-28546/1-A), TF2-003-SS1019-000.5 (320-4670-64), TF2-003-SS-DUP06-1013 (320-4670-65), TF2-004/5-SS1027-0001 (320-4670-14), TF2-004/5-SS1028-000.8 (320-4670-13), TF2-004/5-SS1033-000.8 (320-4670-24), TF2-004/5-SS1034-000.6 (320-4670-23), TF2-004/5-SS1039-000.9 (320-4670-16), TF2-004/5-SS1040-000.9 (320-4670-15), TF2-004/5-SS1041-000.7 (320-4670-32), TF2-004/5-SS1042-000.5 (320-4670-31), TF2-004/5-SS1044-000.5 (320-4670-30), TF2-004/5-SS1045-000.5 (320-4670-29), TF2-004/5-SS1046-000.5 (320-4670-28), TF2-004/5-SS1047-000.8 (320-4670-27), TF2-004/5-SS1048-000.8 (320-4670-26), TF2-004/5-SS1049-000.9 (320-4670-25), TF2-004/5-SS1050-000.6 (320-4670-42), TF2-004/5-SS1051-000.8 (320-4670-41), TF2-004/5-SS1052-000.6 (320-4670-40), TF2-004/5-SS1053-000.6 (320-4670-39), TF2-004/5-SS1054-000.6 (320-4670-38), TF2-004/5-SS1055-000.8 (320-4670-37), TF2-004/5-SS1056-000.6 (320-4670-36), TF2-004/5-SS1057-0001

(320-4670-35), TF2-004/5-SS1058-000.5 (320-4670-50), TF2-004/5-SS1059-000.6 (320-4670-49), TF2-004/5-SS1060.000.5 (320-4670-48), TF2-004/5-SS1061-000.6 (320-4670-44), TF2-004/5-SS1062-000.8 (320-4670-43), TF2-004/5-SS1063-000.6 (320-4670-53), TF2-004/5-SS1064-000.6 (320-4670-52), TF2-004/5-SS1065-000.5 (320-4670-51), TF2-004/5-SS1066-000.9 (320-4670-47), TF2-004/5-SS1067-000.7 (320-4670-46), TF2-004/5-SS-DUP03-1013 (320-4670-33), TF2-004/5-SS-DUP04-1013 (320-4670-45), TF2-003-SS-RB03-1013 (320-4670-66) and (MB 320-28374/1-A.). Quantitation is based on the theoretical ion abundance ratio; therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC). The affected analytes have been flagged.

The ion abundance ratios are outside criteria for the following samples: (MB 320-28458/1-A), TF2-003-SS1011-000.8 (320-4670-56), TF2-003-SS1012-000.7 (320-4670-57), TF2-003-SS1013-000.7 (320-4670-58), TF2-003-SS1014-0001 (320-4670-59), TF2-003-SS1015-000.8 (320-4670-60), TF2-003-SS1016-000.9 (320-4670-61), TF2-003-SS1017-000.8 (320-4670-62), TF2-004/5-SS1023-000.8 (320-4670-4), TF2-004/5-SS1024-000.6 (320-4670-3), TF2-004/5-SS1026-000.8 (320-4670-2), TF2-004/5-SS1035-0001 (320-4670-21), TF2-004/5-SS1036-000.6 (320-4670-20), TF2-004/5-SS1037-000.7 (320-4670-19), TF2-004/5-SS1038-000.7 (320-4670-18), TF2-004/5-SS1068-000.5 (320-4670-54), TF2-004/5-SS-DUP02-1013 (320-4670-22), TF2-004/5-SS-DUP05-1013 (320-4670-55). Quantitation is based on the theoretical ion abundance ratio. Therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC). The affected analytes have been flagged.

The ion abundance ratios are outside criteria for the following samples: TF2-003-SS1018-000.8 (320-4670-63), TF2-004/5-SS1020-0001 (320-4670-7), TF2-004/5-SS1021-000.7 (320-4670-6), TF2-004/5-SS1022-000.9 (320-4670-5), TF2-004/5-SS1025-000.8 (320-4670-1), TF2-004/5-SS1029-000.6 (320-4670-12), TF2-004/5-SS1030-000.6 (320-4670-11), TF2-004/5-SS1031-000.8 (320-4670-9), TF2-004/5-SS1032-000.9 (320-4670-8), TF2-004/5-SS-DUP01-1013 (320-4670-10). Quantitation is based on the theoretical ion abundance ratio. Therefore, these analytes have been reported as an estimated maximum possible concentration (EMPC). The affected analytes have been flagged.

The concentration OCDD associated with the following samples exceeded the instrument calibration range: TF2-003-SS-DUP06-1013 (320-4670-65), TF2-004/5-SS1027-0001 (320-4670-14), TF2-004/5-SS1027-0001 (320-4670-14 MS), TF2-004/5-SS1027-0001 (320-4670-14 MSD), TF2-004/5-SS1033-000.8 (320-4670-24), TF2-004/5-SS1039-000.9 (320-4670-16), TF2-004/5-SS1040-000.9 (320-4670-15), TF2-004/5-SS1041-000.7 (320-4670-32), TF2-004/5-SS1045-000.5 (320-4670-29), TF2-004/5-SS1047-000.8 (320-4670-27), TF2-004/5-SS1048-000.8 (320-4670-26), TF2-004/5-SS1049-000.9 (320-4670-25), TF2-004/5-SS1051-000.8 (320-4670-41), TF2-004/5-SS1053-000.6 (320-4670-39), TF2-004/5-SS1057-0001 (320-4670-35), TF2-004/5-SS1059-000.6 (320-4670-49), TF2-004/5-SS1060.000.5 (320-4670-48), TF2-004/5-SS1062-000.8 (320-4670-43), TF2-004/5-SS1066-000.9 (320-4670-47), TF2-004/5-SS-DUP03-1013 (320-4670-33). These analytes have been qualified; however, the peak(s) did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range.

The concentration of one or more analytes associated with the following samples exceeded the instrument calibration range: TF2-004/5-SS1020-0001 (320-4670-7), TF2-004/5-SS1022-000.9 (320-4670-5), TF2-004/5-SS1029-000.6 (320-4670-12), TF2-004/5-SS-DUP01-1013 (320-4670-10), TF2-003-SS1011-000.8 (320-4670-56), TF2-003-SS1015-000.8 (320-4670-60), TF2-003-SS1016-000.9 (320-4670-61), TF2-004/5-SS1036-000.6 (320-4670-20). These analytes have been qualified; however, the peaks did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 28540 were outside control limits for 1,2,3,4,6,7,8-HpCDD. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Due to the high concentration of OCDD, the matrix spike / matrix spike duplicate (MS/MSD) for batch 28540, 28431 and 28458 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

The auto end resolution check was set up witihin 12 hours of the beginning resolutin check, however, the sios locked up and end rescheck could not be completed . The sios was rebooted the end resolution check was performed without changing the instrument tune parameters. This analysis was associated with the following samples:), TF2-004/5-SS1028-000.8 (320-4670-13), TF2-004/5-SS1040-000.9 (320-4670-15), TF2-004/5-SS1039-000.9 (320-4670-16), TF2-004/5-SS1060.000.5 (320-4670-48), TF2-004/5-SS1065-000.5 (320-4670-51), TF2-004/5-SS1064-000.6 (320-4670-52), TF2-003-SS1019-000.5 (320-4670-64), and TF2-003-SS-DUP06-1013 (320-4670-65).

The bracketing continuing calibration verification (CCV) associated with analytical batch 29348 has an analyte (1,2,3,4,7,8-HxCDD) with a percent difference value that is between the method criteria of 20% to 25% deviation from the initial calibration curve. Per method guidelines, an average relative response factor (RRF) is calculated from the bracketing CCV and is used to quantitate any positive results in the associated samples for the affected analytes.

Reanalysis of the following samples was performed outside of the analytical holding time : TF2-004/5-SS1036-000.6 (320-4670-20), TF2-004/5-SS1039-000.9 (320-4670-16), TF2-004/5-SS1040-000.9 (320-4670-15), TF2-004/5-SS1045-000.5 (320-4670-29), TF2-004/5-SS1047-000.8 (320-4670-27), TF2-004/5-SS1048-000.8 (320-4670-26), TF2-004/5-SS1049-000.9 (320-4670-25), TF2-004/5-SS1053-000.6 (320-4670-39), TF2-004/5-SS1057-0001 (320-4670-35), TF2-004/5-SS-DUP03-1013 (320-4670-33). TF2-004/5-SS1020-0001 (320-4670-7), TF2-004/5-SS1021-000.7 (320-4670-6), TF2-004/5-SS1022-000.9 (320-4670-5), TF2-004/5-SS1026-000.8 (320-4670-2), TF2-004/5-SS1027-0001 (320-4670-14), TF2-004/5-SS1027-0001 (320-4670-14 MS), TF2-004/5-SS1027-0001 (320-4670-14 MSD), TF2-004/5-SS1030-000.6 (320-4670-11), TF2-004/5-SS1031-000.8 (320-4670-9), TF2-004/5-SS-DUP01-1013 (320-4670-10), TF2-004/5-SS1033-000.8 (320-4670-24), TF2-004/5-SS1041-000.7 (320-4670-32), TF2-004/5-SS1046-000.5 (320-4670-28), TF2-004/5-SS1051-000.8 (320-4670-41), TF2-004/5-SS1054-000.6 (320-4670-38),

TF2-004/5-SS1054-000.6 (320-4670-38 MS), TF2-004/5-SS1054-000.6 (320-4670-38 MSD), TF2-004/5-SS1055-000.8 (320-4670-37), TF2-004/5-SS1056-000.6 (320-4670-36), TF2-004/5-SS1061-000.6 (320-4670-44), TF2-004/5-SS-DUP03-1013 (320-4670-33), TF2-004/5-SS1062-000.8 (320-4670-43), TF2-004/5-SS-DUP04-1013 (320-4670-45), TF2-003-SS1011-000.8 (320-4670-56), TF2-003-SS1015-000.8 (320-4670-60), TF2-003-SS1016-000.9 (320-4670-61), TF2-003-SS-DUP06-1013 (320-4670-65), TF2-004/5-SS1029-000.6 (320-4670-12), TF2-004/5-SS1059-000.6 (320-4670-49), TF2-004/5-SS1060.000.5 (320-4670-48), TF2-004/5-SS1066-000.9 (320-4670-47), TF2-003-SS1018-000.8 (320-4670-63), TF2-004/5-SS1058-000.5 (320-4670-50), TF2-004/5-SS1059-000.6 (320-4670-49), TF2-004/5-SS1063-000.6 (320-4670-53), TF2-004/5-SS1064-000.6 (320-4670-52), TF2-004/5-SS1064-000.6 (320-4670-52 MS), TF2-004/5-SS1064-000.6 (320-4670-52 MSD), TF2-004/5-SS1067-000.7 (320-4670-46), TF2-004/5-SS1068-000.5 (320-4670-54). Both the initial analysis and the re-analysis values have been reported.

The Isotope Dilution Analyte (IDA) recovery of 13C-2,3,7,8-TCDF associated with the following sample is below the method recommended limit: TF2-004/5-SS1067-000.7 (320-4670-46). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample. All detection limits are below the lower calibration.

The column performance standard mix (CPSM) associated with batch 32194 exceeded the 25% valley resolution requirement for 2,3,7,8-TCDD on the DB5 column analysis. The valley resolution was 26%. The associated samples were analyzed for OCDD only, therefore there is no impact on the data.

The following samples were diluted to bring the concentration of target analytes within the calibration range: TF2-004/5-SS1020-0001 (320-4670-7), TF2-004/5-SS1022-000.9 (320-4670-5), TF2-004/5-SS1027-0001 (320-4670-14 MS), TF2-004/5-SS1027-0001 (320-4670-14 MSD), TF2-004/5-SS1036-000.6 (320-4670-20), TF2-004/5-SS1039-000.9 (320-4670-16), TF2-004/5-SS1040-000.9 (320-4670-15), TF2-004/5-SS-DUP01-1013 (320-4670-10), TF2-003-SS1011-000.8 (320-4670-56), TF2-003-SS1015-000.8 (320-4670-60), TF2-003-SS1016-000.9 (320-4670-61), TF2-003-SS-DUP06-1013 (320-4670-65), TF2-004/5-SS1029-000.6 (320-4670-12), TF2-004/5-SS1059-000.6 (320-4670-49), TF2-004/5-SS1060.000.5 (320-4670-48), TF2-004/5-SS1062-000.8 (320-4670-43), TF2-004/5-SS1066-000.9 (320-4670-47). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

Dioxin Prep
No analytical or quality issues were noted.

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The isomer is qualified as positively identified, but at an estimated quantity because the quantitation is based on the theoretical ratio for these samples.
E	Result exceeded calibration range.
H	Sample was prepped or analyzed beyond the specified holding time
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
*	LCS or LCSD exceeds the control limits
F1	MS and/or MSD Recovery exceeds the control limits
*	Isotope Dilution analyte exceeds control limits
I	Ion Ratio outside of limits, value is EMPC.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method 8290

Dioxins and Furans (HRGC/HRMS) by Method 8290

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 5D2 Start Date: 08/13/2013 14:04

Analysis Batch Number: 22916 End Date: 08/13/2013 19:44

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-22916/1		08/13/2013 14:04	1	13AU13A5D2_001.d	DB-225 0.32(mm)
IC 320-22916/2		08/13/2013 14:41	1	13AU13A5D2_002.d	DB-225 0.32(mm)
IC 320-22916/3		08/13/2013 16:36	1	13AU13A5D2_005.d	DB-225 0.32(mm)
IC 320-22916/4		08/13/2013 17:14	1	13AU13A5D2_006.d	DB-225 0.32(mm)
IC 320-22916/5		08/13/2013 18:29	1	13AU13A5D2_008.d	DB-225 0.32(mm)
IC 320-22916/6		08/13/2013 19:07	1	13AU13A5D2_009.d	DB-225 0.32(mm)
ICV 320-22916/7		08/13/2013 19:44	1	13AU13A5D2_010.d	DB-225 0.32(mm)

CAL. 2,3,7,8-TCDF

8290

CAL. 2,3,7,8-TCDF
~~509~~
Istr. 502

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
13AU13A5D2	1	CPS 081313	DB225 CPSM HRDXNCP_00019				1.00000	
13AU13A5D2	2	IC 081313	CS-4 HRDXNL4_00011				1.00000	
13AU13A5D2	3		CS-3 HRDXNL3_00005		Expired		1.00000	
13AU13A5D2	4		CS-2 HRDXNL2_00006		Expired		1.00000	
13AU13A5D2	5	IC 081313A	CS-3 HRDXNL3_00007				1.00000	
13AU13A5D2	6	IC 081313B	CS-2 HRDXNL2_00008				1.00000	
13AU13A5D2	7	IC 081313C	CS-1 HRDXNL1_00012	NU	Sensitivity CK		1.00000	
13AU13A5D2	8	IC 081313D	CS-6 HRDXNL6_00006				1.00000	
13AU13A5D2	9	IC 081313E	CS-5 HRDXNL5_00012				1.00000	
13AU13A5D2	10	ICV 081313	2nd Source HRDXNIC_00013				1.00000	
13AU13A5D2	11	CPS 081313A	DB225 CPSM HRDXNCP_00019				1.00000	
13AU13A5D2	12						1.00000	
13AU13A5D2	13						1.00000	
13AU13A5D2	14						1.00000	
13AU13A5D2	15		MEG 08/13/13				1.00000	

log file checked
8-13-13 ALM

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 22916

SDG No.:

Instrument ID: 5D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2013 14:41 Calibration End Date: 08/13/2013 19:07 Calibration ID: 4077

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-22916/4	13AU13A5D2_006.d
Level 2	IC 320-22916/3	13AU13A5D2_005.d
Level 3	IC 320-22916/2	13AU13A5D2_002.d
Level 4	IC 320-22916/6	13AU13A5D2_009.d
Level 5	IC 320-22916/5	13AU13A5D2_008.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.6727	1.7106	1.5443	1.8729	1.9940	AveID		1.7589				10.0		20.0			
2,3,7,8-TCDF	0.9010	0.7874	0.7729	0.8940	0.9510	AveID		0.8613				9.0		20.0			
13C-2,3,7,8-TCDD	0.8044	0.9274	0.8309	0.9261	0.9074	Ave		0.8793				6.5		30.0			
13C-2,3,7,8-TCDF	2.0854	2.3174	2.0745	2.5749	2.5581	Ave		2.3221				10.0		30.0			
37Cl4-2,3,7,8-TCDD	1.2356	1.1101	1.1584	1.4896	1.5627	Ave		1.3113				15.0		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 22916

SDG No.:

Instrument ID: 5D2 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/13/2013 14:41 Calibration End Date: 08/13/2013 19:07 Calibration ID: 4077

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-22916/4	13AU13A5D2_006.d
Level 2	IC 320-22916/3	13AU13A5D2_005.d
Level 3	IC 320-22916/2	13AU13A5D2_002.d
Level 4	IC 320-22916/6	13AU13A5D2_009.d
Level 5	IC 320-22916/5	13AU13A5D2_008.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	698850	3314280	14635876	42677175	253369560	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	987264	3650258	17612680	54233931	330065048	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCl	Ave	88149808	99838947	96257334	57423212	64508776	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCl	Ave	225283706	247567757	239201468	158385314	178823183	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	758264	2689506	15126230	41473615	248091330	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: ICV 320-22916/7 Calibration Date: 08/13/2013 19:44

Instrument ID: 5D2 Calib Start Date: 08/13/2013 14:41

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/13/2013 19:07

Lab File ID: 13AU13A5D2_010.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.759	1.897		10.8	10.0	7.9	30.0
2,3,7,8-TCDF	AveID	0.8613	0.9399		10.9	10.0	9.1	30.0
13C-2,3,7,8-TCDD	Ave	0.8793	0.8765		99.7	100	-0.3	
13C-2,3,7,8-TCDF	Ave	2.322	2.409		104	100	3.7	
37Cl4-2,3,7,8-TCDD	Ave	1.311	1.325		20.2	20.0	1.0	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-22916/1 Instrument ID (1): 5D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 08/13/2013 14:04

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.19	16

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\5D2\20130814-6548.b\13AU13A5D2_001.d
Injection Date: 13-Aug-2013 14:04:19 Limit Group: HR - 8290 - ICAL
Client ID: Instrument ID: 5D2
Lims Batch ID: 22916 Lims Sample ID: 1
Operator ID: Injection Vol: 2.0 ul
Column Type: Column Dia:

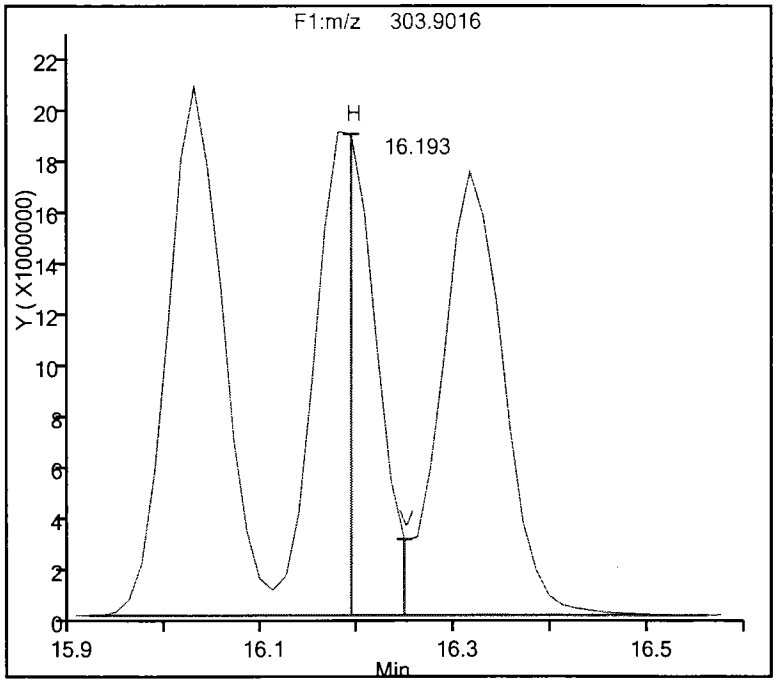
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2960386
H (Peak Height) = 18715020

%R = 16 <= 25
Passed



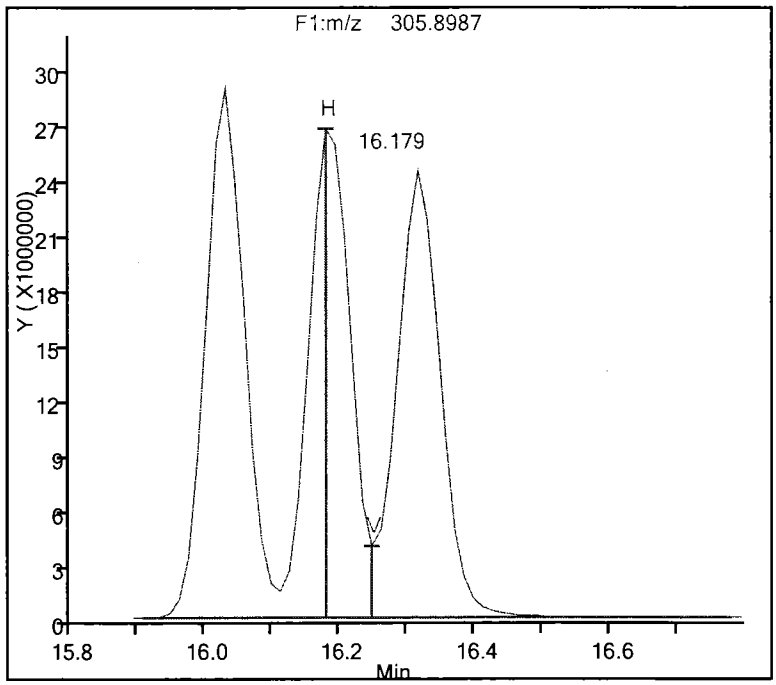
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3852978
H (Peak Height) = 26290420

%R = 15 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 5D2 Start Date: 11/18/2013 16:43

Analysis Batch Number: 30113 End Date: 11/19/2013 03:18

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-30113/1		11/18/2013 16:43	1	18NO135D2_001.d	DB-225 0.32(mm)
CCV 320-30113/2		11/18/2013 17:20	1	18NO135D2_002.d	DB-225 0.32(mm)
320-4670-60 RA	TF2-003-SS1015-000.8 RA	11/18/2013 18:35	1	18NO135D2_004.d	DB-225 0.32(mm)
320-4670-20 RA	TF2-004/5-SS1036-000.6 RA	11/18/2013 19:12	1	18NO135D2_005.d	DB-225 0.32(mm)
320-4670-21 RA	TF2-004/5-SS1035-0001 RA	11/18/2013 19:50	1	18NO135D2_006.d	DB-225 0.32(mm)
320-4670-22 RA	TF2-004/5-SS-DUP02-1013 RA	11/18/2013 20:27	1	18NO135D2_007.d	DB-225 0.32(mm)
320-4670-3 RA	TF2-004/5-SS1024-000.6 RA	11/18/2013 21:04	1	18NO135D2_008.d	DB-225 0.32(mm)
320-4670-4 RA	TF2-004/5-SS1023-000.8 RA	11/18/2013 21:42	1	18NO135D2_009.d	DB-225 0.32(mm)
ZZZZZ		11/18/2013 22:19	1		DB-225 0.32(mm)
ZZZZZ		11/18/2013 22:56	1		DB-225 0.32(mm)
ZZZZZ		11/18/2013 23:34	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 00:11	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 00:49	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 01:26	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 02:03	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 02:41	1		DB-225 0.32(mm)
CCV 320-30113/18		11/19/2013 03:18	1	18NO135D2_018.d	DB-225 0.32(mm)

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
18NO135D2	1	CPS 111813	DB225 CPSM HRDXNCP_00019				1.00000	
18NO135D2	2	CCV 111813	CS-4 HRDXNL4_00012				1.00000	
18NO135D2	3	RB 111813	Reagent Blank C-14				1.00000	
18NO135D2	4	320-28431	320-4670-A-60-A RI	20	8290/Solid	74	10.00000	g
18NO135D2	5	320-28458	320-4670-A-20-A	20	8290/Solid		10.00000	g
18NO135D2	6	320-28458	320-4670-A-21-A	20	8290/Solid		10.00000	g
18NO135D2	7	320-28458	320-4670-A-22-A	20	8290/Solid		10.00000	g
18NO135D2	8	320-28458	320-4670-A-3-A	20	8290/Solid		10.00000	g
18NO135D2	9	320-28458	320-4670-A-4-A	20	8290/Solid		10.00000	g
18NO135D2	10	320-29176	640-45478-B-19-B	20	8290/Solid	79	10.00000	g
18NO135D2	11	320-29176	640-45478-B-23-B	20	8290/Solid		10.00000	g
18NO135D2	12	320-29176	640-45478-B-24-B	20	8290/Solid		10.00000	g
18NO135D2	13	320-28640	320-4696-A-3-B	20	8290/Solid	76	10.00000	g
18NO135D2	14	320-28640	320-4696-A-4-B	20	8290/Solid		10.00000	g
18NO135D2	15	320-28640	320-4696-A-5-B	20	8290/Solid		10.00000	g
18NO135D2	16	320-29223	460-65815-F-6-A	20	8290/Solid	80	10.00000	g
18NO135D2	17	RB 111813A	Reagent Blank C-14				1.00000	
18NO135D2	18	CCV 111813A	CS-4 HRDXNL4_00012				1.00000	
18NO135D2	19						1.00000	
18NO135D2	20						1.00000	
18NO135D2	21						1.00000	
18NO135D2	22						1.00000	
18NO135D2	23		ALM 11-18-13				1.00000	
18NO135D2	24						1.00000	

logfile checked
11-19-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-30113/2 Calibration Date: 11/18/2013 17:20

Instrument ID: 5D2 Calib Start Date: 08/13/2013 14:41

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/13/2013 19:07

Lab File ID: 18NO135D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.759	2.012		11.4	10.0	14.4	20.0
2,3,7,8-TCDF	AveID	0.8613	0.7647		8.88	10.0	-11.2	20.0
13C-2,3,7,8-TCDD	Ave	0.8793	0.9286		106	100	5.6	30.0
13C-2,3,7,8-TCDF	Ave	2.322	2.191		94.3	100	-5.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.311	1.692		6.45	5.00	29.0	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-30113/18 Calibration Date: 11/19/2013 03:18

Instrument ID: 5D2 Calib Start Date: 08/13/2013 14:41

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/13/2013 19:07

Lab File ID: 18NO135D2_018.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.759	2.001		11.4	10.0	13.8	20.0
2,3,7,8-TCDF	AveID	0.8613	0.8195		9.52	10.0	-4.8	20.0
13C-2,3,7,8-TCDD	Ave	0.8793	0.9427		107	100	7.2	30.0
13C-2,3,7,8-TCDF	Ave	2.322	2.509		108	100	8.1	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.311	1.610		6.14	5.00	22.8	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-30113/1 Instrument ID (1): 5D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 11/18/2013 16:43

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	18.45	11

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\5D2\20131119-8727.b\18NO135D2_001.d
Injection Date: 18-Nov-2013 16:43:10 Instrument ID: 5D2
Lims ID: CPS Lab Sample ID: CPS 320-30113/1-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_5D2 Limit Group: HR - 8290 - ICAL

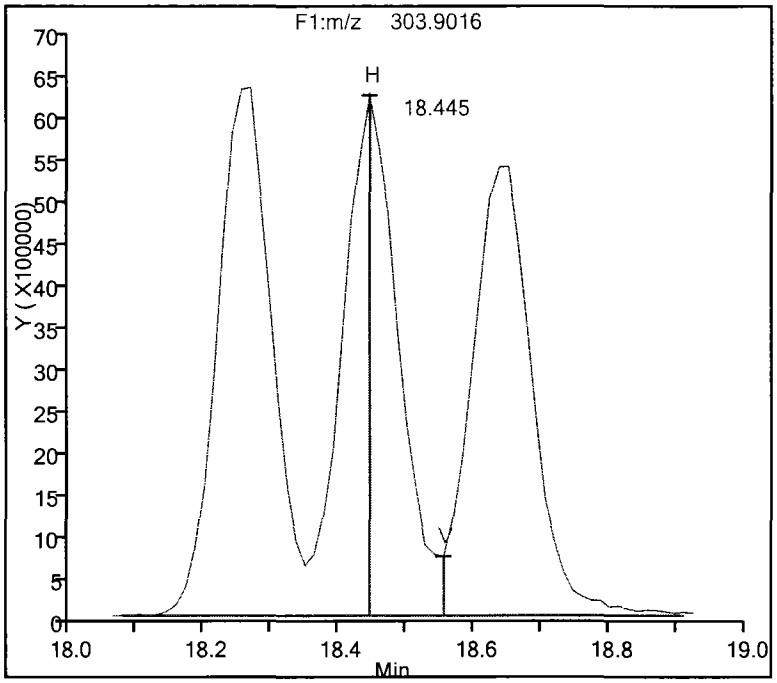
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 700461
H (Peak Height) = 6196759

%R = 11 <= 25
Passed



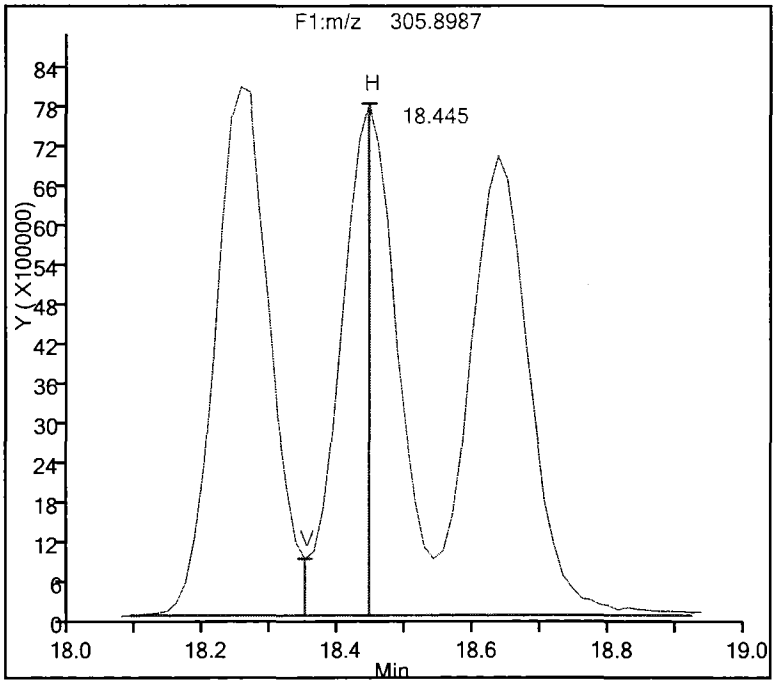
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 858838
H (Peak Height) = 7767766

%R = 11 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 5D2 Start Date: 11/19/2013 18:01

Analysis Batch Number: 30201 End Date: 11/20/2013 03:59

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-30201/1		11/19/2013 18:01	1	19no13a5d2_001.d	DB-225 0.32(mm)
CCV 320-30201/2		11/19/2013 18:38	1	19no13a5d2_002.d	DB-225 0.32(mm)
320-4670-1 RA	TF2-004/5-SS1025-000.8 RA	11/19/2013 20:30	1	19no13a5d2_005.d	DB-225 0.32(mm)
320-4670-8 RA	TF2-004/5-SS1032-000.9 RA	11/19/2013 21:08	1	19no13a5d2_006.d	DB-225 0.32(mm)
320-4670-12 RA	TF2-004/5-SS1029-000.6 RA	11/19/2013 21:45	1	19no13a5d2_007.d	DB-225 0.32(mm)
ZZZZZ		11/19/2013 22:23	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 23:00	1		DB-225 0.32(mm)
ZZZZZ		11/19/2013 23:37	1		DB-225 0.32(mm)
ZZZZZ		11/20/2013 00:15	1		DB-225 0.32(mm)
ZZZZZ		11/20/2013 00:52	1		DB-225 0.32(mm)
ZZZZZ		11/20/2013 01:30	1		DB-225 0.32(mm)
ZZZZZ		11/20/2013 02:07	1		DB-225 0.32(mm)
ZZZZZ		11/20/2013 02:44	1		DB-225 0.32(mm)
CCV 320-30201/17		11/20/2013 03:59	1	19no13a5d2_017.d	DB-225 0.32(mm)

8290

ata file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
19NO13A5D2	1	CPS 111913	DB225 CPSM HRDXNCP_00019				1.00000	
19NO13A5D2	2	CCV 111913	CS-4 HRDXNL4_00012				1.00000	
19NO13A5D2	3	RB 111913	Reagent Blank C-14				1.00000	
19NO13A5D2	4	320-27950	280-47992-B-24-A	20	1613B/Solid	71	10.00000	g
19NO13A5D2	5	320-28361	320-4670-A-1-B	20	8290/Solid	73	10.00000	g
19NO13A5D2	6	320-28458	320-4670-A-8-A	20	8290/Solid	74	10.00000	g
19NO13A5D2	7	320-28458	320-4670-A-12-A	20	8290/Solid		10.00000	g
19NO13A5D2	8	320-29772	640-45478-B-19-C	20	8290/Solid	84	10.00000	g
19NO13A5D2	9	320-29772	640-45478-B-23-C	20	8290/Solid		10.00000	g
19NO13A5D2	10	320-29772	640-45478-B-24-C	20	8290/Solid		10.00000	g
19NO13A5D2	11	320-29772	640-45478-B-28-C	20	8290/Solid		10.00000	g
19NO13A5D2	12	320-29772	640-45478-B-29-C	20	8290/Solid		10.00000	g
19NO13A5D2	13	320-29772	640-45478-B-60-C	20	8290/Solid		10.00000	g
19NO13A5D2	14	320-29772	640-45478-B-61-C	20	8290/Solid		10.00000	g
19NO13A5D2	15	320-29772	640-45478-B-18-C	20	8290/Solid		10.00000	g
19NO13A5D2	16	RB 111913A	Reagent Blank C-14				1.00000	
19NO13A5D2	17	CCV 111913A	CS-4 HRDXNL4_00012				1.00000	
19NO13A5D2	18						1.00000	
19NO13A5D2	19						1.00000	
19NO13A5D2	20						1.00000	
19NO13A5D2	21						1.00000	
19NO13A5D2	22						1.00000	
19NO13A5D2	23		AM 11-19-13				1.00000	
NO13A5D2	24						1.00000	

Logfile checked
11-20-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-30201/2 Calibration Date: 11/19/2013 18:38

Instrument ID: 5D2 Calib Start Date: 08/13/2013 14:41

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/13/2013 19:07

Lab File ID: 19no13a5d2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.759	1.963		11.2	10.0	11.6	20.0
2,3,7,8-TCDF	AveID	0.8613	0.7974		9.26	10.0	-7.4	20.0
13C-2,3,7,8-TCDD	Ave	0.8793	0.9511		108	100	8.2	30.0
13C-2,3,7,8-TCDF	Ave	2.322	2.651		114	100	14.2	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.311	1.646		6.28	5.00	25.6	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-30201/17 Calibration Date: 11/20/2013 03:59

Instrument ID: 5D2 Calib Start Date: 08/13/2013 14:41

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/13/2013 19:07

Lab File ID: 19no13a5d2_017.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.759	1.812		10.3	10.0	3.0	20.0
2,3,7,8-TCDF	AveID	0.8613	0.7801		9.06	10.0	-9.4	20.0
13C-2,3,7,8-TCDD	Ave	0.8793	0.9492		108	100	8.0	30.0
13C-2,3,7,8-TCDF	Ave	2.322	2.508		108	100	8.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.311	1.627		6.20	5.00	24.1	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-30201/1 Instrument ID (1): 5D2

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 11/19/2013 18:01

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	16.35	24

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\5D2\20131119-8757.b\19no13a5d2_001.d
Injection Date: 19-Nov-2013 18:01:29 Instrument ID: 5D2
Lims ID: CPS Lab Sample ID: CPS 320-30202/1-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_5D2 Limit Group: HR - 8290 - ICAL

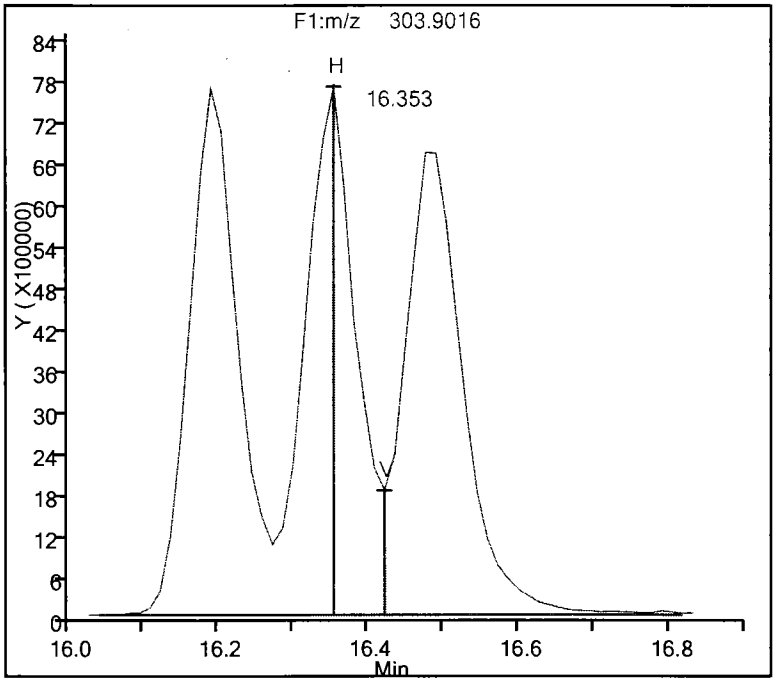
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1800437
H (Peak Height) = 7652684

%R = 24 <= 25
Passed



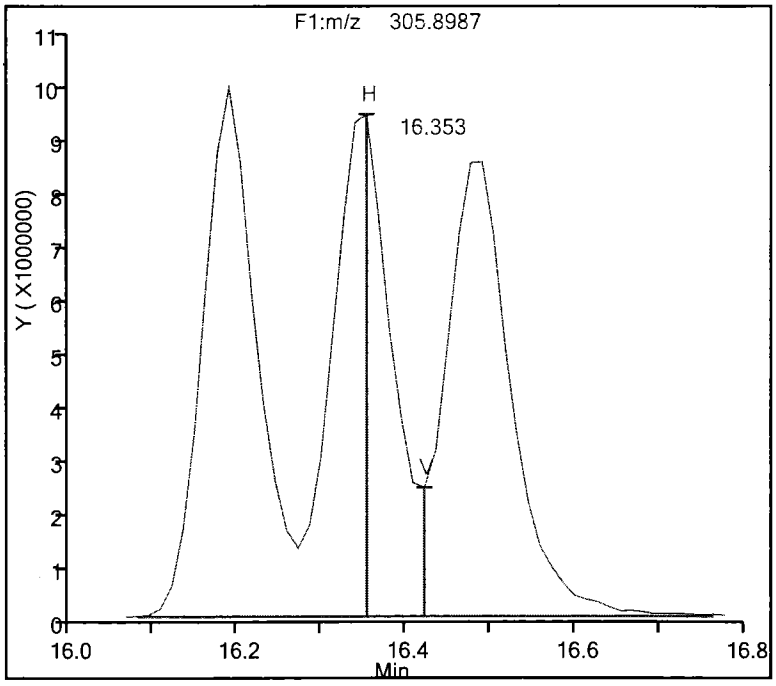
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2378227
H (Peak Height) = 9286062

%R = 26 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 08/27/2013 14:37

Analysis Batch Number: 24028 End Date: 08/27/2013 20:36

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-24028/1		08/27/2013 14:37	1	27AU13A11D2_001.d	DB-225 0.32(mm)
ZZZZZ		08/27/2013 15:17	1		DB-225 0.32(mm)
STD2 320-24028/3 IC		08/27/2013 15:57	1	27AU13A11D2_003.d	DB-225 0.32(mm)
STD3 320-24028/4 IC		08/27/2013 16:37	1	27AU13A11D2_004.d	DB-225 0.32(mm)
STD4 320-24028/5 IC		08/27/2013 17:17	1	27AU13A11D2_005.d	DB-225 0.32(mm)
STD5 320-24028/6 IC		08/27/2013 17:57	1	27AU13A11D2_006.d	DB-225 0.32(mm)
STD6 320-24028/7 IC		08/27/2013 18:37	1	27AU13A11D2_007.d	DB-225 0.32(mm)
ZZZZZ		08/27/2013 19:17	1		DB-225 0.32(mm)
ICV 320-24028/9		08/27/2013 19:56	1	27AU13A11D2_009.d	DB-225 0.32(mm)
CPS 320-24028/10		08/27/2013 20:36	1		DB-225 0.32(mm)

CAL 2,3,7,8 TCDF

8290

CAL

Data file	Smp	Work Order	Sample ID	Method/Matrix	Size	U
27AU13A11D2	1	CPS 082713	DB225 CPSM HRDXNCP_00019	2,3,7,8-TCDF	1.00000	
27AU13A11D2	2	RB 082713	Reagent Blank C-14		1.00000	
27AU13A11D2	3	IC 082713	CS-2 HRDXNL2_00008		1.00000	
27AU13A11D2	4	IC 082713A	CS-3 HRDXNL3_00007		1.00000	
27AU13A11D2	5	IC 082713B	CS-4 HRDXNL4_00011	INST. 405	1.00000	
27AU13A11D2	6	IC 082713C	CS-5 HRDXNL5_00012		1.00000	
27AU13A11D2	7	IC ~~031913E~~	CS-6 HRDXNL6_00006		1.00000	
27AU13A11D2	8	RB 082713A	Reagent Blank C-14		1.00000	
27AU13A11D2	9	ICV 082713	2nd Source HRDXNIC_00013		1.00000	
27AU13A11D2	10	CPS 082713A	DB225 CPSM HRDXN_00019		1.00000	
27AU13A11D2	11				1.00000	
27AU13A11D2	12		→ 082713E		1.00000	
27AU13A11D2	13		8/28/13 2:15		1.00000	
27AU13A11D2	14		SMA 08-27-13		1.00000	
27AU13A11D2	15				1.00000	
27AU13A11D2	16				1.00000	

logfile checked
8-27-13 ALM

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 24028

SDG No.:

Instrument ID: 11D5 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/27/2013 15:57 Calibration End Date: 08/27/2013 18:37 Calibration ID: 4236

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD2 320-24028/3	27AU13A11D2_003.d
Level 2	STD3 320-24028/4	27AU13A11D2_004.d
Level 3	STD4 320-24028/5	27AU13A11D2_005.d
Level 4	STD5 320-24028/6	27AU13A11D2_006.d
Level 5	STD6 320-24028/7	27AU13A11D2_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDD	1.3707	1.2441	1.1278	1.1243	1.1559	AveID		1.2046				8.7		20.0			
2,3,7,8-TCDF	1.1330	1.1274	1.0180	1.0167	1.0327	AveID		1.0655				5.6		20.0			
13C-2,3,7,8-TCDD	0.9756	0.9709	0.9771	0.9819	0.9960	Ave		0.9803				1.0		30.0			
13C-2,3,7,8-TCDF	1.4461	1.3722	1.3446	1.3982	1.3793	Ave		1.3881				2.7		30.0			
37Cl4-2,3,7,8-TCDD	1.4494	1.2702	1.3470	1.3530	1.3780	Ave		1.3595				4.7		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
INTERNAL STANDARD RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 24028

SDG No.:

Instrument ID: 11D5 GC Column: DB-225 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 08/27/2013 15:57 Calibration End Date: 08/27/2013 18:37 Calibration ID: 4236

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD2 320-24028/3	27AU13A11D2_003.d
Level 2	STD3 320-24028/4	27AU13A11D2_004.d
Level 3	STD4 320-24028/5	27AU13A11D2_005.d
Level 4	STD5 320-24028/6	27AU13A11D2_006.d
Level 5	STD6 320-24028/7	27AU13A11D2_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDD		AveID	378516	1389241	7369784	28582478	136678492	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDF		AveID	493585	1825042	9013600	36372605	167953482	0.500	2.00	10.0	40.0	200
13C-2,3,7,8-TCDD	13CTCI	Ave	61600490	57614409	65983869	64962288	59910082	100	100	100	100	100
13C-2,3,7,8-TCDF	13CTCI	Ave	90005250	79924664	89586654	90603039	82213219	100	100	100	100	100
37Cl4-2,3,7,8-TCDD	13CTCI	Ave	513133	1696845	10260852	39970242	186697957	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-24028/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 08/27/2013 14:37

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.38	18

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\11D5\20130828-6877.b\27AU13A11D2_001.d		
Injection Date:	27-Aug-2013 14:37:43	Instrument ID:	11D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	24028 (1)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	DXN_DB225_11D2	Limit Group:	HR - 8290 - ICAL

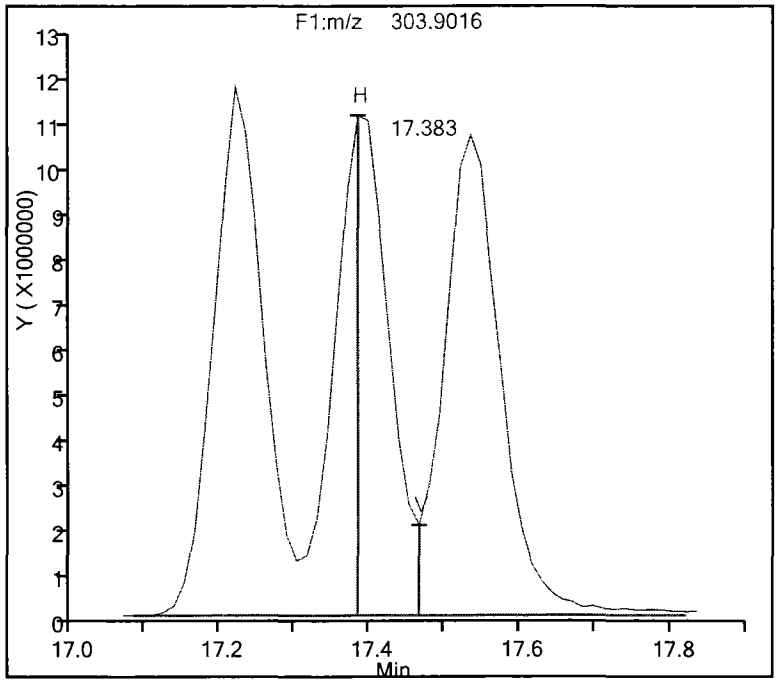
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2012755
H (Peak Height) = 11142892

%R = 18 <= 25
Passed



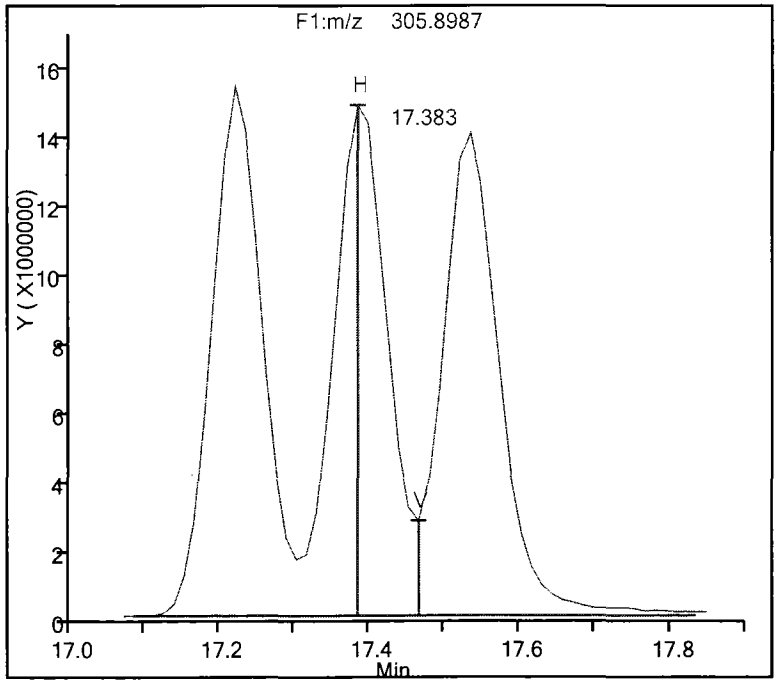
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2678604
H (Peak Height) = 14441132

%R = 19 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 11/07/2013 17:07

Analysis Batch Number: 29487 End Date: 11/08/2013 02:51

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-29487/1		11/07/2013 17:07	1	07NO1311D2_001.d	DB-225 0.32(mm)
CCV 320-29487/2		11/07/2013 17:45	1	07NO1311D2_002.d	DB-225 0.32(mm)
ZZZZZ		11/07/2013 19:04	1		DB-225 0.32(mm)
320-4670-23 RA	TF2-004/5-SS1034-000.6 RA	11/07/2013 19:43	1	07NO1311D2_005.d	DB-225 0.32(mm)
320-4670-25 RA	TF2-004/5-SS1049-000.9 RA	11/07/2013 20:22	1	07NO1311D2_006.d	DB-225 0.32(mm)
320-4670-26 RA	TF2-004/5-SS1048-000.8 RA	11/07/2013 21:01	1	07NO1311D2_007.d	DB-225 0.32(mm)
320-4670-27 RA	TF2-004/5-SS1047-000.8 RA	11/07/2013 21:40	1	07NO1311D2_008.d	DB-225 0.32(mm)
320-4670-29 RA	TF2-004/5-SS1045-000.5 RA	11/07/2013 22:18	1	07NO1311D2_009.d	DB-225 0.32(mm)
320-4670-30 RA	TF2-004/5-SS1044-000.5 RA	11/07/2013 22:57	1	07NO1311D2_010.d	DB-225 0.32(mm)
320-4670-31 RA	TF2-004/5-SS1042-000.5 RA	11/07/2013 23:36	1	07NO1311D2_011.d	DB-225 0.32(mm)
320-4670-35 RA	TF2-004/5-SS1057-0001 RA	11/08/2013 00:15	1	07NO1311D2_012.d	DB-225 0.32(mm)
320-4670-39 RA	TF2-004/5-SS1053-000.6 RA	11/08/2013 00:54	1	07NO1311D2_013.d	DB-225 0.32(mm)
320-4670-40 RA	TF2-004/5-SS1052-000.6 RA	11/08/2013 01:33	1	07NO1311D2_014.d	DB-225 0.32(mm)
ZZZZZ		11/08/2013 02:12	1		DB-225 0.32(mm)
CCV 320-29487/16		11/08/2013 02:51	1	07NO1311D2_016.d	DB-225 0.32(mm)

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
07NO1311D2	1	CPS 110713	DB225 CPSM HRDXNCP_00019				1.00000	
07NO1311D2	2	CCV 110713	CS-4 HRDXNL4_00012				1.00000	
07NO1311D2	3	RB 110713	Reagent Blank C-14				1.00000	
07NO1311D2	4	320-28374	490-38349-E-4-A	20	8290/Water	74	1.00000	L
07NO1311D2	5	320-28540	320-4670-A-23-A	20	8290/Solid	75	10.00000	g
07NO1311D2	6	320-28540	320-4670-A-25-A	20	8290/Solid		10.00000	g
07NO1311D2	7	320-28540	320-4670-A-26-A	20	8290/Solid		10.00000	g
07NO1311D2	8	320-28540	320-4670-A-27-A	20	8290/Solid		10.00000	g
07NO1311D2	9	320-28540	320-4670-A-29-A	20	8290/Solid		10.00000	g
07NO1311D2	10	320-28540	320-4670-A-30-A	20	8290/Solid		10.00000	g
07NO1311D2	11	320-28540	320-4670-A-31-A	20	8290/Solid		10.00000	g
07NO1311D2	12	320-28540	320-4670-A-35-A	20	8290/Solid		10.00000	g
07NO1311D2	13	320-28540	320-4670-A-39-A	20	8290/Solid		10.00000	g
07NO1311D2	14	320-28540	320-4670-A-40-A	20	8290/Solid		10.00000	g
07NO1311D2	15	RB 110713A	Reagent Blank C-14				1.00000	
07NO1311D2	16	CCV 110713A	CS-4 HRDXNL4_00012				1.00000	
07NO1311D2	17						1.00000	
07NO1311D2	18						1.00000	
07NO1311D2	19						1.00000	
07NO1311D2	20						1.00000	
07NO1311D2	21						1.00000	
07NO1311D2	22						1.00000	
07NO1311D2	23		SMA, ALM 11-07-13				1.00000	
07NO1311D2	24						1.00000	

logfile checked
11-08-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29487/2 Calibration Date: 11/07/2013 17:45

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 07NO1311D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.281		10.6	10.0	6.3	20.0
2,3,7,8-TCDF	AveID	1.066	1.040		9.76	10.0	-2.4	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9633		98.3	100	-1.7	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.605		116	100	15.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.371		5.04	5.00	0.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29487/16 Calibration Date: 11/08/2013 02:51

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 07NO1311D2_016.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.180		9.80	10.0	-2.0	20.0
2,3,7,8-TCDF	AveID	1.066	1.019		9.56	10.0	-4.4	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9644		98.4	100	-1.6	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.569		113	100	13.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.404		5.16	5.00	3.3	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29487/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 11/07/2013 17:07

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.33	25

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\11D5\20131108-8554.b\07NO1311D2_001.d		
Injection Date:	07-Nov-2013 17:07:05	Instrument ID:	11D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29487 (1)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	DXN_DB225_11D2	Limit Group:	HR - 8290 - ICAL

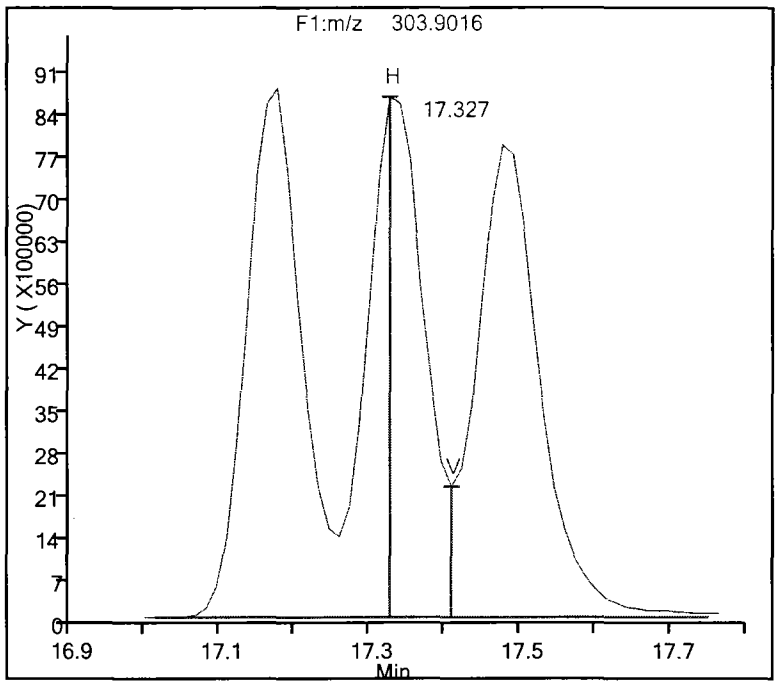
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2166649
H (Peak Height) = 8639702

%R = 25 <= 25
Passed



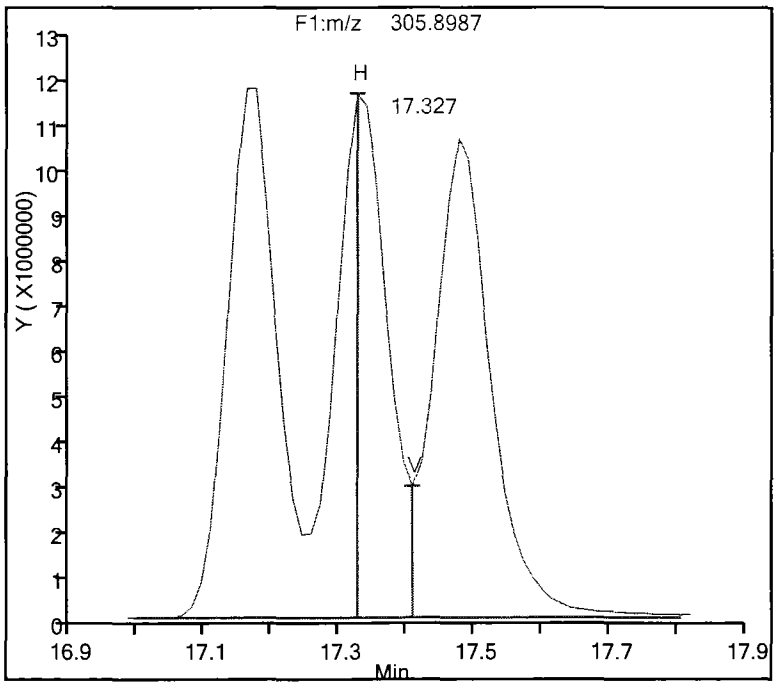
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2793701
H (Peak Height) = 11148806

%R = 25 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: T1D5 Start Date: 11/08/2013 10:36

Analysis Batch Number: 29533 End Date: 11/08/2013 21:02

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29533/1		11/08/2013 10:36	1	08NO13A11D2_001.d	DB-225 0.32(mm)
CPS 320-29533/3		11/08/2013 11:58	1	08NO13A11D2_003.d	DB-225 0.32(mm)
ZZZZZ		11/08/2013 15:51	1		DB-225 0.32(mm)
ZZZZZ		11/08/2013 16:30	1		DB-225 0.32(mm)
ZZZZZ		11/08/2013 17:09	1		DB-225 0.32(mm)
ZZZZZ		11/08/2013 17:48	1		DB-225 0.32(mm)
320-4670-42 RA	TF2-004/5-SS1050-000.6 RA	11/08/2013 18:27	1	08NO13A11D2_013.d	DB-225 0.32(mm)
320-4670-43 RA	TF2-004/5-SS1062-000.8 RA	11/08/2013 19:06	1	08NO13A11D2_014.d	DB-225 0.32(mm)
320-4670-47 RA	TF2-004/5-SS1066-000.9 RA	11/08/2013 19:45	1	08NO13A11D2_015.d	DB-225 0.32(mm)
ZZZZZ		11/08/2013 20:23	1		DB-225 0.32(mm)
CCV 320-29533/17		11/08/2013 21:02	1	08NO13A11D2_017.d	DB-225 0.32(mm)

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
08NO13A11D2	1	CCV 110813	CS-4 HRDXNL4_00012				1.00000	
08NO13A11D2	2	CPS 110813	DB225 CPSM HRDXNCP_00019				1.00000	
08NO13A11D2	3	CPS 110813A	DB225 CPSM HRDXNCP_00019				1.00000	
08NO13A11D2	4	RB 110713	Reagent Blank C-14				1.00000	
08NO13A11D2	5	320-28162	500-65240-E-2-A	20	8290A/Solid	E-35	1.00000	g
08NO13A11D2	6	280-28657	280-48399-C-2-A	20	1613B/Solid	76	10.00000	g
08NO13A11D2	7	280-28657	280-48399-C-18-A	20	1613B/Solid		10.00000	g
08NO13A11D2	8	320-28361	280-48190-B-30-A	20	1613B/Solid	73	10.00000	g
08NO13A11D2	9	320-28361	720-53263-B-1-A	20	8290/Solid	73	10.00000	g
08NO13A11D2	10	320-28361	720-53263-B-5-A	20	8290/Solid		10.00000	g
08NO13A11D2	11	320-28361	720-53161-C-1-A	20	8290/Solid		10.00000	g
08NO13A11D2	12	320-28361	720-53161-C-3-A	20	8290/Solid		10.00000	g
08NO13A11D2	13	320-28540	320-4670-A-42-A	20	8290/Solid	75	10.00000	g
08NO13A11D2	14	320-28540	320-4670-A-43-A	20	8290/Solid		10.00000	g
08NO13A11D2	15	320-28546	320-4670-A-47-A	20	8290/Solid		10.00000	g
08NO13A11D2	16	RB 110813A	Reagent Blank C-14				1.00000	
08NO13A11D2	17	CCV 110813A	CS-4 HRDXNL4_00012				1.00000	
08NO13A11D2	18						1.00000	
08NO13A11D2	19						1.00000	
08NO13A11D2	20						1.00000	
08NO13A11D2	21						1.00000	
08NO13A11D2	22		SMA 11-08-13				1.00000	
08NO13A11D2	23						1.00000	
08NO13A11D2	24						1.00000	
08NO13A11D2	25						1.00000	

logfile checked
11-08-13 ALM

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29533/1 Calibration Date: 11/08/2013 10:36

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 08NO13A11D2_001.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.131		9.39	10.0	-6.1	20.0
2,3,7,8-TCDF	AveID	1.066	0.9608		9.02	10.0	-9.8	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9252		94.4	100	-5.6	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.419		102	100	2.2	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.370		5.04	5.00	0.7	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29533/17 Calibration Date: 11/08/2013 21:02

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 08NO13A11D2_017.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.102		9.15	10.0	-8.5	20.0
2,3,7,8-TCDF	AveID	1.066	0.9596		9.01	10.0	-9.9	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9870		101	100	0.7	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.475		106	100	6.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.339		4.93	5.00	-1.5	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29533/3 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 11/08/2013 11:58

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.29	13

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\11D5\20131111-8569.b\08NO13A11D2_003.d				
Injection Date:	08-Nov-2013 11:58:29	Instrument ID:	11D5		
Lims ID:	CPS	Lab Sample ID:	CPS 320-29535/3-A		
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	3
Injection Vol:	2.0 ul	Dil. Factor:	1.0000		
Method:	DXN_DB225_11D2	Limit Group:	HR - 8290 - ICAL		

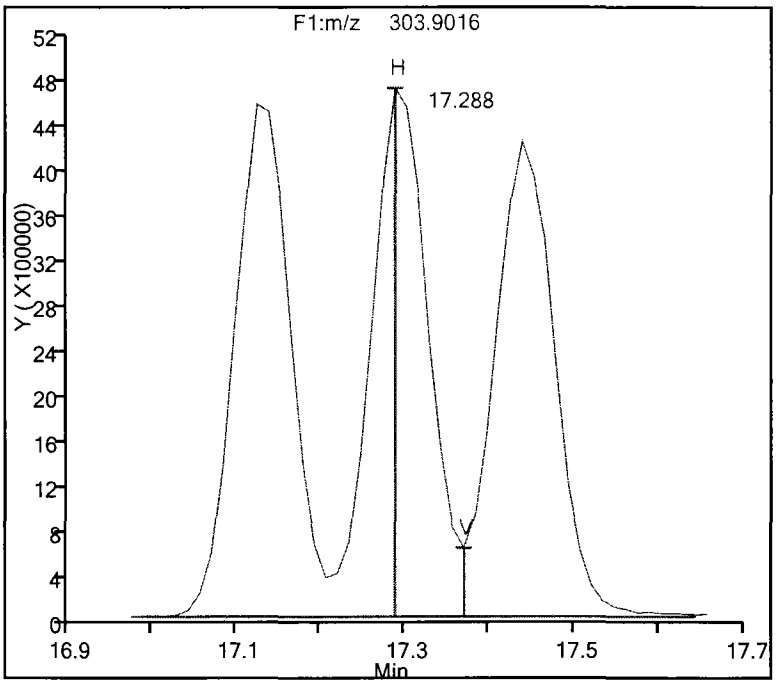
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 605778
H (Peak Height) = 4656705

%R = 13 <= 25
Passed



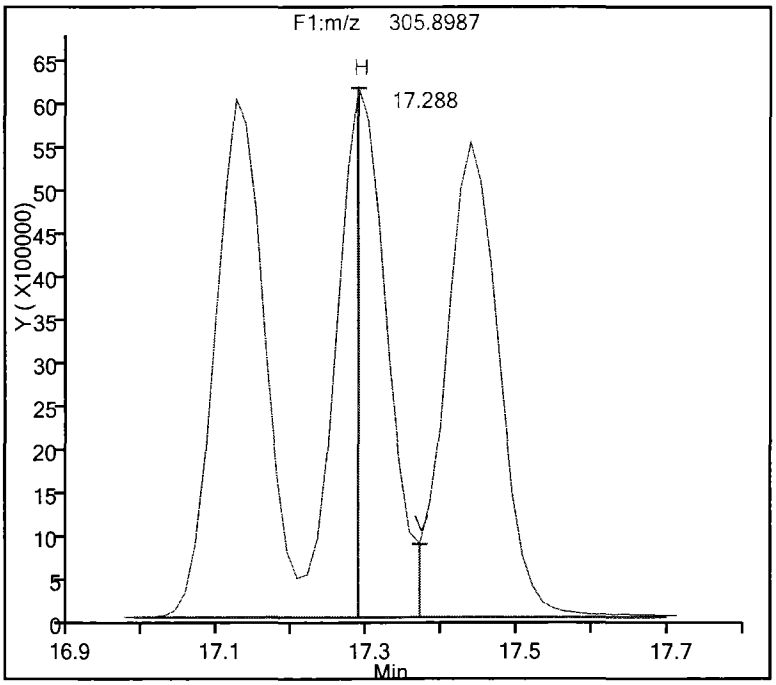
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 844020
H (Peak Height) = 6122992

%R = 14 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 11/08/2013 22:34

Analysis Batch Number: 29560 End Date: 11/09/2013 08:56

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-29560/1		11/08/2013 22:34	1	08NO13B11D2_001.d	DB-225 0.32(mm)
CCV 320-29560/2		11/08/2013 23:13	1	08NO13B11D2_002.d	DB-225 0.32(mm)
320-4670-48 RA	TF2-004/5-SS1060.000.5 RA	11/09/2013 00:30	1	08NO13B11D2_004.d	DB-225 0.32(mm)
320-4670-51 RA	TF2-004/5-SS1065-000.5 RA	11/09/2013 01:09	1	08NO13B11D2_005.d	DB-225 0.32(mm)
ZZZZZ		11/09/2013 01:48	1		DB-225 0.32(mm)
ZZZZZ		11/09/2013 02:27	1		DB-225 0.32(mm)
ZZZZZ		11/09/2013 03:06	1		DB-225 0.32(mm)
320-4670-64 RA	TF2-003-SS1019-000.5 RA	11/09/2013 03:45	1	08NO13B11D2_009.d	DB-225 0.32(mm)
320-4670-64 MS RA	TF2-003-SS1019-000.5 MS RA	11/09/2013 04:24	1	08NO13B11D2_010.d	DB-225 0.32(mm)
320-4670-64 MSD RA	TF2-003-SS1019-000.5 MSD RA	11/09/2013 05:03	1	08NO13B11D2_011.d	DB-225 0.32(mm)
320-4670-65 RA	TF2-003-SS-DUP06-1013 RA	11/09/2013 05:41	1	08NO13B11D2_012.d	DB-225 0.32(mm)
320-4670-13 RA	TF2-004/5-SS1028-000.8 RA	11/09/2013 06:20	1	08NO13B11D2_013.d	DB-225 0.32(mm)
320-4670-15 RA	TF2-004/5-SS1040-000.9 RA	11/09/2013 06:59	1	08NO13B11D2_014.d	DB-225 0.32(mm)
320-4670-16 RA	TF2-004/5-SS1039-000.9 RA	11/09/2013 07:38	1	08NO13B11D2_015.d	DB-225 0.32(mm)
ZZZZZ		11/09/2013 08:17	1		DB-225 0.32(mm)
CCV 320-29560/17		11/09/2013 08:56	1	08NO13B11D2_017.d	DB-225 0.32(mm)

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
08NO13B11D2	1	CPS 110813B	DB225 CPSM HRDXNCP_00019				1.00000	
08NO13B11D2	2	CCV 110813B	CS-4 HRDXNL4_00012				1.00000	
08NO13B11D2	3	RB 110813B	Reagent Blank C-14				1.00000	
08NO13B11D2	4	320-28431	320-4670-A-48-A	20	8290/Solid	74	10.00000	g
08NO13B11D2	5	320-28431	320-4670-A-51-A	20	8290/Solid		10.00000	g
08NO13B11D2	6	320-28431	320-4670-A-52-A	20	8290/Solid		10.00000	g
08NO13B11D2	7	320-28431	320-4670-A-52-B MS	20	8290/Solid		10.00000	g
08NO13B11D2	8	320-28431	320-4670-A-52-C MSD	20	8290/Solid		10.00000	g
08NO13B11D2	9	320-28431	320-4670-A-64-A	20	8290/Solid		10.00000	g
08NO13B11D2	10	320-28431	320-4670-A-64-B MS	20	8290/Solid		10.00000	g
08NO13B11D2	11	320-28431	320-4670-A-64-C MSD	20	8290/Solid		10.00000	g
08NO13B11D2	12	320-28431	320-4670-A-65-A	20	8290/Solid		10.00000	g
08NO13B11D2	13	320-28458	320-4670-A-13-A	20	8290/Solid		10.00000	g
08NO13B11D2	14	320-28458	320-4670-A-15-A	20	8290/Solid		10.00000	g
08NO13B11D2	15	320-28458	320-4670-A-16-A	20	8290/Solid		10.00000	g
08NO13B11D2	16	RB 110813B	Reagent Blank C-14				1.00000	
08NO13B11D2	17	CCV 110813B	CS-4 HRDXNL4_00012				1.00000	
08NO13B11D2	18						1.00000	
08NO13B11D2	19						1.00000	
08NO13B11D2	20						1.00000	
08NO13B11D2	21						1.00000	
08NO13B11D2	22						1.00000	
08NO13B11D2	23						1.00000	
08NO13B11D2	24						1.00000	
08NO13B11D2	25		ALM 11-08-13				1.00000	
08NO13B11D2	26						1.00000	

logfile checked
11-11-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29560/2 Calibration Date: 11/08/2013 23:13

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 08NO13B11D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.094		9.08	10.0	-9.2	20.0
2,3,7,8-TCDF	AveID	1.066	0.9915		9.30	10.0	-7.0	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	1.002		102	100	2.2	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.503		108	100	8.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.414		5.20	5.00	4.0	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29560/17 Calibration Date: 11/09/2013 08:56

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 08NO13B11D2_017.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.066		8.85	10.0	-11.5	20.0
2,3,7,8-TCDF	AveID	1.066	0.9216		8.65	10.0	-13.5	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9766		99.6	100	-0.4	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.412		102	100	1.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.411		5.19	5.00	3.8	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29560/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 11/08/2013 22:34

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.22	15

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\11D5\20131111-8575.b\08NO13B11D2_001.d
Injection Date: 08-Nov-2013 22:34:27 Instrument ID: 11D5
Lims ID: CPS Lab Sample ID: CPS 320-29560/1-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_11D2 Limit Group: HR - 8290 - ICAL

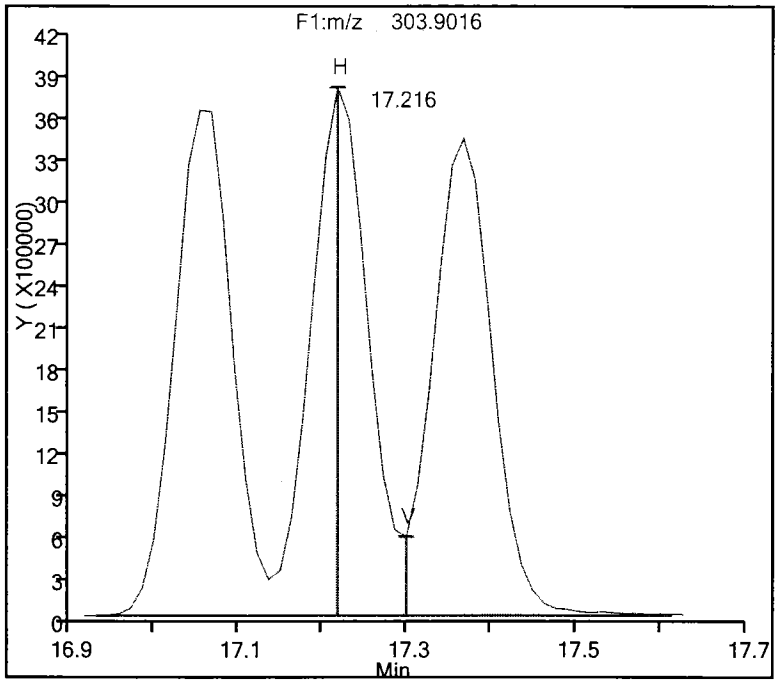
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 563627
H (Peak Height) = 3771051

%R = 15 <= 25
Passed



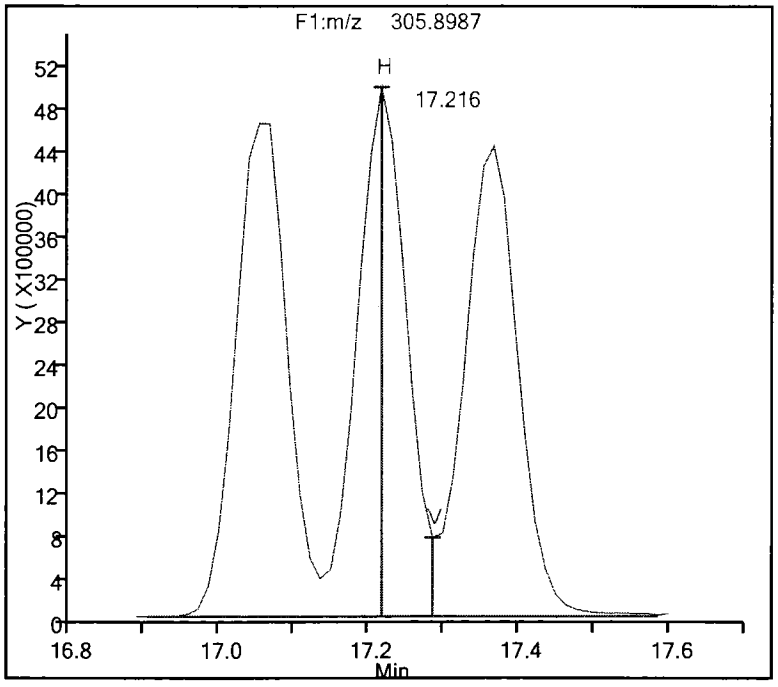
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 734095
H (Peak Height) = 4929679

%R = 15 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 11/12/2013 21:58

Analysis Batch Number: 29775 End Date: 11/13/2013 08:20

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-29775/1		11/12/2013 21:58	1	12NO1311D2_001.d	DB-225 0.32(mm)
CCV 320-29775/2		11/12/2013 22:36	1	12NO1311D2_002.d	DB-225 0.32(mm)
ZZZZZ		11/12/2013 23:15	1		DB-225 0.32(mm)
ZZZZZ		11/13/2013 00:33	1		DB-225 0.32(mm)
320-4670-55 RA	TF2-004/5-SS-DUP05-1013 RA	11/13/2013 01:12	1	12NO1311D2_006.d	DB-225 0.32(mm)
320-4670-56 RA	TF2-003-SS1011-000.8 RA	11/13/2013 01:51	1	12NO1311D2_007.d	DB-225 0.32(mm)
320-4670-57 RA	TF2-003-SS1012-000.7 RA	11/13/2013 02:30	1	12NO1311D2_008.d	DB-225 0.32(mm)
320-4670-58 RA	TF2-003-SS1013-000.7 RA	11/13/2013 03:09	1	12NO1311D2_009.d	DB-225 0.32(mm)
320-4670-59 RA	TF2-003-SS1014-0001 RA	11/13/2013 03:48	1	12NO1311D2_010.d	DB-225 0.32(mm)
ZZZZZ		11/13/2013 04:26	1		DB-225 0.32(mm)
320-4670-61 RA	TF2-003-SS1016-000.9 RA	11/13/2013 05:05	1	12NO1311D2_012.d	DB-225 0.32(mm)
320-4670-62 RA	TF2-003-SS1017-000.8 RA	11/13/2013 05:44	1	12NO1311D2_013.d	DB-225 0.32(mm)
320-4670-18 RA	TF2-004/5-SS1038-000.7 RA	11/13/2013 06:23	1	12NO1311D2_014.d	DB-225 0.32(mm)
320-4670-19 RA	TF2-004/5-SS1037-000.7 RA	11/13/2013 07:02	1	12NO1311D2_015.d	DB-225 0.32(mm)
ZZZZZ		11/13/2013 07:41	1		DB-225 0.32(mm)
CCV 320-29775/17		11/13/2013 08:20	1	12NO1311D2_017.d	DB-225 0.32(mm)

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
12NO1311D2	1	CPS 111213	DB225 CPSM HRDXNCP_00019				1.00000	
12NO1311D2	2	CCV 111213	CS-4 HRDXNL4_00012				1.00000	
12NO1311D2	3	RB 111213	Reagent Blank C-14				1.00000	
12NO1311D2	4	320-29176	280-48075-B-28-B	20	1613B/Solid	79	10.00000	g
12NO1311D2	5	320-28431	320-4670-A-54-A	20	8290/Solid	74	10.00000	g
12NO1311D2	6	320-28431	320-4670-A-55-A	20	8290/Solid		10.00000	g
12NO1311D2	7	320-28431	320-4670-A-56-A	20	8290/Solid		10.00000	g
12NO1311D2	8	320-28431	320-4670-A-57-A	20	8290/Solid		10.00000	g
12NO1311D2	9	320-28431	320-4670-A-58-A	20	8290/Solid		10.00000	g
12NO1311D2	10	320-28431	320-4670-A-59-A	20	8290/Solid		10.00000	g
12NO1311D2	11	320-28431	320-4670-A-60-A	20	8290/Solid		10.00000	g
12NO1311D2	12	320-28431	320-4670-A-61-A	20	8290/Solid		10.00000	g
12NO1311D2	13	320-28431	320-4670-A-62-A	20	8290/Solid		10.00000	g
12NO1311D2	14	320-28458	320-4670-A-18-A	20	8290/Solid	74	10.00000	g
12NO1311D2	15	320-28458	320-4670-A-19-A	20	8290/Solid		10.00000	g
12NO1311D2	16	RB 111213A	Reagent Blank C-14				1.00000	
12NO1311D2	17	CCV 111213A	CS-4 HRDXNL4_00012				1.00000	
12NO1311D2	18						1.00000	
12NO1311D2	19						1.00000	
12NO1311D2	20						1.00000	
12NO1311D2	21						1.00000	
12NO1311D2	22						1.00000	
12NO1311D2	23						1.00000	
12NO1311D2	24		ALM 11-12-13				1.00000	
12NO1311D2	25						1.00000	

logfile checked
11-13-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29775/2 Calibration Date: 11/12/2013 22:36

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 12NO1311D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.242		10.3	10.0	3.1	20.0
2,3,7,8-TCDF	AveID	1.066	1.132		10.6	10.0	6.3	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9547		97.4	100	-2.6	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.648		119	100	18.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.406		5.17	5.00	3.4	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29775/17 Calibration Date: 11/13/2013 08:20

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 12NO1311D2_017.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.225		10.2	10.0	1.7	20.0
2,3,7,8-TCDF	AveID	1.066	1.133		10.6	10.0	6.3	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9600		97.9	100	-2.1	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.622		117	100	16.8	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.370		5.04	5.00	0.7	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29775/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 11/12/2013 21:58

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.29	21

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\11D5\20131113-8644.b\12NO1311D2_001.d
Injection Date: 12-Nov-2013 21:58:05 Instrument ID: 11D5
Lims ID: CPS Lab Sample ID: CPS 320-29776/1-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_11D2 Limit Group: HR - 8290 - ICAL

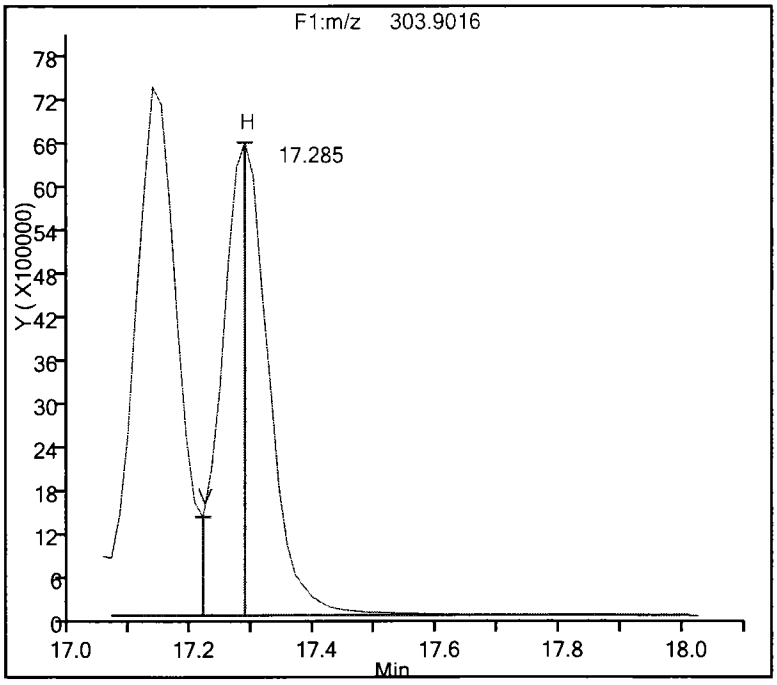
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1373599
H (Peak Height) = 6541215

%R = 21 <= 25
Passed



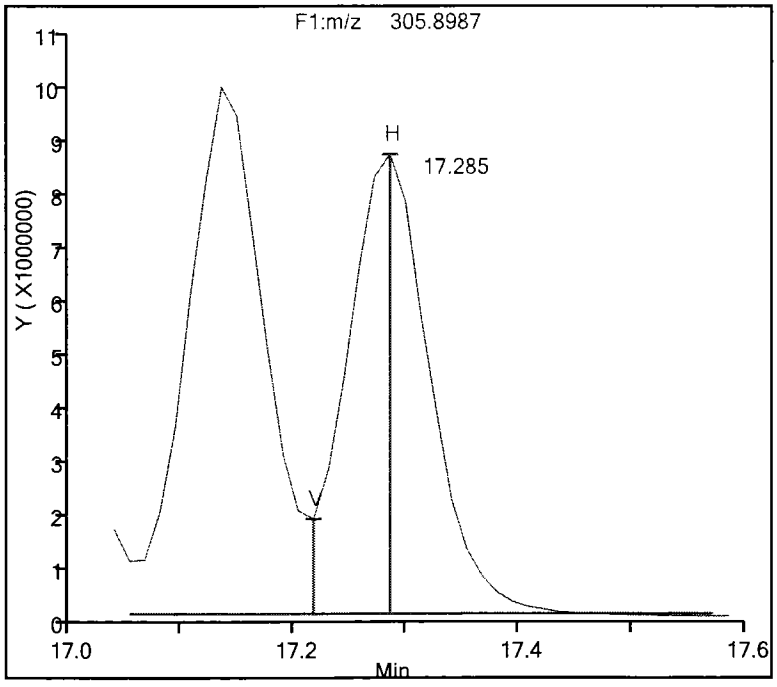
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1785379
H (Peak Height) = 8305699

%R = 21 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 12/16/2013 22:38

Analysis Batch Number: 32057 End Date: 12/17/2013 07:47

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-32057/2		12/16/2013 22:38	1	16DE13A11D2_002.d	DB-225 0.32(mm)
CPS 320-32057/3		12/16/2013 23:17	1	16DE13A11D2_003.d	DB-225 0.32(mm)
ZZZZZ		12/17/2013 00:01	1		DB-225 0.32(mm)
320-4670-2 RA	TF2-004/5-SS1026-000.8 RA	12/17/2013 00:40	1	16DE13A11D2_005.d	DB-225 0.32(mm)
320-4670-5 RA	TF2-004/5-SS1022-000.9 RA	12/17/2013 01:19	1	16DE13A11D2_006.d	DB-225 0.32(mm)
320-4670-6 RA	TF2-004/5-SS1021-000.7 RA	12/17/2013 01:58	1	16DE13A11D2_007.d	DB-225 0.32(mm)
320-4670-7 RA	TF2-004/5-SS1020-0001 RA	12/17/2013 02:36	1	16DE13A11D2_008.d	DB-225 0.32(mm)
320-4670-9 RA	TF2-004/5-SS1031-000.8 RA	12/17/2013 03:15	1	16DE13A11D2_009.d	DB-225 0.32(mm)
320-4670-10 RA	TF2-004/5-SS-DUP01-1013 RA	12/17/2013 03:54	1	16DE13A11D2_010.d	DB-225 0.32(mm)
320-4670-11 RA	TF2-004/5-SS1030-000.6 RA	12/17/2013 04:33	1	16DE13A11D2_011.d	DB-225 0.32(mm)
320-4670-14 RA	TF2-004/5-SS1027-0001 RA	12/17/2013 05:12	1	16DE13A11D2_012.d	DB-225 0.32(mm)
320-4670-14 MS RA	TF2-004/5-SS1027-0001 MS RA	12/17/2013 05:50	1	16DE13A11D2_013.d	DB-225 0.32(mm)
320-4670-14 MSD RA	TF2-004/5-SS1027-0001 MSD RA	12/17/2013 06:29	1	16DE13A11D2_014.d	DB-225 0.32(mm)
ZZZZZ		12/17/2013 07:08	1		DB-225 0.32(mm)
CCV 320-32057/16		12/17/2013 07:47	1	16DE13A11D2_016.d	DB-225 0.32(mm)

* Res check > 25%

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
16DE13A11D2	1	CPS 121613	DB225 CPSM HRDXNCP_00019				1.00000	
16DE13A11D2	2	CCV 121613	CS-4 HRDXNL4_00015				1.00000	
16DE13A11D2	3	CPS 121613A	DB225 CPSM HRDXNCP_00019				1.00000	
16DE13A11D2	4	RB 121613	Reagent Blank C-14				1.00000	
16DE13A11D2	5	320-28458	320-4670-A-2-A	20	8290/Solid	74	10.00000	g
16DE13A11D2	6	320-28458	320-4670-A-5-A	20	8290/Solid		10.00000	g
16DE13A11D2	7	320-28458	320-4670-A-6-A	20	8290/Solid		10.00000	g
16DE13A11D2	8	320-28458	320-4670-A-7-A	20	8290/Solid		10.00000	g
16DE13A11D2	9	320-28458	320-4670-A-9-A	20	8290/Solid		10.00000	g
16DE13A11D2	10	320-28458	320-4670-A-10-A	20	8290/Solid		10.00000	g
16DE13A11D2	11	320-28458	320-4670-A-11-A	20	8290/Solid		10.00000	g
16DE13A11D2	12	320-28458	320-4670-A-14-A	20	8290/Solid		10.00000	g
16DE13A11D2	13	320-28458	320-4670-A-14-B MS	20	8290/Solid		10.00000	g
16DE13A11D2	14	320-28458	320-4670-A-14-C MSD	20	8290/Solid		10.00000	g
16DE13A11D2	15	RB 121613A	Reagent Blank C-14				1.00000	
16DE13A11D2	16	CCV 121613A	CS-4 HRDXNL4_00015				1.00000	
16DE13A11D2	17						1.00000	
16DE13A11D2	18						1.00000	
16DE13A11D2	19						1.00000	
16DE13A11D2	20						1.00000	
16DE13A11D2	21						1.00000	
16DE13A11D2	22						1.00000	
16DE13A11D2	23		ALM 12-16-13				1.00000	
16DE13A11D2	24						1.00000	

Log fil. checked
12-17-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32057/2 Calibration Date: 12/16/2013 22:38

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 16DE13A11D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.273		10.6	10.0	5.6	20.0
2,3,7,8-TCDF	AveID	1.066	1.136		10.7	10.0	6.6	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9734		99.3	100	-0.7	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.612		116	100	16.1	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.586		5.83	5.00	16.7	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32057/16 Calibration Date: 12/17/2013 07:47

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 16DE13A11D2_016.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.262		10.5	10.0	4.8	20.0
2,3,7,8-TCDF	AveID	1.066	1.075		10.1	10.0	0.9	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9851		100	100	0.5	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.666		120	100	20.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.601		5.89	5.00	17.8	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32057/3 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 12/16/2013 23:17

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.11	26

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\11D5\20131217-9285.b\16DE13A11D2_003.d
Injection Date: 16-Dec-2013 23:17:43 Instrument ID: 11D5
Lims ID: CPS Lab Sample ID: CPS 320-32057/3-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_11D2 Limit Group: HR - 8290 - ICAL

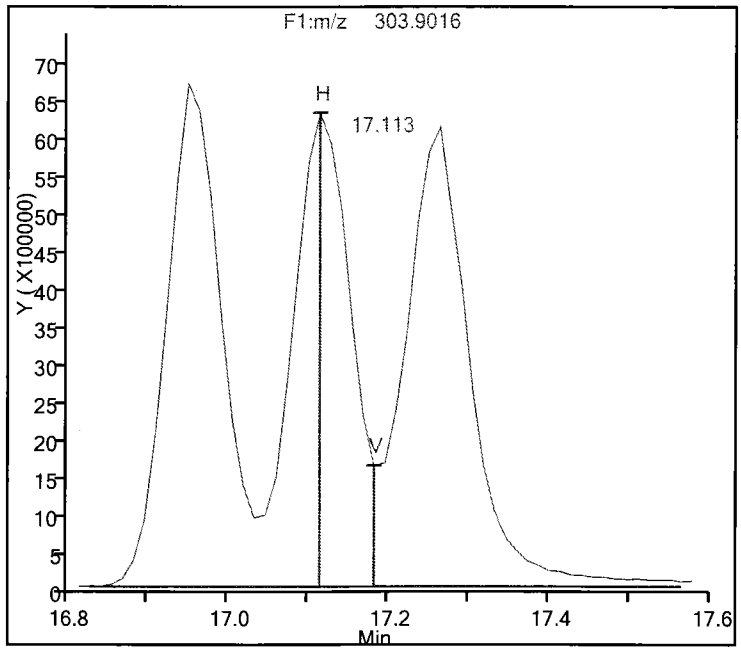
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1620348
H (Peak Height) = 6331772

%R = 26 <= 25
Passed



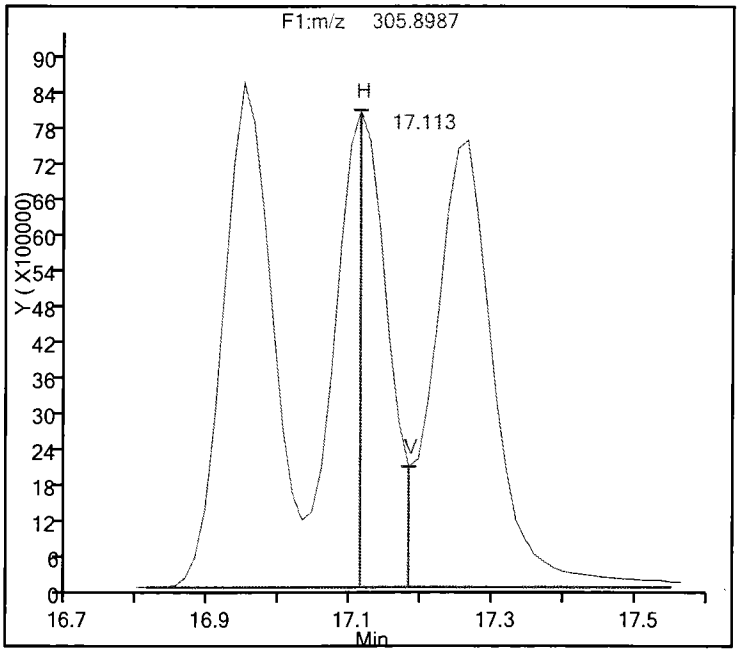
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2030452
H (Peak Height) = 8037748

%R = 25 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 12/17/2013 22:47

Analysis Batch Number: 32221 End Date: 12/18/2013 09:16

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32221/1		12/17/2013 22:47	1	17DE1311D2_001.d	DB-225 0.32(mm)
CCV 320-32221/2		12/17/2013 23:26	1	17DE1311D2_002.d	DB-225 0.32(mm)
ZZZZZ		12/18/2013 00:05	1		DB-225 0.32(mm)
320-4670-24 RA	TF2-004/5-SS1033-000.8 RA	12/18/2013 00:44	1	17DE1311D2_004.d	DB-225 0.32(mm)
320-4670-28 RA	TF2-004/5-SS1046-000.5 RA	12/18/2013 01:22	1	17DE1311D2_005.d	DB-225 0.32(mm)
320-4670-32 RA	TF2-004/5-SS1041-000.7 RA	12/18/2013 02:01	1	17DE1311D2_006.d	DB-225 0.32(mm)
320-4670-33 RA	TF2-004/5-SS-DUP03-1013 RA	12/18/2013 02:40	1	17DE1311D2_007.d	DB-225 0.32(mm)
320-4670-36 RA	TF2-004/5-SS1056-000.6 RA	12/18/2013 03:19	1	17DE1311D2_008.d	DB-225 0.32(mm)
320-4670-37 RA	TF2-004/5-SS1055-000.8 RA	12/18/2013 03:58	1	17DE1311D2_009.d	DB-225 0.32(mm)
320-4670-38 RA	TF2-004/5-SS1054-000.6 RA	12/18/2013 04:37	1	17DE1311D2_010.d	DB-225 0.32(mm)
320-4670-38 MS RA	TF2-004/5-SS1054-000.6 MS RA	12/18/2013 05:16	1	17DE1311D2_011.d	DB-225 0.32(mm)
320-4670-38 MSD RA	TF2-004/5-SS1054-000.6 MSD RA	12/18/2013 05:55	1	17DE1311D2_012.d	DB-225 0.32(mm)
320-4670-41 RA	TF2-004/5-SS1051-000.8 RA	12/18/2013 06:34	1	17DE1311D2_013.d	DB-225 0.32(mm)
320-4670-44 RA	TF2-004/5-SS1061-000.6 RA	12/18/2013 07:12	1	17DE1311D2_014.d	DB-225 0.32(mm)
320-4670-45 RA	TF2-004/5-SS-DUP04-1013 RA	12/18/2013 07:51	1	17DE1311D2_015.d	DB-225 0.32(mm)
ZZZZZ		12/18/2013 08:30	1		DB-225 0.32(mm)
CCV 320-32221/17		12/18/2013 09:16	1	17DE1311AD2_.d	DB-225 0.32(mm)

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
17DE1311D2	1	CPS 121713	DB225 CPSM HRDXNCP_00019				1.00000	
17DE1311D2	2	CCV 121713	CS-4 HRDXNL4_00015				1.00000	
17DE1311D2	3	RB 121713	Reagent Blank C-14				1.00000	
17DE1311D2	4	320-28540	320-4670-A-24-A	20	8290/Solid	75	10.00000	g
17DE1311D2	5	320-28540	320-4670-A-28-A	20	8290/Solid		10.00000	g
17DE1311D2	6	320-28540	320-4670-A-32-A	20	8290/Solid		10.00000	g
17DE1311D2	7	320-28540	320-4670-A-33-A	20	8290/Solid		10.00000	g
17DE1311D2	8	320-28540	320-4670-A-36-A	20	8290/Solid		10.00000	g
17DE1311D2	9	320-28540	320-4670-A-37-A	20	8290/Solid		10.00000	g
17DE1311D2	10	320-28540	320-4670-A-38-A	20	8290/Solid		10.00000	g
17DE1311D2	11	320-28540	320-4670-A-38-B MS	20	8290/Solid		10.00000	g
17DE1311D2	12	320-28540	320-4670-A-38-C MSD	20	8290/Solid		10.00000	g
17DE1311D2	13	320-28540	320-4670-A-41-A	20	8290/Solid		10.00000	g
17DE1311D2	14	320-28546	320-4670-A-44-A	20	8290/Solid	75	10.00000	g
17DE1311D2	15	320-28546	320-4670-A-45-A	20	8290/Solid		10.00000	g
17DE1311D2	16	RB 121713A	Reagent Blank C-14				1.00000	
17DE1311D2	17	CCV 121713A	CS-4 HRDXNL4_00015				1.00000	
17DE1311D2	18						1.00000	
17DE1311D2	19						1.00000	
17DE1311D2	20						1.00000	
17DE1311D2	21						1.00000	
17DE1311D2	22						1.00000	
17DE1311D2	23						1.00000	
17DE1311D2	24		ALM 12-17-13				1.00000	
17DE1311D2	25						1.00000	

logfile checked
12-18-13 ALM

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32221/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 12/17/2013 22:47

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.08	22

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\11D5\20131219-9335.b\17DE1311D2_001.d
Injection Date: 17-Dec-2013 22:47:28 Instrument ID: 11D5
Lims ID: CPS Lab Sample ID: CPS 320-32221/1-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_11D2 Limit Group: HR - 8290 - ICAL

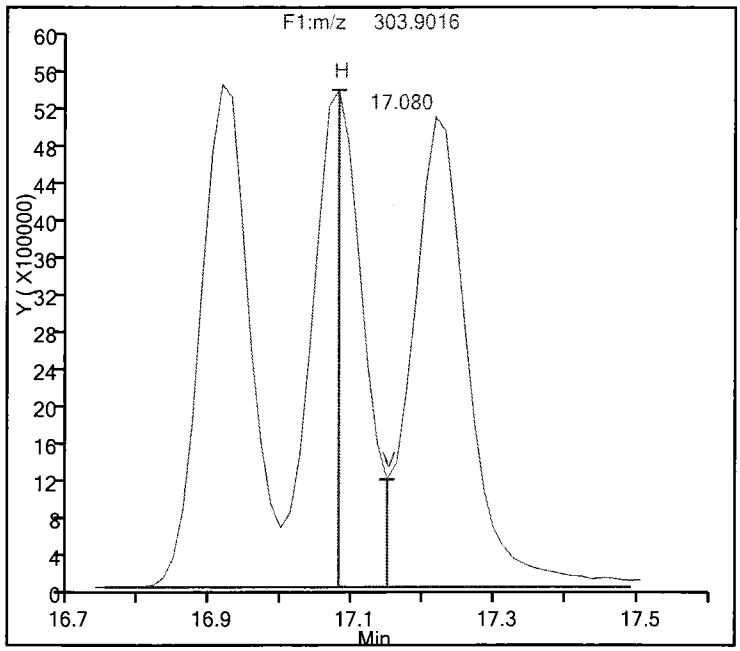
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1167398
H (Peak Height) = 5383206

%R = 22 <= 25
Passed



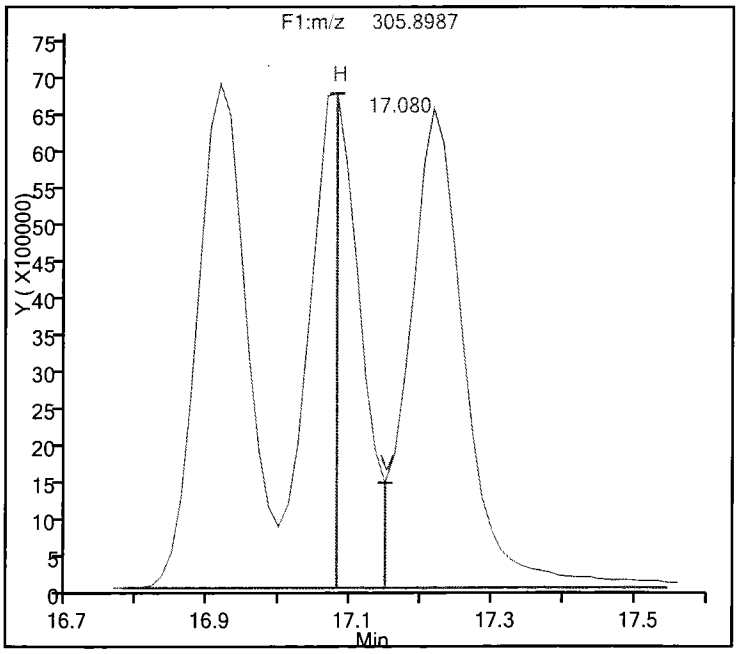
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1428748
H (Peak Height) = 6735628

%R = 21 <= 25
Passed



FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32221/2 Calibration Date: 12/17/2013 23:26

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 17DE1311D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.260		10.5	10.0	4.6	20.0
2,3,7,8-TCDF	AveID	1.066	1.142		10.7	10.0	7.2	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	1.002		102	100	2.2	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.716		124	100	23.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.657		6.10	5.00	21.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32221/17 Calibration Date: 12/18/2013 09:16

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 17DE1311AD2_.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.163		9.65	10.0	-3.5	20.0
2,3,7,8-TCDF	AveID	1.066	1.102		10.3	10.0	3.4	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9866		101	100	0.6	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.519		109	100	9.4	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.601		5.89	5.00	17.8	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 11D5 Start Date: 12/19/2013 00:35

Analysis Batch Number: 32234 End Date: 12/19/2013 09:00

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-32234/1		12/19/2013 00:35	1	18DE1311D2_001.d	DB-225 0.32(mm)
CCV 320-32234/2		12/19/2013 01:14	1	18DE1311D2_002.d	DB-225 0.32(mm)
ZZZZZ		12/19/2013 01:52	1		DB-225 0.32(mm)
320-4670-46 RA	TF2-004/5-SS1067-000.7 RA	12/19/2013 02:31	1	18DE1311D2_004.d	DB-225 0.32(mm)
320-4670-49 RA	TF2-004/5-SS1059-000.6 RA	12/19/2013 03:10	1	18DE1311D2_005.d	DB-225 0.32(mm)
320-4670-50 RA	TF2-004/5-SS1058-000.5 RA	12/19/2013 03:49	1	18DE1311D2_006.d	DB-225 0.32(mm)
320-4670-52 RA	TF2-004/5-SS1064-000.6 RA	12/19/2013 04:28	1	18DE1311D2_007.d	DB-225 0.32(mm)
320-4670-52 MS RA	TF2-004/5-SS1064-000.6 MS RA	12/19/2013 05:07	1	18DE1311D2_008.d	DB-225 0.32(mm)
320-4670-52 MSD RA	TF2-004/5-SS1064-000.6 MSD RA	12/19/2013 05:45	1	18DE1311D2_009.d	DB-225 0.32(mm)
320-4670-53 RA	TF2-004/5-SS1063-000.6 RA	12/19/2013 06:24	1	18DE1311D2_010.d	DB-225 0.32(mm)
320-4670-54 RA	TF2-004/5-SS1068-000.5 RA	12/19/2013 07:03	1	18DE1311D2_011.d	DB-225 0.32(mm)
320-4670-63 RA	TF2-003-SS1018-000.8 RA	12/19/2013 07:42	1	18DE1311D2_012.d	DB-225 0.32(mm)
ZZZZZ		12/19/2013 08:21	1		DB-225 0.32(mm)
CCV 320-32234/14		12/19/2013 09:00	1	18DE1311D2_014.d	DB-225 0.32(mm)

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
18DE1311D2	1	CPS 121813	DB225 CPSM HRDXNCP_00019				1.00000	
18DE1311D2	2	CCV 121813	CS-4 HRDXNL4_00015				1.00000	
18DE1311D2	3	RB 121813	Reagent Blank C-14				1.00000	
18DE1311D2	4	320-28546	320-4670-A-46-A	20	8290/Solid	75	10.00000	g
18DE1311D2	5	320-28431	320-4670-A-49-A	20	8290/Solid	74	10.00000	g
18DE1311D2	6	320-28431	320-4670-A-50-A	20	8290/Solid		10.00000	g
18DE1311D2	7	320-28431	320-4670-A-52-A	20	8290/Solid		10.00000	g
18DE1311D2	8	320-28431	320-4670-A-52-B MS	20	8290/Solid		10.00000	g
18DE1311D2	9	320-28431	320-4670-A-52-C MSD	20	8290/Solid		10.00000	g
18DE1311D2	10	320-28431	320-4670-A-53-A	20	8290/Solid		10.00000	g
18DE1311D2	11	320-28431	320-4670-A-54-A	20	8290/Solid		10.00000	g
18DE1311D2	12	320-28431	320-4670-A-63-A	20	8290/Solid		10.00000	g
18DE1311D2	13	RB 121813A	Reagent Blank C-14				1.00000	
18DE1311D2	14	CCV 121813A	CS-4 HRDXNL4_00015				1.00000	
18DE1311D2	15						1.00000	
18DE1311D2	16						1.00000	
18DE1311D2	17						1.00000	
18DE1311D2	18						1.00000	
18DE1311D2	19						1.00000	
18DE1311D2	20						1.00000	
18DE1311D2	21		ALM 12-18-13				1.00000	
18DE1311D2	22						1.00000	

logfile Checked
12/19/13 JRB

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32234/1 Instrument ID (1): 11D5

GC Column (1): DB-225 ID: 0.32(mm) Date Analyzed (1): 12/19/2013 00:35

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDF	17.07	22

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\11D5\20131219-9340.b\18DE1311D2_001.d
Injection Date: 19-Dec-2013 00:35:13 Instrument ID: 11D5
Lims ID: CPS Lab Sample ID: CPS 320-32234/1-A
Client ID:
Operator ID: ALS Bottle#: 0 Worklist Smp#: 1
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: DXN_DB225_11D2 Limit Group: HR - 8290 - ICAL

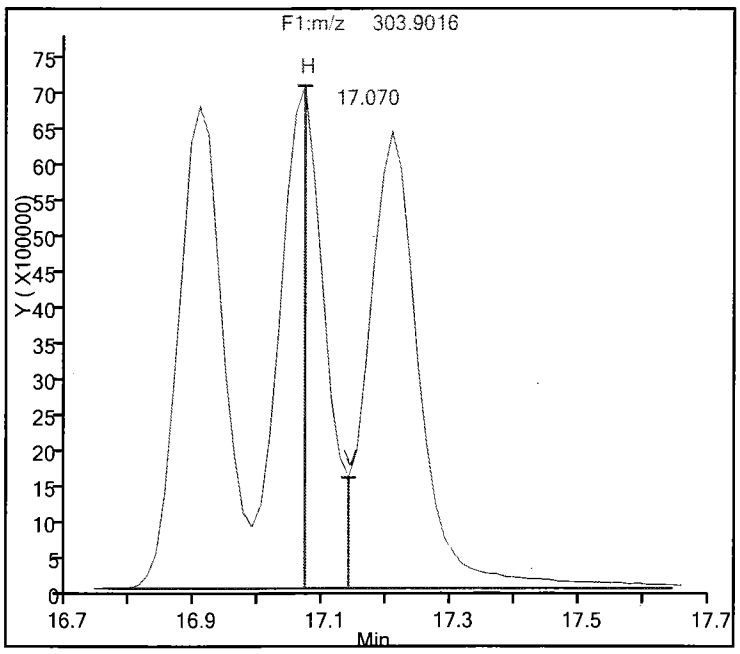
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1545396
H (Peak Height) = 7009460

%R = 22 <= 25
Passed



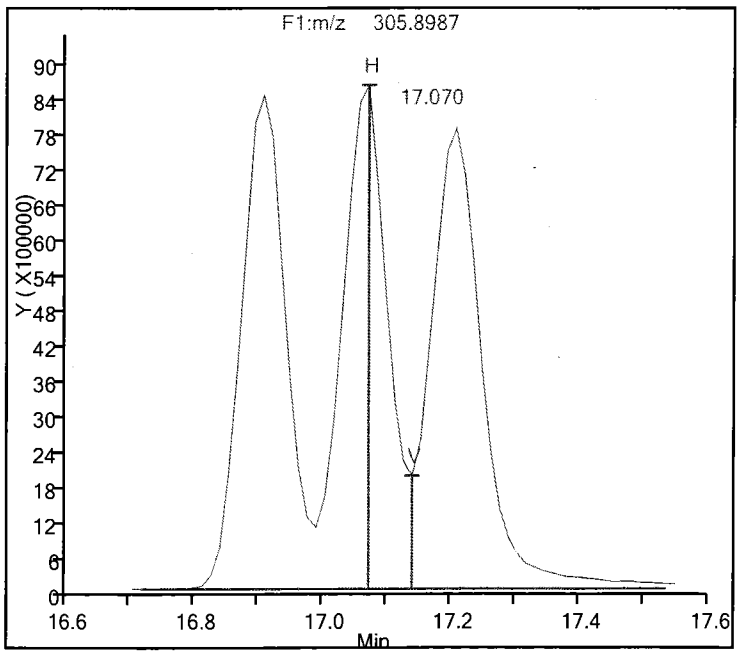
2,3,7,8-TCDF

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1931732
H (Peak Height) = 8617940

%R = 22 <= 25
Passed



FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32234/2 Calibration Date: 12/19/2013 01:14

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 18DE1311D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.308		10.9	10.0	8.6	20.0
2,3,7,8-TCDF	AveID	1.066	1.096		10.3	10.0	2.8	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9380		95.7	100	-4.3	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.645		119	100	18.5	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.591		5.85	5.00	17.1	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32234/14 Calibration Date: 12/19/2013 09:00

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 18DE1311D2_014.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.251		10.4	10.0	3.9	20.0
2,3,7,8-TCDF	AveID	1.066	0.9340		8.77	10.0	-12.3	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	0.9867		101	100	0.6	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.586		114	100	14.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.605		5.90	5.00	18.0	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 4D5 Start Date: 07/10/2013 17:23

Analysis Batch Number: 20434 End Date: 07/10/2013 23:51

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-20434/1		07/10/2013 17:23	1	10JL134D5_001.d	DB-5 0.32(mm)
IC 320-20434/3		07/10/2013 18:49	1	10JL134D5_003.d	DB-5 0.32(mm)
IC 320-20434/4		07/10/2013 19:32	1	10JL134D5_004.d	DB-5 0.32(mm)
IC 320-20434/5		07/10/2013 20:15	1	10JL134D5_005.d	DB-5 0.32(mm)
IC 320-20434/6		07/10/2013 20:58	1	10JL134D5_006.d	DB-5 0.32(mm)
IC 320-20434/7		07/10/2013 21:42	1	10JL134D5_007.d	DB-5 0.32(mm)
ZZZZZ		07/10/2013 22:25	1		DB-5 0.32(mm)
ICV 320-20434/9		07/10/2013 23:08	1	10JL134D5_009.d	DB-5 0.32(mm)
CPS 320-20434/10		07/10/2013 23:51	1		DB-5 0.32(mm)

CAL PCDD/PCDF

8290

PCDD/PCDF
CAL. INST 4D5

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
10JL134D5	1	CPS 071013	DB-5 CPSM HRDXNCP_00018				1.00000	
10JL134D5	2	IC 071013	CS-1 HRDXNL1_00012				1.00000	
10JL134D5	3	IC 071013A	CS-2 HRDXNL2_00008				1.00000	
10JL134D5	4	IC 071013B	CS-3 HRDXNL3_00007				1.00000	
10JL134D5	5	IC 071013C	CS-4 HRDXNL4_00011				1.00000	
10JL134D5	6	IC 071013D	CS-5 HRDXNL5_00012				1.00000	
10JL134D5	7	IC 071013E	CS-6 HRDXNL6_00006				1.00000	
10JL134D5	8	RB 071013	Reagent Blank C-14				1.00000	
10JL134D5	9	ICV 071013	2nd Source HRDXNIC_00013				1.00000	
10JL134D5	10	CPS 071013A	DB-5 CPSM HRDXNCP_00018				1.00000	
10JL134D5	11						1.00000	
10JL134D5	12						1.00000	
10JL134D5	13						1.00000	
10JL134D5	14						1.00000	
10JL134D5	15						1.00000	
10JL134D5	16						1.00000	
10JL134D5	17						1.00000	
10JL134D5	18						1.00000	
10JL134D5	19		ALM 07-10-13				1.00000	
10JL134D5	20						1.00000	

logfile checked
7-11-13
SMA

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 20434

SDG No.:

Instrument ID: 4D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/10/2013 18:49 Calibration End Date: 07/10/2013 21:42 Calibration ID: 3549

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-20434/3	10JL134D5_003.d
Level 2	IC 320-20434/4	10JL134D5_004.d
Level 3	IC 320-20434/5	10JL134D5_005.d
Level 4	IC 320-20434/6	10JL134D5_006.d
Level 5	IC 320-20434/7	10JL134D5_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.0552	1.0297	0.9249	0.9222	0.9434	AveID		0.9751				6.4		20.0			
2,3,7,8-TCDD	1.2455	1.2032	1.1420	1.1503	1.1756	AveID		1.1833				3.6		20.0			
1,2,3,7,8-PeCDF	1.2046	1.2534	1.1516	1.1718	1.1956	AveID		1.1954				3.2		20.0			
2,3,4,7,8-PeCDF	1.1698	1.1965	1.0832	1.0948	1.1172	AveID		1.1323				4.3		20.0			
1,2,3,7,8-PeCDD	1.1658	1.1580	1.0800	1.0949	1.1254	AveID		1.1248				3.4		20.0			
1,2,3,4,7,8-HxCDF	1.1031	1.1217	1.0263	1.0478	1.0420	AveID		1.0682				3.9		20.0			
1,2,3,6,7,8-HxCDF	1.1599	1.2323	1.0989	1.0768	1.0681	AveID		1.1272				6.1		20.0			
2,3,4,6,7,8-HxCDF	1.0903	1.1628	1.0298	1.0300	1.0324	AveID		1.0690				5.5		20.0			
1,2,3,4,7,8-HxCDD	1.1433	1.2423	1.2342	1.1477	1.1783	AveID		1.1892				3.9		20.0			
1,2,3,6,7,8-HxCDD	1.1477	1.2180	1.2639	1.1495	1.1508	AveID		1.1860				4.4		20.0			
1,2,3,7,8,9-HxCDD	1.3299	1.3727	1.3421	1.2659	1.2853	AveID		1.3192				3.3		20.0			
1,2,3,7,8,9-HxCDF	1.0286	1.1069	0.9622	0.9567	0.9866	AveID		1.0082				6.2		20.0			
1,2,3,4,6,7,8-HpCDF	1.5578	1.5991	1.4745	1.4798	1.5007	AveID		1.5224				3.6		20.0			
1,2,3,4,6,7,8-HpCDD	1.1163	1.1925	1.1190	1.1362	1.1542	AveID		1.1436				2.7		20.0			
1,2,3,4,7,8,9-HpCDF	1.2778	1.3520	1.2428	1.2284	1.3007	AveID		1.2803				3.8		20.0			
OCDD	1.2325	1.2814	1.1720	1.1930	1.1807	AveID		1.2119				3.7		20.0			
OCDF	1.4580	1.5039	1.4036	1.4267	1.4382	AveID		1.4461				2.6		20.0			
13C-2,3,7,8-TCDF	1.6223	1.5832	1.6098	1.6122	1.6275	Ave		1.6110				1.1		30.0			
13C-2,3,7,8-TCDD	0.9971	0.9852	1.0028	1.0070	1.0168	Ave		1.0017				1.2		30.0			
13C-1,2,3,7,8-PeCDF	1.2636	1.2535	1.2795	1.2589	1.2419	Ave		1.2595				1.1		30.0			
13C-1,2,3,7,8-PeCDD	0.7563	0.7834	0.7743	0.7638	0.7509	Ave		0.7657				1.7		30.0			
13C-1,2,3,4,7,8-HxCDF	1.2570	1.2451	1.3747	1.3491	1.3145	Ave		1.3081				4.3		30.0			
13C-1,2,3,6,7,8-HxCDD	0.8795	0.8839	0.8328	0.9005	0.8643	Ave		0.8722				2.9		30.0			
13C-1,2,3,4,6,7,8-HpCDF	0.8840	0.9176	0.9605	0.9121	0.8920	Ave		0.9132				3.3		30.0			
13C-1,2,3,4,6,7,8-HpCDD	0.7167	0.7565	0.7804	0.7293	0.7376	Ave		0.7441				3.3		30.0			
13C-OCDD	0.5996	0.6359	0.6591	0.5878	0.6418	Ave		0.6249				4.8		30.0			
37Cl4-2,3,7,8-TCDD	1.2664	1.1790	1.2072	1.2873	1.3112	Ave		1.2502				4.4		30.0			

Note: The ml coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 20434

SDG No.:

Instrument ID: 4D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/10/2013 18:49 Calibration End Date: 07/10/2013 21:42 Calibration ID: 3549

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-20434/3	10JL134D5_003.d
Level 2	IC 320-20434/4	10JL134D5_004.d
Level 3	IC 320-20434/5	10JL134D5_005.d
Level 4	IC 320-20434/6	10JL134D5_006.d
Level 5	IC 320-20434/7	10JL134D5_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	448612	1786296	7303095	35089428	136562862	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	311599	1286359	5666170	27574443	106585391	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	2589107	11927050	49438659	243558754	916355230	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	2583143	11399149	46875796	226794540	855003864	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	1539395	6963938	28201277	137731215	522939511	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	2076287	9278126	37449790	179813533	688283521	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	2166338	10030012	40164378	184515905	708503184	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	1967516	9325543	37623451	177368915	685720163	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1529151	7384467	27908750	133735227	521003390	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	1482153	7223267	28658941	135165140	514633642	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	1786816	8159790	30254709	147619431	570568088	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	1894347	9161943	35622988	165100121	659335528	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	1835099	9146026	35773798	161766956	636834418	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	1091301	5662971	22006572	99727789	406807355	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	1628232	7802764	30116813	134096328	552304908	2.50	10.0	50.0	200	1000
OCDD		AveID	1875746	9417476	36063662	156008884	673683716	5.00	20.0	100	400	2000
OCDF		AveID	2216292	10724991	42154009	184572023	808500731	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	81255203	88457942	78173463	96074983	73282546	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	49831406	55505173	48577223	60133827	45824847	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	87723605	96825261	86617937	105100073	77643074	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	53031213	61167652	53068777	64212642	47038255	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	46855988	51911947	45605648	52721291	41915948	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	54198004	60572168	46164561	59658027	45436276	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	29628323	34780835	29347576	33139639	26862521	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	39535905	47315424	40267945	43880020	35508307	100	100	100	100	100
13C-OCDD	13CHx(	Ave	60228891	72212318	60051436	63407919	56547204	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	357211	1481175	6618103	34643855	132529220	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-20434/1 Instrument ID (1): 4D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 07/10/2013 1[illegible]:23

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.53	17

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\4D5\20130711-5766.b\10JL134D5_001.d		
Injection Date:	10-Jul-2013 17:23:05	Limit Group:	HR - 8290 - ICAL
Client ID:		Instrument ID:	4D5
Lims Batch ID:	20434	Lims Sample ID:	1
Operator ID:		Injection Vol:	2.0 ul
Column Type:	DB-5	Column Dia:	0.32 mm

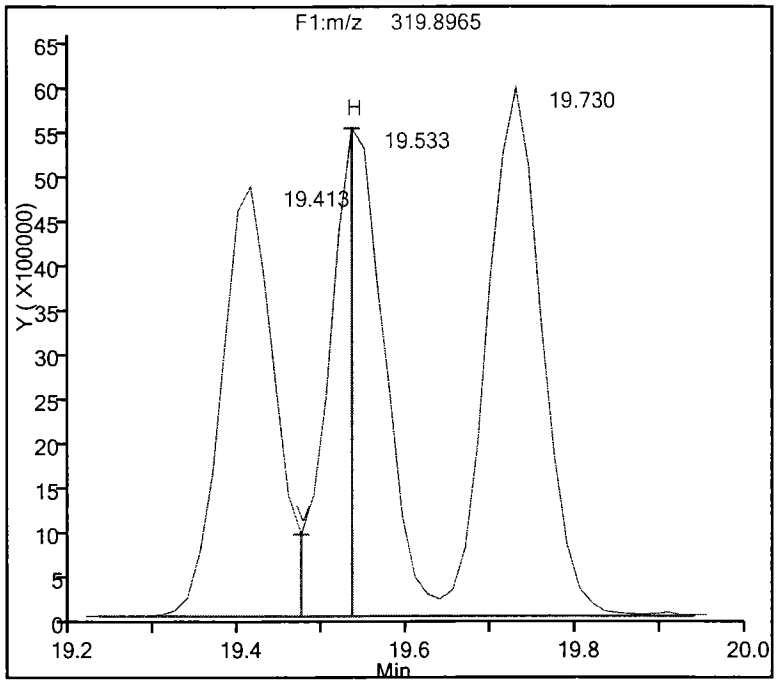
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 920198
H (Peak Height) = 5471622

%R = 17 <= 25
Passed



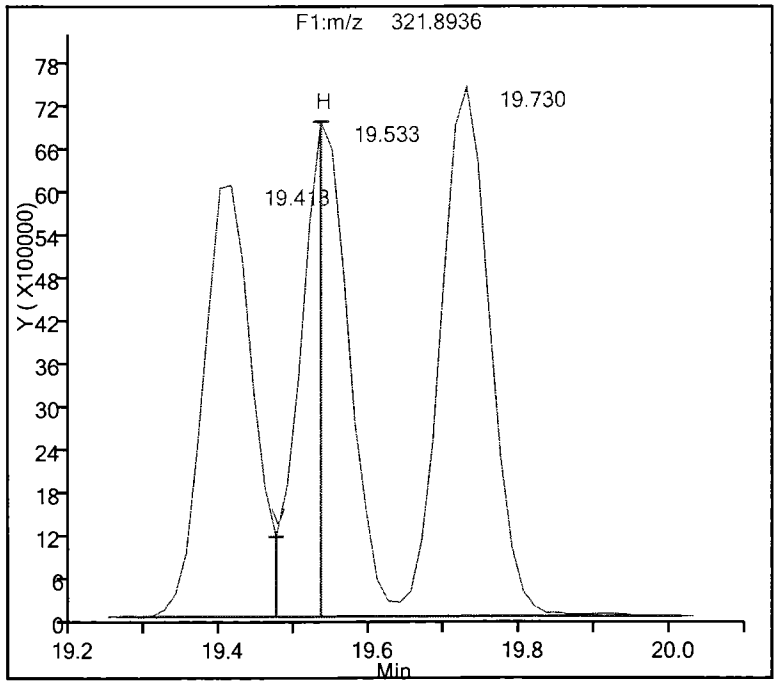
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1109682
H (Peak Height) = 6902450

%R = 16 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 4D5 Start Date: 10/28/2013 20:47

Analysis Batch Number: 28581 End Date: 10/29/2013 06:57

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-28581/1		10/28/2013 20:47	1	28OC13C4D5_001.d	DB-5 0.32(mm)
CCV 320-28581/2		10/28/2013 21:30	1	28OC13C4D5_002.d	DB-5 0.32(mm)
ZZZZZ		10/28/2013 22:19	1		DB-5 0.32(mm)
MB 320-28374/1-A		10/28/2013 23:02	1	28OC13C4D5_004.d	DB-5 0.32(mm)
LCS 320-28374/2-A		10/28/2013 23:45	1	28OC13C4D5_005.d	DB-5 0.32(mm)
ZZZZZ		10/29/2013 00:28	1		DB-5 0.32(mm)
ZZZZZ		10/29/2013 01:11	1		DB-5 0.32(mm)
ZZZZZ		10/29/2013 01:55	1		DB-5 0.32(mm)
ZZZZZ		10/29/2013 02:38	1		DB-5 0.32(mm)
ZZZZZ		10/29/2013 03:21	1		DB-5 0.32(mm)
320-4670-17	TF2-SS-RB01-1013	10/29/2013 04:04	1	28OC13C4D5_011.d	DB-5 0.32(mm)
320-4670-34	TF2-SS-RB02-1013	10/29/2013 04:47	1	28OC13C4D5_012.d	DB-5 0.32(mm)
320-4670-66	TF2-003-SS-RB03-1013	10/29/2013 05:30	1	28OC13C4D5_013.d	DB-5 0.32(mm)
CCV 320-28581/15		10/29/2013 06:57	1	28OC13C4D5_015.d	DB-5 0.32(mm)

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
28OC13C4D5	1	CPS 102813	DB-5 CPSM HRDXNCP_00018				1.00000	
28OC13C4D5	2	CCV 102813	CS-4 HRDXNL4_00012				1.00000	
28OC13C4D5	3	RB 102813	Reagent Blank C-14				1.00000	
28OC13C4D5	4	320-28374	MB 320-28374/1-A	20	8290/Water	74	1.00000	L
28OC13C4D5	5	320-28374	LCS 320-28374/2-A	20	8290/Water		1.00000	L
28OC13C4D5	6	320-28374	490-38349-E-1-A	20	8290/Water		1.00000	L
28OC13C4D5	7	320-28374	490-38349-E-2-A	20	8290/Water		1.00000	L
28OC13C4D5	8	320-28374	490-38349-E-3-A	20	8290/Water		1.00000	L
28OC13C4D5	9	320-28374	490-38349-E-4-A	20	8290/Water		1.00000	L
28OC13C4D5	10	320-28374	490-38349-E-5-A	20	8290/Water		1.00000	L
28OC13C4D5	11	320-28374	320-4670-A-17-A	20	8290/Water		1.00000	L
28OC13C4D5	12	320-28374	320-4670-A-34-A	20	8290/Water		1.00000	L
28OC13C4D5	13	320-28374	320-4670-A-66-A	20	8290/Water		1.00000	L
28OC13C4D5	14	RB 102813A	Reagent Blank C-14				1.00000	
28OC13C4D5	15	CCV 102813A	CS-4 HRDXNL4_00012				1.00000	
28OC13C4D5	16						1.00000	
28OC13C4D5	17						1.00000	
28OC13C4D5	18						1.00000	
28OC13C4D5	19						1.00000	
28OC13C4D5	20						1.00000	
28OC13C4D5	21		ALM 10-28-13				1.00000	
28OC13C4D5	22						1.00000	

logfile checked
10-29-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-28581/2 Calibration Date: 10/28/2013 21:30

Instrument ID: 4D5 Calib Start Date: 07/10/2013 18:49

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/10/2013 21:42

Lab File ID: 28OC13C4D5_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9751	1.132		11.6	10.0	16.1	20.0
2,3,7,8-TCDD	AveID	1.183	1.165		9.85	10.0	-1.5	20.0
1,2,3,7,8-PeCDF	AveID	1.195	1.258		52.6	50.0	5.3	20.0
2,3,4,7,8-PeCDF	AveID	1.132	1.180		52.1	50.0	4.2	20.0
1,2,3,7,8-PeCDD	AveID	1.125	1.042		46.3	50.0	-7.3	20.0
1,2,3,4,7,8-HxCDF	AveID	1.068	1.035		48.5	50.0	-3.1	20.0
1,2,3,6,7,8-HxCDF	AveID	1.127	1.232		54.6	50.0	9.3	20.0
2,3,4,6,7,8-HxCDF	AveID	1.069	1.122		52.5	50.0	5.0	20.0
1,2,3,4,7,8-HxCDD	AveID	1.189	0.9533		40.1	50.0	-19.8	20.0
1,2,3,6,7,8-HxCDD	AveID	1.186	1.120		47.2	50.0	-5.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.319	1.109		42.0	50.0	-15.9	20.0
1,2,3,7,8,9-HxCDF	AveID	1.008	0.8973		44.5	50.0	-11.0	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.522	1.517		49.8	50.0	-0.4	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.144	1.082		47.3	50.0	-5.4	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.280	1.255		49.0	50.0	-2.0	20.0
OCDD	AveID	1.212	1.187		98.0	100	-2.0	20.0
OCDF	AveID	1.446	1.419		98.2	100	-1.8	20.0
13C-2,3,7,8-TCDF	Ave	1.611	1.571		97.5	100	-2.5	30.0
13C-2,3,7,8-TCDD	Ave	1.002	0.9620		96.0	100	-4.0	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.259	1.064		84.5	100	-15.5	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7657	0.6620		86.5	100	-13.5	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.308	1.396		107	100	6.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.8722	1.019		117	100	16.9	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9132	0.9176		100	100	0.5	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7441	0.7021		94.4	100	-5.6	30.0
13C-OCDD	Ave	0.6249	0.5402		173	200	-13.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.250	1.104		4.41	5.00	-11.7	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-28581/15 Calibration Date: 10/29/2013 06:57

Instrument ID: 4D5 Calib Start Date: 07/10/2013 18:49

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/10/2013 21:42

Lab File ID: 28OC13C4D5_015.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	0.9751	1.109		11.4	10.0	13.8	20.0
2,3,7,8-TCDD	AveID	1.183	1.144		9.67	10.0	-3.3	20.0
1,2,3,7,8-PeCDF	AveID	1.195	1.345		56.2	50.0	12.5	20.0
2,3,4,7,8-PeCDF	AveID	1.132	1.276		56.3	50.0	12.7	20.0
1,2,3,7,8-PeCDD	AveID	1.125	1.029		45.8	50.0	-8.5	20.0
1,2,3,4,7,8-HxCDF	AveID	1.068	1.072		50.2	50.0	0.3	20.0
1,2,3,6,7,8-HxCDF	AveID	1.127	1.260		55.9	50.0	11.8	20.0
2,3,4,6,7,8-HxCDF	AveID	1.069	1.109		51.9	50.0	3.8	20.0
1,2,3,4,7,8-HxCDD	AveID	1.189	1.021		42.9	50.0	-14.1	20.0
1,2,3,6,7,8-HxCDD	AveID	1.186	1.324		55.8	50.0	11.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.319	1.213		46.0	50.0	-8.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.008	0.9448		46.9	50.0	-6.3	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.522	1.534		50.4	50.0	0.7	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.144	1.092		47.7	50.0	-4.5	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.280	1.212		47.4	50.0	-5.3	20.0
OCDD	AveID	1.212	1.259		104	100	3.9	20.0
OCDF	AveID	1.446	1.532		106	100	5.9	20.0
13C-2,3,7,8-TCDF	Ave	1.611	1.650		102	100	2.4	30.0
13C-2,3,7,8-TCDD	Ave	1.002	0.998		99.6	100	-0.4	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.259	1.083		86.0	100	-14.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7657	0.7150		93.4	100	-6.6	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.308	1.539		118	100	17.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.8722	0.9868		113	100	13.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9132	1.002		110	100	9.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7441	0.7625		102	100	2.5	30.0
13C-OCDD	Ave	0.6249	0.6423		206	200	2.8	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.250	1.135		4.54	5.00	-9.2	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-28581/1 Instrument ID (1): 4D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/28/2013 20:47

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.61	18

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\4D5\20131028-8278.b\28OC13C4D5_001.d		
Injection Date:	28-Oct-2013 20:47:45	Instrument ID:	4D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	28581 (1)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	4D5_DIOXIN	Limit Group:	HR - 8290 - ICAL

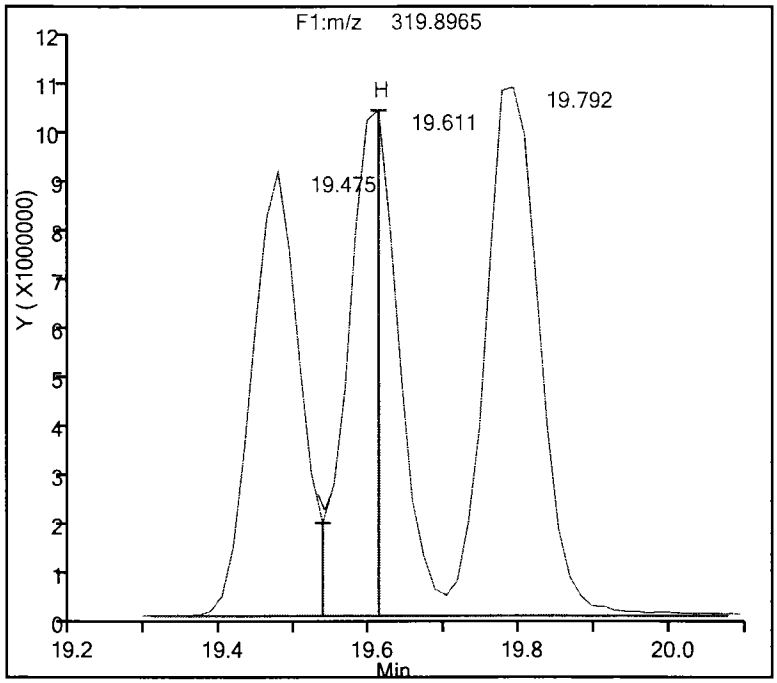
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1870192
H (Peak Height) = 10190704

%R = 18 <= 25
Passed



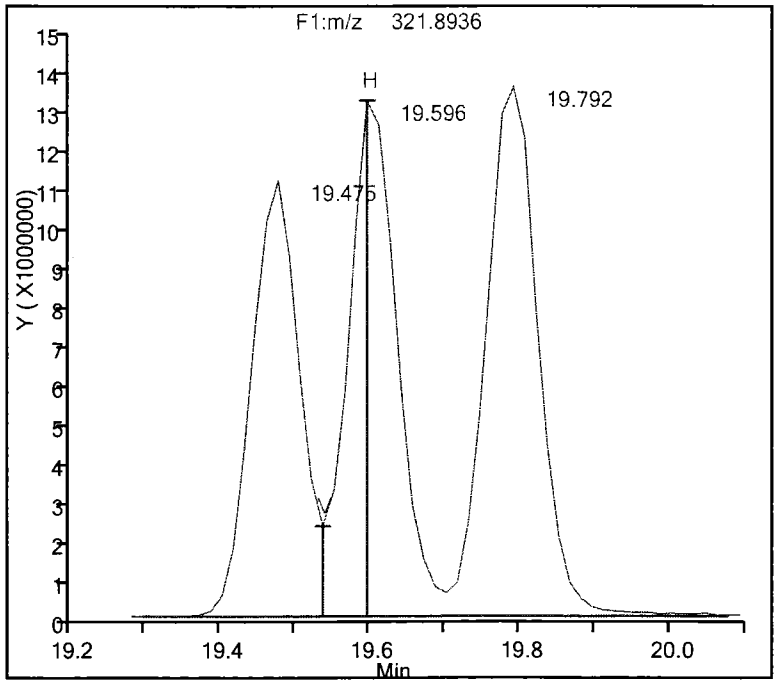
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2259516
H (Peak Height) = 12932668

%R = 17 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 4D5 Start Date: 10/31/2013 10:35

Analysis Batch Number: 28953 End Date: 10/31/2013 17:13

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-28953/1		10/31/2013 10:35	1	31OC13A4D5_001.d	DB-5 0.32(mm)
STD2 320-28953/3 IC		10/31/2013 12:02	1	31OC13A4D5_003.d	DB-5 0.32(mm)
STD3 320-28953/4 IC		10/31/2013 12:45	1	31OC13A4D5_004.d	DB-5 0.32(mm)
STD4 320-28953/5 IC		10/31/2013 13:29	1	31OC13A4D5_005.d	DB-5 0.32(mm)
STD5 320-28953/6 IC		10/31/2013 14:12	1	31OC13A4D5_006.d	DB-5 0.32(mm)
STD6 320-28953/7 IC		10/31/2013 14:55	1	31OC13A4D5_007.d	DB-5 0.32(mm)
ZZZZZ		10/31/2013 15:47	1		DB-5 0.32(mm)
ICV 320-28953/9		10/31/2013 16:30	1	31OC13A4D5_009.d	DB-5 0.32(mm)
CPS 320-28953/10		10/31/2013 17:13	1		DB-5 0.32(mm)

CAL PCDD/PCDF

8290

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 28953

SDG No.:

Instrument ID: 4D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/31/2013 12:02 Calibration End Date: 10/31/2013 14:55 Calibration ID: 4999

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD2 320-28953/3	31OC13A4D5_003.d
Level 2	STD3 320-28953/4	31OC13A4D5_004.d
Level 3	STD4 320-28953/5	31OC13A4D5_005.d
Level 4	STD5 320-28953/6	31OC13A4D5_006.d
Level 5	STD6 320-28953/7	31OC13A4D5_007.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	0.9960	1.0576	1.0041	1.0040	1.0234	AveID		1.0170				2.4		20.0			
2,3,7,8-TCDD	1.2297	1.3423	1.2385	1.2214	1.2324	AveID		1.2529				4.0		20.0			
1,2,3,7,8-PeCDF	1.1824	1.2521	1.1475	1.1558	1.1638	AveID		1.1803				3.6		20.0			
2,3,4,7,8-PeCDF	1.1737	1.1913	1.1160	1.0923	1.1123	AveID		1.1371				3.8		20.0			
1,2,3,7,8-PeCDD	1.0919	1.1331	1.0664	1.0713	1.0985	AveID		1.0922				2.4		20.0			
1,2,3,4,7,8-HxCDF	1.1003	1.1810	1.0366	1.0441	1.0473	AveID		1.0819				5.6		20.0			
1,2,3,6,7,8-HxCDF	1.2415	1.3631	1.1519	1.1969	1.2720	AveID		1.2451				6.4		20.0			
2,3,4,6,7,8-HxCDF	1.1847	1.2464	1.0609	1.1030	1.1494	AveID		1.1489				6.3		20.0			
1,2,3,4,7,8-HxCDD	0.9726	1.1251	0.9568	0.8855	0.9703	AveID		0.9821				8.9		20.0			
1,2,3,6,7,8-HxCDD	1.2429	1.3191	1.2041	1.2151	1.0666	AveID		1.2096				7.6		20.0			
1,2,3,7,8,9-HxCDD	1.2118	1.3293	1.1744	1.1831	1.1571	AveID		1.2112				5.7		20.0			
1,2,3,7,8,9-HxCDF	1.0249	1.1211	0.9415	1.0269	1.0736	AveID		1.0376				6.4		20.0			
1,2,3,4,6,7,8-HpCDF	1.5207	1.5846	1.4807	1.4788	1.4756	AveID		1.5081				3.1		20.0			
1,2,3,4,6,7,8-HpCDD	1.0976	1.1438	1.0939	1.0998	1.0969	AveID		1.1064				1.9		20.0			
1,2,3,4,7,8,9-HpCDF	1.3462	1.3096	1.2422	1.2776	1.2820	AveID		1.2915				3.0		20.0			
OCDD	1.1932	1.2273	1.1284	1.1401	1.1327	AveID		1.1644				3.8		20.0			
OCDF	1.3955	1.4622	1.3679	1.4103	1.4093	AveID		1.4090				2.4		20.0			
13C-2,3,7,8-TCDF	1.8535	1.8126	1.8664	1.8626	1.8935	Ave		1.8577				1.6		30.0			
13C-2,3,7,8-TCDD	1.0229	1.0288	1.0275	1.0353	1.0736	Ave		1.0376				2.0		30.0			
13C-1,2,3,7,8-PeCDF	1.3716	1.3702	1.4027	1.4306	1.5026	Ave		1.4156				3.9		30.0			
13C-1,2,3,7,8-PeCDD	0.7800	0.7876	0.7796	0.8052	0.8457	Ave		0.7996				3.5		30.0			
13C-1,2,3,4,7,8-HxCDF	1.2876	1.2086	1.3123	1.2336	1.1723	Ave		1.2429				4.6		30.0			
13C-1,2,3,6,7,8-HxCDD	0.9078	0.8571	0.9056	0.8908	0.9094	Ave		0.8942				2.5		30.0			
13C-1,2,3,4,6,7,8-HpCDF	0.9326	0.9366	0.9330	0.9030	0.9028	Ave		0.9216				1.9		30.0			
13C-1,2,3,4,6,7,8-HpCDD	0.7367	0.7292	0.7267	0.7096	0.7218	Ave		0.7248				1.4		30.0			
13C-OCDD	0.6727	0.6596	0.6908	0.6947	0.7259	Ave		0.6887				3.7		30.0			
37Cl4-2,3,7,8-TCDD	1.3418	1.3327	1.3515	1.4107	1.4593	Ave		1.3792				3.9		30.0			

Note: The ml coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 28953

SDG No.:

Instrument ID: 4D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 10/31/2013 12:02 Calibration End Date: 10/31/2013 14:55 Calibration ID: 4999

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD2 320-28953/3	31OC13A4D5_003.d
Level 2	STD3 320-28953/4	31OC13A4D5_004.d
Level 3	STD4 320-28953/5	31OC13A4D5_005.d
Level 4	STD5 320-28953/6	31OC13A4D5_006.d
Level 5	STD6 320-28953/7	31OC13A4D5_007.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	589732	2773584	12168760	50853725	257928594	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	405862	2007103	8554130	35591824	179633198	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	3814376	16948005	74732455	318298374	1645022869	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	3670724	16174977	72757510	300627693	1568187771	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	1986266	8802164	38481899	165872261	869728989	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	2744960	12353170	54811327	221778982	1136257348	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	3133130	13754405	60769474	254498901	1391782147	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	3011817	12843404	55547956	234103963	1254474119	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	1762505	8339764	35664076	138752700	836292932	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	2248119	10038643	45398459	192212650	929821659	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	2253418	10080024	43748478	186304495	1001246311	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	2556726	11419876	49572272	219395802	1175800642	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	2738926	11873204	52021237	216771092	1168277919	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	1478148	6808053	30385445	129362884	707307517	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	2244410	9815223	44134068	187422176	1014547762	2.50	10.0	50.0	200	1000
OCDD		AveID	2868203	12011969	55204570	240217717	1348528265	5.00	20.0	100	400	2000
OCDF		AveID	3206726	14086395	66165352	293832260	1653433658	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	124962550	130047039	127379730	130367142	129684220	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	68224941	73287314	68959848	72352712	72467026	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	130089386	138038954	134173930	141513168	144870454	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	72401409	77913426	72706189	77856611	79574823	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	63176688	64328455	66632634	67882022	68787324	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	75427606	78033864	78245266	82791877	90428906	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	42623684	46629023	43495232	45709902	49803164	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	55164837	59626002	55954105	58438554	65285902	100	100	100	100	100
13C-OCDD	13CHx(	Ave	92599793	98793959	98646086	106858085	121275786	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	501115	2130831	10199894	44074694	222562093	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-28953/1 Instrument ID (1): 4D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/31/2013 10:35

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.58	18

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\4D5\20131101-8391.b\31OC13A4D5_001.d		
Injection Date:	31-Oct-2013 10:35:56	Instrument ID:	4D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	28953 (1)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	4D5_DIOXIN	Limit Group:	HR - 8290 - ICAL

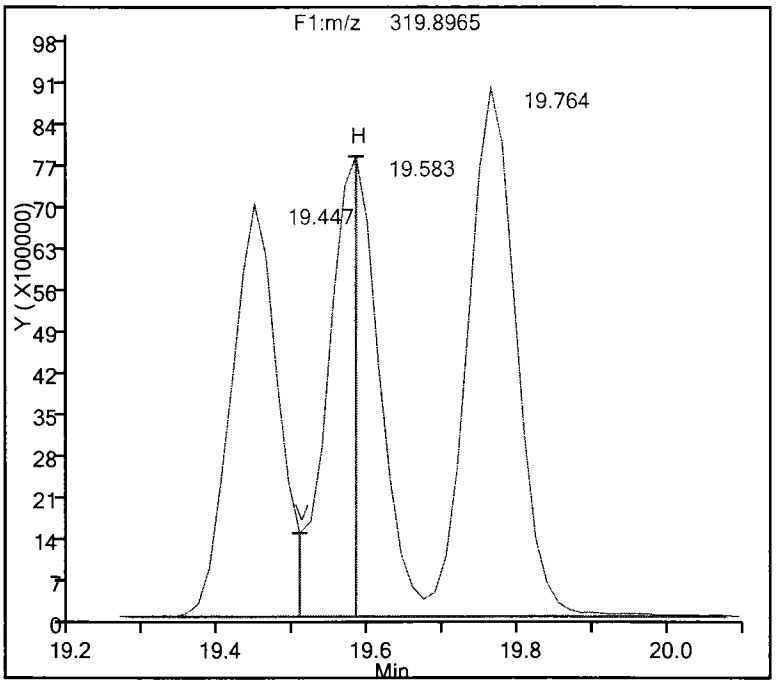
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1422579
H (Peak Height) = 7830259

%R = 18 <= 25
Passed



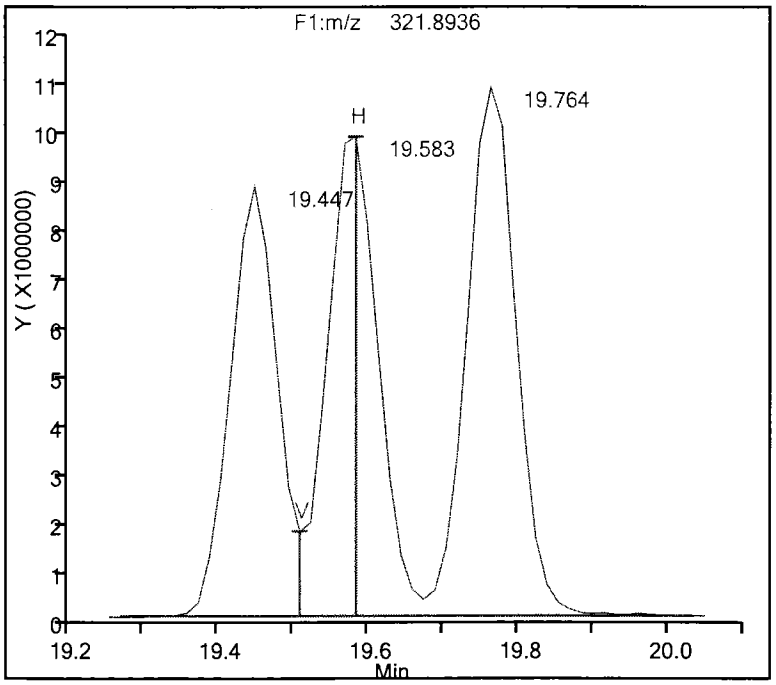
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1686252
H (Peak Height) = 9580780

%R = 18 <= 25
Passed



FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: ICV 320-28953/9 Calibration Date: 10/31/2013 16:30

Instrument ID: 4D5 Calib Start Date: 10/31/2013 12:02

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/31/2013 14:55

Lab File ID: 31OC13A4D5_009.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.017	1.065		10.5	10.0	4.7	30.0
2,3,7,8-TCDD	AveID	1.253	1.253		10.0	10.0	0.0	30.0
1,2,3,7,8-PeCDF	AveID	1.180	1.237		26.2	25.0	4.8	30.0
2,3,4,7,8-PeCDF	AveID	1.137	1.176		25.9	25.0	3.5	30.0
1,2,3,7,8-PeCDD	AveID	1.092	1.109		25.4	25.0	1.5	30.0
1,2,3,4,7,8-HxCDF	AveID	1.082	1.154		26.7	25.0	6.7	30.0
1,2,3,6,7,8-HxCDF	AveID	1.245	1.375		27.6	25.0	10.4	30.0
2,3,4,6,7,8-HxCDF	AveID	1.149	1.228		26.7	25.0	6.9	30.0
1,2,3,4,7,8-HxCDD	AveID	0.9821	0.9628		24.5	25.0	-2.0	30.0
1,2,3,6,7,8-HxCDD	AveID	1.210	1.131		23.4	25.0	-6.5	30.0
1,2,3,7,8,9-HxCDD	AveID	1.211	1.144		23.6	25.0	-5.6	30.0
1,2,3,7,8,9-HxCDF	AveID	1.038	1.108		26.7	25.0	6.8	30.0
1,2,3,4,6,7,8-HpCDF	AveID	1.508	1.632		27.1	25.0	8.2	30.0
1,2,3,4,6,7,8-HpCDD	AveID	1.106	1.168		26.4	25.0	5.6	30.0
1,2,3,4,7,8,9-HpCDF	AveID	1.292	1.354		26.2	25.0	4.8	30.0
OCDD	AveID	1.164	1.215		52.2	50.0	4.3	30.0
OCDF	AveID	1.409	1.451		51.5	50.0	3.0	30.0
13C-2,3,7,8-TCDF	Ave	1.858	1.872		101	100	0.7	
13C-2,3,7,8-TCDD	Ave	1.038	1.047		101	100	0.9	
13C-1,2,3,7,8-PeCDF	Ave	1.416	1.411		99.7	100	-0.3	
13C-1,2,3,7,8-PeCDD	Ave	0.7996	0.7903		98.8	100	-1.2	
13C-1,2,3,4,7,8-HxCDF	Ave	1.243	1.259		101	100	1.3	
13C-1,2,3,6,7,8-HxCDD	Ave	0.8942	1.006		113	100	12.5	
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9216	0.9380		102	100	1.8	
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7248	0.7381		102	100	1.8	
13C-OCDD	Ave	0.6887	0.6866		199	200	-0.3	
37Cl4-2,3,7,8-TCDD	Ave	1.379	1.367		19.8	20.0	-0.9	

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 4D5 Start Date: 11/05/2013 17:40

Analysis Batch Number: 29245 End Date: 11/06/2013 03:07

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29245/2		11/05/2013 17:40	1	05NO134D5_002.d	DB-5 0.32(mm)
CPS 320-29245/3		11/05/2013 18:23	1	05NO134D5_003.d	DB-5 0.32(mm)
MB 320-28361/1-A		11/05/2013 19:13	1	05NO134D5_004.d	DB-5 0.32(mm)
LCS 320-28361/2-A		11/05/2013 19:56	1	05NO134D5_005.d	DB-5 0.32(mm)
ZZZZZ		11/05/2013 20:39	1		DB-5 0.32(mm)
ZZZZZ		11/05/2013 21:22	1		DB-5 0.32(mm)
ZZZZZ		11/05/2013 22:05	1		DB-5 0.32(mm)
ZZZZZ		11/05/2013 22:48	1		DB-5 0.32(mm)
ZZZZZ		11/05/2013 23:31	1		DB-5 0.32(mm)
ZZZZZ		11/06/2013 00:15	1		DB-5 0.32(mm)
ZZZZZ		11/06/2013 00:58	1		DB-5 0.32(mm)
ZZZZZ		11/06/2013 01:41	1		DB-5 0.32(mm)
ZZZZZ		11/06/2013 02:24	1		DB-5 0.32(mm)
CCV 320-29245/15		11/06/2013 03:07	1	05NO134D5_015.d	DB-5 0.32(mm)

8290

Data file	Smp	Work Order	Sample ID	FV-uL	Method/Matrix	Box	Size	U
05NO134D5	1	CPS 110513	DB-5 CPSM HRDXNCP_00018				1.00000	
05NO134D5	2	CCV 110513	CS-4 HRDXNL4_00012				1.00000	
05NO134D5	3	CPS 110513A	DB-5 CPSM HRDXNCP_00018				1.00000	
05NO134D5	4	320-28361	MB 320-28361/1-A	20	8290/Solid	73	10.00000	g
05NO134D5	5	320-28361	LCS 320-28361/2-A	20	8290/Solid		10.00000	g
05NO134D5	6	320-28361	720-53161-C-1-A	20	8290/Solid		10.00000	g
05NO134D5	7	320-28361	720-53161-C-2-A	20	8290/Solid		10.00000	g
05NO134D5	8	320-28361	720-53161-C-3-A	20	8290/Solid		10.00000	g
05NO134D5	9	320-28361	720-53161-C-4-A	20	8290/Solid		10.00000	g
05NO134D5	10	320-28361	720-53263-B-1-A	20	8290/Solid		10.00000	g
05NO134D5	11	320-28361	720-53263-B-3-A	20	8290/Solid		10.00000	g
05NO134D5	12	320-28361	720-53263-B-4-A	20	8290/Solid		10.00000	g
05NO134D5	13	320-28361	720-53263-B-5-A	20	8290/Solid		10.00000	g
05NO134D5	14	RB 110513	Reagent Blank C-14				1.00000	
05NO134D5	15	CCV 110513A	CS-4 HRDXNL4_00012				1.00000	
05NO134D5	16						1.00000	
05NO134D5	17						1.00000	
05NO134D5	18						1.00000	
05NO134D5	19						1.00000	
05NO134D5	20						1.00000	
05NO134D5	21		ALM 11-05-13				1.00000	
05NO134D5	22						1.00000	

logfile checked
11-06-13
SMA

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29245/2 | Calibration Date: 11/05/2013 17:40

Instrument ID: 4D5 | Calib Start Date: 10/31/2013 12:02

GC Column: DB-5 ID: 0.32(mm) | Calib End Date: 10/31/2013 14:55

Lab File ID: 05NO134D5_002.d | Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.017	1.068		10.5	10.0	5.0	20.0
2,3,7,8-TCDD	AveID	1.253	1.190		9.50	10.0	-5.0	20.0
1,2,3,7,8-PeCDF	AveID	1.180	1.266		53.6	50.0	7.3	20.0
2,3,4,7,8-PeCDF	AveID	1.137	1.213		53.3	50.0	6.7	20.0
1,2,3,7,8-PeCDD	AveID	1.092	1.054		48.3	50.0	-3.5	20.0
1,2,3,4,7,8-HxCDF	AveID	1.082	1.098		50.8	50.0	1.5	20.0
1,2,3,6,7,8-HxCDF	AveID	1.245	1.324		53.2	50.0	6.3	20.0
2,3,4,6,7,8-HxCDF	AveID	1.149	1.197		52.1	50.0	4.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.9821	1.027		52.3	50.0	4.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.210	1.108		45.8	50.0	-8.4	20.0
1,2,3,7,8,9-HxCDD	AveID	1.211	1.181		48.8	50.0	-2.5	20.0
1,2,3,7,8,9-HxCDF	AveID	1.038	1.035		49.9	50.0	-0.2	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.508	1.589		52.7	50.0	5.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.106	1.105		49.9	50.0	-0.2	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.292	1.333		51.6	50.0	3.2	20.0
OCDD	AveID	1.164	1.211		104	100	4.0	20.0
OCDF	AveID	1.409	1.532		109	100	8.7	20.0
13C-2,3,7,8-TCDF	Ave	1.858	1.877		101	100	1.1	30.0
13C-2,3,7,8-TCDD	Ave	1.038	1.033		99.5	100	-0.5	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.416	1.314		92.8	100	-7.2	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7996	0.7757		97.0	100	-3.0	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.243	1.338		108	100	7.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.8942	0.9400		105	100	5.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9216	0.8794		95.4	100	-4.6	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7248	0.6795		93.8	100	-6.2	30.0
13C-OCDD	Ave	0.6887	0.6911		201	200	0.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.379	1.253		4.54	5.00	-9.2	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29245/15 Calibration Date: 11/06/2013 03:07

Instrument ID: 4D5 Calib Start Date: 10/31/2013 12:02

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 10/31/2013 14:55

Lab File ID: 05NO134D5_015.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.017	1.022		10.1	10.0	0.5	20.0
2,3,7,8-TCDD	AveID	1.253	1.206		9.63	10.0	-3.7	20.0
1,2,3,7,8-PeCDF	AveID	1.180	1.241		52.6	50.0	5.1	20.0
2,3,4,7,8-PeCDF	AveID	1.137	1.183		52.0	50.0	4.1	20.0
1,2,3,7,8-PeCDD	AveID	1.092	1.083		49.6	50.0	-0.8	20.0
1,2,3,4,7,8-HxCDF	AveID	1.082	1.160		53.6	50.0	7.2	20.0
1,2,3,6,7,8-HxCDF	AveID	1.245	1.303		52.3	50.0	4.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.149	1.199		52.2	50.0	4.4	20.0
1,2,3,4,7,8-HxCDD	AveID	0.9821	1.074		54.7	50.0	9.4	20.0
1,2,3,6,7,8-HxCDD	AveID	1.210	1.142		47.2	50.0	-5.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.211	1.241		51.3	50.0	2.5	20.0
1,2,3,7,8,9-HxCDF	AveID	1.038	1.079		52.0	50.0	3.9	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.508	1.584		52.5	50.0	5.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.106	1.114		50.4	50.0	0.7	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.292	1.317		51.0	50.0	2.0	20.0
OCDD	AveID	1.164	1.229		106	100	5.6	20.0
OCDF	AveID	1.409	1.570		111	100	11.4	20.0
13C-2,3,7,8-TCDF	Ave	1.858	1.892		102	100	1.8	30.0
13C-2,3,7,8-TCDD	Ave	1.038	1.040		100	100	0.2	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.416	1.358		96.0	100	-4.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7996	0.7818		97.8	100	-2.2	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	1.243	1.355		109	100	9.0	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.8942	0.9099		102	100	1.8	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.9216	0.9110		98.9	100	-1.1	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7248	0.6983		96.3	100	-3.7	30.0
13C-OCDD	Ave	0.6887	0.6906		201	200	0.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.379	1.298		4.71	5.00	-5.9	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29245/3 Instrument ID (1): 4D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/05/2013 18:23

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	19.60	26

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\4D5\20131106-8476.b\05NO134D5_003.d		
Injection Date:	05-Nov-2013 18:23:44	Instrument ID:	4D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29245 (3)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	4D5_DIOXIN	Limit Group:	HR - 8290 - ICAL

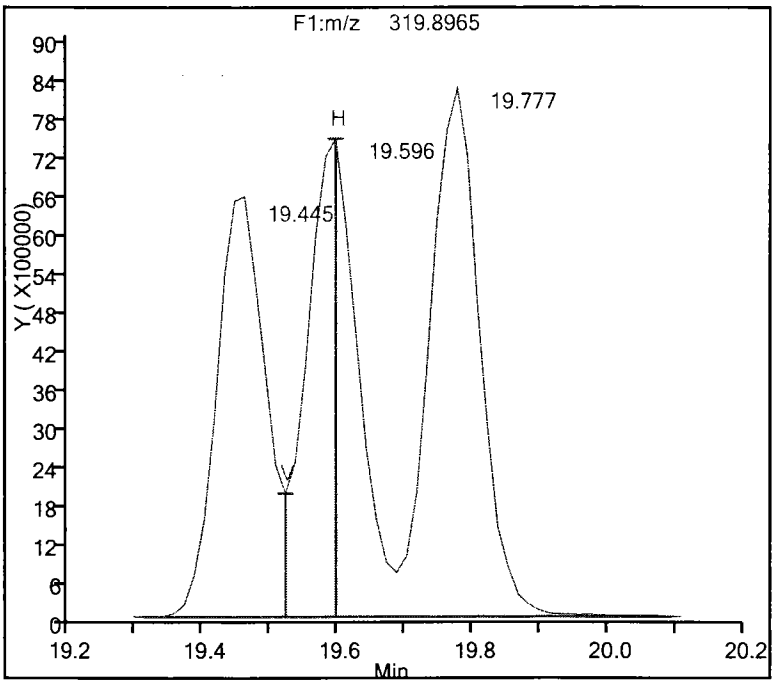
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1921219
H (Peak Height) = 7449795

%R = 26 <= 25
Passed



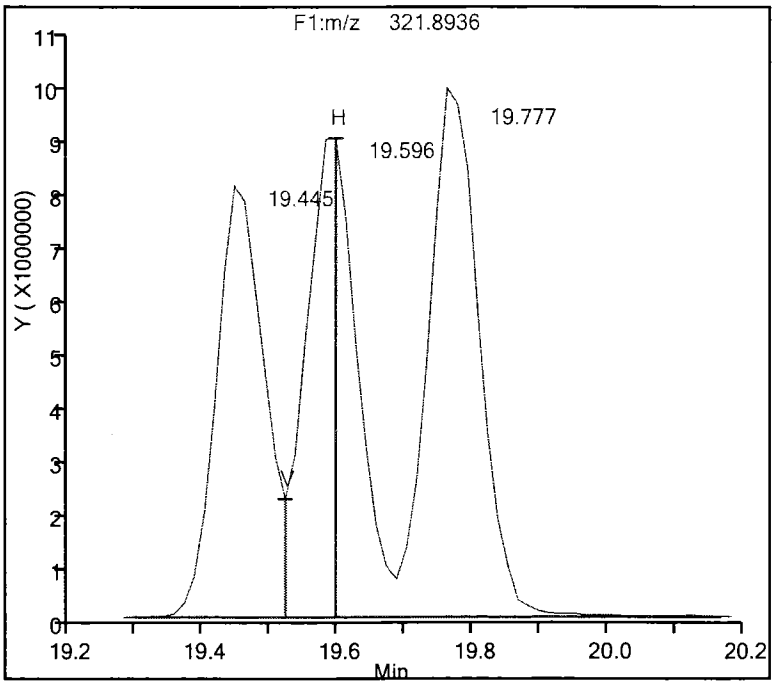
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2211644
H (Peak Height) = 8981308

%R = 25 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 07/31/2013 14:30

Analysis Batch Number: 21946 End Date: 07/31/2013 19:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-21946/1		07/31/2013 14:30	1	31JL13A3D5_1.d	DB-5 0.32(mm)
IC 320-21946/2		07/31/2013 15:11	1	31JL13A3D5_2.d	DB-5 0.32(mm)
IC 320-21946/3		07/31/2013 15:54	1	31JL13A3D5_3.d	DB-5 0.32(mm)
IC 320-21946/4		07/31/2013 16:35	1	31JL13A3D5_4.d	DB-5 0.32(mm)
IC 320-21946/5		07/31/2013 17:58	1	31JL13A3D5_6.d	DB-5 0.32(mm)
IC 320-21946/6		07/31/2013 18:40	1	31JL13A3D5_7.d	DB-5 0.32(mm)
ICV 320-21946/7		07/31/2013 19:31	1	31JL13A3D5_8.d	DB-5 0.32(mm)

CAL PCDD/PCDF

8290

Sample List Report **MassLynx 4.1**

Sample List: C:\MassLynx\JAN2013.PRO\SampleDB\31JL13A3D5.SPL
Last Modified: Thursday, August 01, 2013 08:45:14 Pacific Daylight Time
Printed: Thursday, August 01, 2013 11:01:18 Pacific Daylight Time

Page Position (1, 1)

CAL PCDD/PCDF INST. 3D5

	File Name	File Text	Sample ID	Bottle	Meth/Matrix	BOX #
1	31JL13A3D5_1	DB-5 CPSM HRDXNCP_00018	CPS 073113	Tray1:1	---	
2	31JL13A3D5_2	CS-4 HRDXNL4_00011	IC 073113	Tray1:6	---	
3	31JL13A3D5_3	CS-3 HRDXNL3_00007	IC 073113A	Tray1:5	---	
4	31JL13A3D5_4	CS-2 HRDXNL2_00008	IC 073113B	Tray1:4	---	
5	31JL13A3D5_5	CS-1 HRDXNL1_00012	IC 073113C	Tray1:3	---	
6	31JL13A3D5_6	CS-6 HRDXNL6_00006	IC 073113D	Tray1:8	---	
7	31JL13A3D5_7	CS-5 HRDXNL5_00012	IC 073113E	Tray1:7	---	
8	31JL13A3D5_8	2nd Source HRDXNIC_00013	ICV 073113	Tray1:9	---	
9	31JL13A3D5_9	DB-5 CPSM HRDXNCP_00018	CPS 073113A	Tray1:1	---	
10	31JL13A3D5_10	CS-4 HRDXNL4_00011	CCV 073113	Tray1:6	---	
11	31JL13A3D5_11	DB-5 CPSM HRDXNCP_00018	CPS 073113B	Tray1:1	---	
12	31JL13A3D5_12	MB 320-21850/1-A	320-21850	Tray1:10	1613B/8290/Solid	41
13	31JL13A3D5_13	580-39524-D-1-A	320-21850	Tray1:11	8290/Solid	---
14	31JL13A3D5_14	580-39524-D-2-A	320-21850	Tray1:12	8290/Solid	---
15	31JL13A3D5_15	580-39525-A-1-A	320-21850	Tray1:13	8290/Solid	---
16	31JL13A3D5_16	580-39525-A-2-A	320-21850	Tray1:14	8290/Solid	---
17	31JL13A3D5_17	580-39525-A-3-A	320-21850	Tray1:15	8290/Solid	---
18	31JL13A3D5_18	580-39525-A-4-A	320-21850	Tray1:16	8290/Solid	---
19	31JL13A3D5_19	580-39525-A-4-B MS	320-21850	Tray1:17	8290/Solid	---
20	31JL13A3D5_20	580-39525-A-4-C MSD	320-21850	Tray1:18	8290/Solid	---
21	31JL13A3D5_21	580-39525-A-5-A	320-21850	Tray1:19	8290/Solid	---
22	31JL13A3D5_22	LCS 320-21850/2-A	320-21850	Tray1:20	1613B/8290/Solid	---
23	31JL13A3D5_23	CS-4 HRDXNL4_00011	CCV 073113A	Tray1:6	---	

reviewed
by
MEL
8/1/13

FORM VI
DIOXIN INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 21946

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/31/2013 15:11 Calibration End Date: 07/31/2013 18:40 Calibration ID: 3838

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-21946/4	31JL13A3D5_4.d
Level 2	IC 320-21946/3	31JL13A3D5_3.d
Level 3	IC 320-21946/2	31JL13A3D5_2.d
Level 4	IC 320-21946/6	31JL13A3D5_7.d
Level 5	IC 320-21946/5	31JL13A3D5_6.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
2,3,7,8-TCDF	1.1261	1.1686	1.0671	1.0766	1.0945	AveID		1.1066				3.7		20.0			
2,3,7,8-TCDD	1.1921	1.1860	1.1116	1.1194	1.1358	AveID		1.1490				3.3		20.0			
1,2,3,7,8-PeCDF	1.1028	1.1650	1.0693	1.0867	1.0842	AveID		1.1016				3.4		20.0			
2,3,4,7,8-PeCDF	1.0792	1.1144	0.9984	1.0096	1.1059	AveID		1.0615				5.1		20.0			
1,2,3,7,8-PeCDD	1.0929	1.1641	1.0708	1.0515	1.0893	AveID		1.0937				3.9		20.0			
1,2,3,4,7,8-HxCDF	1.2719	1.3246	1.1973	1.1750	1.2282	AveID		1.2394				4.8		20.0			
1,2,3,6,7,8-HxCDF	1.6245	1.7573	1.6149	1.5709	1.5552	AveID		1.6246				4.9		20.0			
2,3,4,6,7,8-HxCDF	1.4400	1.5601	1.3636	1.3708	1.4116	AveID		1.4292				5.6		20.0			
1,2,3,4,7,8-HxCDD	0.8107	0.8294	0.7747	0.7957	0.7856	AveID		0.7992				2.7		20.0			
1,2,3,6,7,8-HxCDD	1.1545	1.1648	1.0529	1.0730	1.0129	AveID		1.0916				6.0		20.0			
1,2,3,7,8,9-HxCDD	1.2071	1.2825	1.0865	1.0988	1.0045	AveID		1.1359				9.6		20.0			
1,2,3,7,8,9-HxCDF	1.3440	1.4195	1.1680	1.1992	1.2262	AveID		1.2714				8.4		20.0			
1,2,3,4,6,7,8-HpCDF	1.4704	1.5122	1.4075	1.4127	1.4217	AveID		1.4449				3.1		20.0			
1,2,3,4,6,7,8-HpCDD	1.1154	1.2047	1.0938	1.0645	1.0977	AveID		1.1152				4.8		20.0			
1,2,3,4,7,8,9-HpCDF	1.2224	1.2300	1.2025	1.1822	1.2739	AveID		1.2222				2.8		20.0			
OCDD	1.1701	1.2840	1.1663	1.2319	1.2002	AveID		1.2105				4.0		20.0			
OCDF	1.5509	1.6849	1.6866	1.6793	1.6846	AveID		1.6572				3.6		20.0			
13C-2,3,7,8-TCDF	1.6097	1.6010	1.6044	1.6264	1.6484	Ave		1.6180				1.2		30.0			
13C-2,3,7,8-TCDD	1.0250	1.0445	1.0332	1.0381	1.0628	Ave		1.0407				1.4		30.0			
13C-1,2,3,7,8-PeCDF	1.1826	1.2713	1.2191	1.2682	1.2559	Ave		1.2394				3.1		30.0			
13C-1,2,3,7,8-PeCDD	0.7043	0.7778	0.7133	0.7827	0.8236	Ave		0.7604				6.6		30.0			
13C-1,2,3,4,7,8-HxCDF	0.9157	0.9173	1.0857	1.0367	1.0379	Ave		0.9986				7.8		30.0			
13C-1,2,3,6,7,8-HxCDD	0.8814	0.8930	0.9834	0.9420	0.9631	Ave		0.9326				4.7		30.0			
13C-1,2,3,4,6,7,8-HpCDF	0.7752	0.7904	0.8300	0.8143	0.8434	Ave		0.8107				3.5		30.0			
13C-1,2,3,4,6,7,8-HpCDD	0.6903	0.6973	0.7580	0.7531	0.7634	Ave		0.7324				4.8		30.0			
13C-OCDD	0.4578	0.4322	0.5014	0.5040	0.5440	Ave		0.4879				8.9		30.0			
37Cl4-2,3,7,8-TCDD	1.3374	1.3226	1.3591	1.3888	1.4535	Ave		1.3723				3.8		30.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
DIOXIN INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1 Analy Batch No.: 21946

SDG No.:

Instrument ID: 3D5 GC Column: DB-5 ID: 0.32(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/31/2013 15:11 Calibration End Date: 07/31/2013 18:40 Calibration ID: 3838

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-21946/4	31JL13A3D5_4.d
Level 2	IC 320-21946/3	31JL13A3D5_3.d
Level 3	IC 320-21946/2	31JL13A3D5_2.d
Level 4	IC 320-21946/6	31JL13A3D5_7.d
Level 5	IC 320-21946/5	31JL13A3D5_6.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (PG/UL)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
2,3,7,8-TCDF		AveID	1440257	6489135	25981035	114005041	497816942	0.500	2.00	10.0	40.0	200
2,3,7,8-TCDD		AveID	900403	4080564	16455527	74602889	323025808	0.500	2.00	10.0	40.0	200
1,2,3,7,8-PeCDF		AveID	7280618	36236316	137723293	627478226	2590753960	2.50	10.0	50.0	200	1000
2,3,4,7,8-PeCDF		AveID	7110028	34753041	128661815	583283118	2644204640	2.50	10.0	50.0	200	1000
1,2,3,7,8-PeCDD		AveID	4243013	21931973	79393403	372456203	1704084093	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDF		AveID	5209389	25990176	100254986	439283130	2091702150	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDF		AveID	6656849	34445285	137358347	580379031	2555414186	2.50	10.0	50.0	200	1000
2,3,4,6,7,8-HxCDF		AveID	5975002	30664312	113171336	509185931	2310910805	2.50	10.0	50.0	200	1000
1,2,3,4,7,8-HxCDD		AveID	3154072	15849331	58576877	271302493	1230806551	2.50	10.0	50.0	200	1000
1,2,3,6,7,8-HxCDD		AveID	4483863	22406758	80214624	366454673	1597420237	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDD		AveID	4595372	24063873	80782147	375523125	1585440891	2.50	10.0	50.0	200	1000
1,2,3,7,8,9-HxCDF		AveID	5490200	27884924	97660010	452163460	2064496871	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDF		AveID	4638850	22881277	81782293	384906832	1776849147	2.50	10.0	50.0	200	1000
1,2,3,4,6,7,8-HpCDD		AveID	3059183	15879175	59368914	267418588	1241538395	2.50	10.0	50.0	200	1000
1,2,3,4,7,8,9-HpCDF		AveID	3700625	19181565	70537497	312052643	1612030361	2.50	10.0	50.0	200	1000
OCDD		AveID	3879440	20371421	76763269	387319608	1831133062	5.00	20.0	100	400	2000
OCDF		AveID	5230349	26521733	111056360	529356218	2483266720	5.00	20.0	100	400	2000
13C-2,3,7,8-TCDF	13CTCl	Ave	272151028	294659911	256135928	280043877	236601352	100	100	100	100	100
13C-2,3,7,8-TCDD	13CTCl	Ave	155745100	173051694	146200705	158364880	133597955	100	100	100	100	100
13C-1,2,3,7,8-PeCDF	13CTCl	Ave	264331676	310490212	257328667	288037517	238316887	100	100	100	100	100
13C-1,2,3,7,8-PeCDD	13CTCl	Ave	158026373	190945889	152636611	178879147	153549965	100	100	100	100	100
13C-1,2,3,4,7,8-HxCDF	13CHx(	Ave	101928071	121087703	104130205	116297108	104725381	100	100	100	100	100
13C-1,2,3,6,7,8-HxCDD	13CHx(	Ave	154285923	189726412	150941152	170198245	156579083	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDF	13CHx(	Ave	72646744	94032036	71080814	79872654	77218434	100	100	100	100	100
13C-1,2,3,4,6,7,8-HpCDD	13CHx(	Ave	112253168	139014529	108722598	127718195	115342924	100	100	100	100	100
13C-OCDD	13CHx(	Ave	131340787	156024320	126763511	151348772	147005354	200	200	200	200	200
37Cl4-2,3,7,8-TCDD	13CTCl	Ave	1203521	5273412	23460388	102940878	448746786	0.250	1.00	5.00	20.0	100

Curve Type Legend:

Ave = Average ISTD
AveID = Average isotope dilution

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-21946/1 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 07/31/2013 14:30

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.63	22

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\3D5\20130731-6241.b\31JL13A3D5_1.d
Injection Date: 31-Jul-2013 14:30:03 Limit Group: HR - 8290 - ICAL
Client ID: Instrument ID: 3D5
Lims Batch ID: 21946 Lims Sample ID: 1
Operator ID: AM Injection Vol: 2.0 ul
Column Type: Column Dia:

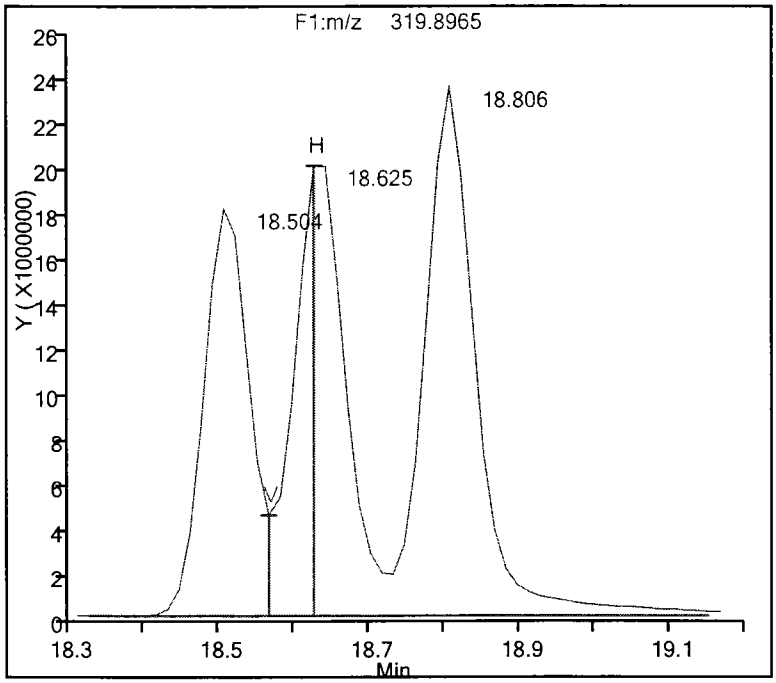
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 4376747
H (Peak Height) = 19507736

%R = 22 <= 25
Passed



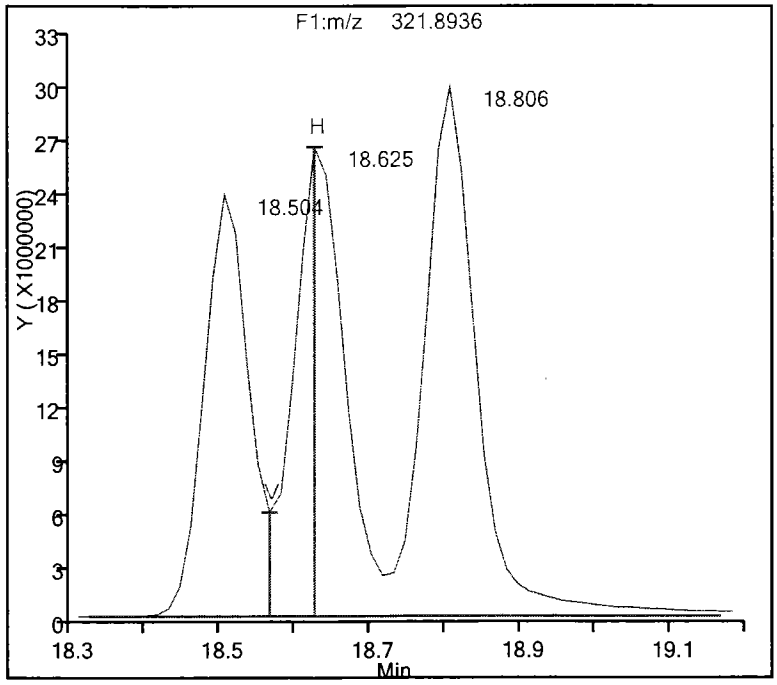
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 5781705
H (Peak Height) = 26163404

%R = 22 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 10/31/2013 22:06

Analysis Batch Number: 29121 End Date: 11/01/2013 07:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CPS 320-29121/2		10/31/2013 22:06	1	31OC13C3D5_2.d	DB-5 0.32(mm)
CCV 320-29121/3		10/31/2013 22:48	1	31OC13C3D5_3.d	DB-5 0.32(mm)
ZZZZZ		10/31/2013 23:30	1		DB-5 0.32(mm)
MB 320-28540/1-A		11/01/2013 00:11	1	31OC13C3D5_5.d	DB-5 0.32(mm)
LCS 320-28540/2-A		11/01/2013 00:53	1	31OC13C3D5_6.d	DB-5 0.32(mm)
320-4670-23	TF2-004/5-SS1034-000.6	11/01/2013 01:35	1	31OC13C3D5_7.d	DB-5 0.32(mm)
320-4670-24	TF2-004/5-SS1033-000.8	11/01/2013 02:16	1	31OC13C3D5_8.d	DB-5 0.32(mm)
320-4670-25	TF2-004/5-SS1049-000.9	11/01/2013 02:58	1	31OC13C3D5_9.d	DB-5 0.32(mm)
320-4670-26	TF2-004/5-SS1048-000.8	11/01/2013 03:40	1	31OC13C3D5_10.d	DB-5 0.32(mm)
320-4670-27	TF2-004/5-SS1047-000.8	11/01/2013 04:22	1	31OC13C3D5_11.d	DB-5 0.32(mm)
320-4670-28	TF2-004/5-SS1046-000.5	11/01/2013 05:04	1	31OC13C3D5_12.d	DB-5 0.32(mm)
320-4670-29	TF2-004/5-SS1045-000.5	11/01/2013 05:45	1	31OC13C3D5_13.d	DB-5 0.32(mm)
CCV 320-29121/15		11/01/2013 07:19	1	31OC13C3D5_15.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29121/3 Calibration Date: 10/31/2013 22:48

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 31OC13C3D5_3.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.119		10.1	10.0	1.1	20.0
2,3,7,8-TCDD	AveID	1.149	1.173		10.2	10.0	2.1	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.190		54.0	50.0	8.0	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.141		53.7	50.0	7.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.032		47.2	50.0	-5.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.191		48.0	50.0	-3.9	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.521		46.8	50.0	-6.4	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.315		46.0	50.0	-8.0	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8723		54.6	50.0	9.1	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.169		53.6	50.0	7.1	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.173		51.6	50.0	3.2	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.182		46.5	50.0	-7.0	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.536		53.1	50.0	6.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.118		50.1	50.0	0.2	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.275		52.2	50.0	4.3	20.0
OCDD	AveID	1.211	1.189		98.2	100	-1.8	20.0
OCDF	AveID	1.657	1.509		91.0	100	-9.0	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.747		108	100	8.0	30.0
13C-2,3,7,8-TCDD	Ave	1.041	0.9880		94.9	100	-5.1	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.246		100	100	0.5	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.7933		104	100	4.3	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.229		123	100	23.0	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9639		103	100	3.4	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7834		96.6	100	-3.4	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6575		89.8	100	-10.2	30.0
13C-OCDD	Ave	0.4879	0.4526		186	200	-7.2	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.244		4.53	5.00	-9.4	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29121/15 Calibration Date: 11/01/2013 07:19

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 31OC13C3D5_15.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.117		10.1	10.0	1.0	20.0
2,3,7,8-TCDD	AveID	1.149	1.145		9.97	10.0	-0.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.200		54.5	50.0	8.9	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.120		52.7	50.0	5.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.025		46.9	50.0	-6.3	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.267		51.1	50.0	2.3	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.550		47.7	50.0	-4.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.341		46.9	50.0	-6.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8673		54.3	50.0	8.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.131		51.8	50.0	3.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.141		50.2	50.0	0.4	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.243		48.9	50.0	-2.2	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.532		53.0	50.0	6.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.106		49.6	50.0	-0.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.339		54.8	50.0	9.5	20.0
OCDD	AveID	1.211	1.154		95.4	100	-4.6	20.0
OCDF	AveID	1.657	1.469		88.6	100	-11.4	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.803		111	100	11.4	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.024		98.3	100	-1.7	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.462		118	100	17.9	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.9485		125	100	24.7	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.229		123	100	23.1	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9902		106	100	6.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8177		101	100	0.9	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.7262		99.2	100	-0.8	30.0
13C-OCDD	Ave	0.4879	0.5398		221	200	10.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.241		4.52	5.00	-9.5	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29121/2 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 10/31/2013 22:06

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.56	20

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131104-8438.b\31OC13C3D5_2.d		
Injection Date:	31-Oct-2013 22:06:04	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29121 (2)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

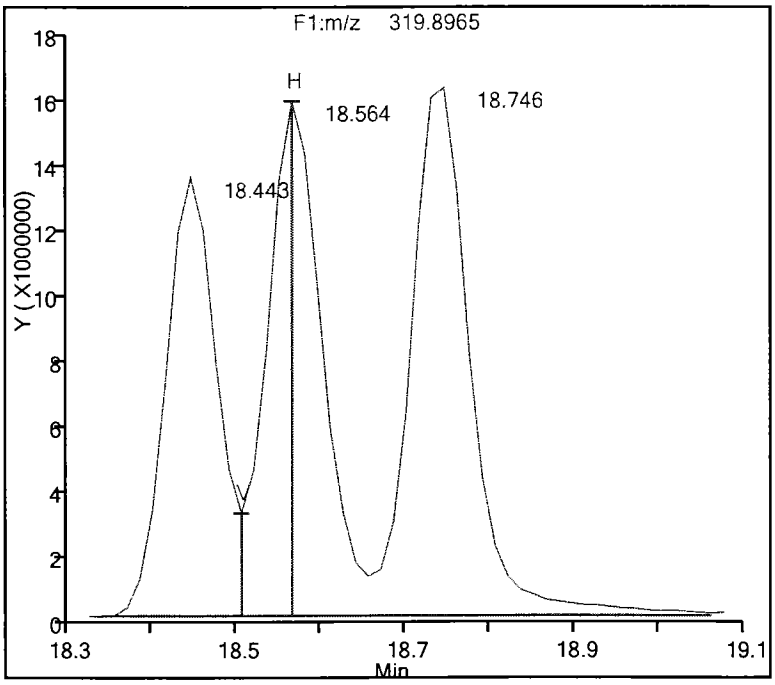
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3150899
H (Peak Height) = 15603895

%R = 20 <= 25
Passed



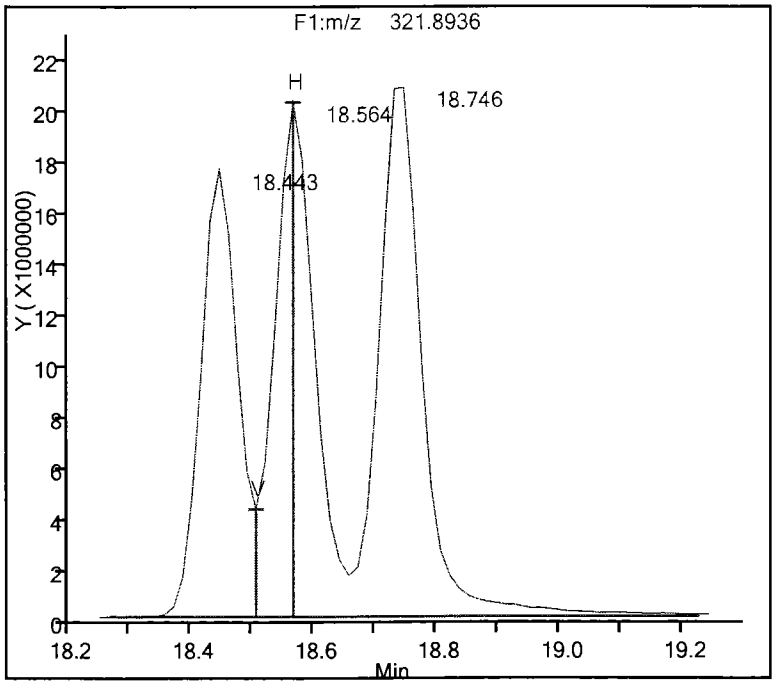
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 4091179
H (Peak Height) = 19583840

%R = 21 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/01/2013 07:19

Analysis Batch Number: 29135 End Date: 11/01/2013 18:11

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29135/15		11/01/2013 07:19	1	31OC13C3D5_15.d	DB-5 0.32(mm)
CPS 320-29135/16		11/01/2013 08:10	1	31OC13C3D5_16.d	DB-5 0.32(mm)
ZZZZZ		11/01/2013 08:51	1		DB-5 0.32(mm)
320-4670-30	TF2-004/5-SS1044-000.5	11/01/2013 09:41	1	31OC13C3D5_18.d	DB-5 0.32(mm)
320-4670-31	TF2-004/5-SS1042-000.5	11/01/2013 10:22	1	31OC13C3D5_19.d	DB-5 0.32(mm)
320-4670-32	TF2-004/5-SS1041-000.7	11/01/2013 11:04	1	31OC13C3D5_20.d	DB-5 0.32(mm)
320-4670-33	TF2-004/5-SS-DUP03-1013	11/01/2013 11:45	1	31OC13C3D5_21.d	DB-5 0.32(mm)
320-4670-35	TF2-004/5-SS1057-0001	11/01/2013 12:27	1	31OC13C3D5_22.d	DB-5 0.32(mm)
320-4670-36	TF2-004/5-SS1056-000.6	11/01/2013 13:09	1	31OC13C3D5_23.d	DB-5 0.32(mm)
320-4670-37	TF2-004/5-SS1055-000.8	11/01/2013 13:50	1	31OC13C3D5_24.d	DB-5 0.32(mm)
320-4670-38	TF2-004/5-SS1054-000.6	11/01/2013 14:32	1	31OC13C3D5_25.d	DB-5 0.32(mm)
320-4670-38 MS	TF2-004/5-SS1054-000.6 MS	11/01/2013 15:14	1	31OC13C3D5_26.d	DB-5 0.32(mm)
320-4670-38 MSD	TF2-004/5-SS1054-000.6 MSD	11/01/2013 15:56	1	31OC13C3D5_27.d	DB-5 0.32(mm)
320-4670-39	TF2-004/5-SS1053-000.6	11/01/2013 16:37	1	31OC13C3D5_28.d	DB-5 0.32(mm)
CCV 320-29135/30		11/01/2013 18:11	1	31OC13C3D5_30.d	DB-5 0.32(mm)

8290

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/01/2013 18:11

Analysis Batch Number: 29136 End Date: 11/02/2013 04:14

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29136/30		11/01/2013 18:11	1	31OC13C3D5_30.d	DB-5 0.32(mm)
CPS 320-29136/31		11/01/2013 19:02	1	31OC13C3D5_31.d	DB-5 0.32(mm)
ZZZZZ		11/01/2013 19:43	1		DB-5 0.32(mm)
MB 320-28546/1-A		11/01/2013 20:25	1	31OC13C3D5_33.d	DB-5 0.32(mm)
LCS 320-28546/2-A		11/01/2013 21:07	1	31OC13C3D5_34.d	DB-5 0.32(mm)
320-4670-40	TF2-004/5-SS1052-000.6	11/01/2013 21:48	1	31OC13C3D5_35.d	DB-5 0.32(mm)
320-4670-41	TF2-004/5-SS1051-000.8	11/01/2013 22:30	1	31OC13C3D5_36.d	DB-5 0.32(mm)
320-4670-42	TF2-004/5-SS1050-000.6	11/01/2013 23:12	1	31OC13C3D5_37.d	DB-5 0.32(mm)
320-4670-43	TF2-004/5-SS1062-000.8	11/01/2013 23:54	1	31OC13C3D5_38.d	DB-5 0.32(mm)
320-4670-44	TF2-004/5-SS1061-000.6	11/02/2013 00:35	1	31OC13C3D5_39.d	DB-5 0.32(mm)
320-4670-45	TF2-004/5-SS-DUP04-1013	11/02/2013 01:17	1	31OC13C3D5_40.d	DB-5 0.32(mm)
320-4670-46	TF2-004/5-SS1067-000.7	11/02/2013 01:59	1	31OC13C3D5_41.d	DB-5 0.32(mm)
320-4670-47	TF2-004/5-SS1066-000.9	11/02/2013 02:41	1	31OC13C3D5_42.d	DB-5 0.32(mm)
CCV 320-29136/44		11/02/2013 04:14	1	31OC13C3D5_44.d	DB-5 0.32(mm)

8290

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/02/2013 04:14

Analysis Batch Number: 29137 End Date: 11/02/2013 14:17

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29137/44		11/02/2013 04:14	1	31OC13C3D5_44.d	DB-5 0.32(mm)
CPS 320-29137/45		11/02/2013 05:05	1	31OC13C3D5_45.d	DB-5 0.32(mm)
ZZZZZ		11/02/2013 05:46	1		DB-5 0.32(mm)
MB 320-28431/1-A		11/02/2013 06:28	1	31OC13C3D5_47.d	DB-5 0.32(mm)
LCS 320-28431/2-A		11/02/2013 07:10	1	31OC13C3D5_48.d	DB-5 0.32(mm)
320-4670-48	TF2-004/5-SS1060.000.5	11/02/2013 07:52	1	31OC13C3D5_49.d	DB-5 0.32(mm)
320-4670-49	TF2-004/5-SS1059-000.6	11/02/2013 08:33	1	31OC13C3D5_50.d	DB-5 0.32(mm)
320-4670-50	TF2-004/5-SS1058-000.5	11/02/2013 09:15	1	31OC13C3D5_51.d	DB-5 0.32(mm)
320-4670-51	TF2-004/5-SS1065-000.5	11/02/2013 09:57	1	31OC13C3D5_52.d	DB-5 0.32(mm)
320-4670-52	TF2-004/5-SS1064-000.6	11/02/2013 10:38	1	31OC13C3D5_53.d	DB-5 0.32(mm)
320-4670-52 MS	TF2-004/5-SS1064-000.6 MS	11/02/2013 11:20	1	31OC13C3D5_54.d	DB-5 0.32(mm)
320-4670-52 MSD	TF2-004/5-SS1064-000.6 MSD	11/02/2013 12:02	1	31OC13C3D5_55.d	DB-5 0.32(mm)
320-4670-53	TF2-004/5-SS1063-000.6	11/02/2013 12:44	1	31OC13C3D5_56.d	DB-5 0.32(mm)
CCV 320-29137/59		11/02/2013 14:17	1	31OC13C3D5_58.d	DB-5 0.32(mm)

8290

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29135/15 Calibration Date: 11/01/2013 07:19

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 310C13C3D5_15.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.117		10.1	10.0	1.0	20.0
2,3,7,8-TCDD	AveID	1.149	1.145		9.97	10.0	-0.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.200		54.5	50.0	8.9	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.120		52.7	50.0	5.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.025		46.9	50.0	-6.3	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.267		51.1	50.0	2.3	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.550		47.7	50.0	-4.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.341		46.9	50.0	-6.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8673		54.3	50.0	8.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.131		51.8	50.0	3.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.141		50.2	50.0	0.4	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.243		48.9	50.0	-2.2	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.532		53.0	50.0	6.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.106		49.6	50.0	-0.9	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.339		54.8	50.0	9.5	20.0
OCDD	AveID	1.211	1.154		95.4	100	-4.6	20.0
OCDF	AveID	1.657	1.469		88.6	100	-11.4	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.803		111	100	11.4	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.024		98.3	100	-1.7	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.462		118	100	17.9	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.9485		125	100	24.7	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.229		123	100	23.1	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9902		106	100	6.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8177		101	100	0.9	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.7262		99.2	100	-0.8	30.0
13C-OCDD	Ave	0.4879	0.5398		221	200	10.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.241		4.52	5.00	-9.5	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29136/30 Calibration Date: 11/01/2013 18:11

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 310C13C3D5_30.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.060		9.58	10.0	-4.2	20.0
2,3,7,8-TCDD	AveID	1.149	1.247		10.9	10.0	8.5	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.177		53.4	50.0	6.8	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.135		53.5	50.0	6.9	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.099		50.3	50.0	0.5	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.196		48.2	50.0	-3.5	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.485		45.7	50.0	-8.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.297		45.4	50.0	-9.3	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8392		52.5	50.0	5.0	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.141		52.3	50.0	4.5	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.117		49.2	50.0	-1.7	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.207		47.5	50.0	-5.1	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.499		51.9	50.0	3.7	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.187		53.2	50.0	6.4	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.292		52.9	50.0	5.7	20.0
OCDD	AveID	1.211	1.147		94.8	100	-5.2	20.0
OCDF	AveID	1.657	1.442		87.0	100	-13.0	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.765		109	100	9.1	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.055		101	100	1.4	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.339		108	100	8.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.7711		101	100	1.4	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.246		125	100	24.8	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.022		110	100	9.6	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8089		99.8	100	-0.2	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6827		93.2	100	-6.8	30.0
13C-OCDD	Ave	0.4879	0.4774		196	200	-2.2	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.347		4.91	5.00	-1.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29136/44 Calibration Date: 11/02/2013 04:14

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 31OC13C3D5_44.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.083		9.79	10.0	-2.1	20.0
2,3,7,8-TCDD	AveID	1.149	1.212		10.5	10.0	5.4	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.158		52.6	50.0	5.1	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.068		50.3	50.0	0.6	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.112		50.8	50.0	1.7	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.240		50.0	50.0	0.0	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.494		46.0	50.0	-8.1	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.345		47.1	50.0	-5.9	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.9057		56.7	50.0	13.3	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.142		52.3	50.0	4.6	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.137		50.0	50.0	0.0	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.255		49.3	50.0	-1.3	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.536		53.1	50.0	6.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.161		52.1	50.0	4.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.290		52.8	50.0	5.5	20.0
OCDD	AveID	1.211	1.148		94.9	100	-5.1	20.0
OCDF	AveID	1.657	1.461		88.2	100	-11.8	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.754		108	100	8.4	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.039		99.9	100	-0.1	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.343		108	100	8.3	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.7968		105	100	4.8	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.187		119	100	18.9	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9762		105	100	4.7	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7950		98.1	100	-1.9	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6962		95.1	100	-4.9	30.0
13C-OCDD	Ave	0.4879	0.5058		207	200	3.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.347		4.91	5.00	-1.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29137/59 | Calibration Date: 11/02/2013 14:17

Instrument ID: 3D5 | Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) | Calib End Date: 07/31/2013 18:40

Lab File ID: 31OC13C3D5_58.d | Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.084		9.80	10.0	-2.0	20.0
2,3,7,8-TCDD	AveID	1.149	1.210		10.5	10.0	5.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.165		52.9	50.0	5.7	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.101		51.9	50.0	3.7	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.125		51.4	50.0	2.8	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.185		47.8	50.0	-4.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.584		48.7	50.0	-2.5	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.356		47.4	50.0	-5.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8191		51.2	50.0	2.5	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.138		52.1	50.0	4.3	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.106		48.7	50.0	-2.6	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.225		48.2	50.0	-3.6	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.449		50.1	50.0	0.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.173		52.6	50.0	5.2	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.304		53.4	50.0	6.7	20.0
OCDD	AveID	1.211	1.141		94.2	100	-5.8	20.0
OCDF	AveID	1.657	1.478		89.2	100	-10.8	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.773		110	100	9.6	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.067		103	100	2.5	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.363		110	100	10.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.7833		103	100	3.0	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.205		121	100	20.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.036		111	100	11.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7797		96.2	100	-3.8	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6733		91.9	100	-8.1	30.0
13C-OCDD	Ave	0.4879	0.4667		191	200	-4.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.373		5.00	5.00	0.0	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29135/16 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/01/2013 08:10

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.56	24

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131104-8438.b\31OC13C3D5_16.d		
Injection Date:	01-Nov-2013 08:10:30	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29135 (16)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

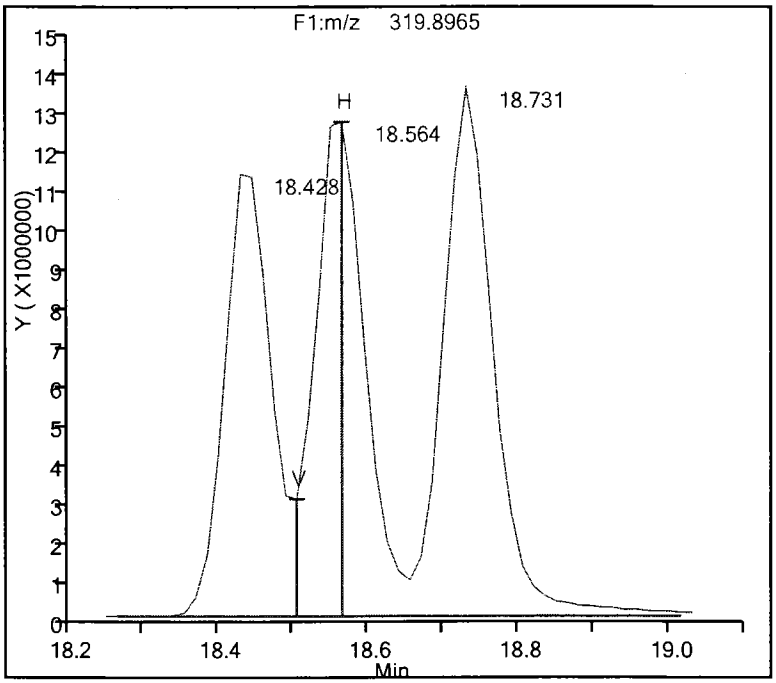
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2895892
H (Peak Height) = 12187094

%R = 24 <= 25
Passed



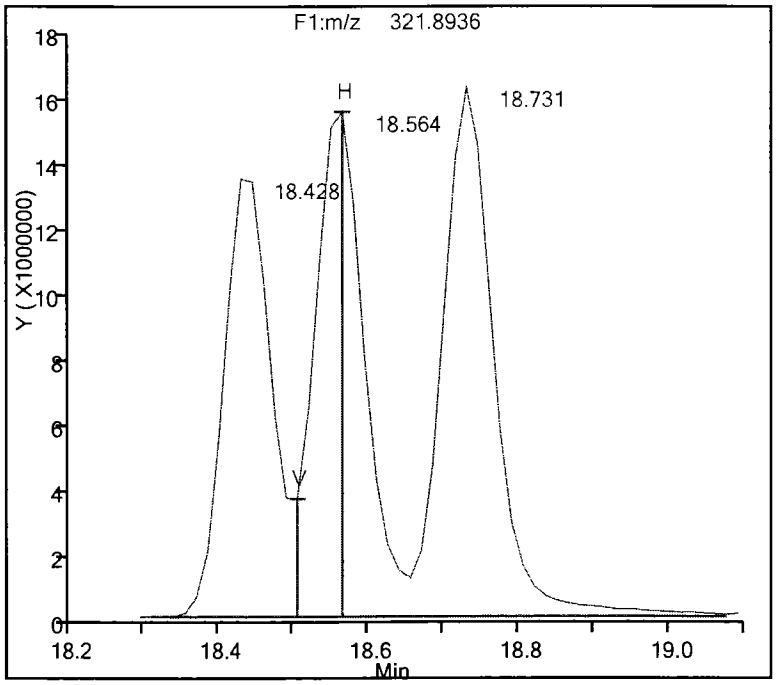
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3558612
H (Peak Height) = 15277100

%R = 23 <= 25
Passed



FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29136/31 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/01/2013 19:02

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.58	24

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131104-8438.b\31OC13C3D5_31.d		
Injection Date:	01-Nov-2013 19:02:27	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29136 (31)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

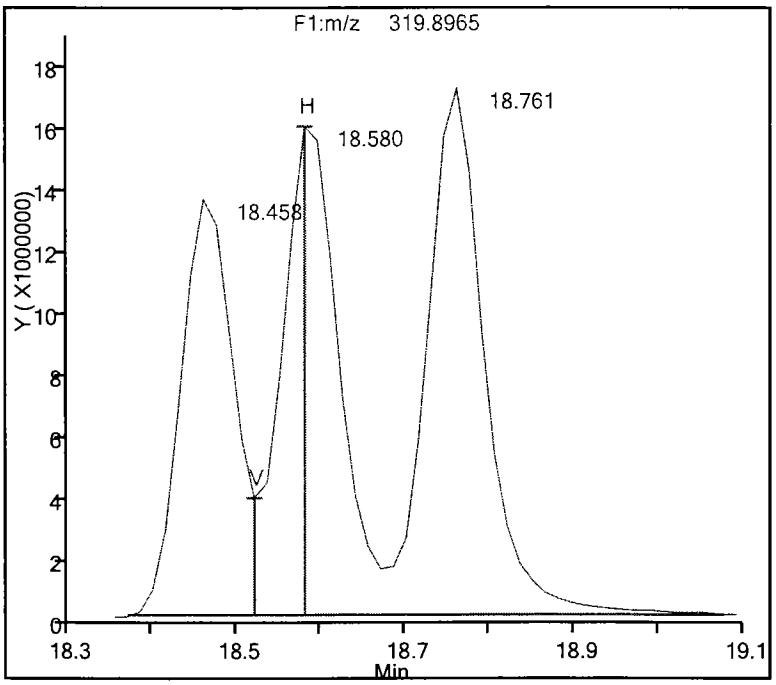
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3736257
H (Peak Height) = 15626203

%R = 24 <= 25
Passed



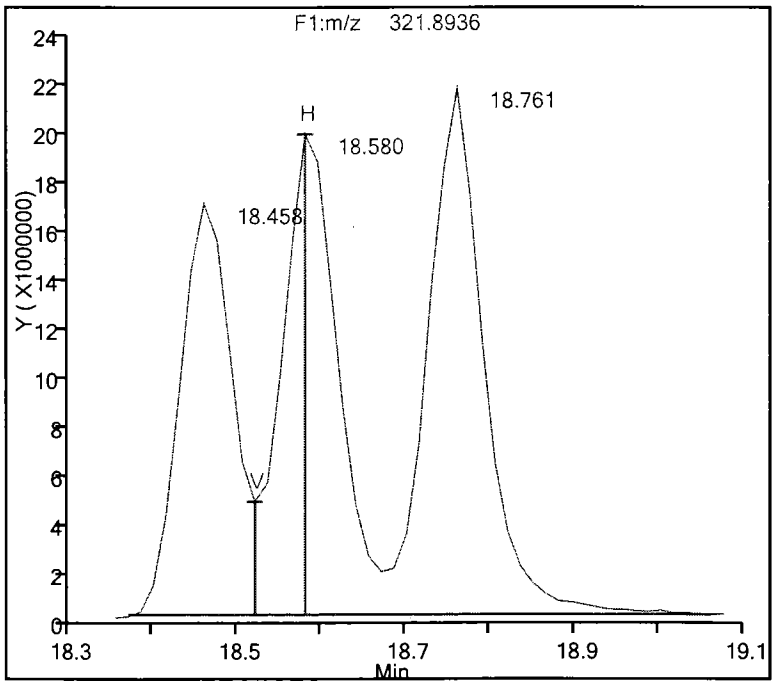
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 4615745
H (Peak Height) = 19633980

%R = 24 <= 25
Passed



FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29137/45 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/02/2013 05:05

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.58	21

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131104-8438.b\31OC13C3D5_45.d		
Injection Date:	02-Nov-2013 05:05:47	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29137 (45)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

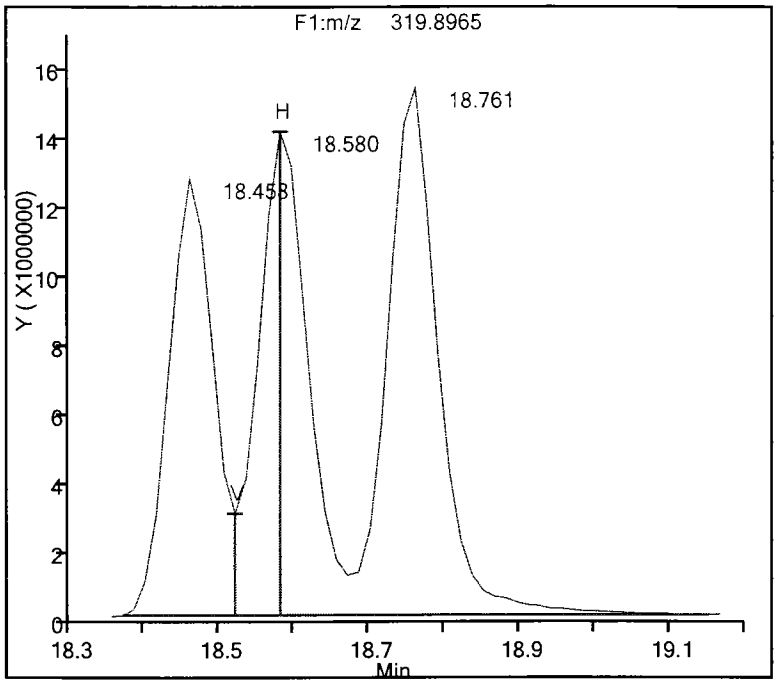
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2840651
H (Peak Height) = 13531113

%R = 21 <= 25
Passed



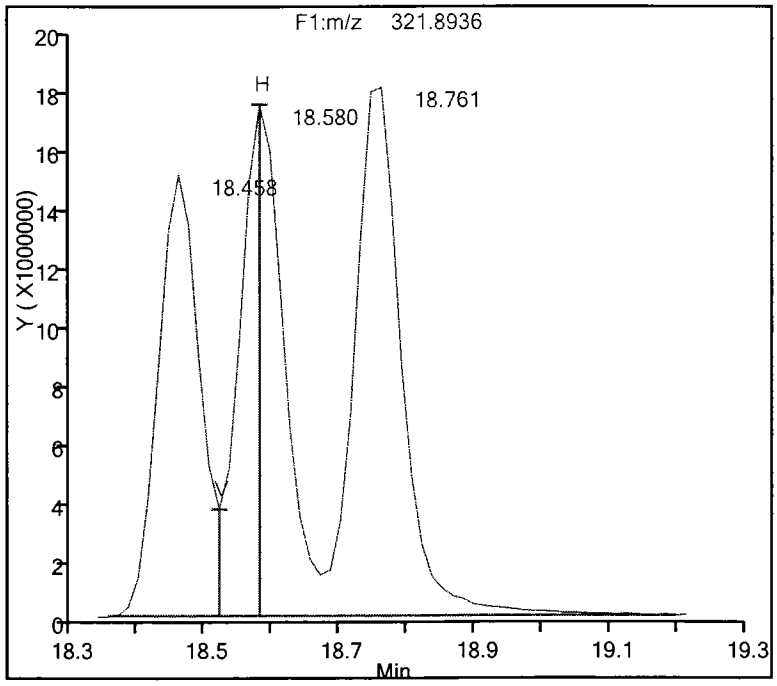
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3645381
H (Peak Height) = 17515964

%R = 21 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/03/2013 00:21

Analysis Batch Number: 29328 End Date: 11/03/2013 09:24

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29328/75		11/03/2013 00:21	1	31OC13C3D5_72.d	DB-5 0.32(mm)
CPS 320-29328/60		11/03/2013 01:12	1	31OC13C3D5_73.d	DB-5 0.32(mm)
320-4670-64	TF2-003-SS1019-000.5	11/03/2013 01:35	1	31OC13C3D5_75.d	DB-5 0.32(mm)
ZZZZZ		11/03/2013 01:53	1		DB-5 0.32(mm)
320-4670-64 MS	TF2-003-SS1019-000.5 MS	11/03/2013 02:16	1	31OC13C3D5_76.d	DB-5 0.32(mm)
320-4670-64 MSD	TF2-003-SS1019-000.5 MSD	11/03/2013 02:58	1	31OC13C3D5_77.d	DB-5 0.32(mm)
320-4670-65	TF2-003-SS-DUP06-1013	11/03/2013 03:40	1	31OC13C3D5_78.d	DB-5 0.32(mm)
320-4670-13	TF2-004/5-SS1028-000.8	11/03/2013 04:22	1	31OC13C3D5_79.d	DB-5 0.32(mm)
320-4670-14	TF2-004/5-SS1027-0001	11/03/2013 05:03	1	31OC13C3D5_80.d	DB-5 0.32(mm)
320-4670-14 MS	TF2-004/5-SS1027-0001 MS	11/03/2013 05:45	1	31OC13C3D5_81.d	DB-5 0.32(mm)
320-4670-14 MSD	TF2-004/5-SS1027-0001 MSD	11/03/2013 06:27	1	31OC13C3D5_82.d	DB-5 0.32(mm)
320-4670-15	TF2-004/5-SS1040-000.9	11/03/2013 07:09	1	31OC13C3D5_83.d	DB-5 0.32(mm)
320-4670-16	TF2-004/5-SS1039-000.9	11/03/2013 07:50	1	31OC13C3D5_84.d	DB-5 0.32(mm)
CCV 320-29328/73		11/03/2013 09:24	1	31OC13C3D5_86.d	DB-5 0.32(mm)

8290

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29328/75 Calibration Date: 11/03/2013 00:21

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 310C13C3D5_72.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.094		9.89	10.0	-1.1	20.0
2,3,7,8-TCDD	AveID	1.149	1.197		10.4	10.0	4.1	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.162		52.7	50.0	5.5	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.106		52.1	50.0	4.2	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.131		51.7	50.0	3.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.205		48.6	50.0	-2.8	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.591		49.0	50.0	-2.1	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.364		47.7	50.0	-4.5	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8955		56.0	50.0	12.1	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.125		51.5	50.0	3.0	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.143		50.3	50.0	0.6	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.262		49.6	50.0	-0.7	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.370		47.4	50.0	-5.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.189		53.3	50.0	6.6	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.297		53.0	50.0	6.1	20.0
OCDD	AveID	1.211	1.113		92.0	100	-8.0	20.0
OCDF	AveID	1.657	1.491		90.0	100	-10.0	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.754		108	100	8.4	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.047		101	100	0.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.339		108	100	8.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.7886		104	100	3.7	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.175		118	100	17.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9842		106	100	5.5	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7892		97.3	100	-2.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6752		92.2	100	-7.8	30.0
13C-OCDD	Ave	0.4879	0.4605		189	200	-5.6	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.329		4.84	5.00	-3.2	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29328/73 Calibration Date: 11/03/2013 09:24

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 310C13C3D5_86.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.047		9.47	10.0	-5.3	20.0
2,3,7,8-TCDD	AveID	1.149	1.183		10.3	10.0	3.0	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.158		52.5	50.0	5.1	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.104		52.0	50.0	4.0	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.151		52.6	50.0	5.2	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.226		49.5	50.0	-1.1	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.598		49.2	50.0	-1.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.367		47.8	50.0	-4.3	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8484		53.1	50.0	6.1	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.130		51.8	50.0	3.5	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.101		48.5	50.0	-3.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.261		49.6	50.0	-0.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.502		52.0	50.0	3.9	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.148		51.5	50.0	3.0	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.269		51.9	50.0	3.8	20.0
OCDD	AveID	1.211	1.120		92.5	100	-7.5	20.0
OCDF	AveID	1.657	1.493		90.1	100	-9.9	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.755		108	100	8.5	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.047		101	100	0.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.346		109	100	8.6	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.7750		102	100	1.9	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.181		118	100	18.3	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.011		108	100	8.4	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7797		96.2	100	-3.8	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6907		94.3	100	-5.7	30.0
13C-OCDD	Ave	0.4879	0.4738		194	200	-2.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.369		4.99	5.00	-0.3	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29328/60 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/03/2013 01:12

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.60	25

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131104-8438.b\31OC13C3D5_73.d		
Injection Date:	03-Nov-2013 01:12:15	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29328 (60)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

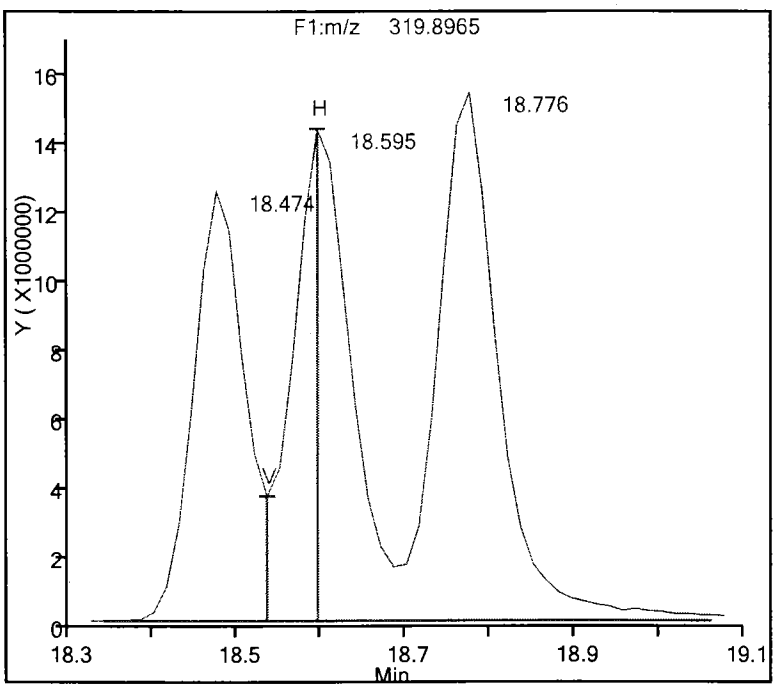
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3450157
H (Peak Height) = 13625425

%R = 25 <= 25
Passed



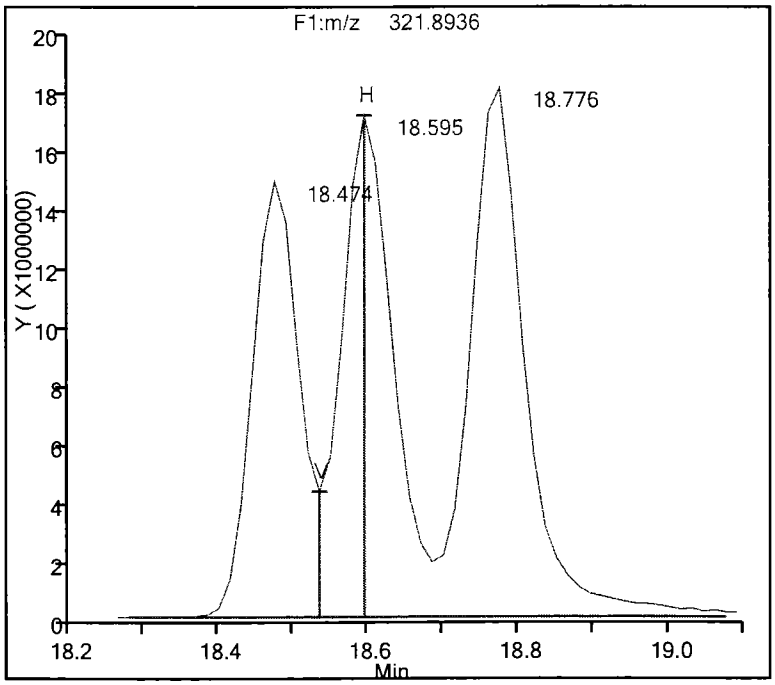
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 4162689
H (Peak Height) = 16647979

%R = 25 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/04/2013 22:15

Analysis Batch Number: 29347 End Date: 11/05/2013 07:29

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29347/2		11/04/2013 22:15	1	04NO13B3D5_2.d	DB-5 0.32(mm)
CPS 320-29347/3		11/04/2013 22:57	1	04NO13B3D5_3.d	DB-5 0.32(mm)
ZZZZZ		11/04/2013 23:39	1		DB-5 0.32(mm)
320-4670-54	TF2-004/5-SS1068-000.5	11/05/2013 00:21	1	04NO13B3D5_5.d	DB-5 0.32(mm)
320-4670-55	TF2-004/5-SS-DUP05-1013	11/05/2013 01:03	1	04NO13B3D5_6.d	DB-5 0.32(mm)
320-4670-56	TF2-003-SS1011-000.8	11/05/2013 01:45	1	04NO13B3D5_7.d	DB-5 0.32(mm)
320-4670-57	TF2-003-SS1012-000.7	11/05/2013 02:27	1	04NO13B3D5_8.d	DB-5 0.32(mm)
320-4670-58	TF2-003-SS1013-000.7	11/05/2013 03:08	1	04NO13B3D5_9.d	DB-5 0.32(mm)
320-4670-59	TF2-003-SS1014-0001	11/05/2013 03:50	1	04NO13B3D5_10.d	DB-5 0.32(mm)
320-4670-60	TF2-003-SS1015-000.8	11/05/2013 04:32	1	04NO13B3D5_11.d	DB-5 0.32(mm)
320-4670-61	TF2-003-SS1016-000.9	11/05/2013 05:14	1	04NO13B3D5_12.d	DB-5 0.32(mm)
320-4670-62	TF2-003-SS1017-000.8	11/05/2013 05:55	1	04NO13B3D5_13.d	DB-5 0.32(mm)
CCV 320-29347/15		11/05/2013 07:29	1	04NO13B3D5_15.d	DB-5 0.32(mm)

8290

DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/05/2013 07:29

Analysis Batch Number: 29348 End Date: 11/05/2013 17:32

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29348/15		11/05/2013 07:29	1	04NO13B3D5_15.d	DB-5 0.32(mm)
CPS 320-29348/16		11/05/2013 08:20	1	04NO13B3D5_16.d	DB-5 0.32(mm)
ZZZZZ		11/05/2013 09:01	1		DB-5 0.32(mm)
MB 320-28458/1-A		11/05/2013 09:43	1	04NO13B3D5_18.d	DB-5 0.32(mm)
LCS 320-28458/2-A		11/05/2013 10:25	1	04NO13B3D5_19.d	DB-5 0.32(mm)
320-4670-18	TF2-004/5-SS1038-000.7	11/05/2013 11:07	1	04NO13B3D5_20.d	DB-5 0.32(mm)
320-4670-19	TF2-004/5-SS1037-000.7	11/05/2013 11:48	1	04NO13B3D5_21.d	DB-5 0.32(mm)
320-4670-20	TF2-004/5-SS1036-000.6	11/05/2013 12:30	1	04NO13B3D5_22.d	DB-5 0.32(mm)
320-4670-21	TF2-004/5-SS1035-0001	11/05/2013 13:12	1	04NO13B3D5_23.d	DB-5 0.32(mm)
320-4670-22	TF2-004/5-SS-DUP02-1013	11/05/2013 13:53	1	04NO13B3D5_24.d	DB-5 0.32(mm)
320-4670-2	TF2-004/5-SS1026-000.8	11/05/2013 14:35	1	04NO13B3D5_25.d	DB-5 0.32(mm)
320-4670-3	TF2-004/5-SS1024-000.6	11/05/2013 15:17	1	04NO13B3D5_26.d	DB-5 0.32(mm)
320-4670-4	TF2-004/5-SS1023-000.8	11/05/2013 15:59	1	04NO13B3D5_27.d	DB-5 0.32(mm)
CCV 320-29348/29		11/05/2013 17:32	1	04NO13B3D5_29.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29347/2 Calibration Date: 11/04/2013 22:15

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 04NO13B3D5_2.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.061		9.58	10.0	-4.2	20.0
2,3,7,8-TCDD	AveID	1.149	1.233		10.7	10.0	7.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.187		53.9	50.0	7.8	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.166		54.9	50.0	9.8	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.090		49.8	50.0	-0.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.199		48.4	50.0	-3.3	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.716		52.8	50.0	5.6	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.417		49.6	50.0	-0.8	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8169		51.1	50.0	2.2	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.124		51.5	50.0	3.0	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.160		51.1	50.0	2.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.265		49.8	50.0	-0.5	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.632		56.5	50.0	13.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.208		54.1	50.0	8.3	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.322		54.1	50.0	8.2	20.0
OCDD	AveID	1.211	1.160		95.8	100	-4.2	20.0
OCDF	AveID	1.657	1.465		88.4	100	-11.6	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.914		118	100	18.3	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.066		102	100	2.5	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.394		113	100	12.5	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8455		111	100	11.2	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.086		109	100	8.8	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.000		107	100	7.3	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7621		94.0	100	-6.0	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.5857		80.0	100	-20.0	30.0
13C-OCDD	Ave	0.4879	0.4643		190	200	-4.8	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.382		5.03	5.00	0.7	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29348/15 Calibration Date: 11/05/2013 07:29

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 04NO13B3D5_15.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.072		9.69	10.0	-3.1	20.0
2,3,7,8-TCDD	AveID	1.149	1.245		10.8	10.0	8.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.170		53.1	50.0	6.2	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.158		54.6	50.0	9.1	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.052		48.1	50.0	-3.8	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.187		47.9	50.0	-4.2	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.495		46.0	50.0	-8.0	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.300		45.5	50.0	-9.0	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8926		55.8	50.0	11.7	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.136		52.0	50.0	4.0	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.159		51.0	50.0	2.0	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.198		47.1	50.0	-5.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.461		50.6	50.0	1.1	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.210		54.2	50.0	8.5	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.296		53.0	50.0	6.0	20.0
OCDD	AveID	1.211	1.155		95.5	100	-4.5	20.0
OCDF	AveID	1.657	1.434		86.5	100	-13.5	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.832		113	100	13.2	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.011		97.2	100	-2.8	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.330		107	100	7.3	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8135		107	100	7.0	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.175		118	100	17.6	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9888		106	100	6.0	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8796		109	100	8.5	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6871		93.8	100	-6.2	30.0
13C-OCDD	Ave	0.4879	0.5526		227	200	13.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.319		4.81	5.00	-3.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29348/29 Calibration Date: 11/05/2013 17:32

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 04NO13B3D5_29.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.072		9.69	10.0	-3.1	20.0
2,3,7,8-TCDD	AveID	1.149	1.280		11.1	10.0	11.4	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.139		51.7	50.0	3.4	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.108		52.2	50.0	4.4	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.122		51.3	50.0	2.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.194		48.2	50.0	-3.7	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.426		43.9	50.0	-12.2	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.321		46.2	50.0	-7.6	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.9751		61.0	50.0	22.0*	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.140		52.2	50.0	4.4	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.200		52.8	50.0	5.6	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.239		48.7	50.0	-2.5	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.497		51.8	50.0	3.6	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.243		55.7	50.0	11.5	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.328		54.3	50.0	8.6	20.0
OCDD	AveID	1.211	1.133		93.6	100	-6.4	20.0
OCDF	AveID	1.657	1.386		83.6	100	-16.4	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.844		114	100	14.0	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.038		99.8	100	-0.2	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.442		116	100	16.3	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8430		111	100	10.9	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.146		115	100	14.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9407		101	100	0.9	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8778		108	100	8.3	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6881		94.0	100	-6.0	30.0
13C-OCDD	Ave	0.4879	0.5500		225	200	12.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.399		5.10	5.00	2.0	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29347/3 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/04/2013 22:57

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.44	24

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131106-8509.b\04NO13B3D5_3.d		
Injection Date:	04-Nov-2013 22:57:44	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29347 (3)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

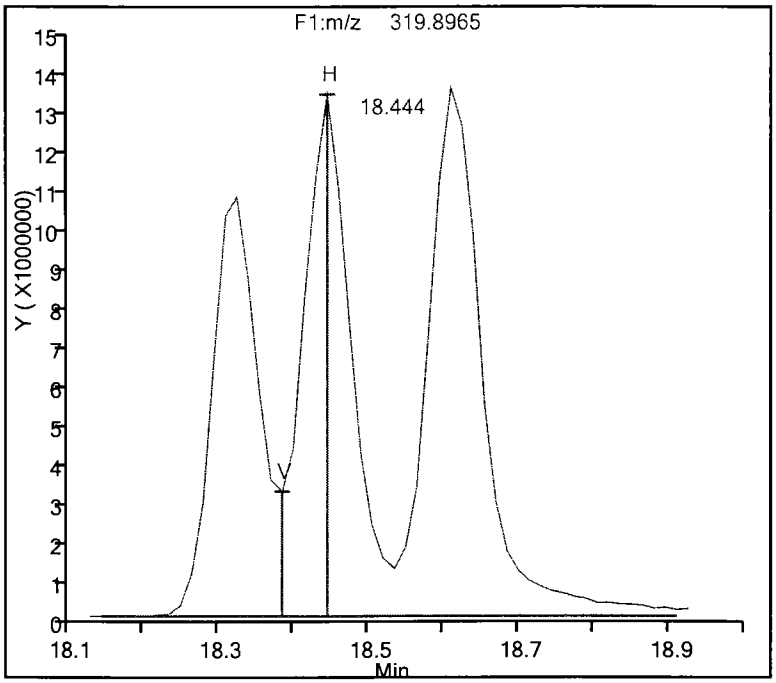
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3053425
H (Peak Height) = 12748165

%R = 24 <= 25
Passed



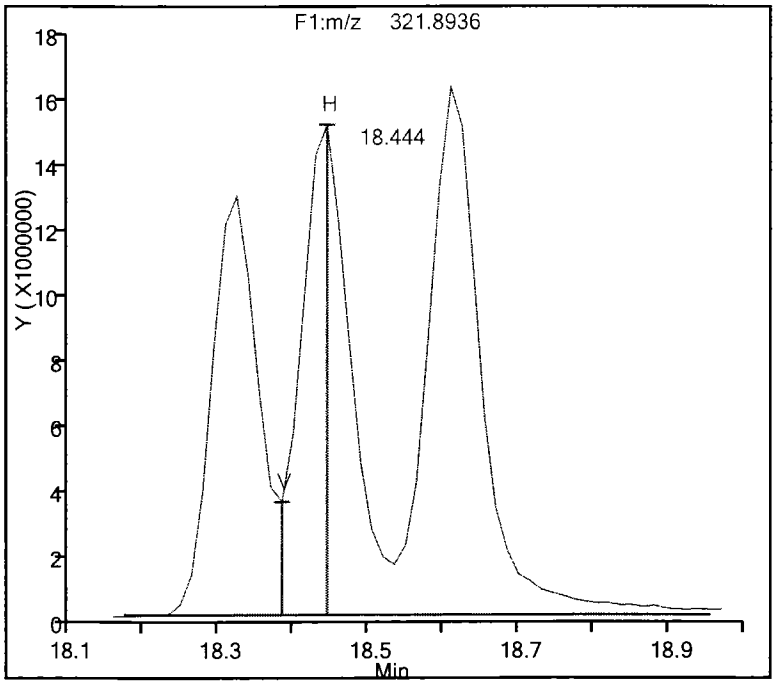
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3483986
H (Peak Height) = 15124972

%R = 23 <= 25
Passed



FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29348/16 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/05/2013 08:20

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.40	21

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131106-8509.b\04NO13B3D5_16.d		
Injection Date:	05-Nov-2013 08:20:41	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29348 (16)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

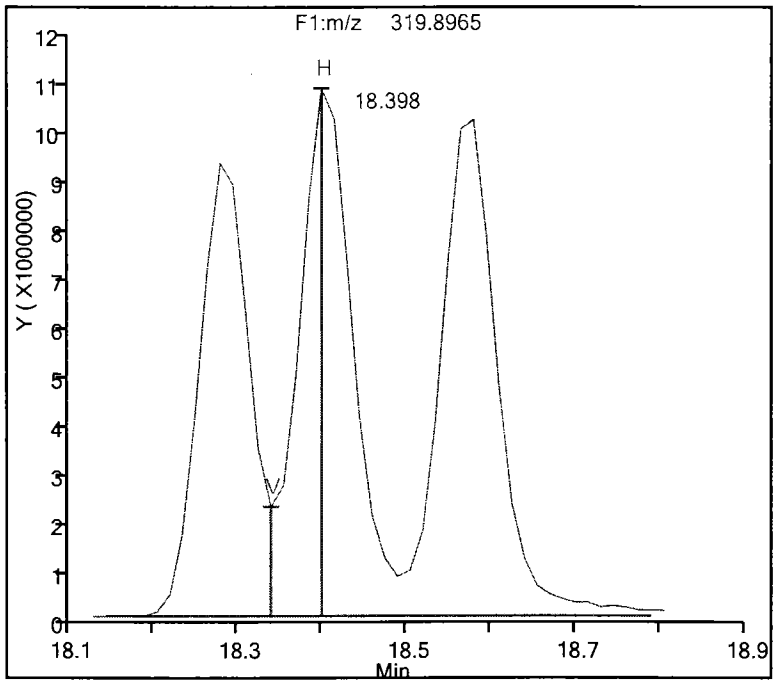
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2177779
H (Peak Height) = 10521531

%R = 21 <= 25
Passed



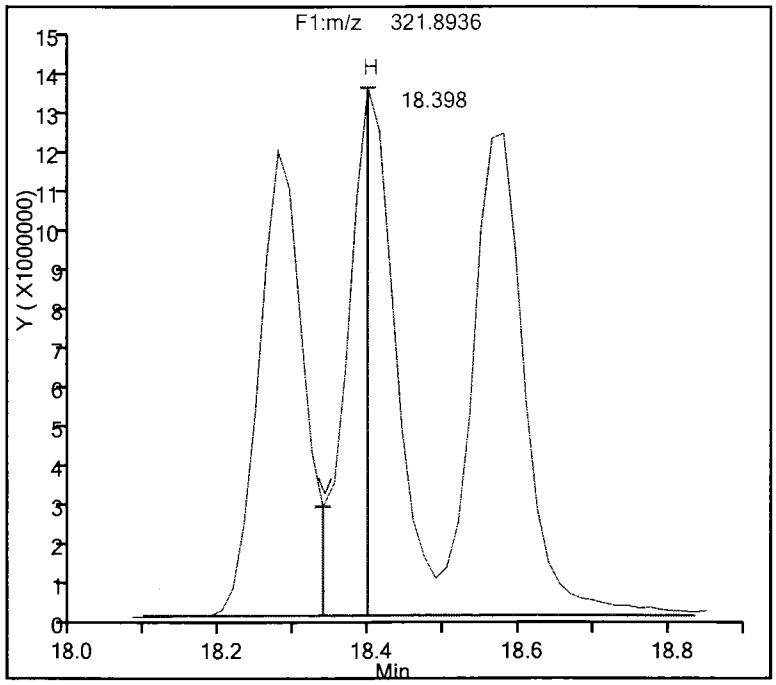
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2653148
H (Peak Height) = 12879928

%R = 21 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 11/05/2013 21:40

Analysis Batch Number: 29432 End Date: 11/06/2013 07:34

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-29432/1	ok	11/05/2013 21:40	1	05NO13A3D5_1.d	DB-5 0.32(mm)
CPS 320-29432/2		11/05/2013 22:22	1	05NO13A3D5_2.d	DB-5 0.32(mm)
ZZZZZ		11/05/2013 23:03	1		DB-5 0.32(mm)
320-4670-1	TF2-004/5-SS1025-000.8	11/05/2013 23:45	1	05NO13A3D5_4.d	DB-5 0.32(mm)
320-4670-5	TF2-004/5-SS1022-000.9	11/06/2013 00:27	1	05NO13A3D5_5.d	DB-5 0.32(mm)
320-4670-6	TF2-004/5-SS1021-000.7	11/06/2013 01:08	1	05NO13A3D5_6.d	DB-5 0.32(mm)
320-4670-7	TF2-004/5-SS1020-0001	11/06/2013 01:50	1	05NO13A3D5_7.d	DB-5 0.32(mm)
320-4670-8	TF2-004/5-SS1032-000.9	11/06/2013 02:32	1	05NO13A3D5_8.d	DB-5 0.32(mm)
320-4670-9	TF2-004/5-SS1031-000.8	11/06/2013 03:13	1	05NO13A3D5_9.d	DB-5 0.32(mm)
320-4670-10	TF2-004/5-SS-DUP01-1013	11/06/2013 03:55	1	05NO13A3D5_10.d	DB-5 0.32(mm)
320-4670-11	TF2-004/5-SS1030-000.6	11/06/2013 04:37	1	05NO13A3D5_11.d	DB-5 0.32(mm)
320-4670-12	TF2-004/5-SS1029-000.6	11/06/2013 05:19	1	05NO13A3D5_12.d	DB-5 0.32(mm)
320-4670-63	TF2-003-SS1018-000.8	11/06/2013 06:00	1	05NO13A3D5_13.d	DB-5 0.32(mm)
CCV 320-29432/15		11/06/2013 07:34	1	05NO13A3D5_15.d	DB-5 0.32(mm)

8290

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29432/1 Calibration Date: 11/05/2013 21:40

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 05NO13A3D5_1.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.016		9.18	10.0	-8.2	20.0
2,3,7,8-TCDD	AveID	1.149	1.214		10.6	10.0	5.6	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.125		51.0	50.0	2.1	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.042		49.1	50.0	-1.8	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.120		51.2	50.0	2.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.182		47.7	50.0	-4.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.458		44.9	50.0	-10.3	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.277		44.7	50.0	-10.6	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8804		55.1	50.0	10.2	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.115		51.1	50.0	2.2	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.127		49.6	50.0	-0.8	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.155		45.4	50.0	-9.2	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.442		49.9	50.0	-0.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.199		53.7	50.0	7.5	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.253		51.3	50.0	2.5	20.0
OCDD	AveID	1.211	1.095		90.5	100	-9.5	20.0
OCDF	AveID	1.657	1.325		80.0	100	-20.0	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.771		109	100	9.5	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.041		100	100	0.0	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.381		111	100	11.4	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8028		106	100	5.6	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.152		115	100	15.4	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9708		104	100	4.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8638		107	100	6.6	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.7051		96.3	100	-3.7	30.0
13C-OCDD	Ave	0.4879	0.6040		248	200	23.8	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.417		5.16	5.00	3.2	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29432/15 Calibration Date: 11/06/2013 07:34

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 05NO13A3D5_15.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.052		9.51	10.0	-4.9	20.0
2,3,7,8-TCDD	AveID	1.149	1.283		11.2	10.0	11.7	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.151		52.3	50.0	4.5	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.142		53.8	50.0	7.6	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.076		49.2	50.0	-1.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.177		47.5	50.0	-5.0	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.374		42.3	50.0	-15.4	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.261		44.1	50.0	-11.8	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.9418		58.9	50.0	17.8	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.139		52.2	50.0	4.4	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.130		49.7	50.0	-0.5	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.186		46.6	50.0	-6.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.439		49.8	50.0	-0.4	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.180		52.9	50.0	5.8	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.275		52.2	50.0	4.3	20.0
OCDD	AveID	1.211	1.129		93.2	100	-6.8	20.0
OCDF	AveID	1.657	1.358		81.9	100	-18.1	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.777		110	100	9.8	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.017		97.7	100	-2.3	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.341		108	100	8.2	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8522		112	100	12.1	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.223		122	100	22.5	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	0.9672		104	100	3.7	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.9243		114	100	14.0	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.7447		102	100	1.7	30.0
13C-OCDD	Ave	0.4879	0.6319		259	200	29.5	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.346		4.91	5.00	-1.9	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-29432/2 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 11/05/2013 22:22

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.41	21

Resolution Report

TestAmerica Sacramento

Data File:	\\Sacchrom\ChromData\3D5\20131107-8535.b\05NO13A3D5_2.d		
Injection Date:	05-Nov-2013 22:22:15	Instrument ID:	3D5
Lims ID:	CPS	Client ID:	
Lab Sample ID:		Lims Batch (Smp):	29432 (2)
Injection Vol:	2.0 ul	Dil. Factor:	1.0000
Method:	Dioxin_3D5	Limit Group:	HR - 8290 - ICAL

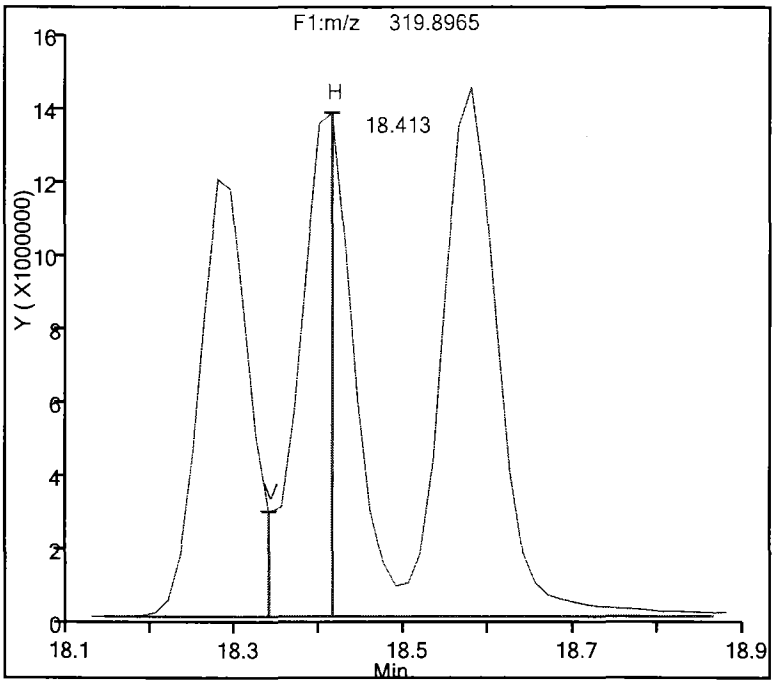
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 2839927
H (Peak Height) = 13619729

%R = 21 <= 25
Passed



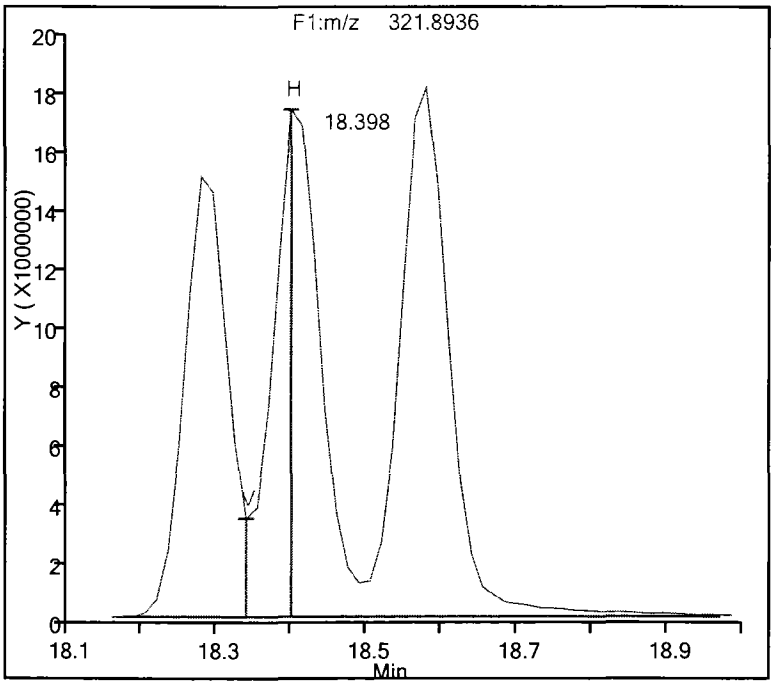
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 3336485
H (Peak Height) = 17267372

%R = 19 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/18/2013 03:44

Analysis Batch Number: 32174 End Date: 12/18/2013 13:48

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-32174/13		12/18/2013 03:44	1	16DE13B3D5_41.d	DB-5 0.32(mm)
CPS 320-32174/14		12/18/2013 04:36	1	16DE13B3D5_42.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 05:17	1		DB-5 0.32(mm)
320-4670-5 RADL	TF2-004/5-SS1022-000.9 RADL	12/18/2013 05:59	10	16DE13B3D5_44.d	DB-5 0.32(mm)
320-4670-7 RADL	TF2-004/5-SS1020-0001 RADL	12/18/2013 06:40	10	16DE13B3D5_45.d	DB-5 0.32(mm)
320-4670-10 RADL	TF2-004/5-SS-DUP01-1013 RADL	12/18/2013 07:22	10	16DE13B3D5_46.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 08:04	10		DB-5 0.32(mm)
ZZZZZ		12/18/2013 08:46	10		DB-5 0.32(mm)
320-4670-14 MS RADL	TF2-004/5-SS1027-0001 MS RADL	12/18/2013 09:28	10	16DE13B3D5_49.d	DB-5 0.32(mm)
320-4670-14 MSD RADL	TF2-004/5-SS1027-0001 MSD RADL	12/18/2013 10:09	10	16DE13B3D5_50.d	DB-5 0.32(mm)
320-4670-15 RADL	TF2-004/5-SS1040-000.9 RADL	12/18/2013 10:51	10	16DE13B3D5_51.d	DB-5 0.32(mm)
320-4670-16 RADL	TF2-004/5-SS1039-000.9 RADL	12/18/2013 11:33	10	16DE13B3D5_52.d	DB-5 0.32(mm)
320-4670-20 RADL	TF2-004/5-SS1036-000.6 RADL	12/18/2013 12:15	10	16DE13B3D5_53.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 12:57	1		DB-5 0.32(mm)
CCV 320-32174/27		12/18/2013 13:48	1	16DE13B3D5_55.d	DB-5 0.32(mm)

8290

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32174/13 Calibration Date: 12/18/2013 03:44

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_41.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.014		9.17	10.0	-8.3	20.0
2,3,7,8-TCDD	AveID	1.149	1.175		10.2	10.0	2.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.138		51.6	50.0	3.3	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.098		51.7	50.0	3.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.109		50.7	50.0	1.4	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.107		44.7	50.0	-10.7	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.400		43.1	50.0	-13.8	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.250		43.7	50.0	-12.5	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.8855		55.4	50.0	10.8	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.127		51.6	50.0	3.2	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.108		48.8	50.0	-2.4	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.140		44.8	50.0	-10.4	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.449		50.1	50.0	0.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.144		51.3	50.0	2.6	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.323		54.1	50.0	8.2	20.0
OCDD	AveID	1.211	1.263		104	100	4.4	20.0
OCDF	AveID	1.657	1.678		101	100	1.3	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.833		113	100	13.3	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.096		105	100	5.3	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.364		110	100	10.0	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8465		111	100	11.3	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.155		116	100	15.7	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.037		111	100	11.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.9053		112	100	11.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.7958		109	100	8.7	30.0
13C-OCDD	Ave	0.4879	0.5367		220	200	10.0	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.515		5.52	5.00	10.4	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32174/27 Calibration Date: 12/18/2013 13:48

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_55.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.002		9.05	10.0	-9.5	20.0
2,3,7,8-TCDD	AveID	1.149	1.271		11.1	10.0	10.6	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.126		51.1	50.0	2.2	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.109		52.2	50.0	4.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.072		49.0	50.0	-2.0	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.132		45.7	50.0	-8.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.539		47.4	50.0	-5.2	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.278		44.7	50.0	-10.6	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.7771		48.6	50.0	-2.8	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.143		52.4	50.0	4.7	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.100		48.4	50.0	-3.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.124		44.2	50.0	-11.6	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.492		51.6	50.0	3.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.143		51.2	50.0	2.5	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.268		51.9	50.0	3.7	20.0
OCDD	AveID	1.211	1.299		107	100	7.3	20.0
OCDF	AveID	1.657	1.767		107	100	6.6	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.821		113	100	12.6	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.055		101	100	1.3	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.328		107	100	7.1	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8385		110	100	10.3	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.093		109	100	9.4	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.073		115	100	15.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8317		103	100	2.6	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6832		93.3	100	-6.7	30.0
13C-OCDD	Ave	0.4879	0.4397		180	200	-9.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.560		5.68	5.00	13.7	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32174/14 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/18/2013 04:36

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.44	22

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\3D5\20131218-9321.b\16DE13B3D5_42.d
Injection Date: 18-Dec-2013 04:36:05 Instrument ID: 3D5
Lims ID: CPS Lab Sample ID: CPS 320-32174/14-A
Client ID:
Operator ID: SMA ALS Bottle#: 1 Worklist Smp#: 14
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 8290 - ICAL

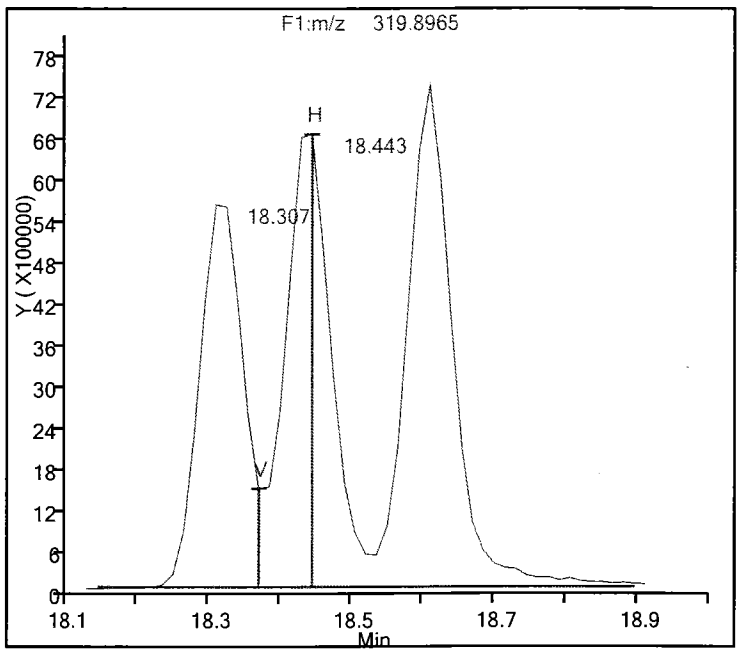
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1436902
H (Peak Height) = 6609211

%R = 22 <= 25
Passed



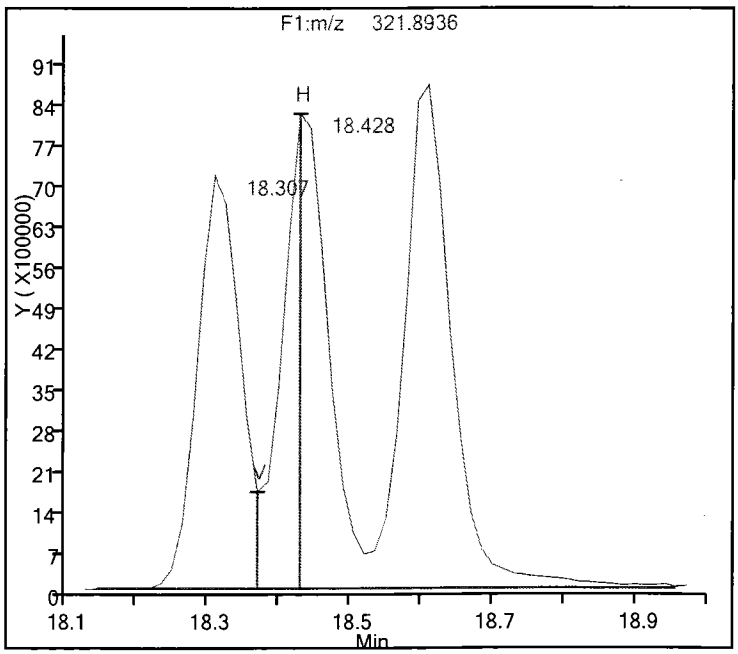
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1658604
H (Peak Height) = 8157702

%R = 20 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/18/2013 13:48

Analysis Batch Number: 32193 End Date: 12/18/2013 21:15

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-32193/1		12/18/2013 13:48	1	16DE13B3D5_55.d	DB-5 0.32(mm)
CPS 320-32193/2		12/18/2013 14:40	1	16DE13B3D5_56.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 15:21	1		DB-5 0.32(mm)
ZZZZZ		12/18/2013 16:02	10		DB-5 0.32(mm)
ZZZZZ		12/18/2013 16:44	10		DB-5 0.32(mm)
ZZZZZ		12/18/2013 17:26	10		DB-5 0.32(mm)
ZZZZZ		12/18/2013 18:08	10		DB-5 0.32(mm)
320-4670-14 RADL	TF2-004/5-SS1027-0001 RADL	12/18/2013 18:50	10	16DE13B3D5_62.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 19:32	10		DB-5 0.32(mm)
CCV 320-32193/11		12/18/2013 21:15	1	16DE13B3D5_65.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32193/1 Calibration Date: 12/18/2013 13:48

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_55.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.002		9.05	10.0	-9.5	20.0
2,3,7,8-TCDD	AveID	1.149	1.271		11.1	10.0	10.6	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.126		51.1	50.0	2.2	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.109		52.2	50.0	4.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.072		49.0	50.0	-2.0	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.132		45.7	50.0	-8.6	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.539		47.4	50.0	-5.2	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.278		44.7	50.0	-10.6	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.7771		48.6	50.0	-2.8	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.143		52.4	50.0	4.7	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.100		48.4	50.0	-3.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.124		44.2	50.0	-11.6	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.492		51.6	50.0	3.3	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.143		51.2	50.0	2.5	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.268		51.9	50.0	3.7	20.0
OCDD	AveID	1.211	1.299		107	100	7.3	20.0
OCDF	AveID	1.657	1.767		107	100	6.6	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.821		113	100	12.6	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.055		101	100	1.3	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.328		107	100	7.1	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8385		110	100	10.3	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.093		109	100	9.4	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.073		115	100	15.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8317		103	100	2.6	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6832		93.3	100	-6.7	30.0
13C-OCDD	Ave	0.4879	0.4397		180	200	-9.9	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.560		5.68	5.00	13.7	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32193/11 Calibration Date: 12/18/2013 21:15

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_65.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.010		9.13	10.0	-8.7	20.0
2,3,7,8-TCDD	AveID	1.149	1.181		10.3	10.0	2.8	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.126		51.1	50.0	2.2	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.120		52.8	50.0	5.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.102		50.4	50.0	0.7	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.122		45.3	50.0	-9.5	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.619		49.8	50.0	-0.3	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.327		46.4	50.0	-7.1	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.7203		45.1	50.0	-9.9	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.116		51.1	50.0	2.3	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.060		46.7	50.0	-6.7	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.168		45.9	50.0	-8.1	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.564		54.1	50.0	8.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.172		52.5	50.0	5.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.274		52.1	50.0	4.3	20.0
OCDD	AveID	1.211	1.280		106	100	5.8	20.0
OCDF	AveID	1.657	1.782		108	100	7.5	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.841		114	100	13.8	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.120		108	100	7.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.354		109	100	9.2	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8455		111	100	11.2	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.029		103	100	3.0	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.093		117	100	17.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7938		97.9	100	-2.1	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6656		82.5	100	-9.1	30.0
13C-OCDD	Ave	0.4879	0.4180		171	200	-14.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.659		6.04	5.00	20.9	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32193/2 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/18/2013 14:40

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.44	24

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\3D5\20131219-9327.b\16DE13B3D5_56.d
Injection Date: 18-Dec-2013 14:40:04 Instrument ID: 3D5
Lims ID: CPS Lab Sample ID: CPS 320-32194/2-A
Client ID:
Operator ID: SMA ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 8290 - ICAL

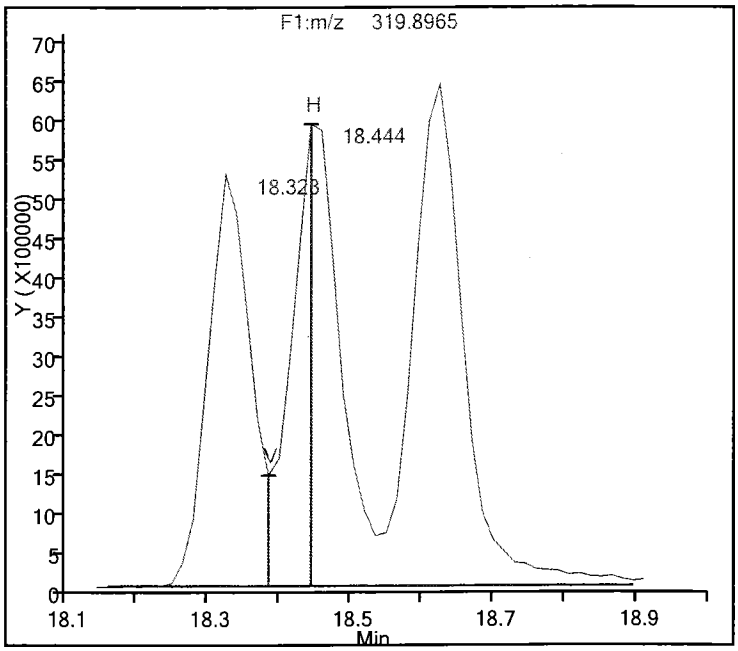
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1405298
H (Peak Height) = 5866099

%R = 24 <= 25
Passed



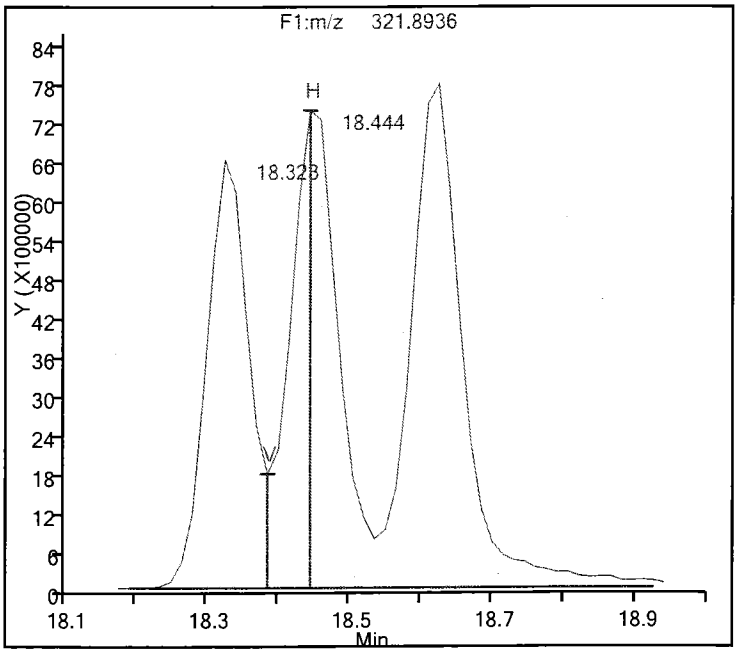
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1760261
H (Peak Height) = 7379581

%R = 24 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/18/2013 21:15

Analysis Batch ~~Number~~: 32194 End Date: 12/19/2013 07:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-32194/11		12/18/2013 21:15	1	16DE13B3D5_65.d	DB-5 0.32(mm)
CPS 320-32194/12		12/18/2013 22:06	1	16DE13B3D5_66.d	DB-5 0.32(mm)
ZZZZZ		12/18/2013 22:47	1		DB-5 0.32(mm)
320-4670-24 RADL	TF2-004/5-SS1033-000.8 RADL	12/18/2013 23:29	10	16DE13B3D5_68.d	DB-5 0.32(mm)
320-4670-25 RADL	TF2-004/5-SS1049-000.9 RADL	12/19/2013 00:11	10	16DE13B3D5_69.d	DB-5 0.32(mm)
320-4670-26 RADL	TF2-004/5-SS1048-000.8 RADL	12/19/2013 00:52	10	16DE13B3D5_70.d	DB-5 0.32(mm)
320-4670-27 RADL	TF2-004/5-SS1047-000.8 RADL	12/19/2013 01:34	10	16DE13B3D5_71.d	DB-5 0.32(mm)
320-4670-29 RADL	TF2-004/5-SS1045-000.5 RADL	12/19/2013 02:16	10	16DE13B3D5_72.d	DB-5 0.32(mm)
320-4670-32 RADL	TF2-004/5-SS1041-000.7 RADL	12/19/2013 02:58	10	16DE13B3D5_73.d	DB-5 0.32(mm)
320-4670-33 RADL	TF2-004/5-SS-DUP03-1013 RADL	12/19/2013 03:40	10	16DE13B3D5_74.d	DB-5 0.32(mm)
320-4670-35 RADL	TF2-004/5-SS1057-0001 RADL	12/19/2013 04:21	10	16DE13B3D5_75.d	DB-5 0.32(mm)
320-4670-39 RADL	TF2-004/5-SS1053-000.6 RADL	12/19/2013 05:03	10	16DE13B3D5_76.d	DB-5 0.32(mm)
320-4670-41 RADL	TF2-004/5-SS1051-000.8 RADL	12/19/2013 05:45	10	16DE13B3D5_77.d	DB-5 0.32(mm)
ZZZZZ		12/19/2013 06:27	1		DB-5 0.32(mm)
CCV 320-32194/25		12/19/2013 07:19	1	16DE13B3D5_79.d	DB-5 0.32(mm)

8290

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32194/11 Calibration Date: 12/18/2013 21:15

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_65.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.010		9.13	10.0	-8.7	20.0
2,3,7,8-TCDD	AveID	1.149	1.181		10.3	10.0	2.8	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.126		51.1	50.0	2.2	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.120		52.8	50.0	5.5	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.102		50.4	50.0	0.7	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.122		45.3	50.0	-9.5	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.619		49.8	50.0	-0.3	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.327		46.4	50.0	-7.1	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.7203		45.1	50.0	-9.9	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.116		51.1	50.0	2.3	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.060		46.7	50.0	-6.7	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.168		45.9	50.0	-8.1	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.564		54.1	50.0	8.2	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.172		52.5	50.0	5.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.274		52.1	50.0	4.3	20.0
OCDD	AveID	1.211	1.280		106	100	5.8	20.0
OCDF	AveID	1.657	1.782		108	100	7.5	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.841		114	100	13.8	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.120		108	100	7.6	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.354		109	100	9.2	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8455		111	100	11.2	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.029		103	100	3.0	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.093		117	100	17.2	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.7938		97.9	100	-2.1	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6656		82.5	100	-9.1	30.0
13C-OCDD	Ave	0.4879	0.4180		171	200	-14.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.659		6.04	5.00	20.9	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32194/25 Calibration Date: 12/19/2013 07:19

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_79.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.013		9.16	10.0	-8.4	20.0
2,3,7,8-TCDD	AveID	1.149	1.171		10.2	10.0	1.9	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.139		51.7	50.0	3.4	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.106		52.1	50.0	4.2	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.079		49.3	50.0	-1.3	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.073		43.3	50.0	-13.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.542		47.5	50.0	-5.1	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.284		44.9	50.0	-10.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.7512		47.0	50.0	-6.0	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.123		51.5	50.0	2.9	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.086		47.8	50.0	-4.4	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.109		43.6	50.0	-12.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.529		52.9	50.0	5.8	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.217		54.5	50.0	9.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.230		50.3	50.0	0.7	20.0
OCDD	AveID	1.211	1.293		107	100	6.9	20.0
OCDF	AveID	1.657	1.749		106	100	5.5	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.854		115	100	14.6	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.090		105	100	4.8	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.356		109	100	9.4	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8605		113	100	13.2	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.082		108	100	8.4	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.087		117	100	16.5	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8403		104	100	3.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6703		91.5	100	-8.5	30.0
13C-OCDD	Ave	0.4879	0.4551		187	200	-6.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.575		5.74	5.00	14.8	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32194/12 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/18/2013 22:06

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.46	26

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\3D5\20131219-9327.b\16DE13B3D5_66.d
Injection Date: 18-Dec-2013 22:06:20 Instrument ID: 3D5
Lims ID: CPS Lab Sample ID: CPS 320-32194/12-A
Client ID:
Operator ID: SMA ALS Bottle#: 1 Worklist Smp#: 12
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 8290 - ICAL

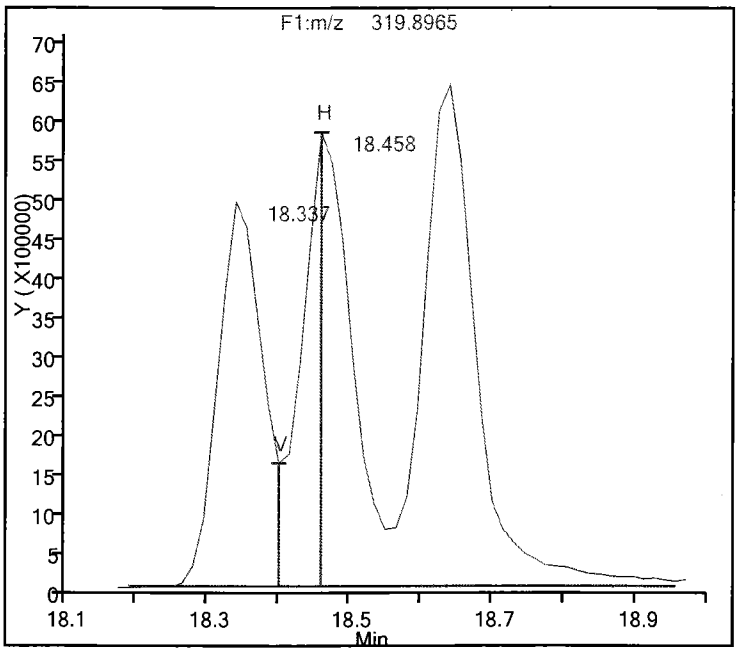
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1560288
H (Peak Height) = 5750588

%R = 27 <= 25
Failed



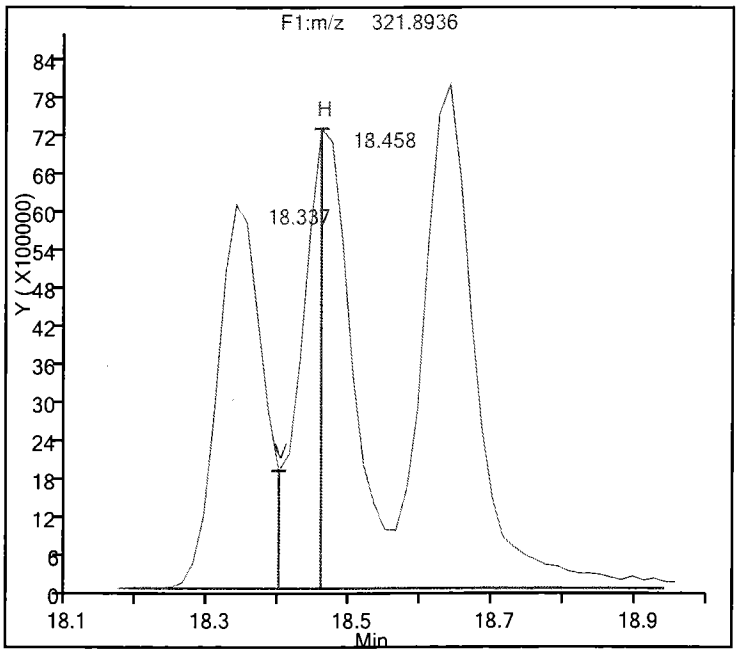
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1845789
H (Peak Height) = 7222210

%R = 26 <= 25
Passed



DIOXIN ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Instrument ID: 3D5 Start Date: 12/19/2013 07:19

Analysis Batch Number: 32323 End Date: 12/19/2013 17:34

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-32323/1		12/19/2013 07:19	1	16DE13B3D5_79.d	DB-5 0.32(mm)
CPS 320-32323/2		12/19/2013 08:10	1	16DE13B3D5_80.d	DB-5 0.32(mm)
ZZZZZ		12/19/2013 08:51	1		DB-5 0.32(mm)
320-4670-43 RADL	TF2-004/5-SS1062-000.8 RADL	12/19/2013 09:33	10	16DE13B3D5_82.d	DB-5 0.32(mm)
320-4670-47 RADL	TF2-004/5-SS1066-000.9 RADL	12/19/2013 10:14	10	16DE13B3D5_83.d	DB-5 0.32(mm)
320-4670-48 RADL	TF2-004/5-SS1060.000.5 RADL	12/19/2013 11:08	10	16DE13B3D5_84.d	DB-5 0.32(mm)
320-4670-49 RADL	TF2-004/5-SS1059-000.6 RADL	12/19/2013 11:50	10	16DE13B3D5_85.d	DB-5 0.32(mm)
320-4670-56 RADL	TF2-003-SS1011-000.8 RADL	12/19/2013 12:31	10	16DE13B3D5_86.d	DB-5 0.32(mm)
320-4670-60 RADL	TF2-003-SS1015-000.8 RADL	12/19/2013 13:13	10	16DE13B3D5_87.d	DB-5 0.32(mm)
320-4670-61 RADL	TF2-003-SS1016-000.9 RADL	12/19/2013 13:55	10	16DE13B3D5_88.d	DB-5 0.32(mm)
320-4670-65 RADL	TF2-003-SS-DUP06-1013 RADL	12/19/2013 14:37	10	16DE13B3D5_89.d	DB-5 0.32(mm)
ZZZZZ		12/19/2013 15:19	10		DB-5 0.32(mm)
320-4670-12 RADL	TF2-004/5-SS1029-000.6 RADL	12/19/2013 16:00	10	16DE13B3D5_91.d	DB-5 0.32(mm)
ZZZZZ		12/19/2013 16:42	1		DB-5 0.32(mm)
CCV 320-32323/15		12/19/2013 17:34	1	16DE13B3D5_93.d	DB-5 0.32(mm)

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32323/1 Calibration Date: 12/19/2013 07:19

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_79.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	1.013		9.16	10.0	-8.4	20.0
2,3,7,8-TCDD	AveID	1.149	1.145		9.97	10.0	-0.3	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.139		51.7	50.0	3.4	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.106		52.1	50.0	4.2	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.079		49.3	50.0	-1.3	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.073		43.3	50.0	-13.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.542		47.5	50.0	-5.1	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.284		44.9	50.0	-10.2	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.7512		47.0	50.0	-6.0	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.123		51.5	50.0	2.9	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.086		47.8	50.0	-4.4	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.109		43.6	50.0	-12.8	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.529		52.9	50.0	5.8	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.217		54.5	50.0	9.1	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.230		50.3	50.0	0.7	20.0
OCDD	AveID	1.211	1.293		107	100	6.9	20.0
OCDF	AveID	1.657	1.749		106	100	5.5	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.854		115	100	14.6	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.090		105	100	4.8	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.356		109	100	9.4	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8605		113	100	13.2	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.082		108	100	8.4	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.087		117	100	16.5	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8403		104	100	3.7	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6703		91.5	100	-8.5	30.0
13C-OCDD	Ave	0.4879	0.4551		187	200	-6.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.575		5.74	5.00	14.8	

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-32323/15 Calibration Date: 12/19/2013 17:34

Instrument ID: 3D5 Calib Start Date: 07/31/2013 15:11

GC Column: DB-5 ID: 0.32(mm) Calib End Date: 07/31/2013 18:40

Lab File ID: 16DE13B3D5_93.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDF	AveID	1.107	0.9700		8.77	10.0	-12.3	20.0
2,3,7,8-TCDD	AveID	1.149	1.173		10.2	10.0	2.1	20.0
1,2,3,7,8-PeCDF	AveID	1.102	1.145		52.0	50.0	3.9	20.0
2,3,4,7,8-PeCDF	AveID	1.061	1.123		52.9	50.0	5.8	20.0
1,2,3,7,8-PeCDD	AveID	1.094	1.155		52.8	50.0	5.6	20.0
1,2,3,4,7,8-HxCDF	AveID	1.239	1.123		45.3	50.0	-9.4	20.0
1,2,3,6,7,8-HxCDF	AveID	1.625	1.608		49.5	50.0	-1.0	20.0
2,3,4,6,7,8-HxCDF	AveID	1.429	1.323		46.3	50.0	-7.4	20.0
1,2,3,4,7,8-HxCDD	AveID	0.7992	0.6817		42.6	50.0	-14.7	20.0
1,2,3,6,7,8-HxCDD	AveID	1.092	1.122		51.4	50.0	2.8	20.0
1,2,3,7,8,9-HxCDD	AveID	1.136	1.056		46.5	50.0	-7.1	20.0
1,2,3,7,8,9-HxCDF	AveID	1.271	1.154		45.4	50.0	-9.3	20.0
1,2,3,4,6,7,8-HpCDF	AveID	1.445	1.416		49.0	50.0	-2.0	20.0
1,2,3,4,6,7,8-HpCDD	AveID	1.115	1.173		52.6	50.0	5.2	20.0
1,2,3,4,7,8,9-HpCDF	AveID	1.222	1.257		51.4	50.0	2.8	20.0
OCDD	AveID	1.211	1.237		102	100	2.2	20.0
OCDF	AveID	1.657	1.741		105	100	5.1	20.0
13C-2,3,7,8-TCDF	Ave	1.618	1.907		118	100	17.8	30.0
13C-2,3,7,8-TCDD	Ave	1.041	1.079		104	100	3.7	30.0
13C-1,2,3,7,8-PeCDF	Ave	1.239	1.408		114	100	13.6	30.0
13C-1,2,3,7,8-PeCDD	Ave	0.7604	0.8632		114	100	13.5	30.0
13C-1,2,3,4,7,8-HxCDF	Ave	0.999	1.065		107	100	6.6	30.0
13C-1,2,3,6,7,8-HxCDD	Ave	0.9326	1.139		122	100	22.1	30.0
13C-1,2,3,4,6,7,8-HpCDF	Ave	0.8107	0.8377		103	100	3.3	30.0
13C-1,2,3,4,6,7,8-HpCDD	Ave	0.7324	0.6738		92.0	100	-8.0	30.0
13C-OCDD	Ave	0.4879	0.4550		187	200	-6.7	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.372	1.601		5.83	5.00	16.7	

FORM VI
RESOLUTION CHECK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID (1): CPS 320-32323/2 Instrument ID (1): 3D5

GC Column (1): DB-5 ID: 0.32(mm) Date Analyzed (1): 12/19/2013 08:10

ANALYTE	RT	RESOLUTION (%)
2,3,7,8-TCDD	18.47	24

Resolution Report

TestAmerica Sacramento

Data File: \\Sacchrom\ChromData\3D5\20131220-9368.b\16DE13B3D5_80.d
Injection Date: 19-Dec-2013 08:10:19 Instrument ID: 3D5
Lims ID: CPS Lab Sample ID: CPS 320-32325/2-A
Client ID:
Operator ID: SMA ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Method: Dioxin_3D5 Limit Group: HR - 8290 - ICAL

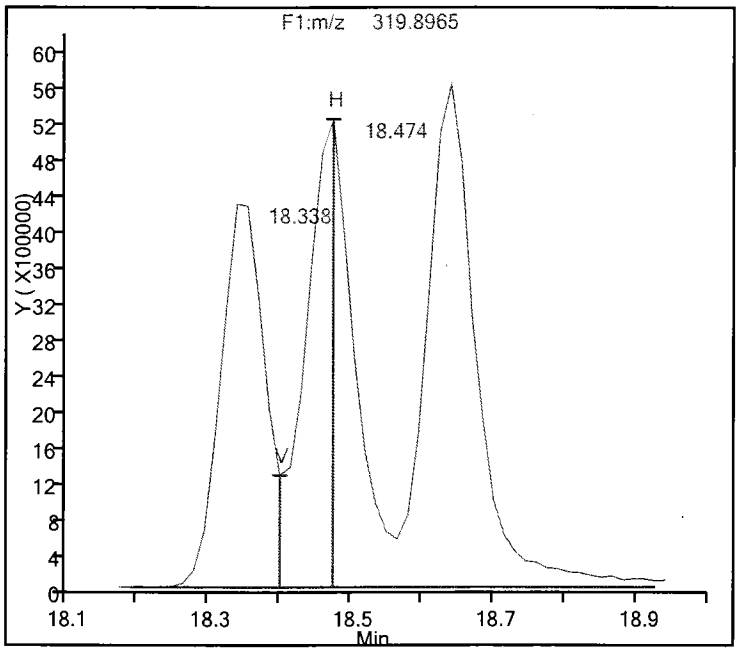
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1248248
H (Peak Height) = 5209267

%R = 24 <= 25
Passed



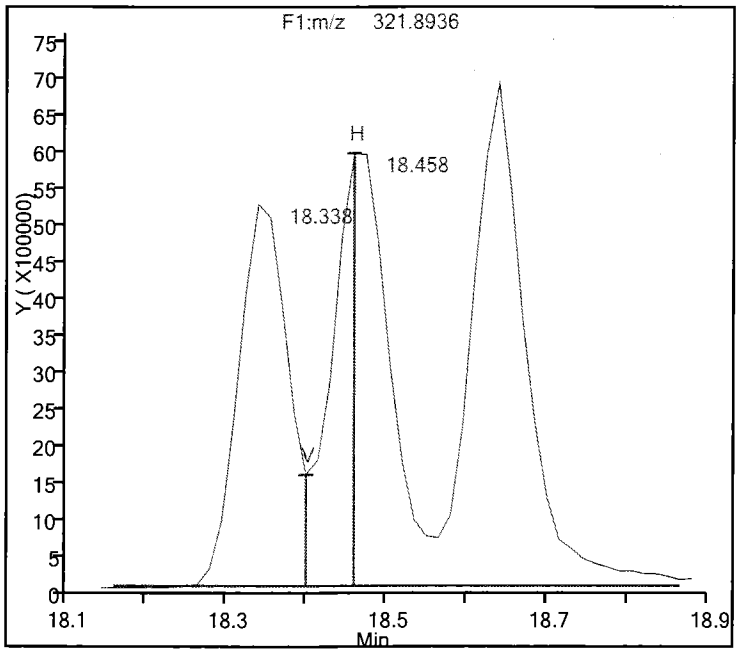
2,3,7,8-TCDD

Isotopic Dilution Dioxin Method

%R = (V / H) * 100

V (Valley Height) = 1525079
H (Peak Height) = 5929357

%R = 26 <= 25
Passed



FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-004/5-SS1022-0 00.9 RADL	320-4670-5 RADL	74
TF2-004/5-SS1020-0 001 RADL	320-4670-7 RADL	73
TF2-004/5-SS-DUP01 -1013 RADL	320-4670-10 RADL	69
TF2-004/5-SS1029-0 00.6 RADL	320-4670-12 RADL	79
TF2-004/5-SS1027-0 001 RADL	320-4670-14 RADL	79
TF2-004/5-SS1040-0 00.9 RADL	320-4670-15 RADL	75
TF2-004/5-SS1039-0 00.9 RADL	320-4670-16 RADL	69
TF2-004/5-SS1036-0 00.6 RADL	320-4670-20 RADL	80
TF2-004/5-SS1033-0 00.8 RADL	320-4670-24 RADL	62
TF2-004/5-SS1049-0 00.9 RADL	320-4670-25 RADL	64
TF2-004/5-SS1048-0 00.8 RADL	320-4670-26 RADL	56
TF2-004/5-SS1047-0 00.8 RADL	320-4670-27 RADL	54
TF2-004/5-SS1045-0 00.5 RADL	320-4670-29 RADL	46
TF2-004/5-SS1041-0 00.7 RADL	320-4670-32 RADL	52
TF2-004/5-SS-DUP03 -1013 RADL	320-4670-33 RADL	55
TF2-004/5-SS1057-0 001 RADL	320-4670-35 RADL	61
TF2-004/5-SS1053-0 00.6 RADL	320-4670-39 RADL	59
TF2-004/5-SS1051-0 00.8 RADL	320-4670-41 RADL	62
TF2-004/5-SS1062-0 00.8 RADL	320-4670-43 RADL	61
TF2-004/5-SS1066-0 00.9 RADL	320-4670-47 RADL	79
TF2-004/5-SS1060.0 00.5 RADL	320-4670-48 RADL	85
TF2-004/5-SS1059-0 00.6 RADL	320-4670-49 RADL	86
TF2-003-SS1011-000 .8 RADL	320-4670-56 RADL	65
TF2-003-SS1015-000 .8 RADL	320-4670-60 RADL	58

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-003-SS1016-000 .9 RADL	320-4670-61 RADL	61
TF2-003-SS-DUP06-1 013 RADL	320-4670-65 RADL	52
TF2-004/5-SS1027-0 001 MS RADL	320-4670-14 MS RADL	62
TF2-004/5-SS1027-0 001 MSD RADL	320-4670-14 MSD RADL	60

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-225 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #
TF2-004/5-SS1025-0 00.8 RA	320-4670-1 RA	80
TF2-004/5-SS1026-0 00.8 RA	320-4670-2 RA	70
TF2-004/5-SS1024-0 00.6 RA	320-4670-3 RA	60
TF2-004/5-SS1023-0 00.8 RA	320-4670-4 RA	80
TF2-004/5-SS1022-0 00.9 RA	320-4670-5 RA	76
TF2-004/5-SS1021-0 00.7 RA	320-4670-6 RA	79
TF2-004/5-SS1020-0 001 RA	320-4670-7 RA	79
TF2-004/5-SS1032-0 00.9 RA	320-4670-8 RA	68
TF2-004/5-SS1031-0 00.8 RA	320-4670-9 RA	73
TF2-004/5-SS-DUP01 -1013 RA	320-4670-10 RA	72
TF2-004/5-SS1030-0 00.6 RA	320-4670-11 RA	76
TF2-004/5-SS1029-0 00.6 RA	320-4670-12 RA	91
TF2-004/5-SS1028-0 00.8 RA	320-4670-13 RA	91
TF2-004/5-SS1027-0 001 RA	320-4670-14 RA	100
TF2-004/5-SS1040-0 00.9 RA	320-4670-15 RA	83
TF2-004/5-SS1039-0 00.9 RA	320-4670-16 RA	72
TF2-004/5-SS1038-0 00.7 RA	320-4670-18 RA	72
TF2-004/5-SS1037-0 00.7 RA	320-4670-19 RA	75
TF2-004/5-SS1036-0 00.6 RA	320-4670-20 RA	74
TF2-004/5-SS1035-0 001 RA	320-4670-21 RA	81
TF2-004/5-SS-DUP02 -1013 RA	320-4670-22 RA	61
TF2-004/5-SS1034-0 00.6 RA	320-4670-23 RA	81
TF2-004/5-SS1033-0 00.8 RA	320-4670-24 RA	70
TF2-004/5-SS1049-0 00.9 RA	320-4670-25 RA	68

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-225 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF	#
TF2-004/5-SS1048-000.8 RA	320-4670-26 RA	69	
TF2-004/5-SS1047-000.8 RA	320-4670-27 RA	68	
TF2-004/5-SS1046-000.5 RA	320-4670-28 RA	82	
TF2-004/5-SS1045-000.5 RA	320-4670-29 RA	62	
TF2-004/5-SS1044-000.5 RA	320-4670-30 RA	69	
TF2-004/5-SS1042-000.5 RA	320-4670-31 RA	67	
TF2-004/5-SS1041-000.7 RA	320-4670-32 RA	73	
TF2-004/5-SS-DUP03-1013 RA	320-4670-33 RA	70	
TF2-004/5-SS1057-0001 RA	320-4670-35 RA	77	
TF2-004/5-SS1056-000.6 RA	320-4670-36 RA	74	
TF2-004/5-SS1055-000.8 RA	320-4670-37 RA	72	
TF2-004/5-SS1054-000.6 RA	320-4670-38 RA	71	
TF2-004/5-SS1053-000.6 RA	320-4670-39 RA	73	
TF2-004/5-SS1052-000.6 RA	320-4670-40 RA	67	
TF2-004/5-SS1051-000.8 RA	320-4670-41 RA	71	
TF2-004/5-SS1050-000.6 RA	320-4670-42 RA	76	
TF2-004/5-SS1062-000.8 RA	320-4670-43 RA	65	
TF2-004/5-SS1061-000.6 RA	320-4670-44 RA	68	
TF2-004/5-SS-DUP04-1013 RA	320-4670-45 RA	71	
TF2-004/5-SS1067-000.7 RA	320-4670-46 RA	32	*
TF2-004/5-SS1066-000.9 RA	320-4670-47 RA	97	
TF2-004/5-SS1060.000.5 RA	320-4670-48 RA	108	
TF2-004/5-SS1059-000.6 RA	320-4670-49 RA	100	
TF2-004/5-SS1058-000.5 RA	320-4670-50 RA	87	

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-225 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #
TF2-004/5-SS1065-0 00.5 RA	320-4670-51 RA	96
TF2-004/5-SS1064-0 00.6 RA	320-4670-52 RA	79
TF2-004/5-SS1063-0 00.6 RA	320-4670-53 RA	95
TF2-004/5-SS1068-0 00.5 RA	320-4670-54 RA	74
TF2-004/5-SS-DUP05 -1013 RA	320-4670-55 RA	76
TF2-003-SS1011-000 .8 RA	320-4670-56 RA	78
TF2-003-SS1012-000 .7 RA	320-4670-57 RA	79
TF2-003-SS1013-000 .7 RA	320-4670-58 RA	84
TF2-003-SS1014-000 1 RA	320-4670-59 RA	76
TF2-003-SS1015-000 .8 RA	320-4670-60 RA	63
TF2-003-SS1016-000 .9 RA	320-4670-61 RA	75
TF2-003-SS1017-000 .8 RA	320-4670-62 RA	77
TF2-003-SS1018-000 .8 RA	320-4670-63 RA	91
TF2-003-SS1019-000 .5 RA	320-4670-64 RA	64
TF2-003-SS-DUP06-1 013 RA	320-4670-65 RA	72
TF2-004/5-SS1027-0 001 MS RA	320-4670-14 MS RA	75
TF2-004/5-SS1054-0 00.6 MS RA	320-4670-38 MS RA	64
TF2-004/5-SS1064-0 00.6 MS RA	320-4670-52 MS RA	90
TF2-003-SS1019-000 .5 MS RA	320-4670-64 MS RA	64
TF2-004/5-SS1027-0 001 MSD RA	320-4670-14 MSD RA	72
TF2-004/5-SS1054-0 00.6 MSD RA	320-4670-38 MSD RA	77
TF2-004/5-SS1064-0 00.6 MSD RA	320-4670-52 MSD RA	97
TF2-003-SS1019-000 .5 MSD RA	320-4670-64 MSD RA	75

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-004/5-SS1025-0 00.8	320-4670-1	84	76	88	87	88	75	83	74
TF2-004/5-SS1026-0 00.8	320-4670-2	66	63	64	66	65	66	60	51
TF2-004/5-SS1024-0 00.6	320-4670-3	75	63	97	101	77	59	67	57
TF2-004/5-SS1023-0 00.8	320-4670-4	90	80	91	91	97	84	90	77
TF2-004/5-SS1022-0 00.9	320-4670-5	72	68	73	73	75	70	76	69
TF2-004/5-SS1021-0 00.7	320-4670-6	74	68	76	76	81	70	76	69
TF2-004/5-SS1020-0 001	320-4670-7	75	68	76	76	82	71	80	73
TF2-004/5-SS1032-0 00.9	320-4670-8	72	65	74	74	73	67	77	70
TF2-004/5-SS1031-0 00.8	320-4670-9	67	63	72	73	73	66	74	67
TF2-004/5-SS-DUP01 -1013	320-4670-10	68	63	68	70	76	64	72	66
TF2-004/5-SS1030-0 00.6	320-4670-11	72	67	75	73	82	70	70	66
TF2-004/5-SS1029-0 00.6	320-4670-12	93	84	95	98	105	91	94	89
TF2-004/5-SS1028-0 00.8	320-4670-13	93	87	93	88	103	99	87	81
TF2-004/5-SS1027-0 001	320-4670-14	91	87	92	88	102	100	87	79
TF2-004/5-SS1040-0 00.9	320-4670-15	88	82	87	83	93	88	78	73
TF2-004/5-SS1039-0 00.9	320-4670-16	75	71	75	72	85	78	75	68
TF2-004/5-SS1038-0 00.7	320-4670-18	69	61	70	69	71	64	66	56
TF2-004/5-SS1037-0 00.7	320-4670-19	72	65	74	71	77	69	72	62
TF2-004/5-SS1036-0 00.6	320-4670-20	89	80	89	86	90	82	88	75
TF2-004/5-SS1035-0 001	320-4670-21	90	79	86	87	92	86	87	76
TF2-004/5-SS-DUP02 -1013	320-4670-22	72	66	76	68	72	69	79	68
TF2-004/5-SS1034-0 00.6	320-4670-23	73	69	68	70	80	71	72	66
TF2-004/5-SS1033-0 00.8	320-4670-24	64	59	59	62	73	64	61	58
TF2-004/5-SS1049-0 00.9	320-4670-25	57	61	63	64	81	63	61	62

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-004/5-SS1048-000.8	320-4670-26	58	58	57	56	72	64	60	60
TF2-004/5-SS1047-000.8	320-4670-27	57	59	58	55	70	60	55	50
TF2-004/5-SS1046-000.5	320-4670-28	72	72	64	76	94	78	75	76
TF2-004/5-SS1045-000.5	320-4670-29	54	53	51	56	57	55	57	58
TF2-004/5-SS1044-000.5	320-4670-30	72	59	69	71	72	62	64	60
TF2-004/5-SS1042-000.5	320-4670-31	66	62	70	74	73	66	63	60
TF2-004/5-SS1041-000.7	320-4670-32	67	63	66	61	76	63	62	59
TF2-004/5-SS-DUP03-1013	320-4670-33	63	59	63	62	73	64	55	55
TF2-004/5-SS1057-0001	320-4670-35	75	70	67	73	94	76	79	73
TF2-004/5-SS1056-000.6	320-4670-36	68	64	66	49	73	66	66	60
TF2-004/5-SS1055-000.8	320-4670-37	66	61	65	65	74	67	68	66
TF2-004/5-SS1054-000.6	320-4670-38	65	64	62	66	81	68	67	63
TF2-004/5-SS1053-000.6	320-4670-39	71	67	70	84	81	74	70	66
TF2-004/5-SS1052-000.6	320-4670-40	63	60	64	62	70	63	62	57
TF2-004/5-SS1051-000.8	320-4670-41	65	62	65	64	71	65	62	58
TF2-004/5-SS1050-000.6	320-4670-42	79	74	77	77	90	77	78	70
TF2-004/5-SS1062-000.8	320-4670-43	66	63	68	67	74	67	64	59
TF2-004/5-SS1061-000.6	320-4670-44	63	60	64	65	71	63	62	58
TF2-004/5-SS-DUP04-1013	320-4670-45	66	63	69	68	76	70	66	61
TF2-004/5-SS1067-000.7	320-4670-46	65	63	67	69	75	68	64	61
TF2-004/5-SS1066-000.9	320-4670-47	95	90	98	97	100	95	87	82
TF2-004/5-SS1060.000.5	320-4670-48	103	96	104	100	115	103	100	90
TF2-004/5-SS1059-000.6	320-4670-49	93	87	94	94	102	93	87	79
TF2-004/5-SS1058-000.5	320-4670-50	84	80	86	84	91	87	79	73

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-004/5-SS1065-0 00.5	320-4670-51	97	92	98	95	105	97	89	83
TF2-004/5-SS1064-0 00.6	320-4670-52	76	71	76	76	82	77	70	65
TF2-004/5-SS1063-0 00.6	320-4670-53	90	84	91	87	96	94	83	74
TF2-004/5-SS1068-0 00.5	320-4670-54	78	68	75	75	75	72	70	62
TF2-004/5-SS-DUP05 -1013	320-4670-55	71	63	69	68	72	70	69	58
TF2-003-SS1011-000 .8	320-4670-56	75	66	73	72	78	71	72	61
TF2-003-SS1012-000 .7	320-4670-57	74	65	71	70	75	70	63	56
TF2-003-SS1013-000 .7	320-4670-58	81	71	80	76	83	75	74	65
TF2-003-SS1014-000 1	320-4670-59	73	64	71	70	76	66	68	60
TF2-003-SS1015-000 .8	320-4670-60	76	67	74	74	80	74	74	64
TF2-003-SS1016-000 .9	320-4670-61	73	65	72	70	74	69	68	59
TF2-003-SS1017-000 .8	320-4670-62	73	64	69	71	76	69	71	63
TF2-003-SS1018-000 .8	320-4670-63	88	80	88	88	103	80	102	95
TF2-003-SS1019-000 .5	320-4670-64	66	63	67	65	73	69	60	58
TF2-003-SS-DUP06-1 013	320-4670-65	74	71	75	70	83	78	67	63
	MB 320-28361/1-A	62	62	57	61	69	68	62	62
	MB 320-28431/1-A	72	68	73	72	79	72	67	67
	MB 320-28458/1-A	69	65	68	73	69	69	73	61
	MB 320-28540/1-A	61	59	58	58	70	62	50	55
	MB 320-28546/1-A	64	60	64	65	71	64	60	57
	LCS 320-28361/2-A	62	62	57	59	68	69	63	62
	LCS 320-28431/2-A	73	70	75	73	77	70	65	62
	LCS 320-28458/2-A	71	61	64	69	75	68	62	53
	LCS 320-28540/2-A	69	65	57	66	79	65	59	60
	LCS 320-28546/2-A	64	60	65	67	73	66	61	56
TF2-004/5-SS1027-0 001 MS	320-4670-14 MS	70	68	71	68	81	79	68	62

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-004/5-SS1054-0 00.6 MS	320-4670-38 MS	58	55	59	61	61	58	54	49
TF2-004/5-SS1064-0 00.6 MS	320-4670-52 MS	86	82	87	85	97	86	80	75
TF2-003-SS1019-000 .5 MS	320-4670-64 MS	65	62	65	63	73	68	61	56
TF2-004/5-SS1027-0 001 MSD	320-4670-14 MSD	67	65	67	65	71	72	63	58
TF2-004/5-SS1054-0 00.6 MSD	320-4670-38 MSD	73	67	74	72	78	73	72	63
TF2-004/5-SS1064-0 00.6 MSD	320-4670-52 MSD	97	89	100	97	111	103	92	83
TF2-003-SS1019-000 .5 MSD	320-4670-64 MSD	79	75	79	75	88	81	72	68

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-004/5-SS1025-0 00.8	320-4670-1	98
TF2-004/5-SS1026-0 00.8	320-4670-2	73
TF2-004/5-SS1024-0 00.6	320-4670-3	70
TF2-004/5-SS1023-0 00.8	320-4670-4	97
TF2-004/5-SS1022-0 00.9	320-4670-5	91
TF2-004/5-SS1021-0 00.7	320-4670-6	91
TF2-004/5-SS1020-0 001	320-4670-7	97
TF2-004/5-SS1032-0 00.9	320-4670-8	91
TF2-004/5-SS1031-0 00.8	320-4670-9	84
TF2-004/5-SS-DUP01 -1013	320-4670-10	89
TF2-004/5-SS1030-0 00.6	320-4670-11	87
TF2-004/5-SS1029-0 00.6	320-4670-12	118
TF2-004/5-SS1028-0 00.8	320-4670-13	94
TF2-004/5-SS1027-0 001	320-4670-14	100
TF2-004/5-SS1040-0 00.9	320-4670-15	88
TF2-004/5-SS1039-0 00.9	320-4670-16	83
TF2-004/5-SS1038-0 00.7	320-4670-18	76
TF2-004/5-SS1037-0 00.7	320-4670-19	80
TF2-004/5-SS1036-0 00.6	320-4670-20	100
TF2-004/5-SS1035-0 001	320-4670-21	101
TF2-004/5-SS-DUP02 -1013	320-4670-22	80
TF2-004/5-SS1034-0 00.6	320-4670-23	83
TF2-004/5-SS1033-0 00.8	320-4670-24	71
TF2-004/5-SS1049-0 00.9	320-4670-25	73

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-004/5-SS1048-0 00.8	320-4670-26	66
TF2-004/5-SS1047-0 00.8	320-4670-27	68
TF2-004/5-SS1046-0 00.5	320-4670-28	87
TF2-004/5-SS1045-0 00.5	320-4670-29	66
TF2-004/5-SS1044-0 00.5	320-4670-30	72
TF2-004/5-SS1042-0 00.5	320-4670-31	72
TF2-004/5-SS1041-0 00.7	320-4670-32	69
TF2-004/5-SS-DUP03 -1013	320-4670-33	68
TF2-004/5-SS1057-0 001	320-4670-35	88
TF2-004/5-SS1056-0 00.6	320-4670-36	69
TF2-004/5-SS1055-0 00.8	320-4670-37	71
TF2-004/5-SS1054-0 00.6	320-4670-38	82
TF2-004/5-SS1053-0 00.6	320-4670-39	81
TF2-004/5-SS1052-0 00.6	320-4670-40	68
TF2-004/5-SS1051-0 00.8	320-4670-41	71
TF2-004/5-SS1050-0 00.6	320-4670-42	85
TF2-004/5-SS1062-0 00.8	320-4670-43	70
TF2-004/5-SS1061-0 00.6	320-4670-44	67
TF2-004/5-SS-DUP04 -1013	320-4670-45	72
TF2-004/5-SS1067-0 00.7	320-4670-46	70
TF2-004/5-SS1066-0 00.9	320-4670-47	98
TF2-004/5-SS1060.0 00.5	320-4670-48	110
TF2-004/5-SS1059-0 00.6	320-4670-49	98
TF2-004/5-SS1058-0 00.5	320-4670-50	84

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-004/5-SS1065-000.5	320-4670-51	101
TF2-004/5-SS1064-000.6	320-4670-52	77
TF2-004/5-SS1063-000.6	320-4670-53	88
TF2-004/5-SS1068-000.5	320-4670-54	81
TF2-004/5-SS-DUP05-1013	320-4670-55	77
TF2-003-SS1011-000.8	320-4670-56	88
TF2-003-SS1012-000.7	320-4670-57	77
TF2-003-SS1013-000.7	320-4670-58	88
TF2-003-SS1014-0001	320-4670-59	78
TF2-003-SS1015-000.8	320-4670-60	86
TF2-003-SS1016-000.9	320-4670-61	84
TF2-003-SS1017-000.8	320-4670-62	83
TF2-003-SS1018-000.8	320-4670-63	122
TF2-003-SS1019-000.5	320-4670-64	65
TF2-003-SS-DUP06-1013	320-4670-65	74
	MB 320-28361/1-A	62
	MB 320-28431/1-A	72
	MB 320-28458/1-A	70
	MB 320-28540/1-A	59
	MB 320-28546/1-A	58
	LCS 320-28361/2-A	64
	LCS 320-28431/2-A	68
	LCS 320-28458/2-A	80
	LCS 320-28540/2-A	65
	LCS 320-28546/2-A	63
TF2-004/5-SS1027-0001 MS	320-4670-14 MS	77

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-004/5-SS1054-000.6 MS	320-4670-38 MS	59
TF2-004/5-SS1064-000.6 MS	320-4670-52 MS	89
TF2-003-SS1019-000.5 MS	320-4670-64 MS	63
TF2-004/5-SS1027-0001 MSD	320-4670-14 MSD	70
TF2-004/5-SS1054-000.6 MSD	320-4670-38 MSD	77
TF2-004/5-SS1064-000.6 MSD	320-4670-52 MSD	101
TF2-003-SS1019-000.5 MSD	320-4670-64 MSD	82

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	TCDF #	TCDD #	PeCDF #	PeCDD #	HxCDF #	HxCDD #	HpCDF #	HpCDD #
TF2-SS-RB01-1013	320-4670-17	91	91	75	80	100	105	92	86
TF2-SS-RB02-1013	320-4670-34	89	87	71	75	100	100	89	81
TF2-003-SS-RB03-1013	320-4670-66	93	93	85	93	95	102	99	94
	MB 320-28374/1-A	93	95	87	96	91	106	94	93
	LCS 320-28374/2-A	92	94	88	98	86	92	94	92

	QC LIMITS
TCDF = 13C-2,3,7,8-TCDF	40-135
TCDD = 13C-2,3,7,8-TCDD	40-135
PeCDF = 13C-1,2,3,7,8-PeCDF	40-135
PeCDD = 13C-1,2,3,7,8-PeCDD	40-135
HxCDF = 13C-1,2,3,4,7,8-HxCDF	40-135
HxCDD = 13C-1,2,3,6,7,8-HxCDD	40-135
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF	40-135
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM II
DIOXIN SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-5 ID: 0.32 (mm)

Client Sample ID	Lab Sample ID	OCDD #
TF2-SS-RB01-1013	320-4670-17	77
TF2-SS-RB02-1013	320-4670-34	72
TF2-003-SS-RB03-1013	320-4670-66	96
	MB 320-28374/1-A	91
	LCS 320-28374/2-A	94

	QC LIMITS
OCDD = 13C-OCDD	40-135

Column to be used to flag recovery values

FORM II 8290

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 28OC13C4D5_004.d Lab Sample ID: MB 320-28374/1-A

Matrix: Water Date Extracted: 10/25/2013 08:29

Instrument ID: 4D5 Date Analyzed: 10/28/2013 23:02

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-28374/2-A	28OC13C4D5_005.d	10/28/2013 23:45
TF2-SS-RB01-1013	320-4670-17	28OC13C4D5_011.d	10/29/2013 04:04
TF2-SS-RB02-1013	320-4670-34	28OC13C4D5_012.d	10/29/2013 04:47
TF2-003-SS-RB03-1013	320-4670-66	28OC13C4D5_013.d	10/29/2013 05:30

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28374/1-A

Matrix: Water | Lab File ID: 28OC13C4D5_004.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1000.0(mL) | Date Analyzed: 10/28/2013 23:02

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		10	0.56
51207-31-9	2,3,7,8-TCDF	ND		10	0.63
40321-76-4	1,2,3,7,8-PeCDD	ND		50	0.82
57117-41-6	1,2,3,7,8-PeCDF	ND		50	0.94
57117-31-4	2,3,4,7,8-PeCDF	ND		50	0.99
39227-28-6	1,2,3,4,7,8-HxCDD	ND		50	0.37
57653-85-7	1,2,3,6,7,8-HxCDD	ND		50	0.37
19408-74-3	1,2,3,7,8,9-HxCDD	ND		50	0.33
70648-26-9	1,2,3,4,7,8-HxCDF	ND		50	0.27
57117-44-9	1,2,3,6,7,8-HxCDF	ND		50	0.26
60851-34-5	2,3,4,6,7,8-HxCDF	ND		50	0.27
72918-21-9	1,2,3,7,8,9-HxCDF	ND		50	0.29
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		50	0.49
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		50	0.25
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		50	0.30
3268-87-9	OCDD	1.30	J	100	0.39
39001-02-0	OCDF	ND		100	0.64
41903-57-5	Total TCDD	ND		10	0.56
30402-14-3	Total TCDF	ND		10	0.63
36088-22-9	Total PeCDD	ND		50	0.82
30402-15-4	Total PeCDF	ND		50	0.99
34465-46-8	Total HxCDD	ND		50	0.46
55684-94-1	Total HxCDF	ND		50	0.29
37871-00-4	Total HpCDD	0.698	J	50	0.49
38998-75-3	Total HpCDF	ND		50	0.30

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28374/1-A

Matrix: Water | Lab File ID: 28OC13C4D5_004.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/25/2013 08:29

Sample wt/vol: 1000.0(mL) | Date Analyzed: 10/28/2013 23:02

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 28581 | Units: pg/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	95		40-135
89059-46-1	13C-2,3,7,8-TCDF	93		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	96		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	87		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	106		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	91		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	93		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	94		40-135
114423-97-1	13C-OCDD	91		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: ~~Water~~ Level: Low Lab File ID: 28OC13C4D5_005.d

Lab ID: LCS 320-28374/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/L)	LCS CONCENTRATION (pg/L)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	200	211	105	72-144	
2,3,7,8-TCDF	200	252	126	73-150	
1,2,3,7,8-PeCDD	1000	961	96	79-125	
1,2,3,7,8-PeCDF	1000	1160	116	79-137	
2,3,4,7,8-PeCDF	1000	1160	116	76-137	
1,2,3,4,7,8-HxCDD	1000	954	95	65-144	
1,2,3,6,7,8-HxCDD	1000	1170	117	78-137	
1,2,3,7,8,9-HxCDD	1000	1070	107	74-142	
1,2,3,4,7,8-HxCDF	1000	1120	112	86-126	
1,2,3,6,7,8-HxCDF	1000	1260	126	79-137	
2,3,4,6,7,8-HxCDF	1000	1220	122	80-138	
1,2,3,7,8,9-HxCDF	1000	1130	113	72-145	
1,2,3,4,6,7,8-HpCDD	1000	1040	104	81-132	
1,2,3,4,6,7,8-HpCDF	1000	1090	109	81-135	
1,2,3,4,7,8,9-HpCDF	1000	1120	112	72-140	
OCDD	2000	2230	111	80-129	
OCDF	2000	2280	114	65-145	
13C-2,3,7,8-TCDD	2000	1880	94	40-135	
13C-2,3,7,8-TCDF	2000	1840	92	40-135	
13C-1,2,3,7,8-PeCDD	2000	1960	98	40-135	
13C-1,2,3,7,8-PeCDF	2000	1760	88	40-135	
13C-1,2,3,6,7,8-HxCDD	2000	1850	92	40-135	
13C-1,2,3,4,7,8-HxCDF	2000	1730	86	40-135	
13C-1,2,3,4,6,7,8-HpCDD	2000	1850	92	40-135	
13C-1,2,3,4,6,7,8-HpCDF	2000	1870	94	40-135	
13C-OCDD	4000	3770	94	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 05NO134D5_004.d Lab Sample ID: MB 320-28361/1-A

Matrix: Solid Date Extracted: 10/24/2013 18:17

Instrument ID: 4D5 Date Analyzed: 11/05/2013 19:13

Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-28361/2-A	05NO134D5_005.d	11/05/2013 19:56
TF2-004/5-SS1025-000.8	320-4670-1	05NO13A3D5_4.d	11/05/2013 23:45
TF2-004/5-SS1025-000.8 RA	320-4670-1 RA	19no13a5d2_005.d	11/19/2013 20:30

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28361/1-A

Matrix: Solid | Lab File ID: 05NO134D5_004.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/24/2013 18:17

Sample wt/vol: 10(g) | Date Analyzed: 11/05/2013 19:13

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29245 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.18
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.16
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.21
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.21
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.22
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.088
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.072
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.072
70648-26-9	1,2,3,4,7,8-HxCDF	0.147	J	5.0	0.047
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.040
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.044
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.049
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		5.0	0.070
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.174	J	5.0	0.060
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.070
3268-87-9	OCDD	ND		10	0.13
39001-02-0	OCDF	ND		10	0.13
41903-57-5	Total TCDD	ND		1.0	0.18
30402-14-3	Total TCDF	ND		1.0	0.16
36088-22-9	Total PeCDD	ND		5.0	0.21
30402-15-4	Total PeCDF	ND		5.0	0.22
34465-46-8	Total HxCDD	ND		5.0	0.088
55684-94-1	Total HxCDF	0.147	J	5.0	0.045
37871-00-4	Total HpCDD	ND		5.0	0.070
38998-75-3	Total HpCDF	0.174	J	5.0	0.065

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28361/1-A

Matrix: Solid | Lab File ID: 05NO134D5_004.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/24/2013 18:17

Sample wt/vol: 10(g) | Date Analyzed: 11/05/2013 19:13

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29245 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	62		40-135
89059-46-1	13C-2,3,7,8-TCDF	62		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	61		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	57		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	68		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	69		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	62		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	62		40-135
114423-97-1	13C-OCDD	62		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 05NO134D5_005.d

Lab ID: LCS 320-28361/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	20.5	103	60-138	
2,3,7,8-TCDF	20.0	22.5	113	56-158	
1,2,3,7,8-PeCDD	100	108	108	70-122	
1,2,3,7,8-PeCDF	100	115	115	69-134	
2,3,4,7,8-PeCDF	100	115	115	70-131	
1,2,3,4,7,8-HxCDD	100	105	105	60-138	
1,2,3,6,7,8-HxCDD	100	102	102	68-136	
1,2,3,7,8,9-HxCDD	100	105	105	68-138	
1,2,3,4,7,8-HxCDF	100	115	115	74-128	
1,2,3,6,7,8-HxCDF	100	113	113	67-140	
2,3,4,6,7,8-HxCDF	100	116	116	71-137	
1,2,3,7,8,9-HxCDF	100	112	112	72-134	
1,2,3,4,6,7,8-HpCDD	100	110	110	71-128	
1,2,3,4,6,7,8-HpCDF	100	115	115	71-134	
1,2,3,4,7,8,9-HpCDF	100	109	109	68-129	
OCDD	200	228	114	70-128	
OCDF	200	239	119	63-141	
13C-2,3,7,8-TCDD	200	124	62	40-135	
13C-2,3,7,8-TCDF	200	124	62	40-135	
13C-1,2,3,7,8-PeCDD	200	119	59	40-135	
13C-1,2,3,7,8-PeCDF	200	114	57	40-135	
13C-1,2,3,6,7,8-HxCDD	200	138	69	40-135	
13C-1,2,3,4,7,8-HxCDF	200	136	68	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	123	62	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	126	63	40-135	
13C-OCDD	400	255	64	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_33.d Lab Sample ID: MB 320-28546/1-A

Matrix: Solid Date Extracted: 10/28/2013 12:47

Instrument ID: 3D5 Date Analyzed: 11/01/2013 20:25

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-28546/2-A	31OC13C3D5_34.d	11/01/2013 21:07
TF2-004/5-SS1061-000.6	320-4670-44	31OC13C3D5_39.d	11/02/2013 00:35
TF2-004/5-SS-DUP04-1013	320-4670-45	31OC13C3D5_40.d	11/02/2013 01:17
TF2-004/5-SS1067-000.7	320-4670-46	31OC13C3D5_41.d	11/02/2013 01:59
TF2-004/5-SS1066-000.9	320-4670-47	31OC13C3D5_42.d	11/02/2013 02:41
TF2-004/5-SS1066-000.9 RA	320-4670-47 RA	08NO13A11D2_015.d	11/08/2013 19:45
TF2-004/5-SS1061-000.6 RA	320-4670-44 RA	17DE1311D2_014.d	12/18/2013 07:12
TF2-004/5-SS-DUP04-1013 RA	320-4670-45 RA	17DE1311D2_015.d	12/18/2013 07:51
TF2-004/5-SS1067-000.7 RA	320-4670-46 RA	18DE1311D2_004.d	12/19/2013 02:31
TF2-004/5-SS1066-000.9 RADL	320-4670-47 RADL	16DE13B3D5_83.d	12/19/2013 10:14

2,3,7,8-TCDF

OCDD

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28546/1-A

Matrix: Solid | Lab File ID: 310C13C3D5_33.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10(g) | Date Analyzed: 11/01/2013 20:25

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.038
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.039
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.057
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.076
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.079
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.042
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.031
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.030
70648-26-9	1,2,3,4,7,8-HxCDF	0.302	J	5.0	0.084
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.064
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.073
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.082
35822-46-9	1,2,3,4,6,7,8-HpCDD	0.0775	J	5.0	0.047
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.381	J	5.0	0.077
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.091
3268-87-9	OCDD	0.630	J	10	0.049
39001-02-0	OCDF	0.527	J	10	0.073
41903-57-5	Total TCDD	ND		1.0	0.038
30402-14-3	Total TCDF	ND		1.0	0.039
36088-22-9	Total PeCDD	ND		5.0	0.057
30402-15-4	Total PeCDF	ND		5.0	0.079
34465-46-8	Total HxCDD	ND		5.0	0.042
55684-94-1	Total HxCDF	0.302	J	5.0	0.075
37871-00-4	Total HpCDD	0.225	J	5.0	0.047
38998-75-3	Total HpCDF	0.381	J	5.0	0.084

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28546/1-A

Matrix: Solid | Lab File ID: 31OC13C3D5_33.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:47

Sample wt/vol: 10(g) | Date Analyzed: 11/01/2013 20:25

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29136 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	60		40-135
89059-46-1	13C-2,3,7,8-TCDF	64		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	65		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	64		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	64		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	71		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	57		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	60		40-135
114423-97-1	13C-OCDD	58		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31OC13C3D5_34.d

Lab ID: LCS 320-28546/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	24.1	120	60-138	
2,3,7,8-TCDF	20.0	21.8	109	56-158	
1,2,3,7,8-PeCDD	100	114	114	70-122	
1,2,3,7,8-PeCDF	100	120	120	69-134	
2,3,4,7,8-PeCDF	100	122	122	70-131	
1,2,3,4,7,8-HxCDD	100	123	123	60-138	
1,2,3,6,7,8-HxCDD	100	118	118	68-136	
1,2,3,7,8,9-HxCDD	100	116	116	68-138	
1,2,3,4,7,8-HxCDF	100	117	117	74-128	
1,2,3,6,7,8-HxCDF	100	108	108	67-140	
2,3,4,6,7,8-HxCDF	100	109	109	71-137	
1,2,3,7,8,9-HxCDF	100	111	111	72-134	
1,2,3,4,6,7,8-HpCDD	100	118	118	71-128	
1,2,3,4,6,7,8-HpCDF	100	120	120	71-134	
1,2,3,4,7,8,9-HpCDF	100	122	122	68-129	
OCDD	200	214	107	70-128	
OCDF	200	203	101	63-141	
13C-2,3,7,8-TCDD	200	119	60	40-135	
13C-2,3,7,8-TCDF	200	129	64	40-135	
13C-1,2,3,7,8-PeCDD	200	133	67	40-135	
13C-1,2,3,7,8-PeCDF	200	129	65	40-135	
13C-1,2,3,6,7,8-HxCDD	200	131	66	40-135	
13C-1,2,3,4,7,8-HxCDF	200	146	73	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	113	56	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	122	61	40-135	
13C-OCDD	400	250	63	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_5.d Lab Sample ID: MB 320-28540/1-A

Matrix: Solid Date Extracted: 10/28/2013 12:22

Instrument ID: 3D5 Date Analyzed: 11/01/2013 00:11

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-28540/2-A	31OC13C3D5_6.d	11/01/2013 00:53
TF2-004/5-SS1034-000.6	320-4670-23	31OC13C3D5_7.d	11/01/2013 01:35
TF2-004/5-SS1033-000.8	320-4670-24	31OC13C3D5_8.d	11/01/2013 02:16
TF2-004/5-SS1049-000.9	320-4670-25	31OC13C3D5_9.d	11/01/2013 02:58
TF2-004/5-SS1048-000.8	320-4670-26	31OC13C3D5_10.d	11/01/2013 03:40
TF2-004/5-SS1047-000.8	320-4670-27	31OC13C3D5_11.d	11/01/2013 04:22
TF2-004/5-SS1046-000.5	320-4670-28	31OC13C3D5_12.d	11/01/2013 05:04
TF2-004/5-SS1045-000.5	320-4670-29	31OC13C3D5_13.d	11/01/2013 05:45
TF2-004/5-SS1044-000.5	320-4670-30	31OC13C3D5_18.d	11/01/2013 09:41
TF2-004/5-SS1042-000.5	320-4670-31	31OC13C3D5_19.d	11/01/2013 10:22
TF2-004/5-SS1041-000.7	320-4670-32	31OC13C3D5_20.d	11/01/2013 11:04
TF2-004/5-SS-DUP03-1013	320-4670-33	31OC13C3D5_21.d	11/01/2013 11:45
TF2-004/5-SS1057-0001	320-4670-35	31OC13C3D5_22.d	11/01/2013 12:27
TF2-004/5-SS1056-000.6	320-4670-36	31OC13C3D5_23.d	11/01/2013 13:09
TF2-004/5-SS1055-000.8	320-4670-37	31OC13C3D5_24.d	11/01/2013 13:50
TF2-004/5-SS1054-000.6	320-4670-38	31OC13C3D5_25.d	11/01/2013 14:32
TF2-004/5-SS1054-000.6 MS	320-4670-38 MS	31OC13C3D5_26.d	11/01/2013 15:14
TF2-004/5-SS1054-000.6 MSD	320-4670-38 MSD	31OC13C3D5_27.d	11/01/2013 15:56
TF2-004/5-SS1053-000.6	320-4670-39	31OC13C3D5_28.d	11/01/2013 16:37
TF2-004/5-SS1052-000.6	320-4670-40	31OC13C3D5_35.d	11/01/2013 21:48
TF2-004/5-SS1051-000.8	320-4670-41	31OC13C3D5_36.d	11/01/2013 22:30
TF2-004/5-SS1050-000.6	320-4670-42	31OC13C3D5_37.d	11/01/2013 23:12

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_5.d Lab Sample ID: MB 320-28540/1-A

Matrix: Solid Date Extracted: 10/28/2013 12:22

Instrument ID: 3D5 Date Analyzed: 11/01/2013 00:11

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-004/5-SS1062-000.8	320-4670-43	31OC13C3D5_38.d	11/01/2013 23:54
TF2-004/5-SS1034-000.6 RA	320-4670-23 RA	07NO1311D2_005.d	11/07/2013 19:43
TF2-004/5-SS1049-000.9 RA	320-4670-25 RA	07NO1311D2_006.d	11/07/2013 20:22
TF2-004/5-SS1048-000.8 RA	320-4670-26 RA	07NO1311D2_007.d	11/07/2013 21:01
TF2-004/5-SS1047-000.8 RA	320-4670-27 RA	07NO1311D2_008.d	11/07/2013 21:40
TF2-004/5-SS1045-000.5 RA	320-4670-29 RA	07NO1311D2_009.d	11/07/2013 22:18
TF2-004/5-SS1044-000.5 RA	320-4670-30 RA	07NO1311D2_010.d	11/07/2013 22:57
TF2-004/5-SS1042-000.5 RA	320-4670-31 RA	07NO1311D2_011.d	11/07/2013 23:36
TF2-004/5-SS1057-0001 RA	320-4670-35 RA	07NO1311D2_012.d	11/08/2013 00:15
TF2-004/5-SS1053-000.6 RA	320-4670-39 RA	07NO1311D2_013.d	11/08/2013 00:54
TF2-004/5-SS1052-000.6 RA	320-4670-40 RA	07NO1311D2_014.d	11/08/2013 01:33
TF2-004/5-SS1050-000.6 RA	320-4670-42 RA	08NO13A11D2_013.d	11/08/2013 18:27
TF2-004/5-SS1062-000.8 RA	320-4670-43 RA	08NO13A11D2_014.d	11/08/2013 19:06
TF2-004/5-SS1033-000.8 RA	320-4670-24 RA	17DE1311D2_004.d	12/18/2013 00:44
TF2-004/5-SS1046-000.5 RA	320-4670-28 RA	17DE1311D2_005.d	12/18/2013 01:22
TF2-004/5-SS1041-000.7 RA	320-4670-32 RA	17DE1311D2_006.d	12/18/2013 02:01
TF2-004/5-SS-DUP03-1013 RA	320-4670-33 RA	17DE1311D2_007.d	12/18/2013 02:40
TF2-004/5-SS1056-000.6 RA	320-4670-36 RA	17DE1311D2_008.d	12/18/2013 03:19
TF2-004/5-SS1055-000.8 RA	320-4670-37 RA	17DE1311D2_009.d	12/18/2013 03:58
TF2-004/5-SS1054-000.6 RA	320-4670-38 RA	17DE1311D2_010.d	12/18/2013 04:37
TF2-004/5-SS1054-000.6 MS RA	320-4670-38 MS RA	17DE1311D2_011.d	12/18/2013 05:16
TF2-004/5-SS1054-000.6 MSD RA	320-4670-38 MSD RA	17DE1311D2_012.d	12/18/2013 05:55

2,3,7,8-TCDF

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_5.d Lab Sample ID: MB 320-28540/1-A

Matrix: Solid Date Extracted: 10/28/2013 12:22

Instrument ID: 3D5 Date Analyzed: 11/01/2013 00:11

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-004/5-SS1051-000.8 RA	320-4670-41 RA	17DE1311D2_013.d	12/18/2013 06:34
TF2-004/5-SS1033-000.8 RADL	320-4670-24 RADL	16DE13B3D5_68.d	12/18/2013 23:29
TF2-004/5-SS1049-000.9 RADL	320-4670-25 RADL	16DE13B3D5_69.d	12/19/2013 00:11
TF2-004/5-SS1048-000.8 RADL	320-4670-26 RADL	16DE13B3D5_70.d	12/19/2013 00:52
TF2-004/5-SS1047-000.8 RADL	320-4670-27 RADL	16DE13B3D5_71.d	12/19/2013 01:34
TF2-004/5-SS1045-000.5 RADL	320-4670-29 RADL	16DE13B3D5_72.d	12/19/2013 02:16
TF2-004/5-SS1041-000.7 RADL	320-4670-32 RADL	16DE13B3D5_73.d	12/19/2013 02:58
TF2-004/5-SS-DUP03-1013 RADL	320-4670-33 RADL	16DE13B3D5_74.d	12/19/2013 03:40
TF2-004/5-SS1057-0001 RADL	320-4670-35 RADL	16DE13B3D5_75.d	12/19/2013 04:21
TF2-004/5-SS1053-000.6 RADL	320-4670-39 RADL	16DE13B3D5_76.d	12/19/2013 05:03
TF2-004/5-SS1051-000.8 RADL	320-4670-41 RADL	16DE13B3D5_77.d	12/19/2013 05:45
TF2-004/5-SS1062-000.8 RADL	320-4670-43 RADL	16DE13B3D5_82.d	12/19/2013 09:33

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28540/1-A

Matrix: Solid | Lab File ID: 310C13C3D5_5.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10(g) | Date Analyzed: 11/01/2013 00:11

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.031
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.034
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.039
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.065
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.067
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.033
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.025
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.024
70648-26-9	1,2,3,4,7,8-HxCDF	ND		5.0	0.085
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.065
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.074
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.083
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		5.0	0.025
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.375	J	5.0	0.10
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.12
3268-87-9	OCDD	0.221	J	10	0.027
39001-02-0	OCDF	0.307	J	10	0.073
41903-57-5	Total TCDD	ND		1.0	0.031
30402-14-3	Total TCDF	ND		1.0	0.034
36088-22-9	Total PeCDD	ND		5.0	0.039
30402-15-4	Total PeCDF	ND		5.0	0.067
34465-46-8	Total HxCDD	ND		5.0	0.033
55684-94-1	Total HxCDF	ND		5.0	0.085
37871-00-4	Total HpCDD	0.0606	J	5.0	0.025
38998-75-3	Total HpCDF	0.375	J	5.0	0.11

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28540/1-A

Matrix: Solid | Lab File ID: 31OC13C3D5_5.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/28/2013 12:22

Sample wt/vol: 10(g) | Date Analyzed: 11/01/2013 00:11

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29121 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	59		40-135
89059-46-1	13C-2,3,7,8-TCDF	61		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	58		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	58		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	62		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	70		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	55		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	50		40-135
114423-97-1	13C-OCDD	59		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 310C13C3D5_6.d

Lab ID: LCS 320-28540/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	23.2	116	60-138	
2,3,7,8-TCDF	20.0	22.6	113	56-158	
1,2,3,7,8-PeCDD	100	111	111	70-122	
1,2,3,7,8-PeCDF	100	122	122	69-134	
2,3,4,7,8-PeCDF	100	133	133	70-131	*
1,2,3,4,7,8-HxCDD	100	133	133	60-138	
1,2,3,6,7,8-HxCDD	100	119	119	68-136	
1,2,3,7,8,9-HxCDD	100	124	124	68-138	
1,2,3,4,7,8-HxCDF	100	113	113	74-128	
1,2,3,6,7,8-HxCDF	100	106	106	67-140	
2,3,4,6,7,8-HxCDF	100	108	108	71-137	
1,2,3,7,8,9-HxCDF	100	105	105	72-134	
1,2,3,4,6,7,8-HpCDD	100	114	114	71-128	
1,2,3,4,6,7,8-HpCDF	100	122	122	71-134	
1,2,3,4,7,8,9-HpCDF	100	127	127	68-129	
OCDD	200	224	112	70-128	
OCDF	200	206	103	63-141	
13C-2,3,7,8-TCDD	200	129	65	40-135	
13C-2,3,7,8-TCDF	200	138	69	40-135	
13C-1,2,3,7,8-PeCDD	200	133	66	40-135	
13C-1,2,3,7,8-PeCDF	200	114	57	40-135	
13C-1,2,3,6,7,8-HxCDD	200	131	65	40-135	
13C-1,2,3,4,7,8-HxCDF	200	158	79	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	120	60	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	117	59	40-135	
13C-OCDD	400	259	65	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_47.d Lab Sample ID: MB 320-28431/1-A

Matrix: Solid Date Extracted: 10/25/2013 15:42

Instrument ID: 3D5 Date Analyzed: 11/02/2013 06:28

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-28431/2-A	31OC13C3D5_48.d	11/02/2013 07:10
TF2-004/5-SS1060.000.5	320-4670-48	31OC13C3D5_49.d	11/02/2013 07:52
TF2-004/5-SS1059-000.6	320-4670-49	31OC13C3D5_50.d	11/02/2013 08:33
TF2-004/5-SS1058-000.5	320-4670-50	31OC13C3D5_51.d	11/02/2013 09:15
TF2-004/5-SS1065-000.5	320-4670-51	31OC13C3D5_52.d	11/02/2013 09:57
TF2-004/5-SS1064-000.6	320-4670-52	31OC13C3D5_53.d	11/02/2013 10:38
TF2-004/5-SS1064-000.6 MS	320-4670-52 MS	31OC13C3D5_54.d	11/02/2013 11:20
TF2-004/5-SS1064-000.6 MSD	320-4670-52 MSD	31OC13C3D5_55.d	11/02/2013 12:02
TF2-004/5-SS1063-000.6	320-4670-53	31OC13C3D5_56.d	11/02/2013 12:44
TF2-003-SS1019-000.5	320-4670-64	31OC13C3D5_75.d	11/03/2013 01:35
TF2-003-SS1019-000.5 MS	320-4670-64 MS	31OC13C3D5_76.d	11/03/2013 02:16
TF2-003-SS1019-000.5 MSD	320-4670-64 MSD	31OC13C3D5_77.d	11/03/2013 02:58
TF2-003-SS-DUP06-1013	320-4670-65	31OC13C3D5_78.d	11/03/2013 03:40
TF2-004/5-SS1068-000.5	320-4670-54	04NO13B3D5_5.d	11/05/2013 00:21
TF2-004/5-SS-DUP05-1013	320-4670-55	04NO13B3D5_6.d	11/05/2013 01:03
TF2-003-SS1011-000.8	320-4670-56	04NO13B3D5_7.d	11/05/2013 01:45
TF2-003-SS1012-000.7	320-4670-57	04NO13B3D5_8.d	11/05/2013 02:27
TF2-003-SS1013-000.7	320-4670-58	04NO13B3D5_9.d	11/05/2013 03:08
TF2-003-SS1014-0001	320-4670-59	04NO13B3D5_10.d	11/05/2013 03:50
TF2-003-SS1015-000.8	320-4670-60	04NO13B3D5_11.d	11/05/2013 04:32
TF2-003-SS1016-000.9	320-4670-61	04NO13B3D5_12.d	11/05/2013 05:14
TF2-003-SS1017-000.8	320-4670-62	04NO13B3D5_13.d	11/05/2013 05:55

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_47.d Lab Sample ID: MB 320-28431/1-A

Matrix: Solid Date Extracted: 10/25/2013 15:42

Instrument ID: 3D5 Date Analyzed: 11/02/2013 06:28

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-003-SS1018-000.8	320-4670-63	05NO13A3D5_13.d	11/06/2013 06:00
TF2-004/5-SS1060.000.5 RA	320-4670-48 RA	08NO13B11D2_004.d	11/09/2013 00:30
TF2-004/5-SS1065-000.5 RA	320-4670-51 RA	08NO13B11D2_005.d	11/09/2013 01:09
TF2-003-SS1019-000.5 RA	320-4670-64 RA	08NO13B11D2_009.d	11/09/2013 03:45
TF2-003-SS1019-000.5 MS RA	320-4670-64 MS RA	08NO13B11D2_010.d	11/09/2013 04:24
TF2-003-SS1019-000.5 MSD RA	320-4670-64 MSD RA	08NO13B11D2_011.d	11/09/2013 05:03
TF2-003-SS-DUP06-1013 RA	320-4670-65 RA	08NO13B11D2_012.d	11/09/2013 05:41
TF2-004/5-SS-DUP05-1013 RA	320-4670-55 RA	12NO1311D2_006.d	11/13/2013 01:12
TF2-003-SS1011-000.8 RA	320-4670-56 RA	12NO1311D2_007.d	11/13/2013 01:51
TF2-003-SS1012-000.7 RA	320-4670-57 RA	12NO1311D2_008.d	11/13/2013 02:30
TF2-003-SS1013-000.7 RA	320-4670-58 RA	12NO1311D2_009.d	11/13/2013 03:09
TF2-003-SS1014-0001 RA	320-4670-59 RA	12NO1311D2_010.d	11/13/2013 03:48
TF2-003-SS1016-000.9 RA	320-4670-61 RA	12NO1311D2_012.d	11/13/2013 05:05
TF2-003-SS1017-000.8 RA	320-4670-62 RA	12NO1311D2_013.d	11/13/2013 05:44
TF2-003-SS1015-000.8 RA	320-4670-60 RA	18NO135D2_004.d	11/18/2013 18:35
TF2-004/5-SS1059-000.6 RA	320-4670-49 RA	18DE1311D2_005.d	12/19/2013 03:10
TF2-004/5-SS1058-000.5 RA	320-4670-50 RA	18DE1311D2_006.d	12/19/2013 03:49
TF2-004/5-SS1064-000.6 RA	320-4670-52 RA	18DE1311D2_007.d	12/19/2013 04:28
TF2-004/5-SS1064-000.6 MS RA	320-4670-52 MS RA	18DE1311D2_008.d	12/19/2013 05:07
TF2-004/5-SS1064-000.6 MSD RA	320-4670-52 MSD RA	18DE1311D2_009.d	12/19/2013 05:45
TF2-004/5-SS1063-000.6 RA	320-4670-53 RA	18DE1311D2_010.d	12/19/2013 06:24
TF2-004/5-SS1068-000.5 RA	320-4670-54 RA	18DE1311D2_011.d	12/19/2013 07:03

2,3,7,8-TCDF

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 31OC13C3D5_47.d Lab Sample ID: MB 320-28431/1-A

Matrix: Solid Date Extracted: 10/25/2013 15:42

Instrument ID: 3D5 Date Analyzed: 11/02/2013 06:28

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-003-SS1018-000.8 RA	320-4670-63 RA	18DE1311D2_012.d	12/19/2013 07:42
TF2-004/5-SS1060.000.5 RADL	320-4670-48 RADL	16DE13B3D5_84.d	12/19/2013 11:08
TF2-004/5-SS1059-000.6 RADL	320-4670-49 RADL	16DE13B3D5_85.d	12/19/2013 11:50
TF2-003-SS1011-000.8 RADL	320-4670-56 RADL	16DE13B3D5_86.d	12/19/2013 12:31
TF2-003-SS1015-000.8 RADL	320-4670-60 RADL	16DE13B3D5_87.d	12/19/2013 13:13
TF2-003-SS1016-000.9 RADL	320-4670-61 RADL	16DE13B3D5_88.d	12/19/2013 13:55
TF2-003-SS-DUP06-1013 RADL	320-4670-65 RADL	16DE13B3D5_89.d	12/19/2013 14:37

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28431/1-A

Matrix: Solid | Lab File ID: 310C13C3D5_47.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10(g) | Date Analyzed: 11/02/2013 06:28

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.044
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.035
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.050
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.051
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.053
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.042
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.031
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.030
70648-26-9	1,2,3,4,7,8-HxCDF	ND		5.0	0.062
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.047
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.054
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.060
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		5.0	0.033
67562-39-4	1,2,3,4,6,7,8-HpCDF	ND		5.0	0.064
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.076
3268-87-9	OCDD	0.196	J	10	0.038
39001-02-0	OCDF	0.141	J	10	0.053
41903-57-5	Total TCDD	ND		1.0	0.044
30402-14-3	Total TCDF	ND		1.0	0.035
36088-22-9	Total PeCDD	ND		5.0	0.050
30402-15-4	Total PeCDF	ND		5.0	0.053
34465-46-8	Total HxCDD	ND		5.0	0.042
55684-94-1	Total HxCDF	ND		5.0	0.062
37871-00-4	Total HpCDD	ND		5.0	0.033
38998-75-3	Total HpCDF	ND		5.0	0.076

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28431/1-A

Matrix: Solid | Lab File ID: 310C13C3D5_47.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/25/2013 15:42

Sample wt/vol: 10(g) | Date Analyzed: 11/02/2013 06:28

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29137 | Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	68		40-135
89059-46-1	13C-2,3,7,8-TCDF	72		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	72		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	73		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	72		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	79		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	67		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	67		40-135
114423-97-1	13C-OCDD	72		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31OC13C3D5_48.d

Lab ID: LCS 320-28431/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	22.6	113	60-138	
2,3,7,8-TCDF	20.0	21.3	106	56-158	
1,2,3,7,8-PeCDD	100	111	111	70-122	
1,2,3,7,8-PeCDF	100	117	117	69-134	
2,3,4,7,8-PeCDF	100	112	112	70-131	
1,2,3,4,7,8-HxCDD	100	123	123	60-138	
1,2,3,6,7,8-HxCDD	100	114	114	68-136	
1,2,3,7,8,9-HxCDD	100	114	114	68-138	
1,2,3,4,7,8-HxCDF	100	113	113	74-128	
1,2,3,6,7,8-HxCDF	100	108	108	67-140	
2,3,4,6,7,8-HxCDF	100	108	108	71-137	
1,2,3,7,8,9-HxCDF	100	111	111	72-134	
1,2,3,4,6,7,8-HpCDD	100	112	112	71-128	
1,2,3,4,6,7,8-HpCDF	100	111	111	71-134	
1,2,3,4,7,8,9-HpCDF	100	115	115	68-129	
OCDD	200	205	102	70-128	
OCDF	200	190	95	63-141	
13C-2,3,7,8-TCDD	200	139	70	40-135	
13C-2,3,7,8-TCDF	200	146	73	40-135	
13C-1,2,3,7,8-PeCDD	200	146	73	40-135	
13C-1,2,3,7,8-PeCDF	200	149	75	40-135	
13C-1,2,3,6,7,8-HxCDD	200	140	70	40-135	
13C-1,2,3,4,7,8-HxCDF	200	154	77	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	123	62	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	130	65	40-135	
13C-OCDD	400	272	68	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 04NO13B3D5_18.d Lab Sample ID: MB 320-28458/1-A

Matrix: Solid Date Extracted: 10/25/2013 18:01

Instrument ID: 3D5 Date Analyzed: 11/05/2013 09:43

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-004/5-SS1028-000.8	320-4670-13	31OC13C3D5_79.d	11/03/2013 04:22
TF2-004/5-SS1027-0001	320-4670-14	31OC13C3D5_80.d	11/03/2013 05:03
TF2-004/5-SS1027-0001 MS	320-4670-14 MS	31OC13C3D5_81.d	11/03/2013 05:45
TF2-004/5-SS1027-0001 MSD	320-4670-14 MSD	31OC13C3D5_82.d	11/03/2013 06:27
TF2-004/5-SS1040-000.9	320-4670-15	31OC13C3D5_83.d	11/03/2013 07:09
TF2-004/5-SS1039-000.9	320-4670-16	31OC13C3D5_84.d	11/03/2013 07:50
	LCS 320-28458/2-A	04NO13B3D5_19.d	11/05/2013 10:25
TF2-004/5-SS1038-000.7	320-4670-18	04NO13B3D5_20.d	11/05/2013 11:07
TF2-004/5-SS1037-000.7	320-4670-19	04NO13B3D5_21.d	11/05/2013 11:48
TF2-004/5-SS1036-000.6	320-4670-20	04NO13B3D5_22.d	11/05/2013 12:30
TF2-004/5-SS1035-0001	320-4670-21	04NO13B3D5_23.d	11/05/2013 13:12
TF2-004/5-SS-DUP02-1013	320-4670-22	04NO13B3D5_24.d	11/05/2013 13:53
TF2-004/5-SS1026-000.8	320-4670-2	04NO13B3D5_25.d	11/05/2013 14:35
TF2-004/5-SS1024-000.6	320-4670-3	04NO13B3D5_26.d	11/05/2013 15:17
TF2-004/5-SS1023-000.8	320-4670-4	04NO13B3D5_27.d	11/05/2013 15:59
TF2-004/5-SS1022-000.9	320-4670-5	05NO13A3D5_5.d	11/06/2013 00:27
TF2-004/5-SS1021-000.7	320-4670-6	05NO13A3D5_6.d	11/06/2013 01:08
TF2-004/5-SS1020-0001	320-4670-7	05NO13A3D5_7.d	11/06/2013 01:50
TF2-004/5-SS1032-000.9	320-4670-8	05NO13A3D5_8.d	11/06/2013 02:32
TF2-004/5-SS1031-000.8	320-4670-9	05NO13A3D5_9.d	11/06/2013 03:13
TF2-004/5-SS-DUP01-1013	320-4670-10	05NO13A3D5_10.d	11/06/2013 03:55
TF2-004/5-SS1030-000.6	320-4670-11	05NO13A3D5_11.d	11/06/2013 04:37

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 04NO13B3D5_18.d Lab Sample ID: MB 320-28458/1-A

Matrix: Solid Date Extracted: 10/25/2013 18:01

Instrument ID: 3D5 Date Analyzed: 11/05/2013 09:43

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-004/5-SS1029-000.6	320-4670-12	05NO13A3D5_12.d	11/06/2013 05:19
TF2-004/5-SS1028-000.8 RA	320-4670-13 RA	08NO13B11D2_013.d	11/09/2013 06:20
TF2-004/5-SS1040-000.9 RA	320-4670-15 RA	08NO13B11D2_014.d	11/09/2013 06:59
TF2-004/5-SS1039-000.9 RA	320-4670-16 RA	08NO13B11D2_015.d	11/09/2013 07:38
TF2-004/5-SS1038-000.7 RA	320-4670-18 RA	12NO1311D2_014.d	11/13/2013 06:23
TF2-004/5-SS1037-000.7 RA	320-4670-19 RA	12NO1311D2_015.d	11/13/2013 07:02
TF2-004/5-SS1036-000.6 RA	320-4670-20 RA	18NO135D2_005.d	11/18/2013 19:12
TF2-004/5-SS1035-0001 RA	320-4670-21 RA	18NO135D2_006.d	11/18/2013 19:50
TF2-004/5-SS-DUP02-1013 RA	320-4670-22 RA	18NO135D2_007.d	11/18/2013 20:27
TF2-004/5-SS1024-000.6 RA	320-4670-3 RA	18NO135D2_008.d	11/18/2013 21:04
TF2-004/5-SS1023-000.8 RA	320-4670-4 RA	18NO135D2_009.d	11/18/2013 21:42
TF2-004/5-SS1032-000.9 RA	320-4670-8 RA	19no13a5d2_006.d	11/19/2013 21:08
TF2-004/5-SS1029-000.6 RA	320-4670-12 RA	19no13a5d2_007.d	11/19/2013 21:45
TF2-004/5-SS1026-000.8 RA	320-4670-2 RA	16DE13A11D2_005.d	12/17/2013 00:40
TF2-004/5-SS1022-000.9 RA	320-4670-5 RA	16DE13A11D2_006.d	12/17/2013 01:19
TF2-004/5-SS1021-000.7 RA	320-4670-6 RA	16DE13A11D2_007.d	12/17/2013 01:58
TF2-004/5-SS1020-0001 RA	320-4670-7 RA	16DE13A11D2_008.d	12/17/2013 02:36
TF2-004/5-SS1031-000.8 RA	320-4670-9 RA	16DE13A11D2_009.d	12/17/2013 03:15
TF2-004/5-SS-DUP01-1013 RA	320-4670-10 RA	16DE13A11D2_010.d	12/17/2013 03:54
TF2-004/5-SS1030-000.6 RA	320-4670-11 RA	16DE13A11D2_011.d	12/17/2013 04:33
TF2-004/5-SS1027-0001 RA	320-4670-14 RA	16DE13A11D2_012.d	12/17/2013 05:12
TF2-004/5-SS1027-0001 MS RA	320-4670-14 MS RA	16DE13A11D2_013.d	12/17/2013 05:50

FORM IV
DIOXIN METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab File ID: 04NO13B3D5_18.d Lab Sample ID: MB 320-28458/1-A

Matrix: Solid Date Extracted: 10/25/2013 18:01

Instrument ID: 3D5 Date Analyzed: 11/05/2013 09:43

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
TF2-004/5-SS1027-0001 MSD RA	320-4670-14 MSD RA	16DE13A11D2_014.d	12/17/2013 06:29
TF2-004/5-SS1022-000.9 RADL	320-4670-5 RADL	16DE13B3D5_44.d	12/18/2013 05:59
TF2-004/5-SS1020-0001 RADL	320-4670-7 RADL	16DE13B3D5_45.d	12/18/2013 06:40
TF2-004/5-SS-DUP01-1013 RADL	320-4670-10 RADL	16DE13B3D5_46.d	12/18/2013 07:22
TF2-004/5-SS1027-0001 MS RADL	320-4670-14 MS RADL	16DE13B3D5_49.d	12/18/2013 09:28
TF2-004/5-SS1027-0001 MSD RADL	320-4670-14 MSD RADL	16DE13B3D5_50.d	12/18/2013 10:09
TF2-004/5-SS1040-000.9 RADL	320-4670-15 RADL	16DE13B3D5_51.d	12/18/2013 10:51
TF2-004/5-SS1039-000.9 RADL	320-4670-16 RADL	16DE13B3D5_52.d	12/18/2013 11:33
TF2-004/5-SS1036-000.6 RADL	320-4670-20 RADL	16DE13B3D5_53.d	12/18/2013 12:15
TF2-004/5-SS1027-0001 RADL	320-4670-14 RADL	16DE13B3D5_62.d	12/18/2013 18:50
TF2-004/5-SS1029-000.6 RADL	320-4670-12 RADL	16DE13B3D5_91.d	12/19/2013 16:00

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento | Job No.: 320-4670-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 320-28458/1-A

Matrix: Solid | Lab File ID: 04NO13B3D5_18.d

Analysis Method: 8290 | Date Collected:

Extract. Method: 8290 | Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10(g) | Date Analyzed: 11/05/2013 09:43

Con. Extract Vol.: 20(uL) | Dilution Factor: 1

Injection Volume: 2(uL) | Level: (low/med) Low

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 | Units: pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
1746-01-6	2,3,7,8-TCDD	ND		1.0	0.042
51207-31-9	2,3,7,8-TCDF	ND		1.0	0.035
40321-76-4	1,2,3,7,8-PeCDD	ND		5.0	0.046
57117-41-6	1,2,3,7,8-PeCDF	ND		5.0	0.054
57117-31-4	2,3,4,7,8-PeCDF	ND		5.0	0.056
39227-28-6	1,2,3,4,7,8-HxCDD	ND		5.0	0.048
57653-85-7	1,2,3,6,7,8-HxCDD	ND		5.0	0.035
19408-74-3	1,2,3,7,8,9-HxCDD	ND		5.0	0.034
70648-26-9	1,2,3,4,7,8-HxCDF	ND		5.0	0.068
57117-44-9	1,2,3,6,7,8-HxCDF	ND		5.0	0.052
60851-34-5	2,3,4,6,7,8-HxCDF	ND		5.0	0.059
72918-21-9	1,2,3,7,8,9-HxCDF	ND		5.0	0.066
35822-46-9	1,2,3,4,6,7,8-HpCDD	ND		5.0	0.041
67562-39-4	1,2,3,4,6,7,8-HpCDF	0.113	J	5.0	0.060
55673-89-7	1,2,3,4,7,8,9-HpCDF	ND		5.0	0.071
3268-87-9	OCDD	0.305	J	10	0.051
39001-02-0	OCDF	ND		10	0.060
41903-57-5	Total TCDD	ND		1.0	0.042
30402-14-3	Total TCDF	ND		1.0	0.035
36088-22-9	Total PeCDD	ND		5.0	0.046
30402-15-4	Total PeCDF	ND		5.0	0.056
34465-46-8	Total HxCDD	ND		5.0	0.048
55684-94-1	Total HxCDF	ND		5.0	0.068
37871-00-4	Total HpCDD	ND		5.0	0.041
38998-75-3	Total HpCDF	0.113	J	5.0	0.066

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Client Sample ID: Lab Sample ID: MB 320-28458/1-A

Matrix: Solid Lab File ID: 04NO13B3D5_18.d

Analysis Method: 8290 Date Collected:

Extract. Method: 8290 Date Extracted: 10/25/2013 18:01

Sample wt/vol: 10(g) Date Analyzed: 11/05/2013 09:43

Con. Extract Vol.: 20(uL) Dilution Factor: 1

Injection Volume: 2(uL) Level: (low/med) Low

% Moisture: GPC Cleanup:(Y/N) N

Analysis Batch No.: 29348 Units: pg/g

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
76523-40-5	13C-2,3,7,8-TCDD	65		40-135
89059-46-1	13C-2,3,7,8-TCDF	69		40-135
109719-79-1	13C-1,2,3,7,8-PeCDD	73		40-135
109719-77-9	13C-1,2,3,7,8-PeCDF	68		40-135
109719-81-5	13C-1,2,3,6,7,8-HxCDD	69		40-135
114423-98-2	13C-1,2,3,4,7,8-HxCDF	69		40-135
109719-83-7	13C-1,2,3,4,6,7,8-HpCDD	61		40-135
109719-84-8	13C-1,2,3,4,6,7,8-HpCDF	73		40-135
114423-97-1	13C-OCDD	70		40-135

FORM III
DIOXIN LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 04NO13B3D5_19.d

Lab ID: LCS 320-28458/2-A Client ID:

COMPOUND	SPIKE ADDED (pg/g)	LCS CONCENTRATION (pg/g)	LCS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.0	24.0	120	60-138	
2,3,7,8-TCDF	20.0	20.8	104	56-158	
1,2,3,7,8-PeCDD	100	113	113	70-122	
1,2,3,7,8-PeCDF	100	116	116	69-134	
2,3,4,7,8-PeCDF	100	126	126	70-131	
1,2,3,4,7,8-HxCDD	100	108	108	60-138	
1,2,3,6,7,8-HxCDD	100	110	110	68-136	
1,2,3,7,8,9-HxCDD	100	110	110	68-138	
1,2,3,4,7,8-HxCDF	100	109	109	74-128	
1,2,3,6,7,8-HxCDF	100	103	103	67-140	
2,3,4,6,7,8-HxCDF	100	103	103	71-137	
1,2,3,7,8,9-HxCDF	100	101	101	72-134	
1,2,3,4,6,7,8-HpCDD	100	120	120	71-128	
1,2,3,4,6,7,8-HpCDF	100	111	111	71-134	
1,2,3,4,7,8,9-HpCDF	100	114	114	68-129	
OCDD	200	205	103	70-128	
OCDF	200	187	93	63-141	
13C-2,3,7,8-TCDD	200	122	61	40-135	
13C-2,3,7,8-TCDF	200	141	71	40-135	
13C-1,2,3,7,8-PeCDD	200	138	69	40-135	
13C-1,2,3,7,8-PeCDF	200	128	64	40-135	
13C-1,2,3,6,7,8-HxCDD	200	136	68	40-135	
13C-1,2,3,4,7,8-HxCDF	200	149	75	40-135	
13C-1,2,3,4,6,7,8-HpCDD	200	107	53	40-135	
13C-1,2,3,4,6,7,8-HpCDF	200	123	62	40-135	
13C-OCDD	400	321	80	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31OC13C3D5_81.d

Lab ID: 320-4670-14 MS Client ID: TF2-004/5-SS1027-0001 MS

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.9	ND	24.3	116	60-138	
2,3,7,8-TCDF	20.9	0.094 J	22.8	109	56-158	
1,2,3,7,8-PeCDD	104	ND	123	117	70-122	
1,2,3,7,8-PeCDF	104	ND	121	116	69-134	
2,3,4,7,8-PeCDF	104	ND	123	118	70-131	
1,2,3,4,7,8-HxCDD	104	0.28 J	117	112	60-138	
1,2,3,6,7,8-HxCDD	104	0.47 J	121	115	68-136	
1,2,3,7,8,9-HxCDD	104	0.57 J	114	109	68-138	
1,2,3,4,7,8-HxCDF	104	0.30 J	118	113	74-128	
1,2,3,6,7,8-HxCDF	104	0.92 J	122	116	67-140	
2,3,4,6,7,8-HxCDF	104	ND	116	111	71-137	
1,2,3,7,8,9-HxCDF	104	ND	117	112	72-134	
1,2,3,4,6,7,8-HpCDD	104	39	156	112	71-128	
1,2,3,4,6,7,8-HpCDF	104	2.1 J	117	110	71-134	
1,2,3,4,7,8,9-HpCDF	104	ND	118	113	68-129	
OCDD	209	4800	5080	141	70-128	E 4
OCDF	209	4.5 J	204	96	63-141	
13C-2,3,7,8-TCDD	209	180	141	68	40-135	
13C-2,3,7,8-TCDF	209	190	146	70	40-135	
13C-1,2,3,7,8-PeCDD	209	180	143	68	40-135	
13C-1,2,3,7,8-PeCDF	209	190	149	71	40-135	
13C-1,2,3,6,7,8-HxCDD	209	210	165	79	40-135	
13C-1,2,3,4,7,8-HxCDF	209	210	169	81	40-135	
13C-1,2,3,4,6,7,8-HpCDD	209	170	130	62	40-135	
13C-1,2,3,4,6,7,8-HpCDF	209	180	141	68	40-135	
13C-OCDD	417	420	322	77	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31OC13C3D5_82.d

Lab ID: 320-4670-14 MSD Client ID: TF2-004/5-SS1027-0001 MSD

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	20.8	23.5	113	3	20	60-138	
2,3,7,8-TCDF	20.8	22.5	108	1	20	56-158	
1,2,3,7,8-PeCDD	104	120	115	2	20	70-122	
1,2,3,7,8-PeCDF	104	122	118	1	20	69-134	
2,3,4,7,8-PeCDF	104	120	116	2	20	70-131	
1,2,3,4,7,8-HxCDD	104	112	107	5	20	60-138	
1,2,3,6,7,8-HxCDD	104	126	121	4	20	68-136	
1,2,3,7,8,9-HxCDD	104	113	109	1	20	68-138	
1,2,3,4,7,8-HxCDF	104	119	115	1	20	74-128	
1,2,3,6,7,8-HxCDF	104	123	118	1	20	67-140	
2,3,4,6,7,8-HxCDF	104	122	117	5	20	71-137	
1,2,3,7,8,9-HxCDF	104	120	116	3	20	72-134	
1,2,3,4,6,7,8-HpCDD	104	154	111	1	20	71-128	
1,2,3,4,6,7,8-HpCDF	104	117	111	0	20	71-134	
1,2,3,4,7,8,9-HpCDF	104	119	115	1	20	68-129	
OCDD	208	4630	-75	9	20	70-128	E 4
OCDF	208	214	101	5	20	63-141	
13C-2,3,7,8-TCDD	208	135	65			40-135	
13C-2,3,7,8-TCDF	208	140	67			40-135	
13C-1,2,3,7,8-PeCDD	208	134	65			40-135	
13C-1,2,3,7,8-PeCDF	208	140	67			40-135	
13C-1,2,3,6,7,8-HxCDD	208	149	72			40-135	
13C-1,2,3,4,7,8-HxCDF	208	148	71			40-135	
13C-1,2,3,4,6,7,8-HpCDD	208	120	58			40-135	
13C-1,2,3,4,6,7,8-HpCDF	208	131	63			40-135	
13C-OCDD	415	289	70			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 310C13C3D5_26.d

Lab ID: 320-4670-38 MS Client ID: TF2-004/5-SS1054-000.6 MS

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.8	0.094 J	24.8	119	60-138	
2,3,7,8-TCDF	20.8	0.43 J	23.0	109	56-158	
1,2,3,7,8-PeCDD	104	0.58 J	117	112	70-122	
1,2,3,7,8-PeCDF	104	0.23 J	123	118	69-134	
2,3,4,7,8-PeCDF	104	0.36 J	124	119	70-131	
1,2,3,4,7,8-HxCDD	104	1.7 J	139	132	60-138	
1,2,3,6,7,8-HxCDD	104	4.3 J	128	119	68-136	
1,2,3,7,8,9-HxCDD	104	3.2 J	124	116	68-138	
1,2,3,4,7,8-HxCDF	104	1.9 J	115	109	74-128	
1,2,3,6,7,8-HxCDF	104	1.2 J	108	102	67-140	
2,3,4,6,7,8-HxCDF	104	0.78 J	121	116	71-137	
1,2,3,7,8,9-HxCDF	104	ND	124	120	72-134	
1,2,3,4,6,7,8-HpCDD	104	98	218	115	71-128	
1,2,3,4,6,7,8-HpCDF	104	26	141	110	71-134	
1,2,3,4,7,8,9-HpCDF	104	1.2 J	126	120	68-129	
OCDD	208	3100	2890	-86	70-128	4
OCDF	208	53	254	97	63-141	
13C-2,3,7,8-TCDD	208	130	113	55	40-135	
13C-2,3,7,8-TCDF	208	140	121	58	40-135	
13C-1,2,3,7,8-PeCDD	208	140	127	61	40-135	
13C-1,2,3,7,8-PeCDF	208	130	122	59	40-135	
13C-1,2,3,6,7,8-HxCDD	208	140	120	58	40-135	
13C-1,2,3,4,7,8-HxCDF	208	170	127	61	40-135	
13C-1,2,3,4,6,7,8-HpCDD	208	130	101	49	40-135	
13C-1,2,3,4,6,7,8-HpCDF	208	140	113	54	40-135	
13C-OCDD	416	340	245	59	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 310C13C3D5_27.d

Lab ID: 320-4670-38 MSD Client ID: TF2-004/5-SS1054-000.6 MSD

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	19.7	23.9	121	4	20	60-138	
2,3,7,8-TCDF	19.7	21.9	109	5	20	56-158	
1,2,3,7,8-PeCDD	98.6	111	112	5	20	70-122	
1,2,3,7,8-PeCDF	98.6	120	121	3	20	69-134	
2,3,4,7,8-PeCDF	98.6	114	115	9	20	70-131	
1,2,3,4,7,8-HxCDD	98.6	124	124	11	20	60-138	
1,2,3,6,7,8-HxCDD	98.6	119	117	7	20	68-136	
1,2,3,7,8,9-HxCDD	98.6	116	114	6	20	68-138	
1,2,3,4,7,8-HxCDF	98.6	112	112	3	20	74-128	
1,2,3,6,7,8-HxCDF	98.6	101	101	6	20	67-140	
2,3,4,6,7,8-HxCDF	98.6	109	110	10	20	71-137	
1,2,3,7,8,9-HxCDF	98.6	113	115	10	20	72-134	
1,2,3,4,6,7,8-HpCDD	98.6	226	130	4	20	71-128	F
1,2,3,4,6,7,8-HpCDF	98.6	144	120	2	20	71-134	
1,2,3,4,7,8,9-HpCDF	98.6	115	115	9	20	68-129	
OCDD	197	3350	140	15	20	70-128	4
OCDF	197	248	99	3	20	63-141	
13C-2,3,7,8-TCDD	197	133	67			40-135	
13C-2,3,7,8-TCDF	197	145	73			40-135	
13C-1,2,3,7,8-PeCDD	197	141	72			40-135	
13C-1,2,3,7,8-PeCDF	197	147	74			40-135	
13C-1,2,3,6,7,8-HxCDD	197	144	73			40-135	
13C-1,2,3,4,7,8-HxCDF	197	154	78			40-135	
13C-1,2,3,4,6,7,8-HpCDD	197	125	63			40-135	
13C-1,2,3,4,6,7,8-HpCDF	197	141	72			40-135	
13C-OCDD	394	305	77			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31OC13C3D5_54.d

Lab ID: 320-4670-52 MS Client ID: TF2-004/5-SS1064-000.6 MS

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	20.3	0.16 J	23.6	115	60-138	
2,3,7,8-TCDF	20.3	0.99 J	22.9	108	56-158	
1,2,3,7,8-PeCDD	101	0.59 J	113	111	70-122	
1,2,3,7,8-PeCDF	101	0.53 J	122	120	69-134	
2,3,4,7,8-PeCDF	101	0.64 J	121	119	70-131	
1,2,3,4,7,8-HxCDD	101	1.2 J	124	121	60-138	
1,2,3,6,7,8-HxCDD	101	3.8 J	123	117	68-136	
1,2,3,7,8,9-HxCDD	101	2.6 J	119	115	68-138	
1,2,3,4,7,8-HxCDF	101	1.8 J	109	105	74-128	
1,2,3,6,7,8-HxCDF	101	1.3 J	106	103	67-140	
2,3,4,6,7,8-HxCDF	101	2.3 J	108	104	71-137	
1,2,3,7,8,9-HxCDF	101	ND	110	108	72-134	
1,2,3,4,6,7,8-HpCDD	101	87	217	128	71-128	
1,2,3,4,6,7,8-HpCDF	101	22	137	114	71-134	
1,2,3,4,7,8,9-HpCDF	101	1.3 J	120	117	68-129	
OCDD	203	1900	2310	226	70-128	4
OCDF	203	44	243	98	63-141	
13C-2,3,7,8-TCDD	203	140	166	82	40-135	
13C-2,3,7,8-TCDF	203	150	175	86	40-135	
13C-1,2,3,7,8-PeCDD	203	150	172	85	40-135	
13C-1,2,3,7,8-PeCDF	203	150	176	87	40-135	
13C-1,2,3,6,7,8-HxCDD	203	160	175	86	40-135	
13C-1,2,3,4,7,8-HxCDF	203	170	197	97	40-135	
13C-1,2,3,4,6,7,8-HpCDD	203	130	152	75	40-135	
13C-1,2,3,4,6,7,8-HpCDF	203	140	162	80	40-135	
13C-OCDD	406	310	363	89	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 310C13C3D5_55.d

Lab ID: 320-4670-52 MSD Client ID: TF2-004/5-SS1064-000.6 MSD

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	20.5	24.6	119	4	20	60-138	
2,3,7,8-TCDF	20.5	23.3	109	2	20	56-158	
1,2,3,7,8-PeCDD	102	116	113	2	20	70-122	
1,2,3,7,8-PeCDF	102	121	118	1	20	69-134	
2,3,4,7,8-PeCDF	102	120	117	1	20	70-131	
1,2,3,4,7,8-HxCDD	102	116	112	6	20	60-138	
1,2,3,6,7,8-HxCDD	102	122	115	1	20	68-136	
1,2,3,7,8,9-HxCDD	102	112	107	6	20	68-138	
1,2,3,4,7,8-HxCDF	102	113	109	4	20	74-128	
1,2,3,6,7,8-HxCDF	102	111	107	4	20	67-140	
2,3,4,6,7,8-HxCDF	102	109	105	2	20	71-137	
1,2,3,7,8,9-HxCDF	102	109	107	0	20	72-134	
1,2,3,4,6,7,8-HpCDD	102	216	126	0	20	71-128	
1,2,3,4,6,7,8-HpCDF	102	141	116	3	20	71-134	
1,2,3,4,7,8,9-HpCDF	102	119	115	1	20	68-129	
OCDD	205	2310	225	0	20	70-128	(4)
OCDF	205	240	96	1	20	63-141	
13C-2,3,7,8-TCDD	205	183	89			40-135	
13C-2,3,7,8-TCDF	205	199	97			40-135	
13C-1,2,3,7,8-PeCDD	205	199	97			40-135	
13C-1,2,3,7,8-PeCDF	205	204	100			40-135	
13C-1,2,3,6,7,8-HxCDD	205	211	103			40-135	
13C-1,2,3,4,7,8-HxCDF	205	227	111			40-135	
13C-1,2,3,4,6,7,8-HpCDD	205	171	83			40-135	
13C-1,2,3,4,6,7,8-HpCDF	205	188	92			40-135	
13C-OCDD	410	415	101			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 310C13C3D5_76.d

Lab ID: 320-4670-64 MS Client ID: TF2-003-SS1019-000.5 MS

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDD	21.6	0.40 J	26.2	120	60-138	
1,2,3,7,8-PeCDD	108	1.7 J	124	113	70-122	
1,2,3,7,8-PeCDF	108	1.4 J	126	116	69-134	
2,3,4,7,8-PeCDF	108	1.1 J	125	115	70-131	
1,2,3,4,7,8-HxCDD	108	2.4 J	126	115	60-138	
1,2,3,6,7,8-HxCDD	108	5.7	131	116	68-136	
1,2,3,7,8,9-HxCDD	108	5.4	124	110	68-138	
1,2,3,4,7,8-HxCDF	108	6.0	123	108	74-128	
1,2,3,6,7,8-HxCDF	108	2.4 J	116	105	67-140	
2,3,4,6,7,8-HxCDF	108	1.9 J	115	105	71-137	
1,2,3,7,8,9-HxCDF	108	ND	117	108	72-134	
1,2,3,4,6,7,8-HpCDD	108	72	201	120	71-128	
1,2,3,4,6,7,8-HpCDF	108	16	135	110	71-134	
1,2,3,4,7,8,9-HpCDF	108	0.79 J	121	112	68-129	
OCDD	216	3000	3160	93	70-128	4
OCDF	216	15	235	102	63-141	
13C-2,3,7,8-TCDD	216	130	133	62	40-135	
13C-2,3,7,8-TCDF	216	140	139	65	40-135	
13C-1,2,3,7,8-PeCDD	216	140	136	63	40-135	
13C-1,2,3,7,8-PeCDF	216	140	140	65	40-135	
13C-1,2,3,6,7,8-HxCDD	216	140	146	68	40-135	
13C-1,2,3,4,7,8-HxCDF	216	150	158	73	40-135	
13C-1,2,3,4,6,7,8-HpCDD	216	120	120	56	40-135	
13C-1,2,3,4,6,7,8-HpCDF	216	130	132	61	40-135	
13C-OCDD	432	270	272	63	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 31OC13C3D5_77.d

Lab ID: 320-4670-64 MSD Client ID: TF2-003-SS1019-000.5 MSD

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDD	21.5	25.6	117	2	20	60-138	
1,2,3,7,8-PeCDD	107	125	115	1	20	70-122	
1,2,3,7,8-PeCDF	107	126	116	1	20	69-134	
2,3,4,7,8-PeCDF	107	127	117	1	20	70-131	
1,2,3,4,7,8-HxCDD	107	134	123	6	20	60-138	
1,2,3,6,7,8-HxCDD	107	128	113	3	20	68-136	
1,2,3,7,8,9-HxCDD	107	126	113	2	20	68-138	
1,2,3,4,7,8-HxCDF	107	125	111	2	20	74-128	
1,2,3,6,7,8-HxCDF	107	124	113	7	20	67-140	
2,3,4,6,7,8-HxCDF	107	118	108	3	20	71-137	
1,2,3,7,8,9-HxCDF	107	118	110	1	20	72-134	
1,2,3,4,6,7,8-HpCDD	107	188	109	7	20	71-128	
1,2,3,4,6,7,8-HpCDF	107	145	120	8	20	71-134	
1,2,3,4,7,8,9-HpCDF	107	129	120	6	20	68-129	
OCDD	215	2730	-109	15	20	70-128	4
OCDF	215	242	105	3	20	63-141	
13C-2,3,7,8-TCDD	215	162	75			40-135	
13C-2,3,7,8-TCDF	215	169	79			40-135	
13C-1,2,3,7,8-PeCDD	215	162	75			40-135	
13C-1,2,3,7,8-PeCDF	215	170	79			40-135	
13C-1,2,3,6,7,8-HxCDD	215	174	81			40-135	
13C-1,2,3,4,7,8-HxCDF	215	190	88			40-135	
13C-1,2,3,4,6,7,8-HpCDD	215	147	68			40-135	
13C-1,2,3,4,6,7,8-HpCDF	215	156	72			40-135	
13C-OCDD	430	351	82			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 08NO13B11D2_010.d

Lab ID: 320-4670-64 MS RA Client ID: TF2-003-SS1019-000.5 MS RA

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDF	21.6	1.5	23.1	100	56-158	
13C-2,3,7,8-TCDF	216	130	138	64	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 08NO13B11D2_011.d

Lab ID: 320-4670-64 MSD RA Client ID: TF2-003-SS1019-000.5 MSD RA

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDF	21.5	22.2	96	4	20	56-158	
13C-2,3,7,8-TCDF	215	161	75			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 16DE13A11D2_013.d

Lab ID: 320-4670-14 MS RA Client ID: TF2-004/5-SS1027-0001 MS RA

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDF	20.9	ND	23.9	114	56-158	H
13C-2,3,7,8-TCDF	209	210	156	75	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 16DE13A11D2_014.d

Lab ID: 320-4670-14 MSD RA Client ID: TF2-004/5-SS1027-0001 MSD RA

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDF	20.8	23.7	114	1	20	56-158	H
13C-2,3,7,8-TCDF	208	150	72			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 16DE13B3D5_49.d

Lab ID: 320-4670-14 MS RADL Client ID: TF2-004/5-SS1027-0001 MS RADL

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
OCDD	209	6100	6160	15	70-128	H 4
13C-OCDD	417	330	261	62	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 16DE13B3D5_50.d

Lab ID: 320-4670-14 MSD RADL Client ID: TF2-004/5-SS1027-0001 MSD RADL

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
OCDD	208	5410	-344	13	20	70-128	H 4
13C-OCDD	415	248	60			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 17DE1311D2_011.d

Lab ID: 320-4670-38 MS RA Client ID: TF2-004/5-SS1054-000.6 MS RA

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDF	20.8	0.17 J	23.5	112	56-158	H
13C-2,3,7,8-TCDF	208	150	132	64	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 17DE1311D2_012.d

Lab ID: 320-4670-38 MSD RA Client ID: TF2-004/5-SS1054-000.6 MSD RA

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDF	19.7	22.3	112	5	20	56-158	H
13C-2,3,7,8-TCDF	197	151	77			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 18DE1311D2_008.d

Lab ID: 320-4670-52 MS RA Client ID: TF2-004/5-SS1064-000.6 MS RA

COMPOUND	SPIKE ADDED (pg/g)	SAMPLE CONCENTRATION (pg/g)	MS CONCENTRATION (pg/g)	MS % REC	QC LIMITS REC	#
2,3,7,8-TCDF	20.3	0.44 J	21.3	103	56-158	H
13C-2,3,7,8-TCDF	203	160	182	90	40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

FORM III
DIOXIN MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Matrix: Solid Level: Low Lab File ID: 18DE1311D2_009.d

Lab ID: 320-4670-52 MSD RA Client ID: TF2-004/5-SS1064-000.6 MSD RA

COMPOUND	SPIKE ADDED (pg/g)	MSD CONCENTRATION (pg/g)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
2,3,7,8-TCDF	20.5	22.5	108	5	20	56-158	H
13C-2,3,7,8-TCDF	205	199	97			40-135	

Column to be used to flag recovery and RPD values

FORM III 8290

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	TF2-003-SS-DUP06-1013	UNITS	TF2-003-SS1015-000.8	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	6100	NG/KG	5400	12.17	700.00
DIOX	1,2,3,4,6,7,8,9-OCDF	11	NG/KG	8.9 J	21.11	2.10
DIOX	1,2,3,4,6,7,8-HPCDD	88	NG/KG	84	4.65	4.00
DIOX	1,2,3,4,6,7,8-HPCDF	9.1	NG/KG	7.4	20.61	1.70
DIOX	1,2,3,4,7,8,9-HPCDF	0.6 J	NG/KG	0.54 J	10.53	0.06
DIOX	1,2,3,4,7,8-HXCDD	1.4 J	NG/KG	1.1 J	24.00	0.30
DIOX	1,2,3,4,7,8-HXCDF	2.3 J	NG/KG	1.7 J	30.00	0.60
DIOX	1,2,3,6,7,8-HXCDD	3.1 J	NG/KG	2.8 J	10.17	0.30
DIOX	1,2,3,6,7,8-HXCDF	1.2 J	NG/KG	0.82 J	37.62	0.38
DIOX	1,2,3,7,8,9-HXCDD	3.1 J	NG/KG	2.9 J	6.67	0.20
DIOX	1,2,3,7,8-PECDD	0.94 J	NG/KG	0.73 J	25.15	0.21
DIOX	1,2,3,7,8-PECDF	0.96 J	NG/KG	0.9 J	6.45	0.06
DIOX	2,3,4,6,7,8-HXCDF	0.89 J	NG/KG	0.85 J	4.60	0.04
DIOX	2,3,4,7,8-PECDF	0.96 J	NG/KG	0.85 J	12.15	0.11
DIOX	2,3,7,8-TCDD	0.25 J	NG/KG	0.15 J	50.00	0.10
DIOX	2,3,7,8-TCDF	0.84 J /p	NG/KG	ND	200.00	0.84 N/A <2XR.L.
DIOX	TOTAL HPCDD	200	NG/KG	190	5.13	10.00
DIOX	TOTAL HPCDF	18	NG/KG	15	18.18	3.00
DIOX	TOTAL HXCDD	33	NG/KG	31 J	6.25	2.00
DIOX	TOTAL HXCDF	16 J	NG/KG	13 J	20.69	3.00
DIOX	TOTAL PECDD	15 J	NG/KG	12 J	22.22	3.00
DIOX	TOTAL PECDF	14 J	NG/KG	12 J	15.38	2.00
DIOX	TOTAL TCDD	7.8 J	NG/KG	7.6 J	2.60	0.20
DIOX	TOTAL TCDF	10 J	NG/KG	8.9 J	11.64	1.10

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	F2-004/5-SS-DUP01-1013	UNITS	F2-004/5-SS1020-0001	RPD	D
DIOX	2,3,7,8-TCDF	0.17 J	NG/KG	0.19 J	11.11	0.02

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	TF2-004/5-SS-DUP03-101	UNITS	TF2-004/5-SS1041-000.7	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	6000	NG/KG	5600	6.90	400.00
DIOX	1,2,3,4,6,7,8,9-OCDF	18	NG/KG	15	18.18	3.00
DIOX	1,2,3,4,6,7,8-HPCDD	63	NG/KG	46	31.19	17.00
DIOX	1,2,3,4,6,7,8-HPCDF	7.3	NG/KG	6.4	13.14	0.90
DIOX	1,2,3,4,7,8-HXCDD	0.49 J	NG/KG	0.43 J	13.04	0.06
DIOX	1,2,3,4,7,8-HXCDF	0.9 J	NG/KG	0.54 J	50.00	0.36
DIOX	1,2,3,6,7,8-HXCDD	0.95 J	NG/KG	0.86 J	9.94	0.09
DIOX	1,2,3,6,7,8-HXCDF	0.76 J	NG/KG	0.74 J	2.67	0.02
DIOX	1,2,3,7,8,9-HXCDD	1.1 J	NG/KG	0.76 J	36.56	0.34
DIOX	1,2,3,7,8-PECDD	0.11 J	NG/KG	0.14 J	24.00	0.03
DIOX	1,2,3,7,8-PECDF	ND	NG/KG	0.067 J /P	200.00	0.07 NA
DIOX	2,3,4,6,7,8-HXCDF	0.34 J /P	NG/KG	0.2 J /P	51.85	0.14 N/A
DIOX	2,3,4,7,8-PECDF	ND	NG/KG	0.18 J /P	200.00	0.18 N/A
DIOX	TOTAL HPCDD	120	NG/KG	82	37.62	38.00
DIOX	TOTAL HPCDF	18	NG/KG	15	18.18	3.00
DIOX	TOTAL HXCDD	7.7 J	NG/KG	6.2 J	21.58	1.50
DIOX	TOTAL HXCDF	6.8 J	NG/KG	5.3 J	24.79	1.50
DIOX	TOTAL PECDD	1.8 J	NG/KG	1.9 J	5.41	0.10
DIOX	TOTAL PECDF	1.3 J	NG/KG	1.1 J	16.67	0.20
DIOX	TOTAL TCDD	0.59 J	NG/KG	0.63 J	6.56	0.04
DIOX	TOTAL TCDF	1 J	NG/KG	1 J	0.00	0.00

<2XR.L.

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	F2-004/5-SS-DUP03-1013	UNITS	F2-004/5-SS1041-000.7/	RPD	D
DIOX	2,3,7,8-TCDF	0.15 J /P	NG/KG	ND	200.00	0.15 N/A<2XR.L.

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	TF2-004/5-SS-DUP04-101	UNITS	TF2-004/5-SS1061-000.6	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	3600	NG/KG	3400	5.71	200.00
DIOX	1,2,3,4,6,7,8,9-OCDF	49	NG/KG	40	20.22	9.00
DIOX	1,2,3,4,6,7,8-HPCDD	120	NG/KG	110	8.70	10.00
DIOX	1,2,3,4,6,7,8-HPCDF	23	NG/KG	22	4.44	1.00
DIOX	1,2,3,4,7,8,9-HPCDF	1 J	NG/KG	1.4 J	33.33	0.40
DIOX	1,2,3,4,7,8-HXCDD	2.2 J	NG/KG	2.3 J	4.44	0.10
DIOX	1,2,3,4,7,8-HXCDF	2.1 J	NG/KG	1.9 J	10.00	0.20
DIOX	1,2,3,6,7,8-HXCDD	5.6	NG/KG	5.7	1.77	0.10
DIOX	1,2,3,6,7,8-HXCDF	1.3 J	NG/KG	1.3 J	0.00	0.00
DIOX	1,2,3,7,8,9-HXCDD	4.9 J	NG/KG	4.7 J	4.17	0.20
DIOX	1,2,3,7,8-PECDD	0.91 J	NG/KG	0.98 J	7.41	0.07
DIOX	1,2,3,7,8-PECDF	0.34 J	NG/KG	0.3 J	12.50	0.04
DIOX	2,3,4,6,7,8-HXCDF	1.2 J	NG/KG	1.2 J	0.00	0.00
DIOX	2,3,4,7,8-PECDF	0.51 J	NG/KG	0.51 J	0.00	0.00
DIOX	2,3,7,8-TCDD	0.2 J /P	NG/KG	ND	200.00	0.20 NA<2XR.L.
DIOX	TOTAL HPCDD	220	NG/KG	200	9.52	20.00
DIOX	TOTAL HPCDF	62	NG/KG	56	10.17	6.00
DIOX	TOTAL HXCDD	36	NG/KG	34 J	5.71	2.00
DIOX	TOTAL HXCDF	30	NG/KG	28	6.90	2.00
DIOX	TOTAL PECDD	4.8 J	NG/KG	4.7 J	2.11	0.10
DIOX	TOTAL PECDF	9.2 J	NG/KG	9.5 J	3.21	0.30
DIOX	TOTAL TCDD	1.2 J	NG/KG	1.3 J	8.00	0.10
DIOX	TOTAL TCDF	4.1 J	NG/KG	5 J	19.78	0.90

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	F2-004/5-SS-DUP04-1013	UNITS	F2-004/5-SS1061-000.6/	RPD	D
DIOX	2,3,7,8-TCDF	0.42 J	NG/KG	0.43 J	2.35	0.01

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	TF2-004/5-SS-DUP05-101	UNITS	TF2-004/5-SS1065-000.5	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	3100	NG/KG	3000	3.28	100.00
DIOX	1,2,3,4,6,7,8,9-OCDF	89	NG/KG	100	11.64	11.00
DIOX	1,2,3,4,6,7,8-HPCDD	170	NG/KG	170	0.00	0.00
DIOX	1,2,3,4,6,7,8-HPCDF	46	NG/KG	51	10.31	5.00
DIOX	1,2,3,4,7,8,9-HPCDF	2.4 J	NG/KG	2.9 J	18.87	0.50
DIOX	1,2,3,4,7,8-HXCDD	2.6 J	NG/KG	2.7 J	3.77	0.10
DIOX	1,2,3,4,7,8-HXCDF	4 J	NG/KG	4.1 J	2.47	0.10
DIOX	1,2,3,6,7,8-HXCDD	6.5	NG/KG	6.8	4.51	0.30
DIOX	1,2,3,6,7,8-HXCDF	3.1 J	NG/KG	3.1 J	0.00	0.00
DIOX	1,2,3,7,8,9-HXCDD	5.9	NG/KG	5.4	8.85	0.50
DIOX	1,2,3,7,8-PECDD	1.1 J	NG/KG	1.1 J	0.00	0.00
DIOX	1,2,3,7,8-PECDF	0.87 J	NG/KG	0.94 J	7.73	0.07
DIOX	2,3,4,6,7,8-HXCDF	3 J	NG/KG	3.3 J	9.52	0.30
DIOX	2,3,4,7,8-PECDF	1.4 J	NG/KG	1.4 J	0.00	0.00
DIOX	2,3,7,8-TCDD	ND	NG/KG	0.18 J ip	200.00	0.18 NA<2XR.L.
DIOX	2,3,7,8-TCDF	1.2	NG/KG	1	18.18	0.20
DIOX	TOTAL HPCDD	290	NG/KG	290	0.00	0.00
DIOX	TOTAL HPCDF	120 J	NG/KG	130	8.00	10.00
DIOX	TOTAL HXCDD	47 J	NG/KG	45	4.35	2.00
DIOX	TOTAL HXCDF	68	NG/KG	68 J	0.00	0.00
DIOX	TOTAL PECDD	8.3 J	NG/KG	7.4 J	11.46	0.90
DIOX	TOTAL PECDF	29	NG/KG	26 J	10.91	3.00
DIOX	TOTAL TCDD	2.8 J	NG/KG	1.8 J	43.48	1.00
DIOX	TOTAL TCDF	9.6 J	NG/KG	11 J	13.59	1.40

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	TF2-004/5-SS-DUP01-101	UNITS	TF2-004/5-SS1020-0001	RPD	D	
DIOX	1,2,3,4,6,7,8,9-OCDD	6600	NG/KG	6000	9.52	600.00	
DIOX	1,2,3,4,6,7,8,9-OCDF	7.3 J	NG/KG	4.9 J	39.34	2.40	
DIOX	1,2,3,4,6,7,8-HPCDD	49	NG/KG	44	10.75	5.00	
DIOX	1,2,3,4,6,7,8-HPCDF	4.1 J	NG/KG	3.6 J	12.99	0.50	
DIOX	1,2,3,4,7,8,9-HPCDF	0.31 J	NG/KG	0.39 J	22.86	0.08	
DIOX	1,2,3,4,7,8-HXCDD	0.55 J	NG/KG	0.62 J	11.97	0.07	
DIOX	1,2,3,4,7,8-HXCDF	0.46 J	NG/KG	0.41 J	11.49	0.05	
DIOX	1,2,3,6,7,8-HXCDD	1.2 J	NG/KG	0.9 J	28.57	0.30	
DIOX	1,2,3,6,7,8-HXCDF	1.4 J /P	NG/KG	0.81 J /P	53.39	0.59	N/A<2xR.L.
DIOX	1,2,3,7,8,9-HXCDD	1.4 J	NG/KG	1.2 J	15.38	0.20	
DIOX	1,2,3,7,8-PECDD	0.24 J	NG/KG	0.27 J	11.76	0.03	
DIOX	2,3,4,6,7,8-HXCDF	0.55 J	NG/KG	0.44 J	22.22	0.11	
DIOX	2,3,4,7,8-PECDF	0.15 J	NG/KG	0.14 J	6.90	0.01	
DIOX	2,3,7,8-TCDD	ND	NG/KG	0.12 J /P	200.00	0.12	N/A<2xR.L.
DIOX	TOTAL HPCDD	86	NG/KG	75	13.66	11.00	
DIOX	TOTAL HPCDF	10	NG/KG	8.1	20.99	1.90	
DIOX	TOTAL HXCDD	10 J	NG/KG	8.8 J	12.77	1.20	
DIOX	TOTAL HXCDF	10 J	NG/KG	9.9 J	1.01	0.10	
DIOX	TOTAL PECDD	1.8 J	NG/KG	2 J	10.53	0.20	
DIOX	TOTAL PECDF	4.2 J	NG/KG	4.8 J	13.33	0.60	
DIOX	TOTAL TCDD	0.58 J /P	NG/KG	1.3 J /W	76.60	0.72	N/A<2xR.L.
DIOX	TOTAL TCDF	1.3 J /W	NG/KG	4.8 J /W	114.75	3.50	

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NAVSTA NEWPORT
SOIL DATA
320-4670-1

FRACTION	CHEMICAL	TF2-004/5-SS-DUP02-101	UNITS	TF2-004/5-SS1035-0001	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	3600	NG/KG	4000	10.53	400.00
DIOX	1,2,3,4,6,7,8,9-OCDF	110	NG/KG	280	87.18	170.00
DIOX	1,2,3,4,6,7,8-HPCDD	330	NG/KG	330	0.00	0.00
DIOX	1,2,3,4,6,7,8-HPCDF	60	NG/KG	110	58.82	50.00
DIOX	1,2,3,4,7,8,9-HPCDF	3.3 J /P	NG/KG	5.7	53.33	2.40 N/A 2XR.L.
DIOX	1,2,3,4,7,8-HXCDD	4.5 J	NG/KG	4.5 J	0.00	0.00
DIOX	1,2,3,4,7,8-HXCDF	5.3 J/P	NG/KG	11	69.94	5.70 N/A 2XR,L.
DIOX	1,2,3,6,7,8-HXCDD	16	NG/KG	14	13.33	2.00
DIOX	1,2,3,6,7,8-HXCDF	3.3 J	NG/KG	4.6 J	32.91	1.30
DIOX	1,2,3,7,8,9-HXCDD	8.8	NG/KG	11	22.22	2.20
DIOX	1,2,3,7,8-PECDD	1.8 J	NG/KG	2.1 J	15.38	0.30
DIOX	1,2,3,7,8-PECDF	1 J	NG/KG	1.1 J	9.52	0.10
DIOX	2,3,4,6,7,8-HXCDF	2.5 J	NG/KG	3.3 J	27.59	0.80
DIOX	2,3,4,7,8-PECDF	1.2 J	NG/KG	2 J	50.00	0.80
DIOX	2,3,7,8-TCDD	0.3 J	NG/KG	0.41 J	30.99	0.11
DIOX	2,3,7,8-TCDF	ND	NG/KG	1.3	200.00	1.30
DIOX	TOTAL HPCDD	590	NG/KG	580	1.71	10.00
DIOX	TOTAL HPCDF	150	NG/KG	210	33.33	60.00
DIOX	TOTAL HXCDD	96	NG/KG	94	2.11	2.00
DIOX	TOTAL HXCDF	69 J	NG/KG	81	16.00	12.00
DIOX	TOTAL PECDD	13 J	NG/KG	13 J	0.00	0.00
DIOX	TOTAL PECDF	21 J	NG/KG	25 J	17.39	4.00
DIOX	TOTAL TCDD	4 J	NG/KG	4.4 J	9.52	0.40
DIOX	TOTAL TCDF	11	NG/KG	12 J	8.70	1.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

PCDD/PCDF CALCULATION SOLIDS/SOILS/SEDIMENTS	SAMPLE TF2-004/5-SS1060.000.5		
TARGET ANALYTE	2,3,7,8-TCDF		
ANALYTE RESPONSE ION 1	2.17E+05		
ANALYTE RESPONSE ION 2	2.88E+05		
INTERNAL STD ION 1 RESPONSE	2.23E+07		
INTERNAL STD ION 2 RESPONSE	2.76E+07		
CONCENTRATION OF INTERNAL STANDARD (Conc.)	100	pg/ul	
Relative Response Factor Analyte (RRF)	1.066		
Weight of Initial sample grams (WT)	10.06	gm	
VOLUME OF FINAL EXTRACT (Vf)	20	uL	
DILUTION FACTOR (DF)	1		
% MOISTURE	4.4		
SOLIDS FRACTION	0.956		
Correction factor 1 (CF1)	1		
		0.9518	on column result
$\frac{[(\text{analyte response ion1}+\text{analyte response ion2})/(\text{int. std. response ion1} + \text{int. std. response ion2})] * (Vf) * \text{Conc.} * DF}{RRF * WT * CF1 * \text{SOLIDS FRACTION}}$	=	1.9794	pg/g or ng/kg

FORM I
DIOXIN ORGANICS ANALYSIS DATA SHEET

Lab Name:	TestAmerica Sacramento	Job No.:	320-4670-1
SDG No.:			
Client Sample ID:	TF2-004/5-SS1060.000.5 RA	Lab Sample ID:	320-4670-48 RA
Matrix:	Solid	Lab File ID:	08NO13B11D2_004.d
Analysis Method:	8290	Date Collected:	10/22/2013 08:15
Extract. Method:	8290	Date Extracted:	10/25/2013 15:42
Sample wt/vol:	10.06(g)	Date Analyzed:	11/09/2013 00:30
Con. Extract Vol.:	20(uL)	Dilution Factor:	1
Injection Volume:	2(uL)	Level: (low/med)	Low
% Moisture:	4.4	GPC Cleanup:(Y/N)	N
Analysis Batch No.:	29560	Units:	pg/g

CAS NO.	COMPOUND NAME	RESULT	Q	RL	EDL
51207-31-9	2,3,7,8-TCDF	2.0		1.0	0.067

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
89059-46-1	13C-2,3,7,8-TCDF	108		40-135

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\Sacchrom\ChromData\11D5\20131111-8575.b\08NO13B11D2_004.d
Lims ID: 320-4670-A-48-A Lab Sample ID: 320-4670-48
Client ID: TF2-004/5-SS1060.000.5
Sample Type: Client
Inject. Date: 09-Nov-2013 00:30:51 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28431
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D5

Method: \\Sacchrom\ChromData\11D5\20131111-8575.b\DXN_DB225_11D2.m
Limit Group: HR - 8290 - ICAL
Last Update: 15-Nov-2013 09:05:05 Calib Date: 27-Aug-2013 18:37:08
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\Sacchrom\ChromData\11D5\20130828-6877.b\27AU13A11D2_007.d

Column 1 : DB-225 (0.32 mm) Detector F1:HRSIR
Process Host: XAWRK011

First Level Reviewer: grandfieldv Date: 15-Nov-2013 09:06:00

Compound	RT (min.)	Area	Ratio	Ical RRF	Amount pg/ul	EMPC pg/ul	Noise EDL	Final EDL	%Rec	Flags
* 13C-1,2,3,4-TCDD	15.972	33260490	0.81	1.4E+06	100.0	100.0				
D 13C-2,3,7,8-TCDF	17.207	49851509	0.81	1.3881	108.0	108.0	0.1850	0.1850	108	
2,3,7,8-TCDF	17.235	505815	0.75	1.0655	0.9522	0.9522	0.0321	0.0321		M
D 13C-2,3,7,8-TCDD	15.739	34128407	0.80	0.9803	104.7	104.7	0.1951	0.1951	105	
2,3,7,8-TCDD	15.739	85689	0.79	1.2046	0.2084	0.2084	0.0425	0.0425		

QC Flag Legend

Review Flags
M - Manually Integrated

TestAmerica Sacramento
Target Compound Quantitation Worksheet Report

Data File: \\Sacchrom\ChromData\11D5\20131111-8575.b\08NO13B11D2_004.d
Lims ID: 320-4670-A-48-A Lab Sample ID: 320-4670-48
Client ID: TF2-004/5-SS1060.000.5
Sample Type: Client
Inject. Date: 09-Nov-2013 00:30:51 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 2.0 ul Dil. Factor: 1.0000
Sample Info: 320-28431
Misc. Info.: DB225RES
Operator ID: Instrument ID: 11D5

Method: \\Sacchrom\ChromData\11D5\20131111-8575.b\DXN_DB225_11D2.m
Limit Group: HR - 8290 - ICAL
Last Update: 15-Nov-2013 09:05:05 Calib Date: 27-Aug-2013 18:37:08
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\Sacchrom\ChromData\11D5\20130828-6877.b\27AU13A11D2_007.d

Column 1 : DB-225 (0.32 mm) Detector F1:HRSIR
Process Host: XAWRK011

First Level Reviewer: grandfieldv Date: 15-Nov-2013 09:06:00

Signal	RT (min.)	REL RT	Area	Height	Avg Noise	EDL Height	S/N	Ratio(Limits)	Flags
13C-1,2,3,4-TCDD									
331.9368	15.972		14855041	3636720	3250	8125	1119.0		
333.9339	15.972		18405449	4195636	2743	6857	1529.6	0.81(0.65-0.89)	
13C-2,3,7,8-TCDF									
315.9419	17.207	1.077	22252626	4489642	4286	10715	1047.5		
317.9389	17.207	1.077	27598883	5728050	3758	9395	1524.2	0.81(0.65-0.89)	
2,3,7,8-TCDF									M
303.9016	17.235	1.002	217418	45952	615	1537	74.7		M
305.8987	17.221	1.001	288397	64010	785	1962	81.5	0.75(0.65-0.89)	
13C-2,3,7,8-TCDD									
331.9368	15.739	0.985	15198709	3850736	3250	8125	1184.8		
333.9339	15.739	0.985	18929698	4556084	2743	6857	1661.0	0.80(0.65-0.89)	
2,3,7,8-TCDD									
319.8965	15.739	1.000	37761	7276	703	1757	10.3		
321.8936	15.766	1.002	47928	11027	1020	2550	10.8	0.79(0.65-0.89)	

QC Flag Legend

Review Flags
M - Manually Integrated

FORM VII
DIOXIN CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-4670-1

SDG No.:

Lab Sample ID: CCV 320-29560/2 Calibration Date: 11/08/2013 23:13

Instrument ID: 11D5 Calib Start Date: 08/27/2013 15:57

GC Column: DB-225 ID: 0.32(mm) Calib End Date: 08/27/2013 18:37

Lab File ID: 08NO13B11D2_002.d Conc. Units: pg/uL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
2,3,7,8-TCDD	AveID	1.205	1.094		9.08	10.0	-9.2	20.0
2,3,7,8-TCDF	AveID	1.066	0.9915		9.30	10.0	-7.0	20.0
13C-2,3,7,8-TCDD	Ave	0.9803	1.002		102	100	2.2	30.0
13C-2,3,7,8-TCDF	Ave	1.388	1.503		108	100	8.3	30.0
37Cl4-2,3,7,8-TCDD	Ave	1.360	1.414		5.20	5.00	4.0	

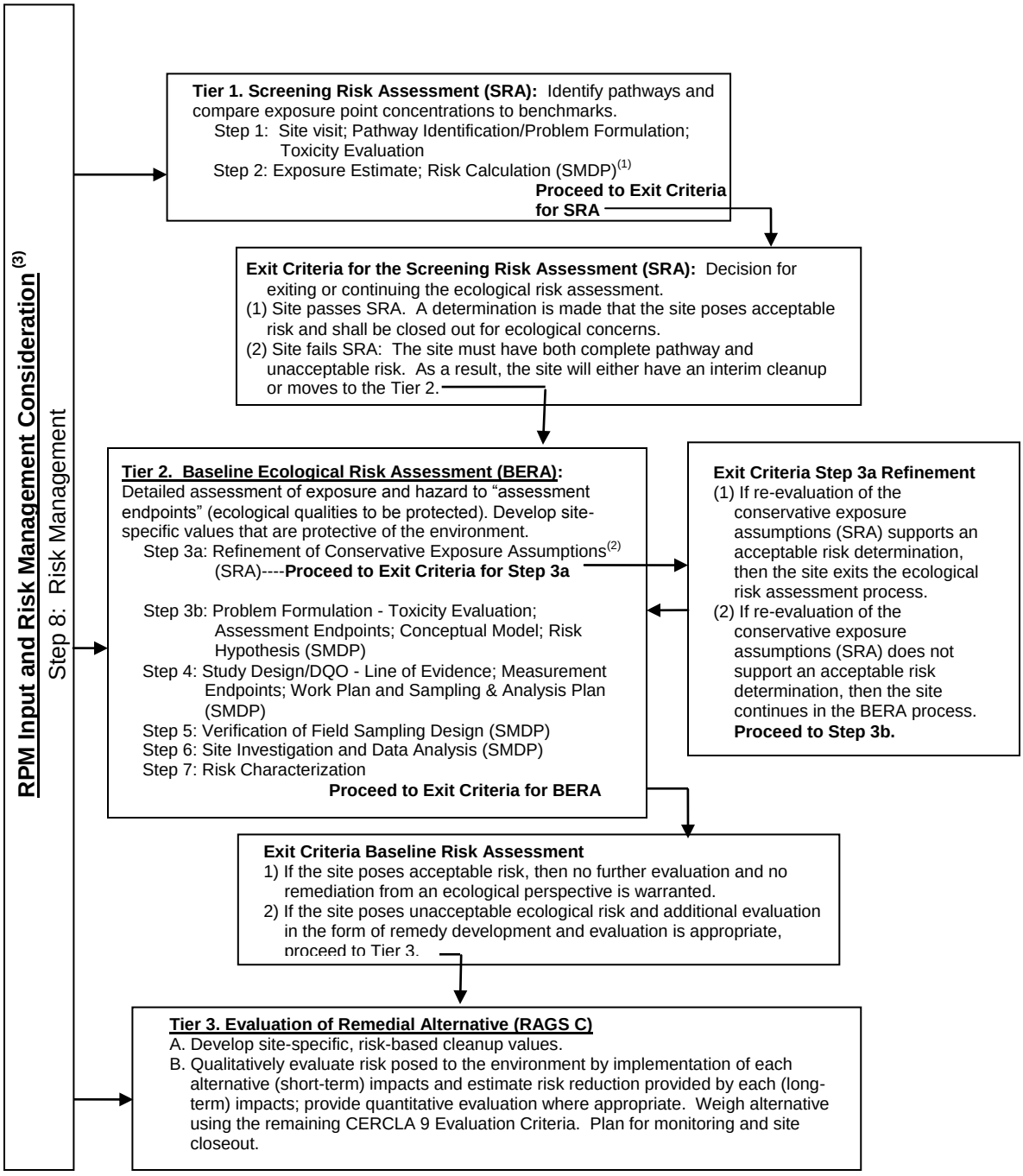
APPENDIX I

SUPPORTING INFORMATION FOR THE ECOLOGICAL RISK ASSESSMENT

NAVY ECOLOGICAL RISK ASSESSMENT TIERED APPROACH

FIGURE 1

NAVY ECOLOGICAL RISK ASSESSMENT TIERED APPROACH
TANK FARM 2
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND



Notes: 1 See USEPA's 8 Steps ERA Process for requirements for each Scientific Management Decision Point (SMDP).
2 Refinement includes but is not limited to background, bioavailability, detection frequency, etc.
3 Risk management is incorporated throughout the tiered approach.

TOXICITY REFERENCE VALUES

TABLE 1

TOXICITY REFERENCE VALUES
TANK FARM 2
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Parameter	Mammal		Bird	
	NOAEL	LOAEL	NOAEL	LOAEL
Polycyclic Aromatic Hydrocarbons				
2-Methylnaphthalene	65.6	356	2	20
Acenaphthene	65.6	356	2	20
Acenaphthylene	65.6	356	2	20
Anthracene	65.6	356	2	20
Benzo(a)anthracene	0.615	38.4	2	20
Benzo(a)pyrene	0.615	38.4	2	20
Benzo(b)fluoranthene	0.615	38.4	2	20
Benzo(g,h,i)perylene	0.615	38.4	2	20
Benzo(k)fluoranthene	0.615	38.4	2	20
Chrysene	0.615	38.4	2	20
Dibenzo(a,h)anthracene	0.615	38.4	2	20
Fluoranthene	65.6	356	2	20
Fluorene	65.6	356	2	20
Indeno(1,2,3-cd)pyrene	0.615	38.4	2	20
Phenanthrene	65.6	356	2	20
Pyrene	0.615	38.4	2	20
PCBs				
Aroclor-1260*	0.068	0.68	0.18	1.8
Dioxins/Furans				
2,3,7,8-TCDD Equivalents	0.000001	0.00001	0.000014	0.00014
Metals				
Aluminum	1.93	19.3	109.7	1097
Antimony	0.059	2.76	NV	NV
Beryllium	0.532	0.673	NV	NV
Chromium	2.40	58.17	2.66	15.63
Copper	5.6	82.7	4.05	34.87
Iron	50	500	100	1000
Lead	4.7	186.4	1.63	44.63
Mercury	0.032	0.16	0.0064	0.064
Thallium	0.0074	0.074	NV	NV
Vanadium	4.16	9.44	0.34	1.69
Zinc	75.4	297.58	66.1	171.44

Notes:
The sources of these NOAELS and LOAELS are presented in Table 2 of this appendix.

The NOAELS and LOAELS in the source table were divided by 10 if a subchronic study was the basis for the value. Also, if only a NOAEL was available, the value was multiplied by 10 to estimate the LOAEL. If only a LOAEL was available, the value was divided by 10 to estimate the NOAEL.

* - Values for Aroclor-1254.
NV - No value available

TABLE 2
SOURCES AND ENDPOINTS FOR NOAELS AND LOAELS FOR TERRESTRIAL WILDLIFE
TANK FARM 2
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Parameters	Concentration (mg/kg-day)	Endpoint	Effect	Chronic/ Subchronic	Species	Primary Reference	Source of Reference
Dioxins/Furans							
2,3,7,8-TCDD	0.000001	NOAEL	reproduction	chronic	rat	Murray et al., 1979	Sample et.al., 1996
2,3,7,8-TCDD	0.00001	LOAEL	reproduction	chronic	rat	Murray et al., 1979	Sample et.al., 1996
2,3,7,8-TCDD	0.000014	NOAEL	reproduction	chronic	pheasant	Nosek et al., 1992	Sample et.al., 1996
2,3,7,8-TCDD	0.00014	LOAEL	reproduction	chronic	pheasant	Nosek et al., 1992	Sample et.al., 1996
PAHs							
7,12-Dimethylbenz(a)anthracene	20	LOAEL	systemic	chronic	nestling/starlings	Trust et al., 1994	
7,12-Dimethylbenz(a)anthracene	2	NOAEL	systemic	chronic	nestling/starlings	Trust et al., 1994	
High Molecular Weight PAHs	38.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
High Molecular Weight PAHs	0.615	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Low Molecular Weight PAHs	356	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Low Molecular Weight PAHs	65.6	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
PCBs							
Aroclor-1254	1.8	LOAEL	reproductive	chronic	pheasant	Dahlgren et al., 1972	Sample et.al., 1996
Aroclor-1254	0.68	LOAEL	reproduction	chronic	mouse	McCoy et al., 1995	Sample et.al., 1996
Metals							
Aluminum	19.3	LOAEL	reproductive	chronic	mouse	Ondreicka et al., 1966	Sample et.al., 1996
Aluminum	109.7	NOAEL	reproductive	chronic	ringed dove	Carriere et al., 1986	Sample et.al., 1996
Antimony	2.76	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Antimony	0.059	NOAEL	reproduction & growth	chronic	rat	USEPA, 2005	
Beryllium	0.673	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Beryllium	0.532	NOAEL	Survival	chronic	rat	USEPA, 2005	
Chromium(III)	15.63	LOAEL	reproduction & growth	chronic	birds	USEPA, 2008	
Chromium(III)	58.17	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2008	
Chromium(III)	2.66	NOAEL	reproduction & growth	chronic	birds	USEPA, 2008	
Chromium(III)	2.4	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2008	
Iron	500	LOAEL	unknown	chronic	rabbit	NAS, 1980	
Iron	1000	LOAEL	unknown	chronic	poultry	NAS, 1980	
Lead	44.6	LOAEL	reproduction & growth	chronic	birds	USEPA, 2005	
Lead	186.4	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Lead	1.63	NOAEL	reproduction & growth	chronic	chicken	USEPA, 2005	
Lead	4.7	NOAEL	reproduction & growth	chronic	rat	USEPA, 2005	
Mercury	0.064	LOAEL	reproductive	chronic	mallard duck	Heinz, 1979	Sample et.al., 1996
Mercury	0.16	LOAEL	reproductive	chronic	rat	Verschuuren et al., 1976	Sample et.al., 1996
Mercury	0.032	NOAEL	reproductive	chronic	rat	Verschuuren et al., 1976	Sample et.al., 1996
Thallium	0.74	LOAEL	reproductive	subchronic	rat	Formigli et al., 1986	Sample et.al., 1996
Vanadium	1.7	LOAEL	reproduction & growth	chronic	birds	USEPA, 2005	
Vanadium	9.436	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2005	
Vanadium	0.344	NOAEL	reproduction & growth	chronic	chicken	USEPA, 2005	
Vanadium	4.16	NOAEL	reproduction & growth	chronic	mouse	USEPA, 2005	
Zinc	297.58	LOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Zinc	171.44	LOAEL	reproduction & growth	chronic	birds	USEPA, 2007	
Zinc	75.4	NOAEL	reproduction & growth	chronic	mammals	USEPA, 2007	
Zinc	66.1	NOAEL	reproduction & growth	chronic	birds	USEPA, 2007	

Notes:

NOAEL = No Observed Adverse Effects Level

LOAEL = Lowest Observed Adverse Effects Level

The NOAELS and LOAELS for the following PAHs are based on the Low Molecular Weight PAH values: acenapthylene, acenaphthene, anthracene, fluoranthene, fluorene, phenanthrene, and 2-methylnaphthalene.

The NOAELS and LOAELS for the following PAHs are based on the High Molecular Weight PAH values: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-c,d)pyrene, and pyrene.

The NOAELS and LOAELS for the PAHs for birds were based on 7,12-dimethylbenz(a)anthracene.

The LOAELs used for several metals were calculated as the geometric mean of growth and reproduction data from the Ecological Soil Screening Levels (USEPA, 2005, 2006, 2007, 2008).

The LOAELs for Aroclor-1254 were used as surrogates for Aroclor-1260.

References for the NOAELS and LOAELs are presented in this appendix and Titled "TRV Source and Endpoint References".

* Value has been adjusted for chronic effects.

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RECEPTOR PROFILES AND EXPOSURE FACTORS CALCULATION

FOOD CHAIN MODEL RECEPTOR PROFILES
TANK FARM 2
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

The following sections present the receptor profiles for the short-tailed shrew, American robin, meadow vole, and northern bobwhite quail. The majority of the information for the profiles was obtained from the Wildlife Exposure Factors Handbook (USEPA, 1993). The data for the incidental soil ingestion rates were obtained from the USEPA Ecological Soil Screening Guidance (USEPA, 2007).

The food ingestion rates are listed in g/g (of body weight)-day on a wet weight basis but were converted to dry weight for the ERA. The home ranges are presented in hectares in USEPA (1993) but were converted to acres by multiplying the number of hectares by 2.471. Also note that the estimated percent of soil/sediment in the diets are listed in dry weight. Table 3 of this appendix presents the exposure parameters and Table 4 of this appendix presents the calculation of the exposure parameters and how the calculations were done.

Short-Tailed Shrew (*Blarina brevicauda*)

Shrews inhabit a wide variety of habitats and are common in areas with abundant vegetative cover. They need cool, moist habitats because of their high metabolic and water-loss rates. The short-tailed shrew is primarily carnivorous, eating insects such as earthworms, slugs, and snails.

The adult body weight for the short-tailed shrew in various habitats ranged from 0.015 to 0.01921 kg with an average of 0.0161 kg. The listed food ingestion rates for shrews are 0.49 and 0.62 g/g-day (wet-weight). The food ingestion rates in kg/day were calculated as shown in Table 4 of this appendix. The food ingestion rates were then multiplied by 0.16, which is the percent solids of worms (Sample et al., 1997) to convert the ingestion rate from a wet-weight value to a dry-weight value. The incidental soil ingestion rate was calculated by multiplying the ingestion rate by the percentage of soil that is incidentally ingested (assumed 3% for conservative food chain model and 0.9% for the average food chain model) from USEPA (2007). 3% is the 90th percentile value and 0.9% is the 50th percentile value from USEPA (2007). The home range for the shrew (0. 9699 acres) was calculated using data from a tamarek bog in Manitoba (only value available).

American Robin (*Turdus migratorius*)

American robins' habitats include parks, lawns, moist forests, swamps, open woodlands, and orchards. Robins forage on the ground in open areas, along habitat edges, or the edges of streams. They also may forage above ground in shrubs and within the lower branches of trees. In the months preceding and during the breeding season, robins feed primarily on invertebrates and on some fruits. During the rest of the year their diet consists primarily of fruits.

The adult body weight for the American robin in New York woodlands and forests and in Pennsylvania ranged

from 0.0773 to 0.0862 kg with an average of 0.0804 kg. The only listed food ingestion rates were for robins in Kansas (1.52 g/g-day) and California (0.89 g/g-day), with an average of 1.205 g/g-day. Studies calculating ingestion rates for the robin included in the USEPA (1993) are based on a diet comprised of berries. Based on these studies, the food ingestion rates in kg/day were calculated as shown in Table 4 of this appendix. The food ingestion rates were then multiplied by 0.23, which is the percent solids of fruit (Sample et al., 1997) to convert the ingestion rate from a wet-weight value to a dry-weight value. However, because it is assumed that the robin 100 percent of the robin's diet are worms for the food chain models, the ingestion rate for the robin was calculated using field metabolism scaling as presented on Table 4 of this appendix (Nagy et al., 1999). These are the values that will be used in the food chain model for this site.

The incidental soil ingestion rate was calculated by multiplying the ingestion rate by the percentage of soil that is incidentally ingested (assumed 16.4% for conservative food chain model and 6.4% for the average food chain model based on the American woodcock) from USEPA (2007). The values are from the woodcock since no incidental soil ingestion rate was available for the robin.

The home range for the robin was calculated using data from Tennessee and a New York dense conifer forest. The values ranged from 0.27 to 1.04 acres with an average home range of 0.6095 acres.

Meadow Vole (*Microtus pennsylvanicus*)

Meadow voles inhabit grassy fields, marshes, and bogs; however, they prefer fields with more grass, more cover, and fewer woody plants. They typically consume green succulent vegetation, sedges, seeds, roots, bark, fungi, insects, and animal matter. However, green succulent vegetation makes up the majority of their diet.

The adult body weight for the vole ranges from 0.017 to 0.0524 kg with an average of 0.0358 kg. The only listed food ingestion rates for voles range from 0.30 to 0.35 g/g-day (wet-weight), with an average of 0.325 g/g-day. The food ingestion rates in kg/day were calculated as shown in Table 4 of this appendix. The food ingestion rates were then multiplied by 0.15, which is the percent solids of plant foliage (USEPA, 2007) to convert the ingestion rate from a wet-weight value to a dry-weight value. Finally, the incidental soil ingestion rate is calculated by multiplying the ingestion rate by the percentage of soil that is incidentally ingested (assumed 3.2% for the conservative food chain model and 1.2% for the average food chain model) from USEPA (2007). The home range for the meadow vole ranges from 0.000494 to 0.2051 acres with an average home range of 0.0659 acres.

Northern Bobwhite Quail (*Colinus virginianus*)

Quails inhabit grasslands, idle fields, pastures, and large clumps of grasses. Bobwhite quails forage in areas with open vegetation, some bare ground, and light litter. Seeds from weeds, woody plants, and grasses

comprise the majority of an adult's diet, although green vegetation has been found to dominate the diet of this species in winter in the southern areas of the United States.

The adult body weight for the bobwhite quail ranges from 0.154 to 0.1939 kg with an average of 0.1751 kg. The listed food ingestion rates for quails range from 0.067 to 0.093 g/g-day (dry-weight), with an average of 0.078 g/g-day. The food ingestion rates in kg/day were calculated as shown in Table 4 of this appendix. The food ingestion rates were already dry-weight values. Finally, the incidental soil ingestion rate is calculated by multiplying the ingestion rate by the percentage of soil that is incidentally ingested, which was 13.9% for conservative food chain model and 6.1% for the average food chain model from USEPA (2007) and was based on the mourning dove.

The home range for the quail ranges from 8.9 to 41.3 acres with an average home range of 18.8 acres.

References:

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TABLE 3

EXPOSURE PARAMETERS FOR THE TERRESTRIAL WILDLIFE MODEL
TANK FARM 2
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Species/Exposure Inputs	Conservative Inputs		Average Inputs	
	Values	Units	Values	Units
Bobwhite Quail				
Body Weight = BW	1.540E-01	kg	1.751E-01	kg
Food Ingestion Rate = If	1.628E-02	kg/day	1.361E-02	kg/day
Soil Ingestion Rate = Is	2.263E-03	kg/day	8.304E-04	kg/day
Home Range = HR	Assume 100% on site		1.880E+01	acres
Meadow Vole				
Body Weight = BW	1.700E-02	kg	3.580E-02	kg
Food Ingestion Rate = If	1.878E-03	kg/day	1.744E-03	kg/day
Soil Ingestion Rate = Is	6.010E-05	kg/day	2.093E-05	kg/day
Home Range = HR	Assume 100% on site		6.590E-02	acres
American Robin				
Body Weight = BW	7.73E-02	kg	8.04E-02	kg
Food Ingestion Rate = If	1.25E-02	kg/day	1.19E-02	kg/day
Soil Ingestion Rate - Is	2.046E-03	kg/day	7.601E-04	kg/day
Home Range = HR	Assume 100% on site		6.095E-01	acres
Short-Tailed Shrew				
Body Weight = BW	1.500E-02	kg	1.610E-02	kg
Food Ingestion Rate = If	1.600E-03	kg/day	1.433E-03	kg/day
Soil Ingestion Rate - Is	4.801E-05	kg/day	1.289E-05	kg/day
Home Range = HR	Assume 100% on site		9.699E-01	acres

Notes:
The exposure factors were derived as presented in Table 2 of this appendix.

The soil ingestion rates were calculated by multiplying the food ingestion rates by the following incidental soil ingestion rates:

	Conservative	Average	Source
Bobwhite quail	13.90%	6.10%	1, 2
Meadow Vole	3.20%	1.20%	1
American Robin	16.40%	6.40%	1,3
Short-tailed Shrew	3%	0.90%	1

1 - USEPA (U.S. Environmental Protection Agency), 2007. Ecological Soil Screening Level Guidance, Office of Emergency and Remedial Response.
2 - Based on the mourning dove.
3 - Based on the American woodcock

TABLE 4

DRY WEIGHT DERIVATION OF BODY WEIGHT AND FOOD INTAKE FACTORS FOR TERRESTRIAL FOOD CHAIN MODELS
TANK FARM 2
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Data from USEPA (1993)				Derivation of Factors for Modeling		
Species/Factor	**Age/Sex/ Cond./Seas.**	**Value**	**Study Average**	**Calculation of Values**		**Notes**
American Robin						
Body Weight (g)	A B	77.3	77.3	Minimum Value	0.0773 kg	
				Maximum Value	0.0862 kg	
	A M nonbreeding	86.2		Overall Study Average	0.0804 kg	
	A F nonbreeding	83.6	84.9			
	A M breeding	77.4				
	A F breeding	80.6	79			
Food Ingestion Rate (g/g-day)	B B free-living	0.89		*For Eating Mostly Fruit*		
				Conservative value:	0.0281 kg/day	Maximum ingestion rate * Average Body weight * 0.23[(1)]
	- B free-living	1.52				
				Average value	0.0223 kg/day	Average ingestion rate * Average Body weight * 0.23[(1)]
						[(1)] - 0.23 = percent solids in fruit to convert to a dry weight ingestion rate
	Overall Study Average		1.21			
				Based on Metabolic Scaling		
					0.01247 kg/day	Used maximum body weight in below equation
					0.01188 kg/day	Used average body weight in below equation
						Food ingestion rates were calculated from Nagy et al., (1999) for insectivores as follows: FI = (9.7*BW(g)$^{0.705}$)/18kJ/g/1000
Short-Tailed Shrew						
Body Weight (g)	A B	15	15	Minimum Value	0.0150 kg	
				Maximum Value	0.01921 kg	
	M summer	19.21	17.27	Overall Study Average	0.01613 kg	
	F summer	17.4				
	M fall	16.87				
	M fall	15.58				
Food Ingestion Rate (g/g-day)	A B	0.49		Conservative value:	0.0016 kg/day	Maximum ingestion rate * Average Body weight * 0.16[(1)]
	A B	0.62		Average value	0.00143 kg/day	Average ingestion rate * Average Body weight * 0.16[(1)]
	Overall Study Average		0.555			[(1)] - 0.16 = percent solids in earthworms to convert to a dry weight ingestion rate

TABLE 4

DRY WEIGHT DERIVATION OF BODY WEIGHT AND FOOD INTAKE FACTORS FOR TERRESTRIAL FOOD CHAIN MODELS
TANK FARM 2
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Data from USEPA (1993)				Derivation of Factors for Modeling		
Species/Factor	Age/Sex/ Cond./Seas.	Value	Study Average	Calculation of Values		Notes
Meadow Vole						
Body Weight (g)	A M summer	40	36.7	Minimum Value	0.017 kg	
	A F summer	33.4		Maximum Value	0.052 kg	
				Overall Study Average	0.0358 kg	
	A M spring	52.4	48.0			
	A F spring	43.5				
	A B spring	26	21.2			
	A B summer	24.3				
	A B fall	17				
	A B winter	17.5				
	A M	35.5	37.3			
	A F	39				
Food Ingestion Rate (g/g-day)		0.3	0.33	Conservative value:	0.001878 kg/day	Maximum ingestion rate * Average Body weight * 0.15 (1)
		0.35		Average value	0.001744 kg/day	Average ingestion rate * Average Body weight * 0.15(1)
						(1) - 0.15 = percent solids in plant foilage to convert to a dry weight ingestion rate
Northern Bobwhite Quail						
Body Weight (g)	A B fall	189.9	191	Minimum Value	0.154 kg	
	A B winter	193.9		Maximum Value	0.194 kg	
	A B spring	190		Overall Study Average	0.1751 kg	
	A M winter	181	177			
	A M summer	163				
	A F winter	183				
	A F summer	180				
	A M winter	161	157			
	A M summer	154				
	A F winter	157				
	A F summer	157				
Food Ingestion Rate (g/g-day)	A B winter	0.093	0.078	Conservative value:	0.01628 kg/day	Maximum ingestion rate * Average Body weight
	A B spring	0.067				
	A B summer	0.079		Average value	0.01361 kg/day	Average ingestion rate * Average Body weight
	A B fall	0.072				
						Dry weight to wet weight conversion factor not needed because food items on a dry weight basis in the wildlife exposure factors handbook.

Notes:
A = Adult
F = Female, M = Male, B = Both
BW = Body Weight

BIOACCUMULATION FACTORS

BIOACCUMULATION FACTORS
TANK FARM 2
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

This attachment presents the bioaccumulation factors (BAFs) that were used in the food chain models. The following sources of BAFs were used in the ecological risk assessment for most of the chemicals:

- Plant and Soil Invertebrate BAFs: EPA Guidance for Developing Ecological Soil Screening Levels, Attachment 4-1 (USEPA, 2007).

- Plant BAFs: Toxicity and Chemical-Specific Factors Database (ORNL, 2013).

- Plant BAFs (mercury): Empirical Model for the Uptake of Inorganic Chemicals from Soil by Plants (ORNL, 1998).

- Soil Invertebrate BAFs: Development and Validation of Bioaccumulation Models for Earthworms (Sample et al., 1998).

Table 5 of this appendix presents the BAFs that were used in the food-chain models for the individual constituents that were detected at Tank Farm 2. Note that dry weight BAFs were used for this ERA. A default value of 1.0 was used for the BAF if chemical-specific data were not available.

The EPA Guidance for Developing Ecological Soil Screening Levels (Eco SSLs) was the source of the BAFs for some of the chemicals. The majority of these BAFs are regression equations that are used to calculate the tissue concentration from the soil concentration.

The soil invertebrate BAF for 2-methylnapthalene was calculated (see Table 6 of this appendix) as described in Table 5 in USEPA (2007) using a log octanol-water partition coefficient from USEPA (2003).

References

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TABLE 5

TERRESTRIAL FOOD CHAIN MODEL - BIOACCUMULATION FACTORS
TANK FARM 2
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Plant Bioaccumulation Factors			Earthworm Bioaccumulation Factors		
	Conservative	Average		Conservative	Average	
Semivolatile Organic Compounds						
2-METHYLNAPHTHALENE	EXP(0.4544*LN(C)-1.3205)		(1)	2.29E+00	2.29E+00	(2)
ACENAPHTHENE	EXP(-0.8556*LN(C)-5.562)		(1)	1.47E+00	1.47E+00	(1)
ACENAPHTHYLENE	EXP(0.791*LN(C)-1.144)		(1)	2.29E+01	2.29E+01	(1)
ANTHRACENE	EXP(0.7784*LN(C)-0.9887)		(1)	2.42E+00	2.42E+00	(1)
BENZO(A)ANTHRACENE	EXP(0.5944*LN(C)-2.7078)		(1)	1.59E+00	1.59E+00	(1)
BENZO(A)PYRENE	EXP(0.975*LN(C)-2.0615)		(1)	1.33E+00	1.33E+00	(1)
BENZO(B)FLUORANTHENE	3.10E-01	3.10E-01	(1)	2.60E+00	2.60E+00	(1)
BENZO(G,H,I)PERYLENE	EXP(1.1829*LN(C)-0.9313)		(1)	2.94E+00	2.94E+00	(1)
BENZO(K)FLUORANTHENE	EXP(0.8595*LN(C)-2.1579)		(1)	2.60E+00	2.60E+00	(1)
CHRYSENE	EXP(0.5944*LN(C)-2.7078)		(1)	2.29E+00	2.29E+00	(1)
DIBENZO(A,H)ANTHRACENE	1.30E-01	1.30E-01	(1)	2.31E+00	2.31E+00	(1)
FLUORANTHENE	5.00E-01	5.00E-01	(1)	3.04E+00	3.04E+00	(1)
FLUORENE	EXP(-0.8556*LN(C)-5.562)		(1)	9.57E+00	9.57E+00	(1)
INDENO(1,2,3-CD)PYRENE	1.10E-01	1.10E-01	(1)	2.86E+00	2.86E+00	(1)
PHENANTHRENE	EXP(0.6203*LN(C)-0.1665)		(1)	1.72E+00	1.72E+00	(1)
PYRENE	7.20E-01	7.20E-01	(1)	1.75E+00	1.75E+00	(1)
PCBs						
AROCLOR-1260	6.15E-04	6.15E-04	(3)	1.59E+01	6.67E+00	(4)
Dioxins/Furans						
TEQ	0.00438		(3)	22.2	11	(4)
Metals						
ALUMINUM	4.00E-03	4.00E-03	(3)	1.00E+00	1.00E+00	
ANTIMONY	EXP(0.938*LN(C)-3.233)		(1)	1.00E+00	1.00E+00	(1)
BERYLLIUM	EXP(0.7345*LN(C)-0.5361)		(1)	4.50E-02	4.50E-02	(1)
CHROMIUM	4.10E-02	4.10E-02	(1)	3.06E-01	3.06E-01	(1)
COPPER	EXP(0.394*LN(C)+0.668)		(1)	5.15E-01	5.15E-01	(1)
IRON	1.00E-02	1.00E-02	(3)	3.60E-02	7.80E-02	(4)
LEAD	EXP(0.561*LN(C)-1.328)		(1)	EXP(0.807*LN(C)-0.218)		(1)
MERCURY	5.00E+00	6.52E-01	(5)	EXP(0.3369*LN(C)+0.0781)		(4)
THALLIUM	4.00E-03	4.00E-03	(3)	1.00E+00	1.00E+00	
VANADIUM	4.85E-03	4.85E-03	(1)	4.20E-02	4.20E-02	(1)
ZINC	EXP(0.554*LN(C)+1.575)		(1)	EXP(0.328*LN(C)+4.449)		(1)

Notes:

A default value of 1.0 was assigned to chemicals with unknown BAFs. No footnotes are listed by these values.
NA - Not Applicable; bioaccumulation of volatile organic compounds into food items was not evaluated.
TEQ - 2,3,7,8-TCDD Equivalents

Footnotes:

1 - USEPA (2007). Attachment 4-1, Tables 4a (for inorganics), 4b (for organics).
2 - See Table 6 in this appendix for calculation of earthworm BAF using site-specific total organic carbon data.
3 - ORNL Risk Assessment Information System (http://rais.ornl.gov/cgi-bin/tools/TOX_search?select=chem_spef)
4 - Sample et al., (February, 1998) conservative value is 90th percentile; average value is median value.
5 - ORNL (September, 1998) for all chemicals; conservative value is 90th percentile; average value is median value.

Sources:

ORNL (Oak Ridge National Laboratory). 1998. Empirical Model for the Uptake of Inorganic Chemicals from Soil by Plants. BJC/OR-133. September.

ORNL, 2013. Toxicity and Chemical-Specific Factors Database. Oak Ridge National Laboratory Web Page, http://rais.ornl.gov/cgi-bin/tools/TOX_search?select=chem_spef

Sample, B.E., J.J. Beauchamp, R.A. Efroymson, G.W., Suter II, and T.L. Ashwood. 1998. Development and Validation of Bioaccumulation Models for Earthworms. Oak Ridge National Laboratory. February. ES/ER/TM-220.

USEPA, 2007. Guidance for Developing Ecological Soil Screening Level, Attachment 4-1, Exposure Factors and Bioaccumulation Models for Derivation of Wildlife Eco-SSLs. Office of Solid Waste and Emergency and Response. OSWER Directive 9285.7-55. April.

TABLE 6

CALCULATION OF SOIL TO EARTHWORM BIOACCUMULATION FACTORS
TANK FARM 2
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Parameter	log K_{OW}[(1)]	log K_{WW}[(2)]	$K_{WW(wet\ wt)}$[(2)]	$K_{WW(dry\ wt)}$[(2)]
2-methylnaphthalene	3.9	1.4	22.7	142

Parameter	K_{WW}	K_{OC}	f_{OC}	K_d	BAF[(2)]
2-methylnaphthalene	142	6190	0.01	61.9	2.29

1 - Source of this value is USEPA, 2003.
2 - These values were calculated as described in Table 5 in USEPA, 2007.

Sources:
USEPA (U.S. Environmental Protection Agency). 2003. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. EPA/600/R-02/013. November.
USEPA, 2007. Guidance for Developing Ecological Soil Screening Level, Attachment 4-1, Exposure Factors and Bioaccumulation Models for Derivation of Wildlife Eco-SSLs. Office of Solid Waste and Emergency and Response. OSWER Directive 9285.7-55. April.

FOOD CHAIN MODELING

TIER 1 FOOD CHAIN MODEL

CHEMICAL CONCENTRATIONS IN SURFACE SOIL AND TISSUE
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Surface Soil Concentrations (mg/kg)	Earthworm Bioaccumulation Factors	Earthworm Concentrations (mg/kg)	Plant Bioaccumulation Factors	Plant Concentrations (mg/kg)
	Maximum Detection	Conservative	Maximum Detection	Conservative	Maximum Detection
Semivolatile Organic Compounds					
2-Methylnaphthalene	7.20E-02	2.29E+00	1.65E-01	Regression equation from Eco SSL using LMW PAH value as surrogate	8.08E-02
Acenaphthene	1.00E+00	1.47E+00	1.47E+00	Regression equation from Eco SSL	3.84E-03
Acenaphthylene	2.60E-02	2.29E+01	5.95E-01	Regression equation from Eco SSL	1.78E-02
Anthracene	2.20E+00	2.42E+00	5.32E+00	Regression equation from Eco SSL	6.87E-01
Benzo(a)anthracene	4.50E+00	1.59E+00	7.16E+00	Regression equation from Eco SSL	1.63E-01
Benzo(a)pyrene	3.70E+00	1.33E+00	4.92E+00	Regression equation from Eco SSL	4.56E-01
Benzo(b)fluoranthene	5.80E+00	2.60E+00	1.51E+01	3.10E-01	1.80E+00
Benzo(g,h,i)perylene	1.80E+00	2.94E+00	5.29E+00	Regression equation from Eco SSL	7.90E-01
Benzo(k)fluoranthene	1.70E+00	2.60E+00	4.42E+00	Regression equation from Eco SSL	1.82E-01
Chrysene	4.90E+00	2.29E+00	1.12E+01	Regression equation from Eco SSL	1.72E-01
Dibenzo(a,h)anthracene	5.90E-01	2.31E+00	1.36E+00	1.30E-01	7.67E-02
Fluoranthene	1.20E+01	3.04E+00	3.65E+01	5.00E-01	6.00E+00
Fluorene	1.30E+00	9.57E+00	1.24E+01	Regression equation from Eco SSL	3.07E-03
Indeno(1,2,3-cd)pyrene	2.80E+00	2.86E+00	8.01E+00	1.10E-01	3.08E-01
Phenanthrene	1.10E+01	1.72E+00	1.89E+01	Regression equation from Eco SSL	3.75E+00
Pyrene	1.10E+01	1.75E+00	1.93E+01	7.20E-01	7.92E+00
PCBs					
Aroclor-1260	1.80E+01	1.59E+01	2.86E+02	6.15E-04	1.11E-02
Dioxins/Furans					
2,3,7,8-TCDD equivalents - Mammal	3.12E-05	2.22E+01	6.92E-04	4.38E-03	1.37E-07
2,3,7,8-TCDD equivalents - Bird	1.82E-05	2.22E+01	4.03E-04	4.38E-03	7.96E-08
Metals					
Aluminum	1.82E+04	1.00E+00	1.82E+04	4.00E-03	7.28E+01
Antimony	6.60E+00	1.00E+00	6.60E+00	Regression equation from Eco SSL	2.32E-01
Beryllium	1.30E+00	4.50E-02	5.85E-02	Regression equation from Eco SSL	7.09E-01
Chromium	4.45E+01	3.06E-01	1.36E+01	4.10E-02	1.82E+00
Copper	3.99E+01	5.15E-01	2.05E+01	Regression equation from Eco SSL	8.33E+00
Iron	3.78E+04	3.60E-02	1.36E+03	1.00E-02	3.78E+02
Lead	1.01E+02	Regression equation from Eco	3.33E+01	Regression equation from Eco SSL	3.53E+00
Mercury	2.10E-01	Regression - Sample et al., (1998)	6.39E-01	5.00E+00	1.05E+00
Thallium	1.00E-01	1.00E+00	1.00E-01	4.00E-03	4.00E-04
Vanadium	3.52E+01	4.20E-02	1.48E+00	4.85E-03	1.71E-01
Zinc	9.91E+01	Regression equation from Eco	3.86E+02	Regression equation from Eco SSL	6.16E+01

1 - Average concentration is the mean concentration of all samples, using 1/2 the detection limit for non-detects, unless the value is greater than the maximum concentration. In that case, the average concentration is the mean of the positive detections.

MEADOW VOLE - TIER 1 INPUTS
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Max Soil Conc. (mg/kg)	Vegetation Conc. (mg/kg)	Dose (mg/kg/d) from: Soil	Dose (mg/kg/d) from: Veget.	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
Semivolatile Organic Compounds									
2-Methylnaphthalene	7.20E-02	8.08E-02	2.55E-04	8.92E-03	9.18E-03	6.56E+01	3.56E+02	1.4E-04	2.6E-05
Acenaphthene	1.00E+00	3.84E-03	3.54E-03	4.24E-04	3.96E-03	6.56E+01	3.56E+02	6.0E-05	1.1E-05
Acenaphthylene	2.60E-02	1.78E-02	9.19E-05	1.96E-03	2.05E-03	6.56E+01	3.56E+02	3.1E-05	5.8E-06
Anthracene	2.20E+00	6.87E-01	7.78E-03	7.59E-02	8.37E-02	6.56E+01	3.56E+02	1.3E-03	2.4E-04
Benzo(a)anthracene	4.50E+00	1.63E-01	1.59E-02	1.80E-02	3.39E-02	6.15E-01	3.84E+01	5.5E-02	8.8E-04
Benzo(a)pyrene	3.70E+00	4.56E-01	1.31E-02	5.03E-02	6.34E-02	6.15E-01	3.84E+01	1.0E-01	1.7E-03
Benzo(b)fluoranthene	5.80E+00	1.80E+00	2.05E-02	1.99E-01	2.19E-01	6.15E-01	3.84E+01	3.6E-01	5.7E-03
Benzo(g,h,i)perylene	1.80E+00	7.90E-01	6.36E-03	8.73E-02	9.36E-02	6.15E-01	3.84E+01	1.5E-01	2.4E-03
Benzo(k)fluoranthene	1.70E+00	1.82E-01	6.01E-03	2.01E-02	2.62E-02	6.15E-01	3.84E+01	4.3E-02	6.8E-04
Chrysene	4.90E+00	1.72E-01	1.73E-02	1.89E-02	3.63E-02	6.15E-01	3.84E+01	5.9E-02	9.4E-04
Dibenzo(a,h)anthracene	5.90E-01	7.67E-02	2.09E-03	8.47E-03	1.06E-02	6.15E-01	3.84E+01	1.7E-02	2.7E-04
Fluoranthene	1.20E+01	6.00E+00	4.24E-02	6.63E-01	7.05E-01	6.56E+01	3.56E+02	1.1E-02	2.0E-03
Fluorene	1.30E+00	3.07E-03	4.60E-03	3.39E-04	4.94E-03	6.56E+01	3.56E+02	7.5E-05	1.4E-05
Indeno(1,2,3-cd)pyrene	2.80E+00	3.08E-01	9.90E-03	3.40E-02	4.39E-02	6.15E-01	3.84E+01	7.1E-02	1.1E-03
Phenanthrene	1.10E+01	3.75E+00	3.89E-02	4.14E-01	4.53E-01	6.56E+01	3.56E+02	6.9E-03	1.3E-03
Pyrene	1.10E+01	7.92E+00	3.89E-02	8.75E-01	9.14E-01	6.15E-01	3.84E+01	1.5E+00	2.4E-02
PCBs									
Aroclor-1260	1.80E+01	1.11E-02	6.36E-02	1.22E-03	6.49E-02	6.80E-02	6.80E-01	9.5E-01	9.5E-02
Dioxins/Furans									
2,3,7,8-TCDD equivalents - Mammal	3.12E-05	1.37E-07	1.10E-07	1.51E-08	1.25E-07	1.00E-06	1.00E-05	1.3E-01	1.3E-02
Metals									
Aluminum	1.82E+04	7.28E+01	6.43E+01	8.04E+00	7.24E+01	1.93E+00	1.93E+01	3.8E+01	3.8E+00
Antimony	6.60E+00	2.32E-01	2.33E-02	2.56E-02	4.89E-02	5.90E-02	2.76E+00	8.3E-01	1.8E-02
Beryllium	1.30E+00	7.09E-01	4.60E-03	7.84E-02	8.30E-02	5.32E-01	6.73E-01	1.6E-01	1.2E-01
Chromium	4.45E+01	1.82E+00	1.57E-01	2.02E-01	3.59E-01	2.40E+00	5.82E+01	1.5E-01	6.2E-03
Copper	3.99E+01	8.33E+00	1.41E-01	9.21E-01	1.06E+00	5.60E+00	8.27E+01	1.9E-01	1.3E-02
Iron	3.78E+04	3.78E+02	1.34E+02	4.18E+01	1.75E+02	5.00E+01	5.00E+02	3.5E+00	3.5E-01
Lead	1.01E+02	3.53E+00	3.57E-01	3.90E-01	7.47E-01	4.70E+00	1.86E+02	1.6E-01	4.0E-03
Mercury	2.10E-01	1.05E+00	7.42E-04	1.16E-01	1.17E-01	3.20E-02	1.60E-01	3.6E+00	7.3E-01
Thallium	1.00E-01	4.00E-04	3.54E-04	4.42E-05	3.98E-04	7.40E-03	7.40E-02	5.4E-02	5.4E-03
Vanadium	3.52E+01	1.71E-01	1.24E-01	1.89E-02	1.43E-01	4.16E+00	9.44E+00	3.4E-02	1.5E-02
Zinc	9.91E+01	6.16E+01	3.50E-01	6.81E+00	7.16E+00	7.54E+01	2.98E+02	9.5E-02	2.4E-02

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	1.70E-02	kg
Food Ingestion Rate = (If)	1.88E-03	kg/day
Soil Ingestion Rate = (Is)	6.01E-05	kg/day
Home Range = (HR)	Assume 100% on site	
Contaminated Area = (CA)	Assume equal to home range	

Dose (soil) = (Cs * Is)(H)/BW
Dose (vegetation) = (Cv * If)(H)/BW
Cv = Contaminant concentration in vegetation
Cs = Contaminant concentration in soil
Total Dose = Dose (soil) + Dose (vegetation)
Home Range factor (H) = CA/HR (Assume = to 1)

Conc = Concentration
LOAEL = Lowest Observed Adverse Effects Concentration
NOAEL = No Observed Adverse Effects Concentration

BOBWHITE QUAIL - TIER 1 INPUTS
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Max Soil Conc. (mg/kg)	Vegetation Conc. (mg/kg)	Dose (mg/kg/d) from: Soil	Dose (mg/kg/d) from: Veget.	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
Semivolatile Organic Compounds									
2-Methylnaphthalene	7.20E-02	8.08E-02	1.06E-03	8.54E-03	9.60E-03	2.00E+00	2.00E+01	4.8E-03	4.8E-04
Acenaphthene	1.00E+00	3.84E-03	1.47E-02	4.06E-04	1.51E-02	2.00E+00	2.00E+01	7.6E-03	7.6E-04
Acenaphthylene	2.60E-02	1.78E-02	3.82E-04	1.88E-03	2.26E-03	2.00E+00	2.00E+01	1.1E-03	1.1E-04
Anthracene	2.20E+00	6.87E-01	3.23E-02	7.27E-02	1.05E-01	2.00E+00	2.00E+01	5.3E-02	5.3E-03
Benzo(a)anthracene	4.50E+00	1.63E-01	6.61E-02	1.72E-02	8.34E-02	2.00E+00	2.00E+01	4.2E-02	4.2E-03
Benzo(a)pyrene	3.70E+00	4.56E-01	5.44E-02	4.82E-02	1.03E-01	2.00E+00	2.00E+01	5.1E-02	5.1E-03
Benzo(b)fluoranthene	5.80E+00	1.80E+00	8.52E-02	1.90E-01	2.75E-01	2.00E+00	2.00E+01	1.4E-01	1.4E-02
Benzo(g,h,i)perylene	1.80E+00	7.90E-01	2.65E-02	8.35E-02	1.10E-01	2.00E+00	2.00E+01	5.5E-02	5.5E-03
Benzo(k)fluoranthene	1.70E+00	1.82E-01	2.50E-02	1.93E-02	4.43E-02	2.00E+00	2.00E+01	2.2E-02	2.2E-03
Chrysene	4.90E+00	1.72E-01	7.20E-02	1.81E-02	9.02E-02	2.00E+00	2.00E+01	4.5E-02	4.5E-03
Dibenzo(a,h)anthracene	5.90E-01	7.67E-02	8.67E-03	8.11E-03	1.68E-02	2.00E+00	2.00E+01	8.4E-03	8.4E-04
Fluoranthene	1.20E+01	6.00E+00	1.76E-01	6.34E-01	8.11E-01	2.00E+00	2.00E+01	4.1E-01	4.1E-02
Fluorene	1.30E+00	3.07E-03	1.91E-02	3.24E-04	1.94E-02	2.00E+00	2.00E+01	9.7E-03	9.7E-04
Indeno(1,2,3-cd)pyrene	2.80E+00	3.08E-01	4.12E-02	3.26E-02	7.37E-02	2.00E+00	2.00E+01	3.7E-02	3.7E-03
Phenanthrene	1.10E+01	3.75E+00	1.62E-01	3.96E-01	5.58E-01	2.00E+00	2.00E+01	2.8E-01	2.8E-02
Pyrene	1.10E+01	7.92E+00	1.62E-01	8.37E-01	9.99E-01	2.00E+00	2.00E+01	5.0E-01	5.0E-02
PCBs									
Aroclor-1260	1.80E+01	1.11E-02	2.65E-01	1.17E-03	2.66E-01	1.80E-01	1.80E+00	1.5E+00	1.5E-01
Dioxins/Furans									
2,3,7,8-TCDD equivalents - Bird	1.82E-05	7.96E-08	2.67E-07	8.42E-09	2.75E-07	1.40E-05	1.40E-04	2.0E-02	2.0E-03
Metals									
Aluminum	1.82E+04	1.82E+04	2.67E+02	1.92E+03	2.19E+03	1.10E+02	1.10E+03	2.0E+01	2.0E+00
Antimony	6.60E+00	2.32E-01	9.70E-02	2.45E-02	1.21E-01	NV	NV	NV	NV
Beryllium	1.30E+00	7.09E-01	1.91E-02	7.50E-02	9.41E-02	NV	NV	NV	NV
Chromium	4.45E+01	1.82E+00	6.54E-01	1.93E-01	8.47E-01	2.66E+00	1.56E+01	3.2E-01	5.4E-02
Copper	3.99E+01	8.33E+00	5.86E-01	8.81E-01	1.47E+00	4.05E+00	3.49E+01	3.6E-01	4.2E-02
Iron	3.78E+04	3.78E+02	5.56E+02	4.00E+01	5.96E+02	1.00E+02	1.00E+03	6.0E+00	6.0E-01
Lead	1.01E+02	3.53E+00	1.48E+00	3.73E-01	1.86E+00	1.63E+00	4.46E+01	1.1E+00	4.2E-02
Mercury	2.10E-01	1.05E+00	3.09E-03	1.11E-01	1.14E-01	6.40E-03	6.40E-02	1.8E+01	1.8E+00
Thallium	1.00E-01	4.00E-04	1.47E-03	4.23E-05	1.51E-03	NV	NV	NV	NV
Vanadium	3.52E+01	1.71E-01	5.17E-01	1.81E-02	5.35E-01	3.44E-01	1.69E+00	1.6E+00	3.2E-01
Zinc	9.91E+01	6.16E+01	1.46E+00	6.52E+00	7.97E+00	6.61E+01	1.71E+02	1.2E-01	4.7E-02

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	1.54E-01	kg
Food Ingestion Rate = (If)	1.63E-02	kg/day
Soil Ingestion Rate = (Is)	2.26E-03	kg/day
Home Range = (HR)	Assume 100% on site	
Contaminated Area = (CA)	Assume equal to home range	

Dose (soil) = (Cs * Is)(H)/BW
Dose (vegetation) = (Cv * If)(H)/BW
Cv = Contaminant concentration in vegetation
Cs = Contaminant concentration in soil
Total Dose = Dose (soil) + Dose (vegetation)
Home Range factor (H) = CA/HR (Assume = to 1)

Conc = Concentration
LOAEL = Lowest Observed Adverse Effects Concentration
NOAEL = No Observed Adverse Effects Concentration
NV = No value determined

SHORT-TAILED SHREW - TIER 1 INPUTS
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Max Soil Conc. (mg/kg)	Invertebrate Conc. (mg/kg)	Dose (mg/kg/d) from: Soil	Dose (mg/kg/d) from: Invert.	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
Semivolatile Organic Compounds									
2-Methylnaphthalene	7.20E-02	1.65E-01	2.30E-04	1.76E-02	1.78E-02	6.56E+01	3.56E+02	2.7E-04	5.0E-05
Acenaphthene	1.00E+00	1.47E+00	3.20E-03	1.57E-01	1.60E-01	6.56E+01	3.56E+02	2.4E-03	4.5E-04
Acenaphthylene	2.60E-02	5.95E-01	8.32E-05	6.35E-02	6.36E-02	6.56E+01	3.56E+02	9.7E-04	1.8E-04
Anthracene	2.20E+00	5.32E+00	7.04E-03	5.68E-01	5.75E-01	6.56E+01	3.56E+02	8.8E-03	1.6E-03
Benzo(a)anthracene	4.50E+00	7.16E+00	1.44E-02	7.63E-01	7.78E-01	6.15E-01	3.84E+01	1.3E+00	2.0E-02
Benzo(a)pyrene	3.70E+00	4.92E+00	1.18E-02	5.25E-01	5.37E-01	6.15E-01	3.84E+01	8.7E-01	1.4E-02
Benzo(b)fluoranthene	5.80E+00	1.51E+01	1.86E-02	1.61E+00	1.63E+00	6.15E-01	3.84E+01	2.6E+00	4.2E-02
Benzo(g,h,i)perylene	1.80E+00	5.29E+00	5.76E-03	5.65E-01	5.70E-01	6.15E-01	3.84E+01	9.3E-01	1.5E-02
Benzo(k)fluoranthene	1.70E+00	4.42E+00	5.44E-03	4.72E-01	4.77E-01	6.15E-01	3.84E+01	7.8E-01	1.2E-02
Chrysene	4.90E+00	1.12E+01	1.57E-02	1.20E+00	1.21E+00	6.15E-01	3.84E+01	2.0E+00	3.2E-02
Dibenzo(a,h)anthracene	5.90E-01	1.36E+00	1.89E-03	1.45E-01	1.47E-01	6.15E-01	3.84E+01	2.4E-01	3.8E-03
Fluoranthene	1.20E+01	3.65E+01	3.84E-02	3.89E+00	3.93E+00	6.56E+01	3.56E+02	6.0E-02	1.1E-02
Fluorene	1.30E+00	1.24E+01	4.16E-03	1.33E+00	1.33E+00	6.56E+01	3.56E+02	2.0E-02	3.7E-03
Indeno(1,2,3-cd)pyrene	2.80E+00	8.01E+00	8.96E-03	8.54E-01	8.63E-01	6.15E-01	3.84E+01	1.4E+00	2.2E-02
Phenanthrene	1.10E+01	1.89E+01	3.52E-02	2.02E+00	2.05E+00	6.56E+01	3.56E+02	3.1E-02	5.8E-03
Pyrene	1.10E+01	1.93E+01	3.52E-02	2.05E+00	2.09E+00	6.15E-01	3.84E+01	3.4E+00	5.4E-02
PCBs									
Aroclor-1260	1.80E+01	2.86E+02	5.76E-02	3.06E+01	3.06E+01	6.80E-02	6.80E-01	4.5E+02	4.5E+01
Dioxins/Furans									
2,3,7,8-TCDD equivalents - Mammal	3.12E-05	6.92E-04	9.98E-08	7.39E-05	7.40E-05	1.00E-06	1.00E-05	7.4E+01	7.4E+00
Metals									
Aluminum	1.82E+04	1.82E+04	5.83E+01	1.94E+03	2.00E+03	1.93E+00	1.93E+01	1.0E+03	1.0E+02
Antimony	6.60E+00	6.60E+00	2.11E-02	7.04E-01	7.25E-01	5.90E-02	2.76E+00	1.2E+01	2.6E-01
Beryllium	1.30E+00	5.85E-02	4.16E-03	6.24E-03	1.04E-02	5.32E-01	6.73E-01	2.0E-02	1.5E-02
Chromium	4.45E+01	1.36E+01	1.42E-01	1.45E+00	1.60E+00	2.40E+00	5.82E+01	6.6E-01	2.7E-02
Copper	3.99E+01	2.05E+01	1.28E-01	2.19E+00	2.32E+00	5.60E+00	8.27E+01	4.1E-01	2.8E-02
Iron	3.78E+04	1.36E+03	1.21E+02	1.45E+02	2.66E+02	5.00E+01	5.00E+02	5.3E+00	5.3E-01
Lead	1.01E+02	3.33E+01	3.23E-01	3.56E+00	3.88E+00	4.70E+00	1.86E+02	8.3E-01	2.1E-02
Mercury	2.10E-01	6.39E-01	6.72E-04	6.82E-02	6.89E-02	3.20E-02	1.60E-01	2.2E+00	4.3E-01
Thallium	1.00E-01	1.00E-01	3.20E-04	1.07E-02	1.10E-02	7.40E-03	7.40E-02	1.5E+00	1.5E-01
Vanadium	3.52E+01	1.48E+00	1.13E-01	1.58E-01	2.70E-01	4.16E+00	9.44E+00	6.5E-02	2.9E-02
Zinc	9.91E+01	3.86E+02	3.17E-01	4.12E+01	4.15E+01	7.54E+01	2.98E+02	5.5E-01	1.4E-01

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	1.50E-02	kg	Dose (soil) = (Cs * Is)(H)/BW	Conc = Concentration
Food Ingestion Rate = (If)	1.60E-03	kg/day	Dose (invertebrate) = (Ci * If)(H)/BW	LOAEL = Lowest Observed Adverse Effects Concentration
Soil Ingestion Rate = (Is)	4.80E-05	kg/day	Ci = Contaminant concentration in invertebrate	NOAEL = No Observed Adverse Effects Concentration
Home Range = (HR)	Assume 100% on site		Cs = Contaminant concentration in soil	
Contaminated Area = (CA)	Assume equal to home range		Total Dose = Dose (soil) + Dose (invertebrate)	
			Home Range factor (H) = CA/HR (Assume = to 1)	

AMERICAN ROBIN - TIER 1 INPUTS
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Max Soil Conc. (mg/kg)	Invertebrate Conc. (mg/kg)	Dose (mg/kg/d) from: Soil	Dose (mg/kg/d) from: Invert.	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
Semivolatile Organic Compounds									
2-Methylnaphthalene	7.20E-02	1.65E-01	1.91E-03	2.66E-02	2.85E-02	2.00E+00	2.00E+01	1.4E-02	1.4E-03
Acenaphthene	1.00E+00	1.47E+00	2.65E-02	2.37E-01	2.64E-01	2.00E+00	2.00E+01	1.3E-01	1.3E-02
Acenaphthylene	2.60E-02	5.95E-01	6.88E-04	9.61E-02	9.68E-02	2.00E+00	2.00E+01	4.8E-02	4.8E-03
Anthracene	2.20E+00	5.32E+00	5.82E-02	8.59E-01	9.17E-01	2.00E+00	2.00E+01	4.6E-01	4.6E-02
Benzo(a)anthracene	4.50E+00	7.16E+00	1.19E-01	1.15E+00	1.27E+00	2.00E+00	2.00E+01	6.4E-01	6.4E-02
Benzo(a)pyrene	3.70E+00	4.92E+00	9.79E-02	7.94E-01	8.92E-01	2.00E+00	2.00E+01	4.5E-01	4.5E-02
Benzo(b)fluoranthene	5.80E+00	1.51E+01	1.54E-01	2.43E+00	2.59E+00	2.00E+00	2.00E+01	1.3E+00	1.3E-01
Benzo(g,h,i)perylene	1.80E+00	5.29E+00	4.76E-02	8.54E-01	9.02E-01	2.00E+00	2.00E+01	4.5E-01	4.5E-02
Benzo(k)fluoranthene	1.70E+00	4.42E+00	4.50E-02	7.13E-01	7.58E-01	2.00E+00	2.00E+01	3.8E-01	3.8E-02
Chrysene	4.90E+00	1.12E+01	1.30E-01	1.81E+00	1.94E+00	2.00E+00	2.00E+01	9.7E-01	9.7E-02
Dibenzo(a,h)anthracene	5.90E-01	1.36E+00	1.56E-02	2.20E-01	2.36E-01	2.00E+00	2.00E+01	1.2E-01	1.2E-02
Fluoranthene	1.20E+01	3.65E+01	3.18E-01	5.89E+00	6.20E+00	2.00E+00	2.00E+01	3.1E+00	3.1E-01
Fluorene	1.30E+00	1.24E+01	3.44E-02	2.01E+00	2.04E+00	2.00E+00	2.00E+01	1.0E+00	1.0E-01
Indeno(1,2,3-cd)pyrene	2.80E+00	8.01E+00	7.41E-02	1.29E+00	1.37E+00	2.00E+00	2.00E+01	6.8E-01	6.8E-02
Phenanthrene	1.10E+01	1.89E+01	2.91E-01	3.05E+00	3.34E+00	2.00E+00	2.00E+01	1.7E+00	1.7E-01
Pyrene	1.10E+01	1.93E+01	2.91E-01	3.11E+00	3.40E+00	2.00E+00	2.00E+01	1.7E+00	1.7E-01
PCBs									
Aroclor-1260	1.80E+01	2.86E+02	4.76E-01	4.62E+01	4.67E+01	1.80E-01	1.80E+00	2.6E+02	2.6E+01
Dioxins/Furans									
2,3,7,8-TCDD equivalents - Bird	1.82E-05	4.03E-04	4.81E-07	6.51E-05	6.56E-05	1.40E-05	1.40E-04	4.7E+00	4.7E-01
Metals									
Aluminum	1.82E+04	1.82E+04	4.82E+02	2.94E+03	3.42E+03	1.10E+02	1.10E+03	3.1E+01	3.1E+00
Antimony	6.60E+00	6.60E+00	1.75E-01	1.07E+00	1.24E+00	NV	NV	NV	NV
Beryllium	1.30E+00	5.85E-02	3.44E-02	9.44E-03	4.38E-02	NV	NV	NV	NV
Chromium	4.45E+01	1.36E+01	1.18E+00	2.20E+00	3.38E+00	2.66E+00	1.56E+01	1.3E+00	2.2E-01
Copper	3.99E+01	2.05E+01	1.06E+00	3.32E+00	4.37E+00	4.05E+00	3.49E+01	1.1E+00	1.3E-01
Iron	3.78E+04	1.36E+03	1.00E+03	2.20E+02	1.22E+03	1.00E+02	1.00E+03	1.2E+01	1.2E+00
Lead	1.01E+02	3.33E+01	2.67E+00	5.38E+00	8.05E+00	1.63E+00	4.46E+01	4.9E+00	1.8E-01
Mercury	2.10E-01	6.39E-01	5.56E-03	1.03E-01	1.09E-01	6.40E-03	6.40E-02	1.7E+01	1.7E+00
Thallium	1.00E-01	1.00E-01	2.65E-03	1.61E-02	1.88E-02	NV	NV	NV	NV
Vanadium	3.52E+01	1.48E+00	9.32E-01	2.39E-01	1.17E+00	3.44E-01	1.69E+00	3.4E+00	6.9E-01
Zinc	9.91E+01	3.86E+02	2.62E+00	6.23E+01	6.50E+01	6.61E+01	1.71E+02	9.8E-01	3.8E-01

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	7.73E-02	kg
Food Ingestion Rate = (If)	1.25E-02	kg/day
Soil Ingestion Rate = (Is)	2.05E-03	kg/day
Home Range = (HR)	Assume 100% on site	
Contaminated Area = (CA)	Assume equal to home range	

Dose (soil) = (Cs * Is)(H)/BW
Dose (invertebrate) = (Ci * If)(H)/BW
Ci = Contaminant concentration in invertebrate
Cs = Contaminant concentration in soil
Total Dose = Dose (soil) + Dose (invertebrate)
Home Range factor (H) = CA/HR (Assume = to 1)

Conc = Concentration
LOAEL = Lowest Observed Adverse Effects Concentration
NOAEL = No Observed Adverse Effects Concentration
NV = No value determined

TIER 2, STEP 3A FOOD CHAIN MODEL

CHEMICAL CONCENTRATIONS IN SURFACE SOIL AND TISSUE FOR COMBINED AOCs 001, 003, AND 4/5, BUILDING 219, AND BUOY STORAGE AREA
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Surface Soil Concentrations (mg/kg)				Earthworm Bioaccumulation Factors		Earthworm Concentrations (mg/kg)		Plant Bioaccumulation Factors		Plant Concentrations (mg/kg)	
	Maximum Detection	Average of All Results	Average of Positive Results	Average [(1)]	Conservative	Average	Maximum Detection	Average	Conservative	Average	Maximum Detection	Average
AOCs 001, 003, AND 4/5												
Semivolatile Organic Compounds												
Benzo(a)anthracene	4.50E+00	1.99E-01	2.05E-01	1.99E-01	1.59E+00	1.59E+00	7.16E+00	3.17E-01	Regression equation from Eco SSL		1.63E-01	2.56E-02
Benzo(b)fluoranthene	5.80E+00	2.53E-01	2.53E-01	2.53E-01	2.60E+00	2.60E+00	1.51E+01	6.59E-01	3.10E-01	3.10E-01	1.80E+00	7.86E-02
Chrysene	4.90E+00	2.12E-01	2.12E-01	2.12E-01	2.29E+00	2.29E+00	1.12E+01	4.85E-01	Regression equation from Eco SSL		1.72E-01	2.65E-02
Fluoranthene	1.20E+01	4.78E-01	4.78E-01	4.78E-01	3.04E+00	3.04E+00	3.65E+01	1.45E+00	5.00E-01	5.00E-01	6.00E+00	2.39E-01
Indeno(1,2,3-cd)pyrene	2.80E+00	1.34E-01	1.39E-01	1.34E-01	2.86E+00	2.86E+00	8.01E+00	3.82E-01	1.10E-01	1.10E-01	3.08E-01	1.47E-02
Phenanthrene	1.10E+01	3.76E-01	3.82E-01	3.76E-01	1.72E+00	1.72E+00	1.89E+01	6.47E-01	Regression equation from Eco SSL		3.75E+00	4.62E-01
Pyrene	1.10E+01	4.49E-01	4.49E-01	4.49E-01	1.75E+00	1.75E+00	1.93E+01	7.86E-01	7.20E-01	7.20E-01	7.92E+00	3.23E-01
Dioxins/Furans												
2,3,7,8-TCDD equivalents - Mammal	3.12E-05	5.79E-06	5.79E-06	5.79E-06	2.22E+01	1.10E+01	6.92E-04	6.37E-05	4.38E-03	4.38E-03	1.37E-07	2.54E-08
2,3,7,8-TCDD equivalents - Bird	1.82E-05	4.32E-06	4.32E-06	4.32E-06	2.22E+01	1.10E+01	4.03E-04	4.76E-05	4.38E-03	4.38E-03	7.96E-08	1.89E-08
Metals												
Antimony	6.60E+00	3.70E-01	3.75E-01	3.70E-01	1.00E+00	1.00E+00	6.60E+00	3.70E-01	Regression equation from Eco SSL		2.32E-01	1.55E-02
Chromium	4.45E+01	1.72E+01	1.72E+01	1.72E+01	3.06E-01	3.06E-01	1.36E+01	5.27E+00	4.10E-02	4.10E-02	1.82E+00	7.06E-01
Copper	3.99E+01	2.01E+01	2.01E+01	2.01E+01	5.15E-01	5.15E-01	2.05E+01	1.03E+01	Regression equation from Eco SSL		8.33E+00	6.36E+00
Iron	3.78E+04	2.42E+04	2.42E+04	2.42E+04	3.60E-02	7.80E-02	1.36E+03	1.89E+03	1.00E-02	1.00E-02	3.78E+02	2.42E+02
Lead	1.01E+02	2.80E+01	2.80E+01	2.80E+01	Regression equation from Eco SSL		3.33E+01	1.18E+01	Regression equation from Eco SSL		3.53E+00	1.72E+00
Thallium	1.00E-01	4.67E-02	5.16E-02	4.67E-02	1.00E+00	1.00E+00	1.00E-01	4.67E-02	4.00E-03	4.00E-03	4.00E-04	1.87E-04
Vanadium	3.52E+01	2.22E+01	2.22E+01	2.22E+01	4.20E-02	4.20E-02	1.48E+00	9.33E-01	4.85E-03	4.85E-03	1.71E-01	1.08E-01
BUILDING 219												
PCBs												
Aroclor-1260	1.80E+01	3.78E+00	3.78E+00	3.78E+00	1.59E+01	6.67E+00	2.86E+02	2.52E+01	6.15E-04	6.15E-04	1.11E-02	2.32E-03
BUOY STORAGE AREA												
Metals												
Lead	7.38E+01	3.15E+01	3.15E+01	3.15E+01	Regression equation from Eco SSL		2.59E+01	1.30E+01	Regression equation from Eco SSL		2.96E+00	1.84E+00

1 - Average concentration is the mean concentration of all samples, using 1/2 the detection limit for non-detects, unless the value is greater than the maximum concentration. In that case, the average concentration is the mean of the positive detections.

MEADOW VOLE - TIER 2, STEP 3A INPUTS FOR AOCs 001, 003, AND 4/5, BUILDING 219, AND BUOY STORAGE AREA
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Average Soil Conc. (mg/kg)	Vegetation Conc. (mg/kg)	Dose (mg/kg/d) from: Soil	Dose (mg/kg/d) from: Veget.	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
AOCs 001, 003, AND 4/5									
Semivolatile Organic Compounds									
Benzo(a)anthracene	1.99E-01	2.56E-02	1.17E-04	1.25E-03	1.36E-03	6.15E-01	3.84E+01	2.2E-03	3.5E-05
Benzo(b)fluoranthene	2.53E-01	7.86E-02	1.48E-04	3.83E-03	3.98E-03	6.15E-01	3.84E+01	6.5E-03	1.0E-04
Chrysene	2.12E-01	2.65E-02	1.24E-04	1.29E-03	1.41E-03	6.15E-01	3.84E+01	2.3E-03	3.7E-05
Fluoranthene	4.78E-01	2.39E-01	2.79E-04	1.16E-02	1.19E-02	6.56E+01	3.56E+02	1.8E-04	3.3E-05
Indeno(1,2,3-cd)pyrene	1.34E-01	1.47E-02	7.81E-05	7.16E-04	7.94E-04	6.15E-01	3.84E+01	1.3E-03	2.1E-05
Phenanthrene	3.76E-01	4.62E-01	2.20E-04	2.25E-02	2.27E-02	6.56E+01	3.56E+02	3.5E-04	6.4E-05
Pyrene	4.49E-01	3.23E-01	2.62E-04	1.57E-02	1.60E-02	6.15E-01	3.84E+01	2.6E-02	4.2E-04
Dioxins/Furans									
2,3,7,8-TCDD equivalents - Mammal	5.79E-06	2.54E-08	3.39E-09	1.24E-09	4.62E-09	1.00E-06	1.00E-05	4.6E-03	4.6E-04
Metals									
Antimony	3.70E-01	1.55E-02	2.16E-04	7.56E-04	9.72E-04	5.90E-02	2.76E+00	1.6E-02	3.5E-04
Chromium	1.72E+01	7.06E-01	1.01E-02	3.44E-02	4.44E-02	2.40E+00	5.82E+01	1.8E-02	7.6E-04
Copper	2.01E+01	6.36E+00	1.17E-02	3.10E-01	3.22E-01	5.60E+00	8.27E+01	5.7E-02	3.9E-03
Iron	2.42E+04	2.42E+02	1.41E+01	1.18E+01	2.59E+01	5.00E+01	5.00E+02	5.2E-01	5.2E-02
Lead	2.80E+01	1.72E+00	1.64E-02	8.37E-02	1.00E-01	4.70E+00	1.86E+02	2.1E-02	5.4E-04
Thallium	4.67E-02	1.87E-04	2.73E-05	9.09E-06	3.64E-05	7.40E-03	7.40E-02	4.9E-03	4.9E-04
Vanadium	2.22E+01	1.08E-01	1.30E-02	5.25E-03	1.82E-02	4.16E+00	9.44E+00	4.4E-03	1.9E-03
BUILDING 219									
PCBs									
Aroclor-1260	3.78E+00	2.32E-03	1.00E-03	5.13E-05	1.05E-03	6.80E-02	6.80E-01	1.5E-02	1.5E-03
BUOY STORAGE AREA									
Metals									
Lead	3.15E+01	1.84E+00	1.84E-02	8.95E-02	1.08E-01	4.70E+00	1.86E+02	2.3E-02	5.8E-04

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	3.58E-02	kg	Dose (soil) = (Cs * Is)(H)/BW		Conc = Concentration	
Food Ingestion Rate = (If)	1.74E-03	kg/day	Dose (vegetation) = (Cv * If)(H)/BW		LOAEL = Lowest Observed Adverse Effects Concentration	
Soil Ingestion Rate = (Is)	2.09E-05	kg/day	Cv = Contaminant concentration in vegetation		NOAEL = No Observed Adverse Effects Concentration	
Home Range = (HR)	6.59E-02	acres	Cs = Contaminant concentration in soil			
Home Range factor (H) = CA/HR			Total Dose = Dose (soil) + Dose (vegetation)			
	AOCs 1, 3, 4/5		**Building 219**		**BSA**	
Contaminated Area = (CA)	3.46E-01	acres	2.98E-02	acres	1.61E-01	acres
Home Range Factor = (H)	1.00E+00		4.53E-01		1.00E+00	

When home range is smaller than contaminated area, home range factor is assumed equal to 1.

BOBWHITE QUAIL - TIER 2, STEP 3A INPUTS FOR AOCs 001, 003, AND 4/5, BUILDING 219, AND BUOY STORAGE AREA
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Average Soil Conc. (mg/kg)	Vegetation Conc. (mg/kg)	Dose (mg/kg/d) from: Soil	Dose (mg/kg/d) from: Veget.	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
AOCs 001, 003, AND 4/5									
Semivolatile Organic Compounds									
Benzo(a)anthracene	1.99E-01	2.56E-02	1.74E-05	3.65E-05	5.39E-05	2.00E+00	2.00E+01	2.7E-05	2.7E-06
Benzo(b)fluoranthene	2.53E-01	7.86E-02	2.21E-05	1.12E-04	1.34E-04	2.00E+00	2.00E+01	6.7E-05	6.7E-06
Chrysene	2.12E-01	2.65E-02	1.84E-05	3.78E-05	5.63E-05	2.00E+00	2.00E+01	2.8E-05	2.8E-06
Fluoranthene	4.78E-01	2.39E-01	4.16E-05	3.41E-04	3.83E-04	2.00E+00	2.00E+01	1.9E-04	1.9E-05
Indeno(1,2,3-cd)pyrene	1.34E-01	1.47E-02	1.16E-05	2.10E-05	3.26E-05	2.00E+00	2.00E+01	1.6E-05	1.6E-06
Phenanthrene	3.76E-01	4.62E-01	3.28E-05	6.60E-04	6.92E-04	2.00E+00	2.00E+01	3.5E-04	3.5E-05
Pyrene	4.49E-01	3.23E-01	3.91E-05	4.62E-04	5.01E-04	2.00E+00	2.00E+01	2.5E-04	2.5E-05
Dioxins/Furans									
2,3,7,8-TCDD equivalents - Bird	4.32E-06	1.89E-08	3.77E-10	2.71E-11	4.04E-10	1.40E-05	1.40E-04	2.9E-05	2.9E-06
Metals									
Antimony	3.70E-01	1.55E-02	3.22E-05	2.22E-05	5.44E-05	NV	NV	NV	NV
Chromium	1.72E+01	7.06E-01	1.50E-03	1.01E-03	2.51E-03	2.66E+00	1.56E+01	9.4E-04	1.6E-04
Copper	2.01E+01	6.36E+00	1.75E-03	9.09E-03	1.08E-02	4.05E+00	3.49E+01	2.7E-03	3.1E-04
Iron	2.42E+04	2.42E+02	2.11E+00	3.46E-01	2.45E+00	1.00E+02	1.00E+03	2.5E-02	2.5E-03
Lead	2.80E+01	1.72E+00	2.44E-03	2.45E-03	4.89E-03	1.63E+00	4.46E+01	3.0E-03	1.1E-04
Thallium	4.67E-02	1.87E-04	4.07E-06	2.67E-07	4.33E-06	NV	NV	NV	NV
Vanadium	2.22E+01	1.08E-01	1.94E-03	1.54E-04	2.09E-03	3.44E-01	1.69E+00	6.1E-03	1.2E-03
BUILDING 219									
PCBs									
Aroclor-1260	3.78E+00	2.32E-03	2.85E-05	2.87E-07	2.87E-05	1.80E-01	1.80E+00	1.6E-04	1.6E-05
BUOY STORAGE AREA									
Metals									
Lead	3.15E+01	1.84E+00	1.28E-03	1.22E-03	2.50E-03	1.63E+00	4.46E+01	1.5E-03	5.6E-05

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	1.75E-01	kg
Food Ingestion Rate = (If)	1.36E-02	kg/day
Soil Ingestion Rate = (Is)	8.30E-04	kg/day
Home Range = (HR)	1.88E+01	acres
Home Range factor (H) = CA/HR		

	AOCs 1, 3, 4/5		Building 219		BSA	
Contaminated Area = (CA)	3.46E-01	acres	2.98E-02	acres	1.61E-01	acres
Home Range Factor = (H)	1.84E-02		1.59E-03		8.55E-03	

Dose (soil) = (Cs * Is)(H)/BW
Dose (vegetation) = (Cv * If)(H)/BW
Cv = Contaminant concentration in vegetation
Cs = Contaminant concentration in soil
Total Dose = Dose (soil) + Dose (vegetation)

Conc = Concentration
LOAEL = Lowest Observed Adverse Effects Concentration
NOAEL = No Observed Adverse Effects Concentration
NV = No value determined

SHORT-TAILED SHREW - TIER 2, STEP 3A INPUTS FOR AOCs 001, 003, AND 4/5, BUILDING 219, AND BUOY STORAGE AREA
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Average Soil Conc. (mg/kg)	Invertebrate Conc. (mg/kg)	Dose (mg/kg/d) from: Soil	Dose (mg/kg/d) from: Invert.	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
AOCs 001, 003, AND 4/5									
Semivolatile Organic Compounds									
Benzo(a)anthracene	1.99E-01	3.17E-01	5.69E-05	1.01E-02	1.01E-02	6.15E-01	3.84E+01	1.6E-02	2.6E-04
Benzo(b)fluoranthene	2.53E-01	6.59E-01	7.23E-05	2.09E-02	2.10E-02	6.15E-01	3.84E+01	3.4E-02	5.5E-04
Chrysene	2.12E-01	4.85E-01	6.04E-05	1.54E-02	1.54E-02	6.15E-01	3.84E+01	2.5E-02	4.0E-04
Fluoranthene	4.78E-01	1.45E+00	1.36E-04	4.60E-02	4.62E-02	6.56E+01	3.56E+02	7.0E-04	1.3E-04
Indeno(1,2,3-cd)pyrene	1.34E-01	3.82E-01	3.81E-05	1.21E-02	1.22E-02	6.15E-01	3.84E+01	2.0E-02	3.2E-04
Phenanthrene	3.76E-01	6.47E-01	1.07E-04	2.05E-02	2.06E-02	6.56E+01	3.56E+02	3.1E-04	5.8E-05
Pyrene	4.49E-01	7.86E-01	1.28E-04	2.49E-02	2.50E-02	6.15E-01	3.84E+01	4.1E-02	6.5E-04
Dioxins/Furans									
2,3,7,8-TCDD equivalents - Mammal	5.79E-06	6.37E-05	1.65E-09	2.02E-06	2.02E-06	1.00E-06	1.00E-05	2.0E+00	2.0E-01
Metals									
Antimony	3.70E-01	3.70E-01	1.06E-04	1.17E-02	1.18E-02	5.90E-02	2.76E+00	2.0E-01	4.3E-03
Chromium	1.72E+01	5.27E+00	4.91E-03	1.67E-01	1.72E-01	2.40E+00	5.82E+01	7.2E-02	3.0E-03
Copper	2.01E+01	1.03E+01	5.73E-03	3.28E-01	3.34E-01	5.60E+00	8.27E+01	6.0E-02	4.0E-03
Iron	2.42E+04	1.89E+03	6.90E+00	5.98E+01	6.67E+01	5.00E+01	5.00E+02	1.3E+00	1.3E-01
Lead	2.80E+01	1.18E+01	7.98E-03	3.75E-01	3.83E-01	4.70E+00	1.86E+02	8.1E-02	2.1E-03
Thallium	4.67E-02	4.67E-02	1.33E-05	1.48E-03	1.49E-03	7.40E-03	7.40E-02	2.0E-01	2.0E-02
Vanadium	2.22E+01	9.33E-01	6.33E-03	2.96E-02	3.59E-02	4.16E+00	9.44E+00	8.6E-03	3.8E-03
BUILDING 219									
PCBs									
Aroclor-1260	3.78E+00	2.52E+01	9.31E-05	6.90E-02	6.91E-02	6.80E-02	6.80E-01	1.0E+00	1.0E-01
BUOY STORAGE AREA									
Metals									
Lead	3.15E+01	1.30E+01	4.19E-03	1.92E-01	1.96E-01	4.70E+00	1.86E+02	4.2E-02	1.1E-03

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	1.61E-02	kg	Dose (soil) = (Cs * Is)(H)/BW				Conc = Concentration	
Food Ingestion Rate = (If)	1.43E-03	kg/day	Dose (invertebrate) = (Ci * If)(H)/BW				LOAEL = Lowest Observed Adverse Effects Concentration	
Soil Ingestion Rate = (Is)	1.29E-05	kg/day	Ci = Contaminant concentration in invertebrate				NOAEL = No Observed Adverse Effects Concentration	
Home Range = (HR)	9.70E-01	acres	Cs = Contaminant concentration in soil					
Home Range factor (H) = CA/HR			Total Dose = Dose (soil) + Dose (invertebrate)					
	AOCs 1, 3, 4/5		**Building 219**		**BSA**			
Contaminated Area = (CA)	3.46E-01	acres	2.98E-02	acres	1.61E-01	acres		
Home Range Factor = (H)	3.56E-01		3.08E-02		1.66E-01			

AMERICAN ROBIN - TIER 2, STEP 3A INPUTS FOR AOCs 001, 003, AND 4/5, BUILDING 219, AND BUOY STORAGE AREA
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
DATA GAPS ASSESSMENT TANK FARM 2 CATEGORY 1 AREAS
NAVSTA NEWPORT
PORTSMOUTH, RHODE ISLAND

Chemical	Average Soil Conc. (mg/kg)	Invertebrate Conc. (mg/kg)	Dose (mg/kg/d) from: Soil	Dose (mg/kg/d) from: Invert.	Total Dose (mg/kg/d)	NOAEL (mg/kg/d)	LOAEL (mg/kg/d)	Hazard Quotients NOAEL	Hazard Quotients LOAEL
AOCs 001, 003, AND 4/5									
Semivolatile Organic Compounds									
Benzo(a)anthracene	1.99E-01	3.17E-01	1.07E-03	2.66E-02	2.76E-02	2.00E+00	2.00E+01	1.4E-02	1.4E-03
Benzo(b)fluoranthene	2.53E-01	6.59E-01	1.36E-03	5.52E-02	5.65E-02	2.00E+00	2.00E+01	2.8E-02	2.8E-03
Chrysene	2.12E-01	4.85E-01	1.13E-03	4.06E-02	4.17E-02	2.00E+00	2.00E+01	2.1E-02	2.1E-03
Fluoranthene	4.78E-01	1.45E+00	2.56E-03	1.22E-01	1.24E-01	2.00E+00	2.00E+01	6.2E-02	6.2E-03
Indeno(1,2,3-cd)pyrene	1.34E-01	3.82E-01	7.16E-04	3.20E-02	3.27E-02	2.00E+00	2.00E+01	1.6E-02	1.6E-03
Phenanthrene	3.76E-01	6.47E-01	2.02E-03	5.42E-02	5.62E-02	2.00E+00	2.00E+01	2.8E-02	2.8E-03
Pyrene	4.49E-01	7.86E-01	2.41E-03	6.58E-02	6.82E-02	2.00E+00	2.00E+01	3.4E-02	3.4E-03
Dioxins/Furans									
2,3,7,8-TCDD equivalents - Bird	4.32E-06	4.76E-05	2.32E-08	3.98E-06	4.01E-06	1.40E-05	1.40E-04	2.9E-01	2.9E-02
Metals									
Antimony	3.70E-01	3.70E-01	1.98E-03	3.10E-02	3.30E-02	NV	NV	NV	NV
Chromium	1.72E+01	5.27E+00	9.22E-02	4.41E-01	5.33E-01	2.66E+00	1.56E+01	2.0E-01	3.4E-02
Copper	2.01E+01	1.03E+01	1.08E-01	8.66E-01	9.74E-01	4.05E+00	3.49E+01	2.4E-01	2.8E-02
Iron	2.42E+04	1.89E+03	1.30E+02	1.58E+02	2.88E+02	1.00E+02	1.00E+03	2.9E+00	2.9E-01
Lead	2.80E+01	1.18E+01	1.50E-01	9.91E-01	1.14E+00	1.63E+00	4.46E+01	7.0E-01	2.6E-02
Thallium	4.67E-02	4.67E-02	2.50E-04	3.91E-03	4.16E-03	NV	NV	NV	NV
Vanadium	2.22E+01	9.33E-01	1.19E-01	7.81E-02	1.97E-01	3.44E-01	1.69E+00	5.7E-01	1.2E-01
BUILDING 219									
PCBs									
Aroclor-1260	3.78E+00	2.52E+01	1.75E-03	1.82E-01	1.84E-01	1.80E-01	1.80E+00	1.0E+00	1.0E-01
BUOY STORAGE AREA									
Metals									
Lead	3.15E+01	1.30E+01	7.86E-02	5.08E-01	5.86E-01	1.63E+00	4.46E+01	3.6E-01	1.3E-02

Cells are shaded if the value is greater than 1.0

Body Weight = (BW)	8.04E-02	kg				
Food Ingestion Rate = (If)	1.19E-02	kg/day				
Soil Ingestion Rate = (Is)	7.60E-04	kg/day				
Home Range = (HR)	6.10E-01	acres				
Home Range factor (H) = CA/HR						
	AOCs 1, 3, 4/5		**Building 219**		**BSA**	
Contaminated Area = (CA)	3.46E-01	acres	2.98E-02	acres	1.61E-01	acres
Home Range Factor = (H)	5.67E-01		4.90E-02		2.64E-01	

Dose (soil) = (Cs * Is)(H)/BW
Dose (invertebrate) = (Ci * If)(H)/BW
Ci = Contaminant concentration in invertebrate
Cs = Contaminant concentration in soil
Total Dose = Dose (soil) + Dose (invertebrate)

Conc = Concentration
LOAEL = Lowest Observed Adverse Effects Concentration
NOAEL = No Observed Adverse Effects Concentration
NV = No value determined